FINAL
Preliminary Assessment Report Volunteer Training Site-Smyrna, Tennessee

Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites
ARNG Installations, Nationwide

October 2018

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Table of Contents

Figures

Appendices

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	area of interest
ARNG	Army National Guard
AST	above ground storage tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	conceptual site model
FTA	fire training area
IED	Installations and Environment Division
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
TNARNG	Tennessee Army National Guard
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VTS-S	Volunteer Training Site-Smyrna
WWTP	waste water treatment plant

Executive Summary

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division (IED), Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. The ARNG is assessing potential effects on human health related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible.

AECOM completed a PA for PFAS at Volunteer Training Site-Smyrna (VTS-S) in Rutherford County, Tennessee, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 21 May 2018
- Interviewed personnel associated with VTS-S activities during the site visit including the TNARNG Environmental Specialist, a VTS-S Maintenance Chief, the Smyrna Rutherford Airport Authority Fire Chief, and AASF#1 personnel that formerly worked at VTS-S
- Completed visual survey inspections at known or suspected PFAS release locations and documented those areas with photographs
- Developed a conceptual site model (CSM) to outline the potential release, pathway, and receptors of PFAS for VTS-S

Four possible PFAS releases off-facility were identified during the PA. These include:

- A 2016 Blue Angel Crash occurred south of the Runway 32 approach and behind the Sam Davis Historic Home, which is off the airport property approximately 1 mile southeast of the end of Runway 32. From interviews, it is believed that AFFF was used to extinguish a fire on the wing of the aircraft.
- A 2017 Jet A fuel spill occurred on 6 October 2017 at Hollingshead Aviation, near the airport tower. In response to the spill, Hollingshead personnel reportedly used AFFF to suppress fuel vapors. It was estimated that 10 gallons of foam was used for this purpose.
- Small releases of AFFF (5 gallons or less) were reported by the Smryna Rutherford Airport Fire Department Fire Chief during annual Federal Aviation Administration (FAA)-required demonstrations of emergency response readiness, typically staged adjacent to the runway at a different location each year selected by the FAA representative. AFFF is dispersed from the fire truck and allowed to runoff and infiltrate.
- Past storage of AFFF and refilling of fire extinguishers in the large hangar (Buffalo Hangar) north of the fuel ASTs were reported. To the best of their knowledge, TNARNG staff noted no AFFF releases occurred at the Buffalo Hangar.

The PA identified one area of interest (AOI) related to PFAS releases at VTS-S. The AOI is shown in **Figure ES-1** and summarized below.

Area of Interest	Name	Used by	Release Dates
AOI 1	2006 hangar fire at Building 682S and fire extinguisher training in adjacent ramp area	TNARNG	2006 in hangar and occasionally over multiple years in adjacent ramp

Based on the documented AFFF release at this AOI, there is potential exposure to PFAS contamination in surface and subsurface soil to site and construction workers via inhalation of dust or ingestion, in surface water to municipal water supply users and recreational users via ingestion and in groundwater to residential and commercial well users via ingestion. The CSM for VTS-S is shown on **Figure ES-2**.

CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	10/23/2018	GIS BY	MS	10/23/2018
SCALE	1:14,400	CHK BY	SS	10/23/2018
Base Map: Michigan Statewide Authoritative Imagery & LiDAR (MiSAIL) program		PM	RG	10/23/2018

Legend

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream

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Summary of Findings

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Figure ES-1

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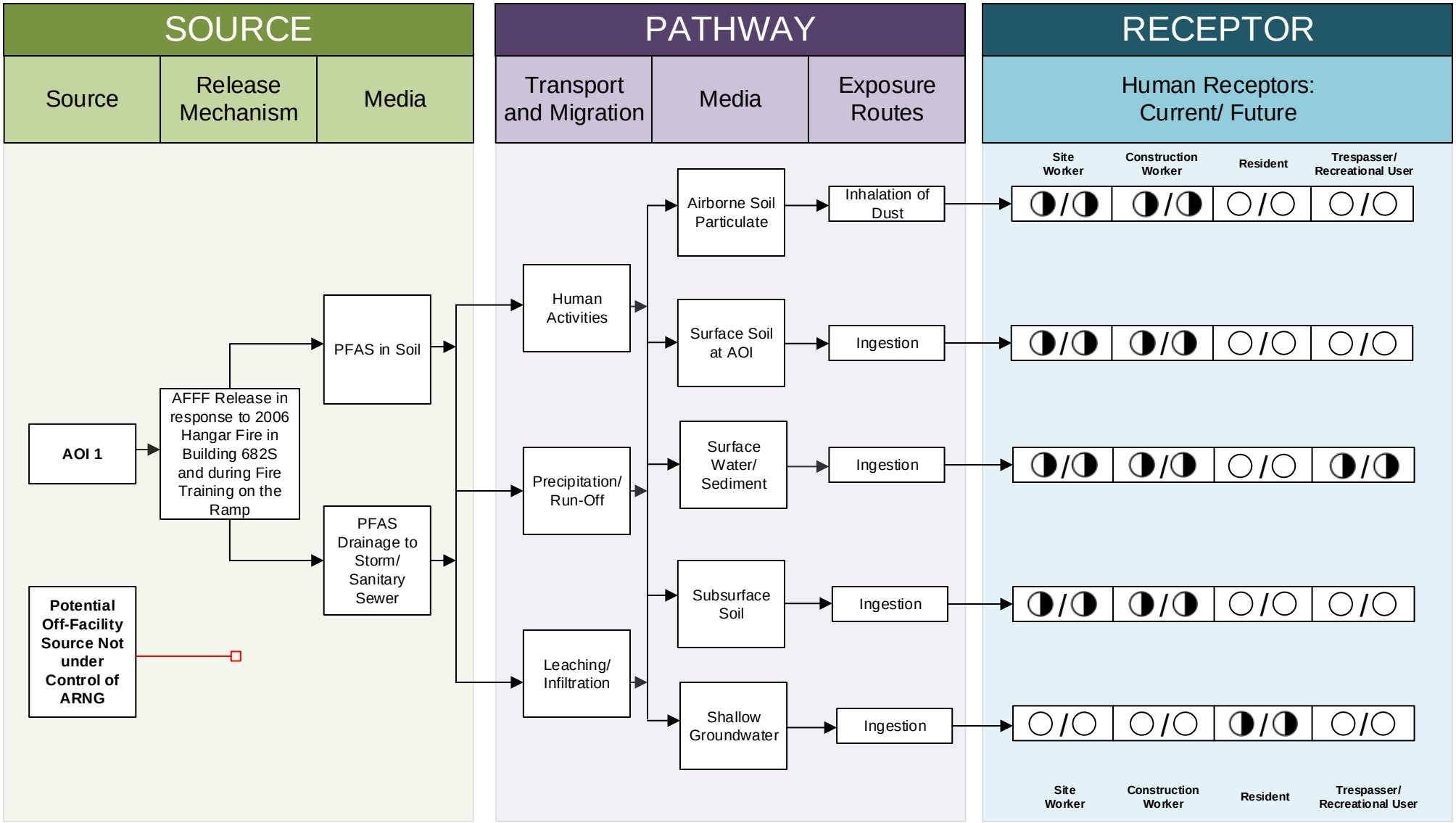


LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Figure ES-2
Conceptual Site Model
AOI 1

1. Introduction

1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division (IED), Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide* under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017, and Modification 01 issued 30 September 2017. The ARNG is assessing potential effects on human health related to processes at their facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily releases of aqueous film forming foam (AFFF) although other sources of PFAS are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of these PFAS compounds in the environment will vary. The regulatory framework at both federal and state levels continues to evolve. The U.S. Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water. In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS.

This report presents findings of a PA for PFAS at Volunteer Training Site-Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300), and USACE requirements and guidance.

This PA documents the locations where PFAS are currently stored and may have been released into the environment at VTS-S. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 21 May 2018
- Interviewed personnel associated with VTS-S activities during the site visit including the TNARNG Environmental Specialist, a VTS-S Maintenance Chief, the Smyrna Rutherford Airport Authority Fire Chief and AASF#1 personnel that formerly worked at VTS-S
- Completed visual survey inspection (VSI) at known or suspected PFAS release locations and documented with photographs
- Developed a conceptual site model (CSM) to outline the potential release and pathway of PFAS for each area of interest (AOI)

1.3 Report Organization

This report has been prepared in accordance with the USEPA *Guidance for Performing Preliminary Assessments under CERCLA* (USEPA, 1991). The report sections and descriptions of each are:

- **Section 1** – **Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA.
- **Section 2** – **Fire Training Areas:** describes fire training areas (FTAs) at the facility identified during the site visit.
- **Section 3** – **Non-Fire Training Areas:** describes other locations of potential or suspected PFAS releases at the facility identified during the site visit.
- **Section 4** – **Emergency Response Areas:** describes areas of suspected or potential AFFF release at the facility, specifically in response to emergency situations.
- **Section 5** – **Adjacent Sources:** describes sources of PFAS release adjacent to the facility that are not under the control of ARNG.
- **Section 6** – **Conceptual Site Model:** describes the pathways of PFAS transport and receptors at the AOI.
- **Section 7** – **Conclusions:** summarizes the data findings and presents the conclusions of the PA.
- **Section 8** – **References:** provides the references used to develop this document.
- **Appendix A** – Data Resources
- **Appendix B** – Preliminary Assessment Documentation
- **Appendix C** – Photographic Log

1.4 Facility Location and Description

VTS-S occupies 868 acres of land near Smyrna, Tennessee in Rutherford County, approximately 22 miles southeast of Nashville (**Figure 1-1**). The Smyrna/Rutherford County Regional Airport is situated to the west of the VTS-S. VTS-S is partially within the city limits of the Town of Smyrna, Tennessee. Main access to the training site is by Sam Ridley Parkway, which is easily accessible via U.S. Highway 41-70S, Interstate 24, and State Route 840 (TNARNG, 2012).

VTS-S consists of federally-, state- and county-owned property. The TNARNG is licensed to use 709.57 acres from the Nashville District USACE and 137.15 acres from the Mobile District USACE. The state-owned portion consists of 10.11 acres and located within the cantonment area. On the western border of the training site, adjacent to airport property, the Airport Authority and TNARNG have developed a joint use agreement for an approximate 11-acre parcel (TNARNG, 2012) which contains aircraft hangars, a vehicle maintenance facility, fuel storage, surrounding parking areas and offices.

The facility was established in 1941 as Smyrna Army-Air Base and construction of the site began in 1942. During World War II, the site was used as a training facility for bomber pilots. In the years immediately following the war's end, base activities were reduced, and in July 1947 the base was deactivated (TNARNG, 2012). In August 1948, the base was reopened with the arrival of the 314th Troop Carrier Wing from Texas. The base was renamed Sewart Air Force Base (AFB) in 1950 after Major Alan J. Sewart, who was killed in aerial combat during World

War II. In 1955, the 516th Troop Carrier was activated at Sewart AFB. It was the only helicopter group in the Air Force at that time. In 1965, it was announced that the Sewart AFB would be phased out over a 4.5-year period and would be completely closed by July 1970. The closure coincided with the acquisition of lands for the J. Percy Priest Dam and Reservoir by the USACE Nashville District (TNARNG, 2012).

When the Sewart AFB closed, the USACE retained a portion of the former installation, including the cantonment area, and the National Airport Authority retained the airfield. In 1970, the TNARNG obtained a license from the Nashville USACE to use 780.55 acres for education of troops and various field training purposes on a continual basis. Under TNARNG management, the site has been called Smyrna Training Site, Grubbs/Kyle Training Center, and most recently, VTS-S. The airfield was transferred to the Metropolitan Nashville Airport Authority, and has subsequently been transferred to the Smyrna/Rutherford County Airport Authority.

1.5 Facility Environmental Setting

VTS-S lies within the Central Basin physiographic region of the state. The Central Basin is characterized by gently rolling to nearly level lands, land surface elevations at VTS-S generally fall between 490 and 550 feet (TNARNG, 2012). Site topography is generally flat to gently rolling and slopes from west to east toward Stewart Creek.

1.5.1 Geology

VTS-S is underlain mostly by the Ridgley Limestone, which is Ordovician in age. Other Ordovician age units underlying VTS-S include the Carters, Lebanon, Pierce, and Murfreesboro Formations. Sinkholes and caves are characteristic features of limestone formations. Numerous sinkholes are present in the northeastern corner of VTS-S (TNARNG, 2012). The nature of such karst features allows significant interactions between surface water and groundwater. VTS-S is also located on the outer portion of the New Madrid Seismic Zone, which is the most seismically active zone east of the Rocky Mountains.

1.5.2 Hydrogeology

VTS-S lies above the Central Basin aquifer which consists of generally flat-lying carbonate rocks of Ordovician to Devonian age and underlies the Central Basin physiographic province. Groundwater is stored in and moves through solution-enlarged vertical joints and horizontal bedding planes. Wells commonly yield 5 to 20 gallons per minute and are an important source of drinking water throughout much of the Central Basin (TNARNG, 2012).

Based on the surrounding topography, shallow groundwater flow is anticipated to flow to the southeast (**Figure 1-2**). Groundwater depth at VTS-S ranges from approximately 40 feet to 2 to 3 feet near Stewart Creek. Groundwater is recharged via the percolation of precipitation into the Central Basin aquifer. Some fractures and faults through the Central Basin aquifer may allow recharge to the underlying Knox aquifer, whose upper formation can also provide substantial quantities of water to wells in the Central Basin at depths of 1000 feet or more (TNARNG, 2012).

As noted in the attached Environmental Data Research (EDR) report (**Appendix A**), a query of Tennessee Department of Environment and Conservation's water well database identified six residential and one commercial private water supply wells approximately 0.5 miles east and southeast of VTS-S (**Figure 1-2**) and range in depth from 85 to 390 feet.

1.5.3 Hydrology

VTS-S is located within the Stones River Watershed (USGS Hydrologic Unit #05130203), which includes approximately 589,440 acres (921 square miles) of land and water and ultimately drains into the Cumberland River. **Figure 1-3** shows perennial surface water features at VTS-S including Stewart Creek and the J. Percy Priest Reservoir (TNARNG, 2012). VTS-S is located in an area of high flood risk which is mitigated to some degree by USACE control of water levels at J. Percy Priest Lake. A large portion of VTS-S falls at or below the "508-line", which is defined as portions under 508 feet above mean sea level and are subject to specific use restrictions.

Storm water runoff at VTS-S flows north and east to two outfalls on Stewart Creek via open-flow ditches and limited sewer lines and is not treated before entering the creek. Flow into hangar floor drains are conveyed to two sump tanks and wastewater from all wash racks passes through oil/water separators before discharge to the Town of Smyrna sanitary sewer system (TNARNG, 2012).

Potable water for VTS-S and surrounding areas is supplied by the Town of Smyrna from an intake on J. Percy Priest Reservoir. The Town has capacity to provide up to 8 million gallons of water per day for the local community (TNARNG, 2012).

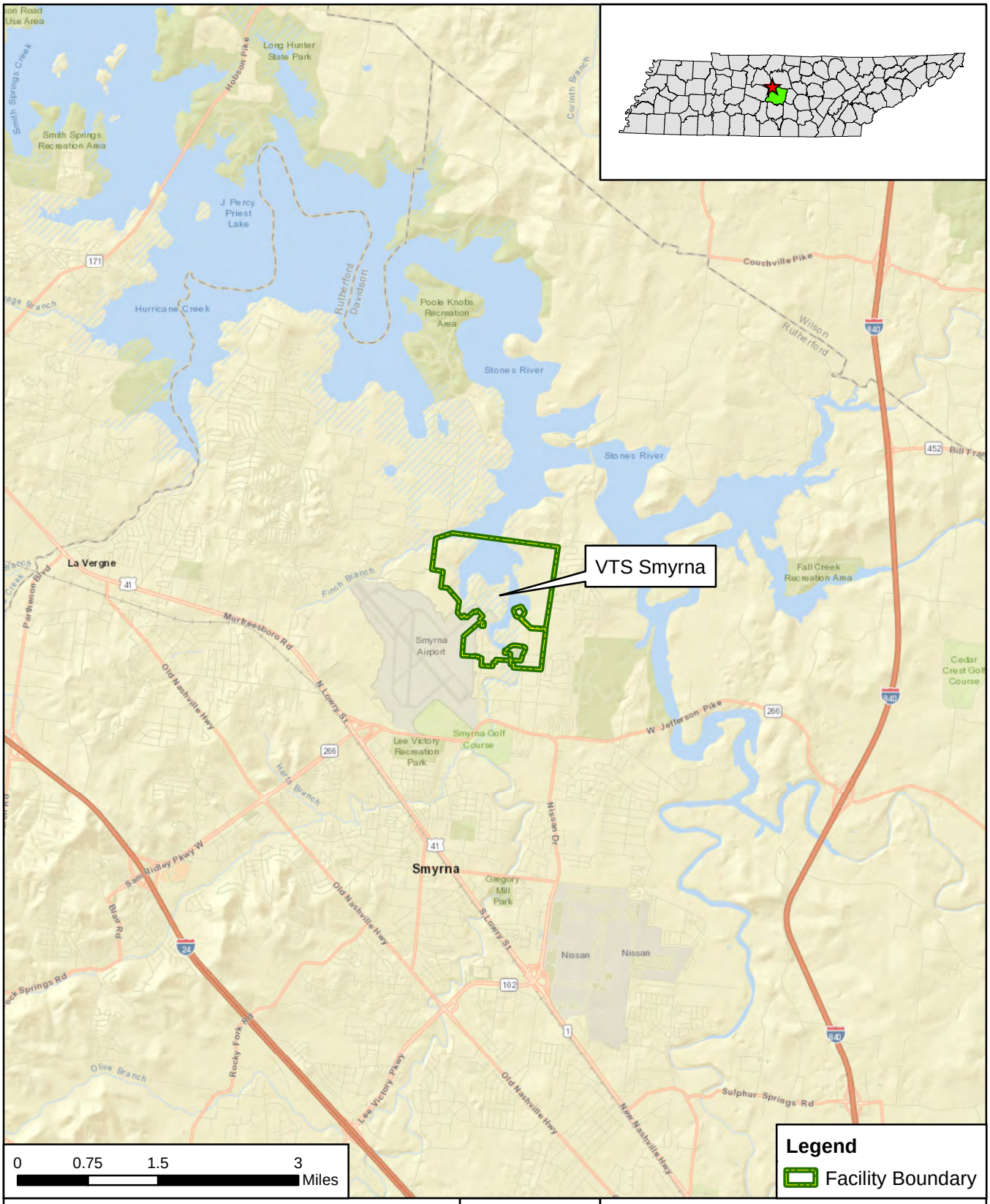
1.5.4 Climate

Data from Smyrna, Tennessee, indicate that the mean annual temperature between 1981 and 2010 was 57.5 degrees Fahrenheit (ºF) (National Oceanic and Atmospheric Administration [NOAA], 2018). The warmest months are July and August, with normal daily mean temperatures of 88.9ºF and 90.0ºF, respectively. January is the coldest month, with a mean temperature of 47.5ºF. Average annual precipitation measured from 1981 to 2010 in Smyrna, Tennessee was 54.36 inches. Rainfall is heaviest during the month of May, averaging 5.75 inches per month; October and August are the driest months. Average monthly precipitation ranges from 3.44 inches in October to 3.60 inches in August.

1.5.5 Current and Future Land Use

In April 2015, TNARNG's Army Aviation Support Facility #1 transferred operations from VTS-S to Berry Field in Nashville, with some vehicle maintenance personnel and equipment remaining at VTS-S. VTS-S is the primary training facility for TNARNG units within 100 miles of the training site. In addition, a variety of non-National Guard organizations use the training site, including: the 100th Division and the 304th MP unit, both of which are Army Reserve units; 3-BCT 101st Airborne, a U.S. Army unit; as well as local gun clubs, ROTC groups, and local law enforcement units. Approximately sixty percent of all training at VTS-S takes place either in classrooms or in virtual training facilities. Field training exercises at VTS-S accounts for ten to fifteen percent of overall usage at VTS-S and involve a wide variety of activities such as tracked and wheeled vehicle operations on all military-developed roads and major trails, mounted and dismounted maneuvers, field bivouacking, mine field detection, land navigation, aviation sling load training, and weapons firing.

The western boundary of VTS-S is adjacent to the Smyrna/Rutherford County Regional Airport. Smyrna Municipal Golf Course is located to the south. South and southeast of VTS-S is privately owned residences and industrial businesses. High density residential properties border VTS-S to the east.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	8/7/2018	GIS BY	MS	8/7/2018
SCALE	1:95,040	CHK BY	SS	8/7/2018
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN,		PM	RG	8/7/2018

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Facility Location

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Figure 1-1

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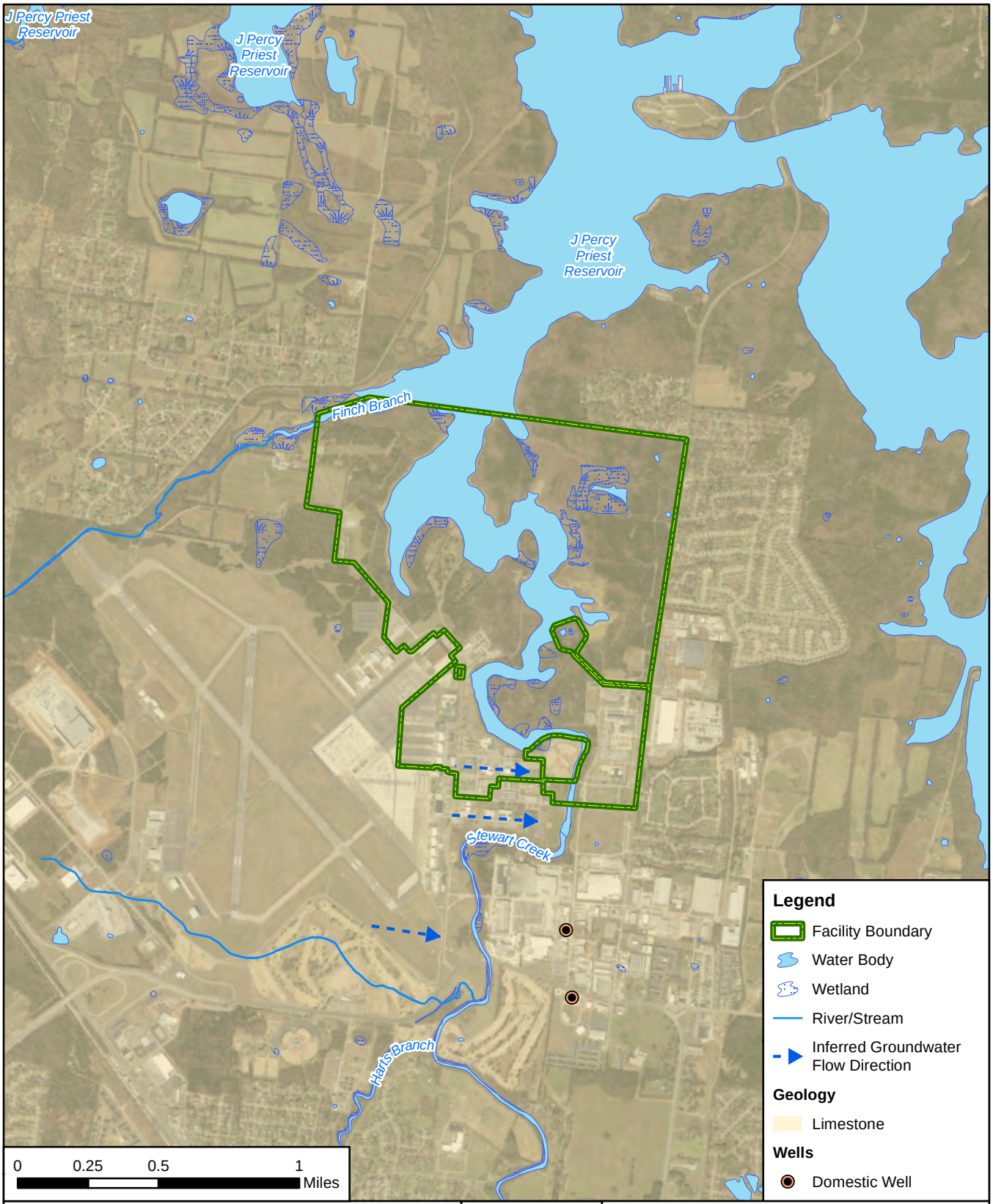

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at VTS Smyrna, TN			
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SCALE	1:31,680	CHK BY	SS	10/23/2018
Base Map: National Agricultural Imagery Program, 2016		PM	RG	10/23/2018

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Groundwater Features

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Figure 1-2

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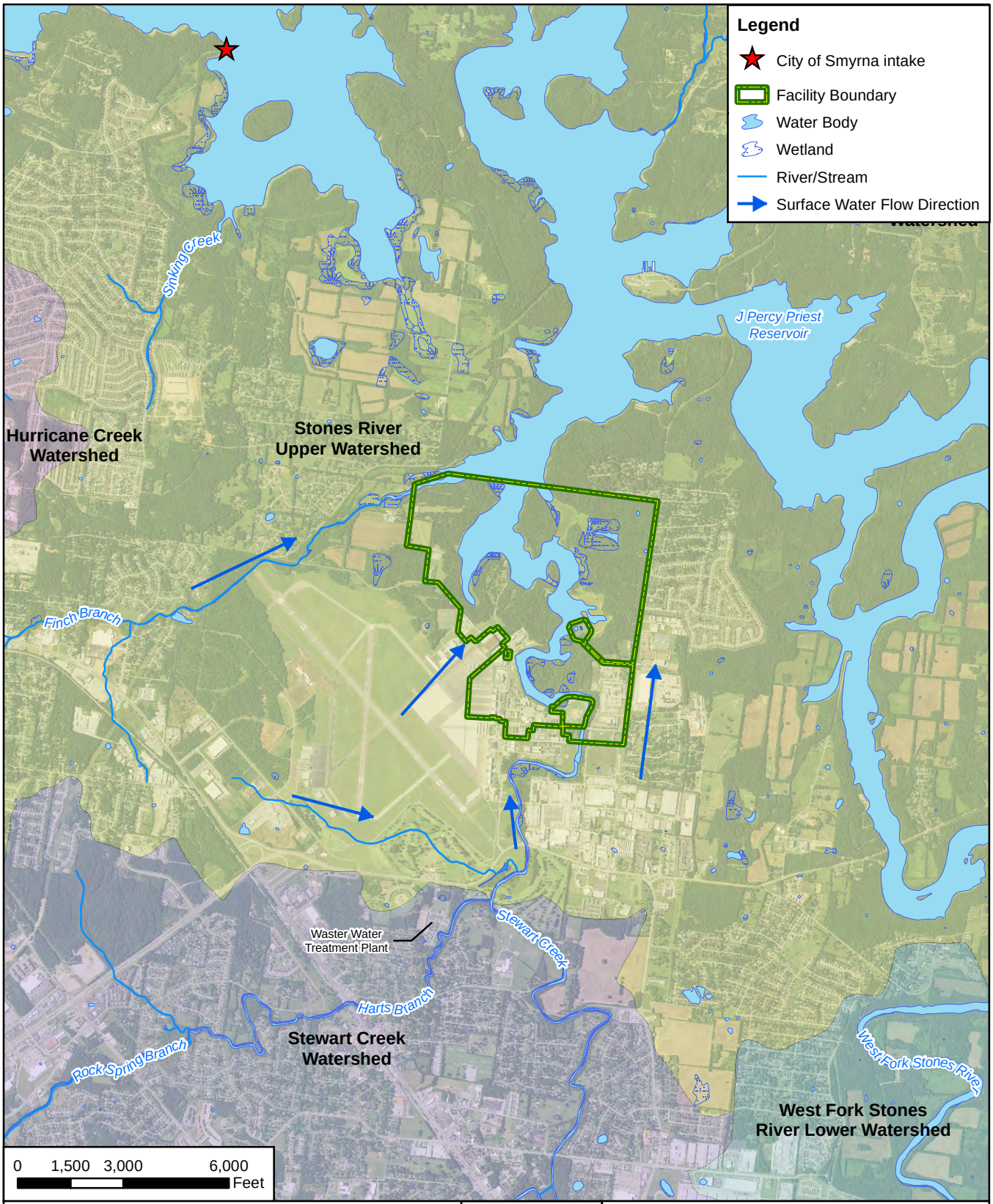

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NOTES	Preliminary Assessment for PFAS at VTS Smyrna, TN			
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SCALE	1:48,000	CHK BY	SS	8/8/2018
Base Map: National Agricultural Imagery Program, 2016		PM	RG	8/8/2018

Surface Water Features

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Figure 1-3

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2. Fire Training Areas

TNARNG staff reported fire extinguisher training with expired AFFF was conducted on the ramp in front (west) of the hangar buildings. Associated training records or other information regarding the timing and estimated quantities used were not available. TNARNG staff also reported that off-site emergency response training, conducted jointly with the Smyrna Fire Department occurs one to two times per year and has not included fire training with AFFF. Personnel confirmed there are no current or former FTAs at VTS-S.

3. Non-Fire Training Areas

During the PA, several non-fire training areas were evaluated. One non-fire training area on the installation was identified to have a known release of AFFF. Each non-FTA is described below and shown on **Figure 3-1,** with photographs appearing in **Appendix C**.

3.1 Buildings and Hangars

All three TNARNG hangar buildings were assessed during the PA, Buildings 681, 682N (north) and 682S (south), also referenced by some TNARNG staff as Buildings 1, 2 and 3, respectively. All three buildings are equipped with similar AFFF fire suppression systems which were installed circa 2004/2005. All systems include a 900-gallon capacity AFFF above ground storage tank (AST) connected to ceiling nozzles via piping. Each building is discussed further below.

3.1.1 Building 681

Building 681 is the northernmost building evaluated during the PA. Formerly used as a hangar, Building 681 now serves as a vehicle maintenance facility. Because aircraft are no longer stored in the building, the building's AFFF fire suppression system has been deactivated (i.e., tank valve locked and tagged) such that water only would be released in the event of a fire. The sight gauge on the AFFF AST shows empty. It is not clear if the tank is empty or if the gage is malfunctioning. To the best of their knowledge, TNARNG staff who had been working on site since the installation of the building's AFFF system, had no knowledge about whether the tank had leaked or had been emptied, nor of system leaks or failures of any kind in the building. Offsite disposal of the AFFF in this and, as discussed below, other building ASTs, and in the two remaining mobile carts, is planned and awaiting National Guard Bureau contracting. The geographic coordinates are 36° 0'31.41"N and 86°30'28.67"W.

3.1.2 Building 682N

Building 682N is located south of Building 681. Building 682N serves as an active aircraft hangar by the Tennessee Bureau of Investigation. Because aircraft are currently stored in the building, the associated AFFF fire suppression system is the only such system at VTS-S that is active. The 900-gallon AST system is labeled as three percent AFFF and the sight gauge shows full. The system testing is currently conducted annually by American Fire Protection, and formerly by Tyco Simplex. The system test consists of withdrawing AFFF concentrate directly from the tank for collection and analysis. The overall system operation is not tested. During the test, 2 to 3 gallons of AFFF are discharged and routed to the sanitary sewer. The integrity of the sanitary sewer, which conveys wastes to the City of Smyrna wastewater treatment plant (WWTP), is unknown. To the best of their knowledge, TNARNG staff who had been working on site since the installation of the building's AFFF system, there have been no leaks or failures. The geographic coordinates are 36° 0'34.06"N and 86°30'28.84"W.

3.1.3 Building 682S

Building 682S is located south of Building 682N. Currently the building is not used and the AFFF system is deactivated (i.e., tank valve locked and tagged). The AFFF AST sight gauge shows full. Because this building is the location of an emergency response action, it is further discussed in **Section 4.1**.

3.1.4 Fuel ASTs

The aviation fuel ASTs at VTS-S are now inactive and scheduled for decommissioning. There are no reports or records of any reportable releases of fuel (larger than 5 gallons) in the area. Interviews indicated that during use standard fuel spill cleanup protocol required placement of sorbent material, not AFFF. Therefore there is no evidence of AFFF releases in the vicinity of the fuel ASTs area.

3.2 Waste Water Treatment Plant

The City of Smyrna previously had a license for a large parcel of land in on the installation for sewage treatment purposes (TNARNG, 2012). The associated dates of operation and closure were not reported. The only residual signs of the treatment plant are access roads and a large, perennial pond). Currently the City of Smyrna operates a WWTP off the airport property to the south (**Figure 3-1** inset).

3.3 Landfills

According to the 2012 INRMP, there is a historical DoD landfill on the edge of the J. Percy Priest Reservoir (TNARNG, 2012). TNARNG has informally agreed not to use the area until landfill mitigation options are implemented. The landfill location is shown on **Figure 3-1**.

Landfills are not usually a primary release area of PFAS, but materials disposed of in landfills may create a secondary source of contamination. Such materials, to name a few, may include sludge from a WWTP that processes PFAS-laden water, used AFFF storage containers, or products associated with waterproofing uniforms or boots. At VTS-S, no information obtained indicates PFAS-related materials were disposed of in any landfill.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	10/17/2018	GIS BY	MS	10/17/2018
SCALE	1:3,000	CHK BY	SS	10/17/2018
Base Map: National Agricultural Imagery Program, 2016		PM	RG	10/17/2018

Non-Fire Training Areas

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Figure 3-1

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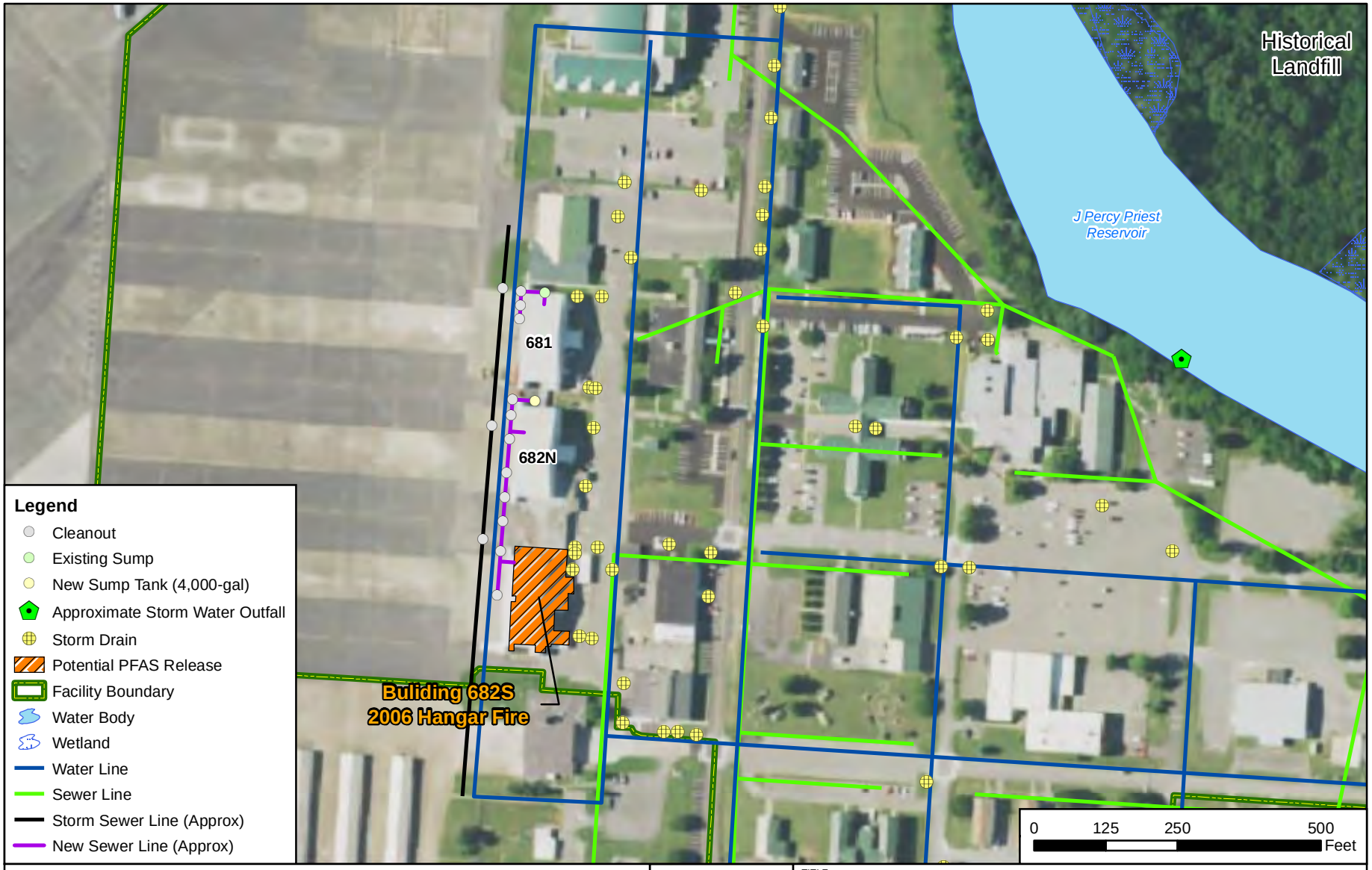
4. Emergency Response Areas

As noted in **Section 3.1.3**, one emergency response location was identified at VTS-S during the PA: a fire in Building 682S in 2006 (shown on **Figure 4-1)**.

Based on the PA interview with TNARNG Safety Officer and staff present at the building in 2006, a fire started following welding operations between exterior walls of Building 682S. Staff reported the hangar's overhead fire suppression system did not deploy AFFF until late stages of the incident. After the system did engage, foam filled the hangar. When the City of Smyrna Fire Department later arrived on the scene, they reportedly used water in their response. Following the fire, the hangar was gutted and restored; and the AFFF fire suppression system was recharged. Interviewees did not know the volume of AFFF discharged, or the volume required to re-fill the 900-gallon capacity fire suppression system AST following the incident. The cause of the delayed AFFF system response was attributed to two factors, system design flaws and location of the fire between the building walls i.e., not the building interior where the sensors are located. During the initial stages of the fire, VTS-S personnel extracted aircraft stored inside the building. Some personnel were exposed to smoke and required emergency medical care. The Airport Authority Fire Department Chief, interviewed during the PA by phone, provided the City Fire Department's incident report included in **Appendix A**.

The TNARNG Environmental Specialist reported a 4,000-gallon underground sump north of Building 682N (shown on **Figure 4-1**) receives water from floor drains in Buildings 682N and 682S. She recalled the sump being emptied in 2009 or 2010, after the 2006 hangar fire. Record of the disposition of the sump contents was not available. A second older sump located north of Building 681 receives water from Building 681. Diagrams provided by the TNARNG of the sumps (location and configuration) are included in **Appendix A**. No other records on the incident were identified during the PA.

The geographic coordinates are 36° 0'31.41"N and 86°30'29.05"W.



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SCALE	1:3,000	CHK BY	SS	10/17/2018
Base Map: Michigan Statewide Authoritative Imagery & LiDAR (MiSAIL) program		PM	RG	10/17/2018

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TITLE

Emergency Response Area

AECOM

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Germantown, MD 20876

Figure 4-1

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5. Adjacent Sources

The following describes potential sources of AFFF outside the VTS-S boundary.

5.1 Smyrna/Rutherford County Regional Airport Fire Station.

The Smyrna Rutherford Airport Authority Fire Department operates as the fire department for the airport areas adjacent to VTS-S and is equipped with AFFF. The Fire Chief clarified the Smyrna Rutherford Airport Authority Fire Department provides emergency response only to aircraft-related fires whereas the City of Smyrna's Fire Department responds to emergencies related to airport property structures, such as the 2006 hangar fire. The station is located immediately south of Building 682S (**Figure 5-1**). The Airport Authority Fire Chief reported no AFFF releases have occurred during handling of AFFF at their station and the Department does not train with the material. The Fire Chief noted small releases of AFFF (5 gallons or less) during annual Federal Aviation Administration (FAA)-required demonstrations of emergency response readiness. During these demonstrations, typically staged adjacent to the runway at a different location each year selected by the FAA representative, AFFF is dispersed from the fire truck and allowed to runoff and infiltrate. The Fire Chief reported two PFAS sources in the vicinity, a 2016 crash of a U.S. Navy jet (Blue Angel) and a 2017 fuel spill at an airport fixed-base operator (Hollingshead Aviation). These sources are described further below and approximate locations shown on **Figure 5-1**.

5.2 Blue Angel Crash Site 2016

The Fire Chief stated that a military jet crashed south of the Runway 32 approach and behind the Sam Davis Historic Home, which is off the airport property approximately 1 mile southeast of the end of Runway 32. The approximate geographic coordinates are 35° 59' 28.123" N and 86° 30' 2.060" W. A fire ensued after the crash, and the Fire Chief recalled AFFF was used to extinguish flames on a wing of the aircraft. He stated a U.S. Navy contractor reportedly remediated the crash site, including removal and offsite disposal of impacted soil. With the exception of newspaper articles about the actual crash, information regarding the volume of AFFF used during the emergency response and the reported subsequent soil removal was not available.

5.3 Hollingshead Aviation Jet-A fuel spill

The Fire Chief also reported the occurrence of a Jet A fuel spill which occurred on 6 October 2017 at Hollingshead Aviation, near the airport tower. The approximate geographic coordinates are 36° 0' 18.978" N and 86° 31' 29.783" W. In response to the spill, Hollingshead personnel reportedly used foam to suppress fuel vapors. It was estimated that 10 gallons of AFFF was used for this purpose. Some of the material evaporated and a small amount drained, approximately 100 feet from the spill site, to the storm sewer system. The Fire Chief recalled Hollingshead hired Evergreen AES for spill response services, including removal of AFFF that had drained to the storm sewer. The Fire Chief provided a copy of the 2017 incident report included in **Appendix A**.

5.4 Buffalo Hangar

TNARNG staff reported past storage of bulk AFFF and refilling of fire extinguishers in the large hangar (called Buffalo Hangar) north of the fuel ASTs (see **Figure 5-1**) which was previously leased by the TNARNG. To the best of their knowledge, TNARNG staff noted no AFFF releases occurred at the Buffalo Hangar.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	10/17/2018	GIS BY	MS	10/17/2018
SCALE	1:14,400	CHK BY	SS	10/17/2018
Base Map: National Agricultural Imagery Program, 2016		PM	RG	10/17/2018

N

Adjacent Sources

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Chisholm_6th\March2017\ Fig_5-1_VTS_Smyrna_Adjacent_Sources.mxd

6. Conceptual Site Model

Based on the PA findings, the AFFF release area associated with the 2006 hangar fire and fire extinguisher training in adjacent ramp area was identified as an area of interest (AOI). The AOI is shown on **Figure 6-1**. The following section describes the CSM components and the specific CSM developed for this AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, and (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Dermal contact is not considered to be a potential exposure pathway as studies have shown very limited absorption of PFAS through the skin (National Ground Water Association [NGWA], 2018). Receptors at VTS-S include site workers, construction workers, residents outside the facility boundary, and recreational users. As described below, the CSM for AOI 1, shown on **Figure 6-2**, indicates which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1

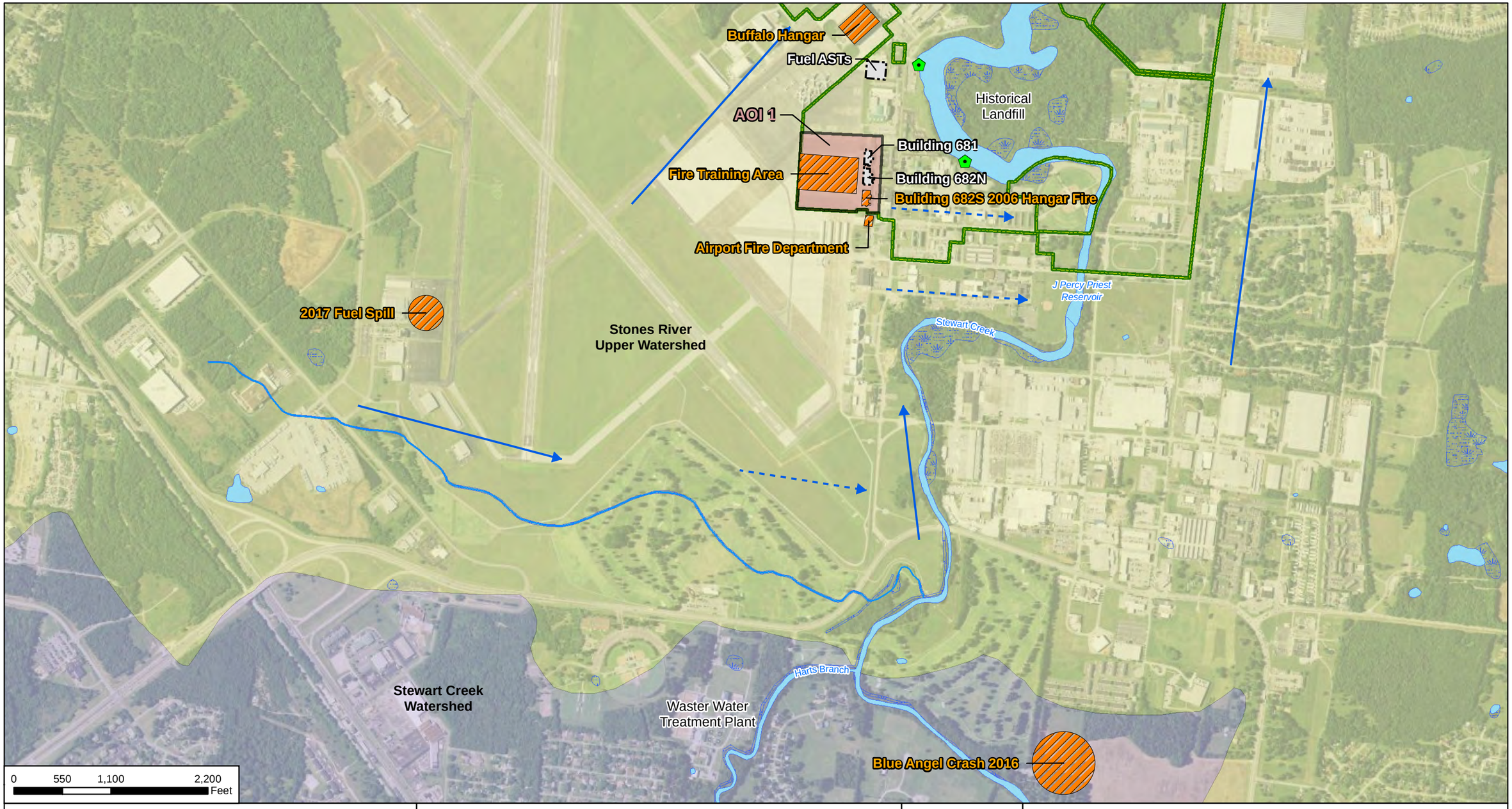
AFFF was released during a 2006 hangar fire at Building 682S and during fire extinguisher training in adjacent ramp area.

No surface water bodies are present within the AOI; Stewart Creek is located approximately 1,000 feet to the east northeast of Building 682S. PFAS releases during the fire response would have been conveyed through hangar floor drains and sump to the airport sanitary sewer system which flows to the City of Smyrna wastewater treatment plant. PFAS-impacted surface drainage would flow east via storm water conveyances to an outfall on Stewart Creek, which discharges into Percy Priest Lake or along the pavement to the unpaved area south of Building 682S and potentially impact surface and subsurface soil. Ingestion exposure pathways for surface water are potentially complete for municipal water supply users via the downstream intake on Percy Priest Lake and recreational users (e.g., swimming and fishing) of Stewart Creek and Percy Priest Lake.

PFAS contamination may have infiltrated to subsurface soil via seams and cracks in the hangar floor and surrounding concrete apron. Ground disturbing activities at the AOI could result in site worker and construction worker exposure to PFAS via inhalation of dust or ingestion of exposed subsurface soil.

Potential PFAS contamination may have infiltrated to shallow groundwater, which is likely to flow to the east and discharge into Stewart Creek and Percy Priest Lake. Some groundwater could migrate to downgradient water supply wells. Six residential and one commercial water supply wells ranging in depth from 85 to 390 feet below ground surface are reported less than one mile to the east and southeast (EDR, 2018). Therefore, the ingestion exposure pathway for groundwater is potentially complete.

AOI 1 includes potential PFAS contamination associated with fire extinguisher testing on the flight line/apron west of the hangar buildings that may have flowed along the pavement to surrounding soil, infiltrated to subsurface soil, and infiltrated further to intercept shallow groundwater. Exposure pathways include site worker and construction worker exposure to PFAS via inhalation of dust or ingestion of exposed soil in this area. Additionally PFAS may have migrated from subsurface soil to groundwater indicating additional potential exposure to residential and commercial well users via ingestion.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	10/23/2018	GIS BY	MS	10/23/2018
SCALE	1:13,200	CHK BY	SS	10/23/2018
Base Map: Michigan Statewide Authoritative Imagery & LiDAR (MiSAIL) program		PM	RG	10/23/2018

- Approximate Storm Water Outfall
- Potential PFAS Release
- No Suspected Release
- Area of Interest
- Facility Boundary
- Water Body
- Wetland
- River/Stream
- Surface Water Flow Direction
- Inferred Groundwater Flow Direction

N

Area of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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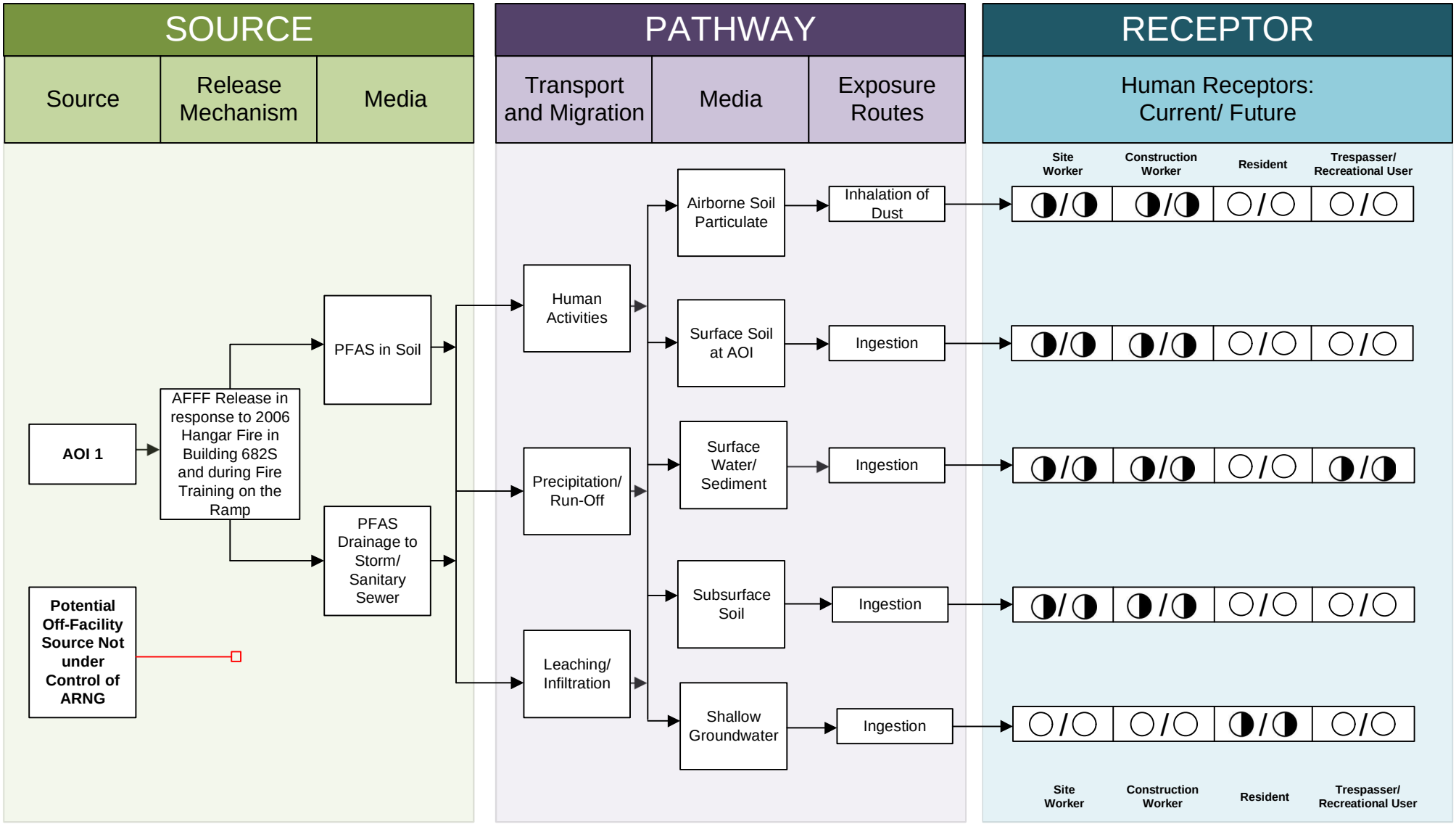

LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Figure 6-2
Conceptual Site Model
AOI 1

7. Conclusions

One AOI related to a PFAS release (Building 682S 2006 hangar fire and fire extinguisher training in adjacent ramp area) was identified at VTS-S during the PA (**Figure 7-1**).

7.1 Findings

Based on the documented AFFF release at VTS-S during the 2006 hangar fire emergency response and potential AFFF release in west side ramp, evidence supports the potential for PFAS contamination in soil, groundwater, or surface water to intercept one or more receptors. Other sources of PFAS were identified at off-site locations, including the emergency responses to a fuel spill on the airport property west of VTS-S, the Blue Angel crash site southeast of VTS-S, and AFFF storage and use to refill fire extinguishers at the Buffalo Hangar located north of fuel ASTs.

7.2 Uncertainties

A number of information sources were investigated during this PA to determine the potential for PFAS-containing materials to have been present, used, or released at the facility. Historically, documentation of PFAS use was not required because PFAS were considered benign. Therefore, records were not typically kept by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposition.

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes the provided information was vague or conflicted with other sources. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS was first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

The following table summarizes the uncertainties associated with the PA:

Area of Interest	Source of Uncertainty
AOI 1	1. The fire training on the ramp was conducted over multiple years and with an unknown number of extinguishers each time. 2. The status of the AFFF storage tank in Building 681. 3. Spills or leaks that may have occurred at the Airport Authority Fire Department station associated with maintenance and filling of fire trucks with AFFF 4. The locations and quantities of AFFF used by the Airport Authority Fire Department during FAA-required fire readiness demonstration exercises. 5. Spills or discharges associated with replacing expired AFFF solution in extinguishers that was conducted at the Buffalo Hangar. 6. Building 682S hangar was completely restored following the 2006 fire. The fire incident report does not include information regarding the total

volume of material used to contain the fire. Additionally, the final disposition of the damaged building materials removed during the hangar restoration (which may contain residual AFFF) is unknown.

CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at VTS Smyrna, TN			
REVISED	10/23/2018	GIS BY	MS	10/23/2018
SCALE	1:14,400	CHK BY	SS	10/23/2018
Base Map: Michigan Statewide Authoritative Imagery & LiDAR (MiSAIL) program		PM	RG	10/23/2018

Legend

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream

N

Summary of Findings

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Germantown, MD 20876

Figure 7-1

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8. References

Environmental Data Research (EDR), 2018.

Tennessee Army National Guard (TNARNG), 2012. *Integrated Natural Resources Management Plan*, Volunteer Training Site-Smyrna, Rutherford County, Tennessee. March 2012.

National Ground Water Association (NGWA). 2018. *Groundwater and PFAS: State of Knowledge and Practice*. January.

National Oceanic and Atmospheric Administration (NOAA), 2018. *1981-2010 Climate Normals for Smyrna, TN US.* http://www.ncdc.noaa.gov/cdo-web/datatools/normals. Accessed 13 June 2018.

USEPA, 1991. *Guidance for Performing Preliminary Assessments under CERCLA*. EPA/540/G-91/013. September 1991.

Appendix A

Data Resources

Data resources will be provided separately on CD. Data resources for Volunteer Training Site – Smyrna include:

Volunteer Training Site – Smyrna Leases, Licenses and Permits

Previous Investigations Completed at Volunteer Training Site - Smyrna

- 2012 Final Integrated Natural Resources Management Plan, Volunteer Training Site-Smyrna, Rutherford County Tennessee

PFAS Release Information - Smyrna/Rutherford County Regional Airport

- Smyrna Fire Department Incident Reports
  - 2006 VTS-S Building 682S Hangar Fire
  - 2017 Hollingshead Aviation Fuel Spill

Volunteer Training Site Smyrna Installation Maps

- Undated Facility Underground Utility Drawings
- Undated Floor Drain Alteration Design Drawings for Buildings 681 and 682

Volunteer Training Site Smyrna Environmental Data Resources Report

- 2018 Volunteer Training Site Smyrna EDR Report

Integrated Natural Resources Management Plan

Volunteer Training Site – Smyrna

Tennessee Army National Guard
Nashville, Tennessee

March 2012

Integrated Natural Resources Management Plan

Volunteer Training Site – Smyrna

Rutherford County, Tennessee

Tennessee Army National Guard
Nashville, Tennessee

March 2012

Updated and Revised by
Janie J. Becker
Conservation Biologist
Business World Management, Inc.
And
Laura Lecher
Natural Resources Manager
Tennessee Military Department

Originally prepared for and submitted to the
Tennessee Military Department, Environmental Office
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Anchorage, AK 99523

Volunteer Training Site – Smyrna
Integrated Natural Resources Management Plan

Signature Page

This Integrated Natural Resources Management Plan (INRMP) meets the requirements for INRMPs listed in the Sikes Act Improvement Amendments (16 U.S.C. 670a et seq.), AR 200-3, and the "Executive Summary and Scope" within this plan. It has set appropriate and adequate guidelines for conserving and protecting the natural resources of the Volunteer Training Site at Smyrna.

APPROVING OFFICIALS: DATE:

Michael J Bennett 17 Apr 12

COL MICHAEL J. BENNETT, Chief
Environmental Programs Division
Army National Guard

MG TERRY M. HASTON
The Adjutant General
Tennessee National Guard

COL DARRELL DARNBUSH
Deputy Chief of Staff, Operations
Tennessee Army National Guard

LTC GARY B. HERR
Training Site Commander
Tennessee Army National Guard

COL STEPHEN B. LONDON
Environmental Protection Specialist
Tennessee Army National Guard

Volunteer Training Site – Smyrna
Integrated Natural Resources Management Plan

Signature Page

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APPROVING OFFICIALS: DATE:

COL MICHAEL J. BENNETT
Chief Environmental Programs Division
National Guard Bureau

14 MAR 2012

MG TERRY M. HASTON
The Adjutant General
Tennessee National Guard

13MAR12

COL DARRELL DARNBUSH
Deputy Chief of Staff, Operations
Tennessee Army National Guard

12 MAR 12

LTC GARY B. HERR
Training Site Commander
Tennessee Army National Guard

07 MAR 2012

COL STEPHEN B. LONDON
Environmental Protection Specialist
Tennessee Army National Guard

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

January 6, 2012

Ms. Laura Lecher
Natural Resource Manager
Tennessee Army National Guard
JFHQ-TN-ENV
3041 Sidco Drive
Nashville, Tennessee 37204-1502

Subject: Final Draft Revision of the Integrated Natural Resources Management Plan for the Tennessee Army National Guard Volunteer Training Site – Smyrna in Rutherford County, Tennessee.

Dear Ms. Lecher:

U. S. Fish and Wildlife Service (Service) personnel from the Tennessee Field Office have reviewed the final draft of the revised Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. We offer the following comments.

The final draft of the revised INRMP adequately describes the resources within the project area and the proposed actions' impact on these resources, with the exception of the federally endangered Indiana bat (*Myotis sodalis*). The Tennessee Field Office has recently re-evaluated our view on how timber practices adversely impact suitable summer roosting habitat of the Indiana bat. Habitat that is suitable for use by the species during summer includes trees, snags, and similar structures. Although the species has used trees smaller than five inches diameter at breast height, structure that is five inches and larger is considered adequate size. The structure must have exfoliating bark, crevices, or other characteristics that would be considered by a person with sufficient experience (as recognized by the Fish and Wildlife Service) to provide adequate shelter for one or more bats. Caves, abandoned mines, and similar structures are not considered in this definition. Before any clearing or thinning of forest stands are initiated, we request VTS-S staff consult with our office regarding potential take of suitable summer roosting habitat of the Indiana bat.

We support VTS-S's initiative to insure that the Service's trust resources such as federally listed species, wetlands, migratory birds, and stream habitats are protected without undue interference with the overall mission of the installation.

Thank you for the opportunity to comment on this proposed action. If you have any questions regarding the information which we have provided, please contact Robbie Sykes of my staff at 931/525-4979, or at *robbie_sykes@fws.gov*.

Sincerely,

Brad Bingham

Acting for Mary E. Jennings
Field Supervisor

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

1 March 2012

MEMORANDUM FOR RECORD

SUBJECT: Tennessee Wildlife Resources Agency Assumed Concurrence with the Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna

1. The Tennessee Wildlife Resources Agency (TWRA), in accordance with the Sikes Act, was given the opportunity to provide input into the development of the Integrated Natural Resources Management Plan (INRMP) for the Volunteer Training Site – Smyrna (VTS-S) and to review the first draft and the final draft of this document.

2. Letters were sent to TWRA on the following dates:

a. June 2, 2006 – stating the intent of the TNARNG to revise the INRMP for VTS-S.

b. June 25, 2009 – to alert the agency that the draft document would be sent out in August 2009.

c. September 28, 2009 – the first draft was sent for review.

d. October 26, 2011 – the final draft was sent for review.

3. No response was received to any of these communications. The agency has had more than 60 days for review of the final draft document and has provided no comments during that time.

4. In accordance with National Guard Bureau guidance, the Tennessee Army National Guard assumes mutual agreement by the Tennessee Wildlife Resources Agency with the INRMP as presented.

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AMSL	Above Mean Sea Level
AR	Army Regulations
ARAP	Aquatic Resource Alteration Permit
ARNG	Army National Guard
BMP	Best Management Practice
CEQ	Council for Environmental Quality
CFMO	Construction and Facilities Management Office
DA	Department of Army
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Analysis
EMS	Environmental Management System
ENV	Environmental Office (of the TNARNG)
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FMO	Facilities Maintenance/Engineering Office (of the TNARNG)
FMP	Forest Management Plan
FOB	Forward Operating Base
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GPS	Global Positioning System
HQ	Headquarters
ICRMP	Integrated Cultural Resources Management Plan
IH	In-house
INRMP	Integrated Natural Resources Management Plan
IPMP	Integrated Pest Management Plan
IPP	Invasive Pest Plant
IRP	Installation Restoration Program
ISO	International Standard Organization
ITAM	Integrated Training Area Management
LCTA	Land Condition Trend Analysis (now RTLA)
METL	Mission Essential Task List
MOA	Memorandum of Agreement
MOSQ	Military Occupational Skill Qualification
MP	Military Police
NCVS	North Carolina Vegetation Survey
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGB-ARE	National Guard Bureau – Director of Environmental Programs

NGB-ARI	National Guard Bureau – Director of Engineering
NGB-ART	National Guard Bureau – Director of Operations, Training, and Readiness
NOAA	National Oceanic and Atmospheric Administration
NRCS	United States Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
POL	Petroleum, Oil, and Lubricants
POTO	Plans, Operations, and Training Officer (of the TNARNG)
PPK	Projectile Point/Knives
REC	Record of Environmental Consideration
RTE	Rare, Threatened, or Endangered Species
SAIA	Sikes Act Improvement Act of 1997
SAR	Species at Risk
SHPO	State Historic Preservation Office
SITE	Training Site personnel (of the TNARNG)
SJA	Staff Judge Advocate
SMZ	Streamside Management Zone
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasure
STEP	Status Tool for Environmental Program
SWPPP	Storm Water Pollution Prevention Plan
TA	Training Area
TAG	The Adjutant General
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TNANG	Tennessee Air National Guard
TNARNG	Tennessee Army National Guard
TNC	The Nature Conservancy
TNDNH	Tennessee Division of natural Heritage
TN-EPPC	Tennessee Exotic Pest Plant Council
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
UAC	Urban Assault Course
USAF	United States Air Force
USA-CERL	United States Army Corps of Engineers Environmental Research Laboratory
USDA	United States Department of Agriculture
USDC	United States Department of Commerce
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Service
VOC	Volatile Organic Compounds
VTS-S	Volunteer Training Site–Smyrna
WFMP	Wildland Fire Management Plan

EXECUTIVE SUMMARY

This Revised Integrated Natural Resources Management Plan (INRMP), which is required by the Sikes Act, as amended (16 U.S.C. 670a et seq.), has been developed for use by the Tennessee Army National Guard (TNARNG) to provide guidance on the protection of natural resources at the Volunteer Training Site – Smyrna (VTS-S). The original VTS-S INRMP was implemented in 2002. As the natural resources management program developed, it was determined that the original INRMP format was not serviceable. Therefore, a revision of formatting and information was undertaken for this second iteration. Cooperating agencies were contacted 2 June 2006 and informed of the TNARNG intent to revise the INRMP for the VTS-S (Appendix C). At this time, TNARNG requested input from both the United States Fish and Wildlife Service (USFWS) state field office and from the Tennessee Wildlife Resources Agency (TWRA); no objections were raised from either organization toward the prospect of developing a complete revision of the existing INRMP. Therefore, the formal "five year review for operation and effect" was incorporated into the revision process.

The primary purpose of natural resources management at VTS-S is to support the military training mission. The purpose of this INRMP is to ensure that natural resource conservation measures and military activities on mission lands are integrated and consistent with responsible stewardship and environmental compliance. This INRMP was prepared in accordance with the Sikes Act, as amended; Army Regulation (AR) 200-1 – Environmental Protection and Enhancement; and Department of Defense Instruction (DoDI) 4715.3 – Environmental Conservation Program.

The National Environmental Policy Act (NEPA) of 1969 dictates that planners of public actions using federal monies, such as those on military installations, shall consider the environmental impacts and effects of "major federal actions." Section 1508.18 in the Council for Environmental Quality (CEQ) regulations lists the adoption of a formal Integrated Natural Resource Management Plan as a major federal action. The NEPA for this document is being tiered off the Environmental Assessment for the first addition of the VTS-S INRMP. A Record of Environmental Consideration (REC) for this revised plan is located in Appendix A. The Finding of No Significant Impact (FNSI) for the original EA can be found in Appendix B. In addition, in accordance with §670a(2) of the Sikes Act, approval of the INRMP has been noted in writing by the U.S. Fish and Wildlife Service and the Tennessee Wildlife Resources Agency (Appendix C).

The goals of this INRMP are:

- To describe the training site and its physical natural resources
- To describe the military mission, potential effects of the mission on natural resources at the training site, and options for resolving conflicts between the military mission and natural resources management
- To show the status of baseline inventories of natural and cultural resources and monitoring requirements for environmental compliance
- To present goals for the management of the site's natural resources and tasks designed to achieve those goals.
- To recommend revegetation and erosion control techniques to maintain stable soils and ensure high-quality water resources and training opportunities

- To provide management guidelines that will be effective in maintaining and improving the sustainability and biological diversity of terrestrial and wetland ecosystems on the training site, support human needs, emphasize public involvement, partnerships and adaptive management

Benefits to the military mission include improved maneuver lands and better distribution of military activities at VTS-S. This plan will enhance mission realism through more options for training as well as more intensive planning of missions. It will also enhance long-range planning efforts at VTS-S. Benefits to the environment include reduced soil erosion and vegetation loss, improvement of water-quality in wetland and riparian ecosystems, and an increase in overall knowledge of the operation of the ecosystems on VTS-S through surveys and monitoring.

This document begins with a description of the subjects: mission and facility details are outlined in Chapter Two, while specifics of the physical environment at VTS-S are presented in Chapter Three. Chapter Four addresses the management goals for VTS-S according to the resource categories specified by the Sikes Act and the projects designed to meet those goals. Chapter Five presents guidelines intended for management and training activities as they relate to natural resources protection.

The ten Appendices of this document contain supplemental material, including NEPA documentation, additional biological data, and records of the annual review process. Three detailed management plans are included as annexes to this document: the Forest Management Plan, Wildland Fire Management Plan, and the Invasive Pest Plant Control Plan. Additional management plan annexes may be developed for other activities as needed.

Table of Contents

Appendices

A. Record of Environmental Consideration
B. Finding of No Significant Impact
C. Agency Correspondence
D. Public Comment
E. Environmental Regulations
F. Species List
G. Descriptions of Natural Areas located within 15 miles of VTS-S
H. American Indian Tribes
I. Pest Management Forms and Guidance
J. Annual Review Documentation

Management Plan Annexes

1. Forest Management Plan
2. Prescribed Fire Plan
3. Invasive Pest Plant Control Plan

List of Tables

List of Figures

CHAPTER 1
GENERAL INFORMATION

1.1 PURPOSE

The Tennessee Army National Guard (TNARNG) maintains the Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, for the purpose of training Tennessee National Guardsmen. The goal of TNARNG land management on this training site is to ensure that there is no net loss of training land resulting from training activities. In addition, the TNARNG hopes to enhance training potential and environmental quality to the greatest extent possible through its management practices. This Integrated Natural Resources Management Plan (INRMP) for VTS-S is the principle guiding document for TNARNG land management activities taking place on the training site. It is a revision of the original VTS-S INRMP which covered the period 2001-2006, and will remain in effect until a revision is deemed necessary.

The Sikes Act, Public Law 105-85, "Sikes Act Improvement Act of 1997," (SAIA) November 18, 1997, requires the preparation of an INRMP for those military installations containing significant natural resources and specifies the key information to be included in the Plan. The U.S. Fish and Wildlife Service (USFWS) and the Tennessee Wildlife Resources Agency (TWRA) are required to be cooperators in the process of developing the TNARNG INRMPs. The VTS-S contains 456 ac of forest land which may be subject to timber harvest through the DoD Forestry Reimbursable Program, as well as significant surface water resources as the training site abuts J. Percy Priest Lake and straddles one of the lake's tributaries Stewart Creek.

The SAIA requires a review for operation and effect no less than every five years to keep the INRMP current. Major changes require a revision be conducted while minor changes can be incorporated with an update to the existing INRMP. A revision or update will be used based on the review for operation and effect conducted jointly with the USFWS and the TWRA. The original VTS-S INRMP was implemented in 2002. In years since, the mission requirements of the TNARNG have gradually shifted, creating the need to alter some aspects of the training landscape at VTS-S. This change, in combination with the initiation of a Forest Management Plan in 2004 and the unsatisfactory nature of the original INRMP, drove an internal decision by TNARNG in 2005 to initiate a full revision of the INRMP in coordination with the cooperating agencies. The cooperating agencies were contacted when the revision process was begun and did not object to a full revision, and they have contributed to the development of the new INRMP. Thus, the formal five-year review was conducted in conjunction with the revision process, and the spirit of the interagency cooperative effort has been honored. Documentation of this cooperation is included in Appendix C.

This Revised INRMP for VTS-S will serve to guide TNARNG activities on the training site until a review finds that significant revision is necessary. The overriding goals of this plan are to minimize impact on training lands, to effectively repair damage caused by training activities, to improve the mission-specific qualities of the training lands, and to protect and enhance the ecosystem value of the training site. This is a living document which will be reviewed annually and updated as needed. Barring earlier need for substantial revision, five years following the date of implementation of this document, the USFWS, TWRA, and TNARNG will coordinate a review for operation and effect to determine whether the INRMP is functioning effectively or whether another large-scale revision is necessary.

Natural resources management is an on-going, long-term process. This and subsequent iterations of the INRMP will serve to shape the direction of that process to support the military mission of the TNARNG,

to encourage sustainable management of natural resources, and to ensure compliance with all relevant federal, state, and local laws.

1.2 MANAGEMENT PHILOSOPHY

As stated above, the primary goal of land management at VTS-S is to meet military training needs, now and in the future, while maintaining a healthy ecosystem. To ensure the ability to meet those future needs, there must be a healthy natural system in place across the training site. The goals of training and of environmental protection should not be seen as opposing. Rather, the one, a healthy environment, should support and enhance the other, training potential.

Department of Defense (DoD) Instruction 4715.3 directs that DoD land management incorporate ecosystem management, biodiversity conservation, and multiple use management. The basic principle of ecosystem management is to focus on the health of the total environment – ecosystem composition, structure, and function – rather than individual species. It is management driven by goals and designed to be adaptable: monitoring of results should lead to changes in the process if desired outcomes are not achieved. Biodiversity is short for "biological diversity," and it refers simply to the variety, distribution, and abundance of organisms in an ecosystem. Biodiversity is crucial to the stability and functioning of an ecosystem.

Multiple use management refers to the practice of integrating different purposes and end products into the management scheme for a single piece of property. Under multiple use management, the goal is to obtain such commodities as timber, wildlife, recreation, water quality, and in this case training opportunities from the same land through appropriate and integrated management.

The multiple uses for which the VTS-S is to be managed include: TNARNG training needs, maintenance of native communities and biodiversity, surface and ground water quality, conservation of soil resources, threatened and endangered species protection, and habitat quality. It is the role of this INRMP to integrate the management practices for each of these goals such that all needs can be met on a sustainable basis without compromising the health of the ecosystem or mission requirements.

1.3 RESPONSIBILITIES

1.3.1 National Guard Bureau

The National Guard Bureau is the higher headquarters for the TNARNG. The Sikes Act Coordinator in the Environmental Programs Division (NGB-ILE) is responsible for reviewing the INRMP and advising the Environmental Office before the state formally submits the plan for public review. The Environmental Directorate ensures operational readiness by sustaining environmental quality and promoting the environmental ethic and is also responsible for tracking projects, providing technical assistance, quality assurance and execution of funds.

The Installations Directorate (NGB-ILI) provides policy guidance and resources to create, sustain, and operate facilities that support the Army National Guard. The Installations Directorate coordinates proposed construction projects and provides design and construction support, as well as environmental management that is directly related to property maintenance (e.g., grounds maintenance, pest control).

1.3.2 TNARNG

The Adjutant General (TAG) of the TNARNG is directly responsible for the operation and maintenance of VTS-S, which includes implementation of this INRMP. TAG ensures that all installation land users are aware of and comply with procedures, requirements, or applicable laws and regulations that accomplish the objectives of the INRMP. TAG also ensures coordination of projects and construction between environmental, training, and engineering staffs.

TAG has an Environmental (ENV) office to provide professional expertise in the environmental arena for VTS-S and all other TNARNG properties. The conservation branch of ENV is responsible for natural and cultural resources. Natural resources, including flora, fauna, forest management, threatened and endangered species protection, riparian areas, wetlands, soils, and other features, are the focus of this plan. Cultural resources such as archaeology, historical buildings, artifact curation, and American Indian consultation are covered by the Integrated Cultural Resources Management Plan (ICRMP). The compliance branch of ENV handles the legal requirements for managing hazardous materials and waste, drinking water quality, air quality, pollution prevention, and similar tasks. The NEPA process for TNARNG is also coordinated by a branch of the ENV office. Overall, ENV is responsible for characterizing the physical and biological features of TNARNG lands, recommending appropriate management for those features, identifying compliance needs, and advising TNARNG on the best ways to comply with federal and state environmental laws and regulations. The Environmental Office also provides technical assistance to the training site personnel including: developing projects, securing permits, conducting field studies, providing Environmental Awareness materials, locating and mapping natural and cultural resources, and developing and revising management plans, to include the INRMP.

The Plans, Operations and Training Officer (POTO) has the primary responsibility of scheduling military training and ensuring safety of all personnel while training exercises are being conducted. The POTO conducts contingency planning and preparation to provide timely and appropriate military support to meet required Federal, State, and community missions. The POTO is responsible for working with the environmental office to develop a baseline of current and projected training requirements and training lands/facilities for the training site; assisting the Environmental office in determining carrying capacity for the training site by providing military usage and training data; and planning for land use based on accomplishing training requirements while minimizing negative environmental effects.

The Training Site Operations Staff (SITE) is made up of the Training Site Manager, Range Control, and civilian personnel, who work with the Environmental office to implement this plan and assure its success. The Training Site Operations Staff is familiar with all aspects of the training site, including training scheduling (and conflicts), locations of training facilities, impairments or problems with human-made structures or natural functions, and needs for improvement or maintenance of the training land. The Training Site Personnel and TNARNG Environmental staff will ensure that all INRMP and ICRMP projects are identified and executed in accordance with all laws and regulations.

The statewide Facilities Management/Engineering Office (FMO) provides a full range of financial and engineering disciplines for all facilities under the jurisdiction of the Military Department of Tennessee, including VTS-S. The FMO is responsible for master planning and ensuring that all construction projects comply with environmental regulations by consulting with the Environmental office prior to any construction by TNARNG Engineers. The FMO also provides necessary assistance with design of erosion control projects.

The Staff Judge Advocate (SJA) advises the TAG, POTO, FMO, and ENV on laws and regulations that affect training land use and environmental compliance. The joint effort of TAG, Chief of Staff, POTO, Training Site, FMO, and Environmental Office make the INRMP a living document that is updated

annually. The Conservation Branch will conduct yearly meetings with the training site manager and staff, the Training Site Commander, POTO, and FMO on proposed projects and plans for the training site. Coordination for the meeting will be the responsibility of the Environmental office.

1.4 RELEVANT ENVIRONMENTAL REGULATIONS

Natural resources management at VTS-S is subject to a variety of environmental regulations, as referenced in Appendix E. In addition to state and federal law, TNARNG must abide by DoD and Army policy in its handling of the training site. Copies of relevant laws and regulations are being compiled in the TNARNG Environmental library to be more readily available for review by all personnel involved in natural resources management.

1.5 ENVIRONMENTAL REVIEW (NEPA COMPLIANCE)

The National Environmental Policy Act (NEPA) was created to identify environmental concerns with human activities and resolve them to the best degree possible at early stages of project development. The levels of NEPA are recognized:

1. If the proposed action meets a categorical exclusion in AR 200-2, a Record of Environmental Consideration document is prepared for the project, and the project may proceed as planned. These are the most commonly prepared documents.

2. An Environmental Assessment (EA) may be required when the conditions for a categorical exclusion are not met. This often happens when extensive new military exercises, major construction, or land acquisition is planned; when the planned action involves a large area, or when wetlands or endangered species may be involved. A Finding of No Significant Impact is required for the action to proceed as planned. Environmental Assessments are comprehensive documents that describe a proposed action and the alternatives to the action. A 30-day review period is provided for public comment.

3. If more study is needed or a Finding of No Significant Impact cannot be prepared, an Environmental Impact Statement must be written. These can be lengthy documents that require significant time to prepare.

The TNARNG uses NEPA to ensure its activities are properly planned, coordinated and documented. The TNARNG provides NEPA documentation for proposed unit projects at VTS-S that are beyond the existing level of documentation developed by the TNARNG for the training site. This additional NEPA documentation can then be used for identification of potential problems or impacts on the natural resources of the VTS-S.

An Environmental Assessment was completed for the implementation of the original iteration of the INRMP for the VTS-Smyrna (2001). Substantive changes have been minimal from that document, and so the NEPA review for the revised INRMP was a Record of Environmental Consideration tiered off the original EA. This Record and the original Finding of No Significant Impact (FNSI) are included in Appendices A and B.

1.6 IMPLEMENTATION AND REVISION

The original VTS-S INRMP was implemented in 2002. During the first years of implementation, it became apparent that the format and content of the original INRMP were not conducive to applied management and that a thorough revision of the document would be required to bring the structure and project lists more in line with actual management practices and to more accurately reflect current training needs at VTS-S. In 2006, USFWS and TWRA were contacted, informed of this decision, and given the opportunity to object or concur; there was no opposition to this proposal. TNARNG requested contributions to the revision process from both agencies. The cooperating agencies have reviewed and contributed to this new iteration (see documentation in Appendix C), thus satisfying the requirement for a joint review.

This INRMP is living document and will remain effective until a significant revision is deemed necessary. It was developed in cooperation with the USFWS Cookeville Field Office and the TWRA. Those agencies have approved the document. It was subjected to public review to satisfy the Sikes Act requirements. Public comments were reviewed by the cooperating agencies and incorporated into the final document where appropriate. Public comments are recorded in Appendix D.

During the lifetime of this INRMP, it is the responsibility of the TNARNG Environmental Office to work with the cooperating agencies to review it annually and update it to stay in step with military mission requirements and to maintain compliance with all applicable laws. USFWS, TWRA, Training Site personnel, and the Environmental Office will review the accomplishments for the year and address any issues. Documentation of this review will be maintained in Appendix J. Minor changes will be incorporated when needed into the existing document with agreement of the primary cooperators. In the event of a significant change to management practices, military use, or law, a complete revision may be deemed necessary, requiring collaboration with USFWS and GWRD to produce a new, signed version of the INRMP. Otherwise, five years following implementation of this document a full scale review for operation and effect will occur in accordance with the SAIA. A revision or update at that time will be used based on this review effort conducted jointly with the USFWS and the TWRA.

Implementation of the INRMP will be realized through the accomplishment of specific goals and objectives as measured by the completion of the projects identified in each section of this plan. Responsibility for implementation of goals and objectives has been identified and assigned to each project throughout this document. It should be noted that project implementation dates are estimated and are subject to change depending upon funding and staffing availability. The implementation schedule in Chapter 4, Table 4.3, will provide a basis for monitoring and evaluating accomplishments towards reaching the goals.

Projects identified in this Plan are reflected in the Status Tool for Environmental Program (STEP). Funding for these projects is programmed seven years out under this system.

1.6.1 Personnel

Essential to plan implementation is a balanced team of trained professionals and technical staff. Staffing sources for the natural resources program at VTS-S include:

- Permanent Staff
    - VTS-S Training Site Manager
    - VTS-S Range Officer
    - VTS-S Training/Operations NCO
    - Training Technician/Range Facility Management Support Systems (RFMSS) Operator

  - Five state-funded maintenance workers
  - Environmental Branch Personnel
    - TNARNG Environmental Program Manager
    - Natural Resources Manager
    - Contract Biologist
    - Cultural Resources Manager

- Part-time Staff
  - Training Site Detachment (4 people per weekend)

- Troop Labor during Annual or Drill Training provides benefits to the training site as well as to the troops themselves. Examples of projects executed using troop labor in the past are road leveling and grading, spreading of gravel, and hardened bivouac site construction.

1.6.2 Outside Assistance

Because it is most probable that TNARNG will not be able to hire the specialized expertise needed to achieve some of the projects within this INRMP, considerable expertise from universities, agencies, and contractors will be required to accomplish the tasks. Specific needs from other organizations external to TNARNG are indicated throughout this plan.

Agencies and organizations which may provide substantial support to TNARNG in carrying out this INRMP include:

- Tennessee Department of Environment and Conservation
- Tennessee Wildlife Resources Agency
- Tennessee Division of Forestry
- U.S. Fish and Wildlife Service, Cookeville Field Office
- U.S. Forest Service
- Natural Resources Conservation Service, Murfreesboro Office
- Tennessee State Historic Preservation Office

Universities are a key source of scientific expertise. TNARNG does not currently have any Memoranda of Understanding with local schools but is working to establish relationships with:

- University of Tennessee at Knoxville
- Middle Tennessee State University
- Tennessee Technological University

Many of the projects identified in this plan will require expertise and time beyond that available within the permanent TNARNG staff. Such projects will be contracted out to appropriate organizations or corporations and overseen by TNARNG Environmental Office Staff.

1.6.3 Training

Training received by TNARNG personnel and others participating in the management of natural resources at the training site should address practical job-oriented information, legal compliance requirements, applicable DoD/Department of Army (DA) regulations, pertinent State and local laws, and current scientific and professional standards as related to the conservation of natural resources. The following annual workshops, professional conferences, and classes are excellent means of obtaining interdisciplinary training for natural resources managers:

- NGB Conservation Workshop
- Sustainable Range Program Workshop
- Land Rehabilitation and Maintenance Conference
- Colorado State University-Center for Ecological Management of Military Lands RTLA Training
- Pesticide Application and Licensing through Tennessee Department of Agriculture
- National Military Fish and Wildlife Association Conference
- U.S. Army Corps of Engineers Wetlands Delineation Courses
- Prescribed Fire Management Course offered by The Nature Conservancy
- Locally available training through the Cooperative Extension Service, universities, professional and trade organizations, state government, and commercial businesses

1.6.4 Funding

Implementation of this INRMP is subject to the availability of annual funding. The following discussion of funding options is not a complete listing of funding sources. Funding sources are continuously changing and the individual focus, restrictions, and requirements of funding sources are volatile.

In 2005, DA created the Sustainable Range/Installations Environmental Activities Matrix to realign and clarify funding responsibilities for environmental requirements on ranges and facilities to avoid redundancy and gaps. The matrix designates that Environmental is the primary funding source for cultural resources, wetlands, endangered species, and all environmental plans. Installations are the primary funding source for soils issues (erosion), pest management, and invasive species control. Prescribed burning is a shared responsibility: Environmental funds cover planning and burning for ecosystem management and endangered species protection/management. Installations are responsible for wildfire prevention, response, and control, including fire break maintenance.

Other funding sources may be dictated by circumstance. Training funds are utilized to address issues (such as erosion) created by training activities and for range management actions designed to improve training opportunities. Planning, environmental review, and any necessary mitigation required for MILCON projects will be funded through the construction program.

Operations and Maintenance Environmental Funds:
Environmental funds are a special category of Operations and Maintenance (O&M) funds and are controlled by the Status Tool for Environmental Program (STEP) budget process. They are special in that they are restricted by the DoD solely for environmental purposes, but they are still subject to restrictions of O&M funds. Compliance with appropriate laws and regulations is the key to securing environmental funding. The program heavily favors funding high priority projects with a goal of achieving compliance with federal or state laws, especially if non-compliances are backed by Notices of Violation or other enforcement agency action.

Agriculture, Forestry, and Hunting Permit Funds:
The forestry program at VTS-S is supported by the DoD Forestry Reimbursable Program. Income from the sale of forest products is divided: the United State Army Corp of Engineers (USACE) is reimbursed for expenses accumulated in conducting the sale, 40% of the remainder is provided to the state treasury for county schools and roads, and 60% is deposited into the DoD Forestry Account. Funds from the account can be requested each year for projects directly related to forest management. Such activities that can be reimbursed include timber management, reforestation, timber stand improvement, inventories, fire protection, construction and maintenance of timber area access roads, purchase of forestry equipment, disease and insect control, planning (including compliance with laws), marking, inspections, sales preparations, personnel training, and sales.

There are no agricultural outleases at VTS-S, so funding established for the Agricultural and Grazing Outlease program is not accessed for management at the training site. Likewise, there is no hunting program on the site, and so there is no funding available from hunting permit fees for wildlife management.

Other Funding Sources:
The Legacy Resource Management Program provides assistance to DoD efforts to preserve natural and cultural resources on federal lands. Legacy projects could include regional ecosystem management initiatives, habitat preservation efforts, archaeological investigations, invasive species control, and/or flora or fauna surveys. Legacy funds are awarded on the basis of project proposals submitted to the program.

National Public Lands Day is an event that occurs once a year when volunteers come together to improve the country's largest natural resource – our public lands. These volunteers gather on a Saturday every September to help improve the public lands they use for recreation, education, and enjoyment. Consult the National Public Lands Day website for more information at http://www.npld.com and follow the link to the DoD contact listed on the Federal Agency Working Group page.

Pulling Together Initiative (PTI) provides a means for federal agencies to partner with state and local agencies, private landowners, and other interested parties in developing long-term weed management projects within the scope of an integrated pest management strategy. PTI's goals are: 1) to prevent, manage, or eradicate invasive and noxious plants through a coordinated program of public/private partnerships; and 2) to increase public awareness of the adverse impacts of invasive and noxious plants. Projects that benefit multiple species, achieve a variety of resource management objectives, and/or lead to revised management practices that reduce the causes of habitat degradation are sought. A special emphasis is placed on larger projects that demonstrate a landscape-level approach and produce lasting, broad-based results on the ground. Consult the PTI website link at http://www.dodlegacy.org/legacy/intro/guidelines.aspx for information on current grant proposal criteria.

The Federal Domestic Assistance Program 15.608 (Fish and Wildlife Management Assistance) provides technical information, advice, and assistance to Federal and State agencies and Native Americans on the conservation and management of fish and wildlife resources. Projects for grant funding must be submitted to the Regional Director of the USFWS. Cooperative programs with the State conservation agencies and military installations have included joint studies of fishery and wildlife problems of major watersheds, large reservoirs, or streams. Through the Sikes Act, the Service has established a Memorandum of Understanding with the DoD whereby fish and wildlife values are considered on military installations.

The DoD administers the grant program "Streamside Forests: Lifelines to Clean Water," a competitive grant program designed to help children and others learn about protecting resources by working with installation staff to help restore a streamside ecosystem in their own community. The DoD provides funds up to $5,000 to military installations working in partnership with local school and/or civic organizations to purchase locally native plant material for small streamside restoration projects.

1.6.5 Priorities and Scheduling

The Environmental Quality Conservation Compliance Classes define funding priority with regard to O&M funds. All projects in classes 0, I, and II shall be funded consistent with timely execution to meet future deadlines (DODI 4715.3). The four project classes are:

Class 0: Recurring Natural and Cultural Resources Conservation Management Requirements – includes projects and activities needed to cover the recurring administrative, personnel, and other costs that are necessary to meet applicable compliance requirements (Federal and State laws, regulations, Presidential Executive Orders, and DoD policies) or which are in direct support of the military mission. Examples of recurring costs include:

- Manpower, training, and supplies
- Hazardous waste disposal
- Operating recycling activities
- Permits and fees
- Testing, monitoring, and/or sampling and analysis
- Reporting and record keeping
- Maintenance of environmental conservation equipment
- Compliance self-assessments

Class I: Current Compliance – includes projects and activities needed because an installation is currently or will be out of compliance if projects or activities are not implemented in the current program year. Examples include:

- Environmental analyses, monitoring, and studies required to assess and mitigate potential effects of the military mission on conservation resources
- Planning documents
- Baseline inventories and surveys of natural and cultural resources
- Biological assessments, surveys, or habitat protection for a specific listed species
- Mitigation to meet existing regulatory permit conditions or written agreements
- Wetlands delineation
- Efforts to achieve compliance with requirements that have deadlines that have already passed
- Initial documenting and cataloging of archaeological materials

Class II: Maintenance Requirements – includes those projects and activities needed that are not currently out of compliance but shall be out of compliance if projects or activities are not implemented in time to meet an established deadline beyond the current program year. Examples include:

- Compliance with future requirements that have deadlines
- Conservation and Geographic Information System mapping to be in compliance
- Efforts undertaken in accordance with non-deadline specific compliance requirements of leadership initiatives
- Wetlands enhancement, in order to achieve the Executive Order for “no net loss” or to achieve enhancement of existing degraded wetlands
- Environmental awareness and education programs for troops and the public

Class III: Enhancement actions, beyond compliance – includes those projects and activities that enhance conservation resources or the integrity of the installation mission, or are needed to address overall environmental goals and objectives, but are not specifically required under regulation or Executive Order and are not of an immediate nature. Examples include:

- Participation in “National Public Lands Day”, an annual event where volunteers unite to improve resources on public lands
- Community outreach activities, such as “Earth Day” and “Historic Preservation Week”

- Educational and public awareness projects, such as interpretive displays, oral histories, “Watchable Wildlife” area, nature trails, wildlife checklists, and conservation teaching materials
- Restoration or enhancement of cultural or natural resources when no specific compliance requirement dictates a course or timing of action
- Management and execution of volunteer and partnership programs

CHAPTER 2
TRAINING SITE OVERVIEW

2.1 LOCATION AND REGIONAL CHARACTER

2.1.1 Location, Size, General Description

The 868-acre VTS-S is located in Rutherford County, Tennessee, and is located partially within the city limits of the town of Smyrna, approximately 22 miles southeast of Nashville, Tennessee (Figure 2.1). Main access to the training site is provided by Sam Ridley Parkway, which is easily accessible via U.S. Highway 41-70S, Interstate 24, and State Route 840. The Smyrna/Rutherford County Regional Airport is found to the west of VTS-S. The perennial waters of Stewart Creek and J. Percy Priest Lake occupy over 200 acres of the site.

2.1.2 Property Ownership

The training site consists of federally-, state-, and county-owned property. The Tennessee Army National Guard (TNARNG) is licensed to use 709.57 acres from the Nashville District and 137.15 acres from the Mobile District of the United States Army Corps of Engineers (USACE). Of significance on these properties is the USACE-established "508 line", which indicates portions of land less than 508 feet above sea level surrounding the J. Percy Priest Reservoir. Restrictions related to the 508 line as stated by a Memorandum dated October 26, 2004, issued to the TNARNG by the USACE's Mobile District are as follows:

> The premises are subject to a flowage easement reserved by the Nashville District for all areas below Elevation 508 Mean Sea Level. The easement is for continued operations of J. Percy Priest project for flood control, hydroelectric power production, and recreation and provides the Corps the right to flood, the right to prohibit structures for human habitation, and that the placement or construction of any other structures requires the written permission of the Nashville District Engineer. Future construction requests by the TNG [TNARNG] in areas below the 508 contour will require an offset of fill in accordance with the Corps' fill policy. All building requests will require all first floor elevations to be constructed above Elevation 508. All construction plans below Elevation 508 must receive prior written approval by the Nashville District Engineer before construction may be initiated by the TNG [TNARNG].

Areas excluded from the Nashville District USACE license include Cannon Cemetery, located in Training Area (TA) 6 (see Figure 2.4); the former sewage treatment pond (and right of way thereto) in TA2; and Volunteer Park, a softball field complex located in the eastern portion of the Cantonment Area. While not specified in the license agreement, TNARNG has informally agreed not to use TA3 for training until mitigation options are implemented, due to the possibility of hazards remaining as a result of previous DoD landfill use. TNARNG plans to further investigate the terms of the license to determine what activities, if any, are allowed in this area.

The state-owned portion of VTS-S consists of 10.11 acres and is located within the Cantonment area. Additionally, on the western border of the training site, adjacent to airport property, the

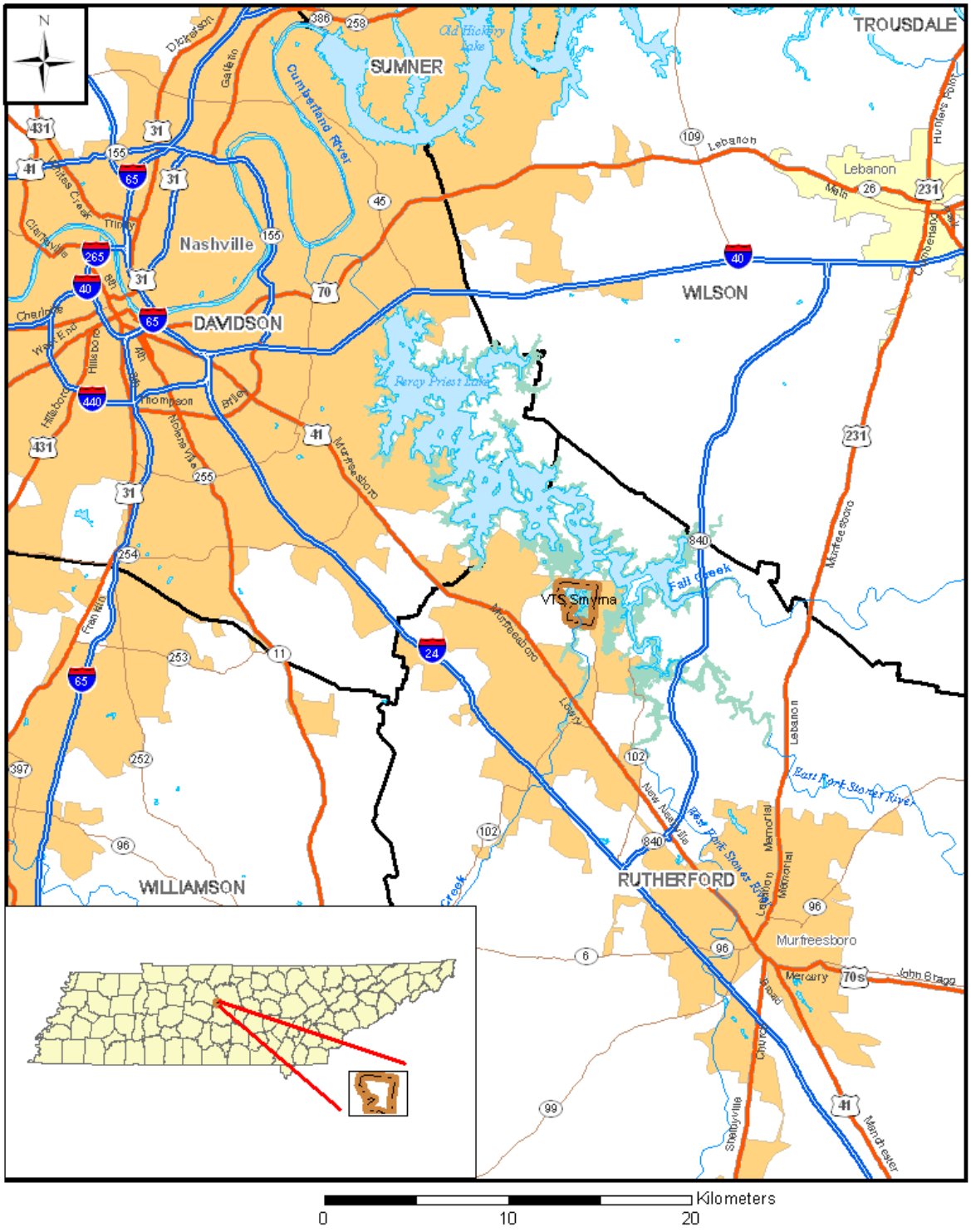

Figure 2.1: Location of the Volunteer Training Site – Smyrna

Smyrna/Rutherford County Airport Authority and the TNARNG have developed a joint use agreement for approximately 11 acres. This parcel of land contains an airplane hangar and surrounding parking areas.

2.1.3 Neighboring Land Ownership

Much of the western boundary of VTS-S lies adjacent to the Smyrna/Rutherford County Regional Airport (Figure 2.2). This facility covers over 1700 acres and serves as the reliever airport for Nashville International Airport, which is located twelve miles northeast of the site.

Smyrna Municipal Golf Course, located just south of the airport, is a municipal facility of the Town of Smyrna and boasts an 18-hole regulation golf course with a full practice facility.

Properties south and southeast of the training site are occupied by a combination of Rutherford County facilities and privately-owned residences and industrial businesses. Hales Camp is a large trailer park located just southeast of VTS-S. Bordering the site's eastern boundary, along Weakley Road, recent development has produced an area of densely-populated subdivisions, condominiums, and apartment complexes.

Volunteer Park is a 15 acre softball field and recreation area located within the boundaries of the training site on the northeastern corner of 8th Street and E Street. While the park is surrounded on all sides by VTS-S, the land on which it is located is excluded from the USACE license agreement with the TNARNG. The park is managed by the Town of Smyrna Parks and Recreation Department.

The United States Corp of Engineers owns and manages most of the property adjacent to the northern and northwestern borders of VTS-S, including J. Percy Priest Lake and a Wildlife Management Area Unit located on the lake's western shore, north of the training site. A large portion of the training site is located within the floodplain of the lake and falls at or below the 508 line, previously defined in Section 2.1.2; portions under 508 feet above sea level are under the jurisdiction of the USACE as relates to flood control measures.

2.1.4 Demographics

Total resident population for Rutherford County, in which VTS-S is located, is 228,829 (Table 2.1). Rutherford County's unemployment rate is lower than the state and national averages. Median household income is substantially greater than the state average and slightly higher than the United States average.

Table 2.1: Selected demographic data for Rutherford County, Tennessee

	Total Resident Population (estimate)*	Median Household Income (estimate)*	% Persons Below the Poverty Line (estimate)*	% Unemployment Rate
Rutherford	228,829	$48,400	11.8	3.5***
Tennessee	6,156,719	$38,947	15.6	5.6**
United States	301,621,157	$46,242	13.3	5.1**

*U.S. Census Bureau (2007a; 2007b) **U.S. Bureau of Labor Statistics (2007) ***TN Division of Employment Security (2007)

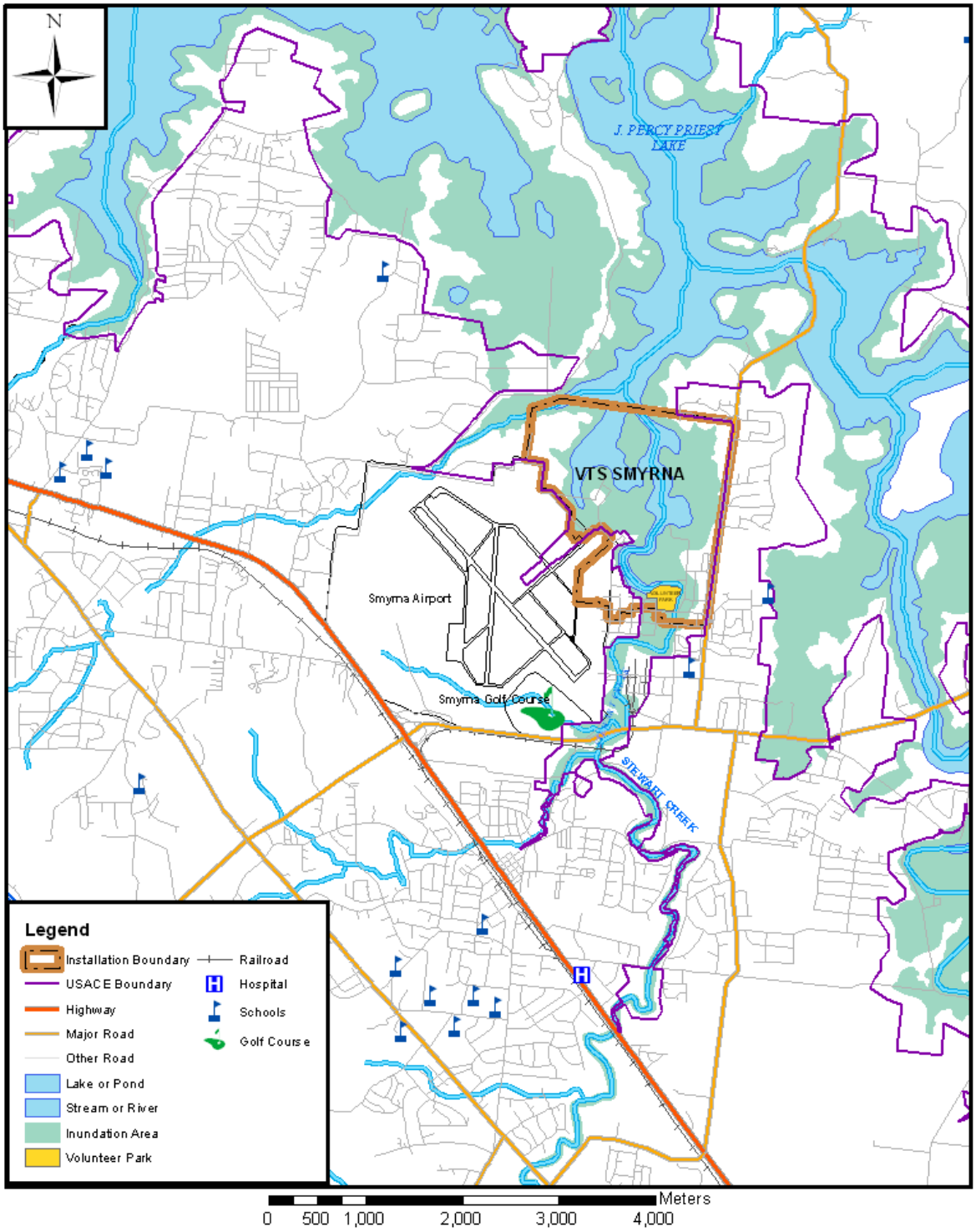

Figure 2.2: Local surroundings of VTS-Smyrna

Rutherford County has earned the designation of the second fastest growing county in Tennessee and is the 84th fastest growing county (of 3,141 counties) in the U.S.--a tribute to its solid pattern of consistent growth since the early 1980s. Rutherford County experienced a 53.5% population increase from 1990 to 2000. The population projection for 2010 is 226,778.

2.1.5 Nearby Natural Areas

Nearly 13,000 acres of natural areas are located within a 15 mile radius of VTS-S. Many of these locations support habitats representative of the conditions that were likely found on the training site prior to the human disturbances of recent centuries. Appendix G contains descriptions of these sites, which include the following:

- Cedars of Lebanon State Forest
- Long Hunter State Park
- Couchville Cedar Glade State Natural Area
- Elsie Quarterman Cedar Glade State Natural Area
- Fate Sanders Barrens State Natural Area
- Gattinger's Cedar Glade State Natural Area
- Mount View Cedar Glade State Natural Area
- Stones River Cedar Glade State Natural Area
- Sunnybell Cedar Glade State Natural Area
- Vesta Cedar Glade State Natural Area
- Vine Cedar Glade State Natural Area
- Walterhill Flood Plain State Natural Area

The largest of these are Cedars of Lebanon State Forest and Long Hunter State Park, which cover 9,420 and 2,400 acres, respectively. Most of the remaining natural areas are found on less than 200 acres and serve to protect and preserve naturally occurring limestone cedar glade communities. Cedar glades are found in open clearings and are composed of plant communities which thrive in dry, shallow, limestone-based soils. Many rare and sensitive species are endemic to cedar glades such as Tennessee coneflower (*Echinacea tennesseensis*) and Pyne's ground plum (*Astralagus bibullatus*) (see Table 3.5 for additional rare species found in local cedar glades). The Inner Central Basin, in which VTS-S is located, has the highest concentration of endemic plants throughout the range of the limestone cedar glade habitat (Quarterman 1989).

In addition to the natural areas listed above, there are approximately 10,000 acres of J. Percy Priest Reservoir-related recreation areas on USACE properties adjoining the lake near VTS-S. These sites contain picnic areas, boat ramps, campgrounds, numerous trails, and other attractions (USACE 2006).

2.2 INSTALLATION HISTORY

The training site is located in the close vicinity of transportation corridors that played significant roles in both the economic development of middle Tennessee and, later, the Civil War, including Stones River, Stewart Creek, Old Jefferson Pike, Murfreesboro Pike (known today as Old Nashville Highway), and the Nashville and Chattanooga (N&C) Railroad. The land in and around VTS-S was settled in the late 1790s, not long after the settlement of Nashville. In 2001, a historic building survey was prepared by Science Applications International Corporation (SAIC) and TRC Garrow Associates, Inc. (Cleveland et al. 2001). Much of the following history is derived from this report.

In 1804, a settlement was established at Jefferson, several miles east of the VTS-S. Remnants of an old road, possibly an early alignment of Jefferson Pike, run east to west across the site through Training Areas 2 and 6. The reservoir now floods portions of the old Pike. Murfreesboro replaced Jefferson as the Rutherford County Seat in 1812. The construction of Murfreesboro Pike, in 1831, and of the N&C Railroad, completed in 1851, greatly increased passenger and freight traffic through the area (Goodspeed Publishing Company 1887).

During the Civil War, the Stewart Creek area served as the site of several strategic military maneuvers preceding and accompanying the brief but bloody Battle of Stones River which occurred just northwest of Murfreesboro, in the winter of 1862-63. The Battle of Stones River was an extremely important event in the war as it marked the beginning of Union occupation of middle Tennessee.

A large cemetery, Cannon Cemetery, can be found in the northwestern portion of the property (see Figure 2.4) and is evidence of the Stewart Creek community, which is mentioned frequently in historical journals (Stanyard and Lane 1999). Approximately 200 gravestones are visible; many more cannot be seen as the graves have caved-in. The cemetery includes the grave of Robert Weakley, who was a Revolutionary War soldier, prominent land speculator, and judge. It is thought that VTS-S contains a large portion of what was Weakley's plantation. An 1878 map of Rutherford County shows three Weakley farmsteads located on what is now VTS-S on either side of Stewart Creek, all within Training Areas 2 and 6 (Cleveland et al. 2001).

In 1941, upon United States entry into World War II, Smyrna Army-Air Base was established to provide transition training to bomber pilots in the B-24 Liberator and the B-17 Flying Fortress. Construction on the site began in March of 1942, and the facility opened to troops on July 1 of that year. In the years immediately following the war's end, base activities were reduced, and in July 1947 the base was deactivated.

In August 1948, the base was reopened with the arrival of the 314th Troop Carrier Wing from Texas. The base was renamed Sewart Air Force Base (AFB) on March 25, 1950 after Major Alan J. Sewart, who was killed in aerial combat during World War II. In 1955, the 516th Troop Carrier was activated at Sewart AFB. It was the only helicopter group in the Air Force at that time. When C-130's were moved to the base in November 1955, it became the most versatile troop carrier base in the United States for several years (Stanyard and Lane 1999).

During the 1950s and 1960s, the military personnel and dependants stationed at the facility exceeded 10,000 persons. The 2,400-acre facility was also a significant source of employment as many civilian jobs were available on the installation. In 1965, it was announced that the Sewart AFB would be phased out over a 4.5-year period and would be completely closed by July 1970. The closure coincided with the acquisition of lands for the J. Percy Priest Dam and Reservoir by the USACE Nashville District and resulted in a severe economic blow to the local community (Town of Smyrna 2001). An aerial photograph from the USACE taken in 1963 shows that most of the site was treeless and still being actively farmed (Figure 2.3).

When the Sewart AFB closed, the USACE retained a portion of the former installation, including the Cantonment area, and the National Airport Authority retained the airfield. In 1970, the TNARNG obtained a license from the Nashville USACE to utilize 780.55 acres for education of troops and various field training purposes on a continual basis. The TNARNG is accountable to the Nashville District of the USACE for activities within the licensed area. Activities within the training site cannot conflict with the USACE operations on J. Percy Priest Lake. The remaining 67.05 acres under license from the USACE are administered by the Mobile District. Another portion of the former Sewart AFB was transferred to the State of Tennessee for operation of the Tennessee Rehabilitation Center.

Figure 2.3: Aerial photograph of Sewart Air Force Base prior to the creation of the J. Percy Priest Dam and Reservoir (November 11, 1963). (Courtesy of USACE, Nashville District). Current boundaries of VTS-Smyrna have been outlined

Under TNARNG management, the site has been called Smyrna Training Site, Grubbs/Kyle Training Center, and most recently, Volunteer Training Site-Smyrna. The site was dedicated as the Grubbs/Kyle Training Center in 1984, in memory of two members of the TNARNG. Captain Douglas Grubbs, of Nashville, was killed during a training mission in 1954; Major Sam Kyle, a native of Lebanon, TN, was killed in 1984, when his helicopter crashed while he was participating in a search for prison escapees (Lose and Associates 1994).

Portions of Sewart AFB, not licensed to the TNARNG, were either sold or transferred to various entities. The majority of the remaining area was the airfield, which was transferred to the Metropolitan Nashville Airport Authority. The airfield has subsequently been transferred to Rutherford County and the Town of Smyrna and is currently operated by the Rutherford County/Smyrna Airport Authority (Town of Smyrna 2001).

The remaining portions have been sold and are now privately owned. The city of Smyrna previously had a license for a large parcel of land in TA2 for sewage treatment purposes. The only residual signs of the treatment plant are access roads and a large, perennial pond (Figure 2.4). Several DoD-related landfills are located on what is now known as TA 3. These areas of the training site are currently off-limits to all training. Future reclamation of these portions of the training site is being investigated. See Section 4.2.3 for additional discussion of reclamation and mitigation efforts.

2.3 MILITARY MISSION

The TNARNG serves both state and federal missions. Both state and federal funding are provided to ensure that the Tennessee Army National Guard is constantly ready to support any mission or need requiring military personnel and equipment. When called by the Governor, the state mission supports civil authorities in the protection of life and property and the preservation of peace, order, and public safety. When called by the President in times of war and national emergency, the federal mission provides trained and equipped personnel and units capable of rapid deployment.

The VTS-Smyrna mission statement is to provide state of the art training facilities in support of total force training requirements to sustain operational readiness and exceed mission requirements. Training needs are subject to change as mission requirements dictate.

2.4 FACILITIES

VTS-S contains an extensively developed cantonment area, covering approximately 170 acres. Cantonment facilities are housed in nearly 60 buildings and include the following:

- Site headquarters
- Administrative offices
- Classroom and meeting facilities
- Two armories
- Army Aviation Support Facility #1
- Combined Support Maintenance Shop #1
- Facilities Maintenance Shop #16
- Regional Training Institute
- National Guard Bureau Visual Information Support Center
- Simulation Training Center
- Eight barracks, with 402 bed capacity
- Unaccompanied personnel housing
- Miscellaneous installation support facilities (e.g., billeting, dining hall, post exchange)

Approximately 451 acres at VTS-S are available for field training. Another 163 to 200 acres are seasonally inundated by J. Percy Priest Lake; these portions of the installation are not considered available for training use. Areas excluded from the USACE license include the former sewage treatment pond in TA2, Volunteer Park, located in the Cantonment Area, and Cannon Cemetery in TA6. Training Area 3, formerly used as a landfill, is currently off limits to training and 23 acres in the northeastern corner of the training site, in TA2, is available to foot traffic only due to the presence of numerous potentially hazardous sinkholes.

Maneuver training areas available for squad, platoon, and company field exercises are described in Table 2.2 and shown in Figure 2.4.

Table 2.2 Current training area uses

Training Area	Area (acres)	Types of training conducted and training area descriptions
1	10	Parade field—used for ceremonies and drilling
2	262	Used for dismounted training maneuvers. Contains LANDNAV course. Plan to thin cedar forests, improve roads, and use for wheeled and tracked training. Off limits to vehicles until road network completed. The northeast corner of TA2 contains numerous marked sinkholes and is off limits to vehicular traffic (boundary to be defined and clearly marked). The former sewage treatment pond is located in the southern portion of TA2. Approximately 6.3 acres, including the sludge pond and adjoining access roads are excluded from the license as issued by the USACE to the TNARNG and are off limits to all training until further notice.
3	72	Currently unused. Site of Sewart AFB landfills. This portion of the training site is currently off-limits to all training. Investigating restoration through Formerly Used Defense Sites (FUDs) funding.
4	54	Used for wheeled vehicle and dismounted maneuvers and Bradley driver training. Contains several bivouac sites, channel crossing connecting to TA5, and a POW camp. An Urban Assault Course (UAC) and an obstacle course are being planned for TA 4.
5	55	Used for wheeled vehicle and dismounted maneuvers. Contains a Virtual Convoy Operations Trainer (VCOT), a boat ramp, four mine detection pits, and an eight point land navigation course (inactive).
6	116	Used for wheeled vehicle and dismounted maneuvers; training for Bradley drivers, night driving, rail loading, and aviation swing-load maneuvers. Contains small arms firing range, an M203 grenade launcher practice range, a hand grenade practice course, bivouac sites, and an active twelve point land navigation course. Cannon Cemetery is located in the northern portion of TA 6 and is fenced off from the rest of the training area
Bldg 425		Used for a variety of classroom and simulation training activities. Contains an engagement skills trainer, WARFIGHTER simulation unit, a STAFFEX facility, Firearms Training System (FATS), and several classrooms. An Aviation Combined Arms Tactical Trainer (AVCTT) pad is located next to the building.

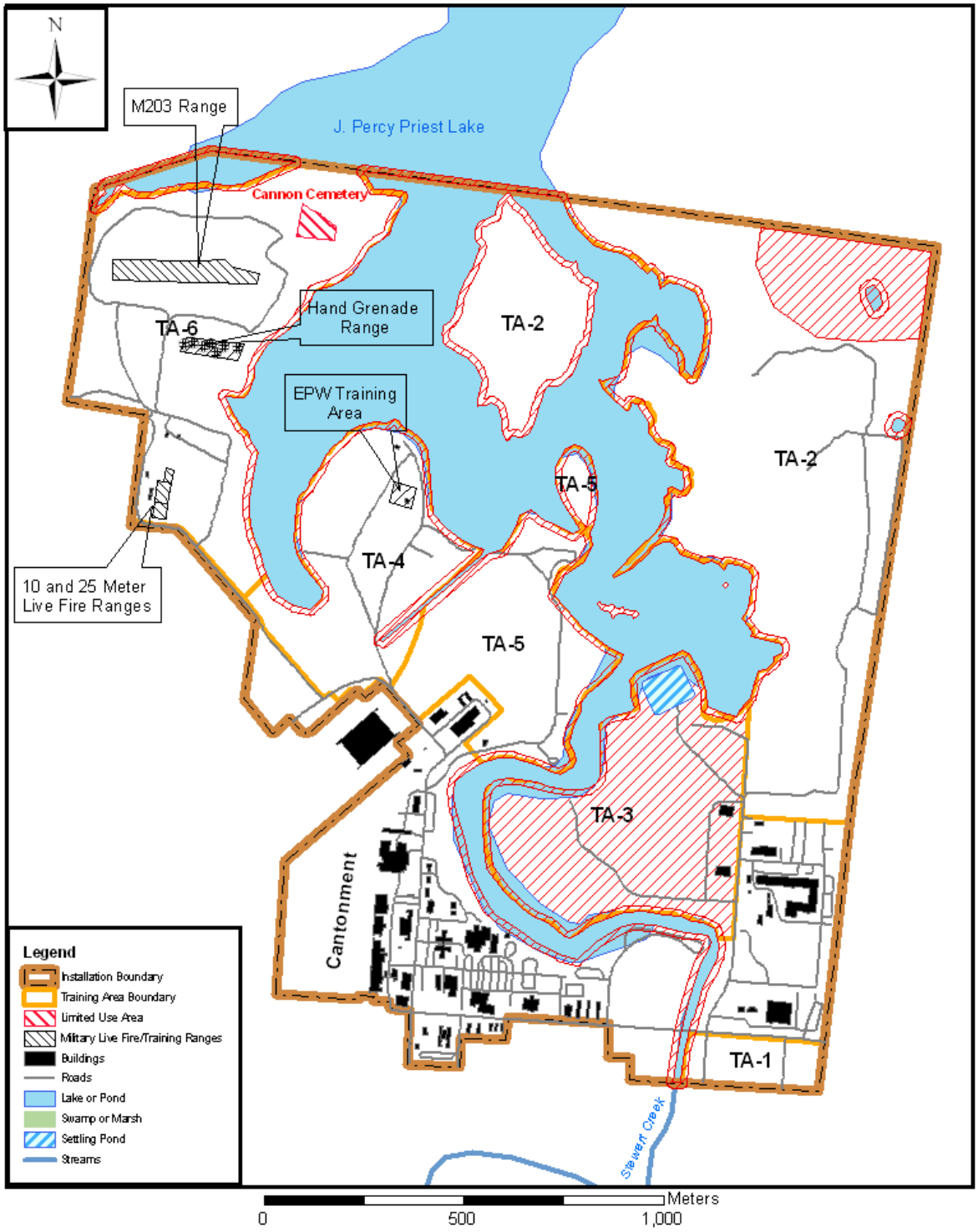

Figure 2.4: VTS-Smyrna Training Areas and Facilities

The three active berm and baffle ranges in Training Area 6 include the following:

- 25-meter Rifle Range: M-16A1, M-16A2 and M193; targets are paper silhouettes on wooden frames; 24 firing points in TA 6.
- 25-meter Pistol Range: .22 cal., .28 cal., .45 cal., and 9mm ball; targets are paper silhouettes on wooden frames; 24 firing points in TA 6.
- 10-meter M60 Machine Gun Range: M60/SAW and 7.62/5.56 ball; targets are paper silhouettes on wooden frames; 10 firing points in TA 6.

2.5 TRAINING SITE UTILIZATION

The VTS-S is the primary training facility for TNARNG units within 100 miles of the training site. The primary TNARNG/TNANG user units are:

117th RTI	2-104th Co CD1
107 AVNE	473rd HHP QM
1-115FA A	568th PSB
1-230th ACR HHC	301 Troop Command
278th ACR HHT	118th SFS SQD
168th MP HHD	

In addition, a variety of non-National Guard organizations use the training site, including: the 100th Division and the 304th MP unit, both of which are Army Reserve units; 3-BCT 101st Airborne, a U.S. Army unit; as well as local gun clubs, ROTC groups, and local law enforcement units. The types of training on VTS-S in the immediate future are expected to be similar to previous years, as described below.

In recent years, use of classroom training and virtual simulation equipment at VTS-S have enhanced and expanded traditional training capabilities of the site by broadening the types of training that may be accomplished, substantially increasing training safety, and reducing training costs. Approximately sixty percent of all training at VTS-S takes place either in classrooms or in virtual training facilities.

Use of ranges and training area facilities is coordinated through the RFMSS Scheduler at VTS-S at least 30 days prior to training dates. Units request training areas based their mission requirements, and training areas are assigned on a “first come, first served basis”. Before training in the field, using units’ Range Officers in Charge (OIC) and Safety Officers must review the VTS-S SOP and attend a safety briefing at VTS-S Headquarters. Approximately twenty-five to thirty percent of training use at VTS-S occurs on the small arms firing ranges in TA6.

Field training exercises at VTS-S compose ten to fifteen percent of overall usage at VTS-S and involve a wide variety of activities such as tracked and wheeled vehicle operations on all military-developed roads and major trails, mounted and dismounted maneuvers, field bivouacking, mine field detection, land navigation, aviation sling load training, and weapons firing. Field exercises take place primarily in TAs 4, 5, and 6. Live fire may only occur on designated ranges within the Range Complex in TA6.

The Training Site License anticipates that no more than six tracked and 25 wheeled vehicles will be maneuvered on the training site and that a maximum of 400 troops will be in the area at a given time. If force structure changes the license will need to be reevaluated and revised in coordination with the USACE, Nashville District.

Available data on troop utilization of the VTS-S for the period spanning 2002-2006 is summarized in Table 2.3 and Figure 2.5 in man-days per year, and by indicating monthly usage trends over those years in Figures 2.6 and 2.7. Average training site usage for 2002-2006 was approximately 79,095 man-days per year.

Training site utilization data from 2002-2006 shows that 66% of all training occurs during the spring and summer months between April and September. An unusually high number of man-days were reported during April 2004. This anomaly was due to the mobilization of the 278th Army Cavalry Regiment, which affected approximately 3,000 soldiers. December is historically the slowest month of the year for training and averages approximately two percent of all annual training at VTS-S.

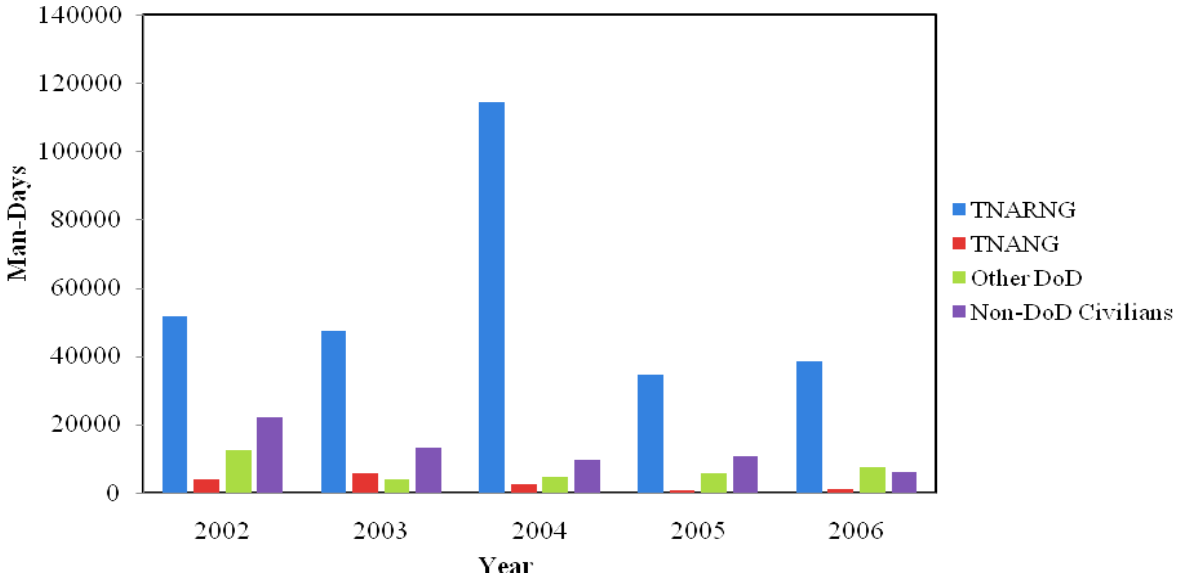

Figure 2.5: Training man-days by user at VTS-S, FY 2002-2006

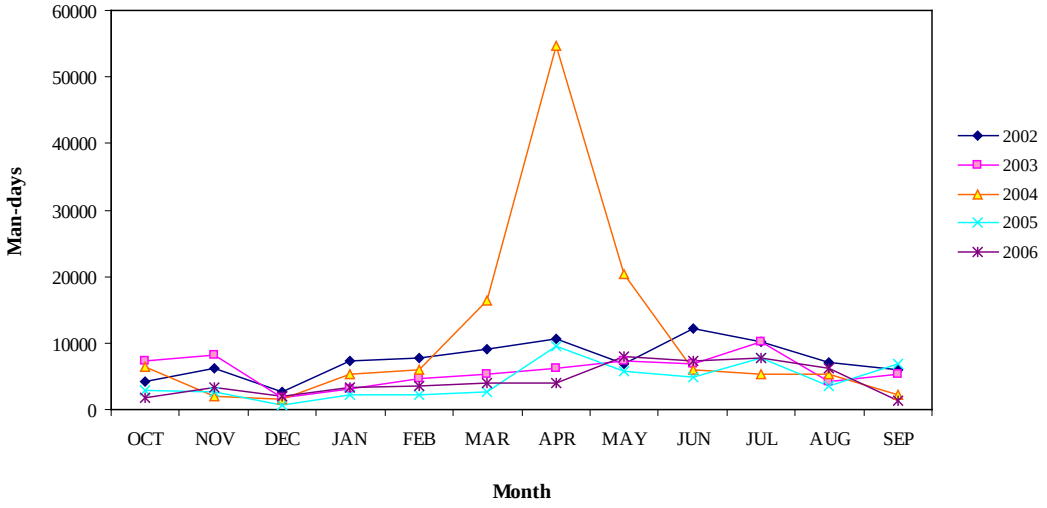

Figure 2.6: Monthly trends in total man-day usage at VTS-S, FY 2002-2006

Table 2.3: Training site utilization by National Guard, other military, and civilian users, 2002-2006.

TY2002	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TNARNG/TNANG	3254	2699	1514	5871	5696	4954	6299	4707	6536	4228	4375	5274	55407
Other Military	396	1765	445	386	1324	2532	714	715	1944	354	1361	110	12046
Civilian	625	1640	607	1146	651	1625	3515	1374	3798	5557	1313	535	22386
TOTALS	4275	6104	2566	7403	7671	9111	10528	6796	12278	10139	7049	5919	89839
TY2003	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TNARNG/TNANG	6224	7457	1195	2227	3815	3077	4982	5379	5264	6309	3035	4285	53249
Other Military	232	137	186	306	548	910	483	0	75	0	894	180	3951
Civilian	845	569	326	644	211	1425	826	1819	1470	3945	213	795	13088
TOTALS	7301	8163	1707	3177	4574	5412	6291	7198	6809	10254	4142	5260	70288
TY2004	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TNARNG/TNANG	4501	1272	1380	3801	4464	14748	53368	18773	3716	4687	4798	1409	116917
Other Military	859	0	0	900	750	470	279	111	243	347	300	80	4339
Civilian	1067	676	80	550	757	1112	948	1530	1970	182	197	689	9758
TOTALS	6427	1948	1460	5251	5971	16330	54595	20414	5929	5216	5295	2178	131014
TY2005	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TNARNG/TNANG	2129	1012	192	1613	1865	1937	8489	3325	2549	5531	2617	3928	35187
Other Military	458	1611	397	267	217	302	382	131	447	546	721	170	5649
Civilian	328	40	68	308	171	407	691	2264	1791	1656	287	2801	10812
TOTALS	2915	2663	657	2188	2253	2646	9562	5720	4787	7733	3625	6899	51648
TY2006	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TNARNG/TNANG	742	744	1753	2780	2781	3312	3354	6794	5901	5409	5031	769	39370
Other Military	404	2262	210	283	680	393	326	610	154	914	1034	73	7343
Civilian	556	240	110	289	88	384	402	550	1310	1476	140	428	5973
TOTALS	1702	3246	2073	3352	3549	4089	4082	7954	7365	7799	6205	1270	52686

2.6 EFFECTS OF TRAINING ON NATURAL RESOURCES

Military training can have both negative effects on and positive benefits to natural resources. Maneuver damage is by far the largest negative effect on the natural resources at VTS-S. Maneuvering heavy tracked and wheeled vehicles across even the best-suited landscapes can cause damage to vegetation and soils. For this reason, soils at the VTS-S require timely land rehabilitation efforts at appropriate intervals. Vegetation as well as soils can be damaged by regular use on areas such as trails, bivouac sites, and firing points. In addition, vehicles can be a source of invasive species propagules when relocated from other regions. Wildlife populations can also be harmed by field equipment training, small arms firing, or by mission-related wildfires.

The impact level of typical TNARNG training activities is given in Table 2.4. "Low" impact activities are those which generally will not disturb the vegetation or soil and will require no rehabilitation. "Medium" impact activities may cause some disturbance or change which may require minor rehabilitation or which may recover over time without aid. "High" impact activities typically cause significant change to the soils or vegetation of the area which will require timely attention to avoid or minimize long-term alteration of existing conditions. Some training activities may be conducted at different levels of disturbance.

Table 2.4: Military training and land use activities that may cause soil or vegetation disturbance. (Activities grayed out are not conducted on VTS-S).

Training Activities	Low Impact	Medium Impact	High Impact
Small unit infantry tactics	X		
Reconnaissance	X		
Terrain/map analysis	X		
Escape and evasion	X		
Infiltration	X		
Land navigation	X		
Patrolling	X		
Nuclear, Biological, Chemical training with simulated agents	X	X	X
Engineer reconnaissance	X		
Tactical bivouac occupation/displacement		X	X
Cold weather operations	X	X	X
Cover and concealment		X	
Field fortifications		X	X
Install/clear minefields			X
Construct obstacles			X
Breaching and clearing operations			X
Construct and maintain main supply routes	X	X	
Demolition training			X
Nonstandard fixed bridges		X	
Bridging and rafting operations		X	
Fording operations		X	
Mobility and countermobility			X
Weapons qualifications/familiarization		X	
Mechanized maneuvers (tracked)			X
Mechanized maneuvers (wheeled)			X
Artillery training (setup and firing)			X
Direct fire			X
Aerial operations	X		

Five basic management techniques can be used to minimize military training effects to the soil and vegetation resources: (1) limit total use; (2) redistribute use; (3) modify kinds of uses; (4) alter the behavior of use; and (5) manipulate the natural resources for increased durability. These will be discussed throughout the management plan. One example of modifying the kind of use is the use of simulators and simulations at VTS-S. Various high-technology methods have been implemented at VTS-S to provide for increased safety, better use of available space, and reduced effects of noise on natural resources by eliminating the need for live-fire in certain situations. Expanded use of simulators and better equipment can reduce maneuver damage to land and soils, while improving training realism.

Vehicle maneuvers, tracked and wheeled, have the potential to cause the greatest military related impact to the VTS-S ecosystem. Vehicles used by TNARNG range from High Mobility Multipurpose Wheeled Vehicles (HMMWVs) to Abrams tanks. Military vehicle training may involve single vehicle maneuvers up to platoon or squadron-sized elements. Soil compaction and erosion are the most probable results of vehicle maneuvers. Appropriate planning (e.g., avoiding steep slopes, highly erodible soil types, and wet soils) and preparation (gravelling of tank trails, etc.) can mitigate much substrate damage. Immediate repair of any damaged areas after training maneuvers ensures no net loss of training area.

Invasive pest plants (IPP) are one of the most immediate threats to native ecosystems in the southeastern U.S. These exotic species can reproduce prolifically and spread rampantly throughout an ecosystem, causing significant disruption to the natural system. They can be easily transported into new areas in the mud on vehicles. To minimize this threat, vehicles arriving at VTS-S must be washed thoroughly before entering the VTS-S training area.

Bivouacking has impacts similar to civilian campgrounds. Soil compaction and trampling of vegetation increase runoff rates and may lead to higher erosion. There may also be a change in vegetation composition to more damage and disturbance tolerant species. During wet conditions, vehicles may create ruts if pulled off-road. Rotation of sites and careful site selection can minimize the damage caused by bivouacking.

The greatest positive effect of the TNARNG mission on natural resources is the military presence. TNARNG land managers have instituted good land use practices such as reducing erosion and negative impacts on stream crossings and wetlands. Landscape disturbances (for example, agricultural tillage, reduction of forest and wildlife habitat for development, and much recreational vehicle damage) are avoided on VTS-S, so that natural communities are relatively undisturbed and are left to return to their natural compositions. After training, the land is evaluated by training site personnel for any damage. If repair is needed, it is initiated at that time to ensure minimal erosion or loss of training land is occurring. If impacts are substantial, training is rotated to another site until the first area has recovered and can be used again.

2.7 NATURAL RESOURCES NEEDED TO SUPPORT MILITARY MISSION

Due to the variety of units that utilize VTS-S, multiple environmental conditions are needed for training:

- Open woodland areas for bivouac
- Open fields for practice ranges and other training
- Wooded maneuver areas for foot and vehicle traffic
- Road networks for convoy training
- Pull-off points along roads
- Firing ranges
- Diverse, wooded terrain for land navigation course

According to the Training Site Manager, the current site conditions meet most training needs at VTS-S. The small size of the facility is its major limiting factor. However, some modifications to existing conditions will improve training opportunities.

The VTS-S boundary is ill-defined in many areas and accidental and/or purposeful trespass occurs regularly, posing a hazard to both training site users and the trespasser. Clearing of the fenceline and boundary will clarify the demarcation. Addition of a perimeter trail will further define the boundary, function as a firebreak, and provide access to the edges of the site for security and safety purposes.

Training Area 2 is a dense, largely unusable thicket of eastern redcedar. Reclamation of the old roadways in this area will provide training opportunities for the Bradley Training School, as well as creating a network of maintainable fire breaks.

The forest cover in TA 2 should be thinned to make off-road dismounted use of the area feasible. Thinning will also improve forest health and encourage a more diverse species assemblage. At the time that general thinning is conducted in this training area, one or two small (approximately 1 acre) sites will be cleared to provide platoon assembly areas. See Annex 1 (Forest Management Plan) for more details about planned timber harvests.

Unclear documentation and conflicting information have created confusion about the status of Training Area 3. At this time no training activities are conducted in TA 3 due to the uncertainties over allowable use. The land area is needed for training, however. When the situation is reconciled, the overstory should be thinned and existing openings should be enlarged for training purposes.

To achieve the currently desired missionscape, the VTS-Smyrna needs a cleared boundary fenceline and perimeter road, additional Bradley trails, thinning of the overstory and additional small clearings in TA 2, and access to TA 3. With these additions and modifications, the overall landscape of the VTS-Smyrna should continue to meet TNARNG training needs. Any significant change in mission will require that the missionscape be reexamined.

2.8 NATURAL RESOURCES CONSTRAINTS ON MISSION/MISSION PLANNING

Certain features of the natural environment represent constraints or potential limitations on training activities. Most significant at VTS-S are water quality, noise and encroachment issues, invasive species, and forest management activities. The challenge is to protect sensitive resources, or to promote their control in the case of invasive species, while still ensuring the full range of military training required by the mission.

Many sensitive areas can be identified prior to any training activity and incorporated into the ambiance of the activity in the form of safety, off-limits, or contaminated areas. This allows protection of the environment in conjunction with more realistic training scenarios.

2.8.1 Water quality

While the J. Percy Priest Reservoir (Figure 2.4) is used primarily to control flooding and to provide hydroelectric power, the reservoir system is widely used for recreation (e.g., fishing, boating, swimming, and camping), as well as a source of drinking water. As the current storm water drainage system directs all cantonment-originating runoff and most training area runoff directly to Stewart Creek, which flows directly into J. Percy Priest Lake, it is important that the users of VTS-S take every reasonable precaution

possible to minimize contamination of this large, municipal water source in order to comply with water quality regulations set forth by the State of Tennessee.

Materials used and stored at VTS-S, as well as at the neighboring airport and the former Sewart AFB, includes several types of fuels and oils, transmission fluids, antifreeze, various solvents, and many other hazardous materials. In addition to these chemical contaminants, erosion of soils found at VTS-S poses a serious threat to surrounding surface waters. Siltation is the primary cause of impairment for waterways in Tennessee (Price and Karesh 2002), including 303(d) listed portions of Stewart Creek and surrounding tributaries. Sedimentation of eroded materials into Stewart Creek and J. Percy Priest Lake destroys valuable wildlife habitat, reduces the intended storage volume of the reservoir, decreases water visibility, and increases water filtration costs.

2.8.2 Noise and Encroachment Issues

While VTS-S is located near relatively high populated areas, there have been no significant noise complaints at VTS-S to date. This is due primarily to the fact that the small arms range at the training site neighbors the Smyrna/Rutherford County Regional Airport, a facility with substantially greater noise concerns. The one exception to this is the presence of an approximately 135 acre research farm, managed by the Tennessee Wildlife Resources Agency located immediately west of the M203 range and northwest of the training site's small arms range. However, as this farm has no live-in residents and apparently houses office and storage only, noise complaints are not expected to become a problem.

Additional future encroachment issues at VTS-S are minimal due to the fact that nearly all surrounding land has either already been developed or is contained within the USACE-managed J. Percy Priest Lake and Wildlife Management Area.

2.8.3 Invasive Species

Large populations of several invasive species are found throughout VTS-S (see Chapter 3 and Annex 3). Most problematic of these are the extensive stands of common privet (*Ligustrum* spp.). Privet is found across the training site, in many places forming a dense understory layer that is difficult to traverse on foot and impossible to maneuver a vehicle through. Autumn olive (*Elaeagnus umbellata*), silverthorn olive (*E. pungens*), and multiflora rose (*Rosa multiflora*) also pose serious threats to native communities and impede maneuver capabilities on training areas. These shrubs form large clumps which are dense, thorny, and difficult to navigate through. Control of these and other invasive pest plants is necessary to avoid deterioration of existing training areas.

2.8.4 Forest Management

Active management of natural areas on the training site is required in order to support the training requirements of TNARNG users. The forests of VTS-S, especially the dense red cedar stands in TA2, need to be thinned to both increase available area for training maneuvers and to improve the overall health of the site's forest ecosystems. A Forest Management Plan was developed for VTS-S in 2006 (Thompson Engineering et al.; Annex A), providing a forest inventory as well as forest management prescriptions for each of the six training areas. Timber harvesting activities will be implemented following finalization of this INRMP in accordance with the plan in Annex A.

2.9 GEOGRAPHIC INFORMATION SYSTEM (GIS) ASSETS

TNARNG supports a Geographical Information (GIS) Branch which is responsible for all GPS/GIS activities in support of the CFMO-Environmental Office mission. The TNARNG CFMO GIS Branch provides secondary support of the ITAM mission as it applies to the Environmental activities. The GIS Branch provides mapping, data mining, data storage/retrieval, statistical analysis, and data modeling. As well as all data collection via GPS, surveying and research. In addition to required GIS/GPS functions the GIS Branch all provides first line Information Technology support, database development and web based publishing. Geospatial data must meet federal, DOD, Army, and NGB standards, including Federal Geographic Data Committee (FGDC) and Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE). All TNARNG sponsored projects will be incorporated into the TNARNG integrated Geodatabase in support of all Training Site facilities, maintained by the GIS Branch.

The GIS database includes all facilities data, ITAM data, facilities and environmental data, including but not limited to: roads, structures, infrastructure, fencing, utilities, cultural resources, and natural resources, conservation, compliance as well as topographic maps, digital elevation models (DEM), TINs, and aerial photographic coverage of all sites. All environmental projects include gathering of GIS data for inclusion within the system. Additional needs are programmed into the STEP system as they become apparent.

CHAPTER 3
PHYSICAL AND BIOTIC ENVIRONMENT

3.1 CLIMATE

Tennessee lies within the hot continental division of the humid temperate domain (Bailey 1996) and is characterized by relatively mild winters, warm summers, and generally abundant rainfall. Rutherford County, like the rest of Tennessee, is influenced by air masses from the Gulf of Mexico and is located far enough north to be frequently traversed by cold air masses from northern regions. Consequently, the county experiences large seasonal and even daily variations in temperature and humidity (True et al. 1977).

The following climatic data was obtained from the National Oceanic and Atmospheric Administration's National Climatic Data Center (2004).

Temperature: The average annual temperature for 1971-2000 was 58ºF. July and August are the warmest months with average daily maximum temperatures of 89°F. January is the coldest month, with an average maximum temperature of 46ºF and an average minimum temperature of 25ºF.

Precipitation: Normal annual precipitation measured during the years 1971-2000 for Murfreesboro, TN, near VTS-S, was approximately 55 inches. Annual snowfall (usually between the months of November and March) average is four inches. Over most of the state, the greatest precipitation occurs in winter and early spring; fall tends to be the driest season for the state. Severe storms have been relatively infrequent in Rutherford County; however, tornados have been reported in the county. The area is too far inland to experience much damage from tropical storms. Hailstorms occur about twice a year, mostly in the spring. Heavy snowstorms are infrequent; snow in winter seldom persists for more than a few days.

The length of the growing season is linked to climate and topography. The average growing season in Rutherford County is 193 days (6.3 months). Mean spring (March through May) temperature is 57°F, with average daily temperatures of 48.3°F in March and 65.7°F in May. Fall (September through November) temperatures are slightly higher than spring temperatures, with a mean temperature of 59°F.

Relative Humidity: Throughout most days, relative humidity varies inversely with temperature and is, therefore, highest early in the morning and lowest late in the afternoon. The annual relative humidity average ranges from 60 percent in the afternoon to 85 percent in the morning. An annual variation of relative humidity also occurs; the average daily values are higher in winter and lower in spring (True et al. 1977).

Wind: The prevailing winds are southerly; however, the wind changes direction frequently. The average windspeed is about six miles per hour. Winds are usually lighter early in the morning and stronger early in the afternoon (True et al. 1977).

3.2 PHYSIOGRAPHY AND TOPOGRAPHY

Rutherford County lies within the physiographic region known as the Central Basin of Tennessee. The topography of this portion of the Central Basin is characterized by gently rolling to nearly level lands with elevations ranging from 490 to 1,352 feet above mean sea level (True et al. 1977). Land surface elevations at VTS-S generally fall between 490 and 550 feet. Site topography is generally flat to gently rolling and slopes from west to east toward Stewart Creek.

Karst topography is prevalent over much of the Central Basin, especially within the Inner Basin. Caves and sinkholes, cavities formed when groundwater dissolves portions of limestone bedrock, are two typical features of karst terrain. Six caves lie within six miles of VTS-S, most of which occur in Ridley Limestone, the formation underlying most of the training site; however, no caves are known to exist at VTS-S. A number of sinkholes are present on the grounds, with concentrations in the northeast corner of the site in Training Area 2 (TA 2). A survey of karst features on VTS-S was conducted in 2005 (Dynamic Solutions, LLC) that found eight discernable sinkholes, all of which were located in TA 2 (Figure 3.2). Of these eight, at least two represent immediate hazards to those traveling off-road in that portion of TA 2 as they have vertical openings at ground level. All documented sinkholes were marked with bright flagging and warning signs. There is potential for existing sinkholes to expand or for more sinkholes to develop as cavities created by karst activity may collapse suddenly creating visible sinkholes; therefore, monitoring of karst features should be done on a regularly scheduled basis at VTS-S.

3.3 GEOLOGY

3.3.1 Geologic Formations

The inner basin of the Central Basin is dominated by limestone formations of Ordovician age, including the formations composing the Stones River Group which are the Carters, Lebanon, Ridley, Pierce, and Murfreesboro Formations. All five of these formations are represented at VTS-S (Table 3.1).

Table 3.1 Geologic Formations of the Stones River Group

Formation	Characteristics
Carters Limestone	Fine-grained, yellowish brown limestone; thin-bedded in upper part; thicker bedded and slightly cherty with scattered mottling of magnesian limestone in lower part. Contains thin bentonite beds. Thickness 500 to 100 feet.
Lebanon Limestone	Thin-bedded, grey limestone with calcareous shale partings. Thickness 80 to 100 feet.
Ridley Limestone	Thick-bedded, brownish grey limestone, fine grained with minor mottling of magnesian limestone; slightly cherty. Thickness 90 to 150 feet.
Pierce Limestone	Grey, thin-bedded limestone with shale partings. Thickness up to 25 feet.
Murfreesboro Limestone	Thick-bedded, dark grey, fine-grained limestone; somewhat cherty in upper part. Maximum exposed thickness 70 feet.

(From Hardeman 1966)

3.3.2 Seismicity

The VTS-S is located in the outer periphery of the New Madrid Seismic Zone (NMSZ), the most seismically active zone east of the Rocky Mountains. The NMSZ has produced damaging earthquakes in the past, including at least three earthquakes estimated to have had moment magnitudes of 8.0 or greater between 1811 and 1812. According to a USGS earthquake-predicting model (USGS 2002), however, there is a one percent probability of an earthquake occurring in Rutherford County of magnitude 5.0 or greater within the next 100 years as VTS-S is located over 160 miles from the most eastern portion of the NMSZ.

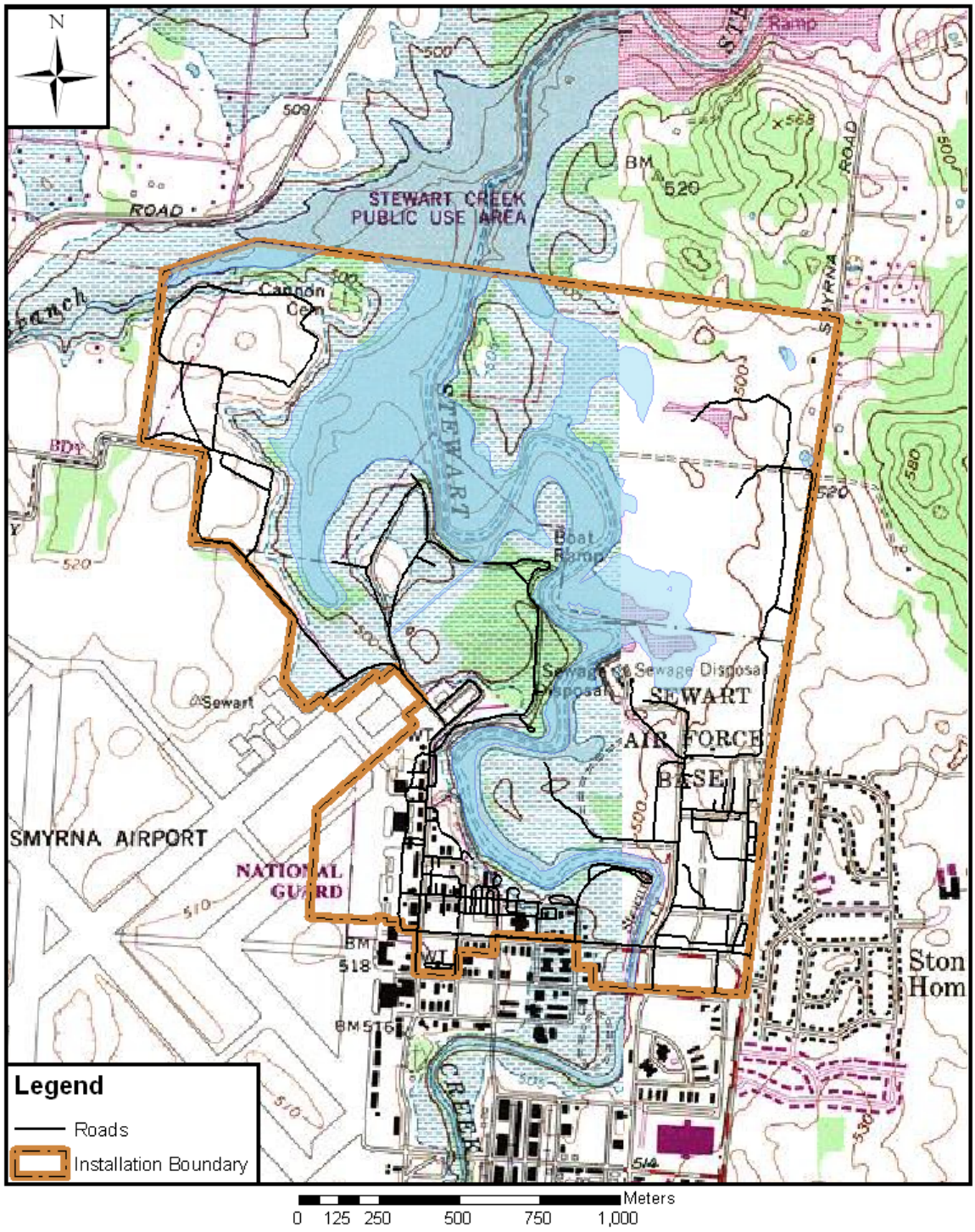

Figure 3.1: Topography of VTS-Smyrna

3.3.3 Petroleum and Mineral Resources

Rutherford County is a major producer of crushed limestone (Tennessee Division of Geology/U.S. Geological Survey 2004). No oil or gas is produced in Rutherford County. There is no commercial utilization of mineral resources on VTS-S.

3.4 SOILS

The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) (formerly named the Soil Conservation Service) completed a soil survey of Rutherford County in 1977 (True et al.). Descriptions of soils found on the following pages were derived from this publication. While the soils map (Figure 3.2) was compiled using the most recent data obtained from the NRCS, there are areas on VTS-S such as the landfill on TA3 and the former sewage treatment plant on TA2 (both described as Bradyville-Urban land complex) that should be reevaluated to improve accuracy and planning.

3.4.1 Soil Descriptions (from True et al. 1977)

Soils on VTS-S are mapped in two major soil associations: Rock Outcrop-Talbott-Barfield Association and Bradyville-Lomond-Talbott Association. The soil associations are generalized categories of soil series and types that occur together in a geographical location. They are named for the dominant soils present, but several other similar soils may be included. Ten soil series that occur either singly or in combination in 15 distinct map units (plus "water") were identified on VTS-S (Table 3.2 and Figure 3.2).

Parent material affects soil mineralogy, soil texture, and the internal drainage properties of soils. Soils at VTS-S are derived from weathered sandstone or limestone bedrock, creating the four primary soil components: residuum, colluvium (soil and weathered rock transported downhill by gravity), alluvium (soil and weathered rock transported by flowing water), and loess (deposits of wind-blown silt). Soils adjacent to J. Percy Priest Reservoir are susceptible to periodic flooding, tend to be poorly drained, and have slower permeability than upland soils. They become very slippery when wet and susceptible to compaction. Other properties of soils at VTS-S influencing their use and management are moderate erodibility, low soil strength, high shrink-swell potential, and high content of gravel or rocks. The majority of the soils found at VTS-S embody these characteristics.

The Armour series is found in valleys and alongside streams in the Central Basin and is comprised of well-drained, deep, loamy soils. These soils formed from deep, old alluvium and underlying clay-derived limestone. Depth to underlying bedrock may range anywhere between 30 inches and 8 feet. Slopes range from 0-5 %. It is moderately acidic and well suited for cropland, pasture, and woodland uses. When located on a slope, these soils are severely erodible.

The Arrington series consists of deep, loamy, well-drained soils found primarily in bottoms and depressions. Upper silty layers of this series may be 30 to 40 inches deep with dense, hard clay found beneath. These soils formed in recently deposited sediment washed from limestone-derived soils. Slopes range from 0-2 %. It is considered well suited for cropland, pasture, and woodland uses. Puddling and rutting may occur from wheeled and tracked equipment when the soil is wet.

The Bradyville series is generally found on upland sites and consists of deep, well-drained soils. Limestone bedrock is typically found 40 to 60 inches deep. These soils formed in a clayey residuum weathered from limestone. Slopes range from 0-12% and may erode very easily. Soils in this series

Table 3.2 Soil types onVTS-S

Soil Symbol (Figure 3.1)	Soil Name	Acres
Am	Armour Silt Loam, 0-5 % slopes	14.1
Ar	Arrington Silt Loam, depressed and occasionaly flooded	9.8
BrA	Bradyville Silt Loam, 0-2 % slopes	3.1
BrB	Bradyville Silt Loam, 2-5 % slopes	47.9
BrC2	Bradyville Silt Loam, 5-12 % slopes, severely eroded	22.1
BsB3	Bradyville Silty Clay/Loam, 2-5 % slopes, severly eroded	3.8
BtC	Bradyville-Rock outcrop complex, 2-12 % slopes	25.3
Bu	Bradyville-Urban land complex	469
CuB	Cumberland Silt Loam/Clay, 2-5 % slopes, moderately to severely eroded	122.8
CuC2	Cumberland Silt Loam, 5-12 % slopes, eroded	19.7
GRC	Gladeville-Rock outcrop-Talbott Association, rollling	≤ 1.0
HcA	Harpeth Silt Loam, 0-2 % slopes	57.5
Lo	Lomand Silt Loam, 0-5 % slopes	167.4
Ly	Lynnville Silt Loam, floodplain	≤ 1.0
Pd	Pits and Dumps	29.8
	Total Soil Acreage	*992.3
W	Water	171.7

Data obtained from the United States Natural Resources Conservation Service

***** Total soil acreage may differ from the 868 acres presented in Chapter 2.1 due to the varying waterlevels of the J. Percy Priest Reservoir

cover approximately 78 acres (8%) at VTS-S. In areas with low grade, these soils are well suited for cropland and pasture uses. In steeper areas, however, rock outcrops may interfere with the use of cultivation and harvest equipment, limiting land use to pasture. Bradyville soils have very low strength and are poorly suited for most road construction.

The Bradyville-Urban land complex is found on portions of the training site that have been artificially filled and sculpted or smoothed for industrial development, paving, and landscaping using heavy machinery. In the remaining undisturbed areas, soils of the Bradyville series are dominant. Using available NRCS data, this describes the cantonment area, all of TA3, and the southern tip of TA2. Combined, this complex covers 469 (47%) acres of the training site.

The Cumberland series consists of very deep, well-drained soils that are typically found on high stream terraces and uplands. Typical depth to bedrock may range from 5 to 8 feet but can be greater. These soils were formed in alluvium and in the underlying residuum weathered from limestone. Approximately 14% of VTS-S is covered by soil in this series. Slopes range from 0-12%**.** This soil series is well suited to cropland, pasture, woodland, or construction. Erosion control practices are essential at higher slopes.

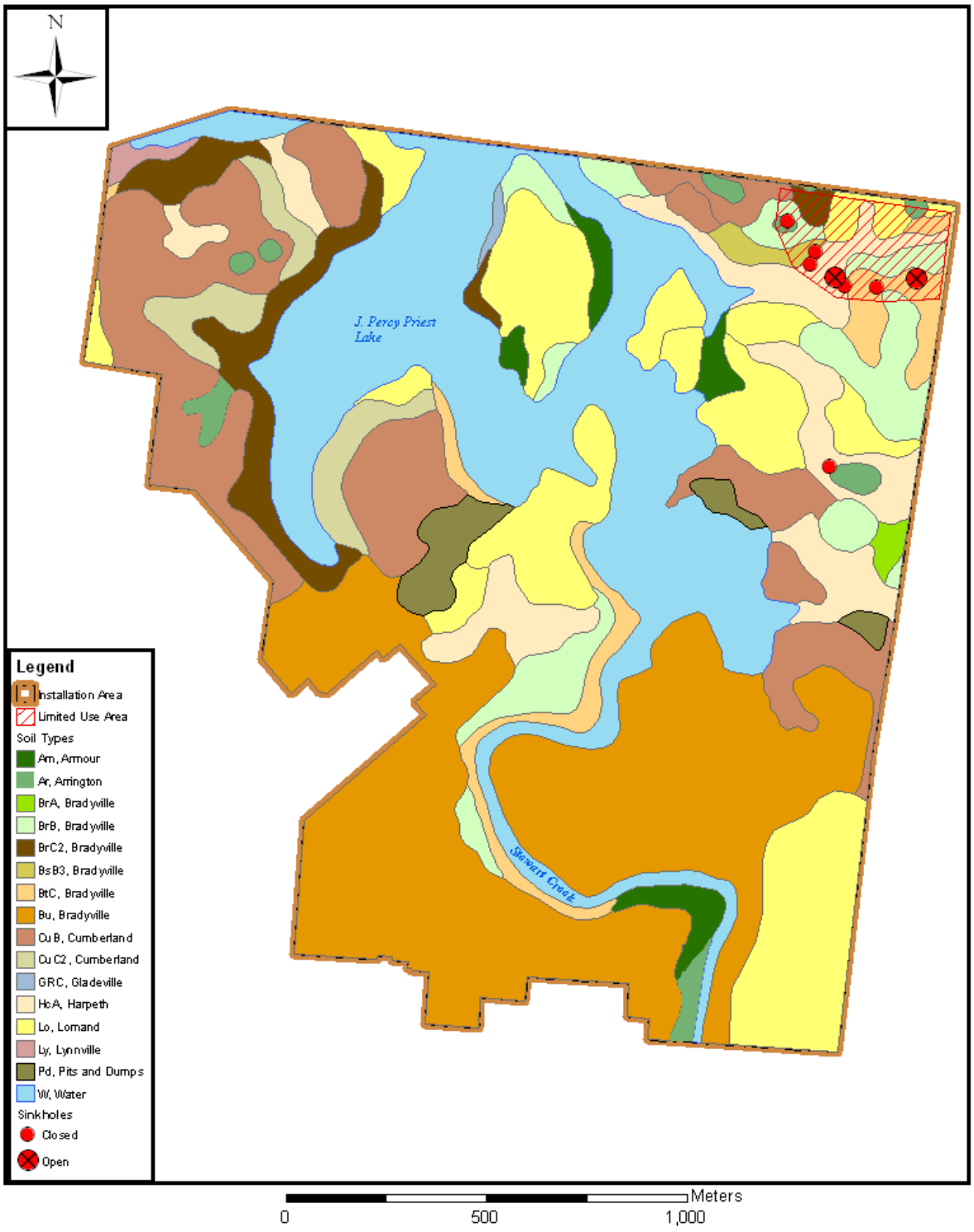

Figure 3.2: Soil Types on VTS-Smyrna

The Gladeville-Rock outcrop-Talbott Association is generally 40 percent Gladeville soils, 20 percent limestone rock outcrop, and 15 percent Talbott soils, with the remainder being a patchwork of other local soil types. Gladeville soils are thin and clayey with large outcrops of bouldery limestone. This association is often described as "gladey," implying the presence of limestone cedar glades. This land is best suited for redcedar woodlands.

The Harpeth series is mostly found in upland depressions and toe slopes at VTS-S and consists of deep, loamy, well-drained soils. These soils were formed by a thin layer of loess with limestone-derived residuum. Depth to bedrock ranges from 5 to 8 feet. Slopes range from 0-5%.

The Lomond series consists of deep, loamy, well-drained soils formed in deep alluvial deposits or in mixtures of loess and alluvial deposits. Slopes range from 0-5%. These soils are located in inland and lakeshore uplands on VTS-S. Depth to bedrock is generally less than 60 inches.

The Lynnville series is most often found in floodplains and in upland depressions. Soils consist of very deep, moderately well-drained soils. These soils formed in loamy alluvium on floodplains and, at VTS-S, are nearly level. The water holding capacity of these soils is quite high and runoff is slow. While there is only a small area at VTS-S containing these soils (NW corner of TA6), care should be taken to avoid wheeled or tracked vehicle use on them when soils are saturated.

The Pits and Dumps land type is typified by highly modified areas containing excavations, garbage dumps and open pits. At VTS-S, the areas most fitting this description may be found on TA3 where there are several old landfill sites. In its present state, this area is not to be used for training.

3.4.2 Soil Erosion Potential

Soil erosion potential, or erosivity, is of particular importance in an area that is subject to the effects of armored vehicular training. Tracked and wheeled vehicles should be used where most appropriate on the training site. It is important to consider the ability of the soil to withstand or recover from the effects of armored vehicular training. Soil erosion potential is principally influenced by rainfall (R), slope length and gradient (LS), soil texture or erodibility (K), cover protecting the soil (C), and special practices (P) such as terracing or planting on the contour. Humans control only the C and P factors. Factors R, K, and, to some extent, LS are inherent to the soils' geographic location, topography, and physical properties and are generally not influenced by humans. The Universal Soil Loss Equation (A=RxLSxKxCxP) uses these factors to estimate the average annual soil loss due to sheet and rill erosion for a specific soil with specific management. It provides an estimate of soil loss in tons per acre per year. It does not include other sources of erosion, such as gully or bank erosion.

Interpretation of the data found in the soil surveys reveals that potential for significant soil erosion (Figure 3.3) and compaction (due to clayey composition and general wetness) are the primary problems affecting the soil resources at the VTS-S site. Without proper conservation strategies in place, VTS-S could lose land appropriate for training. The erosion index (EI) shows the soils' potential for erosion over a given period of time (Table 3.3) considering the effects of rainfall, erodibility, and slope, and adjusting for differences in soil erosion tolerance.

The Bradyville and the Cumberland soil series are the most erodible soil types found at the training site (Figure3.3 and Table 3.3). While none of the soils at VTS-Smyrna are considered "highly erodible," nearly half of the soils at VTS-S require some special consideration to minimize impact from training. Utilization of special conservation practices makes it possible to not only train on the soils at VTS-S without causing excessive damage, but also to more easily repair any damages that may be incurred.

Table 3.3 Soil erosion potential

Soil Symbol	Acreage	Slope (%)	LS Minimum	LS Maximum	T-factor	K-factor	Erosion Index (EI)	HEL Class
AmA [1]	10.6	0 to 2	0.05	0.33	5	0.43	1.1-7.1	NHEL
AmB [1]	3.5	2 to 5	0.13	0.87	5	0.43	2.8-18.7	NHEL
Ar	9.8	0 to 2	0.05	0.47	5	0.37	0.9-8.7	NHEL
BrA	3.1	0 to 2	0.05	0.3	3	0.43	1.8-10.8	NHEL
BrB	47.9	2 to 5	0.13	1.1	3	0.43	4.7-39.4	PHEL
BrC2	22.1	5 to12	0.56	3.32	3	0.43	20.1-119.0	PHEL
BsB3	3.8	2 to 5	0.14	0.84	3	0.43	5.0-30.1	PHEL
BtC	25.3	2 to 12	0.13	4.02	3	0.43	4.7-144.1	PHEL
Bu	469	0 to 2	0.05	0.35	3	0.43	1.8-12.5	NHEL
CuB [2]	121.7	2 to 5	0.13	1.1	5	0.37	2.4-20.4	NHEL
CvB3 [2]	19.7	2 to 5	0.44	4.49	5	0.37	8.1-83.1	NHEL
CuC2	1.1	5 to 12	0.13	0.81	5	0.37	2.4-15.0	PHEL
GRC	1	2 to 15	0.13	2.27	1	0.17	5.5-96.5	PHEL
HcA	57.5	0 to 2	0.05	0.35	5	0.43	1.1-7.5	NHEL
LoA [3]	101.2	0 to 2	0.05	0.35	5	0.43	1.1-7.5	NHEL
LoB [3]	66.2	2 to 5	0.13	1.1	5	0.43	2.8-23.7	NHEL
Ly	1.0	0 to 2	0.05	0.3	5	0.37	0.9-5.6	NHEL
Pd	29.8	12 to 20	1.75	0.32	5	0.43	37.6-140.6	PHEL

LS = Topographic factor (length and steepness of slope) Data obtained from SAIC 2000
T = Tolerable soil loss (acres/year)
K = Soil erodibility factor
EI = Erosion Index
HEL Class: **NHEL** = not highly erodible land; PHEL = potentially highly erodible land.

[1] Soil mapping units combined and represented by symbol "Am" in Figure 3.1

[2] Soil mapping units combined and represented by symbol "CuB" in Figure 3.1

[3] Soil mapping units combined and represented by symbol "Lo" in Figure 3.1

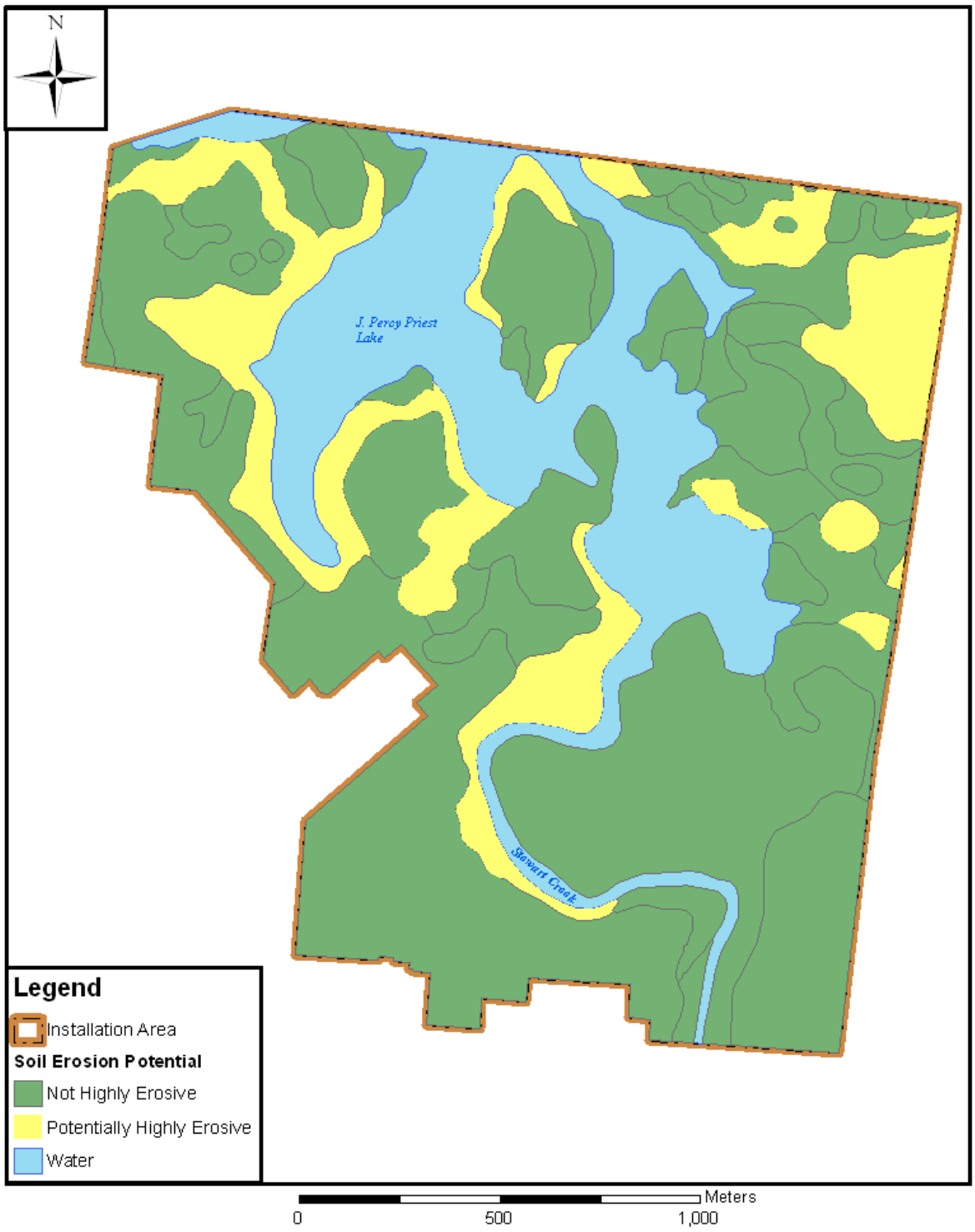

Figure 3.3: Soil erosion potential on VTS-Smyrna

3.4.3 Prime Farmland

Approximately 391 acres of the VTS-S soils are recognized as prime farmland soils; however, they are not currently managed to produce food, feed, forage, fiber, and oilseed crops. Soils were actively farmed prior to 1970 when the USACE granted TNARNG a license to use the site. The TNARNG utilizes the site for the primary purpose of military training, which takes precedence over agricultural land use at this time.

3.5 WATER RESOURCES

3.5.1 Surface Water

VTS-S is located within the Stones River Watershed (USGS Hydrologic Unit #05130203) (Figure 3.4), which includes approximately 589,440 acres (921 square miles) of land and water and ultimately drains into the Cumberland River. Perennial surface water features at VTS-S include Stewart Creek and the J. Percy Priest Reservoir (Figure 3.5).

Stewart Creek is a fourth-order stream that drains a watershed area of 44,608 acres (69.7 square miles) that encompasses crop and livestock agriculture as well as the urbanized region of Smyrna and the training site. Stewart Creek enters the VTS-S on the southeastern border, approximately 1,000 feet west of the eastern site boundary. The creek generally flows northward, but also meanders westward and eastward before merging with the J. Percy Priest Reservoir.

The J. Percy Priest Lake, into which Stewart Creek flows, is an impoundment of the Stones River covering approximately 14,200 acres (22.2 square miles). The USACE maintains the lake, which provides recreation, hydroelectric power, and flood control to surrounding areas. Water from J. Percy Priest Lake is also the primary source of drinking water for several neighboring communities. The lake's winter and summer pool levels are maintained at 480.0 and 483.0 feet above mean sea level (AMSL), respectively. The maximum pool level of the reservoir (flood-control storage level) is 504.5 feet AMSL (USACE 2006).

3.5.1.1 Drainage Systems

The Stones River watershed drains portions of Rutherford, Wilson, Cannon, and Davidson Counties before emptying into the Cumberland River in eastern Davidson County. The Cumberland River joins the Ohio River, near Paducah, Kentucky, and the Ohio flows into the Mississippi River east of Charleston, Missouri. The Mississippi River eventually drains into the Gulf of Mexico.

Storm water runoff from the installation's cantonment area flows northeast and is directed to Stewart Creek via open-flow ditches and limited sewer lines and is not treated before entering the creek. This storm drainage system was designed by the U.S. Air Force and dates from the World War II era. Drainage from the training areas flows into Stewart Creek, as well, by way of surface swales and wet weather conveyances.

Main tributaries to Stewart Creek include Rocky Fork, Olive Branch, Harris Branch, and Rock Spring Branch. All of these waterways are upstream of the portion of Stewart Creek that flows on VTS-S.

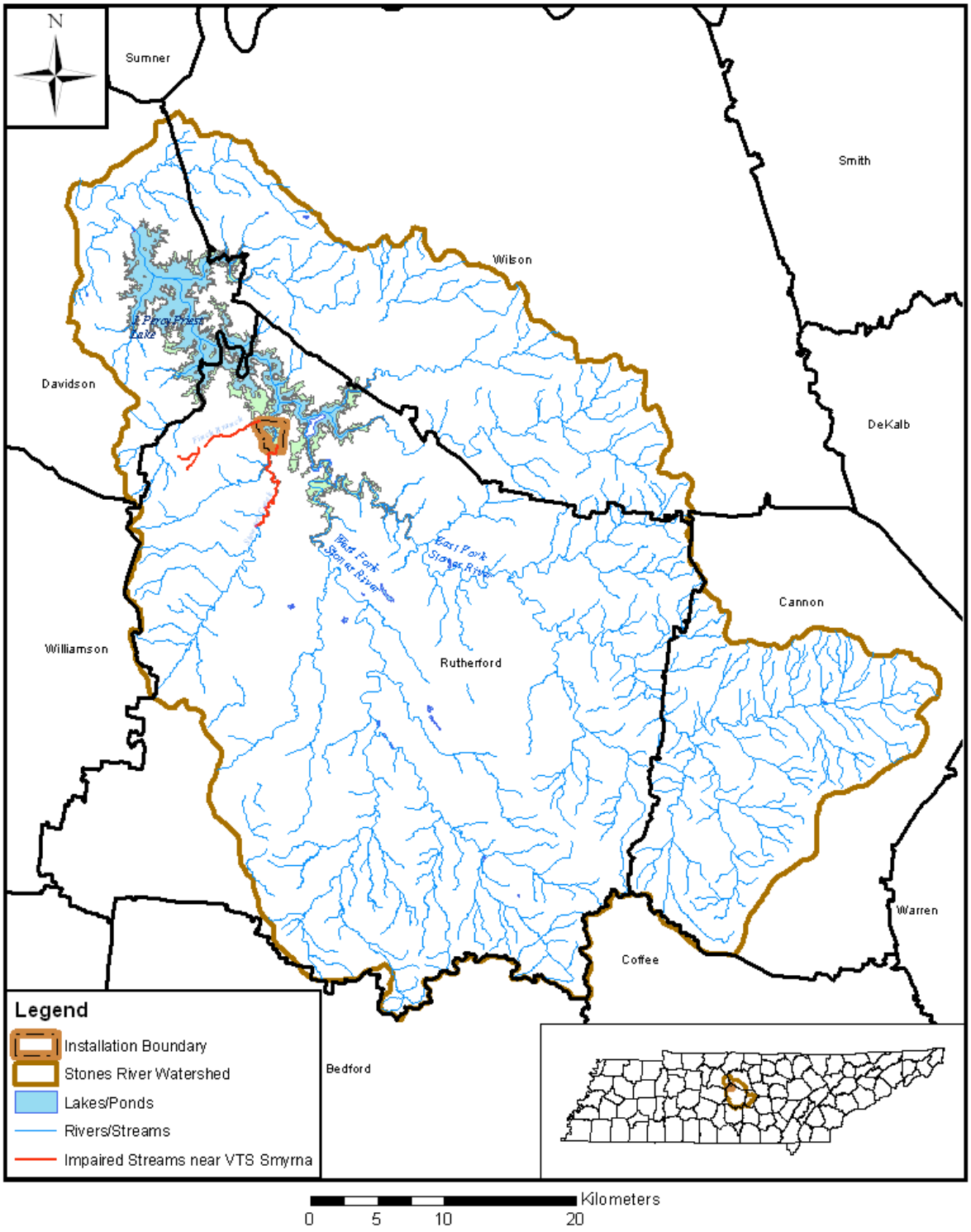

Figure 3.4: Stones River Watershed, noting impaired streams on or near VTS-Smyrna.

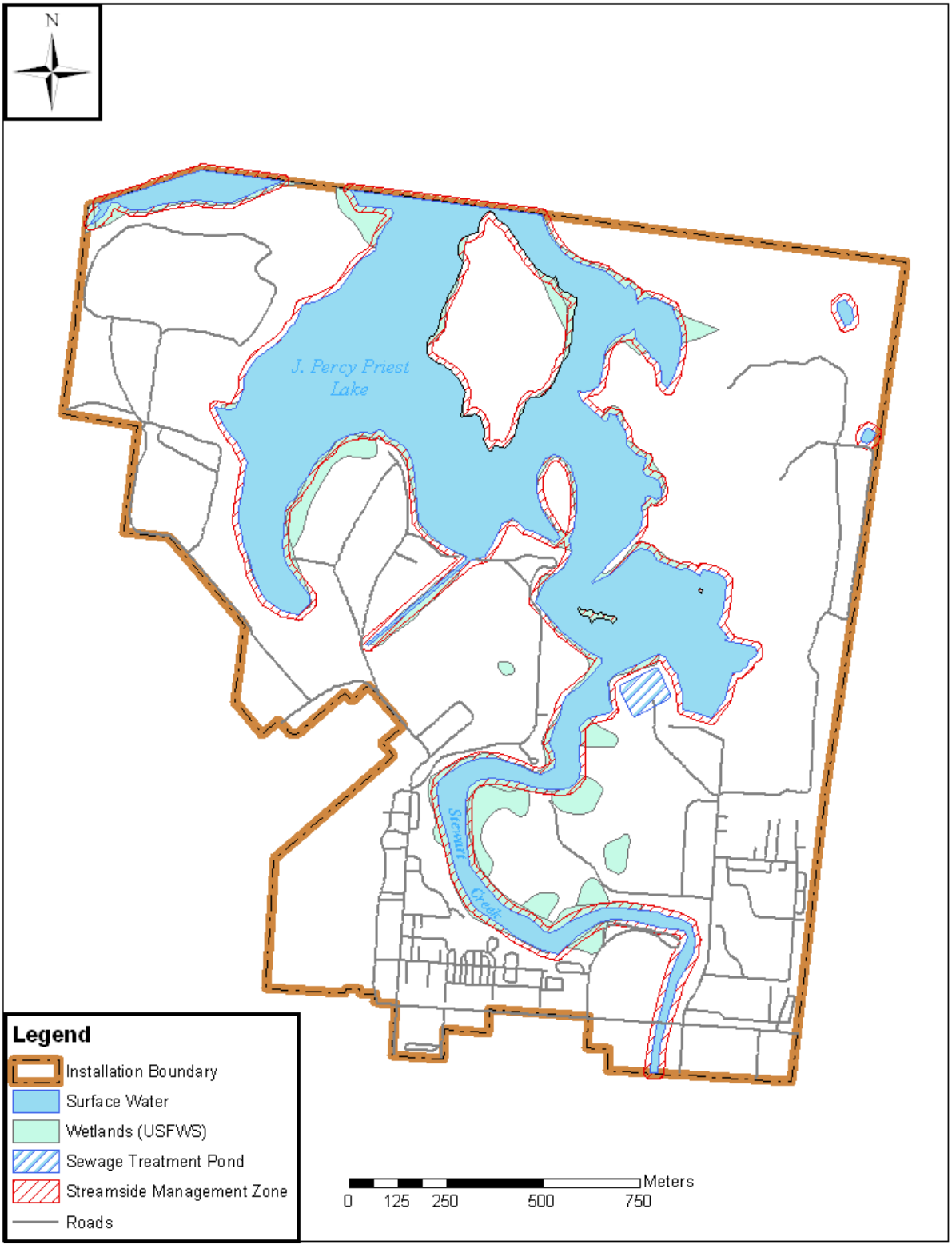

Figure 3.5: Surface water resources on the VTS-Smyrna.

3.5.1.2 Floodplains

Approximately 200 acres of the training site are inundated by J. Percy Priest Lake for at least part of the year. At winter draw-down of the lake, a significant portion of that acreage is a mudflat. Approximately 80 percent of the undeveloped areas of the training site lie within the 100-year floodplain.

According to the U.S. Federal Emergency Management Agency (2007), the area including and immediately surrounding VTS-S is located in an area of high flood risk. This designation indicates that there is a 1% chance of flooding at the training site each year, and that there is a 26% chance of onsite flooding during the next 30 years. This risk is mitigated to a certain degree by the ability of USACE engineers to lower water levels at J. Percy Priest Lake in anticipation of excessive precipitation; however, such scenarios may not always be predicted. In some cases, reservoir levels may need to be allowed to reach the maximum flood storage capacity of 504.5 feet AMSL. Restrictions are placed on construction and other land altering activities below the 508-line (508 feet AMSL; Figure 3.5) on all properties bordering J. Percy Priest Lake, including VTS-S, to allow the USACE the ability to flood this region, if necessary (see Section 2.1.2).

May 2010 Flooding: A series of unusually strong storms fed by a stationary front bringing humid, tropical air up the Mississippi River valley dropped up to 15" of rain in a two-day period (May 1-2, 2010). Over 13" was recorded in Nashville. This storm system caused record flooding in west and middle Tennessee, including the Cumberland and Tennessee Rivers. The J. Percy Priest dam was nearly overtopped during this flooding, as were other dams in the Cumberland system, and the spillway gates were opened to avoid overtopping. The peak water level recorded by the USACE for J. Percy Priest dam was 504.9' MSL (USACE 2010). As Figure 3.6 shows, much of the undeveloped portion of the VTS-S was flooded during this event. No structures were affected, however, and overall damage on the training site was minimal.

In April 2011, high water again closed several recreation areas along J. Percy Priest Lake, although there was not substantial flooding in the region. On the VTS-S, portions of the training areas were again inundated, but there was no significant damage or impact on training.

3.5.2 Ground Water

VTS-Smyrna lies above the Central Basin aquifer which consists of generally flat-lying carbonate rocks of Ordovician to Devonian age and underlies the Central Basin physiographic province. Ground water is stored in and moves through solution-enlarged vertical joints and horizontal bedding planes. Wells commonly yield 5 to 20 gallons per minute and are an important source of drinking water throughout much of the Central Basin.

The flow system in the Central Basin aquifer is generally 300 feet or less below the surface. Ground water depth at VTS-S ranges from two to three feet near Stewart Creek to as much as 40 feet at the training site's highest elevations. Ground water is recharged via the percolation of precipitation into the Central Basin aquifer. Nevertheless, some fractures and faults through the Central Basin aquifer system may allow recharge to the underlying Knox aquifer, whose upper formations can also provide substantial quantities of water to wells in the Central Basin at depths of 1000 feet or more (Brahana and Bradley 1986).

Figure 3.6: Flooding on VTS-Smyrna on 4 May 2010. Dark blue indicates known flooded areas; light blue indicates extrapolated flooding**.**

Ground water at VTS-S, and throughout most of the Central Basin, is rich in carbonic and other organic acids which slowly dissolves the limestone bedrock (Lose and Assoc. Inc. 1994). The resulting voids in the carbonate rock may eventually form extensive cave networks or collapse and create sinkholes or depressions on the ground's surface. Geologic features formed in such scenarios are termed "karst" topography and are found throughout Middle Tennessee. The nature of karst features allows surface and ground waters to have more direct contact and significant interactions with one another, thereby underlining the importance of responsible management of each system.

There are numerous sinkholes in the northeastern corner of the training site (see Section 3.2; Figure 3.2), each of which is individually marked and flagged. Two of these of these have small, inconspicuous openings at the surface but are deep and potentially hazardous to VTS-S personnel, contractors, or trespassers should they decide to travel into the off-road area. Access is restricted to foot traffic in these areas and training exercises are not recommended. The sinkholes have been posted to indicate restricted access, but further determination and marking of the potential use of the entire area is needed.

3.5.3 Water Quality

Stewart Creek's designated use classification, according to the Tennessee Department of Environment and Conservation (TDEC) Rule 1200-4-4, includes fish and aquatic life, recreation, irrigation, and livestock watering and wildlife. From Harris Branch to Rock Fork Creek (Figure 3.4), Stewart Creek is partially supporting of the designated uses listed above (EPA 1998, 2007). "Partially supporting" means that water quality is considered moderately impacted by pollution and that water quality criteria are exceeded with some frequency. The primary sources of contamination to Stewart Creek are siltation, suspended solids, and nitrate pollution originating from above ground and storm sewer runoff in surrounding urban and industrial areas as well as flow alteration from construction activities.

Some portions of Stewart Creek are listed on the State of Tennessee's 303(d) list for nitrate contamination and for loss of biological integrity due to siltation (TDEC 2008). This designation applies to 7 miles of Stewart Creek upstream of VTS-S and ends approximately 550 yards downstream from the southern boundary of VTS-S (EPA 2007). Several tributaries of Stewart Creek are also impaired for the same reasons, including Finch Branch, which empties into J. Percy Priest Lake just outside the most northwestern boundary of VTS-S.

3.5.3.1 Water Quality Assessments

An initial water quality assessment was conducted on the portion of Stewart Creek within the boundaries of the VTS-S during the fall (low-flow) of 1998 and the following spring (high flow) (SAIC 1999). Two stations were sampled: one upstream in Stewart Creek off the shore of TA3 and the second off the shore of TA5 where the creek widens into the reservoir.

Results from this study indicated that water quality in Stewart Creek on the VTS-S was generally good, with low concentrations of toxic metals, nutrients, anions, and fecal coliform. Inconsistent results were found for several analytes. In the December 1998 sampling, potassium, chloride, sulfate, total dissolved solids, and total organic carbon were higher than the April 1999 sampling date. Higher December concentrations were most likely due to lower flows and lower temperatures. All of the concentrations were within ranges expected to be harmless to aquatic biota. Higher concentrations of calcium, total fecal coliform, and total suspended solids were found during the April 1999 sampling period. Based on the measured parameters, the water quality at the two sites sampled is sufficient to support benthos and fish communities.

Biosurveys of the benthic macroinvertebrate communities at each sampling point were also performed during this baseline study. Results revealed that relatively few taxa and numbers of individuals occupied

the waters of Stewart Creek at the time of survey. This lack of population density and diversity was attributed to low habitat availability, an intrinsic feature of many embayments, as well as potential point source discharges found upstream of the training site's surface waters. While neither of these impacts appears to be aggravated by the activities occurring at VTS-S, these results highlight the need to take extra care to avoid soil erosion, sedimentation, and imposition on Streamside Management Zones on the facility.

More recent water quality data (54 sampling events spanning 2001-2007) has been obtained from TDEC's Division of Water Pollution Control (unpublished data) at Stewart Creek sample sites 0.8 to 13.7 miles upstream from VTS-S. Mixing and backflow of waters from impoundments such as J. Percy Priest Lake into upstream tributaries make analysis of such a wide range of sampling sites necessary. During these sampling events, E. coli and fecal coliform samples were collected that exceeded 126 colony forming units per 100 ml (TDEC Water Quality Rule 1200-4-3-.03) on at least 28 out of 54 sampling events for E. coli and 27 out of 56 sampling events for coliform. Higher levels of both E. coli and coliform occurred during winter months.

Dissolved oxygen (DO) levels in water samples taken from the 2001-2007 time period noted above were within designated water quality standards during this same period of sampling. The State of Tennessee's General Water Quality Criteria states that DO levels for wadeable streams in subecoregion 71i "shall not be less than a daily average of 5.0 mg/l with a minimum DO level of 4.00 mg/l." A reading taken September 19, 2006 of 4.23 mg/l is below the required daily average of 5.0 mg/l. The available data suggests that this is the only sample taken on this day indicating a violation of the daily average of 5.0 mg/l waster quality standard. However, this appears to be a one time event; sampling data from before and after the 4.23 mg/l result were all above the 5.0 mg/l standard.

Other parameters monitored during TDEC sampling include metals such as cadmium, nickel, copper, arsenic, iron, aluminum, silver, and zinc, and nutrients including phosphorus, nitrogens and sulfate. Monitoring for these parameters indicated levels well within acceptable water quality standards.

A follow-up aquatic habitat survey was conducted in 2007-8 for the purpose of reassessing water quality and aquatic habitat quality and describing the macroinvertebrate and fish communities on VTS-S (URS 2009). Sampling was conducted at eight locations – five in the lake and three in the flowing portion of Stewart Creek – in November-December 2007 and in March 2008. Three of the sampling points were reference points located beyond the training site boundaries: two were in bays of the lake downstream of VTS-S and one was located on Stewart Creek upstream of the training site.

Water quality was found to be generally good and conducive to supporting a diverse aquatic community. Measured variables including pH, dissolved oxygen, conductivity, turbidity, nitrogen concentration (measured as total kjeldahl nitrogen), hardness, and total suspended solids were within regulatory limits at both lake and stream stations. Dissolved oxygen measurements did show substantial variation among the sampling points that suggests it is impacted by point source input from the sewage treatment plant upstream of the VTS-S.

Stream habitat was considered not impaired under the Tennessee Department of Environment and Conservation protocol for stream habitat assessment. The lake stations had poor habitat in the open water areas due to silty substrate, but the shoreline habitat was generally good.

The macroinvertebrate survey found low diversity of benthic invertebrates at both the stream and lake sampling points. Both sampling events found a much lower number of individuals and of species than in the 1999 survey. This difference may have been caused by sampling location discrepancy: the

macroinvertebrate samples in 2007-8 were collected in open water habitats which typically support less diversity than shoreline sites. Fish were abundant at both sampling periods, but diversity scores indicate that the fish community is fair to poor at all locations. The predominance of omnivorous species and low numbers of more sensitive carnivore or insectivore species were responsible for the low diversity scores; however, the results from the training site samples were consistent with the reference points from beyond the site boundaries.

These water quality studies should be repeated regularly to identify changes from previous investigations. In addition, as more thorough macroinvertebrate study is recommended to determine whether the variation between the 1999 and 2008 results is due to differing sampling efforts or degradation of the macroinvertebrate population.

3.5.3.2 Streamside Management Zones

Maintaining vegetative buffers (i.e., undisturbed woody vegetation) commonly called Streamside Management Zones (SMZs) along streams and other waterways is an extremely effective water pollution control measure. Such buffer zones filter and decrease velocities of stormwater runoff, protect banks from channel erosion by stabilizing soils, provide flood control, and help support various aquatic and streamside habitats.

The Town of Smyrna's Water Quality Buffer Zone Policy requires that a vegetation buffer zone extend a minimum of 2 times the width of the channel on either side of the channel of all perennial and intermittent stream waterways and wetlands (see Section 5.1.5 for more detail). This requirement applies to VTS-S along the banks of Stewart Creek up to its confluence with J. Percy Priest Lake. As Stewart Creek has been impounded by the J. Percy Priest Dam, the current channel width is not that of a true stream, the waterway type for which this guidance was written. Therefore, a uniform 50 foot SMZ will be demarcated and maintained along either side of the Stewart Creek shoreline at VTS-S (Figure 3.5). Similarly, the USACE requires that vegetation buffers of 50 feet be maintained along all shores of J. Percy Priest Lake. This measurement is taken from the shoreline when the lake is at summer levels. Mapping and posting of SMZs along the waterways of VTS-S was completed in 2009-10.

3.5.3.1 Water Supply

Potable water for VTS-S is supplied by the Town of Smyrna from J. Percy Priest Reservoir. The town of Smyrna can provide up to 8,000,000 gallons per day for the local community. A storage tank on the training site has the capacity to hold 500,000 gallons of water.

3.5.3.2 Wastewater Discharge

All domestic wastewater at VTS-S, as well as process wastewater produced from the CSMS, including its associated wash rack, is discharged to the Town of Smyrna sanitary sewer system. The industrial processes that generate wastewater at the AASF, CSMS, and FMS include, in part, floor cleaning, parts washing, and equipment washing at the washracks. The CSMS also has a paint booth operation that generates wastewater. Wash racks located at the FMS and the AASF are discharged to J. Percy Priest Lake through the stormwater system. Wastewater from all washracks passes through oil/water separator devices before being discharged. Industrial stormwater from AASF, CSMS, and FMS is discharged directly to Stewart Creek and/or J. Percy Priest Lake. Outside the cantonment on VTS-S, portable sanitary units are used and wastes are removed by permitted, licensed septic haulers.

The stormwater system at VTS-S is outdated and in need of modification. Particular updates needed include the installation of new water quality units into the existing drain line that serves the flight line

area and installation of a new “oil stop” valve into the existing drain line from the aviation fuel farm. This would provide primary treatment to the stormwater being conveyed to Stewart Creek by reducing the amount of sediment, floatables, and free oil and grease present in the site’s stormwater emissions. In addition, the total number of stormwater outfalls into J. Percy Priest Lake and Stewart Creek need to be reduced. Stormwater flows should be separated so that the industrial flows from the AASF and Shop areas are directed to one or two dedicated outfalls.

3.6 WETLANDS

To meet the definition of "jurisdictional wetland" under Section 404 of the Clean Water Act, an area must exhibit three traits: (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology. Areas that are periodically wet but do not meet all three criteria are not jurisdictional wetlands subject to section 404 of the Clean Water Act. Areas that have been disturbed or that are classified as problem area wetlands, however, may not meet all three criteria due to man-induced alterations, but are still considered jurisdictional wetlands. Wetlands store water and minimize flooding. They also filter sediment, excess nutrients, and other impurities from water as it is stored. The aquatic vegetation found in wetlands protects shorelines from erosion and provides food and cover for wildlife. Wetlands provide habitat for micro- and macro-invertebrates that use or break down nutrients and contaminants.

3.6.1 Wetlands Vegetation

In 2000, SAIC conducted an inventory of wetlands at VTS-S using routine determination methods established by the USACE (U.S. Army Corps of Engineers 1987). According to this survey, approximately 1.3% (11 acres) of VTS-S is covered by potential jurisdictional wetlands, including approximately 4.6 acres of bottomland hardwood wetland, 3.9 acres of palustrine emergent wetlands, and 2.5 acres of scrub shrub wetlands. These habitats are described below; a complete list of species found at VTS-S, including scientific names, can be found in Appendix F. As the SAIC survey did not include GIS mapping of potential wetlands, the wetlands data depicted in Figure 3.5 were obtained from the National Wetland Inventory, which is managed by the USFWS and is available at: http://www.fws.gov/nwi/.

The mixed bottomland hardwood habitat type occurs in narrow to wide bands in floodplain areas along the banks of Stewart Creek and low-lying areas adjacent to the shores of the J. Percy Priest Reservoir. These sites may be frequently inundated with floodwaters during the wet season (December to April), and flooding is of sufficient duration during the growing season to create wetland conditions. These sites are dominated by mature trees and have not been significantly disturbed for many years. Dominant tree species include sycamore, boxelder, green ash, silver maple, slippery elm, bald cypress, and black willow.

Palustrine wetlands at VTS-S have formed as a result of reservoir management of the J. Percy Priest Reservoir and are found adjacent to the lake on the mainland western boundary of TA2. These areas are dominated by graminiod and herbaceous species, with a few scattered shrubs or small trees. Wetlands of this type at VTS-S have large expanses of open water, up to one meter deep, and cover at least several acres. Dominant persistent species include numerous members of the sedge, rush, and grass families, such as wool-grass, soft rush, and cattail. Other common nonpersistent herbaceous species include marsh smartweed, Pennsylvania smartweed, arrowleaf tearthumb, jewelweed, and bushy seedbox. Hydrology varies from semi-permanently to permanently flooded and is controlled by pool elevation of the lake. These sites are usually wet for extended periods (greater than one month) during the growing season.

Scrub shrub wetlands occur in floodplain areas along the shores of J. Percy Priest Lake adjacent western boundaries of TA2 and are often found in areas that have seen heavy disturbance by humans. They may

represent a transitional stage of succession between a marsh and a forested wetland. Dominant species include buttonbush, silky dogwood, roughleaf dogwood, river cane, elderberry, spicebush, and saplings of many of the tree species found in the site's bottomland hardwood wetland areas. Hydrology varies from temporarily flooded to seasonally flooded, saturated, or semi-permanently flooded. These sites may be wet for brief (one to two weeks) to extended periods (greater than one month) during the growing season; some of these sites may remain saturated for much of the growing season. Scrub shrub communities are intermixed with other wetland types at VTS-S.

3.6.2 Wetlands Inventory and Mapping

Aerial photographs, visual observation, and/or photo point monitoring can be used to effectively monitor onsite wetlands to ensure that avoidance measures have been effective and to ensure that no additional rehabilitation projects are needed in the areas surrounding the wetlands. Such monitoring could be integrated into a routine site assessment performed annually.

Formal USACE wetlands delineation mapping has not yet occurred at the training site; this would more precisely describe the conditions and coverage of wetlands at VTS-S than the survey performed in 2000 and guide appropriate management practices. The wetlands inventory performed at that time assembled subjective field data to form a rough approximation of possible wetlands found at VTS-S and is not to be considered exhaustive. GIS data was not captured during that initial assessment of the training site's wetlands; therefore, detailed maps of these areas are not available at this time. A resurvey of the wetland areas was initiated in FY10; results are expected in mid-2012. This resurvey includes collection of GIS information for all wetlands on the training site.

Accurate surveys of wetland and aquatic flora, fauna, threatened and endangered species, and exotic species conducted at regularly scheduled intervals would provide valuable insight into the health of the training site's wetlands, associated waterways, and surrounding habitats. Macroinvertebrate bioassays provide data that is particularly useful when assessing the biological integrity of an aquatic setting as these animals react very quickly to environmental changes and are generally plentiful in most aquatic settings. Therefore, if there is reason to suspect change in the water quality of the training site's wetlands such as a dramatic change in water levels or contamination due to construction, natural disaster, or a hazardous chemical spill, a macroinvertebrate survey may be initiated as a precursor to recovery efforts. An analysis of macroinvertebrate populations at multiple points at VTS-S was conducted by URS in 2008 (URS 2009) and found relatively low diversity levels of benthic invertebrates in all habitats sampled.

3.7 VEGETATION

The VTS-S is part of a larger ecosystem that is known as the Interior Low Plateau Section of the Eastern Deciduous Province (Bailey 1980; McNab and Avers 1994). Prior to widespread settlement and development, the natural landscape was composed of a mosaic of interacting communities linked by hydrologic flow, nutrient cycling, fire, animal movement, and transitions between communities. The modern landscape supports islands of somewhat natural areas (with one or more communities present) within a sea of anthropogenic features such as roads, buildings, farms, and cities. Fire has probably been the principal historical disturbance, previously burning over moderate-sized areas between natural barriers with low frequency and low intensity (McNab and Avers 1994). Climatic related influences include occasional droughts and ice storms.

In recent history, the most significant impact to vegetation communities at VTS-S was caused by the impoundment of the Stones River by the J. Percy Priest Dam in 1968. This action drastically altered the hydrogeology of all surrounding areas, which directly (and in some cases, immediately) affected

vegetation adjacent to the lake by creating aquatic habitat where there were once riparian and mesic communities and converting additional mesic uplands to bottomland and riparian ecosystems.

3.7.1 Vegetative Cover

At the time of European settlement, most of VTS-S was probably covered by patches of oak-hickory forest, cedar glade, and possibly a mosaic of bluestem prairie-oak-hickory forest (USFWS 1995, Shea 1999). Approximately 43% of VTS-S is currently forested. The principal cover type is eastern redcedar, which is found in dense stands in TA2 and likely represents secondary regeneration on previously cleared farmland. Oak-dominated forests occur in some of the drier upland sites, while sugar maple, green ash, and hackberry dominate much of the more mesic forest and bottomland areas adjacent to Stewart Creek and J. Percy Priest Lake.

During a vegetation community survey completed in 2007, AMEC identified a total of 284 plant species at VTS-S [49 trees, 23 shrubs, 18 vines, and 194 herbaceous plants (see Appendix F for complete flora list)] and described 12 vegetation associations within six different natural vegetation communities. These community types include: (1) upland mixed redcedar forests, (2) closed canopy, upland redcedar woodlands, (3) open canopy, redcedar stands, (4) closed canopy, upland deciduous forest, (5) closed canopy, floodplain/bottomland hardwood forests, and (6) open field, managed grasses/herbaceous plants. The community classifications are described below and are depicted in Figure 3.7.

3.7.1.1 Upland, Mixed, *Juniperus virginiana* Forests (map unit R1, Figure 3.7)

Juniperus virginiana-Aesculus glabra Xeric Rock Woodland (R1)

This community type is most prevalent in thin, rocky soils on lakeside bluffs. The canopy is mostly small/stunted eastern redcedar and Ohio buckeye. The understory is sparse but contains poverty oat grass and blunt lobe cliff fern over rocky soil. This woodland type transitions to more mesic oak-hickory forest with shagbark hickory, scarlet oak and southern red oak being more common in the canopy.

3.7.1.2 Closed Canopy, Upland *Juniperus virginiana* Forest (map unit F1)

Juniperus virginiana –Celtis laevigata/*Frangula caroliniana* Forest (F1)

This forest type is found primarily on dry-mesic upland sites and occupies the largest area of any forest cover type at VTS-S. Most of this forest association occurs as dense, even-aged stands of early seral eastern redcedar and sugarberry. Based on both topographic location and the presence of occasional oak, hickory, and sugar maple in the understory, it is assumed that this association would succeed to dry-mesic oak-hickory or maple-ash-oak forest in the absence of disturbance. However, due to the relatively heavy clay soils and their water-holding capacities, portions of this forest type may naturally remain as redcedar-sugarberry-hackberry stands. This area was heavily disturbed by clearing and agricultural use for many years in the past and the historic forest type that occurred in this area may be difficult to determine.

3.7.1.3 Open Canopy, *Juniperus virginiana* Woodland (map unit C1)

Open *Juniperus virginiana* stands (C1)

These areas generally have widely spaced eastern redcedar and occur in relatively dry portions of the training site. The understory in these areas consists primarily of old field species as described under O1. Therefore, it appears that these stands are the result of past logging, clearing, and possibly farming, as well as recent training exercises, and would likely succeed to surrounding forest types in the absence of disturbance. No areas meeting general characteristics of cedar

glades or barrens were observed in these areas during the field investigation. However, some areas, particularly near the northeast corner of the training site, appear to be significantly drier than most of these stands and contain winged elm, wiry panic grass, poverty oat grass, hairy white old field aster, and patches of prickly pear cactus. While no typical indicators of glade flora were found, it is unclear if some of these areas may have historically contained cedar glade plants.

3.7.1.4 Closed Canopy, Upland Deciduous Forest (map units F2, F4, F7, and F8)

Acer saccharum-Fraxinus americana-Quercus (*shumardii, rubra, falcata*) Forest (F2)

This forest type occurs in the transition between mesic or bottomland forest and drier eastern redcedar or oak-hickory forest. Canopy species include sugar maple, white ash, southern red oak, northern red oak, scarlet oak, and white oak. The overall appearance of this forest type is one of a sugar maple-oak association and differs from F7 by having a larger percentage of the canopy dominated by oaks and a patchier, sparser, and less diverse herbaceous layer. The understory is relatively open with occasional patches of black snakeroot and individuals of Virginia grapefern occurring. Virginia creeper and poison ivy also occur in patches or clumps.

Variations within this forest type include areas of nearly pure stands of regenerating sugar maple. These areas have an overstory of eastern redcedar and an understory of leaf litter. Another variation occurs where this forest type transitions to bottomland, and sugarberry and American elm become more prominent.

Celtis laevigata/*Symphoricarpos orbiculatus* Forest (F4)

This forest type occupies the disturbed forest area generally between F1, in drier areas, and F3, in the lowlands along Percy Priest Lake. This forest type is similar to F1; however it differs by having coralberry as a dominant shrub. In fact, coralberry often represents up to 75% or more of the understory species in this forest type. The canopy is typically dense and even-aged, similar to F1, and lacks vertical stratification. However, the shrub and herbaceous layers appear more lush, dense, and diverse than in F1, with species such as wingstem, Japanese grass, butterweed, and occasional sedges occurring throughout. Japanese grass also covers large portions of the forest floor in this and other forest types in the study area.

This forest type may have historically been mesic maple-ash-oak forest because a number of areas contain sugar maple seedlings in the understory and because of the general topographic position. However, portions of this forest type may succeed to a type of bottomland forest of sugarberry and American elm.

Acer saccharum-Fraxinus americana-Carya (*cordiformis,ovata*)-*Liriodendron tulipifera*/ *Symphoricarpos orbiculatus* Forest (F7)

The forest type is similar to F2 but differs in having fewer oaks and more mesic species in the canopy such as tulip poplar. Other differences include a more lush and diverse herbaceous layer, including species such as green dragon, tall thimbleweed, and mayapple.

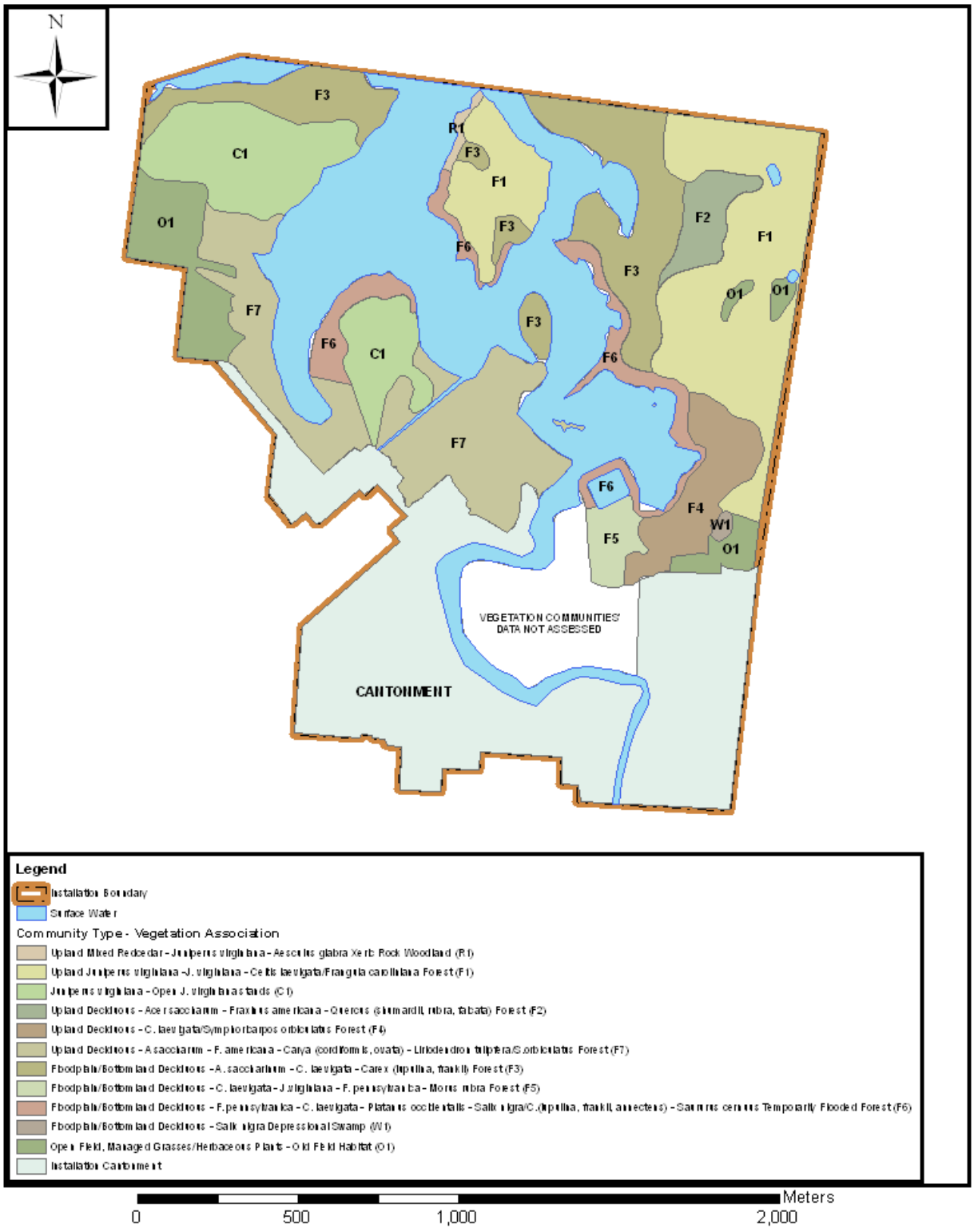

Figure 3.7: Vegetation communities on VTS-Smyrna

3.7.1.5 Closed Canopy, Floodplain/Bottomland Deciduous Forest (map units F3, F5, F6, and W1)

Acer saccharinum-Celtis laevigata-Carex (*lupulina, frankii*) Bottomland Forest (F3)

This forest type occurs on low, wet ground near the margin of Percy Priest Lake. Much of the area where the forest type occurs appears to be a depressional area that is at or near ordinary high water of the lake. In some areas, the canopy is dominated by nearly pure stands of silver maple, while other areas have sugarberry sharing dominance. Some stands, particularly those dominated by silver maple are very open with few shrubs and an almost continuous carpet of sedges in the ground layer. This may be the result of fairly consistent inundation or saturation in these areas that precludes the growth of other species. Coralberry occurs in areas of higher ground.

Celtis laevigata-Juniperus virginiana-Fraxinus pennsylvanica-Morus rubra Forest (F5)

This forest type is similar to F3 and occupies a similar topographic position and location on the soil moisture gradient. However, this type differs in having occasional stands of the floodplain species green ash and red mulberry. This may indicate a slightly lower elevation or wetter soil than found in types F1 and F3. Shrub and herbaceous species composition and understory density are highly similar to F3.

Fraxinus pennsylvanica- Celtis laevigata-Platanus occidentalis-Salix nigra/*Carex* (*lupulina, frankii, annectens*)-*Saururus cernuus* Temporarily Flooded Forest, (F6)

This association occurs in the lowest and wettest areas immediately bordering Percy Priest Lake. Dominant canopy species at the waters edge include black and green ash. In slightly drier locations there are mixed stands of sugarberry, sycamore, green ash, and boxelder. Most of these stands, particularly those at the waters edge, appear to be inundated for a good portion of the growing season. Herbaceous growth is either minimal due to the presence of dense leaf litter (areas of slightly higher ground and less light penetration) or dominated by various sedges as well as other floodplain/bottomland herbaceous species such as swamp smartweed, jewelweed, frogfruit, Virginia water horehound, and bushy seedbox. Other graminoids include green bulrush, rice cutgrass, and woodgrass. Emergent areas intermingled with black willow thickets have vegetation dominated by sedges (as described above) and occasional pure stands of lizard's tail.

Salix nigra Depressional Swamp (W1)

This forest type includes a small, isolated basin occupied by a dense stand of black willow. The understory is mostly leaf litter but contains patchy areas of false nettle, soft rush, and sedges.

3.7.1.6 Open Field, Managed Grasses/Herbaceous Plants (map unit O1)

Old Field Habitat

Old fields are areas that have been mown and maintained. These areas typically have vegetation dominated by dense stands of non-native meadow fescue. Other species include lespedeza, arrow plantain, passion flower, pokeweed, mullein, redtop, alfalfa, Johnson grass, and Canada smooth goldenrod. Native species that do occur are primarily common disturbance-oriented plants. It is likely that these areas would succeed to forest types similar to the surrounding forest if left undisturbed.

The managed grasses/herbaceous plants category includes regularly mowed lawns in the cantonment area, areas of relatively bare soil around some of the firing ranges, and other areas that are mowed or cleared on a regular basis for training purposes. The grass in these areas consists largely of fescue with a mixture of other grasses and weedy herbaceous plants. Such communities are dependent upon continued and regular human activities and maintenance;

otherwise they would be invaded by woody pioneer species. As portions of this area located in the cantonment were not included in the vegetation survey completed in 2007 (AMEC), the entirety of this habitat type is not represented in Figure 3.7.

3.7.2 Forest Management

In recent years, small areas in the forests of VTS-S have been thinned or cleared for training purposes (e.g., trails, bivouac sites); however, to date, the forests at VTS-S have no history of active management.

3.7.2.1 Forest Inventory

A forest inventory and a forest management plan (FMP) were completed in 2006 by Thompson Engineering, Forest Management Group, and Aerostar Environmental Service via a contract through the U.S. Army Corps of Engineers, Mobile District (See Annex 1). The training site was inventoried by training area, to ensure stand identification and management was compatible with other management activities on the training site. Stands were delineated through the use of aerial imagery and ground observations. Sample points were then taken in each stand (number of plots per stand was dependent on acreage of the stand) to collect the physical data needed to calculate timber volumes. The complete data for all forest stands is provided in the VTS-Smyrna FMP (Thompson Engineering et al. 2006) and includes sawtimber and pulpwood volumes (apportioned by species/species groups), dominant and co-dominant species, average basal area and DBH, average number of snags per acre, minimum and maximum tree ages, general health assessment, and current condition of the stand.

The forest inventory determined that a total of 456 acres of VTS-S were covered in forests in April 2005. The forest stands are typically dominated by eastern redcedar, red oaks, and other miscellaneous hardwoods such as maples and hackberries, with a substantial amount of green ash in some stands. Red oaks are co-dominant in some stands, as are hickory, sycamore, and black willow. Timber volumes are given in Table 3.4. The average DBH for the entire installation was calculated as 8.3 inches, and the average basal area was 56.1 square feet per acre. Most stands are 5-30 years old; although some had trees approaching 40 years in age. While some redcedar stands appear to be in the mid to early stages of succeeding into oak-hickory or maple-hickory forest, others, found on poorly-drained, heavy soils, will most likely maintain current compositions. The overall health of the forest stands was classified as good in April 2005.

The forest inventory data was utilized to develop management prescriptions for each forest stand on VTS-S based on forest health and commercial timber production goals. Military requirements and goals were then incorporated into the final forest management plan for VTS-S presented in Annex 1. The forest management plan covers a ten year period and will be reviewed and revised as needed during that time in conjunction with the INRMP review process. The forest inventory should be repeated in 2015 to provide updated information for the next ten-year planning cycle.

Timber harvests will be conducted at VTS-S for the purposes of opening up needed training areas and improving forest health. Both clear-cutting and marked tree thinning practices will be used. The intensity of the thinning is dependent on two factors: 1) training mission needs and 2) prescriptions of the installation's Forest Management Plan. The initial harvesting project will be to thin the densely wooded redcedar stands in TA 2.

Table 3.4 Forest Product Volume Summary for VTS-Smyrna Based on the April 2005 Forest Inventory

Timber Product	Per Acre		Installation Total	
	Tons	Board Feet	Tons	Board Feet
Sawtimber				
Pine	1.5	178.2	685	81,348
Pole	0	0	0	0
CNS	0.1	13.6	46	6,208
Cedar	0.1	13.7	46	6,254
Red Oak	0.8	107.7	365	49,165
Hickory	0.2	19.9	91	9,084
White Oak	0.2	26.5	91	12,097
Ash	0.1	8.8	46	4,017
Poplar	0.5	53.4	228	24,377
Walnut	0.1	16.3	46	7,441
Misc. Hardwood	2.4	316.3	1,096	144,391
Pulpwood				
Pine	0	0	0	0
Hardwood	14.9	5.5	6,082	2,511

3.7.2.2 Prescribed Fire

Prescribed burning is a forest management tool used to improve wildlife habitat, reduce available fuels to minimize wildfire hazard, and control invasive pest plant species. Planned burn schedules will be determined by TNARNG as the annual workplan is developed each year; however, prescribed burning will not take place at VTS-S until substantial timber harvests occur, as many areas are currently too densely vegetated to safely conduct prescribed burns. TNARNG will coordinate training activities to avoid conflict and will also, were feasible, provide trained personnel to assist with burning activities. Future uses of prescribed fire at VTS-S are further detailed in Annex 2.

3.7.3 Invasive Pest Plants

Non-native plants have become a significant part of most ecosystems in this age of extensive international travel and trade. Many of the species brought into a new environment remain uncommon, requiring human intervention to reproduce and/or spread. Certain species, however, are invasive: they reproduce prolifically and spread rampantly throughout an ecosystem, causing significant disruption to the natural system. Because the predators and diseases of exotic species are rarely transplanted with them, the invasive pests lack natural control mechanisms. Invasive plants typically displace native species and change the species composition of a community. They can also change edaphic characteristics of the site by altering such factors as water use, shade, or flammability.

A number of invasive plant species can be found on VTS-S. A complete survey of the training site was completed in 2005 (Dynamic Solutions, LLC 2005a). Chief among the problem species are: privet (*Ligustrum* spp.), multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), silver thorn olive (*Eleagnus pungens*), tree of heaven (*Ailanthus altissima*), sericea lespedeza (*Lespedeza cuneata*), Japanese honeysuckle (*Lonicera japonica*), Japanese grass (*Microstegium vimineum*), Johnson grass (*Sorghum halapense*), mimosa

(*Albizia julibrissin*), and winter creeper (*Euonymus fortunei*). All of these species are listed as "severe threats" on the Tennessee Exotic Pest Plant Council list (TN-EPPC 2004). All landowners are requested to control such plants if found growing on their property. In addition to impacting native communities and threatening rare or endangered plant species, these exotic pest plants can interfere with training activities. Privet, olives, and multiflora rose, in particular, can create dense, difficult to traverse stands which make an area unsuitable for mounted or dismounted maneuvers. Methods for managing these species will be discussed in section 4.2.10 and in Annex 3.

Complete eradication of these problem species is unlikely to be possible. In the case of small, recently established infestations – tree-of-heaven and winter creeper at VTS-S – rapid control efforts may eliminate the species from the site. For the more prevalent species, reducing their numbers and extent and limiting their impacts on native species is the goal. Control of these species is typically a combination of manual/non-chemical efforts and application of herbicides. A detailed plan of attack against these invasive pest plants is presented in Annex 3, Invasive Pest Plant Control.

3.8 FISH AND WILDLIFE

3.8.1 Migratory Birds

Migratory birds are defined in part 10, Title 50 of the U.S. Code of Federal Regulations as:

> …any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in Sec. 10.13, or which is a mutation or a hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof…

and include species with at least some populations breeding in the United States and/or Canada. A list of the protected bird species is available at http://www.fws.gov/migratorybirds. Songbirds, shorebirds, and waterfowl may fall into this category, as well as birds that may be perennial residents in some areas. Attention has been placed on such a large number of species since many birds in this group are experiencing steep rates of population decline. It is DoD policy to promote and support a partnership role in the protection and conservation of migratory birds and their habitat by protecting vital habitat, enhancing biodiversity, and maintaining healthy and productive natural systems on DoD lands consistent with military mission.

In Tennessee, over 250 bird species regularly depend on the food and shelter provided by forests, thickets, and fields located throughout the state during semi-annual migrations, breeding and nesting seasons, and for some, perpetually throughout the year. A baseline survey of the birds utilizing the training site was completed in 2008 (AMEC). During this study, 144 bird species were documented using habitats found on VTS-S (see Appendix F for complete list). Of these, all but seven species are Migratory Birds as defined above. The native wild turkey (*Meleagris gallopavo*) and northern bobwhite (*Colinus virginianus*), are excluded because populations of these species are typically year-round residents of an area and do not migrate seasonally. The non-native bird species found at VTS-S, Eurasian collared dove (*Streptopelia decaocto*), rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*), are excluded because their occurrences in the United States are due to either unintentional or intentional human-influenced release.

Four habitats on the property have been noted as being especially valuable to avian communities due both to species richness observed and to the "uniqueness" of the locations: the lake and stream shorelines of

the installation; wetland areas found in TA2; the former sewage treatment pond in TA2; and the woodlands surrounding Cannon Cemetery in TA6, in which a great-horned owl (*Bubo virginianus*) was confirmed to have successfully fledged two young (AMEC 2008).

The Migratory Bird Treaty Act (16 U.S.C. 703-711) provides protection for migratory birds. Under the Act, willful, knowing attempts to take, kill or remove migratory birds is unlawful unless authorized by the U.S. Fish and Wildlife Service. Feathers or other parts, nests, eggs, and products made from migratory birds are also covered by the Act. Take is defined as pursuing, hunting, shooting, poisoning, wounding, killing, capturing, trapping, or collecting. Migratory bird hunting regulations, established by the U.S. Fish and Wildlife Service, allow the taking, during designated seasons, of ducks, geese, doves, rail, woodcock, and some other species. In addition, permits may be granted for various non-commercial activities involving migratory birds and some commercial activities involving captive-bred migratory birds. Misdemeanor or felony violations of the Act by individuals or organizations may result in significant fines or imprisonment.

Executive Order 13186 (10 January 2001), "Responsibilities of Federal Agencies to Protect Migratory Birds" requires each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a MOU with the USFWS within two years that shall promote the conservation of migratory bird populations. If any measurable negative effects on migratory bird populations at VTS-S are identified, the TNARNG will develop a MOU with the USFWS within two years.

3.8.1.1 Wood Ducks

As a contribution to waterfowl habitat at VTS-S, a local eagle scout initiated a project building nesting boxes for wood ducks (*Aix sponsa*) and installing them along the shores of J. Percy Priest Lake. The wood duck is an uncommon to locally common summer resident of Tennessee, preferring nesting sites in naturally-occurring hollows of dead or unhealthy trees found in wooded areas located alongside marshes, streams, and lakes (Robinson 1990). Wood ducks exhibit a high rate of return to the same breeding area each year and often choose the same nesting sites for many years in a row (Kirby 1990). Egglaying begins as early as March and can extend through much of June (Goetz and Sharp 1980).

Fourteen wood duck boxes were installed early in the summer of 2004, and eleven more were installed in 2006, in the early fall. Each winter (December to February), the boxes are cleaned and inventoried for suspected types of inhabitants, estimated number of hatched eggs from the previous year, if applicable, and for box condition. Repairs and replacements are performed, when necessary. Supporting this species of migrating waterfowl helps to increase the biodiversity of the entire training site.

The 2010 wood duck box inventory found 20 boxes in functional condition; 17 contained wood duck eggs or remnants indicating a total of 139 successful hatchings. Twenty un-hatched eggs were found. One box was inhabited by a roosting eastern screech owl which was left undisturbed, and two boxes contained squirrel nesting material which was removed.

3.8.2 Wildlife and Game Management

A comprehensive mammal survey conducted by the Conservation Management Institute in 2005 detected twenty mammalian species at VTS-S including, among others: white-tailed deer (*Odocoileus virginianus*), grey fox (*Urocyon cinereoargenteus)*, prairie vole (*Microtus ochrogaster*), cottontail rabbit (*Sylvilagus floridanus*), and raccoon (*Procyon lotor*) (see complete list in Appendix F). Numerous waterfowl, wild turkey, and perennial songbirds also exist in the area.

To date, no hunting has occurred at VTS-S due to the training site's relatively small size and proximity to heavily developed civilian areas; however, the USACE-managed Wildlife Management Areas bordering the training site are open to hunting during appropriate seasons.

J. Percy Priest Lake is routinely stocked by TWRA with numerous game fish species. The primary game fish found in the lake are multiple species of bass and catfish, white crappie, Asiatic carp, and bluegill (URS 2009). Fishing on VTS-S from the shores of J. Percy Priest Lake is open to TNARNG personnel and is allowed with permission from the Facility Manager or designated representative (Bldg. 609). A valid Tennessee fishing license is also required. Equipment is restricted to rod and reel or cane poles with lines (no trot lines, snag lines, or nets are allowed), and catch limits are as set forth by Tennessee State Law.

3.9 RARE, THREATENED, OR ENDANGERED SPECIES

3.9.1 Rare plant species at VTS-S

A survey for sensitive, threatened, or endangered plant species was performed by AMEC in 2006 during a vegetation community survey of VTS-S. Although no state or federally listed plant species were found during this survey, potentially suitable habitat may exist for at least some of the plants listed. The Tennessee Division of Natural Heritage (TNDNH) and the USFWS have identified four federally endangered plants, seven state endangered plants, eleven state threatened plants, and an additional seven state special concern plants found within a five mile radius of VTS-S (Table 3.5). These species predominantly occur in cedar glade and barrens habitats. Those portions of the VTS-S which might support such ecotypes have been greatly affected by both past land use history and the aggressive spread of several non-native exotic species, resulting in poor habitat quality. To date, none of these species has been found on the training site.

A survey for the Stones River bladderpod (*Lesquerella stonensis*), was conducted in the spring of 2008 (SpecPro). Stones River bladderpod was defined as a ***species at risk*** in a 2004 report prepared for the USFWS and DoD (NatureServe). While *species at risk* are not currently covered by the Endangered Species Act, they are considered to be critically imperiled. Taking a proactive management approach to such populations and to the habitats which support them could help to avoid federal listing and protect the species, while also ensuring that the installation's capacity for military training activities is not diminished. There are documented occurrences of Stones River bladderpod within 2 kilometers of VTS-S; however, the 2008 survey did not detect this species on the installation.

3.9.2 Rare animal species at VTS-S

According to a baseline survey of mammals, completed in 2005 (Conservation Management Institute), VTS-S is home to the meadow jumping mouse (*Zapus hudsonius*), an organism with Tennessee State status of "in need of management." TWRA defines "in need of management" as:

> Any species or subspecies of nongame wildlife which the executive director of the TWRA believes should be investigated in order to develop information relating to populations, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures necessary for their continued ability to sustain themselves successfully. This category is analogous to "Special Concern."

Table 3.5 Rare plant and animal species found at or in the vicinity of VTS-S

	SCIENTIFIC NAME	COMMON NAME	HABITAT	Federal Status[1]	State Status[2]	Global Rank [3]
	Allium stellatum	glade onion	glades	None	E	G5
	Ammoselinum popei	Pope's sand parsley	glades	None	T	G4
	Amsonia tabernaemontana var. gattingeri	limestone bluestar	glades, barrens, and rocky banks	None	S	G53TQ
	Anemone caroliniana	Carolina anemone	cedar woodlands	None	E	G5
	Arabis hirsuta	western hairy rockcress	glades and LS bluffs	None	T	G5
	Arabis perstellata	Braun's rockcress	LS bluffs	E	E	G2
	Astragalus bibullatus	Pyne's ground-plum	glades	E	E	G1
	Astragalus tennesseensis	Tennessee milk-vetch	glades	None	S	G3
	Dalea candida	white prairie clover	barrens	None	S	G5
	Dalea foliosa	leafy prairie clover	rocky washes in glades	E	E	G2G3
	Echinacea simulata	wavy-leaf purple clover	glades and barrens	None	T	G3
	Echinacea tennesseensis	Tennessee coneflower	glades	E	E	G2
	Evolvulus nuttallianus	prairie morning glory	glades	None	S	G5
	Leavenworthia exigua var. exigua	glade-cress	glades	None	S	G4T3
	Lesquerella densipila	Duck River bladderpod	cultivated fields	None	T	G3
	Lesquerella stonensis	Stones River bladderpod	cultivated fields	None	E	G1
	Mirabilis albida	pale umbrella-wort	glades	None	T	G5
	Oenothera macrocarpa	Missouri primrose	cedar glades	None	T	G5
	Panax quinquefolius	American ginseng	rich woods	None	S-CE	G3G4
	Phlox bifida ssp. stellaria	glade cleft phlox	glades	None	T	G5?T3
	Schoenolirion croceum	yellow sunnybell	wet areas in glades	None	T	G4
	Silphium pinnatifidum	southern prairie-dock	barrens	None	T	G3Q
	Stellaria fontinalis	water stichwort	LS creek beds	None	T	G3
	Talinum calcaricum	limestone fame-flower	glades	None	S	G3
	Zanthoxylum americanum	northern prickly-ash	cedar woodlands	None	T	G5
†	*Accipiter striatus*	sharp-shinned hawk	open woodlands	PS	D	G5
†	*Ardea alba*	great egret	forested wetlands	None	D	G5
	Chondestes grammacus	lark sparrow	grasslands, woodland edges	None	T	G5
†	*Dendroica cerulea*	cerulean warbler	forested wetlands	None	D	G4
	Etheostoma microlepidum	finescale darter	swift rivers and streams	None	D	G2G3
	Gyrinophilus palleucus	Tennessee cave salamander	caves	None	T	G2G3
	Myotis grisescens	gray bat	cave-like habitats	E	E	G3
†	*Sphyrapicus varius*	yellow-bellied sapsucker	mixed forests	None	D	G5
	Typhlichthys subterraneus	southern cavefish	caves	None	D	G4
†	*Zapus hudsonius*	meadow jumping mouse	moist grasslands	PS	D	G5

† Documented at VTS-S

[1] Federal status abbreviation codes:

E – Listed federally as an endangered species

PS – Partial Status (taxon which is listed in part of its range, but for which TN subspecies are not included in Federal designation.)

[2] State status abbreviation codes (Tennessee Department of Environment and Conservation):

(**E**) Endangered –in danger of becoming extinct in Tennessee because of (a) rarity throughout range, or (b) rarity in Tennessee

(**T**) Threatened –likely to become endangered in the immediately foreseeable future

(**S**) Species of concern, deemed in need of management (vascular and non-vascular plants)

(**S-CE**) Species of concern due to commercial exploitation

(**D**) Deemed in need of management (nongame animals)

[3] Global Rank: The Division of Natural Heritage estimate of abundance on a global scale. Ranking codes are:

G1- extremely rare and critically imperiled **G3**- very rare **G5**- very common

G2- very rare and imperiled **G4**- common

A variety of habitats on VTS-S may support meadow jumping mice. They are known to prefer moist grasslands and other thickly vegetated areas bordering streams, ponds, or marshes. The individual captured during the 2005 survey was found approximately 200 meters from the shore of J. Percy Priest Lake in redcedar woodland habitat.

The meadow jumping mouse is federally listed as having partial status in the State of Tennessee. This indicates that the species is designated as threatened or endangered in a portion of its national range but that populations found in Tennessee have been determined to be secure at this time.

Four bird species with Tennessee State status of "in need of management" were documented on VTS-S during an avian study completed in 2008 (AMEC): great egret (*Ardea alba*), sharp-shinned hawk (*Accipiter striatus*), cerulean warbler (*Dendroica cerulea*), and yellow-bellied sapsucker (*Sphyrapicus varius*). The sharp-shinned hawk, like the meadow jumping mouse described above, is listed as having partial federal status in Tennessee; however, statewide populations appear to be currently stable.

In this most recent bird study, AMEC identified 14 additional birds with Tennessee State designations of "vulnerable", "imperiled", or "critically imperiled": pied-billed grebe (*Podilymbus podiceps*), double-crested cormorant (*Phalacrocorax auritus*), black-crowned night heron (*Nycticorax nycticorax*), blue-winged teal (*Anas discors*), Cooper's hawk (*Accipiter cooperii*), osprey (*Pandion haliaetus*), northern bobwhite (*Colinus virginianus*), American coot (*Fulica americana*), sora (*Porzana carolina*), spotted sandpiper (*Actitis macularius*), brown creeper (*Certhia americana*), winter wren (*Troglodytes troglodytes*), golden-crowned kinglet (*Regulus satrapa*), hermit thrush (*Catharus guttatus*), magnolia warbler (*Dendroica magnolia*), prairie warbler (*Dendroica discolor*), and Canada warbler (*Wilsonia canadensis*). State conservation status of all VTS-S avian species may be found in Appendix F.

The Tennessee Division of Natural Heritage and USFWS (2004) have identified additional sensitive animal species documented within a 5-mile radius of VTS-S that may occur at the training site but which have not yet been found there (Table 3.5). While gray bats may potentially use some of the waterways on the training site for foraging, none were recorded with ultrasonic detectors used during the mammal survey in 2005 (Conservation Management Institute).

3.10 CULTURAL RESOURCES

3.10.1 Palaeoenvironment

The prevalence of northern pine, spruce, and deciduous tree pollen in pollen core samples taken from Anderson Pond in White County, Tennessee, indicates that cool, moist conditions dominated on the Eastern Highland Rim ca. 23,000 B.C. (Stanyard and Lane 1999). During the late Wisconsin glacial period (ca. 17,000 to 14,300 B.C), boreal taxa of jack pine, spruce, and fir were dominant. This forest began to be replaced by a spruce-fir-deciduous forest around 14,000 B.C., when jack pines became locally extinct. Cool-temperate mixed mesophytic forest taxa became most abundant during the early Holocene epoch (ca. 10,500 and 6,000 B.C.), which coincides with the earliest human occupation of the region.

The Altithermal (Hypsithermal) warming and drying period (also referred to as the "prairie maximum"), which occurred from ca. 6,000 to 3,000 B.C., is reflected by an influx of oak, ash, and hickory pollen and a diminishing amount of mixed mesophytic forest taxa. At this time, patches of prairie intermingled with climax-aged mixed deciduous forests, while the limestone

cedar glades characteristic of the Central Basin expanded in response to increased warmth and more frequent summer droughts.

The mixed mesophytic forest achieved its present distribution in the period from ca. 4,000 to 2,000 B.C., following the Altithermal period and the onset of more moist conditions. Eventually, much of the prairie forest ecotone moved westward toward its present boundary and limestone cedar glades contracted, becoming islands within the mixed mesophytic forest.

3.10.2 Pre-European Populations

Little is known about the protohistoric populations of central Tennessee, as the sixteenth century Spanish expeditions by de Soto and Pardo seem to have been confined to the eastern portions of the state. English traders who crossed the Blue Ridge Mountains in the 1670s encountered the Overhill Cherokee. Other major tribes that are known to have inhabited the state in the seventeenth century include the Chickasaw, Creek, Yuchi, and Shawnee.

Shawnee permanent settlements were reported in the Cumberland River Valley in 1681, but were repeatedly expelled by both the Cherokee and Chickasaw (Sims 1947; Clayton 1880). It is thought that there were few permanent Native American settlements in Middle Tennessee prior to European colonization, as the land was used as hunting grounds by several tribes in the region. According to *A History of Rutherford County*, "the Indians to the south [Cherokee and Chickasaw] would not allow the Shawnees to establish permanent settlements on their hunting ground, and even fought among themselves for hunting rights." (Sims 1947).

The Chickasaws, typically residents of Northern Mississippi, claimed western Tennessee for hunting territory, but did not permanently settle large portions of the state. The Overhill Cherokee settlements in the Appalachian region are believed to represent the only sizeable American Indian settlements in Tennessee from the early eighteenth century onward.

3.10.3 Historic Overview

<u>European Contact, Colonization, and Early Statehood</u>
By the time English explorers began arriving in the Tennessee River valley, the Cherokee tribe had emerged as the dominant culture and had established control of a large area that included eastern Tennessee, western North Carolina, and northern Georgia (Stanyard et al. 1998). As a result of the American victory in the Revolutionary War (1775-1783), in which the Cherokee sided with the British, many of the Cherokee were driven to the southern portion of their claimed territory, into what is now northwest Georgia.

Shortly following the settlement of Nashville, some of the first permanent European settlements were established in the Rutherford County area. One of the first of these was the Stewart Creek community, which was founded in the mid-1790s and was located near the present day training site (Sims 1947; Weeks 1992). This area was likely chosen because of its location on Stewart Creek and its close proximity to the Stones River. Early land grants in the Rutherford County area were provided by North Carolina to early settlers between 1786 and 1797, several of whom settled in the vicinity of Stones River (Sims 1947). The farms and plantations of the area were established by these early pioneers, many of whom later figured prominently in the formation of Tennessee's governmental institutions and served as community leaders.

Elements of the Chickasaw, Shawnee, and Cherokee tribes frequented the Stewart Creek community on hunting and raiding trips, but there is no evidence of permanent villages in the Stewart Creek area during the colonial or territorial periods.

Davidson County (from which Rutherford County eventually emerged) was created by the North Carolina legislature in 1783 when Tennessee was a territorial extension of that state. The Stewart Creek area became part of Sumner County in 1786, then Wilson County, and finally Rutherford County (authorized by the legislature in 1803). The original county seat was located in the community of Jefferson, near present day Smyrna. In 1812, the county seat moved to a more central location that became incorporated as Murfreesboro in 1817 (Sims 1947).

Murfreesboro Pike and the Railroad

Commerce with Nashville shifted from Jefferson to Murfreesboro after the latter became the county seat of government. This move quickly led to the construction of a more direct Nashville to Murfreesboro route, then called Nashville Pike. The settlement of LaVergne, located two miles west of the VTS-S, preceded the establishment of Smyrna. Nashville Pike ran through the center of LaVergne and a mile south of Smyrna. This road is now called the Old Nashville Highway and parallels Murfreesboro Road, which was constructed in the early 1900s and is located approximately one mile northeast of the older road.

Built in 1847–1851, the Nashville and Chattanooga Railroad is one of the state's oldest railroads (Weeks 1992). This railroad served as an essential tool for the movement of vast numbers of men and tons of military supplies for both the Confederate and Union armies during the Civil War. The town of Smyrna was established along the railroad line to serve the commercial needs of plantations in the area.

One of the largest of these plantations, named Goochland, was located on some of the land now occupied by VTS-S. The only visible remnant of this plantation is the slave cemetery, preserved in the center of the cantonment area east of the guard gate. The plantation house and outbuildings were demolished by the Army in 1941, in preparation for the Smyrna Army Air Base (Weeks 1992).

Military History

During the U.S. Civil War, the movements of both Union and Confederate troops and their numerous minor skirmishes heavily impacted LaVergne, Smyrna, and Stewart Creek. LaVergne's location astride the Nashville Pike funneled thousands of troops and wagons through the area. Conflicts at LaVergne spilled over into Smyrna and up Stewart Creek to the plantations located there. The Jefferson Pike Bridge over Stewart Creek and the Nashville Pike Bridge were of considerable strategic importance for movement of men and supplies, and considerable efforts were made before, during, and after the Battle of Stones River in northwest Murfreesboro to keep the bridges from being destroyed. Union defense systems were constructed to protect the bridges and the railway from cavalry raids and to ensure speedy repairs to keep the supply lines open to the large supply depot in Nashville.

While the movement of armies and supplies continued through LaVergne and Smyrna throughout the four years of the war, the area was particularly impacted during the Stones River campaign, in northwest Murfreesboro (December and January 1862), and during the Battle of Nashville (November and December of 1864).

On December 22, 1941, in reaction to the bombing of Pearl Harbor, the United States War Department ordered construction of an air bombardment base near Nashville, Tennessee, the Smyrna Army Air Base. The selected site was established to train B-24 and B-17 pilots and crew. A crew of 6,000 men completed construction of the original 200 buildings and associated landing strips. The site, initially designated as a temporary facility, opened on July 1, 1942. After World War II, base activities were reduced and shortly afterward, in 1947, the base was deactivated until 1948 when it was reopened for use by the 314th Troop Carrier Wing. In 1950, the Smyrna Army Air Base was renamed Sewart Air Force Base (Sewart AFB), to honor Major Allen J. Sewart, Jr., who was killed during a Solomon Islands bombing mission in 1942 (Stanyard and Lane 1999).

Throughout the Korean Conflict (1950–1953), Sewart AFB supported the 314th Troop Carrier (C-119 planes); the 516th Carrier Group (H-19 helicopters, comprising the Air Force's only helicopter group); and the 513th Troop Carrier Group (C-123 Provider planes). In 1957, the base acquired the C-130 Hercules aircraft and retired its C-119 planes. The following year, the 513th Troop Carrier wing was deactivated and the 463rd wing transferred to Ardmore Air Force Base, Oklahoma. At that time, Sewart AFB was the only base in the U.S. that supported C-130 Hercules aircraft. In 1961, Sewart AFB was designated as a permanent installation and in July 1962, the United States Air Force Advanced Flying School was established under the 4442 Combat Crew Training Group.

Sewart AFB closed in 1970, at which time the site encompassed approximately 2,636 acres, including 635 units for family housing that are now privately owned. Prior to deactivation, it supported the 839th Air Division, the 64th Tactical Airlift Wing (which provided troop transport to Ft. Campbell, Kentucky), the 4442nd Combat Crew Training Wing (transferred to Dyess AFB, Texas), the 314th Combat Support Group (transferred to Blytheville, AK), and the 839th TAC Hospital (State of Tennessee Military Department 1999).

When the Sewart AFB closed, the USACE retained a portion of the former installation, including the Cantonment area, and the National Airport Authority retained the airfield. In 1970, the TNARNG obtained a license from the Nashville USACE to utilize 780.55 acres for education of troops and various field training purposes on a continual basis. The remaining 67.05 acres under license from the USACE are administered by the Mobile District. Another portion of the former Sewart AFB was transferred to the State of Tennessee for operation of the Tennessee Rehabilitation Center.

Portions of Sewart AFB, not licensed to the TNARNG, were either sold or transferred to various entities. The majority of the remaining area was the airfield, was transferred to the Metropolitan Nashville Airport Authority. The airfield has subsequently been transferred to Rutherford County and the Town of Smyrna and is currently operated by the Rutherford County/Smyrna Airport Authority (Town of Smyrna 2001).

The remaining portions have been sold and are now privately owned. The city of Smyrna previously had a license for a large parcel of land for sewage treatment purposes on TA2. The only residual signs of the treatment plant are access roads and a large, perennial pond (Figure 2.4). Several DoD-related landfills are believed to be on the site within what is now known as TA 3.

3.10.4 Native American Resources

The VTS-S is located on lands adjudicated to the Cherokee Nation. Chickasaw, Choctaw, Kaskinampo/Coushatta, and Shawnee may also have aboriginal ties to central Tennessee in the area now managed by the TNARNG at VTS-S (Riordan 1998).

- The federally-recognized Chickasaw Nation of Oklahoma is located in southern Oklahoma, with headquarters in Ada.
- Descendants of Choctaw Indians who avoided removal from Tennessee lands are federally recognized as the Jena Band of Choctaw in Louisiana and the Mississippi Band of Choctaw Indians in Mississippi. The Oklahoma Choctaw are federally recognized as the Choctaw Nation of Oklahoma.
- Federally recognized tribes of the Coushatta are the Alabama-Quassarte Tribal Town of the Creek Nation of Oklahoma, the Coushatta Tribe of Louisiana, and the Alabama-Coushatta Tribe of Texas.
- Today, the Shawnee are represented by two federally-recognized groups, the Absentee Shawnee in Oklahoma and the Eastern Shawnee in Missouri.

To date, no Native American sacred plant, animal, or mineral gathering localities are known from VTS-S; however, all archaeological sites identified during cultural resources surveys are potential Native American sacred sites. No human remains or funerary objects have been identified from VTS-S.

3.10.5 Cultural Resources Identified on VTS-S

The TNARNG is meeting Section 110 responsibilities to inventory and evaluate historic and cultural resources under its jurisdiction at VTS-S. Numerous cultural resources investigations have been conducted within the boundaries of the VTS-S. A Phase I cultural resources survey (Stanyard and Lane 1999), a Phase II archaeological survey (Barrett and Karpynec 2005), and a Historic Building Inventory (Cleveland et al. 2001) have been completed and historic property surveys are ongoing.

Six archaeological sites were discovered at VTS-S in 1978, during a reconnaissance-level shoreline survey for the USACE, Nashville District. The survey was conducted by Daniel S. Amick during the winter drawdown of J. Percy Priest Reservoir. A report of this investigation is not available; however, site descriptions were documented on official state forms and may be found in the archives of the Tennessee State Archaeology Division. All six sites examined (40RD52, 40RD53, 40RD54, 40RD55, 40RD56, and 40RD57) were prehistoric; however, their National Register of Historic Places (NRHP) eligibility status is unknown as they have yet to be formally investigated.

In 1999, Stanyard and Lane completed a Phase I archaeological survey of the VTS-S. Five previously unreported archaeological sites and nine isolated finds of prehistoric cultural material were discovered during the study. Results of this study indicate that two of the sites (40RD233 and 40RD234) were determined to exhibit significant historical findings, and therefore are eligible for listing in the NRHP. The other three (40RD231, 40RD232, and40RD235) were considiered potentially eligible. All of the nine isolated finds were determined to be ineligible for the NRHP. During the Phase II archaeological survey (Barrett and Karpynec 2005), sites 40RD231, 40RD232, and 40RD235 were determined to lack historical significance warranting further investigation or future preservation and were deemed ineligible for listing in the NRHP.

In 2001, a historic building inventory was completed at the VTS-S (Cleveland et al.). Results included the identification of 48 individual buildings within the boundaries of the VTS-S, including 10 barracks, 17 administrative/training/shop facilities, 2 buildings originally utilized as a pastry kitchen/cafeteria, 3 recreation facilities, 8 utility/storage facilities, 4 warehouses, and four hangars. Of the 48 inventoried properties at the VTS-S, 29 were constructed for military activities related to World War II. Nineteen buildings were constructed for use by Stewart AFB during the 1950s and 1960s. None were recommended eligible for the NRHP. Twenty-seven of the properties qualify for dismissal under the DoD 1986 Programmatic Agreement governing World War II-era temporary buildings. Two of the properties, although of sufficient age, have been altered over time and do not display any historical or architectural significance. The remaining 19 properties are less than 50 years of age and do not exhibit “exceptional” significance in accordance with NRHP Criteria Consideration G. Moreover, nearly all of the 48 inventoried properties have been extensively altered and modified over the years, thereby diminishing and compromising their historic integrity.

CHAPTER 4
MANAGEMENT GOALS:
GOALS, OBJECTIVES AND TASKS FOR NATURAL RESOURCES MANAGEMENT

4.1 MILITARY MISSION GOALS AND OBJECTIVES

VTS-Smyrna exists to provide a location and facilities for the training of Tennessee National Guardsmen. Ensuring the availability of mission-critical training land for now and the future is the primary objective of the VTS-Smyrna.

The following are military mission-related objectives that will be accomplished in cooperation with the natural resources management actions proposed in this INRMP:

- Clear training site boundary fenceline to meet security requirements.
- Create a boundary trail, where feasible.
- Reclaim old roadbeds in Training Area 2 for use by the Bradley training school.
- Thin TA 2 overstory and create two small (1 acre) openings for platoon assembly areas.
- Clarify accessibility and allowable use status for TA 3.
- Thin TA 3 overstory and enlarge existing opening.

4.2 NATURAL RESOURCES GOALS AND OBJECTIVES

The ultimate goal of the TNARNG natural resources program is to maintain healthy natural ecosystems while training soldiers to meet the mission requirements. Training programs and land management are both long-term, ever-changing processes, and the goals and objectives presented here are intended to guide TNARNG activities for the foreseeable future. The projects list is scheduled five to ten years out and will be updated annually as needed.

4.2.1 Ecosystem Management and Maintenance of Biodiversity

In 1994, the Office of the Under Secretary of Defense for Environmental Security issued a memordandum to all forces in the Department of Defense (DoD) to implement Ecosystem Management on DoD lands. Ecosystem management blends multiple-use needs, provides a consistent framework to manage installations, and ensures that the integrity of the system of DoD lands remains intact. DoD Instruction 4715.3, “Environmental Conservation Program”, implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD control.

Ecosystems are “explicit units of the earth that include all of the organisms, along with all components of the non-living environment within its boundaries” (Ecological Society of America 1996). The aim of “ecosystem management” is to manage the land for the health of the whole rather than for constituent pieces, such as game species, timber, or rare species. Maintaining the system as a functioning whole ensure the continuing ability of that system to meet future needs.

Ecosystem management is not easily planned or measured. Many functions of an ecosystem take place on scales far larger and longer than most human activity, and the boundaries of an ecosystem are not easily defined. For the purposes of this INRMP, the property line of the training site will function as a permeable border around a series of interconnected systems (forest, grassland, riparian) which make up a

whole, which is itself a part of a larger system. Management of the training site must focus on the training site, but must take into account the activities beyond the fenceline, as well.
The biological integrity of ecosystems found on VTS-S has been greatly affected by historical land uses, such as complete clearing of natural vegetation for settlement, agriculture, forestry, and military purposes; habitat fragmentation due to building roads, railroad, facilities for military training, and J. Percy Priest Lake; and disruption of historic wildfire cycles. None of the habitats currently found on the training site are regionally rare; the site has only a small area of soils suitable to the cedar glade/barrens ecotype. The extent of the shoreline along J. Percy Priest Lake and Stewart Creek does make the riparian habitat a significant community type. All of the ecosystems on the VTS-S will be managed to maintain or increase native biodiversity and to ensure that those systems continue to function fully. Long-term monitoring will be utilized to track the effectiveness of the ecosystem management and other tasks (see section 4.2.11).

Goals:

- Provide the ecosystem types needed for training.
- Maintain or improve ecosystem and habitat diversity.
- Maintain or improve species diversity.
- Protect unique communities.

Objective 1-1: Manage for mission-suitable habitats or "missionscape."

Tasks	Targets
Identify natural resources characteristics needed for training activities on VTS-S through consultation with training site manager, training site commander, units, and trainers.	1a. Missionscape statement development FY11
Determine appropriate acreage and locations for given mission habitats based on training needs and VTS-S characteristics.	1b. Missionscape plan development FY12
Develop and implement management actions to create, improve or expand mission habitats, as needed.	

Objective 1-2: Identify ecotypes present on the training site and maintain up to date information regarding those systems.

Tasks	Targets
Repeat vegetation community survey every ten years.	1c. Vegetation community PLS FY16
Repeat wetland survey using USACE formal delineation guidelines every ten years.	1d. Wetland PLS FY10 (in progress) and FY20
Repeat surface water quality assessment every 5 years.	1e. Surface water quality assessment FY14

Objective 1-3: Characterize the species composition, ecosystem health, and wildlife use of the significant habitats on VTS-S.

Tasks	Targets
Conduct a baseline survey for potential threatened and endangered species and repeat every 5 years.	1f. Rare species PLS FY 12 and FY17
Conduct a bat survey and repeat every 5 years.	1g. Bat PLS FY 13 and FY18
Repeat bird survey every 5 years.	1h. Avian PLS FY12 and FY17

Conduct an insect survey.	1i. Insect PLS FY14
Repeat aquatic fauna survey, including macroinvertebrate and vertebrate organisms every 5 years.	1j. Aquatic fauna PLS FY14
Repeat mammal survey every 5 years.	1k. Mammal PLS FY15
Repeat herpetofauna survey every 5 years.	1l. Herpetofauna PLS FY14

Objective 1-4: Develop management strategies to protect ecotypes/habitats of importance, including former barrens/cedar glade systems.

Tasks	Targets
Identify and prioritize ecotypes of significance at regional and local scales.	1m. Map and priority list of extant ecosystems FY12
Identify training or other threats to significant habitats.	
Determine the necessity of significant habitats to training activities, and identify alternate areas for training where feasible.	1n. Threat and usage details collected FY12
Develop protection plan for significant habitats	1o. Protection plan FY13
Implement measures of biodiversity at multiple scales to monitor habitat health (see Section 4.2.11).	

Objective 1-5: Manage for ecosystem health, wildlife, and improved habitat quality.

Tasks	Targets
Eliminate invasive exotic species where feasible (see Section 4.2.10)	
Initiate conversion to native species to restore natural vegetation communities, especially in grassland areas, where there is no conflict with military training.	1p. Identify locations for native species restoration FY11 1q. Develop restoration plan 1r. Implement restoration plan as possible
Institute prescribed fire regime for grassland and forest management where appropriate, incorporating training site needs, nesting bird protection, and the historic fire regime (see Section 4.2.8).	
Implement measures of biodiversity at multiple scales to monitor habitat health (see Section 4.2.11).	

4.2.2 Rare, Threatened, and Endangered Species (RTE) Management

To date, five rare species with State status have been documented at VTS-S, meadow jumping mouse (*Zapus hudsonius*), sharp-shinned hawk (*Accipiter striatus*), great egret (*Ardea alba*), cerulean warbler (*Dendroica cerulean*), and yellow-bellied sapsucker (*Sphyrapicus varius*). All of these species have Tennessee state status of 'species in need of management'. Meadow jumping mouse and sharp-shinned hawk also have partial Federal status in the State of Tennessee, meaning that while threatened or endangered in other portions of their range, populations in Tennessee demonstrate sufficient stability that they do not warrant protection under ESA. However, in case their protected range should expand in the future, it is appropriate to further explore the extent of each population at VTS-S as well as their habitat requirements.

Such proactive planning is also the driver behind the DoD's 'species at risk' designation. Species at risk (SAR) are defined as plant and animal species that are not yet federally listed as threatened or endangered

under ESA, but that are either designated as candidates for listing or are regarded by NatureServe as critically imperiled or imperiled throughout their range. Stones River bladderpod (*Lesquerella stonensis*) is the only SAR currently on the DoD list that is likely to be found at VTS-S; however, a survey completed in 2008 (SpecPro) did not reveal any populations of this plant on the training site.

Additional information will be added if other RTE species are identified on the training site, if the status of any existing RTE should change, and/or if management protocols are developed for them.

Goals:

- Avoid conflicts between the training mission and species protection.
- Maintain native plant communities that support state and federal rare, threatened, or endangered species.
- Cooperate with the U.S. Fish and Wildlife Service and the Tennessee Wildlife Resources Agency.
- Ensure that VTS-S remains in compliance with the Endangered Species Act.

Objective 2-1: Quantify and monitor populations of state and federal RTE species of VTS-S.

Tasks	Targets
Resurvey for Stone's River bladderpod in appropriate habitats on the training site following significant shoreline disturbance events.	2a. Bladderpod survey FY12
Investigate extent of sharp-shinned hawk populations occurring at VTS-S, as well as habitat use and potential nesting sites.	2b. Sharp-shinned hawk survey FY13
Investigate extent of meadow jumping mouse populations on VTS-S as well as habitat specifications.	2c. Meadow jumping mouse survey FY15
Incorporate Indiana bat survey protocol into regularly scheduled bat surveys.	See target 1g
Perform a comprehensive survey for RTE species every 5 years.	See target 1f
Develop management plan and monitoring protocol for any new species identified on VTS-S, as needed.	

Objective 2-2: Identify and manage native communities currently supporting or potentially supporting RTE species.

Tasks	Targets
Integrate community information with RTE information and develop community-based habitat management plans and monitoring protocols for significant habitats, as needed.	
Control invasive pest plant species where impacting RTE habitats (see Section 4.2.10)	
Monitoring health of communities of interest through long-term vegetation monitoring program and repeat surveys (see Section 4.2.11).	

4.2.3 Reclamation/Mitigation

Reclamation and mitigation are a part of the everyday management of the training site. Guidance for minimizing and/or controlling erosion is provided in Section 5.1.2 (Table 5.1) and Section 5.1.3 (Table 5.2). These best management practices are applicable to all soil-disturbing actions on VTS-S.

Major projects of reclamation and mitigation are included under the more specific environmental topic involved (e.g., erosion control, wildlife habitat, etc.). The primary one addressed in this INRMP is the reclamation of the former landfill in TA 3.

The land on which the former sewage treatment plant and the landfill are located (in TAs 2 and 3, respectively) is off limits to all military training at this time. While the sewage treatment pond is explicitly excluded from the USACE license agreement, the site of the former landfill is not. This area covers a significant portion of the training site and could be valuable for field maneuvers. The former landfill has been determined eligible for restoration and reclamation funding through the Defense Environment Restoration Program (DERP) as a Formerly used Defense Site (FUDS). This program is managed and directed by the USACE.

It is the understanding of the ENV Office that these areas in TAs 2 and 3are to be excluded from all natural resource management activities, including, but not limited to, environmental baseline studies and timber harvests. It is impossible to adequately manage natural resources on this portion of the training site without greater understanding of the site's condition or without a clear assertion of what activities are allowed. Further investigations should be performed to determine the feasibility of reclaiming this area for training purposes and/or the need to officially exclude this area from the TNARNG license and, therefore, TNARNG responsibility.

Goals:

- Investigate restoration of unused areas on VTS-S.

Objective 3-1: Investigate TNARNG use agreements with the USACE regarding Training Area 3.

Tasks	Targets
Investigate terms of license with the USACE regarding the former landfill in TA 3.	
Determine whether other historical documents, beyond the license, state conditions of TNARNG use of TA 3.	
Develop guidance for TNARNG use of TA 3.	3a. Summary document FY12

4.2.4 Erosion Control and Soil Conservation

Erosion control is an on-going issue at a facility where large wheeled and tracked vehicles are utilized on a regular basis. Erosion may lead to sedimentation of streams, damage to habitat, and surface irregularities that make training difficult or impossible. Erosion issues need to be identified and repaired as quickly as possible. Documentation of recurring problems will allow adjustment to training use to avoid such problem areas.

According to the 2005 DA Sustainable Range/Installations Environmental Activities Matrix, erosion control and repair is predominantly a facilities or range responsibility. The Environmental Office will provide survey and reporting support, technical guidance, and assistance with permits as required. Repair efforts will be funded in accordance with the matrix.

Goals:

- Keep topsoil in its place.
- Minimize the development of erosion and sedimentation problems on the training land.
- Rehabilitate existing erosion problems.
- Protect shorelines from unnecessary erosion.

Objective 4-1: Identify and rehabilitate degraded and eroding training land.

Tasks	Targets
Develop a reporting form for TNARNG soldiers and training site personnel to report erosion problems identified during other daily activities.	4a. Form prepared FY11
Install reporting form on the Environmental webpage for easy access for all personnel.	4b. Form on website FY11
Establish regular surveys of training areas to identify and prioritize degraded or eroded areas requiring rehabilitation.	4c. Annual surveys beginning FY12
Develop a system for compiling erosion reports, prioritizing projects, and tracking project progress and budget through the ENV office.	4d. Tracking system FY12
Repair erosion problems as identified. (Typically a facility responsibility).	
Develop an "erosion guide" for VTS-S that identifies areas experiencing repeated erosion and gives guidance in appropriate repair and avoidance methodology.	4e. Erosion guide FY12
Develop training for soldiers, commanders, and planners in Best Management Practices and their applicability to TNARNG actions.	4f. BMP training module FY13

Objective 4-2: Protect shoreline of J. Percy Priest Lake and all riparian areas from potential causes of erosion.

Tasks	Targets
Restrict all vehicular traffic, especially of large vehicles and machinery, along highly erodible soils at water's edge by maintaining, at minimum, a 50 foot riparian buffer zone (SMZ).	
Post and maintain signs identifying SMZs.	4g. Posting complete FY11 and checked biennially
Maintain SMZs during all timber harvests and other clearing activities, retaining all trees that exist within the buffer zone.	
Educate troops, management staff, and others on the importance of SMZs, the limitations to their use, and regulatory and permitting issues involved in riparian area activities.	4h. SMZ training module FY13
Monitor erosion at the boat ramp in TA 4 and repair as needed.	

4.2.5 Watershed Management

The riparian ecosystem, consisting of mixed bottomland hardwood wetland forests, occurs on approximately 6 percent (50 acres) of the training site along the banks of Stewart Creek and J. Percy Priest Lake. Riparian areas serve as interfaces between aquatic and terrestrial ecosystems. These communities serve as valuable wildlife habitat and corridors, promote streambank stabilization, trap sediments and nutrients, filter runoff water, and help to moderate flooding. As J. Percy Priest Reservoir is also a major source of area drinking water, it is especially important to responsibly manage its boundaries within the training site in order to maintain good water quality.

Limited military training activities occur within the riparian areas at VTS-S. For much of the year, the natural water table makes the area too wet for vehicle or troop movement. Stream fording by vehicles and foot traffic is only allowed at designated sites as permitted by the USACE.

The TNARNG will maintain riparian habitats along waterways by implementing, at minimum, a 50 foot riparian buffer zone, also known as a streamside management zone (SMZ) on either side of Stewart Creek and along the shores of J. Percy Priest Lake. Vehicular traffic in the SMZ will be kept to a minimum and authorization must be obtained from the USACE before conducting maintenance and construction activities (see Section 5.1.5 for additional guidance). Foot traffic through riparian areas is not regulated, but vehicles will be kept to established roads and trails. SMZs should remain continuous along the shores of Stewart Creek and J. Percy Priest Lake. Where wetlands are present, a 50 foot riparian buffer zone will be established and marked with Siebert stakes on all sides of the wetland.

The riparian habitat is variable in size. While the restricted-activity Streamside Management Zone is at least 50 feet on either side of the waterway, the actual riparian area typically extends much further beyond the streambank. All areas of bottomland hardwood forest should be considered to be within the riparian zone, and care should be taken to minimize impacts on water and habitat quality.

An area in the northeastern portion of Training Area 2 contains a series of karst features, some of which are open, potentially hazardous sinkholes (see Section 3.2). The nature of the area makes contamination of ground water a special concern as fissures and open sinkholes can serve as direct pathways to ground water supplies. These sinkholes are currently marked individually; however, due to their concentrated nature and varying degrees of hazard, this area will be marked off-limits to all vehicular traffic. While foot traffic will be permitted, reasonable caution is advised.

Riparian areas are particularly susceptible to invasion by exotic plant species. The Stewart Creek shoreline is heavily infested with privet (*Ligustrum* spp.) and Japanese honeysuckle (*Lonicera japonica*), while Nepalese browntop grass (*Microstegium vimineum*) carpets the lower understory throughout the training site's bottomland hardwood forests. These species drastically modify the habitat quality of the area and will require intensive efforts to control.

Goals:

- Minimize nutrient and sediment inputs from watersheds.
- Minimize non-point source pollution in watersheds through use of Best Management Practices.
- Understand the ecosystem dynamics and stressors within the watersheds.
- Retain/rehabilitate vegetative buffers on waterways.
- Incorporate watershed management concerns into training and land management planning.

Objective 5-1: Improve knowledge of existing riparian areas and their conditions.

Tasks	Targets
Vegetation community surveys and aquatic fauna surveys as noted in Section 4.2.1.	
Survey streams as part of regular erosion surveys as noted in Section 4.2.4.	
Develop and implement monitoring protocol for water resources to assess water quality across the training site and at in-flow and out-flow points.	5a. Implement water monitoring FY12
Resurvey karst features every 10 years to monitor change.	5b. Karst survey FY15

Objective 5-2: Improve buffering quality of the riparian areas.

Tasks	Targets
Perform riparian habitat assessments to identify degraded riparian corridors and prioritize restoration efforts.	5c. Riparian habitat assessments FY13
Restore degraded buffers with appropriate native vegetation, as needed.	
Repair erosion and sedimentation problems as identified, in accordance with Section 4.2.4. (Generally a Facilities responsibility).	
Control invasive species in the riparian communities to allow native species to re-establish (see Section 4.2.10).	
Monitor riparian ecosystems to determine effects of management through long-term vegetation monitoring and repeat surveys (see Section 4.2.11).	

4.2.6 Wetlands Protection

VTS-S has approximately 6.4 acres of wetland ecosystem, the majority of which are located on the eastern shore of J. Percy Priest Lake in Training Area 2. This ecotype is of importance for its chemical and sediment filtration functions as well as providing habitat for many species. These sites at VTS-S have not been formally classified as jurisdictional wetlands as defined under Section 404 of the Clean Water Act (CWA) (see Section 3.6); however, considering their immediate proximity to J. Percy Priest Lake, a municipal water source, the wetlands at VTS-S will be treated as jurisdictional for the purposes of this INRMP. The wetlands' inland boundaries are, in all cases, either bottomland forests, regularly inundated with water, or adjacent to abrupt, rocky woodland borders, both of which habitats are unsuitable for most training exercises.

Goals:

- Minimize operational impact of the military mission on wetlands.
- Maintain functional, healthy wetlands that are resilient to minor, inadvertent encroachments and impacts.
- Manage for no net loss of wetland acreage, function, or value.

Objective 6-1: Improve knowledge of existing wetlands and their conditions.

Tasks	Targets
Wetland surveys as noted in Section 4.2.1.	
Develop protocol for and implement regularly scheduled wetland condition monitoring.	6a. Monitoring protocol FY12
Conduct a floristic study of wetland habitats. Significant flora will be subject to appropriate monitoring.	6b. Floristic study FY13
Conduct a faunal study of wetland habitats. Significant fauna will be subject to appropriate monitoring.	6c. Fauna study FY13

Objective 6-2: Implement and enforce effective buffers around wetlands areas.

Tasks	Targets
Post signs identifying 50' wetland buffers.	6d. Post after 2010 survey complete
Identify areas surrounding wetlands that require a vegetative buffer or filterstrip (or repair thereto) for protection.	6e. Buffer zone vegetative assessment FY13

Educate troops, management staff, and other site users on the importance of wetland buffers, the limitations to their use, and regulatory and permitting issues involved in wetland area activities.	6f. Wetland training module FY13
Visually monitor wetlands annually to ensure compliance with SMZs.	

4.2.7 Forest Management

Approximately 43 percent (373 acres) of VTS-S is covered by forest habitat composed of redcedar woodlands, a mixture of upland hardwoods and evergreens, and bottomland hardwoods. The desired future condition of the forest at VTS-S is a range of forest types and ages, approximating natural habitat conditions and provided needed training opportunities. Timber production is not a primary goal of forest management on VTS-S, but timber harvest may be an appropriate method to achieve training needs, native species restoration, and/or forest health goals.

While the current health of the forests on VTS-S is generally good, some areas of the training site (the redcedar stands in TA 2, especially) are too dense for effective training use and need to be thinned. Other areas need selective thinning in order to maintain forest health and enhance the quality of wildlife habitat.

The Forest Management Plan (FMP) for the VTS-S is found in Annex 1 to this INRMP.

Goals:

- Provide optimum forestland training opportunities for TNARNG.
- Improve forest health and wildlife habitat through appropriate forest management techniques.
- Manage for native forest species appropriate to the region.

Objective 7-1: Maintain forest inventory and other information needed for forest management planning.

Tasks	Targets
Repeat forest inventory every 10 years.	7a. Timber inventory FY15
Conduct planning level surveys as noted in Section 4.2.1	

Objective 7-2: Improve training areas by selected timber harvesting.

Tasks	Targets
Determine needs of TNARNG for forestland training operations at VTS-S and identify areas requiring alterations to the forest stands for training purposes.	7b. Consult with training site staff annually
Identify management practices to create desired training conditions, as needed.	
Implement timber management to support training, as needed. (Program projects through STEP or RPTS as appropriate.)	

Objective 7-3: Improve forest health and habitat quality across the training site.

Tasks	Targets
Identify stands requiring improvement through forest inventory, planning level surveys, and general observation.	7c. Annual update of FMP
Perform timber stand improvement activities IAW Annex 1.	7d. Annual timber ROA
Conduct prescribed burning, where appropriate, to improve forest	

health and wildlife habitat, IAW Annex 2 (see Section 4.2.8).
Control invasive exotic species within the forest ecosystem IAW Annex 3 (see Section 4.2.10).
Maintain appropriate stand conditions along and around waterways with streamside management zones and best management practices.
Monitor changes to biodiversity and species composition through long-term vegetation monitoring, repeat surveys, and regular timber inventory (see Section 4.2.11).

4.2.8 Fire Management

Catastrophic wildfire is not a common threat in Middle Tennessee, but can occur. Prior to modern development, the natural ecosystems found at the current site of VTS-S depended on infrequent, low-intensity fires to maintain open forest understories and to prevent such dense, shrubby growth as is found in the redcedar stands in TA 2. Prescribed fire will be a useful forest management tool, decreasing the risk of unplanned wildfire by reducing excess fuels as well as improving the land for military training maneuvers. Use of prescribed fire will help to maintain grassland areas and may also be used to effectively manage certain pest plant species. The existing road network at VTS-S provides the basis for a firebreak system; however, creation of additional breaks will be necessary, taking special precautions around the training site's boundaries adjacent to developed areas. The Wildland Fire Management Plan for VTS-S is found in Annex 2 of this INRMP.

Goals:

- Minimize threat of wildfire to the training site.
- Utilize prescribed fire, as appropriate, to maintain training area conditions and native ecosystems.

Objective 8-1: Ensure sufficient firebreaks for protection of VTS-S resources and to prevent fire escape from the training site.

Tasks	Targets
Identify additional firebreak locations needed.	8a. Consult with TDF and training site FY12
Create firebreaks where needed, with consideration for erosion potential and 508-line. Facility responsibility.	
Develop and implement schedule of maintenance for firebreaks. Facility responsibility.	

Objective 8-2: Perform prescribed burning as appropriate for training and ecosystem management needs, IAW Annex 2.

Tasks	Targets
Obtain training for TNARNG personnel for prescribed burning and wildland fire fighting.	8b. Annual refresher training. Additional training opportunities as needed.
Obtain equipment for prescribed burning, as needed.	
Coordinate with the TN Division of Forestry or other organizations to provide a trained prescribed fire burn boss, as needed.	
Implement prescribed fire program in Annex 2 for fuel reduction, training area, and ecosystem management.	

Conduct postburn evaluations to monitor efficacy of prescribed fire program.	
Review Wildland Fire Management plan annually and update as needed.	8c. Annual WFMP review

4.2.9 Fish and Wildlife Management

Currently, there are no specific fish and wildlife management activities conducted at VTS-S. Ecosystem management focuses on maintaining or improving the system as a whole; therefore, TNARNG policy is to manage animal species through maintenance and/or manipulation of their habitat. Appropriate treatment of the forest, grassland, and riparian ecosystems should benefit the species that utilize those habitats. However, further information about the species that are utilizing the training site will allow further enhancement of this plan for the benefit of wildlife species.

There is no hunting at VTS-S due to concerns of installation security and for the safety of the public and the soldiers. Fishing on VTS-S from the shores of J. Percy Priest Lake is open to TNARNG personnel and is allowed with permission from the Facility Manager or designated representative (Bldg. 609). A valid Tennessee fishing license is also required.

Goals:

- Limit negative impacts on wildlife or wildlife management by training activities or land management.
- Improve wildlife habitat where possible through management of native communities and use of native plant species.

Objective 9-1: Gain updated and complete data on wildlife use of VTS-S.

Tasks	Targets
Perform baseline biological surveys as noted in Section 4.2.1.	

Objective 9-2: Manage habitats for all native species, not just game species.

Tasks	Targets
Protect and maintain native species vegetative buffers around water sources, in accordance with SMZ protocols (see Section 4.2.5).	
Install and maintain nest boxes for appropriate bird species, as possible.	9a. Annual wood duck box maintenance
Convert grassland areas to native plant species where feasible. See Section 4.2.1.	
Educate troops, management staff, and other site users on protection of wildlife species and habitats.	9b. Wildlife training module FY13

Objective 9-3: Determine the necessity/feasibility of a hunting program for VTS-S.

Tasks	Targets
Consult with Training Office and training site personnel to determine if the military mission can be coordinated with limited public access hunting.	9c. Hunting discussion FY11
Consult with TWRA about the potential need for additional public hunting opportunities in Rutherford County and the suitability of VTS-S	9d. Consultation FY12

to fill that need.	
Gather information about game species populations on the training site and in the region.	9e. Games species population counts FY13
Consult with TWRA about the carrying capacity of the training site and whether additional population control is needed for any game species.	

4.2.10 Pest Management

Pest Management at VTS-S is directed by the TNARNG Integrated Pest Management Plan (IPMP). Integrated pest management is "a comprehensive approach to pest control or prevention that considers various chemical, physical, and biological suppression techniques; the habitat of the pest; and the interrelationship between pest populations and the ecosystem" (Armed Forces Pest Management Board 1987).

According to DoD regulations and TNARNG policy, only DoD or State Certified Pesticide Applicators may apply any (restricted or general use) pesticide or herbicide to VTS-S property. The only exception to this rule is occasional small application of ready-made general use pesticides applied on a "self-help" basis. At this time, all chemical pest control on the VTS-S is provided by a contracted pest control company. All chemical pesticide applications must be reported to the TNARNG Pest Management Coordinator (see Appendix I for forms).

The primary natural resources aspect of pest management is the control of invasive species. Nonnative species have the potential to degrade training land at VTS-S and impact the usability of the land for training purposes. A variety of invasive pest plants are of concern at VTS-S: common privet, Japanese honeysuckle, multiflora rose, autumn olive, and thorny olive are the most prevalent. These plants can out-compete native plant species, change water and nutrient cycling, and drastically change the ecosystems in which they occur. The invasive species management plan for VTS-S is included in Annex 3.

Goals:

- Implement Integrated Pest Management according to the TNARNG Integrated Pest Management Plan (IPMP).
- Minimize the use of chemical pesticides and herbicides while achieving needed control.
- Ensure compliance with all legislation, regulations, and guidelines for pest management.
- Control animal and plant pests on the installation.

Objective 10-1: Control invasive species (IAW Executive Order 13112) to protect the natural ecosystems of the training site.

Tasks	Targets
Repeat survey to identify and map invasive pest plant infestations every 5 years.	10a. IPP survey FY12
Implement appropriate pest plant controls IAW Annex 3.	10b. Annual implementation efforts
Monitor change in IPP infestations through long-term vegetation monitoring (see Section 4.2.11).	

Objective 10-2: Control invasive species for improvement of training areas.

Tasks	Targets
Identify problem plant species that may interfere with training activities and develop control plan.	10c. Training-specific IPP control plan FY14
Implement appropriate controls to eliminate problem plants from training areas. Facility or Range responsibility.	
Monitor change in IPP infestations through long-term vegetation monitoring (see Section 4.2.11).	

Objective 10-3: Control pest species for safety and comfort of training site users.

Tasks	Targets
Install, as feasible, and maintain bat boxes and bird nest boxes for biological control of mosquitoes around buildings and bivouac sites.	10d. Annual box maintenance
Regularly monitor training site for presence of imported fire ant infestations.	10e. Annual fire ant survey
Control pest animal populations as needed. Facility responsibility.	

4.2.11 Long-term Vegetation Monitoring

The goal of long-term monitoring is to track changes to the land resulting from training activities or other forces. In the fall of 2002, the Environmental Office established vegetation monitoring plots at three TNARNG training sites (Catoosa, Milan, and Tullahoma) following the original Land Condition Trend Analysis (LCTA) line-transect point quadrat methodology; however, plots were not established at VTS-S at that time as it was determined that the spatial design used for LCTA would not be useful at VTS-S due to the training site's small size.

A comprehensive, scientifically valid monitoring program should be developed for the VTS-S. Data collected through a vegetation monitoring program will be used to track impacts of various management activities on overall habitat health on the training site, especially in riparian systems, forest stands, and rare species habitat.

Goal:

- To use data collected from analyses of long-term vegetation plots to monitor effects of training activities and land management practices on VTS-S.

Objective 11-1: Develop and implement a vegetation monitoring program.

Tasks	Targets
Develop vegetation monitoring protocols for VTS-S.	11a. Monitoring protocol in FY12
Establish vegetation monitoring plots.	11b. VTS-S plots in place in FY14
Resample monitoring plots as appropriate IAW monitoring protocol.	

4.2.12 Grounds Maintenance

Environmentally and economically beneficial landscaping practices can reduce maintenance costs while also providing wildlife habitat. Planting windbreaks around buildings, establishing forest, prairie, or wildflower areas, and reducing mowing are all ways to spend dwindling maintenance dollars more wisely, educate the public about the benefits of reduced maintenance, and become better stewards of the environment.

Goals:

- Maintain an attractive, functional landscape appropriate to TNARNG needs.
- Minimize the disconnect between "maintained" and "natural" landscapes.
- Decrease the use of chemical pesticides and herbicides.

Objective 12-1: Utilize regionally native plant species for all landscaping and restoration efforts if feasible.

Tasks	Targets
Use native grasses to seed exposed soils except where the native warm season grass growth habit is incompatible with use (e.g., firing ranges).	
Use native shrubs, trees, and wildflowers for aesthetic plantings.	
Use native species for all reclamation plantings.	
Create a list of non-native plants to avoid and a list of native alternatives and their planting requirements for landscaping purposes.	12a. Native planting guide FY11

Objective 12-2: Identify areas where the "edge" between maintained and natural can be blurred and adjust grounds maintenance activities to produce a less sharp division.

Tasks	Targets
Survey the training site for appropriate boundaries between natural and maintained landscapes.	
Develop and implement a program to create more gradual edges. *Ensure that changes to the vegetation structure will not affect training or safety.*	12b. Edge conversion plan FY14

Objective 12-3: Adjust maintenance schedules for protection of specific environmental values (e.g., breeding seasons of native birds).

Tasks	Targets
Create list of values that may be impacted by grounds maintenance and determine appropriate scheduling and process for their protection.	12c. List and details FY14
Modify the grounds maintenance calendar in the INRMP to reflect these protection efforts.	12d. Calendar finalized FY14

4.2.13 Recreational Use Management

At VTS-S outdoor recreation is limited due to the primary mission of the training site and the danger is presents to public safety. Public access is restricted because of hazards related to on-going construction projects as well as to training activities: small arms firing, convoy movement, training residue (e.g., fox holes and concertina wire), and training mechanisms (e.g., moving targets). All of these are potential

hazards to outdoor recreationists on foot or in a vehicle. For this reason, public access to the training site land by road is controlled by secured gates.

Waters surrounding VTS-S, including J. Percy Priest Lake and Stewart Creek, are readily accessible by watercraft and are used for fishing, swimming, boating, and other aquatic activities. It is imperative that signs identifying VTS-S shores as restricted are clearly visible from the water and well maintained, for reasons of security, safety, and liability.

Any person entering the training site for any purpose prohibited by law or lawful regulation is trespassing. Criminal trespass is a Class C misdemeanor under Tennessee Code 39-14-405 and may be aggravated criminal trespass under TCA 39-14-406 (Class B misdemeanor) if the person knows they do not have the property owners' effective consent to do so and they intend, know, or are reckless about whether their presence will cause fear for the safety of another. Trespass may endanger the life of the person entering the training site as well as potentially endanger the lives of Tennessee Army National Guardsmen and/or interfere with training. Tennessee Recreation Use Statutes (Liability of Land Owner to Person Using Land) are found in TCA 70-7-101 to 104.

Goals:

- Take precautions to minimize conflict between training and nearby recreational activities so that such recreational use will not interfere with training or result in hazardous situations for the public or TNARNG personnel.

Objective 13-1: Identify and make known the legal public access restrictions on VTS-S.

Tasks	Targets
Identify locations on VTS-S at which access limitations may be unclear or unstated, especially along the facility's shorelines.	13a. Survey FY12
Post and maintain regulations and signs to inform public of site access limitations as needed. Facility responsibility.	

4.2.14 Environmental Hazards

It is of paramount importance to the TNARNG to ensure to the fullest extent possible the safety of all persons that access the VTS-S. This includes site personnel, soldiers, and other users of the facility, as well as members of the public that may approach the training site via Stewart Creek or J. Percy Priest Lake whether on purpose or by accident.

In addition to training-related hazards discussed in Section 4.2.13, the presence of a series of sinkholes in TA 2 (see Section 3.5.2), some with vertical openings at ground level, may pose a risk to those entering that portion of the site. The potential exists for those passing through that portion of the site to incur serious injury.

After a survey of karst features, conducted in 2005 (Dynamic Solutions), individual sinkholes were marked with signs and surveyors tape. Due to the linear nature of these karst features and the potential for new surface openings to form, this area in the northeastern portion of TA 2 has been declared off limits for all vehicular traffic. There are no restrictions to foot traffic; however, permanent signs should be installed so that the potential dangers are more apparent to those accessing this area.

Goals:

- Identify natural-occurring hazards present at VTS-S.
- Minimize risk of such hazards for TNARNG staff, soldiers, and members of the public utilizing the training facility.

Objective 14-2: Identify and make known naturally-occurring, concealed features that may present risks on VTS-S.

Tasks	Targets
Karst feature survey every ten years to track changes in the landscape.	14a. Karst resurvey FY15
Post and maintain regulations and signs that delineate boundaries and use restrictions of areas with concentrated karst features. Facility responsibility.	

4.2.15 Cultural Resources Management

TNARNG has an approved Integrated Cultural Resources Management (ICRMP) for the VTS-S (contained within the ICRMP for the properties within Tennessee) and has conducted three consultations with 20 American Indian tribes with an interest in TNARNG properties. The ICRMP addresses cultural resources management in more detail and provides procedures to consider the effects that natural resources activities might have on cultural resources.

Natural resources management activities proposed in the INRMP that may require Section 106, Section 110, or tribal consultation include ground-disturbing activities associated with land rehabilitation and maintenance (erosion control and rehabilitation of eroded areas or trails) and forest management (timber harvests, tree planting). Some military training activities, e.g., engineering training and other ground-disturbing activities, are considering "undertakings" that must be conducted in accordance with the ICRMP. Each activity conducted in accordance with the INRMP must be coordinated through the Environmental Office's Cultural Resources Manager and the ICRMP to ensure that they will comply with all applicable federal and state cultural resources requirements.

Both of the NRHP eligible sites at VTS-S should be avoided when planning and implementing any ground disturbing activities in the immediate area. The cemetery (40RD233) should be accurately delineated by systematic probing before any such activity occurs with 200 meters of the perimeter, as it is currently defined. A secure fence should be placed around the cemetery after it has been thoroughly delineated.

The other NRHP eligible site (40RD234) is a military earthwork that was likely constructed during the Civil War. It may have been constructed during the Stone's River campaign, which played a significant role in military history. A secure fence should be placed around 40RD234 in order to protect it from deliberate or inadvertent damage. The prominent earthworks can be used to define the site's perimeter.

Goals:

- Manage cultural resources in support of the military training mission.
- Identify conflicts between cultural resources management and the training mission. Reconcile conflicts by ensuring continuance of the military mission while protecting cultural resources.
- Avoid impacts to historic, prehistoric, and archaeological resources on VTS-S in accordance with cultural resources laws and regulations.
- Maintain good relations with the American Indian tribes that have interest in TNARNG lands.

Objective 15-1: Adhere to guidelines presented in the TNARNG Integrated Cultural Resources Management Plan for VTS-S.

Objective 15-2: Ensure that potential cultural resources sites are identified and are avoided during all natural resources management activities.

Objective 15-3: Ensure that sites of prehistoric or historic significance which are encountered during natural resources management activities are properly reported, protected, and evaluated as required by state and federal regulations.

Objective 15-4: Protect cemeteries on the VTS-S in accordance with the license.

4.2.16 Geographic Information Systems

TNARNG Environmental has an extensive GIS database. It incorporates relatively complete training site information including all required SDS/FIE feature classes as required by National Guard Bureau. TNARNG GIS Branch meets or exceeds the CIP data calls required by NGB.

Goals:

- Continue to expand the information contained in the database and meet the ever growing demand to make data more readily available via interactive web applications.
- Utilize the data for training and management planning and for reporting purposes.

Objective 16-1: Maintain a constantly improving GIS.

Tasks	Targets
Identify the data layers captured and those still needed.	
Update older data layers and create new, as needed, or as information becomes available.	
Develop appropriate wording to be included in all Conservation contracts to ensure data is collected and presented in the correct format for the TNARNG GIS database.	16a. Review contract wording annually.

4.2.17 Environmental Management Systems (EMS)

The TNARNG Environmental Office is in the process of developing an ISO 14001 program. When completed, the environmental management system (EMS) and International Standard Organization (ISO) 14001 standard will:

- Establish a mission-focused EMS within their purview;
- Comply with Executive Order (EO) 13148, 'Greening the Government';
- Conform to ISO 14001 per Department of Army and Army National Guard policy; and,
- Provide National Guard Bureau with information regarding specific requirements for implementation.

EMS implementation will encompass the entire TNARNG installation, including VTS-S. The EMS implementation requirements apply to all installation missions, facilities, tenants, contractors, and

activities. The surrounding communities, regulators, and other interested parties will be notified of the installation's EMS efforts and encouraged to become participants in and/or contributors to the process.

4.3 NATURAL RESOURCES PROJECTS

4.3.1 Survey History

Effective management of natural resources is dependent on a solid understanding of current conditions and desired conditions. Current conditions are identified through baseline surveys which are repeated as needed as time, human use, or natural occurrence causes change in those conditions. Table 4.1 shows the planning level and other natural resources surveys which have been completed to date for the VTS-S and the anticipated date of the next repetition, if required.

Table 4.1. Surveys completed at VTS-S.

Survey	Completed	Contractor	Next
Soil Survey for Rutherford County, TN	July 1977	U.S. Soil Conservation Service	NA
Phase I Natural Resources Survey	Sept 1994	Lose and Associates, Inc.	NA
Natural Resources Aquatic Survey	Aug 1999	Science Applications International Corporation	2008
Phase II Natural Resources Terrestrial Survey	March 2000	Science Applications International Corporation	NA
Phase I Vegetative Communities Survey	March 2001	Environmental Resources Management	NA
Karst Survey	June 2005	Dynamic Solutions, LLC	2015
Planning Level Mammal Survey	Nov 2005	Conservation Management Institute	2015
Biological Survey for Invasive Species	Nov 2005	Dynamic Solutions, LLC	2010
Forest Inventory	Sept 2006	Forest Management Group	2015
Vegetation Community Survey	Jan 2007	AMEC Earth and Environmental , Inc.	2017
Planning Level Avian Survey	Sept 2008	AMEC Earth and Environmental, Inc.	2012
Survey for Stones River Bladderpod	April 2008	SpecPro, Inc.	2012
Aquatic Fauna Planning Level Survey and Surface Water Quality Assessment	Jan 2009	URS Corporation	2014
Herpetological Fauna Baseline Survey	April 2010	URS Corporation	2014
Planning Level Wetlands Survey	In progress	URS Corporation	2020

4.3.2 Implementation of INRMP 2002-2006

One function of this Revised INRMP is to review the prior INRMP for "operation and effect" in accordance with the 2004 DoD Supplemental Guidance. As noted in Section 1.6, the format of the 2002-2006 INRMP was found to be unwieldy and difficult to apply. In addition, the project lists provided in the first INRMP were not complete, relative to the extensive lists of goals and objectives outlined in that document, and the layout made it difficult to identify the objective which a given project supported. In general, the previous INRMP was found to be ineffective in guiding actual land management efforts. It is hoped that many of its weaknesses have been eliminated in this iteration of the plan.

Despite the flaws in the first INRMP, natural resources management has progressed on VTS-S during the time since its implementation: a great deal of basic information has been gathered through planning level surveys and the groundwork has been laid for a number of management actions which will be carried forward in this new INRMP. As an indicator of the current state of the program, the projects from the original INRMP have been incorporated into Table 4.2 with a description of the status of each project. Some have been fully implemented, and others are in progress. A few were sidelined for budgetary or time reasons. A number of these projects have been carried over with this revised INRMP and will be completed or implemented during the next five years (see Table 4.3).

Table 4.2: Project status from the 2002-2006 INRMP.

Project / Management Action	Status
Conduct planning level floristics survey.	Completed 2007
Conduct planning level mammal trapping and audio surveys.	Completed 2005
Conduct survey of invasive exotic plants.	Completed 2005
Monitor effects of prescribed fire through post burn evaluations.	Prescribed burns have not been conducted.
Conduct breeding and migratory bird survey.	Completed 2008
Conduct planning level wetlands survey.	In progress
Revegetate areas that are incapable of natural regeneration with native plant materials.	All portions of training site carry appropriate vegetative cover
Remove invasive exotic shrub species as necessary to provide habitat for native species.	On-going
Convert ~100 acres dominated by successional vegetation to grassland to create maneuver space and to control the spread of invasive exotic shrub species in TA2 and TA6.	Not yet conducted
Include training site SOP revisions in annual revisions of the INRMP.	On-going
Establish a 50-foot riparian buffer zone on either side of Stewart Creek, marking with Seibert stakes where necessary.	Completed 2009
Replace riparian vegetation that is impacted by construction/maintenance activities at a 3:1 slope.	On-going
Use BMPs for tank trail maintenance to eliminate impacts to riparian areas and streams.	On-going
Conduct planning level topographic survey.	Deemed unnecessary – data available from USGS
Investigate sinkholes and karst features on the site to ensure that a 50-foot buffer is maintained around the openings.	Survey completed in 2005; marking in progress
Conduct water quality monitoring of Stewart Creek.	Completed 2009
Build wood duck boxes, place adjacent to emergent wetlands, and maintain annually.	Completed 2005; maintenance on-going
Certify and maintain certification of pesticide applicators.	On-going
Eradicate invasive pest plants using prescribed fire, cutting, and herbicidal controls.	On-going
Update and implement pest management plan.	Completed 2010

4.3.3 Natural Resources Projects for Revised INRMP

Many natural resources and training site improvement projects are planned for upcoming years. Most are identified in Chapter Four of this plan. Table 4.3 lists all of these projects, grouped according to management sphere (ecosystem management, endangered species, wetlands, etc.) and objective.

An estimated cost is provided for projects which are expected to involve any expenditure beyond manpower. Most of these projects have been entered into the appropriate budget system; however, implementation is subject to funding availability. The anticipated method of conducting the work is given as either contract (C) or in-house (IH). The "proponent" is identified in accordance with the Sustainable Range/Installation Environmental Activities Matrix as either Environmental (ENV) or the Facilities office. In certain cases, two entities are identified. For these projects, it is anticipated that funding will be provided by one source, but that the other proponent will provide subject matter expertise. "SITE" represents work to be done by the training site staff.

Table 4.3: VTS-S Natural Resources Projects

Management Area	Targets (Objectives in Blue)		Project Origin[1]	Year	Est. Cost& Method[2]	Proponent[3]	Status	Actual Cost
1. Ecosystem Management	1-1	Manage for mission-suitable habitats or "missionscape"						
	1a	Missionscape statement development	N	2011	IH	ENV		
	1b	Missionscape plan development	N	2012	IH	ENV		
	1-2	Identify ecotypes present on the training site and maintain up to date information regarding those systems.						
	1c	Vegetation community planning level survey every 10 years	R	2016	C $45,000	ENV		
	1d	Wetland survey every 10 years	R R	2010 2020	C $40,000 C $45,000	ENV	In Prog	$42,364 sw
	1e	Surface water quality assessment every 5 years	R	2014	C 20,000	ENV		
	1-3	Characterize the species composition, ecosystem health, and wildlife use of the significant habitats on VTS-S.						
	1f	RTE planning level survey every 10 years	N	2012	C $40,000	ENV		
	1g	Bat baseline survey and repeat every 5 years	N R	2012 2017	C $40,000 C $40,000	ENV		
	1h	Avian survey every 5 years	R	2013 2018	C $35,000 C $37,500	ENV		
	1i	Insect baseline survey	N	2014	C $35,000	ENV		
	1j	Aquatic fauna survey every 5 years	R	2014	C $25,000	ENV		
	1k	Mammal survey every 10 years	R	2015	C $25,000	ENV		
	1l	Herpetofauna survey every 10 years	R	2019	C $35,000	ENV		
	1-4	Develop management strategies to protect ecotypes/habitats of importance.						
	1m	Map and priority list of extant ecosystems	N	2012	IH	ENV		
	1n	Threat and training use details	N	2012	IH	ENV		
	1o	Habitat protection plan development	N	2013	IH	ENV		
	1-5	Manage for ecosystem health, wildlife, and improved habitat quality.						
	1p	Identify locations for native species restoration	N	2011	IH	ENV		
	1q	Develop restoration plan	N	2011	IH	ENV		
	1r	Implement restoration plan	N	As feasible	IH	ENV		

[1] Whether the project appeared in the earlier INRMP: N = new to this INRMP; C = carried over from previous INRMP; R = repeat of past survey.
[2] Probable method of conducting project: C = contract; IH = in-house. Cost is estimate only and is not guarantee of available funding.
[3] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	Targets (Objectives in Blue)		Project Origin[1]	Year	Est. Cost& Method[2]	Proponent[3]	Status	Actual Cost
2. RTE Management	2-1	Quantify and monitor populations of state and federal RTE species on VTS-S.						
	2a	Stone's River bladderpod survey	R	2012	IH	ENV		
	2b	Sharp-shinned hawk survey	N	2013	C $30,000	ENV		
	2c	Meadow jumping mouse survey	N	2015	C $35,000	ENV		
3. Reclamation / Mitigation	3-1	Investigate use agreements with the USACE regarding Training Area 3						
	3a	Summary document	N	2012	IH	ENV/SITE		
4. Erosion control	4-1	Identify & rehabilitate degraded training lands						
	4a	Develop erosion reporting form	N	2011	IH	ENV		
	4b	Install reporting form on ENV webpage	N	2011	IH	ENV		
	4c	Annual erosion surveys	N	Annual	IH	ENV		
	4d	Erosion report tracking system	N	2011	IH	ENV		
	4e	Develop erosion repair guide	N	2012	IH $2,000	ENV		
	4f	BMP training module	C	2013	IH $1,000	ENV		
	4-2	Protect J. Percy Priest Lake shoreline and riparian areas from erosion						
	4g	Post signs designating SMZs	C	2011	IH $1,000	ENV		
	4h	SMZ training module	N	2013	IH $1,000	ENV		
5. Watershed Management	5-1	Improve knowledge of riparian areas & conditions						
	5a	Implement water quality monitoring	C	2012 Annual	IH $2,000 per year	ENV		
	5b	Karst feature survey every 10 years	R	2015	C $25,000	ENV		
	5-2	Improve buffering quality of the riparian areas						
	5c	Riparian habitat assessments	N	2014	IH $5,000	ENV		
6. Wetlands Protection	6-1	Increase knowledge of wetlands & conditions						
	6a	Develop and implement wetland monitoring protocol	N	2012	IH/C $10,000	ENV		
	6b	Wetland floristic study	C	2013	C $25,000	ENV		
	6c	Wetland fauna study	C	2013	C $25,000	ENV		
	6-2	Implement and enforce buffer areas around wetlands						
	6d	Post signs identifying 50' buffer zones	N	2012	IH $3,000	ENV		
	6e	Buffer zone vegetative assessment	N	2013	IH	ENV		
	6f	Wetland buffer training module	C	2013	IH $1,000	ENV		
7. Forest Management	7-1	Maintain needed forest information						
	7a	Repeat forest inventory every 10 years	R	2015	C $20,000	ENV		
	7-2	Improve training areas via forest management						
	7b	Consult with training site staff	C	Annual	IH	ENV		
	7-3	Improve forest health & habitat quality						

Management Area	Targets (Objectives in Blue)		Project Origin[1]	Year	Est. Cost& Method[2]	Proponent[3]	Status	Actual Cost
	7c	Review data and update forest management plan	C	Annual	IH	ENV		
	7d	Annual timber ROA and RPTS system info	C	Annual	IH	ENV		
8. Fire Management	8-1	Ensure effective firebreak system						
	8a	ID additional firebreak locations needed	C	2012	IH	ENV, FAC		
Fire, cont.	8-2	Implement prescribed fire program						
	8b	Annual refresher training	C	Annual	C $1,000 per year	ENV, FAC		
	8c	Annual WFMP review/update	C	Annual	IH	ENV		
9. Fish & Wildlife Management	9-1	Manage habitats for all native species						
	9a	Annual wood duck box maintenance	R	Annual	IH	ENV		
	9b	Wildlife training module	C	2013	IH $1,000	ENV		
10. Pest Management	10-1	Control IPP for ecosystem health						
	10a	Invasive pest plant survey every 5 years	R	2012	C $25,000	ENV		
	10b	Annual implementation of IPP control plan	C	Annual	IH/C $10,000	ENV		
	10-2	Control pest species for training area improvement						
	10c	Develop training specific IPP control plan	N	2014	IH	ENV		
	10-3	Control pests for TNARNG safety & comfort						
	10d	Install and maintain bat boxes & bird nest boxes	C	Annual	IH $1,000	ENV		
	10e	Annual fire ant survey	N	Annual	IH	ENV		
11. Long-term Monitoring	11-1	Develop and implement a vegetation monitoring program						
	11a	Develop monitoring protocols	C	2012	IH	ENV		
	11b	Establish vegetation monitoring plots	C	2016	IH	ENV		
12. Grounds Maintenance	12-1	Utilize regionally native species for all planting						
	12a	Develop native planting guide	N	2011	IH $500	ENV		
	12-2	Blur the “edge” between maintained and natural areas						
	12b	Develop edge conversion plan	N	2014	IH $500	ENV		
	12-3	Adjust maintenance schedules to benefit environment						
	12c	Create list of values impacted by grounds maintenance	N	2014	IH	ENV		
	12d	Modify maintenance calendar in INRMP	N	2014	IH	ENV		
Recreational Use Management	13-1	Identify and make known the legal public access restrictions on VTS-S						
	13a	Survey site for posting needs	N	2012	IH	ENV		
Environmental Hazards	14-1	Identify and make known naturally-occurring, concealed features that present a risk.						
	14a	Resurvey karst features	N	2015	C $25,000	ENV		

Management Area	Targets (Objectives in Blue)		Project Origin[1]	Year	Est. Cost& Method[2]	Proponent[3]	Status	Actual Cost
Cultural Resources		Projects are defined in the TNARNG ICRMP for TN						
GIS	16-1	Maintain constantly improving GIS						
	16a	Review contract wording	C	Annual	IH	ENV		

CHAPTER 5
RESOURCE PROTECTION GUIDELINES

The projects identified in the previous chapter are intended to improve the management and conservation of the natural resources on VTS-S. In addition to large-scale projects, however, appropriate care is necessary in the day-to-day operations and activities of the training site to ensure excessive damage is not inflicted through misuse or carelessness. The following sections provide guidance for the major activity categories occurring on VTS-S to ensure that TNARNG abides by all relevant laws and regulations, the intent of this INRMP, and good stewardship in its use and management of the training site's resources.

5.1 TRAINING OPERATIONS

VTS-S exists for the purpose of training National Guardsmen, and that training does have environmental impacts. The following guidelines should be incorporated into all training activities:

Roads and Vehicles

- Only existing roads and trails will be utilized. No new entrances will be made into any training area or range without the approval of VTS-S Range Control.
- Track vehicles are restricted to trails and hardened crossings when authorized to move between training areas.
- Vehicular use of cedar and hardwood stands is limited to roads as much as possible, except for special training areas. Bivouac sites and other training areas should be rotated to minimize impact on the soils and vegetation.
- New roads or trails will not be constructed beneath the 508 line as per USACE authority.

Plants and Animals

- Personnel will comply with State Game and Fish Laws.
- Interaction with wildlife should be avoided due to health and safety concerns.
- Do not disturb food plots, experimental exclosures, or other wildlife management equipment or facilities.
- Trees will not be cut without prior approval of the Environmental Office and the VTS Commander. Brush and small vegetation may be used for camouflage and training barricades. Upon completion of the exercise, camouflage and trail barricades will be properly policed.

Streams and Wetlands

- Streamside Management Zones (SMZs) shall be identified around all water bodies see (Figure 3.5). USACE requires that vegetation buffers of 50 feet be maintained along all shores of J. Percy Priest Lake. Perennial and intermittent streams will have an SMZ extending a minimum of 50 feet on either side of the channel. There shall be an SMZ 50 feet wide surrounding all wetland areas.
- Avoid operating vehicles in SMZs.
- Road crossings of riparian zones and streams will only be conducted at designated points.
- Spills will be immediately contained and reported according to the VTS-S Spill Prevention Control and Countermeasures (SPCC) Plan.
- Foot traffic is allowed in wetlands.
- Vehicular traffic is not allowed in wetlands except on established roads.

- There will be no dredging, filling, or dumping of material within wetland areas. Any exceptions have to be approved by the Environmental Office and required state and/or federal permits obtained before the activity takes place.

Wildfire Management

- Open burning is not allowed without a permit.
- Avoid spark-producing activities in dry weather.
- Accidental fires in training areas will be combated by the unit occupying the area, or the nearest unit to an unassigned area, immediately upon discovery.
- The discoverer of a fire will immediately notify VTS-S Range Control and his own immediate superior officer. The next higher headquarters will also be advised, and Range Control will immediately notify the TNARNG Environmental Office.
- Each succeeding commander in the chain of command will take action as appropriate to provide forces to extinguish or control fires pending arrival of fire fighting specialists.
- Prescribed fires will be initiated by trained TNARNG personnel. If the military mission requires an area of VTS-S to be burned, this information will be provided to the Natural Resources Manager so that the area can be integrated into the overall burn plan for the year. Guidelines and recommendations for using prescribed fire in forest management efforts at VTS-S may be found in Annex 2 and in the installation's Forest Management Plan (Annex 1).

5.2 CONSTRUCTION

Activities which disturb the vegetation and soil can be particularly damaging to the environment if improper methods lead to erosion and sedimentation problems. Even actions intended to improve conditions can cause damage if not handled appropriately. Construction activities routinely involve earth moving operations and are subject to the following guidelines:

- Follow the Erosion Control Best Management Practices listed in Table 5.1.
  - Additional information on erosion control procedures is available in the Tennessee Erosion and Sediment Control Handbook (Price and Karesh 2002) available at: http://www.state.tn.us/environment/wpc/sed_ero_controlhandbook/
- Schedule and perform land rehabilitation projects as soon as possible following disturbance, allowing sufficient time for soils to recover before the area again experiences regular use. Seed during optimum seeding periods for individual species. Seeding made in fall for winter cover should be mulched.
- Use temporary erosion control methods (such as cover crops) during rainy periods to protect the soil.
- Include all necessary rehabilitation work, best management practices, and associated costs in project proposals and construction contracts and specifications.
- Only native plant species will be used for landscaping and reclamation work, wherever feasible.
  - When planting native grasses, include non-persistent grasses that act as a cover crop for the first two or three years to minimize erosion before native species become established, for example: red top, timothy, winter wheat, and grain sorghum.
- Areas that fail to establish vegetative cover will be reseeded as soon as such areas are identified and weather permits.
- Present all construction project plans to the Environmental Office for review as far in advance as possible: special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams and will take time to obtain.

Table 5.1: Erosion Control Best Management Practices (BMPs) for Construction Projects.
Modified from the TDEC Erosion and Sediment Control Handbook (Price and Karesh 2002)
http://www.state.tn.us/environment/wpc/sed_ero_controlhandbook/

1. **Construction Management Measures**
    a. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
    b. Construction must be sequenced to minimize exposure time of cleared surface area. Grading activities must be avoided during periods of highly erosive rainfall.
    c. Construction must be staged or phased for larger projects. Areas of one phase must be stabilized before another phase can be initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.
    d. Erosion and sediment control measures must be in place and functional before earth moving operations begin and must be properly constructed and maintained throughout the construction period.
    e. Regular maintenance is vital to the success of erosion and sediment control systems. All control measures shall be checked twice per week, 72 hours apart, before anticipated storm events, and after each rainfall. During prolonged rainfall, daily checking is necessary.
    f. Construction debris must be kept from entering any stream channel.
    g. Stockpiled soil shall be located far enough from streams or drainageways that runoff cannot carry sediment downstream.
    h. A specific individual shall be designated to be responsible for erosion and sediment controls on each project site.
    i. If the area to be disturbed is 1 acre or greater, a Tennessee Construction General Permit is required and a site-specific Storm Water Pollution Prevention Plan (SWPPP) must be developed. The Notice of Intent and SWPPP must be submitted to the State at least 30 days prior to any disturbance of the site. Land disturbing activites shall not start until written approval and Notice of Coverage is obtained from the TDEC Division of Water Pollution Control.

2. **Vegetative Controls**
    a. A buffer strip of vegetation at least as wide as the stream shall be left along any stream bank. Streamside buffer zones at VTS-S will be at least 50 feet on either side of the body of water.
    b. Vegetation ground cover shall not be destroyed, removed, or disturbed more than 15 calendar days prior to grading.
    c. Temporary soil stabilization with appropriate annual vegetation (e.g., annual ryegrass) shall be applied on areas that will remain unfinished for more than 30 calendar days.
    d. Permanent soil stabilization with perennial vegetation shall be applied as soon as practicable after final grading.

3. **Structural Controls**
    a. Staked and entrenched straw bales and/or silt fence must be installed along the base of all fills and cuts, on the downhill sides of stockpiled soil, and along stream banks in cleared areas to prevent transport of sediment into streams. Straw bales and/or silt fence may be

removed at the beginning of the work day but must be replaced at the end of each work day.

b. All surface water flowing toward the construction area shall be diverted around the construction area to reduce erosion potential, using dikes, berms, channels, or sediment traps, as necessary. Temporary diversion channels must be lined to the expected high water level and protected by non-erodible material to minimize erosion. Clean rock, log, sandbag, or straw bale check dams shall be properly constructed to slow runoff and trap sediment.
c. Sediment basins and traps shall be properly designed according to the size of the disturbed or drainage areas. Water must be held in sediment basins until at least as clear as upstream water before it is discharged to surface waters. Water must be discharged through a pipe or lined channel so that the discharge does not cause erosion and sedimentation.
d. Streams shall not be used as transportation routes for equipment. Crossings must be limited to one point. A stabilized pad of clean and properly sized shot rock must be used at the crossing point.
e. All rocks shall be clean, hard rocks containing no sand, dust, or organic materials.

5.3 FACILITIES MANAGEMENT

Maintenance of an attractive, tidy facility is important; however, even activities in a heavily modified cantonment area, such as that at VTS-S, can impact the environment. Mowing, landscaping, and pesticide use in the managed landscape should be undertaken with consideration for this impact.

- Only native species will be used for landscaping and replanting purposes without clearance from the Environmental Office. Native plants are better adapted to local conditions and generally require less fertilizer and herbicide/pesticide input. Use of natives also limits the spread of invasive, exotic species.
- Consider seasonal variables (e.g., timing and quantity of average rainfall, appropriate planting season) in planning and scheduling projects.
- Consider erosion factors when choosing sites for training, construction, or management activities.
- Always include appropriate surface restoration, fertilization, and seeding (or other revegetation practice) as the final stage of any project which disturbs the soil or vegetation.
- Apply Best Management Practices (BMPs) (see Tables 5.1 and 5.2) to all TNARNG projects.
- Use mechanical and biological pest control methods wherever feasible and economical. Only apply pesticides when effective biological or mechanical control methods cannot be found or are prohibitively expensive. See TNARNG Integrated Pest Management Plan for more information.
- Pesticides and herbicides can only be applied by certified applicators and must be reported to the Pest Management Coordinator (see section 5.1.8 for more information).
- Herbicides will be utilized to control weedy vegetation in the most time- and cost-effective manner. See Table A3.2 in Annex 3 for guidance in selecting the appropriate herbicide for different types of invasive pest plants.
- Within 50 feet of Stewart Creek, J. Percy Priest Lake, wetlands, or other recognized waterway, foliar application of herbicides will be limited to those products labeled for application to water because of the risk of drift. All other herbicide applications within these SMZ areas will be made via stem treatments (cut stump, basal bark, or stem injection).
- No soil-active herbicides will be used within Streamside Management Zones (See Figure 3.5).

- Foliar treatments of pesticides will be avoided in any situation where the spray would be carried toward water.
- Removal of invasive pest plant material found within SMZs may occur but will not be done in a manner destructive to the stability of the streambank, waterway, or other aspect of the ecosystem present.
- Where creek bank vegetation is composed of more than 50% invasive species, revegetation and bank stabilization will be conducted immediately following IPP control.

5.4 ROAD CONSTRUCTION AND MAINTENANCE

Roads can be a significant source of sediment, as well as an on-going drain on funds, if poorly designed. Proper placement, design, and construction can alleviate many of the problems associated with unpaved roads, even when utilized by heavy wheeled and track vehicles. The State Forestry Best Management Practices (Table 5.2) deal largely with road construction and should be applied to all road building activities on VTS-S.

No new roads will be constructed at VTS-S below the 508-line (see Figure 3.5), the elevation at which the USACE prohibits any land alteration or construction activities. Should additional materials or excavation be needed to repair existing trails or roads that are located at or below this level, the USACE must be contacted and grant approval before initiating maintenance.

Table 5.2: Forestry Best Management Practices (also apply to construction and rehabilitation of all roads and tank trails). Modified from the Guide to Forestry Best Management Practices (Division of Forestry 2003) (http://www.state.tn.us/agriculture/pulications/forestry/BMPs.pdf)

1. **Access Road Location.** Access roads shall be designed and located to prevent sediment from entering the waters of the State as defined at Tennessee Code Annotated (T.C.A.) § 69-3-102. Methods to prevent sedimentation to streams include, but are not limited to, the following:
    a. Minimize the amount of road to be constructed using existing roads where practical.
    b. Locate roads as far from streams and lakes as possible and practical.
    c. Locate roads as far as practical from streamside management zones (SMZs).
    d. Avoid or minimize stream crossings. If crossings are necessary, an Aquatic Resources Alteration Permit will be needed and may take time to obtain. Complete design and construction plans must be submitted to the Environmental Office as far in advance as possible. Roads should cross streams as close to right angles as possible.
        1. When possible, locate crossings on the straightest section of streams and minimize disruption of normal stream flow.
        2. Design crossings such that disruption of movement of aquatic life is minimized.
        3. Where applicable, approaches to stream crossings should climb away from streams to minimize erosion during high water and should be graveled to prevent washing and rutting.
        4. Where practical, broad-based dips and wing ditch turnouts should be installed to turn water off roads before entering the stream.
        5. When fords are used:
            a. Fords should be located where stream banks are low.
            b. Fords should have a solid bottom; if not, use a pole ford or other appropriate cover. Cover should be removed after use.

6. When culverts are used:
    a. Culvert size should accommodate the area to be drained.
    b. Installation of culverts should minimize disturbance of stream channels and avoid sloughing of stream banks.
7. When bridges are used:
    a. Bridges should be located across narrow points on firm soils.
    b. Care should be taken to protect banks from sloughing when constructing and removing temporary bridges.

e. Avoid sensitive areas that could interfere with drainage and cause soil compaction or erosion.

2. Access Road Construction. Access roads shall be constructed to prevent sediment from entering the waters of the State. Methods to prevent sedimentation include, but are not limited to, the following:

a. To the extent possible, construct and revegetate new roads several weeks or longer in advance of logging/use.
b. Avoid road construction during periods of wet weather.
c. Construct roads on grades of 2 to 12 percent where possible. Runoff from roads should not directly discharge into a stream channel. Runoff from stream crossings should be minimized. Control runoff from roads using techniques such as varying the slope of the road, crowing, outsloping, wing ditches, sediment traps, sediment control structures, broad-based dips, rolling dips, water bars and cross drain culverts and other measures recommended by the Department of Agriculture. Steeper grades are acceptable for short distances provided additional attention is given to water control/drainage structures.
d. When possible, trees and brush cleared for road corridors should be pushed to the downhill side of the road to assist in trapping sediment.
e. Avoid excessive soil disturbance during road construction.
f. Revegetate exposed soil in potential problem areas (i.e., culverts, stream crossing, fill areas).
g. In association with wetlands:
    1. Design the road fill with bridges, culverts, or other drainage structures to prevent the restriction of expected flood flows.
    2. Remove all temporary fills in their entirety and restore the area to its original elevation.

3. Road Retirement. Access roads shall be retired in such a way as to prevent sediment for entering the waters of the State. Methods to prevent sedimentation include, but are not limited to, the following:

a. Water bars or other drainage structures should be constructed immediately after active logging/road use has ceased. If logging will be delayed for a substantial period of time, temporary drainage and erosion control structures should be constructed.
b. Upon completion of logging/road use, remove temporary bridges, culverts, and pole fords; remove sediment and debris from dips, ditches, and culverts; and revegetate problem areas.
c. Use lime, fertilizer, mulch, and/or seed when needed to prevent soil erosion. Amounts should be based on recommendations from the Department of Agriculture or the University of Tennessee Agricultural Extension Service.

4. Streamside Management Zone (SMZ) (see Section 5.1.5 below). Streamside management zones shall be designed and managed along perennial and intermittent streams, lakes, and

impoundments to prevent sediment from entering waters of the State. Methods to prevent sedimentation to streams include, but are not limited to, the following:

a. Establish SMZs along any stream or water body where the potential exists for the movement of sediment into stream or water body, this includes waters associated with wetlands.
b. J. Percy Priest Lake and both perennial and intermittent streams will have an SMZ extending a minimum of 50 feet on either side of the channel. In association with wetlands, SMZs will be established at least 50 feet in width along both sides of all associated streams and open water (total minimum width of 100 feet).
c. Do not remove any trees within an SMZ if such removal would result in soil potentially getting into the stream. If trees can be harvested without risk of soil loss, maintain 50 to 75 percent of the vegetation canopy shading a perennial stream.
d. Avoid operating any harvesting equipment or vehicles within and SMZ. Whenever possible, timber harvested within an SMZ should be pulled or winched out.

5.5 WATER RESOURCES

The water resources on VTS-S include several different ecotypes: perennial streams, the Stewart Creek embayment of J. Percy Priest Lake, riparian areas adjacent to the lake and the creek, wetlands, and the bottomland forests bordering J. Percy Priest Lake (see Figure 3.5). While the specific uses and characteristics of these sites can vary widely, they share the key factor of water and a significant role in the water cycle as well as being important habitats for many creatures. Protection of water resources is of the utmost importance, as they are habitats that can be easily damaged by accident or careless action. One of the simplest BMPs for protection of water resources is the establishment and use of Streamside Management Zones (SMZs).

SMZs shall be designed and managed along perennial and intermittent streams, lakes, and impoundments to prevent sediment from entering waters of the State. Methods to prevent sedimentation to streams include, but are not limited to, the following:

- As per the Water Quality Buffer Zone Policy of the Town of Smyrna, SMZs must be maintained 2 times the width of the channel on either side of the channel of all perennial and intermittent stream waterways. However, as Stewart Creek has been impounded by the J. Percy Priest Dam, the current channel width is not that of a true stream, the waterway type for which this guidance was written. Therefore, a continuous SMZ of 50 feet or more will be demarcated and maintained along either side of the Stewart Creek shoreline and along all shores of J. Percy Priest Lake at VTS-S.
- In association with wetlands, establish SMZs at least 50 feet in width surrounding the wetland area.
- There shall be no digging for training purposes, forest management, or construction activities within an SMZ without prior review and permission from the Environmental Office. Certain activities may require state or federal permitting prior to initiation of activity.
- Do not remove any trees within an SMZ if such removal would result in soil potentially getting into stream. If trees can be harvested without risk of soil loss, maintain, at minimum, 50 to 75 percent of the vegetation canopy shading a perennial stream.
- There shall be no stump removal or other soil grubbing activities within SMZs.
- Avoid operating any vehicles or other equipment within an SMZ.

In addition to protection of SMZs, other actions and/or limitations are essential to maintain high water quality and habitat quality:

Streams and Riparian areas

- Training is allowed in the riparian areas outside of SMZs in accordance with guidelines for forestlands. Use extra caution to avoid causing sedimentation or other contamination of the associated waterway.
- Spills will be immediately contained and reported according to the VTS-S Spill Prevention Control and Countermeasures (SPCC) Plan.
- Dumping of any substance on the training site is not allowed.
- Minimize stream crossings. If regular fording of a creek or seasonal conveyance is necessary, hardened crossings provide more protection. Contact the TNARNG Environmental Office prior to making any alterations to any stream crossing as state and/or federal permitting may be required.
- Monitor for erosion problems along stream and lake banks. Report any erosion, exposed soil, or stream bank collapse to the Environmental Office as soon as possible.
- Utilize native species for plantings to stabilize banks. Vegetative structures are preferable to riprap or concrete structures in most situations.
- Use Erosion Control BMPs during all construction and relocation of roads and during all regularly occurring maintenance activities (see Table 5.1).
- Any activity that will impact a stream or wetland must be presented to the Environmental Office well in advance of the planned action date: special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams, and these permits take time to obtain.

Wetlands

- Foot traffic is allowed in wetlands.
- Vehicular traffic is not allowed in wetlands except on established roads.
- Any non-foot traffic, training, or land management activity to be conducted within a wetland should be coordinated with the Environmental Office.
- There will be no dredging, filling, or dumping of any material within wetland areas. Any exceptions will have to be approved by the Environmental Office and required state and/or federal permits obtained.
- Only herbicides and pesticides labeled for wetland/surface water use will be applied within wetland boundaries (e.g., Rodeo, Aquamaster, Habitat, Accord).
- Within 50 feet of any wetland boundary, foliar application of herbicides will be limited to those products labeled for application to water because of the risk of drift. All other herbicide applications within the SMZ areas will be made via stem treatments (cut stump, basal bark, or stem injection).
- Any ground disturbing activities near wetland areas that might alter the hydrology of the system must be reviewed by the Environmental Office Conservation Branch before any work takes place.
- Implement Erosion and Sediment Controls in construction areas and maneuver areas, streambank stabilization methods, and forestry BMPs to minimize delivery of sediment and chemical pollutants to wetland areas.
- Present all construction plans to the Environmental Office for review as far in advance as possible: special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams and will take time to obtain.

Ground Water

- Vehicular traffic is not allowed in the sinkhole-prone region in the northeastern portion of TA 2.

- Foot traffic is allowed in this area; however, conducting training exercises beyond posted signs is not recommended due to safety concerns.
- Any non-foot traffic, training, or land management activity to be conducted in this area of the training site should be coordinated with the Environmental Office.

5.6 FORESTRY AND FORESTLAND USE

TNARNG manages all forest resources on VTS-S and is responsible for maintaining the health and integrity of the forest ecosystem. Key factors in the utilization of forestlands on VTS-S are:

- Only existing roads and trails will be utilized. No new entrances will be made into any training area or range without the approval of VTS Range Control.
- Vehicular use of forest stands is limited to roads, except for special training areas (e.g., bivouac sites, designated training points).
- Bivouac sites and other forested training areas should be rotated to minimize impact on the soils and vegetation. Site condition should be monitored semi-annually utilizing the long-term vegetation monitoring protocol employed at other TNARNG training sites.
- Clearing or thinning of forest stands to improve or expand training areas will be coordinated through the TNARNG Environmental Office.
- Trees will not be cut without prior approval of the Environmental Office and the VTS Commander. Brush and small vegetation may be used for camouflage and training barricades. Upon completion of exercise, camouflage, and trail barricades will be property policed.
- Open burning is not allowed without a permit.
- Accidental fires in training areas will be combated by the unit occupying the area, or the nearest unit to an unassigned area immediately upon discovery. Contact Range Control immediately. See 5.1.1 Training Operations Guidelines for further wildfire information.
- Interaction with wildlife should be avoided due to health and safety concerns.
- Personnel using the area will comply with State Game and Fish Laws.

5.7 GRASSLAND USE

The grasslands on VTS-S are principally managed, man-made grasslands (ranges); however, they can provide valuable habitat in addition to training opportunities. In order to improve the ecosystem value of the grassland area the following guidance should be applied to training and management activities:

- Avoid use of non-native species for reseeding grassland areas. Utilize a native mix appropriate to the site and intended use. In particular, discontinue the use of KY 31 tall fescue (*Schedonorus phoenix*) and the non-native lespedezas – Chinese or sericea lespedeza (*Lespedeza cuneata*), shrubby lespedeza (*L. bicolor*), and Korean or kobe lespedeza (*Kummerowia stipulacea*).
- Prescribed fire is a useful tool for maintaining grassland ecosystems. See Annex 2 for details of the VTS-S Prescribed Burn Plan.
- Existing roads and trails will be utilized whenever possible. No new entrances will be made into any training area or range without the approval of VTS Range Control.
- Avoid mowing open grasslands from April to September for the protection of nesting birds. Areas in which taller growth will not impede training should be mowed in late March and then allowed to grow until November. Where grasslands must be maintained low cut, maintain 25-50 foot buffer strips along the forest edges which will only be mown every 3-5 years.

5.8 PEST MANAGEMENT

Pest management is an important part of maintaining facilities and protecting the health and safety of personnel, as well as the integrity of natural ecosystems. TNARNG pest management activities are regulated by federal and state law and by DoD regulation. These restrictions and the management goals and guidelines for pest control on TNARNG facilities are presented in the Integrated Pest Management Plan.

- All applications of herbicide or pesticide on VTS-S must be by a State- or DOD-certified applicator.
- All applications of herbicide or pesticide must be reported to the TNARNG Pest Management Coordinator (see Appendix I for reporting forms and contact information).
- Use non-chemical control methods wherever feasible and economical. Only apply pesticides when effective biological or mechanical control methods cannot be found or are prohibitively expensive.
- Pesticides and herbicides should be applied at the time when they will be most effective against the pest in order to achieve maximum control for minimum application. See TNARNG Integrated Pest Management Plan for more information.
- Follow the Forest Service's Management Guide for Invasive Plants in Southern Forests (Miller et al. 2010) guidelines in controlling invasive plant species.
- Only native species will be used in landscaping and in reclamation work.

Contractors who apply pesticides on VTS-S must:

- Show proof of liability insurance.
- Have State commercial certification and licensing in the category or categories of work to be performed.
- Use only EPA registered pesticides or herbicides that are on the "Approved Pesticide List" for use on TNARNG sites (see Appendix I).
- Furnish TNARNG personnel with legible copies of specimen labels and the Material Safety Data Sheets of all pesticides proposed for use.
- Furnish TNARNG personnel with the information required for pest management record keeping (see Appendix I for reporting format).
- Pesticides must be mixed, stored, and disposed of in accordance with Federal, State, and local regulations and with procedures established by the TNARNG.

5.9 RTE MONITORING AND PROTECTION

Currently, there are no known federally threatened or endangered species at VTS-S. However, VTS-S is home to the meadow jumping mouse (*Zapus hudsonius*) an organism with Tennessee State status of "in need of management." Four bird species with the same state status have been documented as utilizing habitat on VTS-S: sharp-shinned hawk (*Accipiter striatus*), great egret (*Ardea alba*), cerulean warbler (*Dendroica cerulea*), and yellow-bellied sapsucker (*Sphyrapicus varius*). The presence of these species will be considered in future planning.

Guidance for the protection of any additional RTE species discovered at VTS-S will be developed as needed.

5.10 CULTURAL RESOURCES MANAGEMENT

The TNARNG Cultural Resources Management Policy is defined in the Integrated Cultural Resources Management Plan (ICRMP), Tennessee Facilities. The primary focus of cultural resources management is heritage stewardship. The following are key points in protection of cultural resources:

- The TNARNG will consult the Tennessee Historical Commission so that known historic, archaeological, and palaeontological sites may be avoided.
- Cannon Cemetery will be protected by fencing and left undisturbed.
- For ground disturbing undertakings (ICRMP SOP #5):
  - Prior to any ground disturbance, contact the Cultural Resources Office to verify that the site is clear of known cultural resources.
  - The avoidance or mitigation of adverse effects to NRHP eligible sites shall be proactively incorporated into the design and planning process rather than deferred until archaeological deposits may be discovered during actual construction.
  - All machine-aided excavations or other earth moving projects shall be designed to avoid damage to archaeological sites or other historic properties that may be eligible for inclusion to the NRHP.
  - Until such time as the TN-SHPO has determined an archaeological site to be ineligible or has concurred with a recommendation that an archaeological site is ineligible, any newly discovered sites will be treated as eligible and will be avoided whenever possible.
- In the event of Emergency Discovery of Archaeological Deposits (ICRMP SOP #6)
  - Contact the Cultural Resources Office immediately. Stop all work at the site.
  - Archaeological deposits discovered in the construction of any new undertaking shall be evaluated for their NRHP eligibility.
  - Until such time as the TN-SHPO has determined an archaeological site to be ineligible or has concurred with a recommendation that an archaeological site is ineligible, any newly discovered sites will be treated as eligible and will be avoided whenever possible.
- Treatment of Human Remains and Funerary/Sacred Objects (ICRMP SOP #8)
  - No Native American human remains, funerary objects, or sacred objects from VTS-S will be knowingly kept in government possession without initiating consultation.
  - Consultation regarding the disposition of Native American human remains, funerary objects, or sacred objects shall be initiated as soon as feasible.

5.11 MANAGEMENT SCHEDULE

Seasonality is an important factor in protecting natural resources. Certain activities should only be done at certain times of the year, and other actions have a higher probability of success in some months than in others. Table 5.3 provides a calendar for essential natural resources activities for VTS-S. This calendar will be revised as new needs are identified and further information is gathered.

Table 5.3: Natural Resources Calendar for VTS-Smyrna

Issue	January	February	March	April	May	June
Weed Control			Pre-emergent weed control on gravel lots and roads	Growth regulator on lawn/range area grasses	Contact herbicide on fencelines and other points of concern	
Revegetation			Mow native grass plots Fertilize Plant cool season grasses	April 15 -> Plant native grass seed Fertilize Plant cool season grasses	Plant native grass seed Plant warm season grasses	Plant warm season grasses
Wetlands		Conduct photo point monitoring				
Erosion control (see Revegetation)		Erosion survey				
Wildlife	Clean out wood duck boxes; repair as needed			Don't mow nesting habitat	Don't mow nesting habitat	Don't mow nesting habitat
Invasive Spp.		Cut-stump treatments of privet, tree of heaven, mimosa, princess tree, olives, white poplar	Basal bark and/or cut stump treat multiflora rose	Basal bark and/or cut stump treat multiflora rose	Basal bark and/or cut stump treat multiflora rose	

Table 5.3, continued:

Issue	July	August	September	October	November	December
Weed Control		Contact herbicide on fencelines and other points of concern				
Revegetation	Plant warm season grasses	Plant cool season grasses Mow native grass plots	Fertilize P&K	Fertilize P&K		
Wetlands		Conduct photo point monitoring				
Erosion control		Erosion survey			Survey SMZ signs; repair, as needed	
Wildlife	Don't mow nesting habitat	Don't mow nesting habitat			Survey SMZ signs; repair, as needed	
Invasive Spp.	Cut-stump treatments of privet, tree of heaven, mimosa, princess tree, olives				Foliar treatments of honeysuckle, winter creeper, and privet on warm days	Foliar treatments of honeysuckle, winter creeper, and privet on warm days

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APPENDIX A

Record of Environmental Consideration
of the
Revised Integrated Natural Resources Management Plan
for the Volunteer Training Site – Smyrna
Tennessee Army National Guard

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REC

RECORD OF ENVIRONMENTAL CONSIDERATION

2011 IMPLEMENTATION Revised Integrated Natural Resources Management Plan

VTS-SMYRNA

PREPARED BY:

CFMO ENVIRONMENTAL OFFICE

PREPARED FOR:

CFMO MANAGEMENT OFFICE

15 OCTOBER 2011

ARNG RECORD OF ENVIRONMENTAL CONSIDERATION

1. PROJECT NAME:

2011 INRMP IMPLEMENTATION VTS-Smyrna

2. PROJECT NUMBER:	**3. DATE:**
N/A	15-Oct-11
4. PROJECT START DATE (dd-mmm-yy):	Nov 1 2011
5. PROJECT END DATE (dd-mmm-yy):	Nov 1 2012

6. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:

Location: VTS-Smyrna, Smyrna, TN Description: REC is for the revision of the 2001 INRMP, which includes an attached EA. There have been no significant changes to this document, as reviewed by NGB Legal. INRMP includes all current RTE listed species, as well as all pertinent Section 7 information. INRMP shall be made available to all related tribes, as well as to the SHPO and adjoining state agencies.

7. CHOOSE **ONE** OF THE FOLLOWING:

☐ An existing **Environmental Assessment** adequately covers the scope of this project.

EA Date (dd-mmm-yy) Conducted By:

☐ An existing **Environmental Impact Statement** adequately covers the scope of this project.

EIS Date (dd-mmm-yy Conducted By:

☑ After reviewing the screening criteria and completing the ARNG Environmental Checklist, this project qualifies for a **Categorical Exclusion** (select one below).

Categorical Exclusion Code: B-3: Preparation of regulations, procedures, manuals, and other...

See 32 CFR 651 App. B

☐ This project is exempt from NEPA requirements under the provisions of:

Cite superseding law:

8. REMARKS:

No environmental issues are noted as part of this proposed action.

REGISTERED ENVIRONMENTAL MANAGER ★ RALPH R. HARDER REM 10542 NREP

CERTIFIED HAZARDOUS MATERIALS MANAGER RALPH R. HARDER 09766 CHMM EXPIRES DEC 31, 2015

REGISTERED ENVIRONMENTAL PROPERTY ASSESSOR ★ RALPH R. HARDER REPA 5933 NREP

Signature of Proponent (Requester)

Concurrence:

Environmental Program Manager

Ralph R. Harder CHMM, REM, NREP

Printed Name of Proponent (Requester)

Printed Name of Env. Program Manager

15 Oct 2011

Date Signed

25 Oct 2011

Date Signed

ARNG ENVIRONMENTAL CHECKLIST

Enter information in the yellow shaded areas.

PART A - BACKGROUND INFORMATION

1. PROJECT NAME:
2011 INRMP IMPLEMENTATION VTS-Smyrna

2. PROJECT NUMBER:	3. DATE:
N/A	15-Oct-11

4. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:
Location: VTS-Smyrna, Smyrna, TN Description: REC is for the revision of the 2001 INRMP, which includes an attached EA. There have been no significant changes to this document, as reviewed by NGB Legal. INRMP includes all current RTE listed species, as well as all pertinent Section 7 information. INRMP shall be made available to all related tribes, as well as to the SHPO and adjoining state agencies.

5. START DATE (dd-mmm-yy): Nov 1 2011		6. END DATE (dd-mmm-yy): Nov 1 2012	
7. STATE/ORGANIZATION: TN-ARNG		8. SERVICE COMPONENT: ARNG	
9. ADDRESS: 3041 Sidco Drive Nashville, TN 37204			
10. PROPONENT/UNIT NAME: AGTN-CFMO		11. POC: Ralph Harder - Env. Engineer	
12. PROPONENT/UNIT ADDRESS: 3041 Sidco Dr RM 314 Nashville, TN 37204			
13. COMM VOICE: 615-313-0607	14. COMM FAX: 313-0766	15. DSN VOICE: 683-0607	
16. DSN FAX: 683-0766	17. EMAIL: ralph.harder@tn.ngb.army.mil		

18. Was the project adequately addressed in a separate environmental review? **Do not include Environmental Baseline Surveys (EBSs).** ☐ YES ☑ NO

If YES, fill out and attach copy of the decision document:	Document Title:
	Reviewing Agency:
	Date of Review: (dd-mmm-yy):

PART B - HISTORICAL INFORMATION

1. Is the agency undergoing, or has it undergone, legal action for NEPA issues?	☐ YES ☑ NO
2. Has there been previous ARNG training, construction, or similar proposals on the site?	☑ YES ☐ NO
3. Are there any known contentious environmental issues currently associated with the site?	☐ YES ☑ NO

Explain any **YES** answers.
Construction and training have previously been conducted at this site.

4. Has the proposed type of equipment (tracked or wheeled) been operated on the site before? ☑ YES ☐ NO

If NO, what NEPA document covers this action? Provide copy of REC, FNSI, or ROD. **This does not include EBSs.**	Document Title:	EA for Implementation of INRMP Management Plan
	Preparing Agency:	TNARNG
	Date (dd-mmm-yy):	Sep-09

5. Describe the environmental setting, including past and present use of the site.
The site has been used as an active military facility for over the past 60 years. This revision to the exisitng INRMP, will have no effect on existing environmental setting of property.

PART C - DESCRIPTION OF PROPOSED PROJECT/ACTION

Include a map with the site clearly marked

1. The proposed action will involve (check all that apply):
☐ Training Activities/Areas ☐ Construction ☐ Reorganization/Restationing
☐ Maintenance/Repair/Rehabilitation ☐ Lease or License ☐ Environmental Plans/Surveys
☐ EBS Preparation
☑ Other (Explain): INRMP Revision

2. Has any related real estate action been addressed in a separate environmental document within the last 5 years? ☐ YES ☑ NO
If YES Document Title: Date (dd-mmm-yy):

3. Number of acres to be disturbed: none

4. How is the site currently zoned?
☐ Residential ☐ Commercial ☐ Industrial ☐ Park
☑ Other (Explain): Federal Military Training Facility

5. Briefly describe the surrounding area land uses (e.g., undeveloped, recreation, residential, etc):
The site is bordered to the north by Percy Priest Lake (recreational), to the west by the Smyrna-Rutherford County Airport (commercial), and to the south and east by light commerical, as well as residential properties.

6. Provide distances to **ALL** environmentally sensitive areas:

TYPE	Distance	Unit	TYPE	Distance	Unit
a. Prime/Unique Farmland	N/A		e. Wild/Scenic River	<15	miles
b. Wilderness Area/National Park	<25	miles	f. Coastal Zones	>400	miles
c. Sole-Source Aquifer	NA		g. Floodplain	<3	miles
d. Wetlands	<1	mile			

PART D - ENVIRONMENTAL IMPACT ANALYSIS

1. AIR

a. Is the proposed action in a non-attainment/maintenance area? ☐ YES ☑ NO
Attach a General Conformity Determination or Record of Non-Applicability (RONA) for Military Construction activities in non-attainment/maintenance areas.

b. Will the proposed action require an air emissions permit, registration, license, etc?
During proposed action ☐ YES ☑ NO
During normal operations after proposed action is completed ☐ YES ☑ NO

c. Will the proposed action release objectionable odors, smoke, dust, suspended particles, or noxious gases into the air?
During proposed action ☐ YES ☑ NO
During normal operations after proposed action is completed ☐ YES ☑ NO

d. Will the proposed action expose sensitive receptors (threatened or endangered plants or animals, or children) to pollutants?
During proposed action ☐ YES ☑ NO
During normal operations after proposed action is completed ☐ YES ☑ NO

Explain any **YES** answers and/or planned mitigation here.

2. TRAFFIC

a. Will the proposed action result in generation of or increase in aircraft activity/traffic? ☐ YES ☑ NO

b. Will the proposed action result in the generation of or increase in vehicular traffic? ☐ YES ☑ NO

c. Will the proposed action use and/or construct unimproved roads?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO

Explain any **YES** answers and/or planned mitigation here. Include aircraft types, number of sorties, and flight schedules (if applicable).

3. NOISE

a. Will the proposed action result in an increase in noise levels?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO

b. Is the proposed action close to any civilian activity where noise might affect the population (add any not listed in the spaces provided)? Include distances for all types: ☐ YES ☑ NO

TYPE	Distance	Unit	TYPE	Distance	Unit
(1) Residence/Home			(5) Library		
(2) Church			(6) Wilderness Area		
(3) School					
(4) Hospital					

c. Will the proposed action involve aircraft?		☐ YES	☑ NO
d. Will the proposed action involve night (10 pm to 7 am) operations?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO

Explain any **YES** answers.

4. EARTH

a. Will the proposed action result in long-term disruptions, displacements, compaction, or overcovering of soil, a permanent change in topography, or ground surface relief features?	☐ YES	☑ NO
b. Will the proposed action result in a long-term increase in wind or water soil erosion, on or off the site, after the proposed action is completed?	☐ YES	☑ NO

Explain any **YES** answers.

5. NATURAL RESOURCES

NOTE- A **subject matter expert** from the State/Territory ARNG Environmental Office must confirm the answers to these questions by signing the signature page.

a. Will the proposed action change the diversity or numbers of any species including mammals, birds, reptiles, amphibians, fish, trees, shrubs, grasses, crops, microflora, or aquatic plants?	☐ YES	☑ NO
b. Will the proposed action introduce any non-native species into the area?	☐ YES	☑ NO
c. Will the proposed action impact any plants or animals that are listed or candidates for threatened, unique, rare, or endangered status?	☐ YES	☑ NO
d. Will the proposed action create barriers to prevent the migration or movement of animals?	☐ YES	☑ NO

e. Will the proposed action deteriorate, alter, or destroy existing fish or wildlife habitat?	☐ YES	☑ NO
f. Will the proposed action deplete any non-renewable natural resources?	☐ YES	☑ NO
g. Will the proposed action alter, destroy, or significantly impact environmentally sensitive areas (wetlands, coastal zones, etc.)?	☐ YES	☑ NO
Explain any **YES** answers.		

6. LAND USE

a. Will the proposed action alter the present land use of the site?	☐ YES	☑ NO
b. Who owns the property? ☑ Federal/DOD ☐ State ☐ City/Town/County ☐ Private ☐ Other (Explain): Military Facility		
c. Does the proposed action involve a real estate action (e.g., purchase, lease, permit, or license)?	☐ YES	☑ NO
Answer the following if you answered YES above: (1) Has an EBS been completed? **If YES,** attach the EBS.	☐ YES	☐ NO
(2) Require an increase of acreage/amendment to an existing lease or license?	☐ YES	☐ NO
(3) Require new purchase of additional acres using federal, state, or other funds?	☐ YES	☐ NO
(4) Require a new lease, license, and/or land use permit?	☐ YES	☐ NO
(5) Replace or dispose of existing facilities?	☐ YES	☐ NO
Explain any **YES** answers.		

7. SOLID WASTE

a. Will the proposed action generate solid wastes that must be disposed of on or off site?	☐ YES	☑ NO
Explain a **YES** answer.		

8. HAZARDOUS WASTE

a. Will the proposed action generate hazardous waste?		☐ YES	☑ NO
b. Will the proposed action store and/or prepare for the disposal of hazardous waste or materials?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
c. Does the proposed action require a permit to accumulate hazardous waste or materials at the site?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
d. Does the proposed action have an increased risk for explosion, spill, or the release of hazardous waste or materials (including but not limited to pesticides, chemicals, or radiation)?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
e. Will the proposed action require the presence of trained personnel to handle and dispose of hazardous	During proposed action	☐ YES	☑ NO
	During normal operations after	☐ YES	☑ NO

f. Will the proposed action involve the opportunity for hazardous material minimization and recycling?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
Explain any **YES** answers.			
g. Do you have a plan describing procedures for the proper handling, storage, use, disposal, and cleanup of hazardous and/or toxic materials?	During proposed action During normal operations after proposed action is completed	☑ YES ☑ YES	☐ NO ☐ NO
Explain any **NO** answers.			

9. WATER

a. Will the proposed action change currents, course, or direction of water movements in marine or fresh waters?		☐ YES	☑ NO
b. Will the proposed action discharge sediments, liquids, or solid wastes into surface waters, or alter the surface water quality?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
c. Will the proposed action change the quality and/or quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?		☐ YES	☑ NO
d. Does the proposed action have the potential to accidentally spill hazardous or toxic materials in or near a body of water?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
e. Does the proposed action have the need for a Spill Control and Countermeasure Plan, and/or Installation Spill Contingency Plan (SPCC and/or ISCP)?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
f. Will the proposed action construct facilities or implement actions within floodplains and/or wetlands?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
g. Does the proposed action require an NPDES stormwater or wastewater discharge permit?		☐ YES	☑ NO
h. Does the proposed action involve the construction of a water or wastewater treatment system (oil water separators, grease traps, etc)?		☐ YES	☑ NO
Explain any **YES** answers.			

10. CULTURAL RESOURCES

a. Does the proposed action involve an undertaking (Reference: 36 CFR 800.161[y]) to a building/structure 50 years or older?	☐ YES	☑ NO
If YES to Question a, has an architectural inventory/evaluation been completed to determine eligibility for the National Register of Historic Places?	☐ YES	☐ NO
b. Does the proposed action involve ground disturbance? (Reference: 36 CFR 800.161[y])	☐ YES	☑ NO
If YES to Question b, has an archaeological inventory been completed to determine if there are any archaeological sites present?	☐ YES	☐ NO
If YES to Question b, did the state contact any Federally-recognized Tribes to comment on the proposed action?	☐ YES	☐ NO
c. Does the proposed action fall under any Federal or Nationwide Programmatic Agreement or Programmatic Comment? **If YES**, reference it below.	☐ YES	☑ NO
d. Has the state contacted the SHPO for comments?	☑ YES	☐ NO
e. Does the proposed action have the potential to affect any traditional cultural properties or sacred sites? **If YES,** attach coordination with Federally-recognized Tribes.	☐ YES	☑ NO

Explain any **YES** answers.
SHPO will be contacted as well as all related Indian Tribes as part of this action.

11. POPULATION

a. Will the proposed action alter the location, distribution, density, or growth rate of the human population of an area?		☐ YES	☑ NO
b. Will the proposed action affect children? Reference: Executive Order 13045	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
c. Are there any Environmental Justice issues associated with the proposed action? Reference: Executive Order 12898.		☐ YES	☑ NO

Explain any **YES** answers.

12. INFRASTRUCTURE

a. Will the proposed action result in the need for new systems or substantial alterations to the following utilities:

(1) Electrical power, fossil fuel or other (specify):	☐ YES	☑ NO
(2) Drinking water?	☐ YES	☑ NO
(3) Wastewater treatment?	☐ YES	☑ NO
(4) Sewer collection system?	☐ YES	☑ NO
(5) Wash racks?	☐ YES	☑ NO
(6) Solid waste disposal?	☐ YES	☑ NO

Explain any **YES** answers.

N/A

PART E - INNOVATIVE READINESS TRAINING (IRT)

Skip this portion if this is not an IRT Project

1. REQUESTER INFORMATION

a. REQUESTER NAME:	b. TITLE:	
c. AGENCY NAME:		
d. AGENCY ADDRESS:		
e. COMM VOICE:	f. COMM FAX:	g. DSN VOICE:
h. DSN FAX:	i. EMAIL:	

j. TYPE: ☐ FEDERAL ☐ STATE ☐ LOCAL/MUNICIPAL ☐ YOUTH/CHARITABLE

k. SUPPORT TYPE REQUESTED:

☐ ENGINEER ☐ TRANSPORTATION ☐ TECH ASSISTANCE ☐ LOGISTICAL

☐ COMMUNICATION ☐ ADMINISTRATIVE ☐ CEREMONIAL ☐ PARADE

☐ OTHER (SPECIFY):

2. ASSIGNED UNIT INFORMATION (Filled out by assigned National Guard unit)

a. UNIT ASSIGNED PROJECT:	b. SERVICE COMPONENT:
c. UNIT ADDRESS:	
d. PROJECT OFFICER RANK: NAME:	
e. SITE VISIT DATE (dd-mmm-yy	

f. PROJECT ASSESSMENT (Give detailed assessment of project requirements. Review project requirements against the screening criteria in Section 651.29 of 32 CFR Part 651. If the project qualifies for a Categorical Exclusion, indicate the Categorical Exclusion code).

g. ESTIMATED NUMBER OF HOURS REQUIRED TO COMPLETE PROJECT:	h. PERSONNEL REQUIRED:	OFFICER	ENLISTED

PART F - DETERMINATION

a. Does the proposed action have the potential to degrade the quality of the environment, or curtail the diversity of the environment? ☐ YES ☑ NO

b. Does the proposed action have the potential for cumulative impacts on environmental quality when the effects are combined with those of other Federal/State actions, or when the action is of lengthy duration? ☐ YES ☑ NO

c. Does the proposed action have environmental effects that will cause substantial adverse effects on the human or natural environment, either directly or indirectly? ☐ YES ☑ NO

On the basis of this initial evaluation, the following is appropriate (check one):

- ☐ An **Environmental Baseline Survey (EBS)** and a **new checklist** once the EBS is completed.
- ☐ IAW 32 CFR 651 Appendix B, the proposed action qualifies for a **Categorical Exclusion (CX)** that does not require a Record of Environmental Consideration.
- ☑ A **Record of Environmental Consideration (REC).**
- ☐ An **Environmental Assessment (EA).**
- ☐ A **Notice of Intent (NOI)** to prepare an **Environmental Impact Statement (EIS).**

Signature of Proponent (Requester)

Printed Name of Proponent (Requester)

19 Oct 2011
Date Signed

Concurrence:

Environmental Program Manager

Printed Name of Env. Program Manager

Oct 25, 2011
Date Signed

Concurrence (as needed):

Signature of Landowner

Printed Name of Landowner

Date Signed

Signature of Commander

Printed Name of Commander

Date Signed

Signature of Facilities Officer

BISHOP JAMES B.
Printed Name of Facilities Officer

25 Oct 11
Date Signed

Signature of Plans & Operations Officer

Printed Name of Plans & Operations Officer

Date Signed

APPENDIX B

Finding of No Significant Impact
for the
Integrated Natural Resources Management Plan, 2001,
for the Volunteer Training Site – Smyrna
Tennessee Army National Guard

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FINDING OF NO SIGNIFICANT IMPACT (FNSI)

Implementation of an Integrated Natural Resources Management Plan for Volunteer Training Site – Smyrna

Tennessee Army National Guard

1. DESCRIPTION OF THE PROPOSED ACTION

The Tennessee Army National Guard (TNARNG) proposes to implement an Integrated Natural Resource Management Plan (INRMP) for the Volunteer Training Site – Smyrna (VTSS), Tennessee. This INRMP complies with the Sikes Act (U.S.C. § 670a *et seq.*) and is consistent with army policy set forth in Army Regulation (AR) 200-3, *Natural Resources- Land, Forest and Wildlife* Management. The INRMP will support the military mission by sustaining the productivity of natural resources. It complies with environmental laws and will help conserve and protect the site's natural resources, thereby, improving the site's relationship with the public.

2. ALTERNATIVES

The Environmental Assessment (EA) examined two alternatives to the proposed action. The preferred alternative was full implementation of the INRMP, and the other alternative was the No Action alternative. The preferred alternative implements the INRMP to the maximum extent possible and in as short a time as practical. It would fully comply with the Sikes Act and AR 200-3. Inclusion of projects listed in the INRMP would not obligate the TNARNG to complete required actions if funding were not available from federal sources. The other alternative, No Action alternative, would not implement the INRMP, and the TNARNG would continue with current methods of natural resources management at the VTSS. In accordance with regulations prompted by CEQ 43 Code of Federal Regulations (CFR), Part 1500, Section 1502.12(d), a "No Action" alternative must be considered. The No Action Alternative was considered despite the fact that implementation of such an alternative would not assure compliance with the Sikes Act or AR 200-3. Therefore, the No Action alternative is not a viable alternative to the TNARNG.

3. ANTICIPATED ENVIRONMENTAL IMPACT

The analysis of potential environmental impact is documented in a combined document and EA entitled: *Volunteer Training Site – Smyrna, Rutherford County, Tennessee, Final Draft Integrated Natural Resources Management Plan and Environmental Assessment.* Impacts to the environment were identified through gathering and comparing information from previous documents, knowledge of standard operating procedures, and analysis of existing environmental conditions.

Implementation of the preferred alternative would have no significant direct or cumulative environmental or socioeconomic impacts. Land use, water resources, vegetation, wildlife, and cultural resources will be positively impacted by implementation of the preferred alternative. Because the proposed action would not involve any

personnel relocations or require significant local goods and services, no cumulative effects on regional demographics, employment, expenditures, or services would occur. Any impact to natural resources that may result from INRMP activities would be mitigated for as part of other INRMP efforts. Because the goals and objectives of the INRMP aim to protect environmental conditions at the VTSS, no mitigation measures are necessary for the proposed action. Many of the INRMP programs themselves serve to mitigate military training impacts to natural resources.

4. REGULATIONS

There are no indications that implementation of this action will violate any federal, state, or local environmental laws or regulations. The proposed action would not violate the National Environmental Policy Act (42 USC § 4321 to 4370e), its regulations as promulgated by the Council on Environmental Quality (40 CFR Parts 1500-1508), Army Regulation 200-2, *Environmental Effects of Army Actions* or any other federal, state, or local environmental laws or regulations, including EO 12898 "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*", EO 13045 "*Protection of Children from Environmental Health Risks and Safety Risks*", EO 13175 "*Consultation and Coordination with Indian Tribal Governments*". The EA documents the status of project compliance with applicable federal environmental statutes and executive orders.

5. CONCLUSION

A careful review of the Environmental Assessment has concluded that the implementation of an Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna, Rutherford County, Tennessee, will not have a significant effect on the quality of the natural or human environment. The requirements of the National Environmental Policy Act and the Council on Environmental Quality Regulations have been satisfied and an Environmental Impact statement (EIS) will not be prepared.

6. PUBLIC REVIEW AND COMMENT

Copies of the final document review are now available for public review and comment at the Smyrna Public Library in Smyrna, Tennessee 37167. Copies can also be obtained at Headquarters Tennessee Army National Guard, Construction and Facilities Management Office, Environmental Division, 3041 Sidco Drive, Nashville, Tennessee 37204-1502. Telephone requests should be directed to CWR Carson Chessor (Natural Resources Program Manager) at (615) 313-2624 during business hours (8:00 a.m. to 4:30 p.m. Monday through Friday).

_____ _____

Date

RICHARD O. MURPHY
COL, NGB
Chief, Environmental Programs
Division

APPENDIX C

Agency Correspondence

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MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 2, 2006

U.S. Fish and Wildlife Service
Tennessee Field Office
446 Neal Street
Cookeville, Tennessee 38501

Dear Sir:

The Tennessee Military Department is beginning the process of revising and updating the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. Army Regulation and the Sikes Act require the TNARNG to develop an INRMP for each of its training site and subject them to a complete revision every five years. The original VTS-S INRMP covered the period 2002-2006. This second edition will cover 2007-2011, and we hope to have a completed document by October 2006.

I am contacting you to inform you of this endeavor and request your agency's participation in the planning process. The USFWS and the Tennessee Wildlife Resources Agency are important cooperators in our task to appropriately manage TNARNG lands and are required signatories to the plan. I would appreciate any insight or information you can provide during the development of the plan.

VTS-S is located next to the Smyrna/Rutherford County Regional Airport in Smyrna, about 22 miles southeast of Nashville, TN. The training site occupies 858 acres on the shores of Stewart Creek and J. Percy Priest Lake. The enclosed map shows the full bounds of the training site. The land is licensed from the Army Corps of Engineers. Natural resources on VTS-S include redcedar forest on the uplands, bottomland hardwood forest along the waterways, and

areas of maintained grassland. There are no known federally listed threatened or endangered species on the training site.

Management goals for VTS-S include a timber management program (forest inventory and management plan development is currently in progress), control of invasive exotic pest plants such as privet, and restoration of native cedar glade ecosystems where appropriate and compatible with the military mission, as well as the on-going goals of protecting waterways from impacts from training or construction activities, maintaining native communities and wildlife habitat, and ensuring the continued availability of a quality environment for military training.

If you have any questions or comments, please contact me at 615-313-0669 or Laura.Lecher@tn.ngb.army.mil. As I get the initial organization of this project in hand, I hope to set up a meeting of the different cooperators to discuss our plans and goals.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

Enclosure

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 2, 2006

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

Dear Sir:

The Tennessee Military Department is beginning the process of revising and updating the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. Army Regulation and the Sikes Act require the TNARNG to develop an INRMP for each of its training site and subject them to a complete revision every five years. The original VTS-S INRMP covered the period 2002-2006. This second edition will cover 2007-2011, and we hope to have a completed document by October 2006.

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Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

Enclosure

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

January 14, 2008

U.S. Fish and Wildlife Service
Tennessee Field Office
ATTN: Lee Barclay
446 Neal Street
Cookeville, TN 38501

Dear Sir:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

In accordance with National Guard Bureau guidance, this letter is to alert you that the draft document is nearly complete. You should receive a copy of the complete first draft for you review in March 2008. If you wish to receive only an electronic copy of the document, please let me know. Otherwise, we will send you both an electronic copy and a paper copy for review.

Once we have received comments and suggestions on this preliminary draft, they will be incorporated into a second draft. NEPA documentation will be prepared at that time. The second draft and NEPA documents will be sent out for your review and for public review.

We apologize for the length of time it has taken us to prepare this document. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP. If you have any questions regarding this document, please contact me at 731-783-3975 or Laura.Lecher@ng.army.mil. My address is Ms. Laura Lecher, Tennessee Army National Guard, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, Tennessee 37204.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

January 14, 2008

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

Dear Sir:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

In accordance with National Guard Bureau guidance, this letter is to alert you that the draft document is nearly complete. You should receive a copy of the complete first draft for you review in March 2008. If you wish to receive only an electronic copy of the document, please let me know. Otherwise, we will send you both an electronic copy and a paper copy for review.

Once we have received comments and suggestions on this preliminary draft, they will be incorporated into a second draft. NEPA documentation will be prepared at that time. The second draft and NEPA documents will be sent out for your review and for public review. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP.

We apologize for the length of time it has taken us to prepare this document. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP. If you have any questions regarding this document, please contact me at 731-783-3975 or Laura.Lecher@ng.army.mil. My address is Ms. Laura Lecher, Tennessee Army National Guard, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, Tennessee 37204.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 2, 2006

U.S. Fish and Wildlife Service
Tennessee Field Office
446 Neal Street
Cookeville, Tennessee 38501

Dear Sir:

The Tennessee Military Department is beginning the process of revising and updating the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. Army Regulation and the Sikes Act require the TNARNG to develop an INRMP for each of its training site and subject them to a complete revision every five years. The original VTS-S INRMP covered the period 2002-2006. This second edition will cover 2007-2011, and we hope to have a completed document by October 2006.

I am contacting you to inform you of this endeavor and request your agency's participation in the planning process. The USFWS and the Tennessee Wildlife Resources Agency are important cooperators in our task to appropriately manage TNARNG lands and are required signatories to the plan. I would appreciate any insight or information you can provide during the development of the plan.

VTS-S is located next to the Smyrna/Rutherford County Regional Airport in Smyrna, about 22 miles southeast of Nashville, TN. The training site occupies 858 acres on the shores of Stewart Creek and J. Percy Priest Lake. The enclosed map shows the full bounds of the training site. The land is licensed from the Army Corps of Engineers. Natural resources on VTS-S include redcedar forest on the uplands, bottomland hardwood forest along the waterways, and areas of maintained grassland. There are no known federally listed threatened or endangered species on the training site.

Management goals for VTS-S include a timber management program (forest inventory and management plan development is currently in progress), control of invasive exotic pest plants such as privet, and restoration of native cedar glade ecosystems where appropriate and compatible with the military mission, as well as the on-going goals of protecting waterways from

impacts from training or construction activities, maintaining native communities and wildlife habitat, and ensuring the continued availability of a quality environment for military training.

If you have any questions or comments, please contact me at 615-313-0669 or Laura.Lecher@tn.ngb.army.mil. As I get the initial organization of this project in hand, I hope to set up a meeting of the different cooperators to discuss our plans and goals.

Sincerely,

Laura P. Lecher

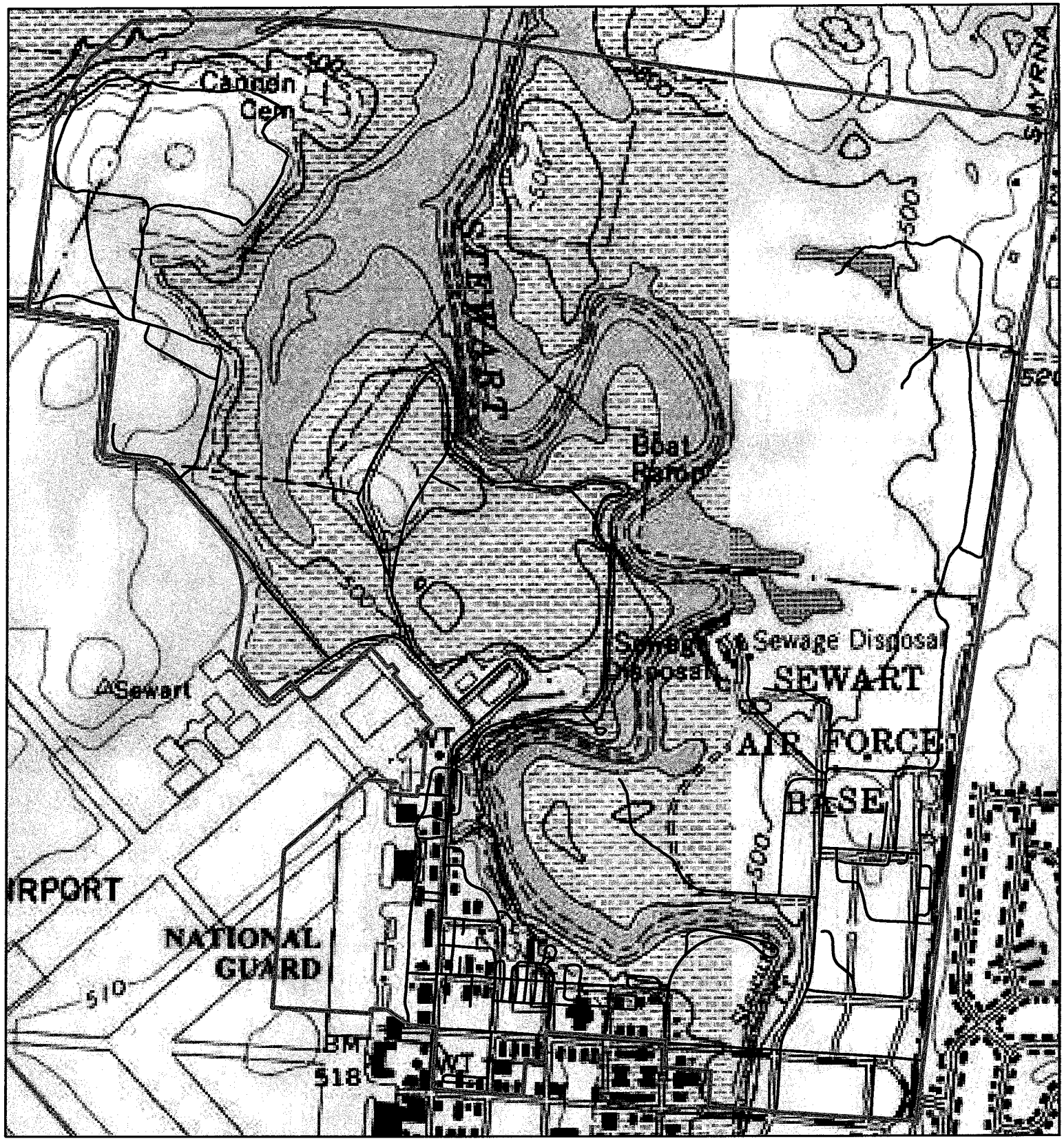
Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

Enclosure

Scale: 1;11,000

VTS SMYRNA

Date: 20 October 2005
Author: C. AGIN
GIS Manager: C. ROBERSON
Phone: 313-0605
E-Mail: Carman.Roberson@tnema.org



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LEGEND

Installation Boundary

Road

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

July 10, 2006

Ms. Laura P. Lecher
Natural Resources Manager
Tennessee Military Department
Office of the Adjutant General
Houston Barracks
Nashville, Tennessee 37204-1502

Re: FWS #06-FA-0927

Dear Ms. Lecher:

Thank you for your letter and enclosure of June 2, 2006, concerning the proposed revision and updating of the Integrated Natural Resources Management Plan for the Tennessee National Guard Volunteer Training Site-Smyrna (VTS-S) in Rutherford County, Tennessee. Fish and Wildlife Service biologists have reviewed the information submitted and we offer the following comments.

We currently have no records for federally listed or proposed endangered or threatened species on the VTS-S. The federally endangered Tennessee purple coneflower (*Echinacea tennesseensis*) and leafy prairie clover (*Dalea foliosa*), however, are known to occur within three miles of the VTS-S. We therefore support the proposed management objective of restoring native cedar glade habitat where it is appropriate and compatible. Successful achievement of this objective will contribute toward the recovery of these two rare native plants.

We also support the objectives of controlling exotic invasive species, protecting the waterways, and maintaining native communities and wildlife habitat on the VTS-S. Biologists from my staff may be able to provide technical assistance in your efforts if you wish.

Thank you for the opportunity to comment. Your concern for the protection of fish and wildlife resources, and endangered and threatened species, is greatly appreciated. If you have any questions, or if we can be of further assistance, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,

for Lee A. Barclay, Ph.D.
Field Supervisor

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 2, 2006

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

Dear Sir:

The Tennessee Military Department is beginning the process of revising and updating the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. Army Regulation and the Sikes Act require the TNARNG to develop an INRMP for each of its training site and subject them to a complete revision every five years. The original VTS-S INRMP covered the period 2002-2006. This second edition will cover 2007-2011, and we hope to have a completed document by October 2006.

I am contacting you to inform you of this endeavor and request your agency's participation in the planning process. The USFWS and the Tennessee Wildlife Resources Agency are important cooperators in our task to appropriately manage TNARNG lands and are required signatories to the plan. I would appreciate any insight or information you can provide during the development of the plan.

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If you have any questions or comments, please contact me at 615-313-0669 or Laura.Lecher@tn.ngb.army.mil. As I get the initial organization of this project in hand, I hope to set up a meeting of the different cooperators to discuss our plans and goals.

Sincerely,

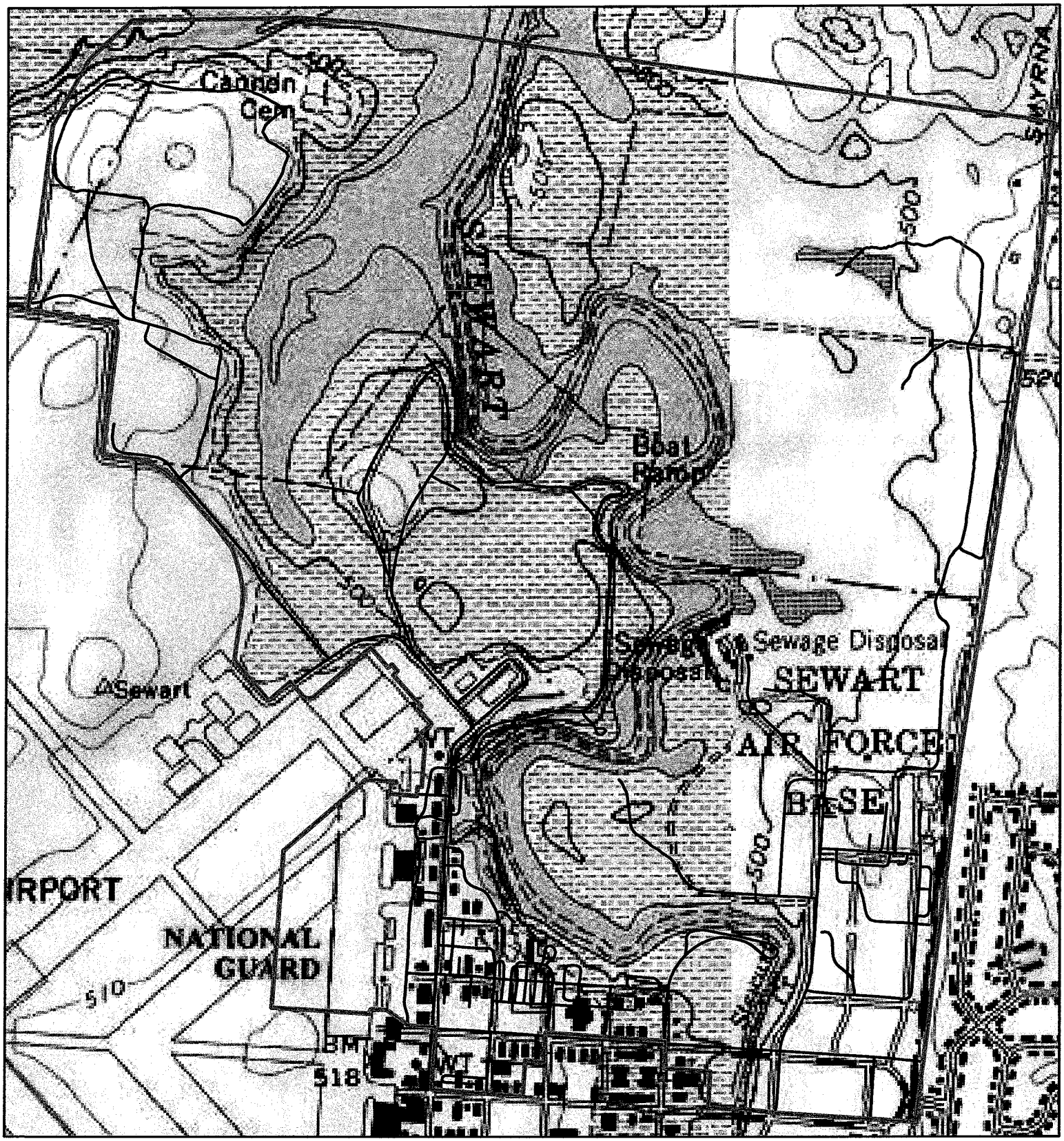
Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

Enclosure

Scale: 1;11,000

VTS SMYRNA

Date: 20 October 2005
Author: C. AGIN
GIS Manager: C. ROBERSON
Phone: 313-0605
E-Mail: Carman.Roberson@tnema.org



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LEGEND

Installation Boundary

Road

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

January 11, 2008

U.S. Fish and Wildlife Service
Tennessee Field Office
ATTN: Lee Barclay
446 Neal Street
Cookeville, TN 38501

Dear Mr. Barclay:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

In accordance with National Guard Bureau guidance, this letter is to alert you that the draft document is nearly complete. You should receive a copy of the complete first draft for your review in March 2008. If you wish to receive only an electronic copy of the document, please let me know. Otherwise, we will send you both an electronic copy and a paper copy for review.

Once we have received comments and suggestions on this preliminary draft, they will be incorporated into a second draft which will be submitted with its NEPA documentation to National Guard Bureau for review, and then will be sent out for public review. You will be notified of the public comment period and provided a copy of that final draft for your review as well.

We apologize for the length of time it has taken us to prepare this document. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP. If you have any questions regarding this document, please contact me at 731-783-3975 or Laura.Lecher@state.tn.us. Address correspondence to my attention at Tennessee Army National Guard, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, Tennessee 37204.

Sincerely,

Laura P. Lecher

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

January 11, 2008

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

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Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 25, 2009

U.S. Fish and Wildlife Service
Tennessee Field Office
ATTN: Lee Barclay
446 Neal Street
Cookeville, TN 38501

Dear Mr. Barclay:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

We had intended to have the first draft delivered to you in mid-2008; however, we fell significantly behind schedule. At this time, we anticipate delivering a draft for your review in August 2009. If you wish to receive only an electronic copy of the document, please let me know. Otherwise, we will send you both an electronic copy and a paper copy for review.

Once we have received comments and suggestions on this draft, they will be incorporated into a second draft which will be submitted with its NEPA documentation to National Guard Bureau for review, and then will be sent out for public review. You will be notified of the public comment period and provided a copy of that final draft for your review as well.

We apologize for the length of time it has taken us to prepare this document. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP. If you have any questions regarding this document, please contact me at 731-783-3975 or Laura.Lecher@tn.gov. Address correspondence to my attention at Tennessee Army National Guard, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, Tennessee 37204.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

June 25, 2009

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

Dear Sir:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

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Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

1 October 2009

U.S. Fish and Wildlife Service
Tennessee Field Office
ATTN: James Widlak
446 Neal Street
Cookeville, TN 38501

Dear Mr. Widlak:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

Enclosed is the first draft of the revised INRMP and associated Environmental Assessment for your review and comment. The overall management goals have changed relatively little from the initial INRMP implemented for 2001-2005, but plans for forest management and wildland fire management have been added, and programs and projects have been updated and expanded. The format and structure of the plan have also been modified.

Once we have received comments and suggestions on this draft, they will be incorporated into a second draft which will be submitted with its NEPA documentation for public review. You will be notified of the public comment period and provided a copy of that final draft for your review as well.

We apologize for the length of time it has taken us to prepare this document. I appreciate your support in this endeavor and look forward to hearing your suggestions for improving the INRMP. If you have any questions regarding this document, please contact Laura Lecher, Natural Resources Manager, at 731-783-3975 or Laura.Lecher@tn.gov. Address correspondence to her attention at Tennessee Army National Guard, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, Tennessee 37204.

Sincerely,

Carson Chessor
Environmental Program Manager
Tennessee Military Department

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

November 20, 2009

Ms. Laura Lecher
Natural Resources Manager
Tennessee Army National Guard
JFHQ-TN-ENV
3041 Sidco Drive
Nashville, Tennessee 37204-1502

Re: FWS #10-CPA-0023

Dear Ms. Lecher:

Thank you for your letter and enclosure of October 1, 2009, transmitting a draft Integrated Natural Resources Management Plan for the Tennessee Army National Guard Volunteer Training Site in Smyrna, Rutherford County, Tennessee. Fish and Wildlife Service biologists have reviewed the document and we offer the following comments.

The Integrated Natural Resources Management Plan contains descriptions of wetland resources and fish and wildlife resources present on the facility. It also describes management activities that will be implemented on the facility to maintain and enhance habitat for fish and wildlife species. Although no federally listed or proposed species have been found on the facility, the activities described in the document to manage aquatic and terrestrial habitats will protect potential endangered and threatened species habitats on the facility.

Thank you for the opportunity to comment. If you have any questions, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,

Mary E. Jennings

Mary E. Jennings
Field Supervisor

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

1 October 2009

Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, Tennessee 37204

Dear Sir:

You were informed in June 2006 of the intent of the Tennessee Military Department to revise and update the Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee, in accordance with Army Regulation and the Sikes Act.

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Sincerely,

Carson Chessor
Environmental Program Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
ENVIRONMENTAL OFFICE AGTN-CFMO-EN
HOUSTON BARRACKS
PO BOX 41502
NASHVILLE, TENNESSEE 37204-1502

October 28, 2009

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, TN 37243-0442

Dear Mr. McIntyre:

In compliance with Section 106 of the National Historic Preservation Act, codified at 36 CFR 800 (Federal Register, December 12, 2000, 776980-77739), the Tennessee Army National Guard (TNARNG) requests your review of the attached submission.

Enclosed is the initial Draft of the revised Integrated Natural Resources Management Plan (INRMP) for the TNARNG Volunteer Training Site-Smyrna (VTS-S), Rutherford County, Tennessee. This is a full revision of the original INRMP, dated 2002, for this training site, with additional significant information on forest management activities, wild land fire management, and invasive species control. In addition, an Environmental Assessment (Appendix A) was prepared in accordance with the National Environmental Policy Act (NEPA) for the proposed action of implementing the revised INRMP.

After review of this document, please advise if you believe the implementation of this plan has the potential to cause any significant impact on historic structures or archaeological resources. Your comments would be appreciated no later than January 29, 2010.

Correspondence should be addressed to Ms. Laura Lecher, TNARNG, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, TN 37204-1502; or phone Laura at (731) 783-3975 or email at Laura.Lecher@tn.gov.

Sincerely,

Mike Stokes
Cultural Resources Manager
Tennessee Army National Guard

Enclosure

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

November 16, 2009

Mr. Mike Stokes
Military Department of Tennessee
Environmental Office AGTN-CFMO-EN
Houston Barracks
Post Office Box 41502
Nashville, Tennessee 37204-1502

RE: DOD, NATURAL RESOURCES MGMT PLAN/SMYRNA, SMYRNA,
RUTHERFORD COUNTY

Dear Mr. Stokes:

At your request, our office has reviewed the above-referenced Integrated Natural Resources Management Plan in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). We find that the plan includes adequate provisions for meeting the Tennessee Army National Guard's responsibilities under Section 106 of the National Historic Preservation Act.

If project plans are changed or archaeological remains are discovered during facility activities, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act.

Your continued cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb

MILITARY DEPARTMENT OF TENNESSEE
OFFICE OF THE ADJUTANT GENERAL
HOUSTON BARRACKS
NASHVILLE
37204-1502

1 October 2009

MEMORANDUM FOR Lisa Delmonico, Natural Resources Program Manager (East), NGB-ARE-C, 111 South George Mason Drive, Arlington, VA 22204-1382.

SUBJECT: Review of Draft Integrated Natural Resources Management Plan, Revised, and Environmental Assessment for the Volunteer Training Site – Smyrna

1. The Tennessee Army National Guard (TNARNG) has developed a revised Integrated Natural Resources Management Plan (INRMP) for its Volunteer Training Site – Smyrna, located in Rutherford County, Tennessee, to guide environmental management for the 2010-2014 period. The INRMP was developed in collaboration with the U.S. Fish and Wildlife Service field office and the Tennessee Wildlife Resources Agency. The first draft is currently in review with both offices.

2. Due to the addition of forest management and wildland fire management plans, as well as more extensive invasive pest plant control measures, a new Environmental Assessment (EA) for the document was also developed. The EA is incorporated as Appendix A of the INRMP.

3. TNARNG hereby submits two hardcopies and one electronic copy of the Draft Integrated Natural Resources Management Plan, Revised, and the associated Environmental Assessment to NGB for review.

4. Point of Contact for this action is Laura Lecher, Natural Resources Manager, at 731-783-3975 or laura.lecher@ng.army.mil.

3 Encls.

Carson Chessor
Environmental Program Manager
Tennessee Military Department

NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1382

ARNG-ILE

29 Mar 11

MEMORANDUM FOR TENNESSEE ARMY NATIONAL GUARD (TNARNG) (Attn: Ms Laura Lecher), CFMO-E, 3041 Sidco Dr, Nashville, TN 37214

SUBJECT: Army National Guard (ARNG) Directorate Review of the Integrated Natural Resource Management Plan (INRMP) for the Smyrna Training Site, Tennessee

1. References:

a. The Sikes Act (16 U.S.C 670 et seq)

b. Handbook, Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with the National Environmental Policy Act of 1969, Jun 06.

c. Memorandum, NGB-ARE, 30 NOV 06, Interim Guidance for Revisions and Updates to Existing Integrated Natural Resource Management Plans.

d. Army Regulation 200–1, Environmental Protection and Enhancement, Dec 07.

2. The ARNG Directorate staff have reviewed the referenced draft INRMP. Attached are the errata sheets containing ARNG-ILE comments. Legal review was not required for an INRMP covered by a Categorical Exclusion (CX).

3. The POC for this action is CPT George Leverton, Training Lands Support Officer. He can be contacted at george.leverton@us.army.mil or at 703-601-7973.

BETH A ERICKSON
Deputy, Environmental
Programs Division

Encl
Errata

Comment #	*following location in the document:*						Comment	Name of NGB Reviewer	Office of NGB Reviewer	Action Taken by State to Address the Comment
	Chapter	Section	Page	Paragraph	Line	Sentence				
	1	1.3.1	2				NR MGR at NGB not responsible for staffing w/ regulators, state is, please re-write	L Delmonico	ARE-C	Rephrased to say "The natural resources manager at NGB-ARE is responsible for reviewing the INRMP and advising the Environmental Office before the state formally submits the plan for public review."
	1	1.4	4				State or Fed Needs to be stated here	L Delmonico	ARE-C	Do not understand comment -- both federal and state laws are compiled in Appendix E, as well as DoD and DA guidance. No change made.
	1	1.5	4				200-2 is gone, now only reference 200-1. Check rest of doc too please.	L Delmonico	ARE-C	200-2 was not superseded by 200-1 according to the new AR 200-1 summary page. However NEPA references changed to **32 CFR 651.**
	1		5				EA? Why? Couldn't you just rec off of old doc?	L Delmonico	ARE-C	NGB legal has determined no EA required. EA removed, references changed to REC off original INRMP EA.
	1	1.6	5	1			where are contributionons from services? Not in Appendix C as referenced here.	L Delmonico	ARE-C	Added concurrence letter from USFWS. No comments received to date from TN Wildlife Resources Agency.
	1	1.6	5	2			public review? Not yet, do after approved by NGB	L Delmonico	ARE-C	Will be done after NGB review and added to document as noted in text.
			8				forestry funds: state gets 40% after USACE and installation get funds. 40% of remainder, not total.	L Delmonico	ARE-C	I don't understand comment: installation doesn't get funds since we do not run our own timber sales.
		appendix e					rmv 200-2, 350-4	L Delmonico	ARE-C	Removed 350-4. Retained AR 200-2 (see response to #5 above).
	2	2.9	27				meet gis standards incl. sdsfie, fgdc, and provide all required data to NGB for CIP	L Delmonico	ARE-C	Section 2.9 rewritten with more detail.
			45				all future surveys should result in useable GIS data	L Delmonico	ARE-C	See last paragraph on p.27.
	3	3.72	50				thinning - what did you do w/ timber value? All timber w/ value is fed property and should not be removed improperly.	L Delmonico	ARE-C	Project was done by training site without Environmental office awareness or approval. However, timber quality in areas thinned has been exceedingly low and sale would have brought minimal value.
	4		63				goals, objectives, and tasks should be nexted, not separate lists. Many goals are very specific	L Delmonico	ARE-C	The goals are overarching -- many objectives meet several goals. It seemed inefficient to list objectives repeatedly under each goal. Therefore goals are listed once. See table 4.3
	general						objectives should be measurable. Tasks should have timeline estimates.	L Delmonico	ARE-C	Objectives/tasks reworked. See text and table 4.3 for timelines.
	general						please pull out all completed projects, grey out text, or some how more clearly mark them. Also, how to distinguish tasks that are new here vs. old INRMP. Did you include all the tasks from old INRMP to show progress? This doc should show how you have been doing, what you are still working on, and new changes. It is hard to differentiate.	L Delmonico	ARE-C	2001 INRMP project progress provided in table 4.2. Reworked table 4.3 to show future projects; they are identified as new to this INRMP, carryover from old INRMP, or repeat project.
	4		68				Env. Doesn't do much erosion control (task 4) be clear this is ITAM. This can be included here, but seems the primary focus, and should not be the case.	L Delmonico	ARE-C	Other responsible parties identified in text and table 4.3.
	5		70				obj 5-2 task 3, here you could repair naturally occuring erosion to solve sedimentation problems, not training erosion problems or at least you must be very clear that this is not ARE bill, but ITAM project. I am glad you are aware and tracking, but this is not our lane anymore.	L Delmonico	ARE-C	Added statement identifying responsible party as maintenance on p.69.

Comment #	*following location in the document:*						Comment	Name of NGB Reviewer	Office of NGB Reviewer	Action Taken by State to Address the Comment
	Chapter	Section	Page	Paragraph	Line	Sentence				
	general						Need to staff with USACE districts and demonstrate their support.	L Delmonico	ARE-C	Will be sent to USACE along with other agencies following NGB review.
		A-3					NGB sign Eas. Need Col Bennett's sig.	L Delmonico	ARE-C	Corrected signature page
		I					Consultation with tribes: need 2 Xs.	L Delmonico	ARE-C	Tribal consultation will be conducted following NGB review.
							Should cultural resources be included under Section 2.8? Are there any natural resources that are of importance to tribes, for example? That might require that you consult before you do anything to them? OR, is there any other way that cultural resources (ie consultation required prior to ground disturbance, etc.) will impact natural resources management under this plan?	K. Leahy	ARE-C	Section 2.8 deals specifically with environmental concerns which might impact the mission. There are no known natural resources that are significant to the tribes. Cultural resource concerns that might impact the mission are addressed in the ICRMP. No change made.
							Section 3.10 - I recommend you make an important statement in the beginning of this section that states clearly that NO work will occur that may have the potential to affect cultural resources and is defined as a federal undertaking as per 36CFR800 until the TNARNG has consulted with appropriate parties under the Section 106 process - including the TNSHPO and any federally recognized tribes that have an interest in the property. Completion of the INRMP in no way means that all consultation requirements associated with management actions described herein are completed.	K. Leahy	ARE-C	Section 3.10 is simply a description of cultural resources on site and site history. Paragraph 2 of Section 4.2.14 states that all INRMP activities will be coordinated through the TNARNG Cultural Resources Manager to ensure that all cultural requirements are met. No change made.
							In EA found in appendix - in cultural resources section 5.7 - This is not really the case as you have not yet consulted with the SHPO on a project by project basis, which would still be required prior to implementation of actions described within your INRMP. Please clarify that the consultation required as part of cultral resources compliance associated with actions described within the INRMP will occur prior to implementation. And, in the cases where the action will have an adverse effect on cultural resources, that a Memorandum of Agreement (as per regulation) will be completed.	K. Leahy	ARE-C	EA has been eliminated. In reference to the concern that consultation be done whenver needed, see response to #23 above.
							Did you consult with tribes regarding your INRMP? That should be included in the consutlation letters in Appendix. Also, an MFR detailing tribal consultation should be included -- ie how you followed up, etc. when letters went out, if responses were received, and how the TNARNG intends to address any responses they do receive.	K. Leahy	ARE-C	Tribal consultation will be conducted following NGB review.
	3	9.2	55	1	1	1	"According to a non-exhaustive survey of mammals", Please define what this is?	Reichold	ARE-C	Rephrased to say "According to a baseline survey of mammals…" "Non-exhaustive" implied that there were probably mammals on site that were missed by the survey methods utilized. However, that is an unnecessary statement as the sentence discusses an animal that was found.
	Table A2.1 Wildfire Management Pla						I would remove this table. It dates the document and annual refresher training is needed.	Reichold	ARE-C	Removed

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

26 October 2011

U.S. Fish and Wildlife Service
Tennessee Field Office
ATTN: James Widlak
446 Neal Street
Cookeville, TN 38501

Dear Mr. Widlak:

In November 2009 your office reviewed the first draft of the revised Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. We appreciate your letter of support for the plan.

The final draft of the revised INRMP for VTS-S is now available. There have been no substantive changes since the first draft; although the projects table in chapter four has been modified. In addition, the National Guard Bureau legal office has determined that the Environmental Assessment (EA) from the original 2001 INRMP is sufficient for this document, and so the draft EA has been removed and replaced with a Record of Environmental Consideration tiering off that earlier EA.

The final draft of the revised INRMP for VTS-S can be accessed at http://tnmilitary.org/Environmental.html. If you have problems downloading the document, a cd version can be mailed to you. A print copy of the document is also available for review at the Smyrna Public Library, 400 Enon Springs Road West, Smyrna, TN 37167.

I request that your agency review this plan according to Section 670a(a)(2) of the Sikes Act. Please provide written comments on this Final Draft no later than 6 January 2012. This document will also be going out for public review during this time in accordance with the Sikes Act.

If you support this plan and have no alterations or additions to request, please furnish this office with a letter from your Field Supervisor stating your agency's concurrence with the document.

Correspondence should be addressed to Ms. Laura Lecher, TNARNG, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, TN 37204-1502. If you have any questions, please contact me at (731)222-5321 or email at Laura.Lecher@tn.gov.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

26 October 2011

Ed Carter, Executive Director
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 41489
Nashville, TN 37204

Dear Mr. Carter:

In November 2009 your office was given the opportunity to review the first draft of the revised Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. The final draft of this document is now available.

There have been no substantive changes since the first draft; although the projects table in chapter four has been modified. In addition, the National Guard Bureau legal office has determined that the Environmental Assessment (EA) from the original 2001 INRMP is sufficient for this document, and so the draft EA has been removed and replaced with a Record of Environmental Consideration tiering off that earlier EA.

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If you support this plan and have no alterations or additions to request, please furnish this office with a letter stating your agency's concurrence with the document.

Correspondence should be addressed to Ms. Laura Lecher, TNARNG, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, TN 37204-1502. If you have any questions, please contact me at (731)222-5321 or email at Laura.Lecher@tn.gov.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

26 October 2011

E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, TN 37243-0442

Dear Mr. McIntyre:

In compliance with Section 106 of the National Historic Preservation Act, codified as 36 CFR 800 (Federal Register, December 12, 2000, 776980-77739), the Tennessee Army National Guard (TNARNG) requests your review of the attached submission.

Enclosed is the Final Draft of the revised Integrated Natural Resources Management Plan (INRMP) for the TNARNG Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. This is an update and revision of the original INRMP, dated 2001, for this training site, with added information on forest management activities, wildland fire management, and invasive species control.

You reviewed an earlier draft of this document in October 2009. There have been no substantive changes since that draft, although the projects table in chapter four has been modified.

After review of this document, please advise if you believe the implementation of this plan has the potential to cause any significant impact on historic structures or archaeological resources. Your comments would be appreciated no later than 6 January 2012.

Correspondence should be addressed to Ms. Laura Lecher, TNARNG, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, TN 37204-1502; or phone Laura at (731)222-5321 or email at Laura.Lecher@tn.gov.

Sincerely,

Carson Chessor
Environmental Program Manager
Tennessee Military Department

Agencies contacted regarding the final review of the draft INRMP for VTS-Smyrna:

USFWS	Lee Barclay, Field Supervisor US Fish and Wildlife Service, Cookeville Field Office 446 Neal Street Cookeville, TN 38501
TWRA	Ed Carter, Executive Director Tennessee Wildlife Resources Agency Ellington Agricultural Center PO Box 41489 Nashville, TN 37204
SHPO	E. Patrick McIntyre, Jr. Tennessee Historical Commission 2941 Lebanon Road Nashville, TN 37243-0442

USACE	US Army Corps of Engineers Nashville District PO Box 1070 Nashville, TN 37202-1070 US Army Corps of Engineers Mobile District PO Box 2288 Mobile, AL 36628-0001
EPA	US Environmental Protection Agency, Region 4 Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303
USFS	US Forest Service, Southern Region 1720 Peachtree Road, NW Atlanta, GA 30309
NRCS	Michael Hart, Area Conservationist Natural Resources Conservation Service 315 John R. Rice Boulevard, Suite 175 Murfreesboro, TN 37129

TDEC	Barry Brawley Nashville Field Office TN Department of Environment and Conservation 711 R.S. Gass Blvd. Nashville, TN 37216
	TN Department of Environment and Conservation Resource Management Division 7th Floor, L&C Annex 401 Church Street Nashville, TN 37243
	Paul E. Davis, Director Division of Water Pollution Control 6th Floor, L&C Annex 401 Church Street Nashville, TN 37243
TDF	Steven Scott, State Forester TN Division of Forestry PO Box 40627 Melrose Station Nashville, TN 37204
Airport	Lois Vallance, Airport Manager Smyrna/Rutherford County Airport Authority 278 Doug Warpoole Rd. Smyrna, TN 37167
Smyrna water	Greg Upham Storm Water Management Town of Smyrna 315 South Lowry Street Smyrna, TN 37167-3416

Tribes:

Henryetta Ellis, THPO
Absentee Shawnee Tribe of Oklahoma
2025 S. Gordon Cooper
Shawnee, OK 74801

Bryant Celestine, Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas 77351

Augustine Asbury, 2nd Chief/Cultural Preservation Specialist
Alabama-Quassarte Tribal Town
PO Box 187
Wetumka, OK 74883

Honorable Chad Smith, Principal Chief
Cherokee Nation
17675 S. Muskogee
Tahlequah, OK 74465

Virginia Nail, Historic Preservation Officer
Chickasaw Nation
PO Box 1548
Ada, OK 74821

Terry Cole, THPO
Choctaw Nation of Oklahoma
PO Box 1210
Durant, OK 74702-1210

Leland Thompson, THPO
Coushatta Tribe of Louisiana
PO Box 818
Elton, TA 70532

Russell Townsend, THPO
Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Ms. Robin DuShane, Cultural Preservation Director
Eastern Shawnee Tribe of Oklahoma
12705 S. 705 Road
Wyandotte, OK 74370

Ms. Dana Masters, THPO
Jena Band of Choctaw
PO Box 14
Jena, LA 71342

Mr. Marsey Harjo, THPO
Kialegee Tribal Town
PO Box 332
Wetumka, OK 74883

Ted Isham, THPO
Muscogee (Creek) Nation
PO Box 580
Ocmulgee, OK 74447

Robert Thrower, THPO
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 36502-5025

Jean Ann Lambert, THPO
Quapaw Tribe of Oklahoma
PO Box 765
Quapaw, OK 74363-0765

Natalie Deere, THPO
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, OK 74884

Willard S. Steele, THPO
Seminole Tribe of Florida
30290 Josie Billie Highway, PMB 1004
Clewiston, FL 33440

Charles Coleman, NAGPRA Representative
Thopthlocco Tribal Town
Rt. 1, Box 190-A
Weleetka, OK 74880

Earl J. Barbry, Jr., THPO
Tunica-Biloxi Tribe of Louisiana
PO Box 1589
Marksville, LA 71351

Lisa C. LaRue, Acting THPO
United Keetoowah Band of Cherokee Indians in Oklahoma
2450 S. Muskogee Ave.
Tahlequah, OK 74464

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

26 October 2011

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Dear Sir:

This letter is to notify you of the availability for review of the final draft of the revised Integrated Natural Resources Management Plan (INRMP) for the Tennessee Army National Guard (TNARNG) Volunteer Training Site – Smyrna (VTS-S) in Rutherford County, Tennessee. This document is an update and revision of the original 1001 INRMP for the training site, with added information on forest management activities, wildland fire management, and invasive species control.

The Volunteer Training Site – Smyrna is located next to the Smyrna/Rutherford County Regional Airport in Smyrna, about 22 miles southeast of Nashville, TN. The 858 acre site is devoted to the preparation of National Guardsmen for their military training, including maneuver, range operations, equipment use, and other combat readiness training.

The training site straddles Stewart Creek and a portion of J. Percy Priest Lake. Natural resources on the VTS-S include redcedar forest on the uplands, bottomland hardwood forest along the waterways, and areas of maintained grassland. There are no known federally listed threatened or endangered species on the training site. The INRMP describes the baseline conditions of natural resources on the VTS-S and describes management programs and guidance allowing for the successful completion of the military mission while providing for the conservation of natural resources, preservation of rare and unique resources, and long-term sustainability of the training site.

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Please provide written comments on this Final Draft no later than 6 January 2012. This document will also be going out for public review during this time in accordance with the Sikes Act.

Correspondence should be addressed to Ms. Laura Lecher, TNARNG, JFHQ-TN-ENV, 3041 Sidco Drive, Nashville, TN 37204-1502. If you have any questions, please contact me at (731)222-5321 or email at Laura.Lecher@tn.gov.

Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
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P.O. Box 41502
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Sincerely,

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

29 February 2012

MEMORANDUM FOR RECORD

SUBJECT: Final Agency and Tribe Review of the Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna

1. Letters were sent to interested agencies in October 2011 regarding the availability for review of the final draft of the Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna. No comments were received.

2. Letters were sent to American Indian tribes with ties to Tennessee Army National Guard lands in October 2011 regarding the availability for review of the final draft of the Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna. Two replies were received:

a. The United Keetowah Band of Cherokee Indians in Oklahoma responded via email on 14 November 2011 that it had no comments at that time.

b. The Choctaw Nation of Oklahoma responded via letter on 17 November 2011 that the project is out of the Choctaw Nation of Oklahoma areas of interest.

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

MILITARY DEPARTMENT OF TENNESSEE
Office of The Adjutant General
Houston Barracks
P.O. Box 41502
Nashville, Tennessee 37204-1502

1 March 2012

MEMORANDUM FOR RECORD

SUBJECT: Tennessee Wildlife Resources Agency Assumed Concurrence with the Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna

1. The Tennessee Wildlife Resources Agency (TWRA), in accordance with the Sikes Act, was given the opportunity to provide input into the development of the Integrated Natural Resources Management Plan (INRMP) for the Volunteer Training Site – Smyrna (VTS-S) and to review the first draft and the final draft of this document.

2. Letters were sent to TWRA on the following dates:

a. June 2, 2006 – stating the intent of the TNARNG to revise the INRMP for VTS-S.

b. June 25, 2009 – to alert the agency that the draft document would be sent out in August 2009.

c. September 28, 2009 – the first draft was sent for review.

d. October 26, 2011 – the final draft was sent for review.

3. No response was received to any of these communications. The agency has had more than 60 days for review of the final draft document and has provided no comments during that time.

4. In accordance with National Guard Bureau guidance, the Tennessee Army National Guard assumes mutual agreement by the Tennessee Wildlife Resources Agency with the INRMP as presented.

Laura P. Lecher
Natural Resources Manager
Tennessee Military Department

APPENDIX D

Public Comment

The final Integrated Natural Resources Management Plan for the Volunteer Training Site – Smyrna was submitted for public review from 1 February to 2 March 2012. No comments were received.

Reminder: JLM to host informational event at Five Senses

The Daily News Journal

MURFREESBORO — Junior League of Murfreesboro is hosting an informational event in February for anyone who is interested in learning more about the nonprofit charitable organization.

The social will begin at 6 p.m. Feb. 20 at Five Senses restaurant, located at 1602 W. Northfield Blvd.

Five Senses will provide appetizers and a cash bar while information is presented regarding activities JLM is currently participating in throughout the community.

Junior League of Murfreesboro began 20 years ago with 24 charter members. The dedicated group of local women came together to develop an organization for the burgeoning community of Murfreesboro.

Currently Junior League of Murfreesboro has grown to an active membership of 155 women, with more than 70 sustainers, and members help serve many areas of need in this community.

Junior League members are committed to promoting voluntarism, developing the potential of women and improving communities through action and leadership of trained volunteers for charitable purposes.

The Junior League of Murfreesboro New Member program will begin in March and activation into the chapter is in September.

If you are interested in learning more about Junior League of Murfreesboro and plan to attend the informational social, contact Ann Elizabeth Rucker at aerucker@gmail.com or call 615-332-1939.

AKA celebrates silver anniversary

SUBMITTED PHOTO

The Murfreesboro Graduate Chapter (Pi Nu Omega) of Alpha Kappa Alpha Sorority Inc. recently celebrated its 25th anniversary. The chapter, which was chartered July 6, 1986, by 16 young ladies, currently has 80-plus members. The celebration was held at First Baptist Church on Castle Street Dec. 11. The program chair was Sernetta Bufford with co-chair Kenesha Harper. Brenda McKinney is president of the local AKA chapter. Charter members, seated, are, from left, Nolia Newsom, Patricia Smith (represented by her daughter Anetra Smith), Phyllis Washington, Linda Jordan, Kreda Yokley, Carolyn Davidson, Joan Simmons and Tanya Henderson. Charter members not present were the late Cora Addison, Phyllis Campbell, Clydell Clark, Rhonda Frazier, Janet Jones, Mary Scales, Connie Wade and the late Luvenia Webb.

--- NOTICE ---

Officials of the Tennessee Army National Guard announce the availability of the Integrated Natural Resources Management Plan for Smyrna Training Site, Smyrna, TN

The Integrated Natural Resources Management Plan is available for public review beginning February 1, 2012, and ending on March 2, 2012 at:

Smyrna Public Library
400 Enon Springs Road West
Smyrna, Tennessee 37167

The Integrated Natural Resources Management Plan was prepared by the Department of Defense, Tennessee Army National Guard and the National Guard Bureau in Washington, DC and provides guidance on the protection and management of natural resources on the Smyrna Training Site, Smyrna, TN. The document includes a list of projects to be implemented in coming years, as funding allows, to support military training and conserve the natural environment on the facility.

Comments on the Integrated Natural Resources Management Plan are invited, and they should be addressed to:

Tennessee Army National Guard
ATTN: Laura Lecher
PO Box 41502
Nashville, Tennessee 37204-1502
Telephone: 731-222-5321
www.tnmilitary.org

TN-0000779963

WEATHER

AccuWeather.com

TODAY'S FORECAST

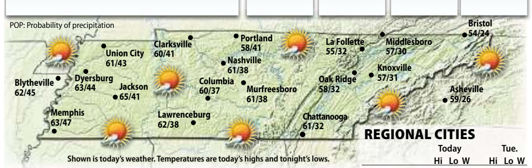
6 A.M.	NOON	6 P.M.	MIDNIGHT
31°	55°	52°	42°
POP: 0%	POP: 0%	POP: 0%	POP: 5%

Mostly sunny and comfortable today. Clear tonight.
High 61° / Low 38°

EXTENDED FORECAST

TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
65° 48°	62° 38°	59° 39°	56° 35°
POP: 10%	POP: 30%	POP: 30%	POP: 35%
Nice with periods of sun	Chance of a shower	Rain and drizzle possible	Mostly cloudy, rain possible

POP: Probability of precipitation



Shown is today's weather. Temperatures are today's highs and tonight's lows.

ALMANAC

Nashville through 5 p.m. yesterday

Temperature

	High	Low
Yesterday	55°	22°
Last year	66°	29°
Normals	48°	29°
Records	78° (1911)	-1° (1966)

Precipitation

24 hours ending 5 p.m. yest.	0.00"
Month to date	5.13"
Year to date	5.13"
Normal month to date	3.48"
Normal year to date	3.48"
Annual normal	47.25"

Sun and Moon

Sunrise today	6:48 a.m.
Sunset tonight	5:10 p.m.
Moonrise today	10:27 a.m.
Moonset today	none

First	Full	Last	New
Jan 30	Feb 7	Feb 14	Feb 21

Forecasts and graphics provided by **AccuWeather, Inc.** ©2012

CONDITIONS TODAY

UV Index and RealFeel Temperature® Today

	6 a.m.	8 a.m.	10 a.m.	Noon	2 p.m.	4 p.m.	6 p.m.
UV Index	0	0	2	3	2	0	0
RealFeel	29	32	46	54	58	54	47

The higher the **AccuWeather.com UV Index™** number, the greater the need for eye and skin protection. 0-2 Low; 3-5 Moderate; 6-7 High; 8-10 Very High; 11+ Extreme. The patented AccuWeather.com RealFeel Temperature is an exclusive index of effective temperature based on eight weather factors.

AIR QUALITY INDEX

Good | Moderate | Unhealthy Sensitive | Unhealthy | Very Unhealthy | Hazardous

15 — 50 — 100 — 150 — 200 — 300

Yesterday's main offender: Particulates

Source: Nashville.gov ▼Today △Yesterday

WEATHER HISTORY

The temperature at La Junta, Colo., rose from 5 degrees on the morning of Jan. 30, 1991, to a high of 50 degrees in the afternoon. Pueblo, Colo., began the day at 2 degrees but ended up with a comfortable high temperature of 58 degrees.

REGIONAL CITIES

	Today Hi	Lo	W	Tue. Hi	Lo	W
Asheville	59	26	s	64	32	s
Atlanta	61	39	s	66	46	s
Birmingham	64	39	s	69	49	pc
Chattanooga	61	32	s	67	40	s
Jackson, MS	69	44	s	72	52	pc
Little Rock	69	42	s	68	52	c
Louisville	56	41	pc	64	50	c
Memphis	63	47	s	68	56	c
Nashville	61	38	s	68	51	pc

RIVER LEVELS

Levels as of 7 a.m. yesterday

West Fork Stones River	Gauge Height	Flood Stage	24 hr. Chg.
near Murfreesboro	3.53	---	-0.31

Lake	Level	Full Pool	24 hr. Chg.
Lake Barkley	355.90	356	none
Kentucky Lake (upper)	355.83	356	+0.13
Kentucky Lake (lower)	325.44	302	+0.44
Old Hickory Lake	444.00	445	+0.02
Percy Priest Lake	485.25	---	-0.95
Center Hill Lake	632.95	648	+0.57

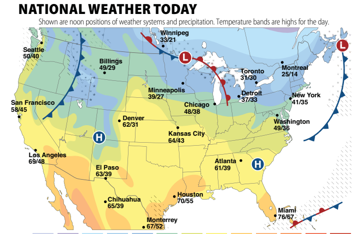
WEATHER TRIVIA™

Q: What weather phenomenon is referred to as a "bowling ball"?

A: An upper-level storm separated from the main jet stream.

NATIONAL WEATHER TODAY

Shown are noon positions of weather systems and precipitation. Temperature bands are highs for the day.



While a seasonably chilly day unfolds across the Northeast and snow pushes through the Great Lakes, milder air will funnel into the Midwest today. Comfortable temperatures will grace the South and Plains. Gusty winds will whip the northern Rockies as snow falls in the mountains. Showers will dot the Pacific Northwest.

Yesterday's National Extremes: (for the 48 contiguous states)
High: 82° in Fullerton, CA **Low:** -18° in Fosston, MN

NATIONAL CITIES

	Today Hi	Lo	W	Tue. Hi	Lo	W
Boston	39	28	pc	44	37	c
Charleston, SC	64	38	s	70	47	pc
Chicago	48	38	pc	49	32	r
Cleveland	40	34	c	52	40	r
Detroit	37	33	c	47	38	r
Evansville	56	40	s	63	47	c
Honolulu	81	68	s	81	66	s
Indianapolis	50	37	pc	58	43	c
Las Vegas	63	41	s	61	43	s
Los Angeles	69	48	s	69	51	s
Miami	76	67	pc	79	70	c
New Orleans	68	54	s	73	60	pc
New York	41	35	pc	53	45	pc
Phoenix	73	46	pc	68	48	s
Pittsburgh	40	34	pc	55	42	pc
Providence	42	27	pc	47	38	pc
Richmond	54	34	pc	68	41	s
Sacramento	61	38	pc	60	34	pc
St. Louis	65	43	pc	67	43	c
San Francisco	58	45	pc	58	42	pc
Tampa	74	55	s	78	60	pc
Washington, DC	49	36	pc	61	42	pc

WORLD CITIES

	Today Hi	Lo	W	Tue. Hi	Lo	W
Amsterdam	32	25	c	33	22	s
Baghdad	61	47	pc	61	47	sh
Barbados	83	74	sh	83	74	s
Cairo	63	51	sh	65	50	s
Dublin	43	39	r	41	37	r
Frankfurt	34	25	c	34	20	s
Geneva	34	25	sf	35	20	c
Hong Kong	63	55	pc	64	57	s
Jerusalem	54	45	sh	53	42	s
Kabul	38	18	sn	43	21	s
Kuwait	64	50	s	65	56	r
London	37	30	c	37	28	c
Mexico City	64	43	t	68	46	c
Moscow	1	-4	pc	-1	-9	c
Paris	36	27	c	33	23	pc
Rome	55	39	c	48	39	r
San Jose	81	61	sh	81	61	pc
Sydney	88	73	pc	90	66	t
Tokyo	43	32	pc	45	36	pc
Vancouver	45	41	r	47	42	r

Weather (W): **s**-sunny, **pc**-partly cloudy, **c**-cloudy, **sh**-showers, **t**-thunderstorms, **r**-rain, **sf**-snow flurries, **sn**-snow, **i**-ice.

APPENDIX E

Annotated Summary of Key Legislation Related to Natural Resources Management

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United States Code

Sikes Act, as amended; *16 U.S.C. 670(a) et seq.*	Authorizes military installations to carry out programs for the conservation and rehabilitation of natural resources. Requires preparation and implementation of Integrated Natural Resources Management Plans for all military installations in U.S. except those lacking significant natural resources.
National Environmental Policy Act of 1969 (NEPA), as amended; *P.L.91-190, 42 U.S.C. 4321 et seq.*	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.
Leases: Non-excess Property of Military Departments, 10 U.S.C. 2667, as amended	Authorizes DoD to lease to commercial enterprises Federal land that is not currently needed for Public use. Covers agricultural outleasing programs.
Federal Land Use Policy and Management Act, *43 U.S.C. 1701-1782*	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archaeological resources and values; as well as to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This act also requires consideration of commodity production such as timbering.
Clean Air Act, *42 U.S.C. 7401-7671q,* *July 14, 1955, as amended*	This Act, as amended, is known as the Clean Air Act of 1990. The amendments made in 1990 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
Federal Water Pollution Control Act (Clean Water Act), *33 U.S.C. 1251-1387*	The Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the U.S. Environmental Protection Agency (USEPA).
Migratory Bird Treaty Act *16 U.S.C. 703-712*	The Migratory Bird Treaty Act implements various treaties and for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.
Endangered Species Act of 1973, as amended; *P.L. 93-205, 16 U.S.C.1531 et seq.*	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with the USFWS and the National Marine Fisheries Service and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
National Historic Preservation Act; 16 U.S.C. 470 et seq.	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.
Federal Noxious Weed Act of 1974; 7 U.S.C. 2801-2814	The Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.
Sale of certain interests in land; logs; 10 U.S.C. 2665	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.

Federal Insecticide, Fungicide, and Rodenticide Act, as amended (FIFRA);	Controls pesticide distribution, sale, and use. Requires licensing/certification for commercial applications and for sales of pesticides.
Archaeological and Historical Preservation Act of 1974; 16 U.S.C. 469 et seq.	Provides for the preservation of historical and archaeological data which might otherwise be lost or destroyed as a result of alteration of the terrain caused by any Federal construction project or federally licensed activity or program.
Archaeological Resources Protection Act of 1979; (16 U.S.C. 470 et seq.) 32 CFR 22 and 229	Protects archeological resources and sites on public lands and Indian lands.

Federal Public Laws and Executive Orders

National Defense Authorization Act of 1989, *Public Law (P.L.) 101-189;* *Volunteer Partnership Cost-Share Program*	Amends two acts and establishes volunteer and partnership programs for natural and cultural resources management on DoD lands.
Defense Appropriations Act of 1991, P.L. 101-511; *Legacy Resource Management Program*	Establishes a program for the stewardship of biological, geophysical, cultural, and historic resources on DoD lands.
Executive Order (EO) 11988, Floodplain Management	Provides direction regarding actions of Federal agencies in floodplains, and requires permits from state and Federal review agencies for any construction within a 100-year floodplain.
EO 11990, Protection of Wetlands	Requires Federal agencies to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands has been implemented.
EO 11514, Protection and Enhancement of Environmental Quality	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment.
EO 11593, Protection and Enhancement of the Cultural Environment	All Federal agencies are required to locate, identify, and record all cultural and natural resources. Cultural resources include sites of archaeological, historical, or architectural significance. Natural resources include the presence of endangered species, critical habitat, and areas of special biological significance.
EO 11990, Protection of Wetlands	Each Agency shall take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.
EO 11987, Exotic Organisms	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters that they administer.
EO 12088, Federal Compliance With Pollution Control Standards.	This EO delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the Environmental Protection Agency authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.
EO 12898, Environmental Justice	This EO requires certain Federal agencies, including the DoD, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.

EO 13112, Exotic and Invasive Species	This EO strives to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.
EO 13045, Protection of Children from Environmental Health and Safety Risks	This EO makes it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
EO 13007, Indian Sacred Sites	Directs protection of Indian sacred sites Federal lands and guarantees access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practioners.
EO 13175, Consultation and Coordination with Indian Tribal Governments	Establishes requirement of and process for Nation-to-Nation consultation with Indian tribal governments with regards to the development of Federal policies that have tribal implications.

DoD Policy, Directives and Instructions

DoD Directive 4700.4, Natural Resources Management Program	Requires that the ARNG implement and maintain a balanced and integrated program for the management of natural resources.
DoD Directive 4715.1, Environmental Security	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This directive also ensures that environmental factors are integrated into DoD decision-making processes that may impact the environment, and are given appropriate consideration along with other relevant factors.
DoD Annotated Policy on Indian Tribes and Alaska Natives	Establishes DoD American Indian and Alaska Native Policy for interacting and working with federally recognized American Indian and Alaska Native governments (hereinafter referred to as "tribes"). It defines: protected tribal resources, tribal rights, and Indian lands.
DoDI 4715.03, Environmental Conservation Program	Implements policy, assigns responsibility, and prescribes procedures under *DoD Directive* 4715.1 for the integrated management of natural and cultural resources on property under DoD control.

Army Instructions and Directives

AR 200-1, Environmental Protection and Enhancement	As of 28 August 2007, this document supersedes all previous iterations of AR 200-1, AR 200-3, AR 200-4, and AR 200-5. Provides policies, standards and procedures for the following resource areas: NEPA, Natural Resources Management, Cultural Resources Management, Natural Resource Damage Assessment (NRDA), Real Property Acquisition, Outgrant and Disposal Transactions, Environmental Agreements, Environmental Compliance Assessments, Environmental Quality Control Committee (EQCC), Army Environmental Training Program, Installation/State Environmental Training Plans, ITAM, and Pest Management Program
AR 350-19, The Army Sustainable Range Program (superceded AR 210-21)	Assigns responsibilities and provides policy and guidance for managing and operating U.S. Army ranges and training lands to support their long-term viability and utility to meet the National defense mission.
HQDA INRMP Policy Memorandum (21 March 1997), *Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plan (INRMP)*	Provides guidance to ensure that natural resource conservation measures and Army activities on mission land are integrated and are consistent with Federal stewardship requirements.

Tennessee State Code

Tennessee Water Quality Control Act of 1977; TCA 69-3-101 et seq.	Establishes the Tennessee Water Quality Control Board to establish standards for various uses of the waters of the state.
Tennessee Insecticide, Fungicide, and Rodenticide Act; TCA 43-8-101 et seq.	Controls pesticide distribution, sale, and use in Tennessee.
Tennessee Hazardous Substances Act; TCA 68-131-101 et seq.	Defines, establishes regulations for the handling of, and sets penalties for the mishandling of hazardous substances in the state of Tennessee.
Tennessee Air Quality Act; TCA 68-201-202 et seq.	Establishes an Air Pollution Control Board to create and maintain rules and regulations for the purpose of protecting Tennessee's air quality.
Tennessee Safe Drinking Water Act of 1983; TCA 68-221-701 et seq.	Defines the duties and responsibilities of the Tennessee Water Quality Board and the Commissioner of the Tennessee Department of Environment and Conservation with regards to protection of the drinking water supply of the state of Tennessee. Also identifies prohibited acts and defines penalties and legal processes for prosecuting violations thereof.
Fish and Wildlife Regulations; TCS 70-4-101	Establishes rules and regulations for hunting, fishing, and protection of wildlife.
Nongame Species Regulations; TCA 70-8-104	Gives the executive director of the Tennessee Wildlife Resources Agency the responsibility for establishing regulations to protect non-game species.
Tennessee Archaeological Statutes; TCA 11-6-101 et seq.	Establishes a state Division of Archaeology and defines its role in research on and protection of archaeological features, sites, and artifacts in the state of Tennessee.

APPENDIX F

Animal and Plant Species found on VTS-Smyrna

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VERTEBRATE SPECIES

BIRDS

Order Family	Common Name	Scientific Name	State Conservation Status
GAVIFORMES – loons and divers			
Gaviidae (loons and divers)			
	common loon	*Gavia immer*	none
PODICIPEDIFORMES – GREBES			
Podicipedidae (grebes)			
	pied-billed grebe	*Podilymbus podiceps*	imperiled
PELICANIFORMES –			
Phalacrocoradae (cormorants)			
	double-crested cormorant	*Phalacrocorax auritus*	imperiled
CICONIIFORMES – herons, storks, and allies			
Ardeidae (herons, bitterns, and egrets)			
	great egret	*Ardea alba*	imperiled
	great blue heron	*Ardea herodias*	apparently secure
	green heron	*Butorides virescens*	apparently secure
	black-crowned night heron	*Nycticorax nycticorax*	imperiled
ANSERIFORMES – ducks, geese, and swans			
Anatidae (ducks, geese, and swans)			
	wood duck	*Aix sponsa*	secure
	northern pintail	*Anas acuta*	none
	northern shoveler	*Anas clypeata*	none
	green-winged teal	*Anas crecca*	none
	blue-winged teal	*Anas discors*	imperiled
	mallard	*Anas platyrhyncos*	secure
	gadwall	*Anas strepera*	none
	Canada goose	*Branta canadensis*	secure
	bufflehead	*Bucephala albeola*	none
	snow goose	*Chen caerulescens*	none
	hooded merganser	*Lophodytes cucullatus*	none
CHARADRIIFORMES - shorebirds			
Charadriidae (plovers)			
	killdeer	*Charadrius vociferous*	secure
Scolopacidae (sandpipers and phalaropes)			
	spotted sandpiper	*Actitis macluria*	imperiled
	western sandpiper	*Calidris mauri*	none
	pectoral sandpiper	*Calidris melanotos*	none
	least sandpiper	*Calidris minutilla*	none
	Wilson's snipe	*Gallinago delicate*	none
	hooded merganser	*Lophodytes cucullatus*	none
	American woodcock	*Scolopax minor*	apparently secure
	lesser yellowlegs	*Tringa flavipes*	none
	greater yellowlegs	*Tringa melanoleuca*	none
	solitary sandpiper	*Tringa solitaria*	none
Laridae (gulls, terns, and skimmer)			
	ring-billed gull	*Larus delawarensis*	none
	Bonaparte's gull	*Larus philidelphia*	none
	Caspian tern	*Sterna caspia*	none
FALCONIFORMES - diurnal birds of prey			
Cathartidae (vultures)			
	turkey vulture	*Cathartes aura*	secure

Order	Family	Common Name	Scientific Name	State Conservation Status
FALCONIFORMES cont'd				
		black vulture	*Coragyps atatus*	apparently secure
	Accipitridae (hawks, kites, eagles, and falcons)			
		Cooper's hawk	*Accipiter cooperii*	vulnerable
		sharp-shinned hawk	*Accipiter striatus*	vulnerable
		red-tailed hawk	*Buteo jamaicensis*	secure
		red-shouldered hawk	*Buteo lineatus*	apparently secure
		broad-winged hawk	*Buteo platypterus*	apparently secure
		osprey	*Pandion haliaetus*	vulnerable
	Falconidae (falcons)	American kestrel	*Falco sparverius*	secure
GALLIFORMES - chicken-like birds				
	Phasianidae (quails, pheasants, and turkeys)			
		northern bobwhite	*Colinus virginianus*	imperiled
		wild turkey	*Meleagris gallopavo*	secure
GRUIFORMES – (coots, cranes, and rails)				
	Rallidae (rails, gallinules, and coots)			
		sora	*Porzana carolina*	critically imperiled
		American coot	*Fulica Americana*	imperiled
COLUMBIFORMES - doves and pigeons				
	Columbidae (doves and pigeons)			
		rock pigeon	*Columba livia*	EXOTIC
		Eurasian collared dove	*Streptopelia decaocto*	EXOTIC
		mourning dove	*Zenaida macroura*	secure
CUCULIFORMES - cuckoos and relatives				
	Cuculidae (cuckoos, roadrunners, et al.)			
		yellow-billed cuckoo	*Coccyzus americanus*	apparently secure
STRIGIFORMIS - owls				
	Strigidae (owls)			
		great horned owl	*Bubo virginianus*	secure
		eastern screech owl	*Otus asio*	secure
		barred owl	*Strix varia*	secure
CAPRIMULGIFORMES – nightbirds				
	Caprimulgidae (goatsuckers)			
		common nighthawk	*Chordeiles minor*	apparently secure
APODIFORMES – hummingbirds and swifts				
	Apodidae (swifts)			
		chimney swift	*Chaetura pelagic*	secure
	Trochilidae (hummingbirds)			
		ruby-throated hummingbird	*Archilochus colubris*	secure
CORACIIFORMES - kingfishers and allies				
	Alcedinidae (kingfishers)			
		belted kingfisher	*Ceryle alcyon*	secure
PICIFORMES - woodpeckers				
	Picidae (woodpeckers)			
		northern flicker	*Colaptes auratus*	secure
		pileated woodpecker	*Dryocopus pileatus*	apparently secure
		red-bellied woodpecker	*Melanerpes carolinus*	secure
		downy woodpecker	*Picoides pubescens*	secure
		hairy woodpecker	*Picoides villosus*	apparently secure
		yellow-bellied sapsucker	*Sphyrapicus varius*	critically imperiled
PASSERIFORMES – passerines				
	Tyrannidae (tyrant flycatchers			
		eastern wood-pewee	*Contopus virens*	secure

Order	Family	Common Name	Scientific Name	State Conservation Status
PASSERIFORMES cont'd		Acadian flycatcher	*Emoidonax virescens*	secure
		great crested flycatcher	*Myiarchus cinerascens*	secure
		eastern phoebe	*Sayornis phoebe*	secure
		eastern kingbird	*Tyrnnus tyrannus*	secure
	Hirundinidae (swallows)			
		barn swallow	*Hirundo rustica*	secure
		purple martin	*Progne subis*	secure
		northern rough-winged swallow	*Stelgidopteryx serripennis*	secure
		tree swallow	*Tachycineta bicolor*	apparently secure
	Corvidae (crows and jays)			
		blue jay	*Cyanocitta cristata*	secure
		American crow	*Corvus brachyrhynchos*	secure
	Paridae (titmice and chickadees)			
		Carolina chickadee	*Parus carolinensis*	secure
		Tufted titmouse	*Parus bicolor*	secure
	Sittidae (nuthatches)			
		white-breasted nuthatch	*Sitta carolinensis*	secure
	Certhiidae (treecrepers)			
		brown creeper	*Certhia Americana*	imperiled
	Troglodytidae (wrens)			
		Carolina wren	*Thyrothorus ludovicianus*	secure
		house wren	*Troglodytes aedon*	apparently secure
		winter wren	*Troglodytes troglodytes*	vulnerable
	Polioptilidae (gnatcatchers)			
		blue-grey gnatcatcher	*Polioptila caerulea*	secure
	Reguliidae (kinglets)			
		ruby-crowned kinglet	*Regulus calendula*	none
		golden-crowned kinglet	*Regulus satrapa*	vulnerable
	Turdidae (thrushes, robins, and wheatears)			
		hermit thrush	*Catharus guttatus*	imperiled
		Swainson's thrush	*Catharus ustulatus*	none
		wood thrush	*Hylocichla mustelina*	apparently secure
		eastern bluebird	*Sialia sialis*	secure
		American robin	*Turdus migratorius*	secure
	Mimidae (mockingbirds and thrashers)			
		grey catbird	*Dumetella carolinensis*	apparently secure
		northern mockingbird	*Mimus polyglottos*	secure
		brown thrasher	*Toxostoma rufum*	secure
	Bombycillidae (waxwings)			
		cedar waxwing	*Bombycilla cedrorum*	apparently secure
	Sturnidae (starlings and mynas)			
		European starling	*Sturnus vulgaris*	EXOTIC
	Vireonidae (vireos)			
		yellow-throated vireo	*Vireo flavifrons*	apparently secure
		white-eyed vireo	*Vireo griseus*	apparently secure
		Philadelphia vireo	*Vireo philadelphicus*	none
		red-eyed vireo	*Vireo olivaceus*	secure
	Emberizidae (warblers, sparrows, et al.)			
	Subfamily Parulinae (wood-warblers)			
		cerulean warbler	*Dendroica cerulean*	vulnerable
		yellow-rumped warbler	*Dendroica coronate*	none
		prairie warbler	*Dendroica discolor*	vulnerable
		yellow-throated warbler	*Dendroica dominica*	apparently secure

Order	Family	Common Name	Scientific Name	State Conservation Status
PASSERIFORMES cont'd		magnolia warbler	*Dendroica magnolia*	critically imperiled
		palm warbler	*Dendroica palmarum*	none
		chestnut-sided warbler	*Dendroica pennsylvanica*	apparently secure
		yellow warbler	*Dendroica petechia*	secure
		pine warbler	*Dendroica pinus*	secure
		blackpoll warbler	*Dendroica striata*	none
		Cape May warbler	*Dendroica tigrina*	none
		black-throated green	*Dendroica virens*	secure
		common yellowthroat	*Geothlypis trichas*	secure
		yellow-breasted chat	*Icteria virens*	secure
		black and white warbler	*Mniotilta varia*	apparently secure
		Kentucky warbler	*Oporonis formosus*	apparently secure
		northern parula	*Parula Americana*	secure
		prothonotary warbler	*Protonotaria citrea*	apparently secure
		oven bird	*Seiurus aurocapillus*	apparently secure
		Louisiana waterthrush	*Seiurus motacilla*	secure
		northern waterthrush	*Seiurus noveboracensis*	none
		American redstart	*Setophaga ruticilla*	apparently secure
		orange-crowned warbler	*Vermivora celata*	none
		Tennessee warbler	*Vermivora peregrine*	none
		Nashville warbler	*Vermivora ruficapilla*	none
		Canada warbler	*Wilsonia canadensis*	vulnerable
		hooded warbler	*Wilsonia citrine*	apparently secure
	Subfamily Thraupinae (tanagers)			
		scarlet tanager	*Piranga olivacea*	secure
		summer tanager	*Piranga rubra*	apparently secure
	Subfamily Cardinalidae (cardinals, grosbeaks, et al.)			
		northern cardinal	*Cardinalis cardinalis*	secure
		blue grosbeak	*Guiraca caerlea*	apparently secure
		indigo bunting	*Passerina cyanea*	secure
		rose-breasted grosbeak	*Pheucticus ludovicianus*	apparently secure
	Subfamily Emberizinae (towhees, sparrows, and longspurs)			
		dark-eyed junco	*Junco hyemalis*	secure
		song sparrow	*Melospiza melodia*	apparently secure
		fox sparrow	*Passerella iliaca*	none
		eastern towhee	*Papilo erythrophthalmus*	secure
		chipping sparrow	*Spizella passerine*	secure
		field sparrow	*Spizella pusilla*	apparently secure
		white-throated sparrow	*Zonotrichia albicollis*	none
	Subfamily Icteridae (blackbirds)			
		red-winged blackbird	*Agelaius phoeniceus*	secure
		orchard oriole	*Icterus spurious*	apparently secure
		brown-headed cowbird	*Molothrus ater*	secure
		common grackle	*Quiscalus quiscula*	secure
		eastern meadowlark	*Sturnella magna*	secure
	Fringillidae (cardueline finches)			
		American goldfinch	*Carduelis tristis*	secure
		house finch	*Carpodacus mexicanus*	EXOTIC
	Passeridae (old world sparrows)			
		house sparrow	*Passer domesticus*	EXOTIC

MAMMALS

Order Family	Common Name	Scientific Name
DIDELPIMORPHIA – American marsupials		
Didelphidae (opossums)	Virginia opossum	*Didelphis virginianus*
SORICOMORPHIA – insectivores		
Soricidae (shrews)	short-tailed shrew	*Blarina brevicauda*
Talipidae (desmans, moles, and relatives)	eastern mole	*Scalopus aquaticus*
CHIROPTERA – bats		
Vespertilionidae (evening and vesper bats)	red bat	*Lasiurus borealis*
	eastern pipistrelle	*Pipistrellus subflavus*
LAGOMORPHA - hares, pikas, and rabbits		
Leporidae (hares and rabbits)	eastern cottontail	*Sylvilagus floridanus*
RODENTIA – rodents		
Cricetidae (new world rats and mice)	prairie vole	*Microtus ochrogaster*
	common pine vole	*Microtus pinetorum*
	white-footed mouse	P*eromyscus leucopus*
	hispid cotton rat	*Sigmodon hispidus*
Dipodidae (jerboas and jumping mice)	meadow jumping mouse	*Zapus hudsonius*
Sciuridae (squirrels)	groundhog	*Marmota monax*
	eastern grey squirrel	*Scurius carolensis*
	fox squirrel	*Scurius niger*
CARNIVORA – carnivores		
Canidae (dogs)	domestic dog	*Canis familiaris*
	coyote	*Canis latrans*
	grey fox	*Urocyon cinereoargenteus*
Felidae (cats)	domestic cat	*Felis domesticus*
Mephitidae (skunks and stink badgers)	striped skunk	*Mephitis mephitis*
Procyonidae (raccoons and allies)	raccoon	*Procyon lotor*
Mustelidae (weasels and allies)	mink	*Mustela vison*
ARTIDACYTYLA - even-toed ungulates		
Cervidae (deer)	white-tailed deer	*Odocoileus virginianus*

FISH

Order	Family	Common Name	Scientific Name
CYPRINODONTIFORMES			
	Poeciliidae (livebearers and topminnows)		
		mosquito fish	*Gambusia affinis*
	Fundulidae (topminnows)		
		blackstripe topminnow	*Fundulus notatus*
CLUPLEIFORMES			
	Clupeidae (herrings and shads)		
		gizzard shad	*Dorosoma cepedianum*
		threadfin shad	*Dorosoma pentenense*
CYPRINIFORMES			
	Cyprinidae (minnows)		
		stoneroller	*Campostoma anomalum*
		steelcolor shiner	*Cyprinella whipplei*
		common carp	*Cyprinus carpio*
		golden shiner	*Notemigonus crysoleucas*
		spotfin shiner	*Notropis spilopterus*
		bluntnose minnow	*Pimephales notatus*
	Catostomidae (suckers)		
		spotted sucker	*Minytrema melanops*
		golden redhorse	*Moxostoma erythrurum*
SILURIFORMES			
	Ictaluridae (North American freshwater catfishes)		
		channel catfish	*Ictalurus punctatus*
		flathead catfish	*Pylodictis olivaris*
ANTHERINIFORMES			
	Anterinidae (silversides)		
		brook silverside	*Labidesthes sicculus*
PERCIFORMES			
	Centrarchidae (sunfishes)		
		rock bass	*Ambloplites repestris*
		redbreast sunfish	*Lepomis auritus*
		green sunfish	*Lepomis cyanellus*
		warmouth	*Lepomis gulosus*
		bluegill	*Lepomis macrochirus*
		longear sunfish	*Lepomis megalotis*
		redear sunfish	*Lepomis microlophus*
		largemouth bass	*Micropterus salmoides*
		white crappie	*Pomoxis annularis*
	Moronidae		
		white bass	*Morone chrysops*
	Percidae (perches)		
		fantail darter	*Etheostoma flabellare*
		logperch	*Percina carprodes*
		walleye	*Stizostedion vitreum*
	Sciaenidae (drums)		
		freshwater drum	*Aplodinotus grunniens*

AQUATIC INVERTEBRATES

Phylum	Class	Order	Family	Species
ANNELIDA (segmented worms)				
	Clitellata			
	Subclass Oligochaeta (earthworms, night crawlers, and relatives)			
			Enchytraeidae	undetermined sp.
		Haplotaxida		
			Naididae	*Dero* sp.
				Nais sp.
			Tubificidae w.h.c.	undetermined sp.
			Tubificidae w.o.h.c.	undetermined sp.
		Rhynchobdellida		
			Glossiphoniidae	*Helobdella* sp.
				Helobdella staginalis
CNIDARIA (cnidarians)				
	Hydrozoa			
		Hydroida (medusae)		
			Hydridae	*Hydra* sp.
ARTHROPODA (crustaceans, insects, spiders, and relatives)				
	Crustaceae			
		Cladocera (water fleas)		
			Sididae	*Sida crystalline*
	Subclass Ostracoda			undetermined spp.
	Insecta			
		Coleoptera (beetles)		
			Dytiscidae	undetermined sp.
			Elmidae	*Ancyronyx* sp.
				Dubiraphia sp.
				Stenelmis sp.
			Haliplidae	*Peltodytes* sp.
			Scirtidae	*Scirtes* sp.
		Diptera (true flies)		
			Ceratopogonidae	*Alluaudonyia* sp.
				Bezzia/Palpomyia gp.
				Sphaeromias sp.
			Chaoboridae	*Chaoborus punctipennis*
			Chironomidae	*Ablabesmyia mallochi*
				Chironomus sp.
				Cladopelma sp.
				Cladotanytarsus sp.
				Cryptochironomus fulvus
				Dicrotendipes lucifer
				Glyptotendtpes sp.
				Polypedilum halterale
				Procladius bellus
				Tanytarsus sp.
			Ephydridae	undetermined sp.
			Tipulidae	undetermined sp.
		Ephemeroptera (mayflies)		
			Baetidae	undetermined spp.
			Caenidae	*Caenis* sp.
			Ephemeridae	*Hexagenia limbata*

Phylum	Class	Order	Family	Species
ARTHROPODA cont'd				
	Insecta			
		Hemiptera (true bugs)		
			Corixidae	undetermined sp.
		Odonata (dragonflies and damselflies)		
			Coenagrionidae	*Enallagma* sp.
			Corduliidae	*Epitheca* sp.
		Trichoptera (caddisflies)		
			Hydropsychidae	*Cheumatopsyche* sp.
			Hydroptilidae	*Hydroptila* sp.
				Orthotrichia sp.
			Leptoceridae	undetermined sp.
			Polycentropodidae	*Cyrnellus fraternus*
	Malacostraca			
		Amphipoda (amphipods)		
			Cragonyctidae	*Cragonyx* sp.
			Gammaridae	*Gammarus* sp.
			Hyalallediae	*Hyella azteca*
		Isopoda (pillbugs and sowbugs)		
			Asellidae	*Lirceus* sp.
MOLLUSCA (mollusks)				
	Bivalvia (bivalves and clams)			
		Veneroida		
			Corbiculidae	*Cobicula flaminea*
			Pisidiidae	*Pisidium* sp.
	Gastropoda (slugs and snails)			
		Basommatophora		
			Ancylidae	*Ferrissia rivularis*
			Lymnaeidae	*Pseudosuccinea* sp.
			Physidae	*Physa* sp.
			Planorbidae	*Helisoma* sp.
		Neotaenioglossa		
			Pleuroceridae	*Goniobasis* sp.
PLATYHELMINTHES (flatworms)				
	Turbellaria (planarians)			
		Tricladida		
			Planariidae	undetermined sp.

VASCULAR PLANTS

Family	Scientific Name	Common Name
Acanthaceae	*Justicia americana*	American water willow
Aceraceae	*Acer negundo*	boxelder
	Acer rubrum	red maple
	Acer saccharinum	silver maple
	Acer saccharum	sugar maple
Agavaceae	*Yucca flaccida*	weak-leaf yucca
Anacardiaceae	*Rhus copallinum*	winged sumac
	Rhus glabra	smooth sumac
	Toxicodendron radicans	eastern poison ivy
Apiaceae	*Angelica venenosa*	hairy angelica
	Chaerophyllum tainturieri	southern chervil
	Daucus carota **	Queen Anne's lace
	Sanicula canadensis var. canadensis	Canada-sanicle
	Thaspium trifoliatum var. aureum	smooth meadow-parsnip
	Zizia aurea	golden Alexanders
Apocynaceae	*Amsonia tabernaemontana*	eastern bluestar
	Apocynum cannabinum	indian hemp
	Vinca minor **	lesser periwinkle
Araceae	*Arisaema dracontium*	green dragon
	Arisaema triphyllum	Jack in the pulpit
	Peltandra virginica	green arrow arum
Aristolochiaceae	*Aristolochia serpentaria*	Virginia snakeroot
Asclepiadaceae	*Asclepias tuberosa ssp. tuberosa*	butterfly weed
	Asclepias variegata	redring milkweed
Aspleniaceae	*Asplenium platyneuron*	ebony-spleenwort
	Woodsia obtusa	blunt-lobed woodsia
Asteraceae	*Ageratina altissima*	white snakeroot
	Ambrosia artemisiifolia var. elatior	common ragweed
	Ambrosia psilostachya	Cuman ragweed
	Antennaria neglecta	field pussytoes
	Antennaria plantaginifolia	woman's tobacco
	Bidens coronata	crowned beggars ticks
	Cirsium arvense **	Canada thistle
	Conyza canadensis	horseweed
	Coreopsis major	greater tickseed
	Coreopsis tinctoria	plains tickseed
	Erigeron annuus	eastern daisy fleabane
	Erigeron philadelphicus	Philadelphia daisy
	Erigeron strigosus	rough fleabane
	Hieracium venosum	rattlesnake weed
	Lactuca biennis	tall blue lettuce
	Leucanthemum vulgare **	oxeye daisy
	Packera aurea	golden ragwort
	Packera glabella	cressleaf groundsel
	Rudbeckia hirta	black-eyed Susan
	Rudbeckia triloba	browneyed Susan

Family	Scientific Name	Common Name
Asteraceae cont'd		
	Sericocarpus linifolius	narrowleaf whitetop aster
	Silphium spp.	rosinweed
	Smallanthus uvedalius	hairy leafcup
	Solidago altissima	late goldenrod
	Solidago canadensis var. hargeri	common goldenrod
	Tragopogon lamottei *	Jack-go-to-bed-at-noon
	Verbesina alternifolia	wingstem
	Vernonia gigantea	tall ironweed
Balsaminaceae	*Impatiens capensis*	spotted touch-me-not
	Impatiens pallida	pale touch-me-not
Berberidaceae	*Podophyllum peltatum*	mayapple
	Berberis thunbergii *	Japanese barberry
Bignoniaceae	*Bignonia capreolata*	crossvine
	Campsis radicans	trumpet creeper
	Catalpa speciosa	northern catalpa
Boraginaceae	*Buglossoides arvensis* *	corn gromwell
	Myosotis verna	spring forget-me-not
Brassicaceae	*Barbarea vulgaris* *	winter cress
	Capsella bursa-pastoris *	shepherd's purse
	Nasturtium officinale *	watercress
Cactaceae	*Opuntia humifusa*	prickly-pear cactus
Campanulaceae	*Lobelia cardinalis*	cardinal flower
	Lobelia puberula	downy lobelia
	Triodanis perfoliata	clasping-leaf Venus' looking-glass
Cannabaceae	*Humulus lupulus* *	common hop
Caprifoliaceae	*Lonicera japonica* **	Japanese honeysuckle
	Sambucus canadensis	common elderberry
	Symphoricarpos orbiculatus	coralberry
	Viburnum prunifolium	smooth blackhaw
Caryophyllaceae	*Cerastium nutans var. nutans*	nodding chickweed
	Dianthus armeria *	Deptford pink
	Silene virginica	fire pink
Chenopodiaceae	*Chenopodium album* *	lamb's quarters
Clusiaceae	*Hypericum prolificum*	shrubby St. Johnswort
	Hypericum punctatum	spotted St. Johnswort
Commelinaceae	*Commelina communis* *	Asiatic dayflower
	Commelina virginica	Virginia dayflower
Cornaceae	*Cornus amomum*	silky dogwood
	Cornus drummondii	rough-leaved dogwood
	Cornus florida	flowering dogwood
	Nyssa sylvatica	black tupelo
Crassulaceae	*Sedum pulchellum*	widow's-cross
Cupressaceae	*Juniperus virginiana*	eastern red cedar
	Taxodium distichum	bald cypress
Cuscutaceae	*Cuscuta compacta*	compact dodder
	Cuscuta gronovii	scaldweed
Cyperaceae	*Carex annectens*	yellow-fruit sedge
	Carex cephalophora	oval-leaf sedge

Family	Scientific Name	Common Name
Cyperaceae cont'd		
	Carex communis	fibrousroot sedge
	Carex flaccosperma	thin-fruit sedge
	Carex frankii	Frank's sedge
	Carex grayi	Gray's sedge
	Carex laxiflora var. laxiflora	broad looseflower sedge
	Carex lupulina	hop sedge
	Carex lurida	sallow sedge
	Carex pennsylvanica	Pennsylvania sedge
	Carex retroflexa	reflexed sedge
	Carex rosea	rosy sedge
	Carex scoparia	broom sedge
	Carex stipata var. stipata	owlfruit sedge
	Carex tribuloides	blunt broom sedge
	Carex vulpinoidea	fox sedge
	Eleocharis spp.	spike rush
	Scirpus atrovirens	dark-green bulrush
	Scirpus cyperinus	cottongrass bulrush
	Scirpus polyphyllus	leafy bulrush
Dioscoreaceae	*Dioscorea villosa*	wild yam
Dipsacaceae	*Dipsacus fullonum* **	Fuller's teasel
Dryopteridaceae	*Onoclea sensibilis*	sensitive fern
	Polystichum acrostichoides	Christmas fern
Ebenaceae	*Diospyros virginiana*	common persimmon
Elaeagnaceae	*Elaeagnus pungens* **	thorny olive
	Elaeagnus umbellata **	autumn olive
Equisetaceae	*Equisetum hyemale*	scouringrush horsetail
Euphorbiaceae	*Euphorbia corollata*	flowering spurge
Fabaceae	*Albizia julibrissin* **	mimosa
	Amphicarpaea bracteata	American hogpeanut
	Cercis canadensis	eastern redbud
	Chamaecrista fasciculata	partridge pea
	Desmanthus illinoensis	prairie bundleflower
	Desmodium nudiflorum	naked-flower ticktrefoil
	Desmodium paniculatum	panicledlead ticktrefoil
	Desmodium rotundifolium	prostrate ticktrefoil
	Gleditsia triacanthos	honeylocust
	Lespedeza cuneata **	Chinese bush-clover, sericea lespedeza
	Lespedeza procumbens	trailing bush-clover
	Lespedeza violacea	violet bush-clover
	Lespedeza virginica	slender bush-clover
	Medicago sp. *	alfalfa
	Melilotus officinalis **	yellow sweet-clover
	Robinia pseudoacacia	black locust
	Stylosanthes biflora	sidebeak pencilflower
	Trifolium dubium *	suckling clover
	Trifolium repens *	white clover
	Vicia sativa ssp, nigra *	garden vetch
Fagaceae	*Quercus alba*	northern white oak
	Quercus coccinea var. coccinea	scarlet oak

Family	Scientific Name	Common Name
Fagaceae cont'd		
	Quercus falcata	southern red oak
	Quercus imbricaria	shingle oak
	Quercus macrocarpa	bur oak
	Quercus muehlenbergii	chinquapin oak
	Quercus prinus	chestnut oak
	Quercus rubra	northern red oak
	Quercus shumardii	Shumard oak
	Quercus stellata	post oak
	Quercus velutina	black oak
Geraniaceae	*Geranium carolinianum*	Carolina geranium
Hamamelidaceae	*Liquidambar styraciflua*	sweetgum
Hippocastanaceae	*Aesculus glabra*	Ohio buckeye
Hydrangeaceae	*Philadelphus hirsutus*	hairy mock-orange
Iridaceae	*Belamcanda chinensis* *	blackberry lily
	Sisyrinchium mucronatum	needletip blue-eyed grass
Juglandaceae	*Carya alba*	mockernut hickory
	Carya cordiformis	bitternut hickory
	Carya glabra	pignut hickory
	Carya ovata	shagbark hickory
	Juglans nigra	black walnut
Juncaceae	*Juncus debilis*	weak rush
	Juncus diffusissimus	slim-pod rush
	Juncus effusus	soft rush
	Luzula echinata	hedgehog woodrush
	Juncus tenuis	poverty rush
Lamiaceae	*Glechoma hederacea* *	ground ivy
	Lamium amplexicaule *	henbit
	Lamium purpureum *	deadnettle
	Lycopus virginicus	Virginia water horehound
	Physostegia virginiana	obedient plant
	Prunella vulgaris *	common selfheal
	Pycnanthemum incanum	hoary mountainmint
	Pycnanthemum tenuifolium	narrowleaf mountainmint
	Salvia lyrata	lyre-leaf sage
	Stachys tenuifolia	smooth hedge nettle
	Teucrium canadense	Canada germander
Lauraceae	*Lindera benzoin*	northern spicebush
	Sassafras albidum	sassafras
Liliaceae	*Allium canadense var. canadense*	meadow garlic
	Eythonium americanum	yellow trout lily
	Hemerocallis fulva *	orange daylily
	Maianthemum racemosum	feathery false lily of the valley
	Polygonatum biflorum	smooth Solomon's seal
	Trillium cuneatum	little sweet Betsy
	Trillium flexipes	nodding wakerobin
	Uvularia sessilifolia	sessile-leaf bellwort
Lycopodiaceae	*Lycopodium dendroidium*	tree groundpine
Magnoliaceae	*Liriodendron tulipifera*	tuliptree
Malvaceae	*Hibiscus moscheutos ssp. moscheutos*	crimsoneyed rose-mallow

Family	Scientific Name	Common Name
Moraceae	*Maclura pomifera*	Osage orange
	Morus alba *	white mulberry
	Morus rubra	red mulberry
Oleaceae	*Fraxinus americana*	white ash
	Fraxinus pennsylvanica	green ash
	Ligustrum sinense **	Chinese privet
	Ligustrum vulgare **	European privet
Onagraceae	*Ludwigia alternifolia*	seedbox
	Oenothera biennis	common evening primrose
Ophioglossaceae	*Botrychium virginianum*	rattlesnake fern
Orchidaceae	*Goodyera pubescens*	downy rattlesnake plantain
	Spiranthes vernalis	spring ladies tresses
Oxalidaceae	*Oxalis stricta*	upright tellow woodsorrel
	Oxalis violacea	violet woodsorrel
Passifloraceae	*Passiflora incarnata*	purple passion flower
	Passiflora lutea	yellow passion flower
Phytolaccaceae	*Phytolacca americana*	American pokeweed
Pinaceae	*Pinus taeda*	loblolly pine
Plantaginaceae	*Plantago aristata*	large bract plantain
	Plantago lanceolata *	English plantain
	Plantago major	great plantain
Platanaceae	*Platanus occidentalis*	American sycamore
Poaceae	*Andropogon virginicus*	broomsedge bluestem
	Arundinaria gigantea	giant cane
	Bromus arvensis *	field brome
	Bromus secalinus **	rye brome
	Chasmanthium latifolium	indian wood-oats
	Danthonia spicata	poverty wild oat grass
	Dichanthelium boscii	Bosc's rosette grass
	Dichanthelium commutatum	variable rosette grass
	Digitaria ciliaris	southern crabgrass
	Digitaria sanguinalis	hairy crabgrass
	Elymus riparius	riverbank wildrye
	Elymus virginicus	Virginia wildrye
	Festuca subverticillata	nodding fesque
	Glyceria striata	fowl manna grass
	Leersia orzyoides	rice cutgrass
	Lolium perenne *	perennial ryegrass
	Melica mutica	two-flower melic grass
	Microstegium vimineum **	Nepalese browntop, Japanese grass
	Panicum flexile	wiry panic grass
	Poa pratensis	Kentucky bluegrass
	Schedonorus phoenix *	tall fescue
	Schedonorus pratensis *	meadow fescue
	Sorghum halepense **	Johnson grass
Polemoniaceae	*Phlox divaricata*	wild blue phlox
	Polemonium reptans var. reptans	Greek valerian
Polygonaceae	*Polygonum hydropiper*	mild water pepper
	Polygonum hydropiperoides	swamp smartweed

Family	Scientific Name	Common Name
	Polygonum lapathifolium	dock-leaf smartweed
	Rumex crispus *	curly dock
Portulacaceae	*Claytonia virginica*	Virginia springbeauty
Ranunculaceae	*Actaea pachypoda*	white baneberry
	Actaea racemosa	black baneberry
	Anemone virginiana	thimbleweed
	Clematis virginiana	devil's-darning needles
	Ranunculus bulbosus *	St. Anthony's turnip
	Ranunculus sardous *	hairy buttercup
	Ceanothus americanus	New Jersey tea
Rhamnaceae	*Frangula caroliniana*	Carolina buckthorn
Rosaceae	*Agrimonia gryposepala*	tall hair agrimony
	Crataegus crus-galli	cockspur hawthorne
	Crataegus mollis	downy hawthorne
	Geum canadense	white avens
	Potentilla canadensis	dwarf cinquefoil
	Potentilla simplex	oldfield cinquefoil
	Prunus americana	American plum
	Prunus serotina	black cherry
	Rosa carolina	Carolina rose
	Rosa multiflora **	rambler rose, multiflora rose
	Rubus allegheniensis	Allegheny blackberry
	Rubus argutus	saw-tooth blackberry
	Rubus flagellaris	whiplash dewberry
	Rubus occidentalis	black raspberry
	Spiraea tomentosa	steeplebush
Rubiaceae	*Cephalanthus occidentalis*	common buttonbush
	Diodia virginiana var. virginiana	Virginia-buttonweed
	Galium aparine	sticky-willy
	Galium circaezans var. circaezans	licorice bedstraw
	Galium pilosum var. pilosum	hairy bedstraw
	Houstonia caerulea	Quaker-ladies
	Houstonia purpurea	Venus' pride
Salicaceae	*Populus alba* **	white poplar
	Populus deltoides ssp. deltoides	cottonwood
	Salix caroliniana	Carolina willow
	Salix exigua	sandbar willow
	Salix nigra	black willow
Saururaceae	*Saururus cernuus*	lizard's-tail
Scrophulariaceae	*Verbascum thapsus* **	common mullein
Simaroubaceae	*Ailanthus altissima* **	tree of heaven
Smilacaceae	*Smilax bona-nox*	fringed greenbrier
	Smilax rotundifolia	horsebrier
Solanaceae	*Physalis heterophylla*	clammy groundcherry
	Solanum carolinense var. carolinense	Carolina horsenettle
Typhaceae	*Typha latifolia*	broad leaf cat tail
Ulmaceae	*Celtis laevigata*	sugarberry
	Celtis occidentalis	common hackberry
	Ulmus alata	winged elm

Family	Scientific Name	Common Name
	Ulmus americana	American elm
	Ulmus rubra	slippery elm
Urticaceae	*Boehmeria cylindrica*	small spike false nettle
	Pilea pumila	Canadian clearweed
Valerianaceae	*Valerianella radiata*	beaked cornsalad
Verbenaceae	*Phyla nodiflora*	turkey tangle fogfruit
	Verbena simplex	narrow-leaf vervain
	Viola pedata	bird-foot violet
Violaceae	*Viola sororia*	hooded blue violet
Vitaceae	*Ampelopsis cordata*	heartleaf peppervine
	Parthenocissus quinquefolia	Virginia-creeper
	Vitis aestivalis	summer grape
	Vitis labrusca	fox grape
	Vitis rotundifolia	muscadine

*Non-Native Plants
** Invasive Pest Plants

APPENDIX G

Natural Areas Near VTS-Smyrna

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Natural Areas within a 15 mile radius of VTS-Smyrna

Name	County	Area (acres)	Notable Features
Cedars of Lebanon State Forest	Wilson	9420	A National Natural Landmark containing two federally endangered plant species, Tennessee coneflower and leafy prairie clover. Additionally, several state-listed species are present.
Long Hunter State Park	Davidson, Rutherford	2400	Located along the eastern shores of J. Percy Priest Lake. Contains Couchville Lake, a 110 acre body of water that formed shortly after the impoundment of the reservoir when water filled underlying karst features. The park boasts cedar glades, forested areas, and a variety of recreational and educational opportunities.
Couchville Cedar Glade	Davidson, Wilson	122	Lies adjacent to the eastern boundary of Long Hunter State Park. Supports one of the largest known populations of Tennessee coneflower.
Elsie Quarterman Cedar Glade	Rutherford	185	Part of the J. Percy Priest Reservoir and is managed by both the USACE and TWRA. Named for Elsie Quarterman, a pioneering cedar glade researcher, who was a professor at Vanderbilt University.
Fate Sanders Barrens	Rutherford	230	Located on the eastern shore of J. Percy Priest Lake. Supports a diverse barrens community of grasses and plants typical of cedar glades, both of which require periodic burning for long term survival.
Gattinger's Cedar Glade	Rutherford, Wilson	57	Supports very large community of Tennessee coneflower a well as a host of other rare, cedar glade endemic species. Named for Augustin Gattinger, a well-known botanist who published the first descriptions of Tennessee coneflower and many other plant species native to Tennessee.
Mount View Cedar Glade	Davidson	9	Contains cedar glade habitat that is surrounded by intensive suburban development.
Stones River Cedar Glade	Rutherford	185	Located within the boundaries of the Stones River National Battlefield. Site of rigorous cedar glade and grassland restoration projects as well as aggressive invasive pest plant management.
Sunnybell Cedar Glade	Rutherford	36	Named for the sizable population of yellow sunnybells, a state-listed threatened plant found in calcareous washes in cedar glades, which are located on the site.

Natural Areas within a 15 mile radius of VTS-Smyrna

Name	County	Area (acres)	Notable Features
Vesta Cedar Glade	Wilson	150	Partially located within the boundaries of Cedars of Lebanon State Forest. Contains a variety of habitats including: cedar glades, barrens, and mixed cedar hardwood forests.
Vine Cedar Glade	Wilson	35	Located in the southeastern corner of Cedars of Lebanon State Forest. Supports a large population of Tennessee coneflower.
Walterhill Flood Plain	Rutherford	34	Situated in an agricultural field found on the floodplain of Stones River. Supports a large, healthy population of Stones River bladderpod, an extremely rare plant species that thrives in disturbed agricultural field habitat. Field management is the responsibility of Middle Tennessee State University's College of Agriculture.
	Approximate Total Acreage[1]	12863	

[1] Portions of Vesta Cedar Glade and Vine Cedar Glade are located within the perimeter of Cedars of Lebanon State Forest

APPENDIX H

American Indian Tribes Consulted by Tennessee Army National Guard

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APPENDIX I

Pest Management at VTS-S:

General information

List of Approved Pesticide Chemicals for Use on VTS-S

Format for Reporting Pesticide/Herbicide Applications

GENERAL PEST MANAGEMENT INFORMATION

- Pest management activities on TNARNG properties are guided by the TNARNG Integrated Pest Management Plan.

- Only certified applicators may apply any herbicide or pesticide (general use or restricted use) on TNARNG facilities. Applicator must have either a DoD Pesticide Applicator Certification or a Tennessee Commercial Applicator Certification for the appropriate category of pesticide.

- All pesticide/herbicide applications made by contractor or TNARNG staff will be reported to the Pest Management Coordinator (PMC). The reporting form to be used is included in this Appendix. Contact information for the PMC is located at the bottom of the form.

- Control of pests of facilities (e.g., termites, spiders, mice) is handled through contract by the training site maintenance office. Contract exterminators may only apply the approved pesticides listed in Table I.1 for use on pest plants and Table I.2 for use on animal pests. Contract exterminators will fill out a reporting form (Figure I.1) completely for each chemical utilized on a visit. The training site will submit a copy of this form to the PMC (see bottom of reporting form for contact information). If, in the future, any VTS-S personnel should receive either DoD or state certification and apply pesticides at the facility, they should also fill out the reporting form and submit it to the PMC.

- In certain situations, a non-certified person may apply a pesticide on a self-help basis for personal protection on a job site. The following limitations apply to self-help pesticide applications:

  - Self-help applications will include only those products listed in Table I.3. Applications of these products must be reported to the PMC annually.

  - Self-help applications are for personal safety and comfort within the workplace and as such will be made only to small areas. Applications to an entire building or armory do not qualify as self-help. If a large portion of the facility requires treatment, a contracted pesticide applicator is needed.

  - Food preparation areas are NOT treated with self-help applications. Kitchens and related areas require professional treatment.

  For more information on self-help applications, contact the PMC.

Table I.1: Herbicides for use on pest plants on Tennessee Army National Guard properties

All Vegetation (bare ground)

Arsenal	Oust	Round-up Ultra Dry
Escort	Outrider	Round-up Ultra Max
Hyvar XL	Reward	Sahara DG
Krovar IDF	Round-up Pro	Scythe

Pre-emergent Herbicides

Balan DF	Surflan A.S
Banvel-720	MSMA
Dyclomec	

Selective Post-emergent (grasses) Cool Season Grasses

MSMA	Plateau
Poast	

Plant Growth Regulator

Cutless 50W
Embark
Primo

Brush & Forestry (also for use on privet & honeysuckle)

Accord Site Prep	Escort	Velpar L
Arsenal	Oust	Velpar ULW
Garlon 3A	Round-up Pro	
Garlon 4	Tordon K	

Aquatic Weeds & Algae

Aquashade	Rodeo
Cutrine Algaecide	Sonar A.S.
Reward 2,4-D 4amine I	

Mosquito (larval stage)	**Mosquito (adults)**
Agnique MMF	Aqua-Reslin

Generic formulations of identical chemical composition may be substituted for these approved pesticides.

Table I.2: Pesticides for use on pest animals on Tennessee Army National Guard properties

Mosquitoes (larvae)
- Agnique MMF
- Altosid
- Altosid LL
- Altosid Pellets
- Altosid XR
- Bactimos Briquets
- Vectolex-CG

Mosquitoes (adults)
- Aqua-Reslin
- Bio-Mist 1.5 + 7.5
- Fyfanon
- Kontrol 4,4
- Mosquito Beater
- Permanone 10% EC
- Scourge 4+12
- ULD BP-100
- ULD BP-300

Fire Ants
- Amdro
- Avenger
- Award Fire Ant Bait
- Chipco Top Choice Fire Ant Bait
- Maxforce Fire Ant Bait

Filth Flies
- FlyTek Fly Bait
- Golden Malrin
- Stimukil Fly Bait

Termites
- Bora-Care
- Dursban TC
- Premise
- Termidor 80WG
- Termidor SC
- Tim-Bor

Bees & Wasps
- Stinger
- Wasp-Freeze PT515

General Arthropod control in and around buildings
- Advance Ant Bait
- Affront
- Borid
- Catalyst
- CB-80 Extra
- Cynoff 2E
- DeltaDust
- DeltaGard
- Demand CS
- Demon EC
- Drax Ant Bait
- Drione
- Dual Choice Ant Bait
- Gentrol
- Kicker
- Maxforce FG
- Maxforce Gel
- Maxforce Roach Bait
- Niban Bait
- Nylar IGR
- PCO Fogger
- Perma-Dust
- P.I. Contact
- Precor Plus Fogger
- PT565 Plus XLO
- Roach Kill
- Saga
- Suspend SC
- Tempo Ultra SC
- Tempo 20WP
- ULD BP-100
- ULD BP-300
- Ultracide
- Zero-In 797-A

Rodents (mice/rats)
- Contrac
- Ditrac
- Fastrac
- Final Blox
- Talon-G
- WeatherBlok

Squirrels
- 4-the-Squirrels

Birds
- 4-the-Birds

Generic formulations of identical chemical composition may be substituted for these approved pesticides.

Table I.3: Products approved for use under the self-help program on TNARNG properties. For more information, see the Integrated Pest Management Plan or contact the Pest Management Coordinator.

Product description	Brand name examples	Active ingredient (s)
Cockroach bait station	Combat Quick Kill	Fipronil
Ant bait station	MaxForce Ant Bait	Fipronil
Ant bait	Advance Dual Choice Amdro Fire Ant Bait	N-ethyl perfluorooctane sulfonamide
	Amdro Fire Ant Bait	Hydramethylnon
Aerosol insecticide	Kill Zone House & Garden Insect Killer Formula 3	D-trans Allethrin, 0.15%, and Resmethrin, 0.2%
	PT 565 Plus XLO	Pyrethrin
Wasp spray	PT 515 Wasp Freeze and Hornet Killer	pyrethrin, allethrin, d-phenothrin, or resmethrin
	Wasp Stopper II Plus	
Boric acid (roach killer)	Roach Kill	boric acid
Roach trap	Mr. Sticky	NA
Rodent glue trap	Victor Holdfast	NA
Spring mouse trap	NA	NA
Fly swatter	NA	NA
Indoor Fly Catcher, cylindrical sticky trap	NA	NA
Insect Fly Catcher, sticky strips	NA	NA

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Pest Control Treatment Record

(Have the contractor fill this form out or provide a printed receipt providing all information.)

Site:_____ Treatment Date:_____

Location of Treatment:_____

Type of Pest Problem:_____

Indicators of Pest Problem:_____
(What did you observe and where? Number of pests seen, signs of damage,…)

Chemical Pesticide/Herbicide Application
Pest control contractors must be state-certified for commercial application – include copy of certification if not on file with contract.

Pesticide/Herbicide Trade Name:_____

EPA Registration Number:_____

Active Ingredient(s) and % Concentration: _____ _____%

_____ _____%

_____ _____%

Quantity of Concentrate Used (if applicable):_____

Quantity of Finished Pesticide Applied:_____

% Active Ingredient as Applied:_____%

Size of Treated Area: _____

Application Rate:_____

Applicator Name:_____ Certification #_____

Man Hours Used:_____ Category(s)_____

Pest Control Company:_____ License #_____

Maintain copies of this form on site.
Send copies quarterly to: TNARNG Milan Training Site
Attn: Laura Lecher
325 Arsenal Lane
Lavinia, TN 38348
Or Fax: (731)222-5323

For more information call: (731)222-5321 or email: Laura.Lecher@tn.gov

Figure I.1: Pest control treatment record.

APPENDIX J

Annual Review of the INRMP

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INRMP ANNUAL REPORT

To:

From:

Subject: ARNG Annual Report on Implementation Status of the Integrated Natural Resource Management Plan (INRMP)

Date:

Reporting Period:
(Period report covers, i.e. 1 May 06 – 1 May 07.)

Annual Coordination Meeting: *(Identify the date and attendees of annual coordination. Indicate if this correspondence will be used in lieu of 'face-to-face' meetings. Use the following headers to document review findings)*

Program Overview: *(Short paragraph addressing the goals and objectives of the plan, the status of the mission requirements relative to the current plan and the issue of "no net loss" to training.)*

Current Implementation Status: *(List all projects for the current reporting period, those completed or on-going, and those that were planned but not initiated. Also indicate if any projects were rescheduled and the proposed new timeline. If a table is already available, paste in or submit as separate sheet and reference here.)*

Proposed Implementation: *(List all projects and actions planned for the next reporting period. If a table is already available, paste in or submit as a separate sheet and reference here.)*

Installation Personnel: *(List by title natural and cultural resource management personnel involved with implementation of the INRMP.)*

USFWS Regional Office Contact Information: *(Enter Point of Contact and contact information.)*

USFWS Field Office Contact Information: *(Enter Point of Contact and contact information.)*

State Fish and Game Agency Contact Information: *(Enter Point of Contact and contact information as applicable. Include all agencies or division involved.)*

Annex 1
FOREST MANAGEMENT PLAN

TABLE OF CONTENTS

1.0 INTRODUCTION

The forestlands of VTS-S were inventoried in 2005, and this management plan was developed based on military needs and forest health goals. It presents the recommended forest management prescriptions for the forest stands occurring within the Cantonment Area and each of the 6 training areas that comprise VTS-S (see Figure A1.1). Details of timber volumes and other stand characteristics are available in the Forest Inventory (Thompson Engineering 2006).

Individual forestry management prescriptions are provided for the forest stands occurring within each training area. The forest management prescriptions are generally focused on actions that would improve training facilities or enhance the habitat quality and health of the forestry resources on VTS-S. The use of prescribed fire is also addressed for each forest stand. Recommendations for prescribed burning

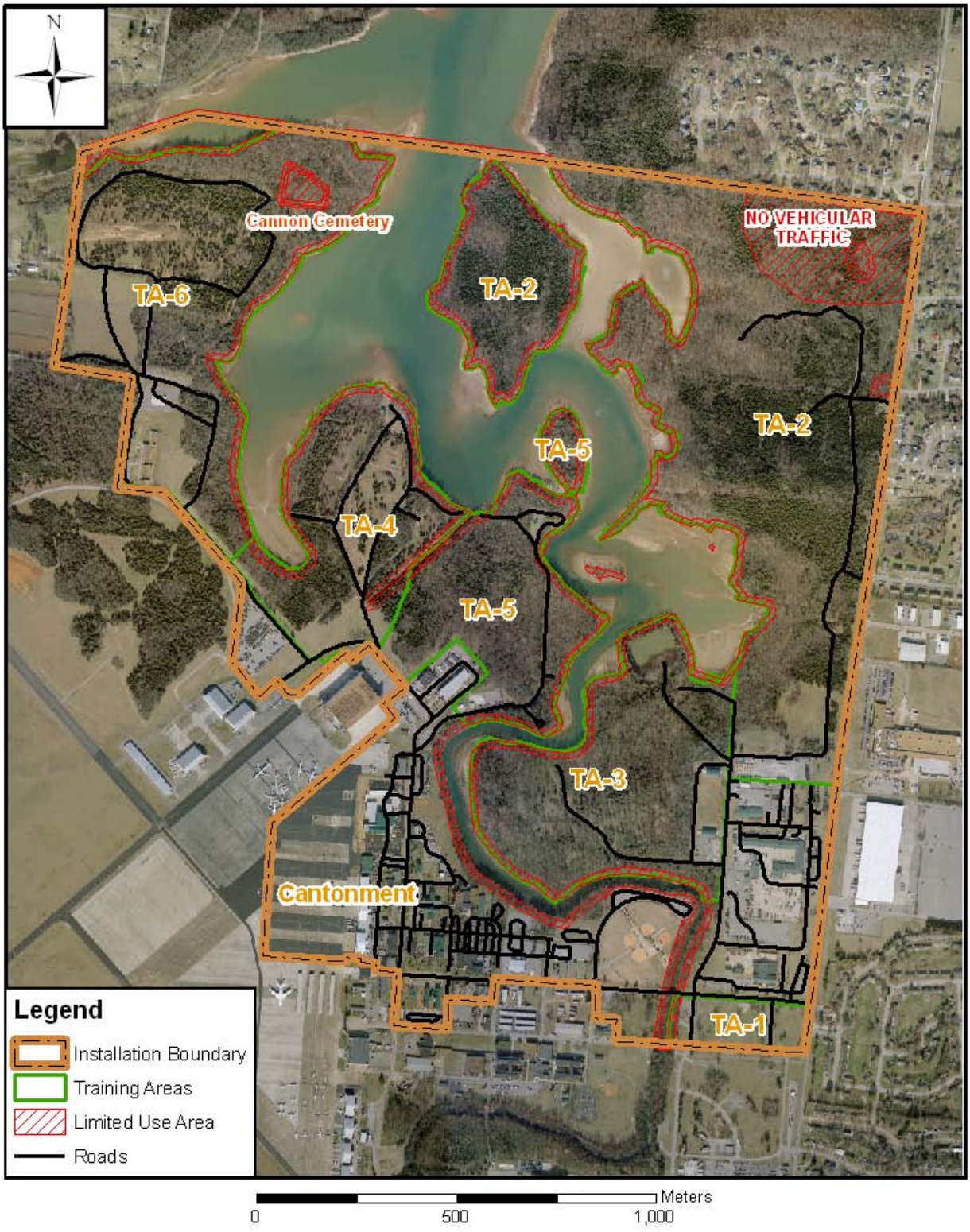

Figure A1.1: Training areas as used for forest stand delineation on the VTS-Smyrna.

are almost exclusively restricted to burns that would to reduce excessive accumulations of fuels to reduce wildfire risks and, in most cases, would be conducted infrequently on a 6-year rotation, unless otherwise specified. Annex 2 provides more details on the prescribed burning program at the VTS-S.

2.0 FOREST INVENTORY

The forest inventory for VTS-S was conducted in April 2005 by Forest Management Group, Inc., based in Hattiesburg, Mississippi. The forest inventory was developed using the established training areas and cantonment area to serve as the basic forestry management units. Figure A1.1 shows the locations of the Cantonment Area and the 6 training areas that make up the VTS-S.

The forest resources occurring within the forestry management units were inventoried. Each management unit was subdivided as appropriate into individual forest stands based on the sharing of common characteristics that served to define each stand. Among the parameters considered to delineate the forest stands were species composition, age, size, and condition. Delineation of the stands was accomplished by both the use of aerial imagery and ground observations of the different timber types and ages. A consistent forest stand numbering system was used throughout the inventory to identify each stand based on the major land features and forest types that characterized each stand.

The forest inventory provides the volumes of sawtimber (in tons and board feet) and pulpwood (in tons and cords) that was available within each stand at the time the inventory was performed in April 2005. The sawtimber is apportioned between pine, pine poles, CNS (chip-n-saw: pine timber that can yield both 2x4s and chips), spruce pine, red oak, white oak, hickory, poplar, cedar, ash, walnut, and miscellaneous hardwood (i.e., all other hardwood species that may be present). The pulpwood is apportioned between pine and hardwoods. The timber volume data is presented on both a per acre basis and as a total per stand for each product class.

The forest inventory also provides supplementary information to better understand the major characteristics of each stand. That information includes:

- Dominant and co-dominant tree species occurring within each stand
- Average basal area and DBH of trees within each stand on a per acre basis
- Average number of snags per acre; the minimum and maximum age of the trees
- A general assessment of the overall health of the stand
- An evaluation of the current condition of the stand
- General remarks on other major characteristics of the stand where appropriate and useful.

The forest inventory determined that a total of 456 acres of VTS-S was covered in forests at the time the forest inventory was conducted in April 2005. Table A1.1 presents summary volume data for the inventoried timber products on a per acre basis and for the entire installation.

The Forest Inventory also revealed that the overall average diameter at breast height (DBH) of trees on the entire installation was 8.3 inches and that the installation had an average basal area of 56.1 square feet per acre. The forest stands on VTS-S are typically dominated by eastern redcedar, red oaks, and other miscellaneous hardwoods such as maples and hackberries, with a substantial amount of green ash in some stands. Red oaks are co-dominant in some stands, as are hickory, sycamore, and black willow. Most stands were characterized by trees ranging from 5-30 years old, but some had trees approaching 40 years in age, while a few stands were dominated by very young trees. The overall health of the forest stands was observed to be good during the April 2005 Forest Inventory.

Table A1.1 Forest Product Volume Summary for VTS-Smyrna Based on the April 2005 Forest Inventory

Timber Product	Per Acre		Installation Total	
	Tons	Board feet	Tons	Board feet
Sawtimber				
Pine	1.5	178.2	685	81,348
Pole	0	0	0	0
CNS	0.1	13.6	46	6,208
Cedar	0.1	13.7	46	6,254
Red Oak	0.8	107.7	365	49,165
Hickory	0.2	19.9	91	9,084
White Oak	0.2	26.5	91	12,097
Ash	0.1	8.8	46	4,017
Poplar	0.5	53.4	228	24,377
Walnut	0.1	16.3	46	7,441
Misc. Hardwood	2.4	316.3	1,096	144,391
Pulpwood				
Pine	0	0	0	0
Hardwood	14.9	5.5	6,082	2,511

Army guidance requires all installations with a forestry program to keep their forest inventories current (i.e., not older than 10 years) when such forests are essential to the mission and/or capable of commercial use. Since the existing forest inventory for VTS-S was conducted in April 2005, the forest resources should be re-inventoried no later than 2015. The inventory intensity should be appropriate at that time to reflect the planned use of the forest and for monitoring the long-term health and sustainability of the forest. In addition to determining the volume of merchantable forest products available on the installation in 2015, the inventory should be directed at evaluating the overall health and characteristics of the forest community and to assessing the effectiveness of the forest management prescriptions that have been implemented during the intervening 10-year period.

3.0 FOREST MANAGEMENT GUIDELINES

Based on the results of the 2005 forest inventory, the health of most of the VTS-S forest stands is judged to be good to excellent. However, despite the relative good health of the majority of the forest stands considered, the stem density in several of the installation's forest communities is so thick that effective military training has become extremely difficult on portions of some of the training areas (i.e., Training Areas 2, 4, and 6) and without significant thinning, the health of many of the forest stands on the installation is expected to begin exhibiting signs of decline within the next 10 years.

The Management Prescriptions section presents the recommended forestry management prescriptions developed for each forest stand occurring within the cantonment area and each of the 6 training areas that comprise VTS-S. The management recommendations are intended to improve conditions for training and

enhance forest resource quality and habitat value. All planned harvests at this time will be thinning to remove smaller trees.

In all harvest activities, pre-commercial or commercial, there will be no timber removal within 100 feet of creek or lake shorelines. A 100 ft buffer will also be maintained along property boundaries except for the 25 ft security line of site clearing required along the fence-line itself.

Generally, no more than 60 acres will be harvested in a given year. In the event that the island portion of TA 2 is harvested, the entire 70 acres (minus buffer zones) will be harvested at one time to minimize impacts on the mudflat that will have to be crossed to access the island. Stands less than 60 acres may be subdivided and harvested in multiple years if training needs dictate on-going access to a portion of the stand.

The use of prescribed fire is also addressed for each forest stand. Recommendations for prescribed burning are almost always restricted to burns that would be directed toward reducing excessive accumulations of fuels to reduce wildfire risks and would be conducted infrequently at intervals of no less than 6 years. Annex 2 should be referred to for information on the weather guidelines that should be considered when conducting such burns and for the management objectives that are to be accomplished by prescribed burning.

3.1 Forest Management Objectives

The individual forestry management recommendations were based upon a consideration of the following broad management objectives developed for the overall forest community occurring on VTS-S.

- Provide appropriate vegetation cover for training needs as determined by mission requirements.

- Maintain a healthy forest ecosystem appropriate to the region through even and uneven aged management techniques. Forest values to be protected or improved are:
  - Soil conservation and water quality protection
  - Wildlife habitat
  - Biodiversity
  - Timber and forest products

- Control invasive pest plants (IPP) for the health of the forest.

- The cedar-dominated stands should be subjected to extensive thinning to reduce stem density, enhance training opportunities, reduce wildfire risks, and promote restoration of native grasses and other herbaceous plants that prefer open areas.

- Create conditions that encourage the establishment of young trees that will be available to regenerate the forest when the existing trees are removed.

- Utilize prescribed fire appropriately for each community types:
  - Prescribed fire should be applied in cedar dominated forest stands only after thinning is accomplished. Thereafter, burns should be directed toward reducing excessive accumulations of fuels to reduce wildfire risks and should be conducted at intervals of 3 years.

- Prescribed fire in bottomland hardwood stands should only be used as necessary for fuel reduction or to meet military mission needs. Harwood stands should be burned no more frequently than every 6 years.
- Stands dominated by grasslands should be burned at 1 to 2 year intervals. Monitoring should be performed at the midpoint between intervals to determine if the interval between burn events should be reduced or increased.

3.2 Timber Harvest Operations

The periodic harvest of timber is the primary measure used to manage forestry resources. The principle purpose of the forest management program on the VTS-S is to support the military mission and ecosystem management goals, while optimizing the forest resource and its associated forest products and benefits. Timber harvest decisions are not to be directed solely to generate revenue.

Timber harvests must be consistent with the military mission and comply with federal laws and policies, including avoiding adverse impacts on sensitive species and cultural resources. Prerequisites for timber harvests include the following:

- A current and approved Forest Management Plan that is normally included in an INRMP.
- National Environmental Policy Act documentation
- Comply with applicable laws
- Be a fiscally sound investment
- Capable of ecosystem sustainability
- Comply with installation safety restrictions
- Consider potential effects on significant archeological resources and historic properties.

The process for conducting a timber sale on VTS-S will start several months prior to harvest time:

- A stand-specific harvest plan will be developed in accordance with this plan (January)
- A Record of Environmental Consideration will be prepared for the harvest plan to satisfy NEPA requirements
- The harvest plan and REC will be sent to the TN SHPO for consideration (before March 1)
- The harvest plan and REC must be submitted to NGB with a Timber Report of Availability (ROA) (by May 30 prior to the fiscal year in which the harvest is planned)

3.3 Pest Management

Trees are susceptible to periodic infestations of insects and fungi that have the potential to result in serious damage to an installation's forest resources and overall landscape. This can result in the diminishment in the quality of the training landscape; economic loss of potential merchantable timber; modification of habitat conditions within the forest ecosystem that could influence wildlife populations; and an increased risk of wildfire. While such infestations are a natural phenomenon, actions may be required on occasion to prevent the spread of the infecting vector and/or remove damaged and diseased trees.

The U.S. Forest Service (USFS) is responsible for protecting forests from insects and disease in cooperation with the owners of forest lands. The DoD and the U.S. Department of Agriculture entered into a Memorandum of Agreement (MOA) in 1990 to conduct forest insect and disease suppression on lands administered by the DoD. Under the MOA, the USFS provides technical assistance and funds to

provide foliage protection, reduce specific insect and disease populations, reduce risk of artificial spread to uninfested areas, and to prevent tree mortality.

Army installations may receive funds from the USFS for forest pest suppression projects under the terms of the MOA. Installations wanting to receive pest management funding should have a biological assessment of the forest resources in questions conducted by the local USFS staff. The biological assessment should recommend the type of technical assistance required and management actions that could be pursued to address the pest problem. This could include population monitoring, surveys, biological evaluations, determination of trends and projected damage, and consideration of environmental and economic impacts. Approximately one year is required before funds are received for approved requests. The USFS funds are provided to the installations through Army channels to the proponent organizations for distribution to the appropriate installations. In the case of the TNARNG, pest management funds are received from the NGB.

3.4 Salvage of Disaster Damaged Trees

Natural weather phenomena such as tornadoes and ice storms can have a severe impact on forests. For example, large swaths of trees can be uprooted and/or their trunks broken above the ground by tornadoes, while large ice storms can create extensive alterations in the forest canopy by damaging limbs and small branches. If the damage to trees is significant and widespread, individual trees can be weakened and become more susceptible to disease and parasites in the years following the weather event. That damage can reduce growth rates and possibly even result in the death of individual trees.

If the damaged trees represent a significant economic loss or if the physical aftermath creates a safety hazard, impediment to training, or threat of insect infestation, it may prove prudent to undertake salvage operations in an attempt to recover as much of the lost volume and value of the damaged timber as possible. Salvage actions must be pursued relatively quickly following the disaster to prevent the deterioration in the quality of the damaged wood so as to recover as much economic value as possible. Even though prompt action is needed, the environmental evaluation requirements are typically not waived. In the event a salvage harvest is deemed necessary, TNARNG will coordinate with USACE to conduct the necessary environmental review and emergency harvest procedures.

4.0 ENVIRONMENTAL CONSIDERATIONS IN FOREST MANAGEMENT

All timber sales must be consistent with all applicable environmental laws and regulations. Experience has shown that cultural resources (i.e., historic and/or archaeological) and endangered and threatened species issues have the greatest potential to affect forestry management operations, including timber sales.

4.1 Cultural Resources

Forest management activities must not negatively impact cultural resources on the VTS-S. Several aspects of timber management have the potential to affect cultural resources, including timber harvest operations, site preparation and planting, and prescribed fire. Cultural resources investigations (Phase I survey in 1999 and Phase II survey in 2005) have identified two archaeological sites that are eligible for listing in the National Register of Historic Places, as well as other sites considered ineligible. These sites are identified in the TNARNG GIS system and will be incorporated into forest management planning. All efforts will be made to minimize any impacts on known cultural resources.

The known archaeological sites, whether eligible or not, will be excluded from ground-disturbing activities unless full consultation with the Tennessee State Historic Preservation Officer (SHPO) has been

conducted for the project. Such activities include, but are not limited to, the construction of plowed fire breaks (see Annex 2, Figure A2.1 for "no plow zones"), the use of dozers or other heavy equipment to clear stumps and logging slash, and the use of mechanical planting equipment. Cannon cemetery will be protected from damage during forestry activities by maintaining a 50 foot no-harvest buffer zone surrounding it.

This plan will be submitted for review to the Tennessee SHPO prior to implementation. In addition, the SHPO will be contacted for comments on the annual report of timber availability submitted each year for timber sale planning. Other forestry projects which have the potential to impact known cultural resources on the VTS-S will be coordinated with the SHPO as appropriate.

4.2 Sensitive Species

Chapter 3 of the INRMP contains information on sensitive species occurring or having the potential to occur on the installation based on information obtained from the Tennessee Division of Natural Heritage and on-site surveys. The VTS-S has no known resident federally listed threatened or endangered species. Two species that have been documented on the training site – the meadow jumping mouse and the sharp-shinned hawk – have partial federal status, indicating that a subspecies of each taxa is designated as threatened or endangered in a portion of its national range. The populations found in Tennessee, however, do not include this subspecies and have been determined to be secure at this time. These two species are listed as deemed in need of management by the state of Tennessee. A number of other species of concern (see Table 3.5) have been documented within a 5-mile radius of VTS-S, but have not yet been observed on the facility.

Almost all of the plant species and some of the animals listed in Table 3.5 prefer cedar glade habitat. Although there is considerable cedar habitat present on VTS-S (particularly in Training Area 2), much of it is overgrown with high stem densities and considerable branching. These conditions make the habitat unsuitable for most of the sensitive species to thrive on the installation. The forest management measures described in Section 6 of this annex include actions that could be taken to improve habitat conditions for these species.

If any federally listed species are found to be regularly utilizing the VTS-S, consultation with the USFWS will be initiated to ensure that further forest management and other natural resources activities will not negatively impact the species. Efforts will also be made to protect any state-listed threatened or endangered species that may be found on the training site through coordination with the Tennessee Wildlife Resources Agency (TWRA) and the Tennessee Natural Heritage Program.

4.3 Forestry Best Management Practices

Protection of watersheds and water quality during forest management activities can be a significant concern. Forestry practices can generate nonpoint source (NPS) pollution including sediment, organic matter, pesticides, nutrients, and elevated water temperatures. Removal of or damage to vegetative cover can increase runoff and erosion. The Stewart Creek embayment of the J. Percy Priest Lake is a major landscape feature at VTS-S, with significant portions of all six training areas bordering the lake's shoreline at various locations on the installation. The entire installation drains into the embayment.

The headwaters of Stewart Creek originate upstream of VTS-S. The installation represents the most downstream portion of the drainage basin before the stream flows into J. Percy Priest Lake. The area contained in the installation represents only a small portion of the Stewart Creek Basin's total drainage area. Much of the basin upstream of VTS-S has been developed as part of the urban sprawl associated with Nashville. The installation's training areas represent the most significant remaining undeveloped

blocks of land in the Stewart Creek Basin and serve as a buffer between the lake's shoreline and surrounding land uses.

Forestry Best Management Practices (BMPs) have been developed to reduce the adverse effects of forest operations on ecosystems and to protect water quality. A BMP is a practice or combination of practices considered to be the most effective means of preventing or reducing the amount of pollution by nonpoint sources to a level compatible with water quality goals and protecting fish and wildlife populations and habitats. BMPs will be applied to all timber management activities on the VTS-S.

The Tennessee Division of Forestry has adopted BMPs for forestry operations to prevent the impairment of water quality in the State's streams. The Tennessee BMPs are offered as nonregulatory guidelines to be used during the construction of roads, log landings, and skid trails to minimize the environmental impact of forest management activities. The BMPs are summarized in Table A1.2 and are available in manual form at http://www.state.tn.us/agriculture/forestry/bmpmanual.html. Although the BMPs are offered as guidelines, the State of Tennessee has firm expectations that appropriate BMPs will be employed in all forestry operations. Under the Tennessee Water Quality Control Act as amended in 2000, the Tennessee Department of Environment and Conservation has the power to issue a stop work order if a timber harvesting operation is determined to pollute waters of the State because a logger failed or refused to implement BMPs.

Table A1.2: Forestry Best Management Practices for VTS-Smyrna. (From Guide to Forestry Best Management Practices in Tennessee. 2003. Tennessee Department of Agriculture, Division of Forestry.)

Forestry Practice	Activity/Resource	BMP
Forest Roads	Locating Roads	Use soil surveys and topographic maps to develop plan.
		Use existing roads to minimize length of road construction.
		Locate roads as far from water bodies as possible.
		Avoid locating roads at confluence of streams.
		Avoid building roads in streamside management zones and sensitive areas.
		Avoid or minimize stream crossings. When that is not possible, crossings should be constructed at right angles.
		Locate roads on upper slopes near ridge crests to promote drainage, but avoid top of ridges.
		Fit roads to topography by following natural contours and keep grade between 2 and 12 percent. Avoid road sections with 0 percent grade.
	Constructing Roads	Complete construction several weeks in advance of use by logging traffic to allow road bed time to settle.
		Avoid construction during wet weather.
		Construction grades on 2 to 12 percent slopes where possible. Steeper slopes should be used for only short distances where adequate drainage structures are provided.
		Runoff from roads should not directly discharge into streams.
		Minimize runoff at stream crossings.
		Control drainage from roads by using appropriate design techniques: varying grades, crowning, outsloping, wing ditches, sediment control structures, broad-based dips, water bars, water turnouts, and/or cross-drain culverts.
		Push cleared trees and brush to downhill side of road to assist in trapping sediment.
		Maximize sunlight exposure to road surface.
		Minimize road width, right-of-way, and stream crossings to minimize soil

Forestry Practice	Activity/Resource	BMP
		disturbance
		Revegetate exposed soils in potential problem areas that could generate sediment.
	Road Retirement	Construct water bars or other drainage structures immediately after active logging has ceased.
		If logging will be delayed, construct temporary drainage and erosion control structures.
		Remove temporary bridges, culverts, and pole fords.
		Remove sediment and debris from dips, ditches, and culverts.
		Use mulch and/or seed with lime and fertilizer to prevent soil erosion.
Streamside Management Zones (SMZs)	Perennial and Intermittent Streams	Streamside Management Zone (SMZ) planning should be done before beginning timber harvest.
		Mark SMZ boundary prior to harvest.
		SMZ width will be a minimum of 50 feet between disturbed area and top bank, with 20 additional feet for each additional 10% of slope. This applies to both sides of the waterway.
		If trees are harvested in SMZ, maintain 50 percent canopy cover or greater.
		Do not use stream channels as roadways for equipment.
		Harvest of timber on training site's islands will be done only during winter pool.
		Avoid equipment operation within SMZ; harvested trees should be cabled or winched out.
	Ephemeral Streams or Wet Weather Conveyances	Avoid skidding within drains during wet conditions.
		Avoid locating roads in drains except when necessary for crossings.
		Do not empty road runoff into drains.
		Minimize soil exposure and compaction to protect ground vegetation.
	Sensitive Areas	Avoid skidding in these areas.
		Avoid locating roads in these areas.
		Do not empty road runoff into drains.
		Minimize soil exposure and compaction to protect ground vegetation.
Stream crossings	Crossings	Avoid or minimize stream crossings. When that is not possible, crossings should be constructed at right angles.
		Locate crossings on straightest stream sections.
		Avoid locating crossings at confluence of streams.
		Design to minimize disruption of movement of aquatic life.
		Approaches should be graveled and should rise away from streams to minimize erosion,
		Install broad-based dips and wing ditch turnouts to turn water off roads before entering stream
	Fords	Use fords for haul roads only, not for skid trails.
		Locate fords where stream banks are low.
		Fords should have a solid bottom.
		Where necessary, use gravel to establish low water crossing.
	Culverts	Permanent culverts should be sized to accommodate the area to be drained.
		Temporary culverts may be smaller, but must be removed after completion of logging.
		Install culverts in a manner that minimizes disturbance of stream. Stabilize fill material with riprap and/or vegetation.
		Inspect culverts periodically to ensure they are free of blockages.
		Install culverts on grade with bottom of channel to allow movement of aquatic life.

Forestry Practice	Activity/Resource	BMP
	Bridges	Locate bridges across narrow points of stream and on firm soils.
		Protect banks from sloughing during construction.
		Remove temporary bridges.
		Do not cover bridges with soil.
		Use temporary bridges for skid trails to prevent equipment and logs from entering stream channels.
Log Landings	Log Landings	Locate landings outside of SMZs and away from streams and sensitive areas.
		Slope landings 2-5 percent to allow for drainage.
		Prevent debris and fuels/lubricants from being washed by runoff into streams.
		Re-vegetate landings after use if they pose a potential water quality problem.
		Install drainage and sediment control structures to divert runoff.
Skid Trails	Skid Trails	Minimize number of skid trails by using existing trails.
		Locate skid trails on slopes 2 to 30 percent. Steeper slopes can be used for short distances if water control/drainage structures are provided.
		Runoff from skid trails should not discharge into a stream.
		Control runoff by varying trail grade, water bars, wing ditches and/or sediment control structures.
		Prevent runoff associated with stream crossings.
		Avoid skidding across streams, drains, and sensitive areas.
		Use culverts or temporary crossing structures.
		Do not use fords to skid across streams.
		Do not operate equipment in streams.
		Avoid skidding directly up or down hill, but follow contours or “zigzag” if possible.
		Use low ground pressure tires on skidders when available and concentrate skidding as much as possible on a few primary skid trails to minimize site disturbance and soil compaction.
		After completing logging, remove temporary bridges and culverts, sediment and debris from dips, ditches, and culverts, and revegetate problem areas.
		Use mulch and/or seed with appropriate amounts of lime and fertilizer when needed to prevent soil erosion.
		Avoid ruts that risk channeling water into a stream.
Logging Debris	Disposition of Debris	Trees should not be felled in or across streams.
		Pull treetops far enough from waterways to prevent them from being washed in during high water.
		Do not drag trees and tops through a stream channel.
		Do not remove stumps and roots from stream banks.
Servicing and Maintaining Equipment	Oils and fuels	Prevent oil and fuel spills. If a spill occurs, clean up all spilled materials and contaminated soils and dispose of both properly. Notify Tennessee Department of Environment and Conservation of spill incident.
Site Preparation for Tree Panting	Mechanical	Choose site preparation method that will expose and disturb as little bare soil as possible.
		Establish SMZs to minimize sediment entering streams.
		Carry out all mechanical site preparation operations and tree planting along the contour of the land.
		Slopes over 30 percent should be hand planted and should not be subjected to mechanical site preparation.
	Chemical	Favor chemical methods over mechanical methods on steep slopes and erodible soils to control undesirable vegetation.
		Follow all EPA label instructions
		Never apply pesticides directly to water except when registered for

Forestry Practice	Activity/Resource	BMP
		application over water.
		Establish SMZ to minimize chemicals entering streams.
		Avoid use of chemicals in or near sensitive areas.
		Consider weather conditions and equipment capabilities to avoid herbicide drift.
		Calibrate spray equipment to apply chemicals uniformly and in correct quantities.
		Prevent chemical leaks from equipment and check equipment.
		Mix and load chemicals outside of SMZs and sensitive areas.
		Rinse spray equipment and discharge rinse water only in areas that are part of the application site. Never rinse tanks or sprayers in or near streams
		Dispose of chemical containers according to label instructions.
Prescribed Fire	Preparation	Locate windrows well away from drains to prevent materials from being washed into streams.
		Construct fire lines on the contour in advance of prescribed burning.
		Plow fire lines only as deep and wide as necessary to control the spread of the prescribed fire and to minimize soil disturbance.
		Construct water bars and wing ditches at appropriate intervals on firelines to turn water into adjacent undisturbed areas.
Fertilization	Application and Clean Up	Determine appropriate amounts and types of fertilizer needed before application.
		Consider weather conditions and equipment capabilities to avoid drift into SMZs.
		Conduct all on-site fertilizer handling away from waterbodies, wells, ditches, and sensitive areas.
		Clean up and/or contain all fertilizer spills immediately.
		Dispose of fertilizer containers and/or excess fertilizer according to applicable governmental regulations and label requirements.

4.4 Monitoring and Inspections

Monitoring is a key element in ecosystem management. Army forest managers are required to balance increasing demands for resource use, such as military training, forest product sales, biodiversity conservation, and, where applicable, recreation use of military lands. The VTS-S forestry program should be periodically monitored to: (1) assess whether or not forest management objectives are being met; and (2) detect trends in forest health and condition in response to the forest management actions proposed.

Forestry program monitoring on the VTS-S will include:

- The progress of each timber sale should be monitored to assure that the harvest is being conducted in accordance with the terms of the contract. Monitoring should be coordinated with the USACE's Mobile District if the timber sale is administered by the USACE. At the conclusion of the timber harvest, a final inspection of the site should be conducted jointly by the USACE and the TNARNG to assure the cut was conducted in accordance with the contract stipulations to allow release of the buyers' bond.

- Effective management requires feedback on the results of the management activities. The necessary assessment may be conducted specifically for the forestry program or as a part of another program area. The VTS-S forests will be monitored to assess:

- Whether the overall condition of the forest is meeting military mission requirements
- The effects of training activities on forest resources
- Response to forest management activities
- Wildlife habitat quality
- Influence of forest management on sensitive species
- Impacts on cultural resources
- Erosion problems related to timber management practices and the success of repair efforts
- Any areas affected by disease or insect infestations (particularly southern pine beetles during summer months)
- Storm or other natural damage
- Invasive pest plant problems
- Fuel loads on the forest floor and the risk for wildfires
- Areas for inclusion in future timber ROAs

- The baseline forest inventory was conducted for VTS-S in 2005. Forest resources should be re-inventoried in 2015. If that work is to be accomplished by contract, adequate advance time should be allowed to prepare the scope of work and to award the contract by that timeframe. The 2015 inventory should include a specific task requiring a comparison of the forest condition in 2015 with the results of the 2005 inventory to determine the direction the installation's forest is headed; how effective management measures have been in assuring a quality forest is provided; and identifying adjustments in the long-term management goals in the installation's forest management program.

5.0 MANAGEMENT PRESCRIPTIONS

The following stand descriptions and management prescriptions are based on the 2005 forest inventory. All planned harvests will thin smaller trees to open up the stands for training purposes, to release existing dominant and subdominant trees for further growth, and to encourage germination and seedling growth for advance regeneration.

Generally, no more than 60 acres will be harvested in a given year. In the event that the island portion of TA 2 is harvested, the entire 70 acres (minus buffer zones) will be harvested at one time to minimize impacts on the mudflat that will have to be crossed to access the island. Stands less than 60 acres may be subdivided and harvested in multiple years if training needs dictate on-going access to a portion of the stand.

As the Cantonment area is heavily developed and Training Area 1 is maintained as a regularly mown grassy field, these areas are not considered further in the VTS-S forest management plan.

In all harvest activities, pre-commercial or commercial, there will be no timber removal within 100 feet of creeks or J. Percy Priest Lake. A 100' buffer will also be maintained along property boundaries except for the 25' line of site clearing required along the fence-line itself.

5.1 Training Area 2

With 217 acres on the mainland, Training Area 2 is the largest of the VTS-S's six training areas. Training Area 2 lies along much of the installation's eastern boundary and about half of the northern boundary. The western boundary of the mainland portion of the training area is formed by the shoreline of the J. Percy Priest Lake. A large island in the lake is also considered a part of Training Area 2, although it is rarely utilized for training. The island is approximately 71.3 acres in size.

Training Area 2 supports two forest stands: a bottomland hardwood dominated forest at the lower elevations bordering the lake shoreline and a cedar dominated forest in the upland areas. The cedar dominated stand has a high stem density with low branching that makes it almost impenetrable, which severely limits training activities.

A network of sinkholes has been identified in the northeastern corner of TA2; this 23 acre portion of the training area will be excluded from all timber harvests. An approximately 10-acre tract along the training area's southern boundary is maintained in an open condition for equipment training and storage.

Stand Descriptions

Stand s0201 is a 126.3-acre immature upland cedar and hardwood forest occurring on the higher upland areas on the mainland portion of the training area and covering the island as well. The stand is dominated by cedar and oak and contains a few pines. The trees range in age from 10 to 30 years. Stem density is high among the cedars, with numerous low branches. The overall health of the stand is excellent but will only decline over the next ten years without management.

Stand s0201(d) is the 71 acre continuation of the immature upland cedar and hardwood forest located on the island.

Stand s0202 is a 78.2-acre mature hardwood forest occurring at the lower elevations of the training area along the lake. The stand is dominated by red oak and miscellaneous hardwood species, with a mix of hickory, poplar, walnut, and pine. The trees range in age from 30 to 50 years. The overall health of the stand is good.

Forest Management Prescription

Stand s0201. This stand will be thinned by removing all cedar trees that are less than 16 inches in diameter at breast height (DBH). This will allow room for the remaining trees to grow and assist in training them. During the thinning operation, all hardwoods will be left regardless of size. Large portions of the stand are covered in almost pure growths of redcedar. Such areas need to be opened up to allow other species to seed in. Where a preferred hardwood seed source exists, openings may be up to 2 acres in size.

Field training should improve considerably once small cedars are thinned out, allowing for greater maneuverability and providing better sight lines. The stand will be divided into two sections to be thinned in different years in order to meet the 60 acres per year guideline.

The island portion of stand s0201 can be accessed only by watercraft during summer months. During winter drawdown of the lake, the island may be reached by crossing a mudflat that is approximately 400 to 500 feet wide. Thinning operations on this island are not a priority as it is rarely used for training exercises; however, any future timber harvests to occur on the island will be conducted during winter

months when lake water level is at winter pool. Skid bridges will be used to cross the mudflats. Upon completion of harvest, all materials used in construction of skid bridges must be completely removed from the crossing and carried offsite or disposed of in an appropriate manner. See Best Management Practices listed in Table A1.2 for further guidelines regarding timber harvesting in sensitive areas.

Following thinning of this stand, prescribed burning can be done once every 3 years to prevent the accumulation of highly combustible forest fuels. No burning should be attempted prior to thinning because of the extreme fire hazard associated with the dense cedar stands.

Stand s0202. This stand will be thinned from below by removing all trees that are not in the dominant or co-dominant crown class. The goal would be for tree crowns to not touch each other on at least three sides. Some of the co-dominants may be removed to allow more room for the remaining trees to grow. The stand will be divided into two sections to be thinned in different years in order to meet the 60 acres per year guideline.

Several small wetland areas occur along the shores of J. Percy Priest Lake. Trees may be harvested from these areas in accordance with the prescription; however, equipment use within the wetland will be minimized to avoid soil disturbance. Harvesting operations will occur in this stand only during winter drawdown of the lake in order to minimize impacts to soils. As with all other harvests, a 100 foot non-harvested buffer will be maintained along the shore of the lake and the property boundary.

Prescribed burning may be done every 6 years for fuel reduction if necessary. Burning should be conducted in strict accordance with the weather guidelines listed in Annex 2. No burning should be performed before the thinning is done.

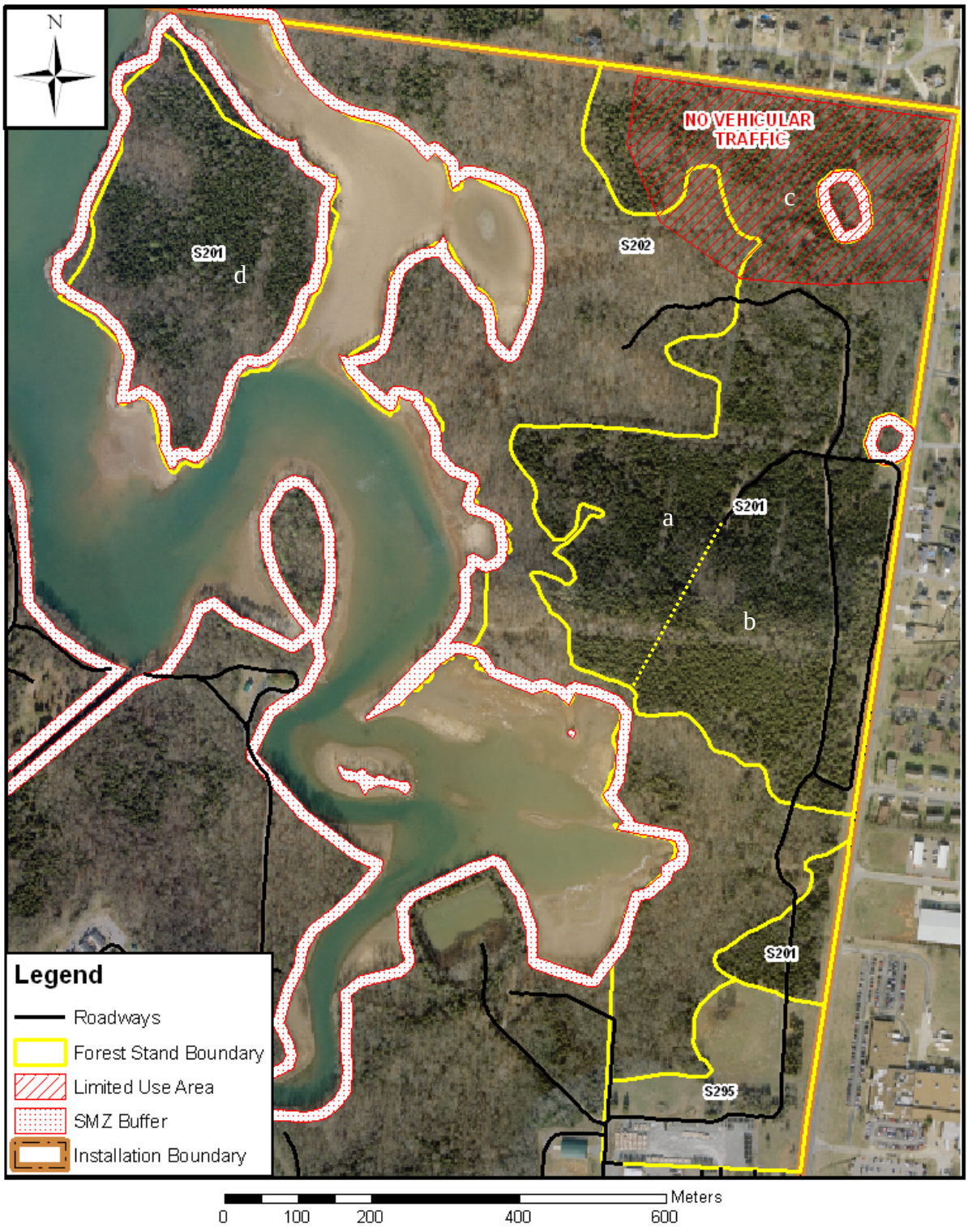

Figure A1-2: Forest stands in Training Area 2 on VTS-Smyrna.

5.2 Training Area 3

Training Area 3 is 74-acre site that is bounded on the north, west, and south by the impounded portion of Stewart Creek and on the east by Training Area 2 and an element of the cantonment area. Part of this area was used as a landfill for various types of refuse when the installation was operated as Sewart Air Force Base (AFB) by the U.S. Air Force. For the purposes of this Forest Management Plan, TA3 also contains the remains of the former AFB sewage treatment lagoon (actually in TA2). Because of these contamination issues, the TNARNG does not use this area for active training. An area totaling less than 10 acres along the training area's eastern boundary contains structures associated with the installation's cantonment area and is permanently maintained in an open condition. A single forest stand covers 68.4 acres (92 percent) of the training area.

Stand Description

Stand 01 is a 68.4-acre stand of immature bottomland hardwood forest occurring on the relatively low elevations that characterize most of the site. The stand is dominated by red oak and white oak, with a mix of hickory, poplar, walnut, and a few pines. The trees range from 10 to 25 years in age and are the result of ecological succession over the years since the site was maintained in a cleared condition by the U.S. Air Force. The overall health of the stand is excellent.

Forest Management Prescription

Stand s0301 will be thinned by removing all trees that are less than 14 inches DBH. This will allow room for the remaining trees to grow, plus aid in training. If, by following this DBH guideline, thinning would create an opening of 1 acre or greater in size, some of the trees smaller than 14 inches should be retained to maintain forest coverage of the area unless areas of this size are desired for specific training purposes.

Training Area 3 contains both bottomland hardwoods and upland redcedar woodlands. The bottomland hardwoods cover the lower elevation areas that border the J. Percy Priest Lake shoreline. The cedar woodlands occupy the higher elevation areas and are relatively dense, with numerous other woody shrubs and other hardwood species being intermingled among the cedars. The area does contain some small openings that are covered in grasses and other herbaceous plants. Although the training potential of Training Area 3 would definitely benefit from selective thinning of the cedars and other woody species and the subsequent application of prescribed fire, use of this area for training has been impeded by historic waste disposal issues that date back to the prior occupation and use of the installation by the U.S. Air Force. Until the waste-related issues are resolved, Training Area 3 will be designated as a No Burn Area. In addition, prior to conducting any prescribed burns in adjoining portions of Training Area 2 firebreaks will be constructed around known landfill sites in Training Area 3.

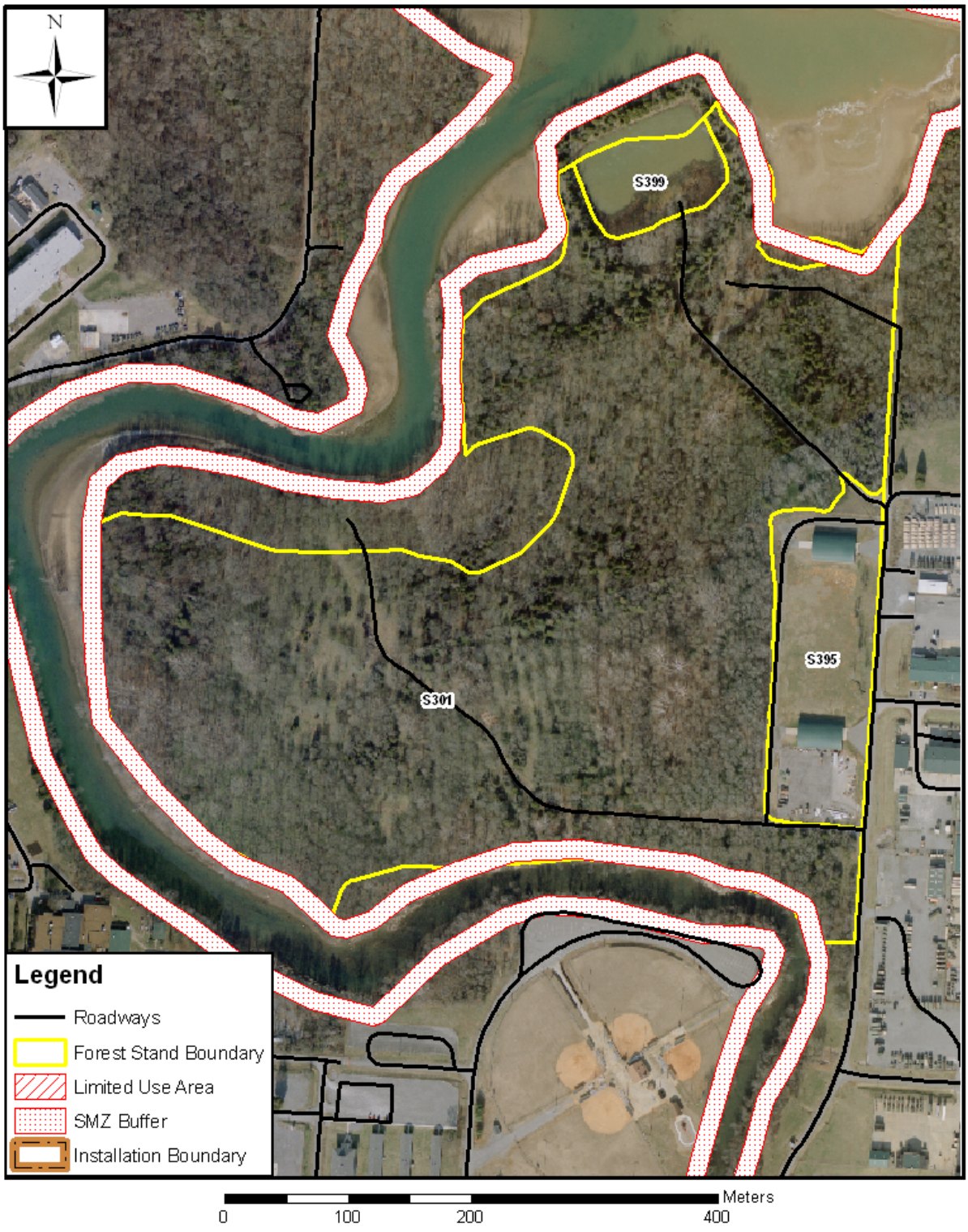

Figure A1-3: Forest stands in Training Area 3 on VTS-Smyrna.

5.3 Training Area 4

The 55 acres comprising Training Area 4 occur as broad peninsula protruding north into the waters of J. Percy Priest Lake. Smyrna Airport is located to the south, and Training Areas 5 and 6 to the east and west, respectively. The 2005 Forest Inventory determined that only one forest stand with a diverse assemblage of individual tree species occurs on the site. The interior of the training area supports a savannah-like grassland with numerous cedar trees being scattered throughout the open area. A small portion of the training area nearest to the airport is maintained in a permanent grassed condition

Stand Description

Stand s0401 consists of 42.2-acre immature upland pine and hardwood forest. The stand is dominated by red oak and white oak, with a mix of hickory, cedar, and a few pines. The site appears to have been a former open field that naturally regenerated over several decades. The trees range in age from 10 to 30 years. The hardwood species are more dominant at the lower elevations along the lake shoreline, while cedars are more abundant on the interior upland areas. Although the overall health of the stand is excellent, its condition will decline without management

Forest Management Prescription

Stand s0401 will be thinned by removing all trees that are less than 10 inches DBH. This will allow room for the remaining trees to grow, plus aid in training of the trees that are left. If following this DBH guideline would create an opening of 1 acre or greater in size, some of the trees smaller than 10 inches should be retained to maintain forest coverage of the area.

Following thinning, the frequency of prescribed burning would depend upon the primary vegetation assemblage occurring within specific portions of the training area. For example, hardwood dominated sites should be burned no frequently than every six years, cedar and cedar grassland associations every 3 years, and permanently maintained open grassed areas once a year or every other year. Prescribed burns should be conducted with the objective of preventing excessive accumulations of organic fuel loads. No burning should be attempted prior to thinning because of the extreme fire hazard associated with the dense cedar stands.

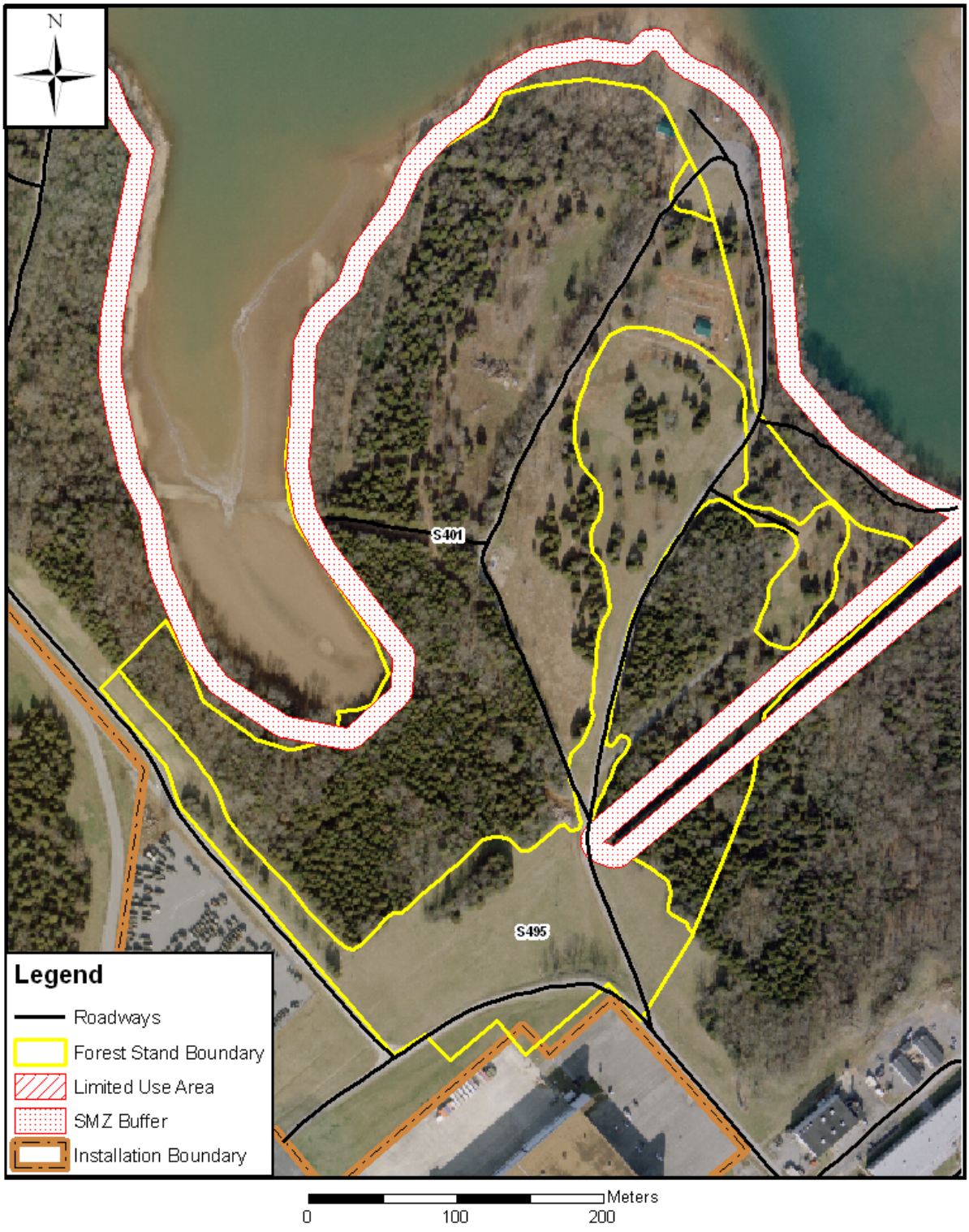

Figure A1-4: Forest stands in Training Area 4 on VTS-Smyrna.

5.4 Training Area 5

Training Area 5 is 54 acres in size. It is a peninsula that extends to the north and east into the upstream reaches of the Stewart Creek Embayment of J. Percy Priest Lake. The overall training area includes a small island that is approximately 4.4 acres in size. Almost 94% of the training area is forested and is designated as a single stand for forest management purposes. The training area is bounded to the west by Training Area 4 and to the south by a portion of the installation's cantonment area.

Stand Descriptions

Stand s0501 is a 50.6 acre mature pine and hardwood forest. The stand is dominated by pines and miscellaneous hardwoods. The hardwoods are more common at the lower elevations, while the pines are more abundant at the higher elevations on the site. The trees range in age from 10 to 35 years. The overall health of the stand is judged to be good.

Forest Management Prescription

Stand s0501 will be thinned by removing all trees that are less than 10 inches DBH. This will allow room for the remaining trees to grow, plus aid in training of the trees that are left. If following this DBH guideline would create openings of 1 acre or greater in size, some of the trees smaller than 10 inches should be retained to maintain forest coverage of the area.

This training area contains a small island just north of the boat ramp. During summer months, this island can be accessed only by watercraft. During winter drawdown of the lake, the island may be reached by crossing a mudflat that is approximately 50 feet wide. Thinning operations on this island are not a priority as it is rarely used for training exercises; however, any timber harvests to occur on the island will only occur during winter months when lake water level is at winter pool. Skid bridges will be used to cross the mudflat. Upon completion of harvest, all materials used in construction of the skid bridge must be completely removed from the crossing and carried offsite or disposed of in an appropriate manner. See Best Management Practices listed in Table A1.2 for further guidelines regarding timber harvesting in sensitive areas.

Following thinning, prescribed burning can be done once every 6 years for fuel reduction. Burning should be accomplished in strict accordance with the weather guidelines listed in the Prescribed Fire Plan (see Annex 2). This will minimize the potential for damage to the hardwoods.

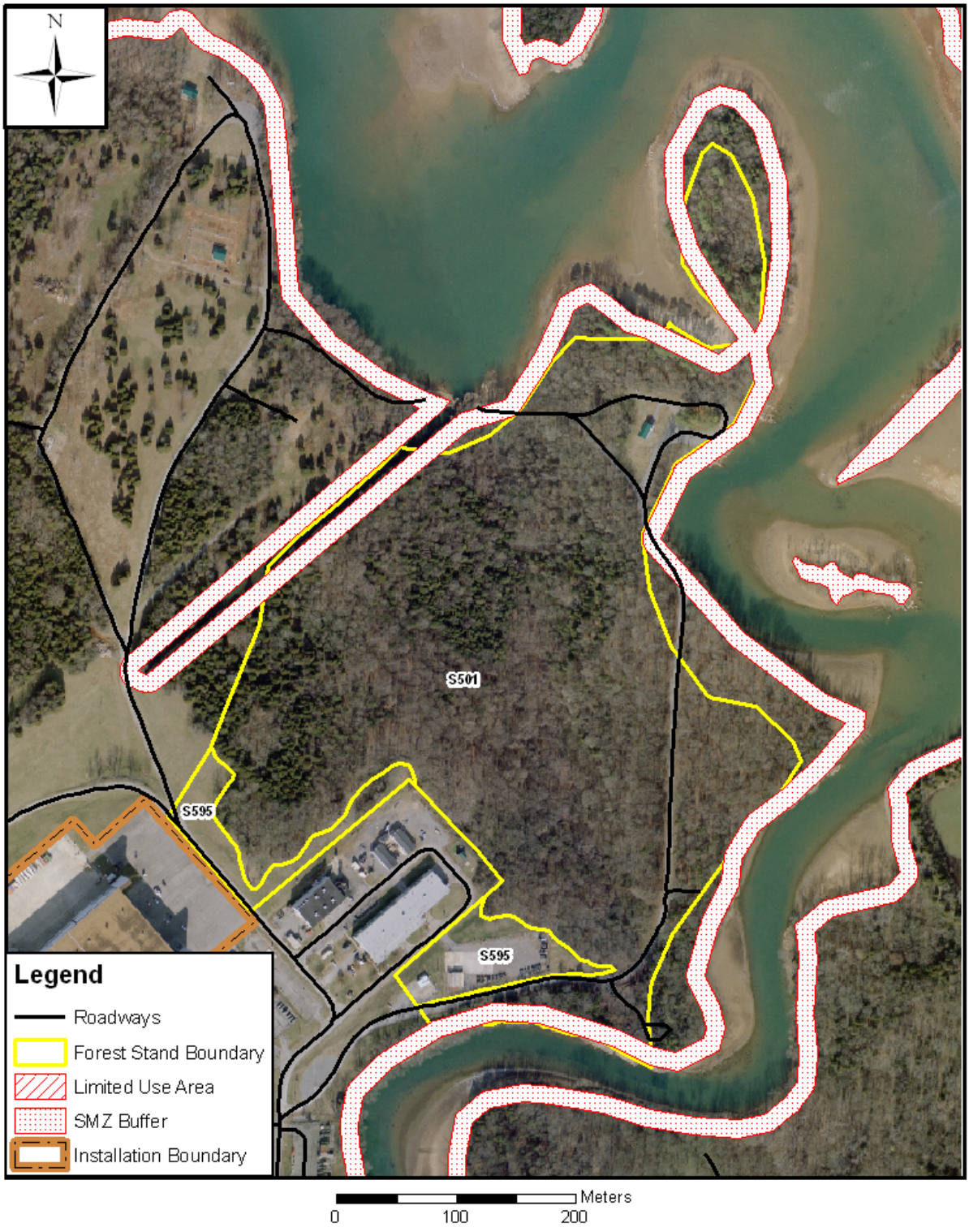

Figure A1-5: Forest stands in Training Area 5 on VTS-Smyrna.

5.5 Training Area 6

At 110 acres, Training Area 6 is the second largest of VTS-S's six training areas. Over half of the training area is bordered by J. Percy Priest Lake to the east and north. Undeveloped lands and agricultural property lie adjacent to the western boundary, while Smyrna Airport property forms the southern boundary. Two large open areas are maintained in permanently grassed conditions for training purposes. The southernmost of these open areas contain the small arms firing range and associated buildings. Although the 2005 Forest Inventory designated the forested area on TA6 to be a single stand for forestry management purposes, two principal vegetation associations actually occur within the area. The lower elevations are dominated by hardwoods, while the higher elevations are covered in open savannah-like prairie habitat within which cedar trees are abundant. The Cannon Cemetery is located on the most northern point of land extending into the lake.

Stand Description

Much of the 90.8 acres found in Stand s0601 is characterized as an immature upland pine and hardwood forest. The lower elevations within the stand are dominated by miscellaneous hardwoods, with a mix of hickory, white oak, poplar, walnut, and a few pines. The higher elevation areas support a considerable amount of cedar. The trees range in age from 10 to 50 years, with the oldest trees typically being hardwood specimens occurring along the lake shoreline. The present overall health of the stand is considered to be excellent for the hardwood component, but poor for the cedars due to over-stocking in some areas.

Forest Management Prescription

Stand s0601: The hardwood component of this stand will be left as is for the next 10 years. After the next Forest Inventory update is prepared, the management prescriptions for this stand will be reconsidered. The eastern redcedar component on approximately 25 acres will be lightly thinned to enhance the utility of the area for military training purposes and to promote the expansion of native prairie grasses.

Prescribed burning in hardwood component may be accomplished every 6 years to reduce forest fuels. Burning within the cedar component should be attempted every 3 years to inhibit the spread of cedars and other undesirable scrubby vegetation. To the extent possible, the open areas in TA6 could be burned every year. All burning should be undertaken in strict accordance with the weather guidelines listed in the Prescribed Fire Plan (see Annex 2) to minimize both damage to the hardwoods and the potential for fire to escape to off-installation lands.

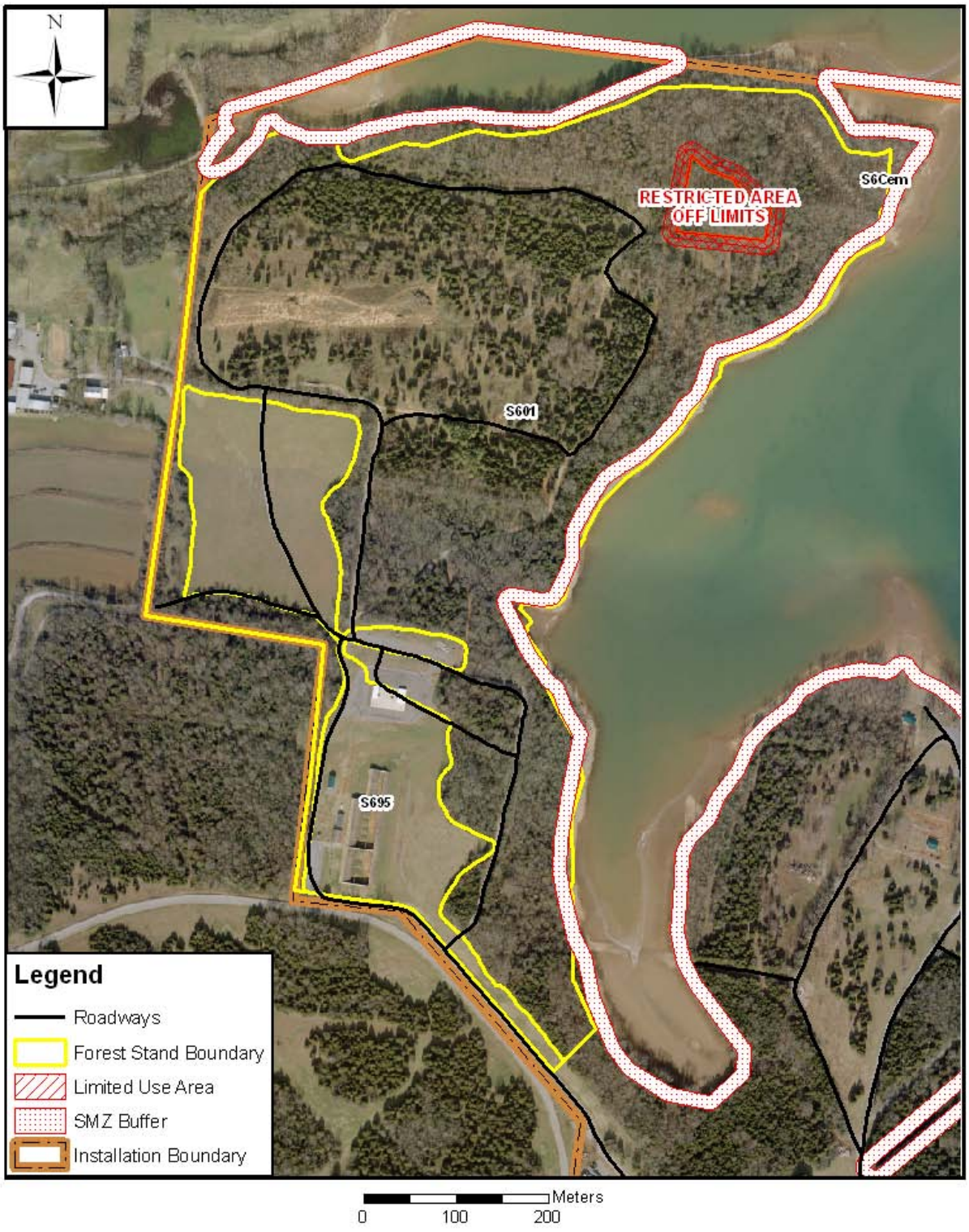

Figure A1-6: Forest stands in Training Area 6 on VTS-Smyrna.

6.0 RECOMMENDED IMPLEMENTATION SCHEDULE

A total of six individual forest stands have been designated on VTS-S, with one stand subdivided into 3 management sections. In general, the overall health of the installation's forest resources is considered to be relatively good. Despite the good health of the forest stands observed at the time the Forest Inventory was conducted in April 2005, the conditions are anticipated to decline over the next five to ten years if the stands are not thinned.

Due to the relatively young age composition of the forest associations occurring over most of the training areas, it appears that much of the installation was once maintained in cleared condition. This may have occurred prior to 1970 when the installation was managed as the Sewart AFB by the U.S. Air Force. Since the TNARNG assumed control of the installation property in 1970, the process of ecological succession has allowed forest communities to become established, and in some cases the present stem density is so thick that effective military training has become extremely difficult on portions of some of the training areas (e.g., Training Areas 2, 4, and 6). As a result, many of the forest stands are in need of thinning to improve conditions for training.

Generally, no more than 60 acres will be harvested in a given year. In the event that the island portion of TA 2 is harvested, the entire 70 acres (minus buffer zones) will be harvested at one time to minimize impacts on the mudflat that will have to be crossed to access the island. Stands less than 60 acres may be subdivided and harvested in multiple years if training needs dictate on-going access to a portion of the stand.

Table A1.3 lists stands in order of the priority of treatment for the first ten years of management. Harvests may skip a year, depending on site access, and so this list may not be completed within ten years. This schedule is subject to change based on military mission needs and updated forest inventory data. A resurvey of the VTS-S forest stands is scheduled for 2015. This plan and the harvest priority will be revised as dictated by the results of the new inventory.

Application of prescribed fire should be an important management tool in the management of VTS-S's forest resources, particularly for those areas that are dominated by thick growths of cedar. See Annex 2 for information on the individual burn units into which the forest stands are recommended to be divided, and the intervals that should be considered between burn operations for the respective units.

Table A1.3: Timber stand harvest priority for VTS-Smyrna.

Training Area	Stand & Section	Acres	Primary Management Action
2	s0201(b)	32	Thin redcedar <16"
4	s0401	42	Thin <10"
5	s0501	51	Thin <10"
2	s0201(a)	35	Thin redcedar <16"
6	s0601	25	Thinning
2	s0202	78	Thin below dominant/subdominant
3	s0301	55	Thin <14"
2	s0201(d)	71	Thin redcedar <16"

ANNEX 2

WILDLAND FIRE MANAGEMENT PLAN
VTS-SMYRNA

Wildland Fire Management Plan

VTS-S

Tennessee Army National Guard

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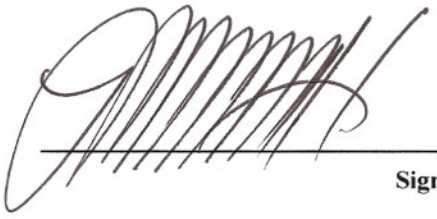


Signature

10 May 2012

Date

TABLE OF CONTENTS

1.0 INTRODUCTION

This Wildland Fire Management Plan (WFMP) has been developed in accordance with the 2002 Department of Army (DA) Wildland Fire Policy Guidance. It presents the standards by which the VTS-Smyrna (VTS-S) wildland fire control and prescribed burning programs will be conducted. This plan is a component of the Integrated Natural Resources Management Plan (INRMP) for the training site and is especially linked to the Forest Management Plan annex to the INRMP.

This plan shall be in compliance with:

- Army Regulation (AR) 420-90, 10 Sep 97, Fire and Emergency Services
- AR 200-1, 28 Sep 2007, Environmental Protection and Enhancement
- DOD Instruction 6055.6, 10 Oct 00, DoD Fire and Emergency Services Program
- Army Memorandum, 04 Sep 2002, Army Wildland Fire Policy Guidance

1.1 Goals and Objectives

Fire management policy for VTS-S was developed to support the following goals:

- Provide for the safety of fire crews on every wildland fire activity.
- Reduce wildfire potential on the training site and suppress undesired wildfires to protect lives, property, and natural and cultural resources in a cost-effective manner.
- Utilize prescribed fire where appropriate to maintain and improve the usability of the training site to support all aspects of the military mission.
- Utilize prescribed fire to effectively protect and enhance valuable natural resources and to implement ecosystem management goals and objectives.

1.2 Key Definitions

Wildland. An area in which development is essentially nonexistent, except for roads, railroads, power lines and similar transportation facilities. Structures, if any, are widely scattered.

Wildland Fire. Any non-structure fire occurring in the wildland that is not meeting management objectives and thus requires a suppression response.

Wildland Fire Use. The application of the appropriate management response to naturally-ignited wildland fires to accomplish specific resource management objectives in pre-defined designated areas outlined in the Fire Management Plan.

Wildfire. An unplanned, unwanted wildland fire, including unauthorized human caused fires, naturally occurring wildland fires, and escaped prescribed fires, where the objective is to put out the fire.

Prescribed Fire. Controlled, purposeful application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions which allow the fire to be confined to a predetermined area and produce the fire behavior and fire characteristics required to attain planned fire treatment and resource management objectives.

1.3 Location and Physical Features

The VTS-S is an 868 acre training facility managed by the Tennessee Army National Guard (TNARNG). The installation is located in Rutherford County in middle Tennessee, approximately 22 miles southeast of Nashville and partially within the city limits of the Town of Smyrna. The training site contains an intensively developed cantonment area of 169 acres; six designated training areas totaling 520 acres; and approximately 180 acres of aquatic habitat associated with Stewart Creek and J. Percy Priest Lake. The exact acreage of the installation covered by water varies depending on the prevailing surface elevation of the lake.

The region surrounding VTS-S has been greatly influenced by urban sprawl originating from the growth and development of Nashville, the second largest city and the capital of Tennessee. The areas surrounding and immediately adjacent to the installation reflect the expanding residential and light industrial/commercial activities that are typical of the overall region and which create a complex and varied pattern of land uses.

The installation's southwestern and western boundaries are formed by the Smyrna/Rutherford County Regional Airport. On the east VTS-S is bounded by densely populated residential areas and light industrial/commercial development. Additional residential developments are located along the installation's northeastern boundary. The only undeveloped lands bordering the installation are located to the northwest.

Stewart Creek and J. Percy Priest Lake are the primary water features at VTS-S. Stewart Creek enters the training site along the southeastern border and flows into J. Percy Priest Lake, an impoundment of the Stones River covering approximately 14,200 acres (22.2 square miles). The lake is surrounded by 18,854 acres of associated project lands, 10,000 acres of which are devoted to wildlife management. The lake is maintained by the Nashville District of the USACE and is operated to generate hydroelectric power, provide both drinking water and flood protection, promote fish and wildlife resources, and to create recreational opportunities. Over 97% (847 acres) of VTS-S property is licensed to TNARNG by either the Nashville or Mobile District of the USACE. Under the terms of the license, military training activities on the licensed lands cannot conflict with the operation of J. Percy Priest Lake. Much of the land is subject to flooding by the lake as a part of regional flood control practices. As a result, the actual amount of lands available for training within the licensed area vary during the course of the year, depending upon the current level of the lake.

Approximately 53% (456 ac) of the training site is forested. Low-lying areas near the lake and creek are occupied by bottomland hardwoods, while the higher, inland areas are dominated by eastern redcedar woodlands which are often densely overstocked. The remainder of the training site includes a heavily developed cantonment area (169 acres) and a number of small grassland areas maintained for military training purposes. There is no unexploded ordnance on the VTS-Smyrna.

2.0 PROGRAM OVERVIEW

2.1 Organizational Structure and Responsibilities

The wildland fire program on VTS-S will operate in accordance with DA Memo (4 Sep 2002), "Army Wildland Fire Policy Guidance," and the DA "Sustainable Range/Installation Environmental Activities Matrix" (2 Sep 2005) for funding. The Adjutant General (TAG), as commander of the TNARNG, is directly responsible for the operation and maintenance of the Volunteer Training Sites, including implementation of this WFMP. TAG delegates fire-related duties among environmental and training site staffs.

The Wildland Fire Program Manager for the TNARNG is the Natural Resources Manager (NRM) in the Environmental Office. The NRM is responsible for preparing and maintaining this WFMP. The NRM also ensures that firefighters are trained to National Wildfire Coordinating Group (NWCG) Firefighter Type 2 standards, at a minimum, maintaining training records and scheduling training as needed.

VTS-S Range Control is responsible for immediate wildland fire control response on the training site. The Smyrna Fire Department is the primary responder for all non-aviation related fires at VTS-S onsite and would respond to any fires within the VTS-S. If needed, the Smyrna Airport Fire Department and the Tennessee Division of Forestry would respond. A unified command will be set up with any of the above departments and any qualified VTS-S personnel in the event that the outside agencies are called in to help control a wildland fire that is beyond the capabilities of the training site staff. The Smyrna Fire Department or the Smyrna Airport Fire Department would respond to any structural fires on the training site.

Prescribed fire activities on the VTS-S are cooperative actions conducted by training site personnel and the Environmental Office with backup support from the Tennessee Division of Forestry.

2.2 Interagency Cooperation and Mutual Aid Agreements

The Town of Smyrna Fire Department would be the first agency alerted in the case of most fire emergencies that could occur during a prescribed burn. While the Smyrna Airport Fire Department is located immediately adjacent to the VTS-S cantonment, they are primary responders only for aviation-related fires, that is, fires affecting either the airport or the AASF. Smyrna Fire Department could, however, request additional support from the Airport Fire Department, if needed. The Tennessee Division of Forestry (TDF) may also be contacted if additional assistance is needed to conduct or manage prescribed and/or wildland fires. A Memorandum of Agreement is being developed between the TNARNG and the TDF to facilitate cooperation between the two agencies for future activities including wildland fire training, the potential availability of TDF personnel to function as burn boss, and other support.

2.3 Personnel

VTS-S currently has one trained wildland firefighter (FFT2). Additional firefighters may be requested from other TNARNG facilities to aid in prescribed burning.

2.4 Available Equipment

The VTS-S maintains a cache of fire equipment for wildland fire suppression and prescribed burning (Table A2.1). In addition, personal protective equipment (PPE) conforming to National Fire Protection Act (NFPA) 1977 (Standard on Protective Clothing and Equipment for Wildland Fire Fighting) is maintained for all trained personnel on site.

Each firefighter is outfitted with:

- Nomex pants
- Nomex shirt
- Firefighting helmet
- Leather gloves
- Goggles
- Fire shelter
- Pack for gear
- Leather boots are required, but are provided by the individuals.

Table A2.1: Available fire equipment at VTS-S.

Fire rake	7
Pulaski axe	4
Shovels (long-handled)	6
Shovel (d-handled)	3
Axe	4
16” Skill chainsaw	3
Portable pressure washer (no holding capacity)	1
200 gal trailer mounted pressure washer	1
500 gal water tank + pump + 50’ hose	2
10,000 gal water tanker + trailer	1
300 gal Bambi bucket (used by air support)	2
D-7 bulldozer	1
D-3 John Deere bulldozer (state-owned)	1
120-G grader	2
Gyro-track with brush grinder	1
6400 JD tractor	1
6415 JD tractor	1
T1520 New Holland tractor	1
New Holland back hoe	1
Bobcat frontend loader	1
24-C skid loader	2
MD24C 2.5 yd^3 bucket loader	1
Chevy 108 4WD diesel pickup truck	5
Chevy Blazer 4WD diesel	1
6’ scraper	1
6’ box blade	1
10’ bush hog	1
16’ batwing bush hog	1
Disc harrow	1
100 gal spray tank	1
John Deere 6x4 Gator	

2.5 Funding Requirements

The funding responsibilities for wildland fire are defined in the DA Sustainable Range/ Installation Environmental Activities Matrix (2 Sep 2005). Wildland fire expenses are primarily the responsibility of the Facilities/Real Property Division. Funding for WFMP implementation, wildland fire prevention, fuels management for hazard reduction, wildland fire suppression, prescribed burning, firebreak construction and maintenance, and other wildland fire management is an installation operations and maintenance responsibility.

Environmental funds may be utilized for prescribed burning that has a specific ecosystem management or rare, threatened, and endangered species management objective as presented in the INRMP and for wildland fire management activities conducted for the purpose of compliance with environmental laws and regulations. Forestry reserve account funds may be requested for fire-related projects that will improve forest health or timber management concerns on the facility.

The funds available will be used to continue the training of the on-site resources and maintain a cache of personal protective equipment and wildfire tools. The VTS-S personnel should use appropriate management response in all incidents which will maintain a cost efficient program.

2.6 Public Relations

When involved with any fire application, VTS-S personnel should always consult with the Smyrna Airport and should contact the Smyrna Airport Fire Department and the Smyrna Fire Department. Permits are required from both the Tennessee Department of Agriculture (TDA) Division of Forestry and from the Town of Smyrna (see Section 6.7 for additional contact information). The surrounding public should be made aware of any smoke issues that may arise and could cause any health issues.

2.7 Environmental Review

Implementation of this Integrated Wildland Fire Management Plan requires an assessment of the environmental effects as required by AR 200-2, *Environmental Effects of Army Action*, and the National Environmental Policy Act of 1969. This assessment will be completed before implementation of the plan, in conjunction with the environmental review for the Integrated Natural Resources Management Plan for the VTS-S.

3.0 SAFETY AND EMERGENCY OPERATIONS

All emergency operations go through Range Control and will be handled through the 911 dispatch. The Range Control Officer will function as the Incident Commander for small scale fire suppression. If a wildfire is beyond the capabilities of the on-site staff, Incident Command will be turned over to the Tennessee Division of Forestry or Smyrna Fire Department representative, as appropriate to the nature of the outside aid required.

The on-site Incident Commander will ensure all firefighter and public safety precautions are taken and are the highest priority in all operations. Except in the event of a threat to human life, no wildland fire situation will require placing a firefighter or equipment in extreme danger.

Before fire suppression or prescribed fire activities are initiated, the Incident Commander (or burn boss, in the case of prescribed burning) will go over the plan of operation with all personnel directly participating and ensure all personnel have at least the minimum PPE required.

All TNARNG personnel involved in wildland fire activities will receive appropriate training for their tasks (see Section 3.2). Firefighters will be issued a Fireline Handbook NWCG Handbook (3 PMS-410/NFES 0065) and the Incident Response Pocket Guide (PMS-461/NFES 1077). Each firefighter will be knowledgeable and review the 10 Standard Fire Orders and the 18 Watchout situations. No emergency situation will be approached without the proper safety mitigations in place with the use of Lookouts, Communications, Escape Routes and Safety Zones (LCES).

All safety gear will comply with NFPA 1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting. This standard specifies the minimum design, performance, testing, and certification requirements for items of wildland fire fighting protective clothing and equipment, including protective garments, helmets, gloves, footwear, goggles, chain saw protectors, and load carrying equipment.

3.1 Risk Assessment Process

Safety of TNARNG personnel, firefighters, civilians, and neighbors is of paramount importance in all wildland fire actions. Risk assessment for all emergency response situations will follow the five step process outlined below (from the Incident Response Pocket Guide PMS-461/NFES 1077). Situational awareness must be maintained throughout the changeable conditions of a wildland fire activity and re-assessment conducted whenever there is a significant alteration of circumstances.

3.1.1 The Risk Management Process

Step 1. Situational Awareness
- Gather information
  - Objective(s)
  - Previous fire behavior
  - Communication
  - Weather forecast
  - Who's in charge?
- Any local factors
  - Scout the fire/incident

Step 2. Hazard Assessment
- Estimate potential fire behavior hazards
  - Look Up / Down / Around indicators
- Identify tactical hazards
  - Watch Outs
- What other safety hazards exist?
- Consider severity vs. probability

Step 3. Hazard Control
- Firefighting Orders and LCES Checklist – MANDATORY
  - Anchor point
  - Downhill checklist (if applicable)
- What other controls are necessary?

Step 4. Decision Point
- Are controls in place for identified hazards?
  - NO: Reassess situation YES: Next question
- Are selected tactics based on expected fire behavior?
  - NO: Reassess situation YES: Next question

- Have instructions been given and understood?
  - NO: Reassess situation YES: Initiate action

Step 5: Evaluate

- Personnel: Low experience level with local factors?
  - Distracted from primary tasks?
  - Fatigue or stress reaction?
  - Hazardous attitude?
- The Situation: What is changing?
  - Are strategy and tactics working?

3.1.2 Prescribed Burning Risk Assessment

The above Risk Management Process will be applied during prescribed fire activities. Prescribed burning will not be conducted under any of the following conditions, as based on the Fire Weather information from National Weather Service through the Tennessee Division of Forestry webpage (http://burnsafetn.org/forecasts_links.html):

- A predicted temperature greater than 85º F
- A predicted wind speed greater than 18 mph at the 20' level
- A predicted relative humidity less than 25%
- An atmosphere with Red Flag conditions issued by TDF or USDA-FS
- Inadequate personnel or equipment available to manage the prescribed burn

3.1.3 Fire Danger Rating and Burning Index

Fire danger (Table A2.2) rating is a classification based on the Burning Index and is available from the USDA-FS Wildland Fire Assessment System (http://www.wfas.us/context/view/17/32). Fire danger rating will be routinely checked during fire season, as it provides guidance of importance both for prescribed burn activities and also for military training. Prescribed burns will generally be conducted at low fire danger rating, or occasionally moderate. Pyrotechnic devices and live fire training will be limited in accordance with the recommendations in the table below:

3.2 Personnel Training and Certification

Training will adhere to the standards set by NWCG as described in PMS-310 (http://www.nwcg.gov/pms/docs/docs.htm). All firefighters need to obtain the basic Firefighter Type 2 (FFT2) qualifications (S130/190 classes) and will need to attend an annual fireline safety refresher provided on-site or off.

The Natural Resource Manager (NRM) for TNARNG, is responsible for maintaining and tracking the training records for VTS-S personnel. The NRM will keep track of the training being offered close to the installation and inform training site personnel of its availability.

3.3 Physical Fitness Standards

Based on the conditions and terrain encountered in wildland fire situations on the VTS-S, the moderate level fitness standard is considered sufficient for TNARNG wildland firefighters. The field test will be administered by the Natural Resources Manager and/or the Environmental Program Manager according to the standards in PMS-307/NFES 1109, Work Capacity Test Administrator's Guide (2003). All TNARNG personnel with current firefighter training will be required to pass the test prior to the end of FY2009.

New personnel with fire suppression or prescribed fire duties will be tested prior to their first fire activities (unless they already have their Red Card).

Table A2.2: Fire Danger Rating.

Fire Danger Rating and Color Code	Burning Index (BI)	Description	Recommended Military Considerations
(1) Low (Green)	0-20	Fuels do not ignite readily from small firebrands. Most prescribed burns are conducted in this range.	None.
(2) Moderate (Blue)	21-40	Fires are not likely to become serious and control is relatively easy. Fires burning in these conditions generally represent the limit of control for direct attack methods.	None.
(3) High (Yellow)	41-60	Fires may become serious and their control difficult unless they are attacked successfully while small. Machine methods are usually necessary or indirect attack should be used.	Recommend firing pyrotechnics into open drums; altering firing times to hours with lower fire danger.
(4) Very High (Orange)	61-79	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. The prospects for direct control by any means are poor at this intensity.	No pyrotechnics or tracer rounds allowed, except with written authorization from Range Control.
(5) Extreme (Red)	80+	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. The heat load on people within 30 feet of the fire is dangerous.	No pyrotechnics or tracer rounds allowed.

4.0 FIRE FACTORS

4.1 Fire History

No significant wildfires have occurred on the training site. All wildfires have been associated with military activities such as firing blanks or tracer rounds. Each fire has been less than one acre in size and has been extinguished by on-site staff.

4.2 Mission Considerations

The mission of the VTS-S is to support unit requirements for maneuver, range operations, equipment use, and other combat readiness training. Much of the military training that takes place at the VTS-S involves air assets, due to the proximity of the military facilities to the Smyrna Airport, or equipment maintenance as reflected in the considerable infrastructure located within the installation's cantonment area. The enclosed firing ranges on Training Area 6 are extensively used. However, field exercises are also conducted on portions of the six training areas, with most of the training activities occurring in Training Areas 4, 5, and 6. The extreme density of the cedar woodlands in Training Area 2 make this site difficult to use for training purposes. Training Area 3 is not used because of environmental contamination issues. Lastly, Training Area 1 is so small as to have limited use in training. A timber thinning program followed by the periodic application of prescribed fire would enhance the utility of Training Area 2 for both wheeled vehicle maneuvering and dismounted infantry and land navigation tactics.

This WFMP supports the military mission of the VTS-S by providing for timely wildfire response, thus minimizing training downtime and facility loss to wildfires. The prescribed burn program provides a cost effect method of maintaining and expanding open training areas such as ranges and controls fuel buildup to minimize wildfire intensity.

Potential negative impacts of the wildland fire program include smoke impacts and interruption of training activities. Care in scheduling burns to accommodate the training calendar will minimize all effects on training activities. Wildfire control downrange will require a range shutdown, which could lead to loss of training time. Smoke management will be addressed through the guidelines provided in this plan.

4.3 Natural and Cultural Resources Considerations

Fire management may have beneficial or negative impacts on both the natural and cultural resources of a site, and both can represent constraints on the fire program, especially prescribed burning.

4.3.1 Cultural Resources

Development of firebreaks is the greatest fire-related threat to Cultural Resources on VTS-S. No new permanent firebreaks (off existing roads and trails) will be developed without consultation with the Tennessee State Historic Preservation Officer (SHPO). Temporary plow line firebreaks may be constructed in those portions of the training site which have been surveyed and identified as free of significant archaeological or historical resources.

A Phase I archaeological survey of VTS-S conducted in 1998 identified 14 archaeological sites and four historic sites on the installation. One of the archaeological sites and all four historical sites were recommended as eligible for the National Register for Historic Places. These sites are considered “no plow” zones, and are included on Figure A2.1 with the natural resource sites that are also protected from the fire plow. Fire control in “no plow” zones will depend on existing firebreaks or methods that do not disturb the soil.

The Cannon Cemetery is located in Training Area 6. It will be protected from wildfire and prescribed burns.

4.3.2 Natural Resources

- Water resources are the most significant natural feature on the VTS-S. Riparian forests represent over 25 percent of the total forest cover occurring in the installation and are found on either side of Stewart Creek and J. Percy Priest Lake, as well as on the two islands in TAs 2 and 5. Riparian hardwood vegetation is highly sensitive to burning. Frequent burning and/or hot fires can cause stress and damage to the trees making up this forest community.

  If wildland fire were allowed to burn completely to the shoreline, potential erosion and water quality issues would be created by the removal of the ground vegetation and leaf litter that were burned. Portions of Stewart Creek upstream from the training site have been designated impaired by the Tennessee Division of Water Pollution Control and are listed as 303(d) impaired as a result of nitrate runoff and loss of biological integrity due to siltation. It is extremely important that waters adjacent to the VTS-S are protected from further contamination to avoid additional listing and to promote stream recovery. In addition, shoreline burning could create a short term aesthetic problem for the recreating public on the lake.

To minimize these concerns and potential erosion issues, all efforts will be made to protect a 50 foot buffer (also known as a Streamside Management Zone [SMZ]) from the banks of Stewart Creek and J. Percy Priest Lake. This vegetated buffer will protect water quality and provide a screen between burned areas and the lake. In a number of locations, bottomland hardwood forests border the lake. In those situations, if possible, the entire extent of the bottomland hardwood forest bordering the lake will be used as the buffer zone and will remain unburned. The SMZ is also a "no-plow zone" (Figure A2.1); if possible, firebreaks should be established further than 100 feet from the stream bank as needed.

- Erosion control on firebreaks is also a concern in order to minimize the potential for sedimentation into these water bodies. Water control structures to manage surface water movement will be installed during firebreak construction. Permanent fire lines will have water control structures maintained. Temporary firelines will be rehabilitated as soon as practicable after any fire. Existing barriers such as roads and trails will be used whenever possible to reduce the need for fire line construction and to minimize resource impacts.

- No federally listed plant species have been discovered on the VTS-S; however, populations of four federally listed endangered plants have been documented within five miles of the training site. Twenty-one additional plant species (see Section 3.9.1 of the INRMP) of concern to the Tennessee Natural Heritage Program have also been found within five miles of the VTS-S, although not on the training site property.

  The life histories of these plant species suggest that occasional burning in the dormant season would be beneficial, especially in expanding open areas and controlling competitors. Most of these sensitive species prefer limestone cedar glade and/or barrens habitat, the former of which is widely prevalent in surrounding undeveloped and protected lands and which may have existed on the site of VTS-S prior to human development. If any of these species are identified in future rare species surveys on the training site, this wildland fire management plan will be reconsidered with regards to the management of the new species.

- Two animals with partial federal status have been sighted at VTS-S: the meadow jumping mouse (*Zapus hudsonius*) and the sharp-shinned hawk (*Accipiter striatus*). These species are protected in a portion of their range, but the populations in Tennessee are stable and are not included under the protected designation. Both species are considered in need of management by the State of Tennessee , as are three other species documented at the site: great egret (*Ardea alba*), cerulean warbler (*Dendroica cerula*), and yellow-bellied sapsucker (*Sphyrapicus varius*); however populations of all five species appear to be stable in Tennessee at this time (NatureServe 2007). Prescribed fire should have little impact on avian populations on and around the training site. Burning can influence small mammals through habitat destruction and, less frequently, direct injury. The scheduling of prescribed burns across the training site (see Figure A2.3) is designed to ensure unimpacted habitat is maintained within close proximity of burn sites each year.

  In addition, one federally listed endangered species, gray bat (*Myotis grisescens*), and four state species of concern have been found within five miles of the training site (see Section 3.9.2 of the INRMP for the complete list). As noted for local sensitive plant species, if any of these animals are found on VTS-S property, reevaluation of this plan may be necessary.

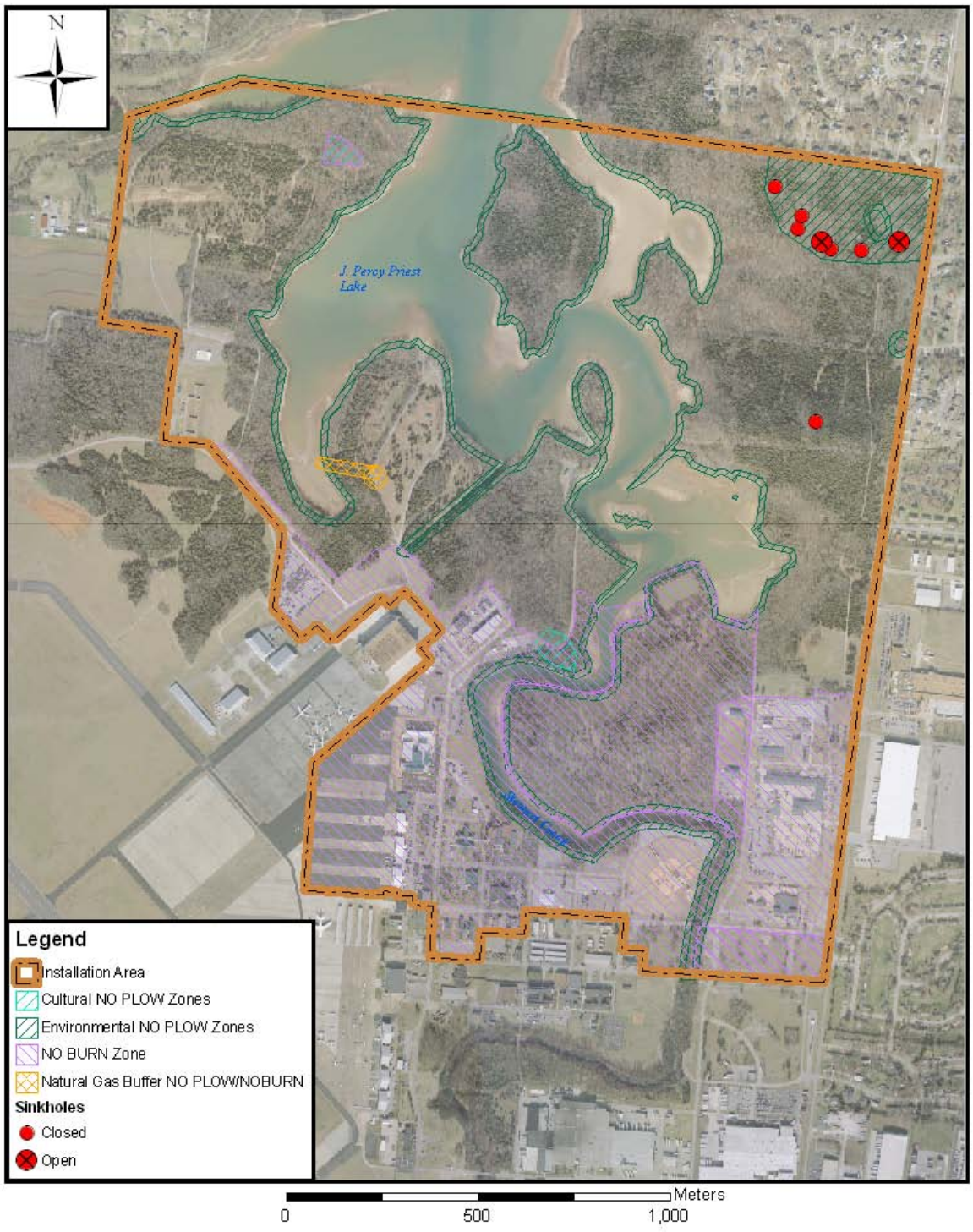


Figure A2.1: No-Plow/No Burn Zones on VTS-S

4.4 Fire Regime

The fire regime classification system is used to characterize the personality of a fire in a given vegetation type, including the frequency that the fire visits the landscape, the type of pattern created, and the ecological effects. The following natural fire regimes are arranged along a temporal gradient, from the most frequent to the least frequent fire return interval. The definitions below are from the General Technical Report, Rocky Mountain Research Station #87 (GTR-RMRS-87).

Fire Regime Frequency Effect to Dominant Vegetation:

Fire Regime I	0-35 years	Low Severity
Fire Regime II	0-35 years	Stand Replacement
Fire Regime III	35-100+ years	Mixed Severity
Fire Regime IV	35-100+ years	Stand Replacement
Fire Regime V	200+ years	Stand Replacement

Fire Regime I: Fires in the under-story fire regime generally do not kill the dominant vegetation or substantially change its structure. Approximately 80 percent or more of the above ground dominant vegetation survives fire. The under-story fire regime occurs primarily in southern pine and oak-hickory forests, including the oak-hickory forest types found at VTS-S. Fire is a natural maintenance disturbance for these types of stands, and is used to maintain and regenerate oak-hickory for timber stand improvement and wildlife stand improvement concerns.

Fire Regime II: This regime is known as the frequent replacement group. It is primarily for grasslands and shrub lands where fires typically replace greater than 75 percent of the stand. This regime covers short and tall grass ecosystems and eastern redcedar stands like those found on the VTS-S.

4.5 Fuel Types

Wildland fuels are classified by diameter:

- less than 0.25” 1-hour fuel
- 0.25”-1” 10-hour fuel
- 1-3” 100-hour fuel
- 3-8” 1000 hour fuel

VTS-S consists of 868 aces, approximately 20% of which is developed cantonment area. Slightly more than half of the training site land is covered in either managed grasslands or with redcedar woodlands that range from dense stands with little understory vegetation to sparse savanna-like communities with significant grass cover. Bottomland hardwoods and mixed evergreen/hardwood stands generally occur on the lower elevation lands bordering the lake. The training site consists of the following fuel models (Figure A2.2).

4.5.1 Grass Group

These fuels are seen on approximately 117 acres on VTS-S. Grasses are generally associated with weeds, ferns, and other seasonal plants. During the growing season, they are green with high moisture content. They act as barriers to fire when green rather than as a carrier of fire. As the season advances, they cure and when fully mature, all but the roots will die and dry out. When dry, they have the fastest rate of spread of any fuel. The loading, however, is low and the fire will not be as intense. The intensity of these fires will be closely associated with the rate of spread. Slow moving fires in grass fuel will have very low intensity but high winds can change it to a very fast moving fire of moderate intensity. Moisture content closely follows daily weather changes. It is very sensitive to changes in humidity and wind.

- **Fuel Model 1** (1-foot deep) Fire spread is governed by the fine herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly through cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the area. Grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations that meet the above area constraint. Annual and perennial grasses are included in this fuel model.
  => Regularly mowed lawns in the VTS-S cantonment area.

- **Fuel Model 2** (timber w/grass understory) Fire spread is primarily through the fine herbaceous fuels that have cured or are nearly cured. Fires are surface fires where herbaceous matter, litter, and dead-down stemwood from the open overstory contribute to the intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area generally fit this model; such stands may include clumps of fuels that generate higher intensities and may produce firebrands.
  => Open areas with scattered and clumped overstory trees in Training Areas 4 and 6.

- **Fuel Model 3** (2.5 feet deep) Fires in this fuel are the most intense of the grass group and display high rates of spread under the influence of wind. The fire may be driven into the upper heights of the grass stand by the wind and cross over standing water. Stands are tall, averaging about 3 feet, but considerable variation may occur. Approximately one-third or more of the stand is considered dead or cured and maintains the fire.
  => Range areas, in Training Area 6 and parts of 2, which are maintained by occasional bush-hogging.

4.5.2 Shrub Group

These fuels are frequently encountered on VTS-S and make up approximately 160 acres. Eastern redcedar can be a very volatile fuel, especially during a drought or given a significant amount of grasses under and between trees. The volume of available fuel will continue to increase until the crowns begin to close, shading out the weeds and grasses. As this occurs, a smaller percentage of the total fuel loading becomes available to most fires due to the height of the crowns and less "ladder" fuel to carry the fire into them. The fuel available to most fires will generally be the understory fuels that are on the surface.

- **Fuel Model 4** (6 feet deep) Fire intensity and fast spreading fires involve the foliage and live and dead fine woody materials in the crowns of a nearly continuous secondary over-story. Besides flammable foliage, there is dead woody material in the stand that significantly contributes to the fire intensity. Heights of stands, qualifying for this model, vary with local conditions. There may be also a deep litter layer that confounds suppression efforts. Red cedar is considered in this group.
  => Much of Training Area 2, including the small island in the lake, and a portion of Training Area 3.

- **Fuel Model 6** (2.5 feet deep) Fires carry through the shrub layer where the foliage is more flammable than Fuel Model 5, but require moderate winds (>8 mi/h) at mid-flame height. Fire will drop to the ground at low wind speeds or openings in the stand. Shrubs are older, but not as tall as shrub types of Model 4, nor do they contain as much fuel as Model 4. This model covers a broad range of shrub conditions. Typical examples include intermediate stands of chamise, chaparral, oak brush, low pocosins, Alaskan spruce taiga, and shrub tundra. Cured hardwood slash can be considered.
  => No typical stands present; timber harvest slash could result in similar fire activity.

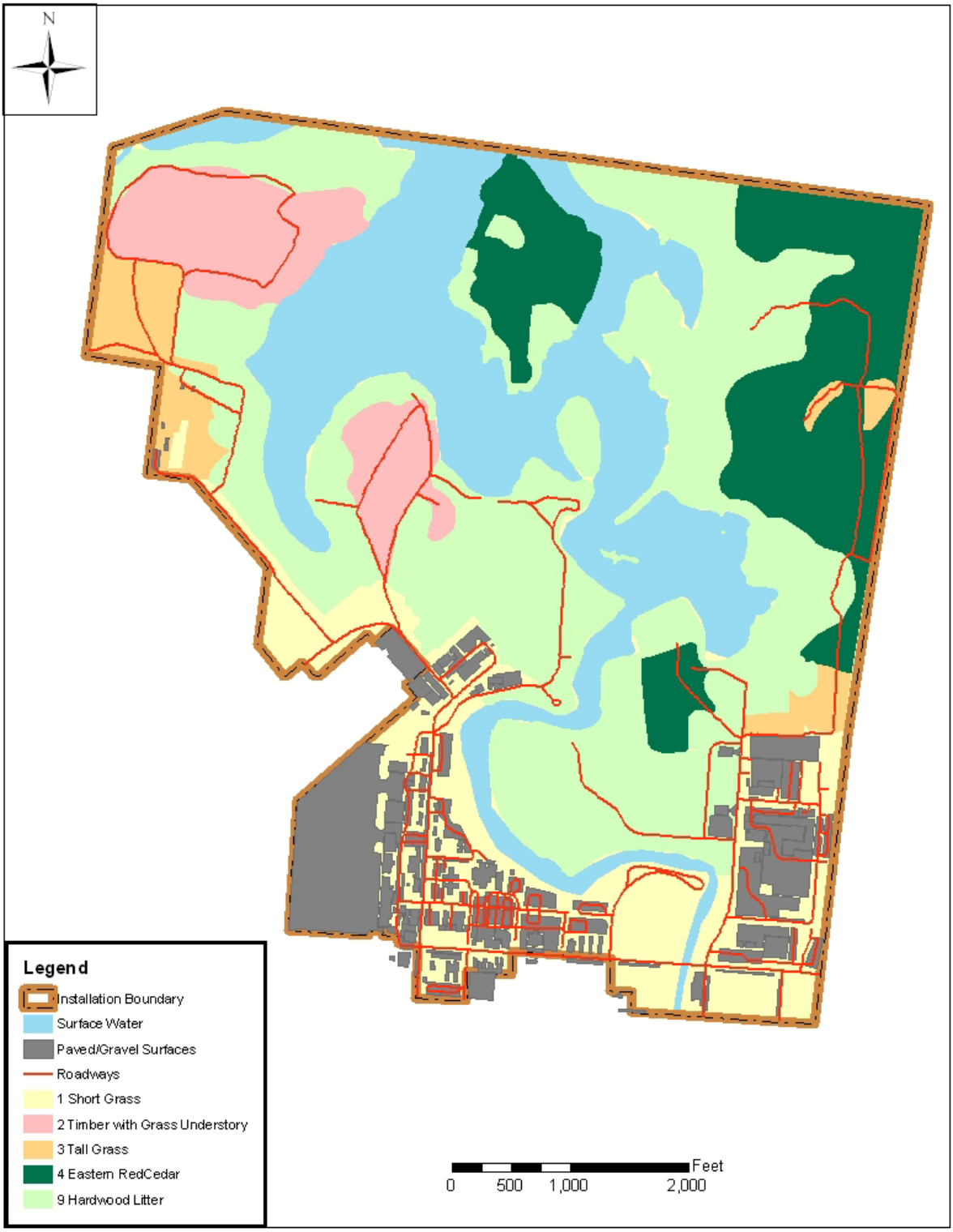


Figure A2.2: Fuel types on the VTS-S

4.5.3 Timber Litter Group

Approximately 200 acres of VTS-S is in the timber litter group. The fuel under most forest stands consists of light to moderate loading of fuel, most of which is compacted on the ground. Fuels of this type are found throughout the Piedmont and Upper Coastal Plains regions of the Southeast. In dense pine stands, the predominant fuel is the matted pine needles. In upland hardwoods, it is compacted hardwood leaves. The amount of brush will vary from almost non-existent to almost solid brush, especially if there is little over-story. This type fuel will generally consist of grasses, pine needles, deciduous shrubs, small saplings, pinecones, twigs and branches. Fires in this type fuel will generally be of low intensity and slow spreading. The surface fuel is compacted and dries out very slowly. Consequently, much of it will not be available. Shrubs and small saplings tend to be more readily available and will add to the intensity where they are present. Most fires will be of rather low intensity and easy to control except during droughts when a larger percent of the fuel will be available. Firefighters can be surprised when this happens if they are not alert because of the increased intensity and rapid spread of the fire.

- **Fuel Model 9** (0.2 foot deep) Fires run through the surface litter faster than model 8 and have higher flame height. Both long-needle conifer and hardwood stands, especially the oak-hickory types, are typical. Fall fires in hardwoods are representative, but high winds will actually cause higher rates of spread than predicted because of spotting caused by rolling blowing leaves. Closed stands of long-needled pine like ponderosa, Jeffrey, and red pines or southern pine plantations are grouped in this model. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning activity.
  => The bottomland hardwood forests that occupy most of the shoreline of the VTS-S.

5.0 WILDLAND FIRE CONTROL

Due to its small size, the VTS-S is not subdivided into fire management zones. Wildfire in all areas outside the Cantonment (where structural firefighters would almost always be needed) will be addressed similarly with the objectives of:

- preserving firefighter and other human safety
- protecting real property
- containing all fires within the training site boundaries
- protecting significant natural and cultural resources
- suppressing or using wildland fire in accordance with military and environmental needs

5.1 Suppression and Prevention

Qualified VTS-S firefighters respond to all wildland fires on the training site. At no time will the firefighting assets be used for fighting vehicle, fuel, or structure fires without approval from the Installation Commander or the Range Officer. The Town of Smyrna Fire Department or the Smyrna Airport Fire Department will be notified if assistance is needed.

Under normal circumstances, immediate suppression will be the goal of wildland fire response on VTS-S. Occasionally, an accidental fire within an open grassland area may be allowed to burn the entirety of a range or fire unit which is due for prescribed burning in that FY.

Wildfire prevention on the VTS-S encompasses the involvement of the following activities. First, all units will be briefed prior to the start of any exercises on what the fire potential for that day will be and any restrictions on use of pyrotechnics and/or tracers. All personnel will understand how fires are reported

through range control and who will be responding that day. All firebreaks will be maintained in a functional manner. The use of prescribed burning will keep fuels loads down.

5.2 Detection

All personnel using or working on VTS-S are responsible for detecting and reporting wildfires. All wildfires must be reported to Range Control.

5.3 Dispatch Procedures

VTS-S Range Control is responsible for wildland firefighting activities on the training site. If additional support is needed, Smyrna Fire Department would be dispatched by training site personnel. The Smyrna Fire Department could then request backup from the Smyrna Airport Fire Department, if necessary. A unified command will be set up with the Fire Department and any qualified VTS-Smyrna personnel.

5.4 Communications Plan

All dispatch runs through range control; the following radio channels will be used.

- Channel 1-Repeater channel
- Channel 2- Car to Car channel (Tactical Channel)

There is cellular phone signal throughout most of VTS-S that can be used if radio traffic is heavy.

5.5 Extended Attack Procedures

If a fire cannot be contained in the first operational period, the Tennessee Division of Forestry will be requested to manage the incident.

5.6 Rehabilitation Needs and Procedures

The Natural Resource Manager (NRM) for TNARNG should evaluate all burned locations and suggest any site rehabilitation measures that may be needed. Rehabilitation costs will be the responsibility of facility maintenance budgets

5.7 Records, Reports, and Monitoring

Firefighters call in a fire report to Range Control after every fire. These fire reports should include:

- Incident name
- Date and Time
- Incident Commander
- Location
- Size in Acres
- Fuel Type
- Brief description of the events
- Documented After-Action-Review:
    - What did we set out to do (what was planned)?
    - What actually happened?
    - Why did it happen that way?
    - What should be sustained? What can be improved?

The Range Control Officer will forward copies of these wildfire reports to the Natural Resource Manager for TNARNG who is responsible for maintaining fire records for all wildfires. The NRM will conduct a basic post-burn evaluation of the site to determine the need for rehabilitation and/or further monitoring of fire impact on natural resources.

6.0 PRESCRIBED FIRE MANAGEMENT

Prescribed fire can be used as a land management tool at VTS-S. However, because of the forest types on the installation, prescribed fire should be used selectively and under a limited set of circumstances. The sensitivity of hardwoods and eastern redcedar to fire necessitates that the burner be experienced in conducting prescribed burns in these forest communities. The following overall burning guidelines were considered in developing the prescribed fire objectives and the recommended prescribed burn program for VTS-S.

- A buffer of at least 50 feet should be maintained between areas burned and the shoreline of J. Percy Priest Lake and Stewart Creek to protect water quality and to screen burn operations from the lake. Plowed fire breaks must be further than 50 feet from the shoreline.
- If burning is done in hardwood stands, the fire should be done 2-6 days after good rainfall and when relative humidity is 40 to 50%.
- Eastern redcedar stands should not be burned until after a thinning harvest to reduce available fuel.
- Prescribed burns should be directed at reducing excessive fuel loads and should consume only the top layer of litter matter when burning under any type timber.
- Open fields should be burned clean to topsoil, but not so hot as to burn the grass roots.

6.1 Objectives

The following are the primary objectives for the prescribed burning program at VTS-S which are described in more detail below:

- Reduce fuel load and wildfire threat.
- Utilize prescribed fire, as appropriate, to create and maintain conditions as required by the military mission.
- Utilize prescribed fire, as appropriate, to aid in control of invasive plant species.
- Utilize prescribed fire, as appropriate, to aid in the regeneration of native glade and barrens communities and to improve health of forest resources on VTS-S.

6.1.1 Reduce fuel load and wildfire threat. Fire management activities should concentrate on preventing, managing, and controlling wildfires that originate on the installation, as well as fires that may encroach onto the installation from neighboring properties.

As eastern redcedars have thin bark and fine, flammable foliage that ignites easily, they are highly susceptible to fire. Prior to conducting prescribed burns in densely forested stands, selective thinning using mechanical methods must be accomplished to reduce the available fuel and created conditions that safely and effectively allow controlled burns. The thinning operations will be focused on creating openings and access lanes that will suit military training needs and provide appropriate spacing among the remaining trees. Lower limbs will be removed as possible to a minimum height of 4 feet above the ground to reduce the risk of uncontrolled fire that could engulf the cedar trees.

The bottomland hardwood forests should be burned on a 6-year interval to reduce fuel loads while minimizing damage to the timber. Burns should be conducted in mid-winter (December-February) under conditions that will produce the coolest fires possible. More frequent burning could damage or stress the trees, resulting in a sparse tree canopy, reduction in growth rates, diminishment of the quality of harvested timber, the outright death of affected trees, and encouragement of dense undergrowth and invasion by other woody plants that will take advantage of the increased sunlight penetration to the forest floor. Forests on the VTS-S will be monitored for degradation due to burning, and the burn frequency will be adjusted as necessary to maintain a healthy forest ecosystem.

6.1.2 Create and maintain conditions required by the military mission. The military mission at the VTS-S requires a variety of landscape conditions. The dense redcedar forests found in TA2 and portions on TA6 are currently not favorable for many aspects of the military mission and could be effectively managed by prescribed fire after thinning operations are conducted. Open areas and grasslands may be effectively managed by prescribed burning to control woody species encroachment and to rejuvenate herbaceous and graminoid species.

- TA2 will be thinned and prescribed fire will be used to further open up the area to make it more suitable for wheeled and dismounted combat trails, land navigation training, and a Forward Operating Base (FOB) location.

- In TA6, prescribed burning will improve maneuverability and would allow for the construction of additional combat trails.

- Approximately 13% of the training site is composed of managed open areas and grasslands, with the largest portions found in TA6 and TA4. Although these open areas have historically been maintained by mowing or bushhogging, use of prescribed fire would minimize the required frequency of such mechanical control. In addition, fire will improve the health of the herbaceous and graminoid components of the grassland, better control woody species encroachment, and assist in controlling exotic invasive pest plant species, including common privet, sericea lespedeza, and Japanese honeysuckle.

6.1.3 Utilize prescribed fire to aid in control of invasive plant species. Prescribed fire can be effectively used in combination with mechanical and herbicidal methods to control two of the invasive species that are problematic on VTS-S: common privet and Japanese honeysuckle. Care will be taken to avoid the use of prescribed fire in those locations where fire could stimulate the spread of other invasive plant species such as Johnson grass.

6.1.4 Regenerate native glade and barrens communities. Ecosystems at VTS-S have been heavily manipulated over the last 200 years, primarily due to agricultural practices and military use. Fire suppression, over the same time period, has caused further declines in the structure and health of the installation's plant communities. Introducing prescribed fire could help to restore naturally-occurring communities such as cedar glades and barrens by controlling redcedar stand density, reducing accumulation of forest floor litter, and allowing the establishment of a more diverse mix of grasses and forbs.

Most plants endemic to prairie and cedar glade habitats flower and bear seeds from late summer into early fall. Therefore, prescribed fire should be applied in late spring prior to green-up in the existing savannah-like areas in Training Areas 4 and 6 and to newly thinned areas in TA2. Such a burning schedule will maintain the open conditions required for military training while encouraging a native species assemblage. Bushhogging should be avoided in these areas, if feasible, between July and September to allow flowering and maturation of seeds of the native grassland plants and to deter exotic invasive species from colonizing the opening.

6.2 Constraints

In addition to minimizing damage to the hardwood timber, prescribed fire on VTS-S must be conducted cautiously with concern for other major limitations on burning on the training site:

6.2.1 Safety hazards
There will be no burning in Training Area 2 until after mechanical thinning has been conducted and much of the biomass has been removed. Other areas that contain very dense stands will also be harvested prior to the initiation of a new fire regime (see the Forest Management Plan Annex for more information).

Controlled burns will not be used in Training Area 1, due to its location, small size, and need for a manicured, mowed appearance. Other grassed locations at VTS-S that will be excluded from prescribed burning include all lawns immediately adjacent to buildings, parking areas, and other developed areas and those sites that are routinely used to store equipment for training purposes. Controlled burns will also be restricted from Training Area 3, which is currently designated as off limits for all training activities due to its previous use as a DoD landfill prior to TNARNG management. Until restoration of these sites is complete, TA3 will be a No Burn Area (see Figure A2.2)

The northeast corner of Training Area 2 contains several sinkholes which have been mapped and posted. Any prescribed burns in this area will be initiated with a safety briefing regarding the locations of these sinkholes and appropriate actions to avoid entrapment or physical injury around them.

6.2.2 Protection of the waterways and streambank erosion prevention. Water resources are the most significant natural feature on the VTS-S, due to the immediate proximity of Stewart Creek and J. Percy Priest Lake. A 50 foot buffer (a.k.a. SMZ) will be maintained along all banks of Stewart Creek and J. Percy Priest Lake, within which neither vegetation nor soils should be disturbed. See Section 4.3.2 for additional discussion of SMZs.

Erosion control on firebreaks is also a concern in order to minimize the potential for sedimentation into these water bodies. Water control structures to manage surface water movement will be installed during firebreak construction. Permanent fire lines will have water control structures maintained. Temporary firelines will be rehabilitated as soon as practicable after any fire. Existing barriers such as roads and trails will be used whenever possible to reduce the need for fire line construction and to minimize resource impacts.

6.2.3 Protection of sensitive species. All prescribed fire applications should be conducted with maximum sensitivity to the biological requirements and behavioral patterns of species of special concern that have the potential to occur on VTS-S.

No federal or state-listed threatened, endangered, or sensitive plant species have been identified on the VTS-S; however, federal and state listed plants and animals have been found within five miles of the training site. These species are discussed in more detail in Section 3.9 of the INRMP and in Section 4.3.2 of this plan. Maintenance of appropriate habitat for these species is a conservation concern and will be considered in prescribed fire planning. If any of the federally listed species are identified on the VTS-S, this plan will be revised to ensure sufficient protection.

6.3 Smoke Management and Air Quality

The U.S. Environmental Protection Agency (EPA) monitors specific air quality parameters to determine if a particular area is in attainment with the National Ambient Air Quality Standards (NAAQS). The

parameters of interest are ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen oxides, and lead. Smoke produced by wildfires contains a number of these pollutants.

The Tennessee Department of Environment and Conservation's (TDEC) Division of Air Pollution Control is responsible for protecting the State's air quality. TDEC has developed regulations governing open burning, which is defined as any burning event that generates combustion products that are emitted directly into the open atmosphere without passing through an open stack. Prescribed burns are a type of open burning; however, TDEC regulations specifically exempt prescribed open burns of forests and grasslands performed in connection with land management activities from having to receive permits issued by TDEC. As a result, TDEC places no special requirements on the conduct of prescribed burns, other than directing burners to obtain Burn Permits from the TDA Division of Forestry and complying with local burn regulations and ordinances.

As a precaution to ensure full compliance with TDEC open burn regulations, the area to be burned should be visually inspected prior to the burn to assure that no items that are prohibited from open burning have been abandoned within the site (e.g., tires, oils, paints, vinyl siding, treated wood, etc.). Should such materials be present, they should be removed prior to burning. To assist in reducing the amount of smoke generated during each burn event, the acreage burned on any given day should be selected to ensure it is of a manageable size. Of equal importance, burns should only be conducted when conditions will minimize the amount of smoke produced.

Although it is not required in order to obtain a TDF burn permit, the TDEC Division of Air Pollution Control should be contacted prior to conducting a prescribed burn to ensure that the burn site is not located within a declared Air Pollution Episode (e.g., air pollution alert, warning, or emergency). If some form of Air Pollution Episode has been declared, the prescribed burn will be postponed until conditions improve. All questions on air quality issues should be directed to the Division of Air Pollution Control (1-888-891-8332).

Atmospheric conditions should be favorable for smoke to rise into the upper air and away from smoke-sensitive areas such as highways, airports, and urban areas. There are several smoke-sensitive areas at VTS-S that will warrant consideration during the conduct of every prescribed burn:

- Smyrna Airport borders VTS-S to the west and southwest. It is operational 24 hours a day and averages 250 flights each day. Landings for all aircraft are primarily made from the south on Runway 32, with take-offs occurring to the northeast on Runway 14. However, if wind conditions are not suitable, the secondary landing approach is Runway 19 from the north, with departures using Runway 1 toward the south. The orientation of the runways means that planes using Runways 1 and 19 have the potential of either taking off or landing, respectively, over portions of the VTS-S. Thus, planes using these two runways may have a greater potential to be exposed to smoke during prescribed burn events.

  Although smoke generated from controlled burns has the potential to create short term problems in managing air traffic, the Smyrna Airport has indicated that it is willing to work with the TNARNG in the conduct of prescribed burns. The Smyrna Airport Manager shall be notified at least 24 hours before a prescribed burn is to be performed so that the control tower personnel can be informed of the impending burn and issue a notice to the Federal Aviation Administration Nashville Center so that all pilots planning to use the airport will be aware of the potential for smoke to influence visibility in the immediate vicinity of the airport. Due to the proximity of Smyrna Airport to the VTS-S, the Smyrna Airport Manager should also be consulted during the advance planning for each prescribed burn so that potential air traffic issues can be factored into the preparation and decision-making process for each burn event.

- Roads – A number of roads and highways are located in the areas surrounding VTS-S. Traffic volumes on these roadways vary, ranging from very heavily used major highways to limited use access roads into residential subdivisions. The combined US Highway 41/State Highway 70 is the most heavily used roadway near the installation and is located approximately a quarter of a mile to the south.

  Local law enforcement personnel should be informed of an impending prescribed burn so a determination can be made as to whether an officer(s) should be assigned to the area to aid in directing traffic movement in case smoke impedes visibility on the roads. Consideration should also be given to placing temporary signage during prescribed burns to inform motorists of potential smoke hazard issues.

- Businesses and Residences – A diverse array of light industrial operations and businesses are located to the south and southeast of VTS-S, with residential developments concentrated to the north and northeast. These developments begin immediately adjacent to the installation boundary, typically being separated by only a road or a thin strip of vegetation.

  All burn activities should consider the potential effects of smoke dispersion on the residents and employees located within these areas. Preparatory to all prescribed fire operations, a news release should be provided to local media outlets serving the immediate area to assist in notifying the public of the impending burn events. Any complaints or concerns expressed by the public will be recorded on the post-burn evaluations and will be considered in the planning for subsequent burns.

- J. Percy Priest Lake is a 14,200 acre reservoir operated by the USACE. The lake forms much of the northern border of the installation, with the Stewart Creek embayment winding its way through the VTS-S to the point at which its namesake stream flows into the lake. All six of the installation's training areas border the lake or stream to some extent. The lake is operated for multiple purposes, including hydroelectric power generation, flood protection, fish and wildlife resources, and recreation.

  Smoke has a tendency to move down slope toward bodies of water. This is particularly true at night when air temperatures decrease and humidity is typically higher, causing the heavier air to sink to lower elevations. The problems can be intensified by the smoke mixing with fog if conditions are favorable for producing fog. These conditions can create visibility problems on the lake that adversely affect navigation and recreational activities.

  Because of the intimate nature in which the lake's Stewart Creek embayment is associated with the installation lands, special emphasis shall be placed on conducting all prescribed burns so that they will be completed and all smoke production ended well before the onset of night. To the extent possible, all burns will be timed to be completed in the early afternoon. The USACE Resource Manager for the lake should be consulted during the planning of all prescribed burns and informed at least 24 hours before the conduct of each burn so the Corps will be prepared to respond to any lake management or safety issues associated with the smoke that will be generated. The Resource Manager for J. Percy Priest Lake may be contacted at (615)889-1975.

- Smyrna Municipal Golf Course – The golf course, owned and operated by the City of Smyrna, is located less than a quarter of a mile southwest of the VTS-S, on the far side of the Smyrna Airport. It consists of 27 holes and a variety of associated facilities. The golf course should be informed in advance of all prescribed burns so that appropriate arrangements can be made to provide information to golf course users on the days the burns are conducted. This can be

accomplished by contacting the course Golf Pro at either (615)459-2666 or hal.loflin@townofsmyrna.org.

6.4 Use of Fire Breaks

Fire breaks can consist of established roads, logging trails, cleared lanes used for the sole purpose of controlled burns, utility rights-of-way, and watercourses. Ideally, fire breaks should be capable of supporting groundcover to guard against erosion when not being used to contain fires. Prior to the conduct of a prescribed burn, the fire breaks should be inspected to ensure that they are in the proper condition to contain the fire. Following the burn, the fire breaks should be inspected again to determine if any remedial measures are needed to prevent erosion and other problems from developing.

To ensure that fire breaks are available when needed, a regular maintenance program must be pursued to maintain the fire breaks in a cleared and open condition, with a minimum of undergrowth and low hanging limbs. The best maintenance scenario exists when the fire breaks serve dual or multiple purposes (i.e., roads, utility rights-of-way, etc.). In such situations, it is possible to distribute maintenance costs to other installation activities instead of having to assign the total costs to the prescribed fire program.

The existing road system provides the basis of the fire break network on the VTS-S. A perimeter fire break should be developed in conjunction with the security line-of-sight clearing along the boundary fence, as funds are available. Additional fire breaks will be developed to subdivide large areas, especially in training areas 2, 4, and 6 because of the high stem density of redcedar in these areas. The new breaks will be developed in conjunction with the planned timber thinning in these training areas – prior to any prescribed burning. Where possible, the fire breaks will eventually function as and be maintained as tank trails. Firebreak construction will be limited in the northeast portion of TA2 due to the presence of several sinkholes and related karst features.

Permanent firebreaks will be constructed with appropriate erosion control features to manage surface water runoff. Those not utilized as tank trails will be maintained in a grassed condition to the extent allowed by the available sunlight penetrating the forest canopy. With the exception of periodic bushhogging, the vegetative cover on these firebreaks will only be disturbed when necessary during the conduct of prescribed burns or in preventing the spread of wildfire. Temporary fire breaks will be cut, as needed, prior to prescribed burns or during wildfire control, in accordance with the no-plow zones (Figure A2.1). These fire breaks will be reclaimed and revegetated as soon as possible following the fire.

The City of Smyrna Gas Department (615/459-2553) has a large meter on their gas line that crosses a portion of TA4. A firebreak should be constructed around this utility feature and care should be exercised in conducting any prescribed burn in its vicinity. Cannon Cemetery is located in the northwestern portion of VTS-S in TA6. A firebreak should be constructed around the periphery of the cemetery, beyond the 50 buffer zone, to protect it during prescribed fire events.

There are culturally significant earthen features in TA5 that are designated No Plow zones (see Figure A2.1) and in which, no firebreaks may be constructed. These features are not sensitive to fire.

6.5 Training and Crew Requirements

Prescribed fire personnel will follow the training set forth in the PMS-310-1 (http://www.nwcg.gov/pms/docs/docs.htm). The following positions should be filled during operations:

- Prescribed Fire Crew Members (VTS-S personnel with FFT2 training)
- Prescribed Fire Burn Boss (1, 2, or 3) depending on complexity

6.6 Burn Plans

A site specific burn plan is developed for each prescribed burn on the VTS-S, containing the elements listed below. The prescribed burn plan format for the TNARNG is located in Section 7.3.

- Burn Objectives
- Acceptable weather and fuel moisture parameters – Spot and General Forecast
- Required personnel and equipment resources
- Burn area map
- Smoke management plan
- Safety considerations
- Pre-burn authorization/notification checklist
- Coordination procedures
- Contingency Plan
- Evaluation and Monitoring plan

6.7 Notification

Agencies and individuals who may play a role in the prescribed burn or may be affected by the burn will be notified prior to the ignition of a prescribed fire.

- The Rutherford County office of the Tennessee Division of Forestry will be notified via the request for a Burn Permit. If additional aid is to be requested from TDA, they will be notified well in advance of the planned burn.
    - TDA Rutherford County 800-337-3157

- The Town of Smyrna Fire Department issues burn permits for all open burning, including prescribed fire, conducted within the city limits and should be contacted at least 24 hours prior to all burns. The Smyrna Airport Fire Department is the primary responder only for aviation-related fire emergencies; however, they should also be alerted prior to any prescribed fires so that they will be prepared to act if they are called upon for assistance and so they may make preparations for potential reduced visibility on and around the airfield.
    - Smyrna Fire Department 615-459-6644
    - Smyrna Airport Fire Department 615-220-8841

- Local law enforcement agencies will be notified so that they can plan for smoke-induced traffic duties, as needed.
    - Smyrna Police Department 615-459-6644
    - Rutherford County Sheriff Department 615-898-7771
    - Tennessee Highway Patrol District 3 615-741-3181

- The USACE Project Office for J. Percy Priest Lake, the Smyrna Airport, and Smyrna Municipal Golf Course will be contacted at least 24 hours prior to the burn so that they may make necessary notifications and preparations.
    - USACE JPP Office 615-889-1975
    - Smyrna Airport 615-459-2651
    - Smyrna Municipal Golf Course 615-459-2666

- Temporary signs may be placed along Weakley Lane to inform motorists of potential visibility hazards from smoke resulting from the burn.

- A news release may be utilized to inform the public if the planned burn is extensive or located close to the property line.

6.8 Contingencies for an Escaped Burn

Prior to any prescribed burn, a small test fire will be ignited to confirm that the fire will behave in the desired manner. However, if after conducting a successful test fire and igniting the main burn any of the following conditions develop, burning will be stopped and the fire will be plowed under:

- Fire behavior is erratic
- Fire is difficult to control
- Wind shifts or other unforeseen weather conditions develop
- Weather conditions move outside the prescription range
- Smoke is not dispersing as predicted
- Public road or other sensitive area becomes smoked-in
- Burn does not comply with all laws, regulations, and standards
- Large fuels are igniting and burning
- There are not enough personnel to mop-up before dark and the likelihood exists that smoke will settle in a smoke-sensitive area overnight

Under any of these conditions, Range Control will be notified that contingency actions are being taken. If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue. If contingency actions are not successful by the end of the next burning period, then the prescribed fire will be converted to a wildfire, and TNARNG will request assistance from the Tennessee Division of Forestry.

6.9 Monitoring

Three types of post fire monitoring should be conducted to determine if fire management activities are reaching the stated objectives: post operational report, post fire effects monitoring, and burn program objective monitoring.

6.9.1 Post operational reports are an important written record of the burn, enabling future staff to learn from previous activities. They will be completed during and immediately following a prescribed fire activity to address the effectiveness of the overall burn process – the plan, implementation, personnel, and effectiveness at meeting objectives. The post-operational report will include:

- Burn unit information
- Burn dates
- Forecasted weather conditions
- On-site burn day weather conditions
- Crew assignments
- Burn schedule
- Fire narrative
- Immediate post burn effects
- Comparison of post burn effects with unit fire management objective
- Notes and recommendations.

Within this report, several questions should be answered:

- Were the fuel conditions within plan guidelines and were guidelines appropriate?

- Did the burn stay within planned parameters?
- Were the fire lines installed as planned and were they adequate?
- Was the equipment in the plan available and appropriate?
- Did the equipment work?
- Were the crew number, training, and assignments appropriate?
- Did the crew understand what they were doing?
- Were the rate of spread and flame length as predicted in the plan?
- Were public interactions satisfactory?

To answer some of these questions, during the burn, a designated crewmember should be assigned to estimate behavior, establish benchmarks (height and distance), record rate of spread for back, flank, and head fires, record flame heights for back, flank, and head fires stratify for fuel type and topography. Post fire estimates of fire intensity (scorch height and class, char, understory burn severity, and litter consumption), should be recorded after each burn to determine if unit-specific fire management objectives were met. Permanent transacts with photo points may be established to monitor and measure tree densities and plant composition. Observations of rare species reaction to fire management will be noted.

6.9.2 Fire effects monitoring will be conducted via a post-burn evaluation of the physical effects of the fire. This monitoring should include data collected during and immediately following the fire, as well as during the first growing season following the fire. Parameters to be evaluated will include tree mortality, midstory kill, pine bark beetle or other pest infestation, erosion problems, and whether overall burn objectives were met. These evaluations are completed and filed with the burn plan.

6.9.3 Burn program objective monitoring will be conducted over a longer time scale in conjunction with the review of INRMP objectives and achievements.

6.10 Prescriptions

The prescriptions below describe the preferred environmental conditions for a burn. Some deviation from these prescriptions in response to specific objectives will be possible on the recommendation of an experienced burn boss. The general prescription for prescribed burning in the open grassland areas of VTS-S is presented in Table A2.3, for cedar stands in A2.4, and the prescription for burning the hardwood forest habitat of the training site is presented in Table A2.5.

Table A2.3. Prescription for controlled burns in grasslands, fields, and forest openings.

Stand Description:	Overstory	None to scattered trees
	Understory	Grasses and small brush
	Fuels	1, 2, 3
	Topography	Gentle rolling hills to flat
Weather Range	Surface wind (dir/speed)	North, West, South at 5 – 8 mph
	Transport wind (dir/speed)	Greater than 5 mph
	Mixing height	Greater than 500 m
	Stagnation index	0 – 3 daytime
	Relative humidity	35 – 55 %
	Temperature	High 70°F
		Low 30°F
	Start time	9:30 am (or as soon as permit allows)

Table A2.4. Prescription for controlled burns in eastern redcedar stands.

Stand Description:	Overstory	Mainly redcedar trees
	Understory	Grasses and cedar needles
	Fuels	4, 6
	Topography	Gentle rolling hills to flat
Weather Range	Surface wind (dir/speed)	North, West, South at 5 – 8 mph
	Transport wind (dir/speed)	Greater than 5 mph
	Mixing height	Greater than 500 m
	Stagnation index	0 – 3 daytime
	Relative humidity	30 – 45 %
	Temperature	High 80°F
		Low 30°F
	Start time	9:30 am (or as soon as permit allows)

Table A2.5. Prescription for controlled burns in hardwood stands.

Stand Description:	Overstory	Closed canopy mature hardwood stands
	Understory	Open, small areas of brush
	Fuels	8, 9
	Topography	Gentle rolling hills
Weather Range	Surface wind (dir/speed)	North, West, South at 5 – 10 mph
	Transport wind (dir/speed)	Greater than 5 mph
	Mixing height	Greater than 500 m
	Stagnation index	0 – 3 daytime
	Relative humidity	40 – 55 %
	Temperature	High 70°F
		Low 30°F
	Start time	9:30 am (or as soon as permit allows)

6.11 Schedule

The planned prescribed fire management actions for VTS-S are presented in Table A2.6. Recommended fire frequency is depicted for all burn units in Figure A2.3. The prescribed fire management measures and their recommended frequency of occurrence are based on the objectives identified in Section 6.1 and correlate to the forest management prescriptions described in the forest management plan (Annex 1 of the INRMP).

The open grasslands of the training site will be subject to a 2 year fire rotation. Forest stands that are dominated by eastern redcedar will also be burned on a 2 year rotation, but not until after these stands have been thinned through timber harvest. The hardwood stands (generally along the shoreline) will only be burned every 6 years, and the 50 foot buffer zone along the lake or creek will not be burned at all. Table A2.6 is subject to minor changes if timber harvests are not completed on schedule.

Table A2.6: Approximate Burn Schedule.

Year	Burn Units						Total Acreage
	2 yr rotation		3 yr rotation*		6 yr rotation		
1	4-2 6-1	5 15	4-5 6-6	9 15	2-5	71	115
2	5-6 6-2	1 14	2-2 4-6	42 10	6-3	22	89
3	4-2 6-1	5 15	2-3 4-3 4-7 6-7	26 8 8 19	5-3	11	92
4	5-6 6-2	1 14	4-5 6-6	9 15	6-5	21	60
5	4-2 6-1	5 15	2-2 4-6	42 10	5-2	34	106
6	5-6 6-2	1 14	2-3 4-3 4-7 6-7	26 8 8 19			66

* Stands in the 3-yr rotation group will not be subject to prescribed burning until after stand thinning or timber harvest.

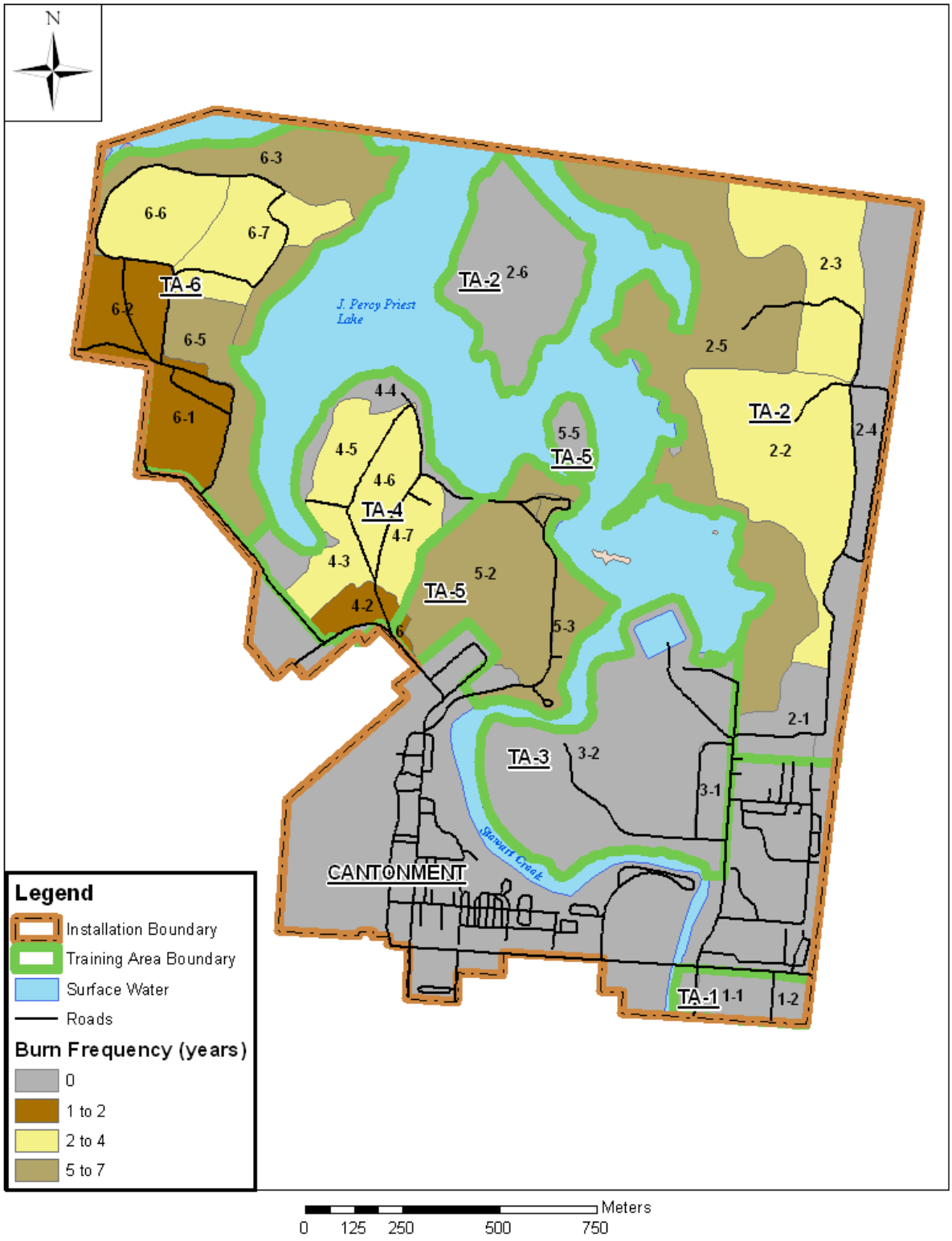


Figure A2.3: Prescribed burn frequency for burn units on VTS-S

7.0 ATTACHMENTS

7.1 Reference Materials

Department of Army Memorandum. 4 Sep 2002, Army Wildland Fire Policy Guidance.

Department of Army Memorandum. 2 Sep 2005, Sustainable Range/Installation Environmental Activities Matrix.

Interagency Prescribed Fire – Planning and Implementation Procedures Guide (July 2008). Available at http://www.nifc.gov/fire_policy/rx/rxfireguide.pdf

NFPA. 1977. Standard on Protective Clothing and Equipment for Wildland Fire Fighting (2005 edition)

NWCG Publications – available at http://www.nwcg.gov/pms/pms.htm
PMS 307, Work Capacity Test Administrator's Guide (March 2003)
PMS 310-1, Wildland Fire Qualification System Guide (January 2006)
PMS 410-1, Fireline Handbook (March 2004)
PMS 410-1, Appendix B, Fire Behavior (April 2006)
PMS 424, Prescribed Fire Complexity Rating System Guide (January 2004)
PM 461, Incident Response Pocket Guide (January 2006)

Schmidt, K.M., J.P. Menakis, C.C. Hardy, W.J. Hann, and D.L. Bunnell. 2002. Development of coarse-scale spatial data for wildland fire and fuel management. Gen. Tech. Rep. RMRS-GTR-87. USDA Forest Service, Rocky Mountain Research Station.

Stanyard, WF, R Lane. 1999. Phase I cultural resource survey of the Grubbs/Kyle Training Center, Rutherford County, Tennessee. Prepared by TRC Garrow Associates, Inc., Atlanta, Georgia through Science Applications International Corporation, Oak Ridge, Tennessee, for the Tennessee Army National Guard.

Thompson Engineering, Forest Management Group, and Aerostar Environmental Services. 2006. Volunteer Training Site – Smyrna Forest Management Plan. Prepared for the TNARNG.

Weather Information
Spot Weather Forecast, http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=ffc
General Forecast, http://www.srh.noaa.gov/ffc/html/firewx.shtml
Middle Tennessee Fire Weather, http://www.srh.noaa.gov/bna/firewx.php

7.2 Burn Plan Format

TNARNG PRESCRIBED FIRE PLAN

Facility:_____

Training Area:_____ Burn Unit Number/Name:_____

Fuel Type:_____ Acres:_____

Burn Permit #: _____

Fire Planner(s):

Name:_____

Title:_____

Signature: _____ Date:_____

Name:_____

Title:_____

Signature: _____ Date:_____

Burn Boss:

Name:_____

Title:_____

Signature: _____ Date:_____

Complexity Rating:_____(Low, Moderate, High)

Approved By:

Signature: _____ Date:_____

A. Pre-Burn Go/No Go Checklist

	YES	NO
Has the area (inside and outside the unit) experience unusual drought conditions or does it contain above-normal fuel loadings which were not considered in the prescription development? If YES, go to question below. If NO, continue with Section B.		
If YES, have appropriate changes been made to plans for ignition, holding, mop-up, and patrol? If YES, continue with Section B. If NO, **stop** and consult Fire Manager.		

B. Prior to Crew Briefing:

- ☐ Fire Unit is as described in plan
- ☐ Copy of burn plan is on site
- ☐ Certified Burn Boss present; Permit obtained (#_____)
- ☐ Required number personnel present, with required PPE
- ☐ Weather forecast obtained & within prescription; Long-range forecast checked for chance of severe weather
- ☐ Official & neighbor notifications complete
- ☐ Required equipment for holding, weather monitoring, ignition, & suppression is on-site & functioning
- ☐ Crew has reviewed equipment
- ☐ Planned ignition & containment methods are appropriate for current & predicted conditions
- ☐ Planned contingencies & mop-ups are appropriate for current & predicted conditions
- ☐ List of emergency phone numbers are in each vehicle
- ☐ Off-site contingency resources are operational and available

C. Crew Briefing:

- ☐ Prescribed Fire Objectives
- ☐ Burn Unit size & boundaries
- ☐ Burn unit hazards & safety issues
- ☐ Expected weather & fire behavior
- ☐ Organization of crew & assignments
- ☐ Methods of ignition, holding, mop-up, communications
- ☐ Contact with the public; Traffic concerns
- ☐ Safety & medical plan
- ☐ Location of back-up equipment, supplies, & water
- ☐ Contingencies for escaped prescribed fire
- ☐ Contingencies for medical emergency

D. Prior to Ignition:

- ☐ On-site weather and fuel conditions are within prescription & consistent with forecast
- ☐ Test burn conducted; fire & smoke behavior within prescribed parameters.

Burn Boss:_____ **Date:**_____

1. Burn Objectives

_____

_____

2. Location and Physical Description (Attach map)

A. Site_____ **Training Area**_____

B. Size_____

C. Topography / Slope_____

D. Project Boundary_____

E. Complexity_____

3. Vegetation / Fuels Description

A. On-site Fuels

Vegetation Types	Fuel Models	% of Unit Area	% Slope	Aspect

B. Adjacent Fuels

Vegetation Types	Fuel Models	% of Unit Area	% Slope	Aspect

4. Description of Unique Features

A. Natural:_____

B. Cultural:_____

5. Special considerations (fences, power poles, …)**:**

_____

_____

_____

_____

6. Prescription

A. Environmental Prescription:_____

_____

B. Fire Behavior Prescription:_____

_____

7. Fuel and Weather Prescription (acceptable ranges)

Fuel Parameters	**Prescription MIN/MAX**	**Forecast* MIN/MAX**	**Test Fire**	**Rx Burn**
1-Hour Fuel Moisture (%)				
10-Hour Fuel Moisture (%)				
100-Hour Fuel Moisture (%)				
Live Fuel Moisture (%)				
Other (e.g., KBDI, live/dead ratio,…)				
Weather Parameters				
Air Temperature (ºF)				
Relative Humidity (%)				
Days Since Rain				
20 ft Wind Speed (mph)				
Wind Direction(s)				
Midflame Windspeed (mph)				
Atmospheric Mixing Height (ft)				
Atmospheric Stability				
Rate of Spread				
Flame Length (ft)				
Scorch Height (ft)				
Probability of Ignition				

*Attach weather forecast.

8. Scheduling

A. Ignition Timeframe / Season(s):_____

B. Projected Duration:_____

C. Constraints:_____

9. Pre-burn Considerations and Weather

A. On-site Considerations:_____

_____

B. Off-site Considerations:_____

_____

C. Method & Frequency for Obtaining Weather and Smoke Management Information:

_____

_____

D. Notifications (List all agencies and neighbors):

Name	Date	Method	Contact Information
Public		Press Release	
Public		Road Signs	
Tennessee Division of Forestry		Telephone	800-337-3157
Smyrna Fire Department		Telephone	615-459-6644
Smyrna Airport		Telephone	615-459-2651
Smyrna Airport Fire Department		Telephone	615-220-8841
USACE Percy Priest Lake Office		Telephone	615-889-1975
Smyrna Golf Course		Telephone	615-459-2666
Rutherford County Sheriff		Telephone	615-898-7771
Smyrna Police Department		Telephone	615-459-6644
Tennessee State Patrol		Telepone	615-741-3181

10. Ignition Plan

A. Firing Methods (including Techniques, Sequences, and Patterns)**:**_____

_____

B. Devices:_____

C. Ignition Staffing:_____

_____

11. Holding Plan

A. General Procedures:_____

_____

B. Critical Holding Points:_____

_____

C. Minimum Organization or Capabilities Needed:_____

_____

12. Contingency Plan

A. Trigger Points:_____

_____

B. Actions Needed:_____

_____

C. Additional Resources and Maximum Response Time:_____

_____

D. Secondary Control Lines:_____

_____

E. Backup Water Supply:_____

13. Crew Organization

- **Burn Boss:**
- **Ignition Boss:**
  - **Ignition:**
  - **Ignition:**
- **Holding Boss:**
  - **Holding:**
  - **Holding:**
  - **Holding:**
- **Monitor:**

14. Equipment

Equipment Item	Quantity	Source

15. Fire Details

Ignition Time_____ **Fire Declared Out**_____

Narrative_____

_____

_____

_____

7.3 Post Burn Evaluation

1. **Site**_____ **Training Area**_____
   Burn Date_____
   Evaluation Date_____(immediately following burn)
   Re-evaluation Date_____(follow-up as needed)

2. **Amount litter left** (immediately after burn)_____**(inches)**

3. **Understory vegetation consumed**_____**(%)**

4. **Scorch: % of Area with Crown Scorch**
   <1/3_____ **1/3 – 2/3**_____ **2/3+**_____

5. **Any spotting / jumpovers?** (immediately after burn)

_____

_____

_____

6. **Tree Damage (insects, disease, mortality)?**_____

_____

7. **Understory kill of undesired vegetation (% top-killed)**_____

8. **Any smoke management violations?** (immediately after burn)

_____

_____

_____

9. **Any escapes?** (immediately after burn)

_____

_____

_____

10. Any complaints? (immediately after burn)

_____

_____

_____

11. Adverse effects?

_____

_____

_____

12. Any restoration needed?

_____

_____

_____

13. Were objectives met (results)?

_____

_____

_____

_____

Immediate Evaluation By:_____ **Date:**_____

Recommendations for future evaluation:

_____

_____

_____

_____

Follow-up Evaluation By:_____ **Date:**_____

7.4 After-Action Review

What did we set out to do?

What actually happened?

Why did it happen?

What are we going to do next time?

Which activities should be sustained?

What can be improved?

ANNEX 3

INVASIVE PEST PLANT CONTROL
VTS-SMYRNA

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Background

As in most other regions of the world today, VTS-Smyrna suffers from infestations of invasive exotic pest plants. These pest species are causing significant changes to the natural vegetation communities and wildlife found on the site which, in turn, impacts the suitability and sustainability of the facility for military mission training. They are pervasively found in open areas along roadsides, streambanks, and other clearings as well as in the densely shaded understories of forested training areas.

Invasive exotic pest plants are species that evolved in other regions of the world but have become established in a new area where the lack of natural predators, diseases, and other controls allows them to thrive The primary problem species at VTS-S include privet (*Ligustrum vulgare* and *L. sinense*), Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), silver thorn olive (*E.* pungens), sericea lespedeza (*Lespedeza cuneata*), mimosa (*Albizia julibrissin*), Japanese Grass (*Microstegium vimineum*), Johnson grass (*Sorghum halepense*), and tree of heaven (*Ailanthus altissima*). Sparse infestations of Fuller's teasel (*Dipsacus fullonum*), wooly mullein (*Verbascum thapsus*), winter creeper (*Euonymus fortunei*), and white poplar (*Populus alba*) exist on VTS-S but can be eradicated with prompt application of mechanical and/or chemical controls.

This annex provides more detailed information on each of these problem species, including recommended methods of control. It also outlines the plan of attack for controlling these species on the training site, to be

implemented as funding allows. It is important to note that complete eradication of widespread invasive plant species is nearly impossible and is cost-prohibitive. Small, confined occurrences may be completely eliminated by prompt, decisive action; however, with well-established populations (e.g., the privet and Japanese grass on VTS-S) the only feasible goal is to contain and thin the infestation and hopefully prevent it from spreading further. Both eradication and control will take multiple years of repeated treatment to achieve.

The control plan on VTS-S will be a two-tiered approach: first, small occurrences (white poplar, tree-of-heaven, mimosa, winter creeper, wooly mullein, Canada thistle, Fuller's teasel) will be identified and treated on a training area-by-training area basis, and second, the larger infestations (privet, honeysuckle, Nepal grass, etc.) will be treated on a species basis in manageable sections. The spatial occurrence of the invasive species is described in more detail below. Control methods will typically use a combination of mechanical (cutting, pulling, mowing) and chemical (herbicide) means.

1.2 Objectives

The objective of this plan is to provide effective control of invasive exotic pest plants on the VTS-S, limiting the areas infected by exotics and allowing the native vegetation communities to reestablish themselves.

Factors guiding the eradication program:

- Eradication and suppression efforts will be coordinated and scheduled to avoid interference with training events
- There should be no detrimental environmental impact resulting from this control effort
- Limited vegetation removal may occur but will not be done in a manner destructive to the stability of the lake, stream bank, or the ecosystem present. Only herbicides labeled for application to water will be applied within 100 feet of any recognized waterway.
- Small or new infestations should be treated with the intent of complete eradication.

1.3 Species Targeted for Suppression

Invasive plant species are successful invaders because they generally grow rapidly, create large amounts of seed, and are thus positioned ecologically to exploit the greater amount of light found on the edges of man-made and natural openings as well as all disturbed areas. In this case the invasive species are adept at exploiting available light and space in the edges of roads and other breaks and openings in the forest canopy. The roads and openings of the forested and woodland portion of the VTS-S have provided many places for invasive plant species to seed into and dominate.

The Tennessee Exotic Pest Plant Council (TN-EPPC) has also developed a list of invasive plants and ranked them according to the threat that they pose. TN-EPPC recommends that Rank 1 and Rank 2 species be controlled and managed in the early stages of detection when possible. The classification of each invasive plant species observed at VTS-S is noted in the list below. Abundance of the invasive species in the aggregation was coded Dominant, greater than 50%, Present, 10 to 50 %, and Sparse, less than 10%.

Table A3.1 is a summary of the invasive species observed at the VTS-S site during the 2005 invasive species survey. It is organized alphabetically by species observed.

Table A3.1: Invasive exotic plant species observed on VTS-Smyrna (from Dynamic Solutions 2005).

Scientific Name	Common Name	TEPPC Ranking	Abundance at VTS-S
Ailanthus altissima	tree-of-heaven	Rank 1: Severe Threat	Present in TA-6, TA-2, TA-5, and TA-4 along roads, perimeter boundaries, and increasingly in the understory.
Albizia julibrissin	mimosa	Rank 1: Severe Threat	Present in TA-1, TA-2, TA-4, and TA-6 generally in edges of roads and openings.
Cirsium arvense	Canada thistle	Rank 2: Significant Threat	Sparsely throughout VTS-S.
Dipsacus fullonum	Fuller's teasel	Rank 2: Significant Threat	Sparsely in isolated location in TA-4.
Elaeagnus pungens	silver thorn olive	Rank 1: Severe Threat	Present in edges of TA-2 and pervasively present in TA-4, TA-5, & TA-6.
Elaeagnus umbellata	autumn olive	Rank 1: Severe Threat	Present in edges of TA-2 and pervasively present in TA-4, TA-5, & TA-6.
Euonymus fortunei	winter creeper	Rank 1: Severe Threat	Present in ornamental plantings and along Stewart Creek in the cantonment and sparsely in the under story of TA-5.
Lespedeza cuneata	sericea lespedeza	Rank 1: Severe Threat	Dominant in open grassy and open wooded areas and along roads.
Ligustrum sinense &/or Ligustrum vulgare	privet	Rank 1: Severe Threat	Pervasively present in edges and understory of TA-2, TA-4, TA-5, and TA-6.
Lonicera japonica	Japanese honeysuckle	Rank 1: Severe Threat	Present in edges and understory of TA-2, TA-4, TA-5, and TA-6.
Microstegium vimineum	Japanese grass; microstegium	Rank 1: Severe Threat	Dominant as shaded understory of all training areas.
Populus alba	white poplar	Rank 2: Significant Threat	Sparsely in one isolated population in TA-2.
Rosa multiflora	multiflora rose	Rank 1: Severe Threat	Present in all training areas.
Sorghum halepense	Johnson Grass	Rank 1: Severe Threat	Pervasively present in open sunny areas of all training areas and lawns of cantonment.
Verbascum thapsus	wooly mullein	Rank 2: Significant Threat	Sparsely in isolated population in TA-6.

2.0 CONTROL PLAN

2.1 Small Infestations

The several small infestations of white poplar, winter creeper, Fuller's teasel, wooly mullein, tree-of- heaven, and mimosa will be treated first, with the goal of complete eradication of these species on VTS-S.

White poplar occurs at VTS-S in a population at the south end of Training Area 2 (TA2). Large trees will be treated with Garlon 3A via either the cut stump method or by basal bark application. Both methods are effective throughout the year, as long as the ground is not frozen. Small trees and sprouts will be treated in the summer with a foliar application of glyphosate. Individual, isolated saplings may be effectively removed by hand pulling, as long as the entire root is extracted.

Winter creeper occurs in a few locations in the cantonment, around ornamental landscape trees and within the vegetative buffer along Stewart Creek and J. Percy Priest Lake. Effective control of this species should be achieved by initial hand cutting in August followed by foliar application of Garlon 4 in the winter. This will be repeated annually for several years. Cutting the vine to the ground prior to spraying will minimize fruit and seed development.

Fuller's teasel has been found in one isolated location just west of the entrance gate to Training Area 4. Hand or spade pulling is the most practical removal method for such a small population as this. Mowing the plants to the ground in early summer prior to flowering may also be an effective means of control.

Wooly mullein is found along road edges and Cannon Cemetery in Training Area 6. It will be treated by hand pulling in early spring (March – May). Plants will be bagged for disposal and, as mullein seed germination requires bare ground, the areas in which it is occurring will be sown with an appropriate native grass and forb seed mixture. These areas will be scouted and treated annually for several years until the seed bank is exhausted.

Tree-of-heaven and mimosa will be treated at the same time. A crew will travel the road system of the training site during the late summer or mid-winter and treat all individuals of these species that they encounter, and as documented in the 2005 survey. Tree-of-heaven has previously been found in TAs 2, 4, 5, and 6, while mimosa has been documented in TAs 1, 2, 4, and 6. Both species are generally found along roads and streambanks, in open areas, and along cleared property boundary lines. Large trees will be stem-injected or felled and the stump treated with Garlon 3A. Saplings will be basal-bark treated with Garlon 4. The following summer, a crew will return to treat all sprouts and seedling with a foliar spray of Garlon 4.

2.2 Extensive Infestations

A number of invasive species have become thoroughly established on the VTS-S and are unlikely to ever be completely removed. The goal of this program is to bring those infestations under control, reducing the numbers of exotic plants, rehabilitating native communities that have been affected, and limiting further spread of the invasives. The principle species falling under this category are privet, silver thorn and autumn olive, Japanese grass, Japanese honeysuckle, multiflora rose, and an open-areas combination of sericea lespedeza and Johnson grass.

For each of these species, the control effort will be intensive and require several years of effort. It would be most efficient to have a firm commitment of manpower and funding for at least 3 years' work prior to initiating any control efforts. A single year of effort without follow-up will have little long-term impact on the invasive species and will represent wasted effort and money.

In addition to the control efforts, it will be necessary to be prepared with a plan for reestablishing native vegetation once the invasives have been cleared. Native species restoration plans will be developed individually for areas requiring such. Restoration efforts will utilize all native species and will involve a minimum of soil disturbance.

2.2.1 Silver thorn and autumn olive

Both silver thorn and autumn olive are found pervasively throughout the training site, absent only from the cantonment and TA1. The two species are commonly found together at the facility, at times dominating open woodlands. Populations are found with greater size and density as one moves east to west across the site; that is, olives are much more prevalent in TA6 than in TA4, and in TA4 than in TAs 5 or 2. Control, therefore, will begin in TA2 and proceed westward with efforts directed at roadsides, open areas, and forest boundaries. For infestations with large quantities of low-growing leaves, a foliar spray of Arsenal AC will be applied. If stems

are too tall for this method to be effective either basal bark application of Garlon 4 or cut stump treatments of Arsenal AC would be more appropriate. This effort should be conducted in mid winter. The following summer, a return visit will be made to treated areas to foliar spray sprouts with Arsenal AC. See Table A3.2 for the herbicide concentrations to be used for each method.

2.2.2 Privet

Privet occurs pervasively in every training area on VTS-S and in the cantonment. It is found within a wide range of environmental conditions: from sunny, shallow-soiled streambanks to densely shaded cedar woodlands to open fields and roadsides. While open areas tend to yield larger, fuller privet plants, extremely dense populations of smaller plants are also present in the forest understory of all training areas. As roadsides and streambanks are generally easier to access, efforts to control privet will begin in these areas. Control will begin along the banks of Stewart Creek and J. Percy Priest Lake and then along all major roads within the training sites. Additional control efforts will focus on forest openings in the training areas. Individual plants less than 5" dbh will be treated with a basal bark spray of Garlon 4. Larger stems will be cut and immediately stump treated with Arsenal AC. This process will be repeated in manageable chunks starting with the Stewart Creek shoreline in the cantonment, working around the edges of the lake, and then moving inland to treat roadways and clearings within the training areas. This effort should be conducted in mid winter. The following late summer, a return visit will be made to treated areas to foliar spray sprouts with Arsenal AC. See Table A3.2 for the herbicide concentrations to be used for each method.

The same program will need to be repeated each winter for several years.

If there are areas of infestation in which little to no desirable vegetation remains, and that are at least 50 feet from any shoreline, the gyrotrack or similar equipment may be used to mow down the privet while leaving any other trees and shrubs standing, as possible. This should be conducted in summer when the ground is dry but before seed set. This will be followed up in the fall with broadcast foliar application of Arsenal AC to the sprouts.

2.2.3 Japanese grass

Japanese grass occurs in low-lying, shaded areas throughout VTS-S. It dominates the understory in all bottomland forests and along partly to densely shaded roadsides. It does not appear to be as pervasive in areas regularly inundated by the lake. Management will be concentrated along roadsides and shorelines where sunlight is greater and competition from other plants suppresses population densities.

Treatment will consist of foliar application of herbicide; the type used will depend on the surrounding vegetation. Glyphosate will be used where there is little desirable vegetation mixed with the Japanese grass. Sethoxydim, a grass selective herbicide, will be applied in locations where native herbaceous vegetation is still present. Treatment will be made in early June, with a second application in late July of the same year to ensure complete kill. Care will be taken to avoid drift onto the waterways (e.g., using a coarse spray, not conducting control activities near water on windy days). Sites will be inspected the following June for new germination. Complete removal will require several years to exhaust the seedbank.

Areas that are accessible and also sufficiently dry may be treated without chemicals by mowing in August. This method requires careful timing to remove the flowers before seed set but late enough to negate the possibility of new flower development. This method will also require several years of repeat treatments to exhaust the seedbank.

Areas that were heavily infested with Japanese grass will need to be reseeded or planted with native species to minimize the available space for re-invasion.

2.2.4 Japanese honeysuckle

Japanese honeysuckle is also present throughout the training site. It is found in all light regimes; however, populations are typically denser along forest edges, where more light is available. The first stage of control will be to treat infestations along roads and streambanks. Foliar spray with Garlon 3A will be conducted in the late fall. Care will be taken to avoid drift onto the waterways (e.g., using a coarse spray, not conducting control activities near water on windy days). Areas will be checked the following summer to determine the need for retreatment with the same prescription.

2.2.5 Open areas complex

Most open fields and roadsides around the training site are infested with some combination of sericea lespedeza, Johnson grass, and Canada thistle. Control of these species will be undertaken in combination with an effort to restore native grasses where feasible on the training site. Small arms ranges and lawns are typically not appropriate locations for native warm season grasses, due to their tall growth form. Such areas will be maintained with the existing mixtures of fescue, bermudagrass, crabgrass, and similar species. Canada thistle will be spot treated with glyphosate or Garlon when found in these areas.

Less manicured open areas (e.g., the open fields surrounding the small arms range and the M203 range, both in TA6) may be treated for invasive pest plants in preparation for reseeding native warm season grasses. A mixture of glyphosate and imazapic applied in the spring, followed by prescribed burning should control the fescue sufficiently so that native warm season grasses may be seeded and successfully established in these fields.

2.3 Environmental Precautions

VTS-S is bisected by the connected waters of Stewart Creek and J. Percy Priest Lake, the latter of which serves as a municipal drinking water source for numerous communities in the area. Protecting stream habitat from both chemical pollutants and sedimentation is of utmost importance.

- There will be no herbicide applications to water unless the chemical is labeled for aquatic use
- Within 25 feet of water, only stem treatments will be used to minimize risk of drift
- Foliar treatments will be avoided in any situation where the spray would be carried toward water
- At all times, care will be taken to minimize pesticide drift to desirable vegetation
- Where possible, dead vegetation will be left standing on the creek banks
- There will be no stump removal on creek banks
- Where creek bank vegetation is composed of more than 50% invasive species, revegetation and bank stabilization will be conducted immediately following IPP control

All label requirements will be followed, as will state and DoD pesticide regulations. Only state or DoD certified applicators will apply herbicides for IPP control. Non-certified personnel may help with non-chemical aspects of control, but will be briefed on pesticide safety prior to initiating work.

Due to the presence of Air Force Base-era landfills on Training Area 3, this parcel is designated as a restricted use area and is off limits to training and all other TNARNG activities. For this reason, Training Area 3 was omitted from the Invasive Plant Species Survey conducted in 2005, from which much of the baseline data for this plan was derived, as well as from the most recent Vegetation Community Survey (AMEC 2007). Therefore, little data is available regarding the extent of invasive pest plants in this training area. While pest plant issues on TA3 are most likely the same or very similar to those in all other regions of the VTS-S, control efforts will not be initiated until the status of this area has been revised by the U.S. Army Corps of Engineers.

2.4 Personal Protective Equipment (PPE)

Personnel who handle and/or apply pesticides are required to wear personal protective equipment and clothing designated on the herbicide label IAW the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 162), Occupational Safety and Health Standards (29 CFR 1910), and DOD Directive 4150.7. Such protective devices include masks, respirators, gloves, goggles, and protective clothing necessary for the pest management operations being conducted and the pesticides used.

2.5 Treatment Methods

Cut stump

The cut stump method is a method used for trees and woody shrubs greater than 5" dbh. The tree is cut down, leaving a stump 2 to 6 inches high (excessive stump height can limit the effectiveness of this method). The appropriate herbicide solution is applied to the outer 20% of the freshly cut stump within a few minutes, if possible. (After 2 hours, a basal bark treatment with penetrant will have to be applied.) Apply the appropriate herbicide solution to the outer 20% of the stump's cut surface. All stems coming from the base or roots of the plant should be cut and treated at the same time.

The cut stump method is most effective when the plant is actively growing but not during the first flush of spring growth. Therefore, cut stump treatments may be initiated in late April to early May and continue through the summer. Cut stump can also be applied during the dormant season.

Stem injection

Stem injection is another method for use on large trees and shrubs. Incision cuts are made downward into the stem, and herbicide is applied into the cut. With hard to control species, the cuts should completely frill the stem. There is less physical effort required for this method as opposed to completely cutting down the tree, but it leaves a dead snag standing, which may be beneficial or not depending on the situation.

Like cut stump, stem injection is most effective in late winter or throughout the summer. It should not be utilized during the heavy spring sap flow.

Basal bark spray

The basal bark method is a recommended method for controlling young trees with smooth bark (generally individuals under 5" dbh). A 6 to 12 inch band of herbicide is applied around the circumference of the tree trunk approximately one foot above ground level. The width of the sprayed band depends on the size of the tree and the species' susceptibility to the herbicide. Ester formulations are most effective due to their ability to readily pass through tree bark. Esters are volatile and care must be taken to follow the label – avoid ester formulations on hot days because vapor drift can injure nontarget plants. A chemical penetrant should be included in the herbicide mixture.

Basal bark applications are usually made in late winter and early spring, when leaves do not interfere with trunk access. This method is effective during the summer, but much more difficult.

Foliar spray

The foliar spray method can be used for all target species not in close proximity to environmentally sensitive areas. This method is most effective in areas where there is a low density of desirable vegetation. Care must be taken to use appropriate spray equipment with sufficient droplet size to minimize drift to nontarget plants. Handheld sprayers can only treat plants up to about 6' in height. Leaves should be wet thoroughly but not to the

point that herbicide runs off and impacts non-target species. Air temperature should be above 65 F to ensure absorption of herbicides.

Foliar sprays should not be used on windy days. Care must be taken to minimize threat to surrounding nontarget vegetation and other sensitive sites (riparian areas).

The foliar spray method only works when the plant has full or near full leaf cover and is most effective from mid-summer to late fall, depending on the target species' life cycle. Evergreen or semi-evergreen species like privet and honeysuckle can be treated in the late fall to winter, as well, as long as they retain a significant portion of their leaf cover.

2.6 Herbicides

Table A3.2 reflects the recommended herbicide and standard concentration to use per plant species and the primary method of control. These recommendations must be corroborated with the concentrations approved on each product label. **The label is the law.**

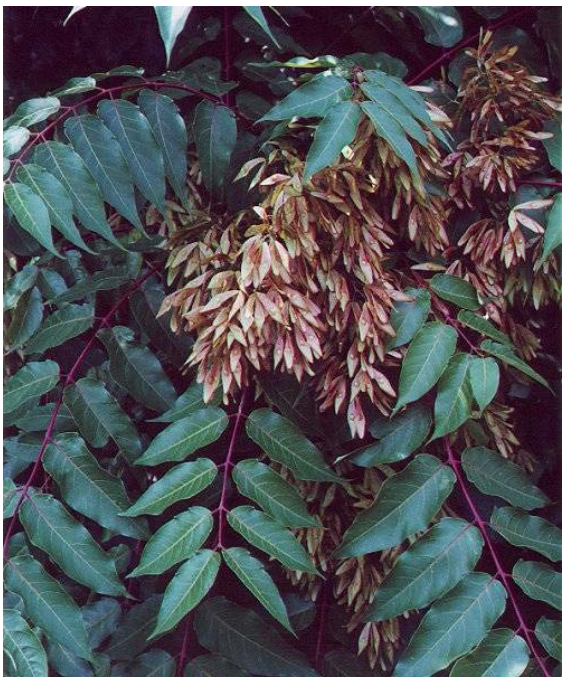
Table A3.2: Herbicide concentrations for use on VTS-S invasive pest plants.

Species	Season	Method	Chemical	Concentration	Additive
Canada thistle	July	Foliar/Mowing	Glyphosate	2%	Surfactant
Japanese honeysuckle	Late fall	Foliar	Garlon 3A	5%	Surfactant
Japanese grass	June & July	Foliar	Glyphosate	2%	Surfactant
	June & July	Foliar	Sethoxydim	Label	
Mimosa	Fall/winter	Cut stump	Garlon 3A	Label	
	Fall/winter	Basal bark	Garlon 4	20%	Basal oil + penetrant
	Summer	Sprout – Foliar	Garlon 4	2%	Surfactant
Multiflora rose	Summer	Sprout-Foliar	Garlon 3A	Label	
	Summer/Fall	Basal bark	Garlon 4	20%	Basal oil + penetrant
Olives	Summer	Foliar	Arsenal AC	1%	Surfactant
	Mid winter/summer	Basal bark	Garlon 4	20%	Basal oil + penetrant
	Fall/winter	Cut stump	Glyphosate	20%	Surfactant
Princess tree	Fall/winter	Cut stump	Glyphosate	Label	
	Fall/winter	Basal bark	Garlon 4	20%	Basal oil + penetrant
	Summer	Sprout – Foliar	Garlon 4	2%	Surfactant
Privet	Fall/winter	Cut stump	Arsenal AC	10%	Surfactant
	Fall/winter	Basal bark	Garlon 4	20%	Basal oil + penetrant
	Summer	Sprout – Foliar	Arsenal AC	1%	Surfactant
Tree-of-heaven	Fall/winter	Cut stump	Garlon 3A	Label	
	Fall/winter	Basal bark	Garlon 4	20%	Basal oil + penetrant
	Summer	Sprout – Foliar	Garlon 4	2%	Surfactant
White poplar	Summer	Foliar	Glyphosate	2%	Surfactant
	Fall/winter	Cut stump	Garlon 3A	Label	
	Fall/winter	Basal bark	Garlon 4	Label	
Winter creeper	August	Hand cut	N/A	N/A	N/A
	Winter	Foliar	Garlon 4	2%	Surfactant

3.0 DETAILED PLANT SPECIES LIST AND PRESCRIPTION

Ailanthus altissima (tree of heaven)

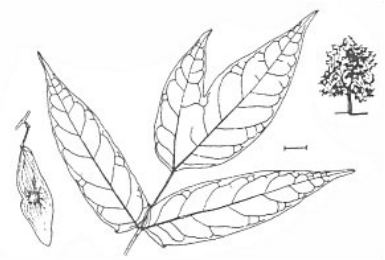
- Description: Tree of heaven is a rapidly growing small tree but can reach up to 80 feet in height and 6 feet in diameter. It has pinnately compound leaves that are 1-4 feet in length with 10-41 leaflets. Tree of heaven resembles the sumacs and hickories, but is easily recognized by the glandular, notched base on each leaflet. It is extremely tolerant of poor soil conditions and has been known to grow even in cement cracks. It cannot grow in heavily shaded conditions but thrives in disturbed forests or edges. Dense clonal thickets displace native species and can rapidly take over fields and meadows.



- Extent of the Infestation: Population rapidly increasing at VTS-S. Occurs frequently along roadsides and forest edges in TA-6, with small populations observed in TA-2 along the edge near the eastern boundary fence and scattered populations in TAs 4 and 5.

- Specific Control Prescription: Small trees may be effectively controlled by hand pulling. Pulling may be done any season. Moist soil facilitates pulling.

  During growing season, re-inspect pulled sites in 30 days for regrowth from unpulled roots. Larger trees should be cut at the stump during the growing season. Treat the cut stump immediately with Garlon 3A applying a 2% solution of herbicide and water to the cut stump, making sure to cover the outer 20% of the stump. As a follow-up when and if stump sprouting occurs, apply Garlon 4 in a 2% solution of herbicide and water plus a 0.5% non-ionic surfactant to thoroughly wet all leaves. Use a low pressure and coarse spray pattern to reduce spray drift damage to non-target species.



Present in Training Areas	
2	4
5	

***Albizia julibrissin* (mimosa)**

- Description: Mimosa is a small tree that is 10 to 50 feet in height, often having multiple trunks. It has delicate looking bi-pinnately compound leaves that resemble ferns. Mimosa has very showy, pink flowers that are fragrant, giving way to small, flat bean-pod like fruits. Mimosa invades any type of disturbed habitat. It is commonly found in old fields, stream banks, and roadsides. Once established, mimosa is difficult to control due to the long-lived seeds and its ability to re-sprout vigorously.

- Extent of the Infestation: Mimosa occurs sparsely along riparian zone of Stewart Creek and along edges and roads in TAs 1, 2, 4, and 6.

- Specific Control Prescription: Small trees may be effectively controlled by hand pulling any time of year. Areas where pulling has been done should be re-inspected during the growing season after 30 days to look for sprouts.

  Larger trees should be cut at the stump. Treat the cut stump immediately with Garlon 3A applying a 25% solution of herbicide and water to the cut stump making sure to cover the outer 20% of the stump.

  As a follow-up when and if stump sprouting occurs, apply Garlon 4 in a 2% solution of herbicide and water plus a surfactant to thoroughly wet all leaves. Use a low pressure and coarse spray pattern to reduce spray drift damage to non-target species.

Present in Training Areas	
1	**2**
4	**6**

***Cirsium arvense* (Canada thistle)**

- Description: Canada thistle is a tall, erect, spiny herbaceous plant that grows to 4 feet tall. It has an extensive creeping rootstock. The leaves are lance-shaped, irregularly lobed with very prickly margins. The stems are ridged and hairy. The flowers are purple to white and can be up to .5 inch in diameter. The small seeds, called achenes, are 1 to 1.5 inches long and have a feathery structure attached to the base, which lets them float through the air. Canada thistle can invade a variety of open habitats including prairies, savannas, fields, pastures, wet meadows, and open forests. It forms dense stands, which can shade out and displace native vegetation. Once established it spreads rapidly and is difficult to remove.

- Extent of the Infestation: Canada thistle occurs sparsely throughout entire training site. It blooms in late August to early-September and is easier to locate during that time.

- Specific Control Prescription: Canada thistle control can be achieved through hand cutting, mowing, and controlled burning, and chemical means, depending on the level of infestation and the type of area being managed. Due to its perennial nature, entire plants must be killed in order to prevent regrowth from rootstock. Hand cutting of individual plants or mowing of larger infestations should be conducted prior to seed set and must be repeated until the starch reserves in the roots are exhausted. Because early season burning of Canada thistle can stimulate its growth and flowering, controlled burns should be carried out late in the growing season for best effect.

  In natural areas where Canada thistle is interspersed with desirable native plants, targeted application of glyphosate may be effective. For extensive infestations in disturbed areas with little desirable vegetation, broad application of this type herbicide may be the most effective method. Repeated applications are usually necessary due to the long life of seeds stored in the soil.

Present in Training Areas	
1	2
3	4
5	6
Cantonment	

***Dipsacus fullonum* (Fuller's Teasel)**

- Description: Fuller's Teasel grows as a basal rosette of leaves for a minimum of one year, then sends up a flowering stalk and dies after flowering. During the rosette stage, leaves are oval or oblong. Leaves may be "hairy" in older rosettes. Common teasel blooms from June through October. Flowering plants have large, oblong, opposite, sessile leaves that form cups (the cups may hold water) and are prickly. Stems also are prickly. Teasel's unique flower head makes the plant easy to identify when blooming. Flowers are small and packed into dense, oval-shaped heads at the tip of the flowering stems and usually have purple flowers. Flowering stems may reach six to seven feet in height. A single teasel plant can produce more than 2,000 seeds. Teasel grows in open sunny habitats. It sometimes occurs in high quality prairies, savannas, seeps and sedge meadows, though roadsides, dumps and heavily disturbed areas are its most common habitats.

- Extent of the Infestation: One isolated population of teasel occurs to the west of the entrance gate to TA-4.

- Specific Control Prescription: For small populations such as this one, mechanical methods work quite well. Young rosettes can be dug up using a dandelion digger. Just as in digging up dandelions, as much of the teasel root needs to be dug up as possible. Once the rosettes get large, it is difficult to dig the roots up without damaging the area around the plant. Very small seedlings can be pulled up by hand when the soil is moist.

  Flowering plants can be cut before seed set slightly below ground level. Bag and dispose of burn all seed heads. Cutting off the flowering stalks just at flowering time will usually prevent resprouting from the root crown. Cutting flowering stalks prior to flowering should be avoided since the plants will resprout and flower again. A later inspection should be performed to catch any root crowns that do resprout. It may take three to five years of control efforts to exhaust the seed stock.

Present in Training Area
4

***Elaeagnus pungens and Elaeagnus umbellata (*silver thorn olive and autumn olive)**

- Description: Silver thorn olive is a dense evergreen shrub that has invaded natural areas throughout the southeastern United States. The shrub is often multi-stemmed. Short, sharp shoots give it a thorny appearance. The alternate leaves are oval to elliptical in shape with irregular wavy margins and silvery surfaces. The axillary clusters of small, white to brown flowers give way to small, red fruit that are dotted with small brown scales. Closely resembles autumn olive. A high shade tolerance allows thorny olive to invade both in open areas as well as under forest canopies. The seeds are dispersed by animals, giving this plant the potential for rapid spread.

- Autumn olive is a deciduous shrub from 3 to 20 feet in height. It is easily recognized by the silvery, dotted underside of the leaves. Axillary clusters of small, yellowish flowers and red, juicy fruits are abundant. Autumn olive invades old fields, woodland edges, and other disturbed areas. Autumn olive can form a dense shrub layer that displaces native species and closes open areas. This species has been widely planted for wildlife habitat, mine reclamation, and shelterbelts since its introduction to America in 1830.

- Extent of the Infestation: Both olive species are present in edge areas in TA-2 and are pervasive in TAs 4, 5, and 6.

- Specific Control Prescription: Small plants may be may be effectively controlled by hand pulling any season. Seedlings are best pulled after a rain when the soil is loose. The entire root must be removed since broken fragments may re-sprout. These species are likely to require mechanical assistance in pulling with tools once they are larger than approximately .25 inches at the root collar.

Larger or un-pullable plants require cutting at ground level with saws. Cutting is most effective when trees have begun to flower to prevent seed production. Cutting is an initial control measure, and success will require either an herbicidal control or repeated cutting of re-sprouting. Cutting during winter and follow-up spraying of resulting tender sprouts in spring and mid-summer is likely to provide effective control.

Treat the cut stump immediately with glyphosate applying a 20% solution of herbicide and water to the cut stump making sure to cover the outer 20% of the stump. As a follow-up when and if stump sprouting occurs, apply Arsenal AC in a 1% solution of herbicide and water plus a 0.5% non-ionic surfactant to thoroughly wet all leaves. Dispose of all plant parts in bags or by burning.

Present in Training Areas	
2	4
5	6

***Euonymus fortunei* (winter creeper)**

- Description: Winter creeper, also known as climbing euonymus, is an evergreen, clinging vine. It can form a dense groundcover or shrub to 3 feet in height, or climb 40-70 foot high vertical surfaces with the aid of aerial roots. Dark green, shiny, egg-shaped leaves, from 1 - 2 1/2 inches long, with toothed margins and silvery veins, occur in pairs along the stems. Stems are narrow, minutely warty, and have abundant rootlets or trailing roots. Clusters of inconspicuous green-white flowers are produced on a long stalk from June to July and are followed in the autumn by pinkish to red capsules that split open to expose seeds adorned with a fleshy orange seed coat, or aril.

- Extent of the Infestation: There are populations of this species in the cantonment: two concentrated occurrences serving as ground cover at the bases of landscape trees in the cantonment and occasional infestations are present within the vegetative buffer maintained along Stewart Creek and J. Percy Priest Lake. Occasional populations of winter creeper may also be found in TA 5 and, in some cases, may actually be large enough to pose a threat to timber species.

- Specific Control Prescription: For small populations, individual vines should be pulled up by the roots and removed from the area. Follow-up during the winter with an application of 2% Garlon 4. A squirt bottle may be used for spot treatment or individual stumps can be painted by hand using a sponge applicator. Treatment should be in late winter when most native vegetation is dormant and prior to the emergence of spring wildflowers.

Present in Training Areas
Cantonment
5

***Lespedeza cuneata* (sericea lespedeza)**

- Description: Sericea lespedeza is an upright semi-woody forb, 3 to 6 feet in height with one to many slender stems. It has thin, alternate, abundant, three-parted leaves. Flowers are small and whitish-yellow. It is an extremely aggressive invader of open areas, out competing native vegetation. Once it is established is very difficult to remove due to the seed bank, which can remain viable for decades. Native to Asia and introduced into the Unites States in the late 1800s, sericea lespedeza has been widely planted for wildlife habitat, erosion control, and mine reclamation.

- Extent of the Infestation: This lespedeza is ubiquitous at VTS-S in open and grassy areas with full sun. Upon close inspection of closely mowed turf areas, it serves as an important component of the mowed "grassy" areas. It is likely that it may have been planted for its erosion control and wildlife habitat benefits. This species is currently recommended by the Tennessee Wildlife Resources Agency under certain conditions for those uses.

- Specific Control Prescription: The best control of lespedeza combines both mechanical and chemical treatments. Hand pulling is impractical due to its extensive perennial root system, but mowing plants at the flower bud stage for two to three consecutive years can significantly reduce the vigor of stands as well as control further spread. Mowing followed by an herbicide treatment is likely the most effective option for the successful control.

  The herbicides triclopyr, clopyralid, and glyphosate are known to control this lespedeza. Herbicide should be applied in early to midsummer, during the flower bud stage. A 2% triclopyr solution or a 0.5% clopyralid solution is effective at control during the vegetative stage prior to branching or during flowering. Note that lespedeza and Johnson grass were observed to be growing together and any treatment of one will harm or benefit the other, so plan accordingly.

Present in Training Areas	
1	2
3	4
5	6
Cantonment	

***Ligustrum sinense &/or Ligustrum vulgare* (privet)**

- Description: Privet is a thick, semi-evergreen shrub to 30 feet in height. Trunks usually occur as multiple stems with many long, leafy branches attached at near right angles. Leaves are opposite, oval and .5 to 1.5 inches long. White flowers are very abundant and occur at the end of branches in clusters. Fruits ripen to a dark purple to black color and persist into winter. Although several species occur they are hard to distinguish. It commonly forms dense thickets in fields or in the understory of forests. It shades and outcompetes many native species and, once established, is very difficult to remove.

- Extent of the Infestation: Privet is found pervasively throughout the entire training site. It occurs in all settings with better growth and larger plants found where sunlight is more available.

- Specific Control Prescription: Privet is mostly evergreen in Tennessee and thus can be identified and treated at any time during the year. Small plants may be may be effectively controlled by hand pulling. Plants should be pulled as soon as they are large enough to grasp, but prior to seed production. Seedlings are best pulled after a rain when the soil is loose. The entire root must be removed since broken fragments may re-sprout. Smaller privets are usually easy to pull; larger individuals are likely to require mechanical assistance in pulling.

Mowing or other mechanical reduction of plant mass is effective for providing safer spraying access but is not an effective control by itself**.** Foliar Spraying can be effective for large thickets of privet where risk to non-target species is minimal. Timing applications for late fall or early spring when many native species are dormant will help minimize damage to non-target species. Generally foliar herbicides offer better control in warmer weather, as plants are growing faster, but privet keeps its leaves which can make it easier to locate when most other plants do not have leaves. To spray, apply a 2% solution of Garlon 4 to thoroughly wet all leaves. Use a low pressure and coarse spray pattern to reduce spray-drift damage to non-target species.

Larger or unpullable plants require cutting at ground level with saws. Cutting is most effective when plants have begun to flower to prevent seed production. Cutting is an initial control measure, and success will require either an herbicidal control or repeated cutting of re-sprouting.

Present in Training Areas	
1	**2**
3	**4**
5	**6**
Cantonment	

Treat the cut stump immediately with Arsenal AC applying a 10% solution of herbicide and water to the cut stump making sure to cover the outer 20% of the stump. As a follow-up when and if stump sprouting occurs, apply Garlon 4 in a 2% solution of herbicide and water plus a 0.5% non-ionic surfactant to thoroughly wet all leaves. Use a low pressure and coarse spray pattern to reduce spray drift damage to non-target species.

***Lonicera japonica* (Japanese honeysuckle)**

- Description: Japanese honeysuckle is a perennial vine that climbs by twisting its stems around vertical structures, including limbs and trunks of shrubs and small trees. Leaves are oblong to oval, sometimes lobed, have short stalks, and occur in pairs along the stem. In Tennessee, Japanese honeysuckle leaves often remain attached through the winter. Flowers are tubular, with five fused petals, white to pink, turning yellow with age, very fragrant, and occur in pairs along the stem at leaf junctures. Stems and leaves are sometimes covered with fine, soft hairs. Japanese honeysuckle blooms from late April through July and sometimes into October. Small black fruits are produced in autumn, each containing 2-3 oval to oblong, dark brown seeds about 1/4 inch across.

- Extent of the Infestation: Japanese honeysuckle occurs throughout the training site. It is present across all light regimes and is more dominant in edges where more sunlight is available.

- Specific Control Prescription: Mowing and fire are effective at reducing the aboveground mass of plant material, but require herbicide follow-up for effective control of honeysuckle.

Foliar spraying with triclopyr herbicides is very effective for controlling Japanese honeysuckle. Timing applications for late fall or early spring when many native species are dormant will help minimize damage to non-target species. Generally foliar herbicides offer better control in warmer weather, as plants are growing faster, but honeysuckle keeps its leaves which can make it easier to locate when most other plants don not have leaves. To spray, apply a 5% solution of Garlon 4 plus a 0.5% non-ionic surfactant to thoroughly wet all leaves.

Larger or unpullable plants require cutting at ground level with saws. Cutting is most effective when plants have begun to flower to prevent seed production. Re-sprouting is common after treatment. Cutting is an initial control measure, and success will require either an herbicidal control or repeated cutting of re-sprouting.

Treat the cut stump immediately with Garlon 3A applying a 20% solution of herbicide and water to the cut stump making sure to cover the outer 20% of the stump. As a follow-up when and if stump sprouting occurs, apply Garlon 4 in a 5% solution to thoroughly wet all leaves. Use a low pressure and coarse spray pattern to reduce spray drift damage to non-target species.

Present in Training Areas	
1	2
3	4
5	6
Cantonment	

Microstegium vimineum* (Japanese grass, Nepalese brown top*)

- Description: Japanese grass, also known as Nepalese brown top and other names is an annual plant. It has a sprawling habit and grows slowly through the summer months, ultimately reaching heights of 2 to 3 1/2 ft. (6-10 dm.). The leaves are pale green, lance-shaped, asymmetrical, 1-3 in. (3-8 cm.) long, and have a distinctive shiny midrib. Slender stalks of tiny flowers are produced in late summer (August - September). The fruits or achenes mature soon after flowering and the plant dies back completely by late fall. It forms a dense carpet that chokes out other species and maintains an abundant seedbank.

- Extent of the Infestation: Microstegium dominates shaded road edges and wooded understories in all training areas. It occurs ubiquitously in shaded, moist soils, but is not present in areas near the lake that are subject to inundation. It will grow well in full sun, but appears to have difficulty competing with other invasives under those conditions.

- Specific Control Prescription: Mow plants as close to the ground as possible using a weedeater or similar grass-cutting tool. Treatments should be made when plants are in flower and before seeds are produced. Treatments made earlier may result in plants producing new seed heads in the axils of lower leaves.

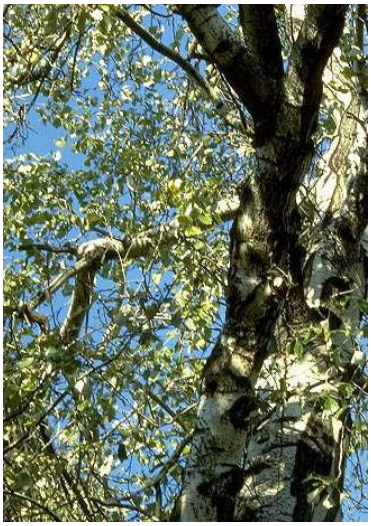
  Herbicide treatments should be made late in the growing season but before the plants set seed. Treatments made earlier in the growing season may allow a second cohort of plants to produce seeds. Apply a 2% solution of glyphosate to thoroughly wet all foliage. Do not spray to the point of runoff. Ambient air temperature should be above 65°F to ensure translocation of the herbicide to the roots. Do not apply if rainfall is expected within two hours following application. Additional treatments are likely to be necessary to exhaust the supply of seed in the soil.

  An alternative chemical treatment is to use grass selective sethoxydim or clethodim. Apply a 1.5% solution of sethoxydim and water plus 1% non-phytotoxic vegetable-based oil to all foliage on a spray-to-wet basis. Do not spray to the point of runoff. Ambient air temperature should be above 65°F. Do not apply if rainfall is expected within one hour following application.

Present in Training Areas	
1	**2**
3	**4**
5	**6**
Cantonment	

Populus alba* (white poplar*)

- Description: White poplar is a tree that, at maturity, may reach 70 feet or more in height and 2 feet in diameter. The smooth, greenish-white bark becomes dark and rough with age. Young green or brown twigs are coated with dense, woolly hair, especially near the tip. A cross-section of the stem reveals five-pointed, star-shaped pith. The 2 to 5-inch long leaves are oval to maple-leaf in shape with 3-5 broad teeth or lobes, and are dark green above and covered with dense white hair below. Male and female flowers are borne in catkins on separate trees and appear in March and April. The small seeds are adorned with cottony fluff that is easily blown by the wind in late spring.



- Extent of the Infestation: An isolated population is present adjacent to the large gravel parking area on the south end of TA-2.

- Specific Control Prescription: White poplar can be controlled using a variety of physical and chemical controls. Removal of seedlings and young plants by hand will help prevent further spread or establishment. Plants should be pulled as soon as they are large enough to grasp. The entire root system of these pulled plants, or as much of it as possible, should be removed to prevent resprout from fragments. Hand removal of plants is best achieved after a rain, when the soil is loose.

  Trees of any size may be felled by cutting at ground level with power or manual saws. Because resprouts are common after cutting, this process may need to be repeated many times until the reserves of the tree are exhausted. Girdling, which kills the tree by severing tissues that conduct water and sugars, also may be effective for large trees, especially if accompanied by application of a systemic herbicide to the cut area. A hatchet or saw is used to make a cut through the bark encircling the base of the tree, approximately six inches above the ground and deep into the bark. Girdling will kill the parent tree but may require follow-up cutting or treatment of sprouts with an herbicide.

  Chemical control of white poplar seedlings and small trees has been achieved by applying a 2% solution of glyphosate to the foliage until the leaves are thoroughly wet. Use of low pressure and a coarse spray with large droplet size will reduce spray drift and damage to non-target plants.

  The cut stump herbicidal method should be considered when treating individual trees or where the presence of desirable species precludes the use of foliar herbicides. Stump treatments can be made at any time of year as long as the ground is not frozen. After cutting the tree near ground level, a 25% solution of Garlon 3A is applied to the stump by spray bottle or brush, making sure to cover the outer 20% of the stump. Basal bark herbicidal treatment is also effective throughout the year, as long as the ground is not frozen, and does not require cutting of the tree. A mixture of 25% Garlon 4 and 75% horticultural oil is applied to the bark in a wide band around the base of the tree to a height of 12-15 inches from the ground. Spray until run-off is just noticeable at the ground line, but not running off-site.

Present in Training Area
Cantonment

***Rosa multiflora* (multiflora rose)**

- Description: Multiflora rose is a thorny, perennial shrub with arching stems (canes), and leaves divided into five to eleven sharply toothed leaflets. The base of each leaf stalk bears a pair of fringed bracts. Beginning in May or June, clusters of showy, fragrant, white to pink flowers appear, each about an inch across. Small bright red fruits, or rose hips, develop during the summer, becoming leathery, and remain on the plant through the winter.

- Extent of the Infestation: Multiflora rose occurs in all training areas but is not widespread or dominant like privet. Where it occurs, this plant thrives under sunny conditions.

- Specific Control Prescription: Mowing/Cutting is appropriate for small initial populations or environmentally sensitive areas where herbicides cannot be used. Repeated mowing or cutting will control the spread of multiflora rose but will not eradicate it. Stems should be cut at least once per growing season as close to ground level as possible. Hand cutting of established clumps is difficult and time consuming due to the long arching stems and prolific thorns.

Three methods using herbicides are practical for different plant situations. The foliar spray method should be considered for large thickets of multi-flora rose where risk to non-target species is minimal. Air temperature should be above 65°F to ensure absorption of herbicides. Apply Garlon 3A in concentration recommended on product label. Use a low pressure and coarse spray pattern to reduce spray drift damage to non-target species.

The cut stump method should be considered when treating individual bushes or where the presence of desirable species precludes foliar application. This treatment remains effective at low temperatures as long as the ground is not frozen. Horizontally cut multiflora rose stems at or near ground level. Immediately apply a 20% solution of Garlon 4 to the cut stump making sure to cover the entire surface.

The basal bark method is effective throughout the year as long as the ground is not frozen. Apply a mixture of 20% Garlon 4 and 75% horticultural oil to the basal parts of the shrub to a height of 30-38 cm (12-15 in) from the ground. Thorough wetting is necessary for good control; spray until run-off is noticeable at the ground line.

Present in Training Areas	
1	2
3	4
5	6
Cantonment	

***Sorghum halepense* (Johnson grass)**

- Description: Johnson grass grows as tall as six feet and is a rhizomatous perennial grass that invades open areas throughout the United States. The two-foot long, lanceolate leaves are arranged alternately along a stout, hairless, somewhat upward branching stem. Flowers occur in a loose, spreading, purplish panicle. Johnson grass is adapted to a wide variety of habitats including open forests, old fields, ditches, and wetlands. It spreads aggressively and can form dense colonies, displacing native vegetation and restricting tree seedling establishment.

- Extent of the Infestation: Johnson grass occurs as part of the mix of plants present in virtually all of the mowed and bushhogged areas of VTS-S. Its presence is diminished in these mixes by the dominance of sericea lespedeza.

- Specific Control Prescription: Johnson grass reproduces through rhizomes and seeds. It cannot be controlled simply by mowing or cutting. It is recommended that mowing followed by herbicide treatment, several times during the growing season for several seasons. Repeated applications of 1% glyphosate, taking care to thoroughly wet all leaves, will be necessary to control Johnson grass.

Present in Training Areas	
1	2
3	4
5	6
Cantonment	

***Verbascum thapsus (*Wooly mullein)**

- Description: Wooly or common mullein is a biennial most commonly found in sites that have experienced disturbance. First year mullein plants are low-growing rosettes of bluish gray-green, felt-like leaves that range from 4-12 inches in length and 1-5 inches in width. Mature flowering plants are produced the second year, and grow to 5 to 10 feet in height, including the conspicuous flowering stalk. The five-petaled yellow flowers are arranged in a leafy spike and bloom a few at a time from June-August. Leaves alternate along the flowering stalks and are much larger toward the base of the plant. The tiny seeds are pitted and rough with wavy ridges and deep grooves and can germinate after lying dormant in the soil for several decades.

- Extent of the Infestation: A population of woolly mullein was observed along the road edges in TA-6 north of the firing range during the July, 2005 data collection. These plants had been bushhogged and were not found during a late-August 2005 visit to VTS-S.

- Specific Control Prescription: Common mullein can be very difficult to eradicate. There are a variety of management methods available, depending on the particular situation. Because mullein seedling emergence is dependent on the presence of bare ground, sowing sites with early successional native grasses or other plants may decrease seed germination and the chance of successful emergence of mullein seedlings.

  Mullein plants are easily hand pulled on loose soils due to relatively shallow tap roots. This is an extremely effective method of reducing populations and seed productivity, especially if plant is pulled before seed set. If blooms or seed capsules are present, reproductive structures should be removed, bagged, and properly disposed of in a sanitary landfill. Care should be taken, however, to minimize soil disturbance since loose soil will facilitate mullein seed germination.

  For situations where hand-pulling of plants is not practical or safe, for example, on very steep slopes where hand pulling is dangerous or would cause significant soil disturbance, herbicidal control is an effective option. Apply a 2% solution of glyphosate, using a tank or backpack sprayer to thoroughly cover all leaves. Do not apply so heavily that the herbicide drips off the leaf surface.

Present in Training Area
6

NFIRS - 1 Basic

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	02/28/2006	13	06-0794	0

B Location

Address Type	Number/Milepost	Prefix	Street or Highway	Street Type	Suffix
1 - Street addres	682		FITZHUGH	Boulevard	

Apt./Suite/Room	City	State	Zip Code
	SMYRNA	TN	37167

Census Tract:

Cross street or directions, as applicable: 8th Avenue

C Incident Type

111 - Building fires

D Aid Given or Received

Their FDID	Their State	Their Incident Number

Type Aid Given or Recieved: N - None

E1 Dates & Times

Midnight is 0000

	Month	Day	Year	Hour	Min	Seconds
Alarm	02/28/2006			09:00		
Arrival	02/28/2006			09:01		
Controlled	02/28/2006			09:25		
Last Unit Cleared	02/28/2006			11:00		

E2 Shifts & Alarms

Local Option

Shift or platoon	Alarms	District
B	1	13

E3 Special Studies

Local Option

Special Study ID#	Special Study Value

F Actions Taken

11 - Extinguish
30 - Emergency medical services, other
82 - Notify other agencies

G1 Resources

[Y] Check this box and skip this section if an Apparatus or Personnel form is used.

	Apparatus	Personnel
Suppression	1	1
EMS	1	2
Other	1	1

[N] Check box if resource counts include aid received resources.

G2 Estimated Dollar Losses & Values

LOSSES: Required for all fires if known. Optional for non fires.

Property	$ 100000
Contents	$ 0

PRE-INCIDENT VALUE: Optional

Property	$ 100000000
Contents	$ 50000000

H1 Casualties

	Deaths	Injuries
Fire Service	0	0
Civilian	0	0

H2 Detector

U - Unknown

H3 Hazardous Materials Release

N - None

I Mixed Use Property

63 - Military use

J Property Use

631 - Defense, military installation

K1 Person/Entity Involved

Mr., Ms., Mrs. | First Name | MI | Last Name | Suffix:

Number	Prefix	Street or Highway	Street Type	Suffix
682		FITZHUGH	Boulevard	

Post Office Box	Apt./Suite/Room	City
		SMYRNA

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
TN	37167	TN NATIONAL GUARD	6153553787	

K2 Owner

Mr., Ms., Mrs. | First Name | MI | Last Name | Suffix:

Number	Prefix	Street or Highway	Street Type	Suffix
682		FITZHUGH	Boulevard	

Post Office Box	Apt./Suite/Room	City
		SMYRNA

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
TN	37167	TN NATIONAL GUARD	6153553787	

NFIRS - 2 Fire

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	02/28/2006	13	06-0794	0

B Property Details

B1 0 — Estimated number of residential living units in building of origin
Y — Not Residential

B2 — Number of buildings involved

B3 — Acres burned (outside fires)

C On-Site Materials or Products

On-site materials: 832 - Helicopters

On-site materials use: 4 - Repair or service

D Ignition

D1 09 - Egress/exit, other — Area of fire origin

D2 12 - Radiated, conducted hea — Heat source

D3 18 - Insulation within struc — Item first ignited

D4 41 - Plastic — Type of material first ignited

Confined to object of origin

E1 Cause of Ignition

2 - Unintentional — Cause of ignition

E2 Factors Contributing To Ignition

12 - Heat source too close to combustibles.

Factors contributing to ignition

E3 Human Factors Contributing To Ignition

6 - Multiple persons involved

Estimated age of person involved

Gender of person involved

F1 Equipment Involved In Ignition

NNN - None — Equipment Involved

Brand

Model

Serial #

Year

F2 Equipment Power

Equipment power source

F3 Equipment Portability

Equipment portability

G Fire Suppression Factors

510 - Automatic fire supression system problem.

Fire suppression factors

H1 Mobile Property Involved

N - None — Mobile property involved

H2 Mobile Property Type & Make

Mobile property type

Mobile property make

Mobile property model

Year

License plate number

State

VIN number

Local Use

NFIRS-3 Structure Fire

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	02/28/2006	13	06-0794	0

I1 Structure Type

1 - Enclosed building

Structure type

I2 Building Status

2 - In normal use

Building status

I3 Building Height

2 — Total number of stories at or above grade

0 — Total number of stories below grade

I4 Main Floor Size

13000 — Total square feet

OR

Length in feet BY Width in feet

J1 Fire Origin

1 — Story of fire origin

J2 Fire Spread

4 - Confined to buil

Fire spread

J3 Number of Stories Damaged By Flame

0	Number of stories w/ minor damage (1 to 24% flame damage)
1	Number of stories w/ significant damage (25 to 49% flame damage)
0	Number of stories w/ heavy damage (50 to 74% flame damage)
0	Number of stories w/ extreme damage (75 to 100% flame damage)

K Material Contributing Most To Flame Spread

K1 00 - Item First Ignited, Other

Item contributing most to flame spread

K2 41 - Plastic

Type of material contributing most to flame spread

L1 Presence of Detectors

U - Undetermined

Presence of detectors

L2 Detector Type

Detector type

L3 Detector Power Supply

Detector power supply

L4 Detector Operation

Detector operation

L5 Detector Effectiveness

Detector effectiveness

L6 Detector Failure Reason

Detector failure reason

M1 Presence of Automatic Extinguishment System

1 - Present

Presence of automatic extinguishment system (AES)

M2 Type of Automatic Extinguishment System

5 - Foam system

Type of automatic extinguishment system

M3 Automatic Extinguishment System Operation

1 - Operated and Effect

Automatic extinguishment system operation

M4 Number of Sprinkler Heads Operating

12

Number of sprinkler heads operating

M5 Automatic Extinguishment System Failure Reason

Automatic extinguishment system failure reason

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	02/28/2006	13	06-0794	0

NFIRS Remarks

Remarks

National Guard came into station and reported fire in bldg. 682. Airport Fire Units responded and were on scene in less than a minute. THe fire was next door to the ARFF station.

M Authorization

Officer in charge ID	Signature	Position or rank	Assignment	Month Day Year
1310	Joe Johnson	Chief	Airport	02/28/2006

Member making report ID	Signature	Position or rank	Assignment	Month Day Year
1310	Joe Johnson	Chief	Airport	02/28/2006

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure	NFIRS - 9 Apparatus or Resources
75012	TN	02/28/2006	13	06-0794	0	

B Apparatus or Resource (Use codes listed below)	Dates and Times (Month Day Year Hours/Mins)	Sent [X]	Number of People	Use (Check ONE box for each apparatus to indicate its main use at the incident.)	Actions Taken
1 ID 1301 Type 17	Dispatch Arrival Clear	X	1	1 - Suppress	
2 ID 1304 Type 11	Dispatch Arrival Clear	X	2	2 - EMS	
3 ID 1303 Type 11	Dispatch Arrival Clear	X	1	0 - Other	
4 ID Type	Dispatch Arrival Clear				
5 ID Type	Dispatch Arrival Clear				
6 ID Type	Dispatch Arrival Clear				
7 ID Type	Dispatch Arrival Clear				
8 ID Type	Dispatch Arrival Clear				
9 ID Type	Dispatch Arrival Clear				
10 ID Type	Dispatch Arrival Clear				
11 ID Type	Dispatch Arrival Clear				
12 ID Type	Dispatch Arrival Clear				
13 ID Type	Dispatch Arrival Clear				

A | FDID: 75012 | State: TN | Incident Date (MM DD YYYY): 02/28/2006 | Station: 13 | Incident Number: 06-0794 | Exposure: 0 | NFIRS - 10 Personnel

B Apparatus or Resource	Dates and Times (Month Day Year Hours/Mins)	Sent [X]	Number of People	Use (Check ONE box for each apparatus to indicate its main use at the incident.)	Actions Taken (List up to 4 actions for each apparatus and each personnel.)
1 ID: 1301 Type: 17	Dispatch / Arrival / Clear	Sent: X	1 #	1 - Suppressi	

Personnel ID	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken

2 ID: 1304 Type: 11	Dispatch / Arrival / Clear	Sent: X	2 #	2 - EMS	

Personnel ID	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken

3 ID: 1303 Type: 11	Dispatch / Arrival / Clear	Sent: X	1 #	0 - Other	

Personnel ID	Name	Rank or Grade	Attend [X]	Action Taken	Action Taken	Action Taken	Action Taken
1310	Johnson, Joe	Chief	X				
1315	Young, Matt	FF	X				
1340	Todd, Paula	FF	X				
1323	Rigsby, Bryan	FF	X				

NFIRS - 1 Basic

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	10/06/2017		0000004	0

B Location

Address Type	Number/Milepost	Prefix	Street or Highway	Street Type	Suffix
1 - Street addres	644		FITZHUGH	Boulevard	

Apt./Suite/Room	City	State	Zip Code
	SMYRNA	TN	37167

Census Tract:

Cross street or directions, as applicable:

C Incident Type

411 - Gasoline or other

D Aid Given or Received

Their FDID	Their State	Their Incident Number

1 - Mutual aid received

Type Aid Given or Recieved

E1 Dates & Times

Midnight is 0000

	Month Day Year	Hour Min Seconds
Alarm	10/06/2017	13:01
Arrival	10/06/2017	13:03
Controlled		
Last Unit Cleared	10/06/2017	18:30

E2 Shifts & Alarms

Local Option

Shift or platoon	Alarms	District
A	1	

E3 Special Studies

Local Option

Special Study ID#	Special Study Value

F Actions Taken

43 - Hazardous materials spill control and confinement
48 - Remove hazardous materials

Actions Taken

G1 Resources

[N] Check this box and skip this section if an Apparatus or Personnel form is used.

	Apparatus	Personnel
Suppression	1	2
EMS	0	0
Other	5	12

[Y] Check box if resource counts include aid received resources.

G2 Estimated Dollar Losses & Values

LOSSES: Required for all fires if known. Optional for non fires.

Property $

Contents $

PRE-INCIDENT VALUE: Optional

Property $

Contents $

H1 Casualties

	Deaths	Injuries
Fire Service	0	0
Civilian	0	0

H2 Detector

H3 Hazardous Materials Release

5 - Diesel fuel/fuel oil - vehicle f

I Mixed Use Property

NN - Not mixed use

J Property Use

974 - Aircraft loading area

K1 Person/Entity Involved

Mr., Ms., Mrs.	First Name	MI	Last Name	Suffix
	BRENDA		FIELDS	

Number	Prefix	Street or Highway	Street Type	Suffix
300		DOUG WARPOOLE	Road	

Post Office Box	Apt./Suite/Room	City
		SMYRNA

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
TN	37167	HOLLINGSHEAD AVIATION	6154593337	

K2 Owner

Mr., Ms., Mrs.	First Name	MI	Last Name	Suffix
	BRENDA		FIELDS	

Number	Prefix	Street or Highway	Street Type	Suffix
300		DOUG WARPOOLE	Road	

Post Office Box	Apt./Suite/Room	City
		SMYRNA

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
TN	37167	HOLLINGSHEAD AVIATION	6154593337	

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
75012	TN	10/06/2017		0000004	0

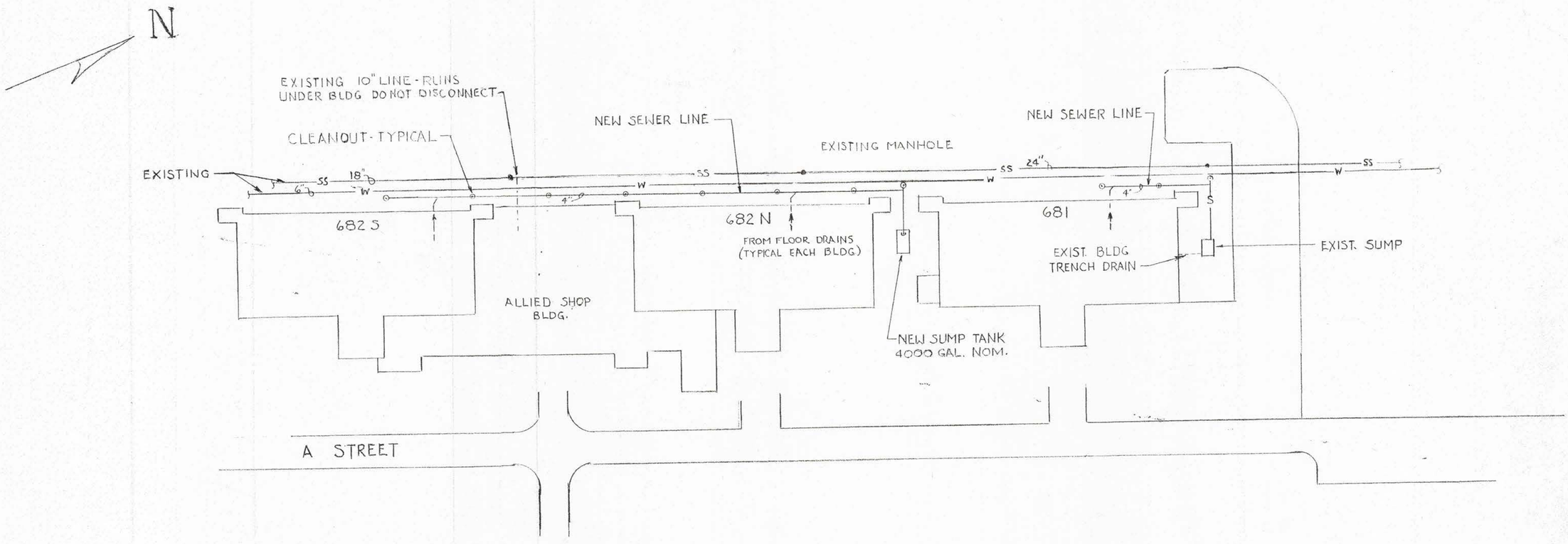
NFIRS Remarks

Remarks

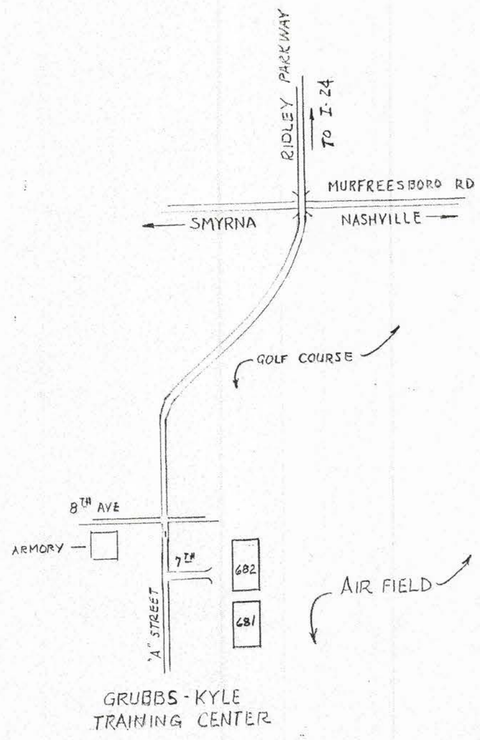
Received call via cellphone from Hollingshead Aviation on the airport, that there was a fuel leak on the east ramp near the control tower.
DPS Responded with F-2. On arrival found DC-9 cargo jet parked on the ramp near the control tower, with a fuel truck parked next to it, being attended by Hollingshead employee. A large unknown amount of Jet-A fuel was seen pouring from the outer portion of the right wing of the DC-9.
DPS F-2 immediately applied a blanket of AFFF Foam to the spill area to minimize fuel vapor.
No ignition hazards noted. The fuel leak was stopped within a minute of F-2 arrival, by the Hollingshead employee and flight crewmember on scene using mechanical switch settings on DC-9 aircraft and fuel truck.
DPS Chief Harris arrived and established Incident Command. Noted that fuel spill was spreading, and had reached the nearby storm drain and was entering the drain.
Chief Harris immediately requested assistance from Smyrna Fire Department and Rutherford County EMA of HAZMAT emergency due to the Jet-A fuel entering the storm drain.
Airport Operations and Maintenance responded and provided absorbency pads and oil dry to the area of the drain to prevent further spread there. Hollingshead management and personnel responded and began applying several bags of oil dry to the spill.
Smyrna Fire arrived and assisted with spill mitigation. Rutherford EMA arrived for assistance.
Distance in storm drain travel of the Jet-A of unknown quantity was approximately 125 feet. Noted distance with cones and dammed up any further travel using copious amount of oil dry to form a barrier.
Evergreen AES from Murfreesboro, TN was called by Chief via cellphone and responded.
Evergreen mitigated the storm drain spill using a vacuum truck and approximately 1125 gallons of water from DPS F-1 Truck to slowly flush drain from "upstream". Evergreen also provided oil dry to the fuel spill area.
Fuel spill area was approximately 75 x 50 feet. No further spread was noted.
Evergreen removed contaminated oil dry in barrels from the scene and used street sweeper equipment to further eliminate spill.
Hazard was mitigated by Evergreen AES. All units returned to service.

M Authorization

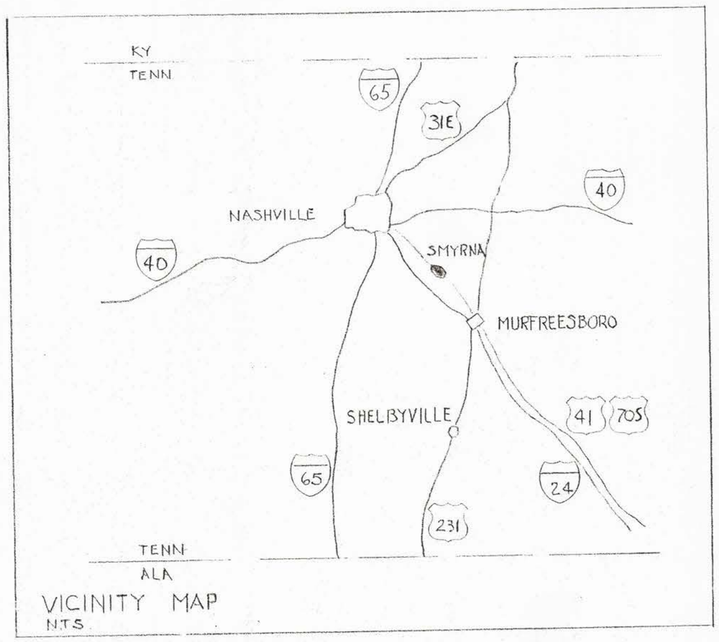
	Signature	Position or rank	Assignment	Month Day Year
Officer in charge ID	JEFF HARRIS	CHIEF		
Member making report ID	JEFF HARRIS	CHIEF		



PLAN VIEW
1" = 50'



LOCATION MAP
NO SCALE



VICINITY MAP
N.T.S.

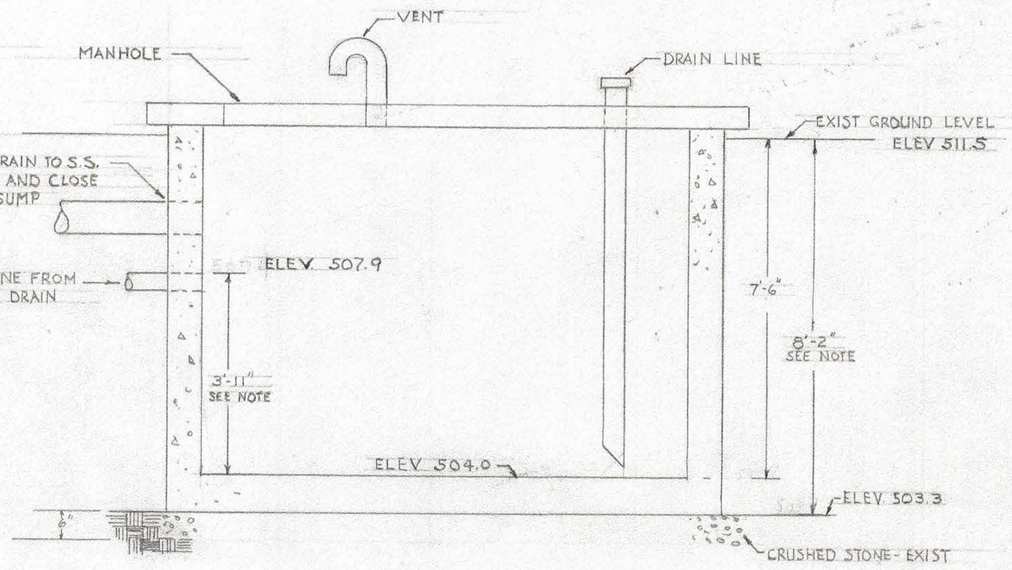
NOTE:
BLDG DRAINS EXIT APPROXIMATEL PERPENDICULAR TO FLOOR DRAINS IN NORTH END OF BLDGS. 681 & 682S. APPROX. CENTER BLDG 682N - INLINE WITH CLEANOUT IN FLOOR.

MILITARY DEPARTMENT OF TENNESSEE
HOUSTON BARRACKS 3100 DRIVE NASHVILLE TENNESSEE

SCALE:	APPROVED BY	DRAWN BY AM S
DATE:		

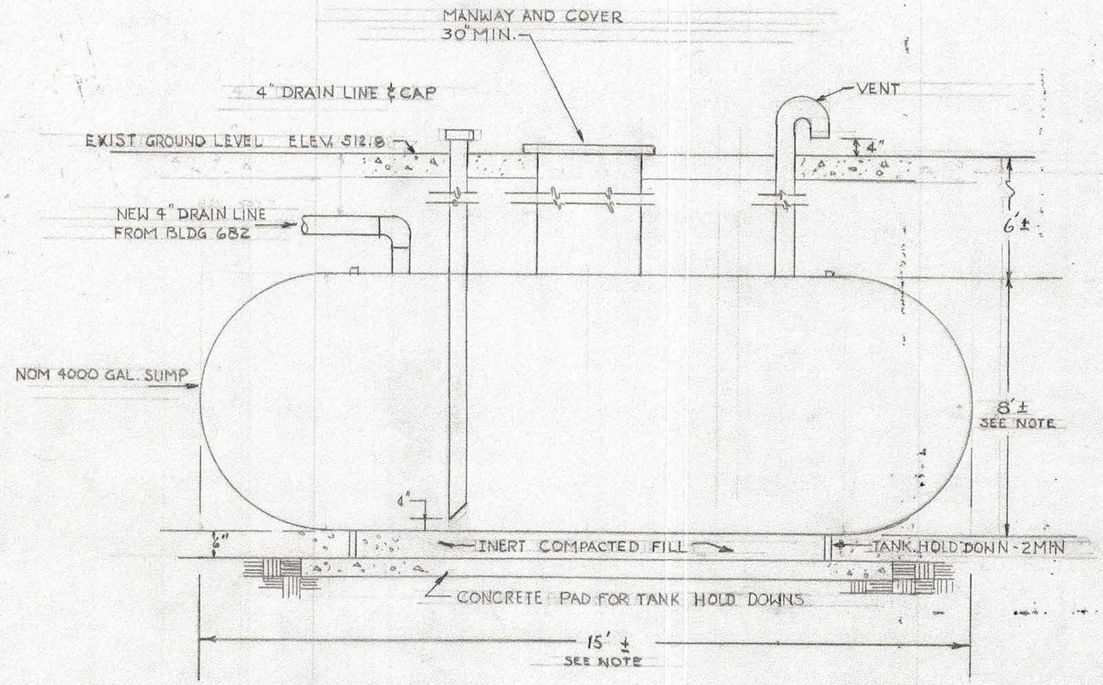
BLDG 681 & 682 FLOOR DRAIN ALTERATIONS
GRUBBS-KYLE TRAINING CTR. SMYRNA TENNESSEE

PLAN	DRAWING NUMBER 1 OF 2



SECTION - EXISTING SUMP

½" = 1'-0"



SECTION - NEW SUMP TANK

½" = 1'-0"

NOTE: DIMENSIONS AND ELEVATIONS ARE ONLY APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAIN LINE AND NEW SUMP TANK ELEVATIONS AFTER DETERMINING EXISTING FLOOR DRAIN ELEVATIONS FOR EACH BUILDING.

ALFRED M. SMITH
REGISTERED ENGINEER
TENNESSEE

MILITARY DEPARTMENT OF TENNESSEE
HOUSTON BARRACKS SIDCO DRIVE NASHVILLE TENNESSEE

SCALE:	APPROVED BY	DRAWN BY A.M.S.
DATE:		

BLDG 681 & 682 FLOOR DRAIN ALTERATIONS
GRUBBS-KYLE TRAINING CTR. SMYRNA TENNESSEE

SECTIONS AND DETAILS — DRAWING NUMBER 2 OF 2

VTS Smyrna

Smyrna

Smyrna, TN 37167

Inquiry Number: 5349421.3

June 29, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

06/29/18

Site Name:	Client Name:
VTS Smyrna	AECOM
Smyrna	12120 Shamrock Plaza
Smyrna, TN 37167	Omaha, NE 68154
EDR Inquiry # 5349421.3	Contact: Jacquelyn Harrington

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AECOM were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 4731-4D34-B452

PO # NA

Project 60552172.0005-TN-PA-NA

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 4731-4D34-B452

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

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VTS Smyrna
Smyrna
Smyrna, TN 37167

Inquiry Number: 5349421.2s
June 29, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

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

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 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

SMYRNA
SMYRNA, TN 37167

COORDINATES

Latitude (North):	36.0008520 - 36° 0' 3.06''
Longitude (West):	86.5095680 - 86° 30' 34.44''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	544202.2
UTM Y (Meters):	3983953.8
Elevation:	519 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5943388 LA VERGNE, TN
Version Date:	2013
Northeast Map:	5943378 GLADEVILLE, TN
Version Date:	2013
Southeast Map:	5943264 WALTERHILL, TN
Version Date:	2013
Southwest Map:	5943250 SMYRNA, TN
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140617, 20140711
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
SMYRNA
SMYRNA, TN 37167

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
Reg	J. PERCY PRIEST LAKE		DOD	Same	1 ft.
A1	ANDERSON AIRPORT EXX	9 & B ST	EDR Hist Auto	Lower	1 ft.
A2	SANFORD SPAN-JOIST I	BLDG 435 9TH STREET	RCRA NonGen / NLR	Lower	1 ft.
A3	EXXON AIRPORT SITE	BLDG. 525 NINTH AVEN	SRP	Lower	1 ft.
4	SKEET RANGE		UXO	Lower	1 ft.
A5	FIBERGLASS SPECIALTI	9TH AVE BLDG 570	RCRA NonGen / NLR	Lower	1 ft.
6	DEPT OF HUMAN SERVIC	NINTH AVE & C ST	LUST	Lower	30, 0.006, NE
B7	RE RUN OF TENNESSEE,	783 14TH AVENUE AND	SWRCY	Lower	138, 0.026, ESE
B8	IMPERIAL FOODS INC	14TH AVE & D ST	LUST	Lower	215, 0.041, ESE
B9	IMPERIAL FOODS INC	14TH AVENUE AND D ST	UST	Lower	215, 0.041, ESE
B10	IMPERIAL FOODS INC	14TH AVENUE AND D ST	HIST UST	Lower	215, 0.041, ESE
11	CMC INC DBA INTERNAT	PO BOX 157	RCRA NonGen / NLR	Lower	254, 0.048, East
C12	CUMBERLAND FREIGHT L	ONE SWAN DRIVE	LUST, UST	Lower	538, 0.102, ENE
C13	CUMBERLAND SWAN INC.	ONE SWAN DRIVE	LUST TRUST	Lower	538, 0.102, ENE
C14	CUMBERLAND FREIGHT L	ONE SWAN DR	LUST	Lower	538, 0.102, ENE
C15	CUMBERLAND FREIGHT L	ONE SWAN DRIVE	HIST UST	Lower	538, 0.102, ENE
C16	VI - JON, INC	ONE SWAN DRIVE	RCRA-SQG	Lower	538, 0.102, ENE
C17	BERRY PLASTICS	1B SWAN DRIVE	RCRA-CESQG	Lower	632, 0.120, ENE
C18	CUMBERLAND SWAN	1 SWAN DRIVE	SRP	Lower	681, 0.129, ENE
19	MI METALS INC SMYRNA	704 12TH AVE	RCRA-LQG, TRIS, US AIRS, FINDS, ECHO	Lower	779, 0.148, ENE
D20	CROSS CONTINENT AIRC	634 A ST	SRP	Lower	908, 0.172, North
D21	SMYRNA/RUTHERFORD CO	634-A ST.	RCRA NonGen / NLR	Lower	908, 0.172, North
22	CHEMICAL RECOVERY SR	733 14TH AVE	INST CONTROL, VCP	Lower	932, 0.177, East
D23	TENNESSEE TECHNICAL	634 FITZHUGH BLVD	RCRA NonGen / NLR, FINDS, ECHO	Lower	937, 0.177, North
D24	SMYRNA/RUTHERFORD CO	660 FITZHUGH BLVD	RCRA-CESQG, FINDS, ECHO	Lower	937, 0.177, North
25	SCREW MACHINE PRODUC	727 "F" ST. (AIRPORT	RCRA NonGen / NLR	Lower	1040, 0.197, East
26	TN REHABILITATION CE	460 9TH STREET	LUST TRUST	Lower	1203, 0.228, NE
27	RYDER TRUCK RENTAL I	250 WEAKLEY LN	LUST	Higher	2512, 0.476, East

EXECUTIVE SUMMARY

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:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

SHWS ---------- List of Inactive Hazardous Substance Sites

EXECUTIVE SUMMARY

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Disposal Facilities

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
HIST_LUST CO ---------- Leaking Underground Storage Tanks Sites

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
AST ---------- Aboveground Storage Tanks
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS ---------- Engineering Control Sites

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---------- Superfund VOAP Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
CDL ---------- Registry of Contaminated Properties
PRIORITYCLEANERS ---------- DCERP Remediation Sites Listing
DEL SHWS ---------- Deleted State Hazardous Waste Sites
US CDL ---------- National Clandestine Laboratory Register

Local Land Records

LIENS ---------- Liens Information
LIENS 2 ---------- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System

SPILLS ---------- State Spills

Other Ascertainable Records

FUDS ---------- Formerly Used Defense Sites
SCRD DRYCLEANERS ---------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---------- Financial Assurance Information
EPA WATCH LIST ---------- EPA WATCH LIST
2020 COR ACTION ---------- 2020 Corrective Action Program List
TSCA ---------- Toxic Substances Control Act
TRIS ---------- Toxic Chemical Release Inventory System
SSTS ---------- Section 7 Tracking Systems
ROD ---------- Records Of Decision
RMP ---------- Risk Management Plans
RAATS ---------- RCRA Administrative Action Tracking System
PRP ---------- Potentially Responsible Parties
PADS ---------- PCB Activity Database System
ICIS ---------- Integrated Compliance Information System
FTTS ---------- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---------- Material Licensing Tracking System
COAL ASH DOE ---------- Steam-Electric Plant Operation Data
COAL ASH EPA ---------- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---------- PCB Transformer Registration Database
RADINFO ---------- Radiation Information Database
HIST FTTS ---------- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---------- Incident and Accident Data
CONSENT ---------- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---------- Indian Reservations
FUSRAP ---------- Formerly Utilized Sites Remedial Action Program
UMTRA ---------- Uranium Mill Tailings Sites
LEAD SMELTERS ---------- Lead Smelter Sites
US AIRS ---------- Aerometric Information Retrieval System Facility Subsystem
US MINES ---------- Mines Master Index File
ABANDONED MINES ---------- Abandoned Mines
FINDS ---------- Facility Index System/Facility Registry System
DOCKET HWC ---------- Hazardous Waste Compliance Docket Listing
ECHO ---------- Enforcement & Compliance History Information
FUELS PROGRAM ---------- EPA Fuels Program Registered Listing
AIRS ---------- Listing of Permitted Sources
DRYCLEANERS ---------- Registered Facilities List
LEAD ---------- Lead Safe Housing Registry
NPDES ---------- Permitted Facility Listing
VAPOR ---------- Vapor Intrusion

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---------- EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner ---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---------- Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

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.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-LQG: 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. 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). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MI METALS INC SMYRNA	***704 12TH AVE***	***ENE 1/8 - 1/4 (0.148 mi.)***	***19***	***62***

RCRA-SQG: 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. 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). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VI - JON, INC	ONE SWAN DRIVE	ENE 0 - 1/8 (0.102 mi.)	C16	26

RCRA-CESQG: 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. 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.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/01/2018 has revealed that there are 2 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BERRY PLASTICS	1B SWAN DRIVE	ENE 0 - 1/8 (0.120 mi.)	C17	60
SMYRNA/RUTHERFORD CO	***660 FITZHUGH BLVD***	***N 1/8 - 1/4 (0.177 mi.)***	***D24***	***120***

State and tribal leaking storage tank lists

LUST: A listing of leaking underground storage tank site locations.

A review of the LUST list, as provided by EDR, and dated 05/14/2018 has revealed that there are 5 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RYDER TRUCK RENTAL I Facility Id: 5750357 Current Status: 1a Completed Tank Closure	250 WEAKLEY LN	E 1/4 - 1/2 (0.476 mi.)	27	123

Lower Elevation	Address	Direction / Distance	Map ID	Page
DEPT OF HUMAN SERVIC Facility Id: 750398 Current Status: 8 Case Closed	NINTH AVE & C ST	NE 0 - 1/8 (0.006 mi.)	6	11
IMPERIAL FOODS INC Facility Id: 5750338 Current Status: 1a Completed Tank Closure	14TH AVE & D ST	ESE 0 - 1/8 (0.041 mi.)	B8	12
CUMBERLAND FREIGHT L Facility Id: 5750093 Current Status: 1a Completed Tank Closure	***ONE SWAN DRIVE***	***ENE 0 - 1/8 (0.102 mi.)***	***C12***	***21***
CUMBERLAND FREIGHT L Facility Id: 5750057 Current Status: 8 Case Closed	ONE SWAN DR	ENE 0 - 1/8 (0.102 mi.)	C14	24

LUST TRUST: This list contains information on sites that had accidental releases of petroleum and are eligible for reimbursement from the TN Petroleum UST Fund.

A review of the LUST TRUST list, as provided by EDR, and dated 05/14/2018 has revealed that there are 2 LUST TRUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CUMBERLAND SWAN INC.	ONE SWAN DRIVE	ENE 0 - 1/8 (0.102 mi.)	C13	23

Facility Status: Closed Facility Id: 5750093				
TN REHABILITATION CE Facility Status: N/A Facility Id: 0750398	460 9TH STREET	NE 1/8 - 1/4 (0.228 mi.)	26	123

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environment & Conservation's Facility and Tank Report.

A review of the UST list, as provided by EDR, and dated 05/14/2018 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IMPERIAL FOODS INC Compartment Status: Permanently Out of Use Facility Id: 5750338	14TH AVENUE AND D ST	ESE 0 - 1/8 (0.041 mi.)	B9	12
CUMBERLAND FREIGHT L Compartment Status: Permanently Out of Use Facility Id: 5750093	***ONE SWAN DRIVE***	***ENE 0 - 1/8 (0.102 mi.)***	***C12***	***21***

State and tribal institutional control / engineering control registries

INST CONTROL: Sites that have institutional controls.

A review of the INST CONTROL list, as provided by EDR, and dated 04/05/2018 has revealed that there is 1 INST CONTROL site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CHEMICAL RECOVERY SR Facility Id: 75501	***733 14TH AVE***	***E 1/8 - 1/4 (0.177 mi.)***	***22***	***117***

State and tribal voluntary cleanup sites

VCP: The Voluntary Cleanup Oversight and Assistance Program (VOAP) offers people the opportunity to work proactively with state government to address necessary cleanup of a property to return it to productive use. In return for their efforts, participants can receive a No Further Action letter and a release of liability for areas where investigation and cleanup is conducted The program is open to everyone with an interest in addressing contamination at a site.

A review of the VCP list, as provided by EDR, and dated 12/18/2017 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CHEMICAL RECOVERY SR	***733 14TH AVE***	***E 1/8 - 1/4 (0.177 mi.)***	***22***	***117***

Facility Status: Closed
Facility Id: 75501

SRP: The State Remediation Program (SRP) was established in 1994 within the Division of Solid Waste Management for the purpose of providing owners, prospective purchasers and other interested parties the means to voluntarily investigate, clean up or monitor contaminated sites not regulated under RCRA, CERCLA or the Tennessee Division of Underground Tanks (UST).

A review of the SRP list, as provided by EDR, and dated 12/18/2017 has revealed that there are 3 SRP sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EXXON AIRPORT SITE State Remediation Program Site Number: SRS750307 Active?: Closed	BLDG. 525 NINTH AVEN	0 - 1/8 (0.000 mi.)	A3	9
CUMBERLAND SWAN State Remediation Program Site Number: SRS750128 Active?: Closed	1 SWAN DRIVE	ENE 1/8 - 1/4 (0.129 mi.)	C18	61
CROSS CONTINENT AIRC State Remediation Program Site Number: SRS750221 Active?: Closed	634 A ST	N 1/8 - 1/4 (0.172 mi.)	D20	101

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facility locations.

A review of the SWRCY list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RE RUN OF TENNESSEE,	783 14TH AVENUE AND	ESE 0 - 1/8 (0.026 mi.)	B7	11

Local Lists of Registered Storage Tanks

HIST UST: This database is no longer updated by the agency. It contains records and detail fields that the current UST database does not.

A review of the HIST UST list, as provided by EDR, and dated 05/14/2018 has revealed that there are 2 HIST UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IMPERIAL FOODS INC Tank Status: Permanently Out of Use	14TH AVENUE AND D ST	ESE 0 - 1/8 (0.041 mi.)	B10	16

Facility Id: 5-750338				
CUMBERLAND FREIGHT L Tank Status: Permanently Out of Use Facility Id: 5-750093	ONE SWAN DRIVE	ENE 0 - 1/8 (0.102 mi.)	C15	24

Other Ascertainable Records

RCRA NonGen / NLR: 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. 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). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/01/2018 has revealed that there are 6 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SANFORD SPAN-JOIST I	BLDG 435 9TH STREET	0 - 1/8 (0.000 mi.)	A2	8
FIBERGLASS SPECIALTI	9TH AVE BLDG 570	0 - 1/8 (0.000 mi.)	A5	10
CMC INC DBA INTERNAT	PO BOX 157	E 0 - 1/8 (0.048 mi.)	11	20
SMYRNA/RUTHERFORD CO	634-A ST.	N 1/8 - 1/4 (0.172 mi.)	D21	101
TENNESSEE TECHNICAL	***634 FITZHUGH BLVD***	***N 1/8 - 1/4 (0.177 mi.)***	***D23***	***118***
SCREW MACHINE PRODUC	727 "F" ST. (AIRPORT	E 1/8 - 1/4 (0.197 mi.)	25	122

DOD: 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.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
J. PERCY PRIEST LAKE		0 - 1/8 (0.000 mi.)	0	8

UXO: A listing of unexploded ordnance site locations

A review of the UXO list, as provided by EDR, and dated 09/30/2016 has revealed that there is 1 UXO site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SKEET RANGE		0 - 1/8 (0.000 mi.)	4	9

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

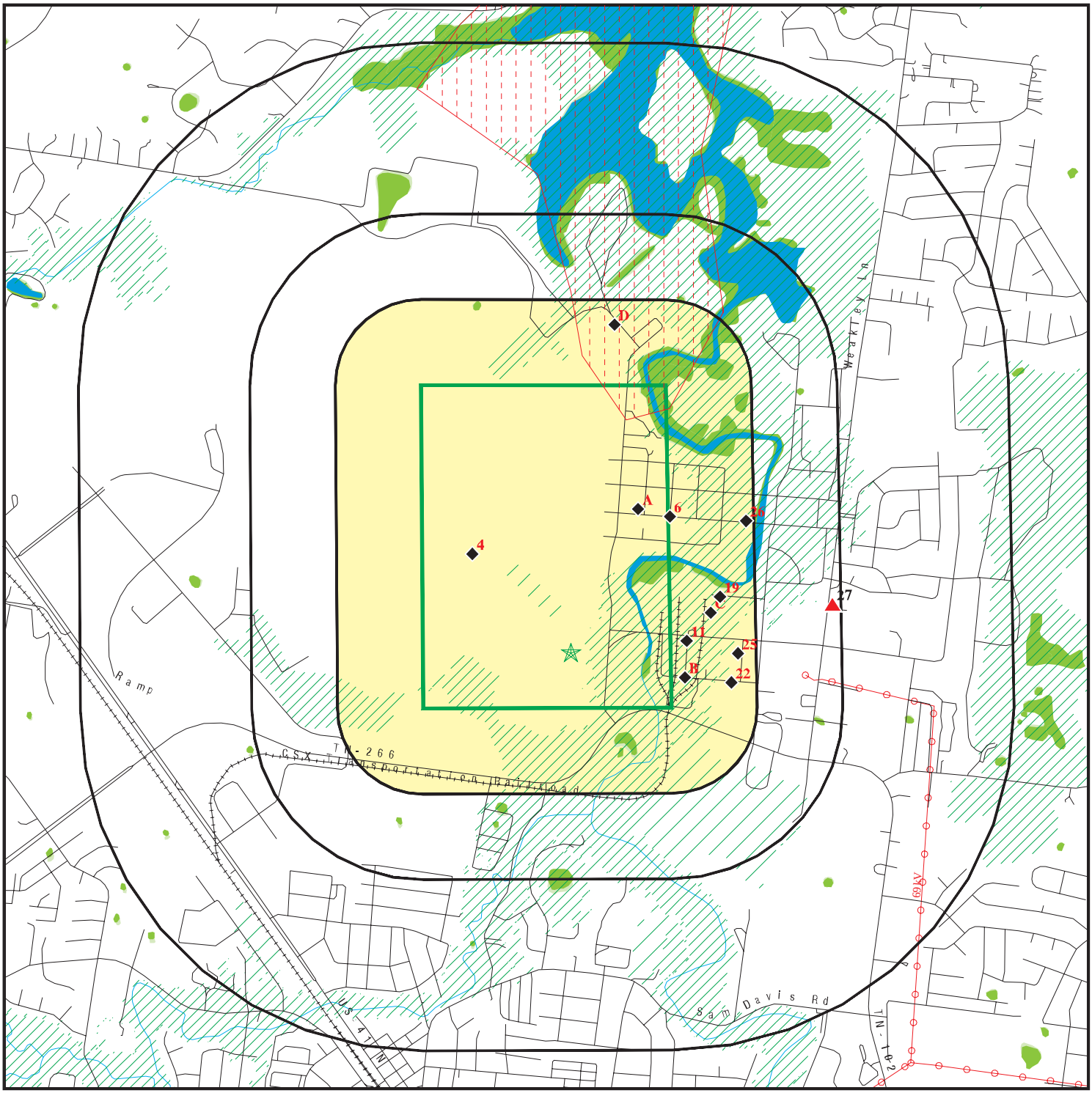
Lower Elevation	Address	Direction / Distance	Map ID	Page
ANDERSON AIRPORT EXX	9 & B ST	0 - 1/8 (0.000 mi.)	A1	8

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 28 records.

Site Name	Database(s)
TOWN OF SMYRNA LIFT STATION #4	HIST UST
TOWN OF SMYRNA LIFT STATION #3	HIST UST
SMYRNA AIRPORT MQY	HIST UST
SMYRNA AIRPORT MQY	HIST_LUST CO
JOHN P SAAD/SMYRNA AIRPORT SITE	SEMS-ARCHIVE
MILLS DRUM SITE	SEMS-ARCHIVE
TOWN OF SMYRNA LIFT STA 4	LUST
SMYRNA GOLF COURSE	LUST, UST
TOWN OF SMYRNA LIFT STA 3	LUST
TOWN OF SMYRNA LIFT STATION #4	UST
TOWN OF SMYRNA LIFT STATION #3	UST
SMYRNA AIRPORT MQY	UST
SMYRNA LAND COMPANY LTD	RCRA NonGen / NLR
SMYRNA LAND COMPANY LTD	FINDS, ECHO
KWIK SAK #18	LUST TRUST
SMYRNA FIRING RANGE	VCP
SMYRNA EXXON AUTOMOTIVE	EDR Hist Auto
MARKET PLACE AT SMYRNA (FKA COLONI	NPDES
MARKET PLACE AT SMYRNA (FKA COLONI	NPDES
MARKET PLACE AT SMYRNA (FKA COLONI	NPDES
THORNTON'S CONVENIENCE MARKET - SM	NPDES
THE SUMMIT AT SMYRNA	NPDES
TOWN OF SMYRNA 2009 REPURIFIED WAT	NPDES
THE HOME DEPOT - SMYRNA	NPDES
THE HOME DEPOT - SMYRNA	NPDES
TOWN OF SMYRNA LIFT STA 4	RGA LUST
SMYRNA GOLF COURSE	RGA LUST
TOWN OF SMYRNA LIFT STA 3	RGA LUST

OVERVIEW MAP - 5349421.2S



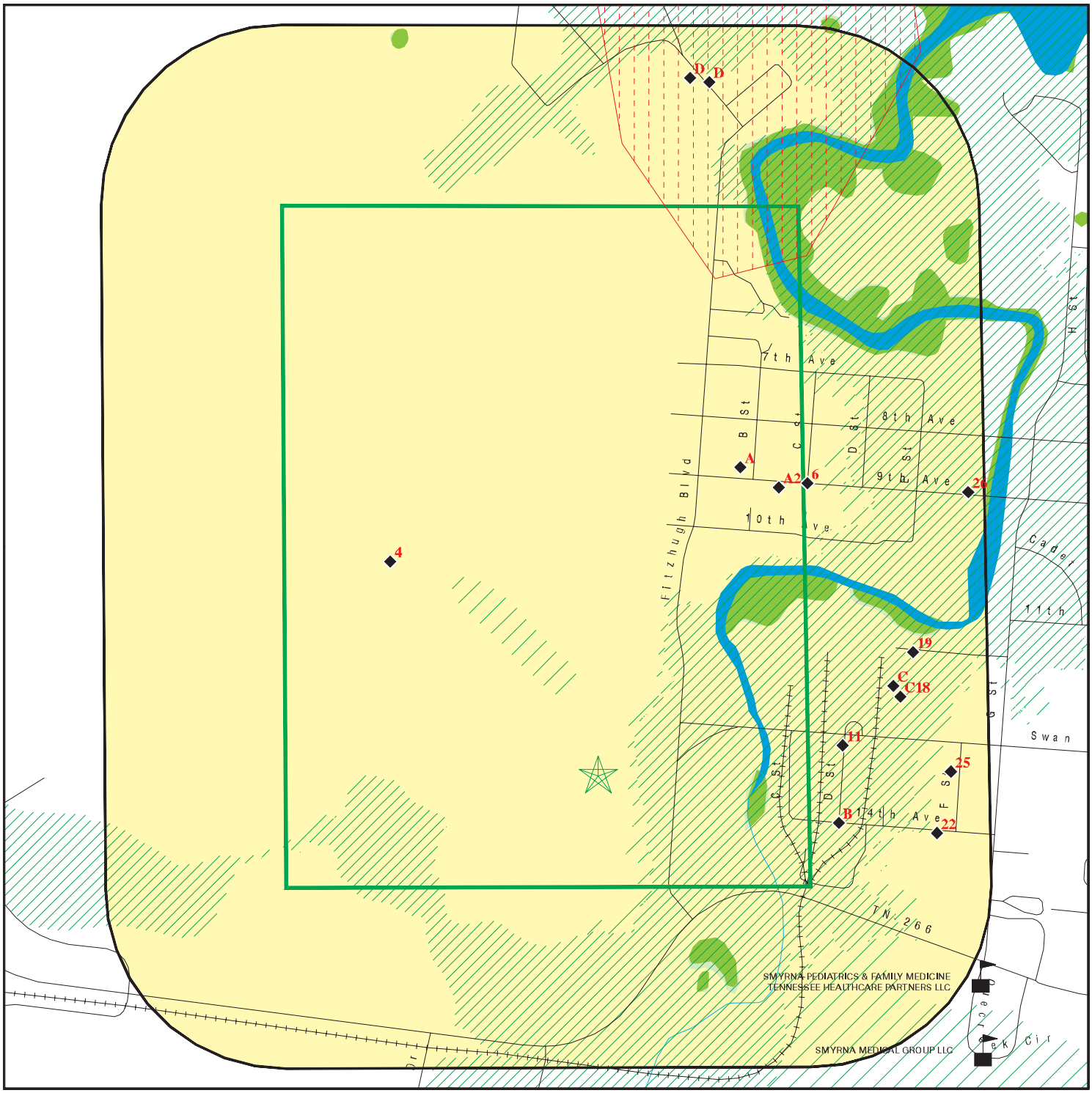
0 1/4 1/2 1 Miles

- 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
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area

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: VTS Smyrna ADDRESS: Smyrna Smyrna TN 37167 LAT/LONG: 36.000852 / 86.509568	CLIENT: AECOM CONTACT: Jacquelyn Harrington INQUIRY #: 5349421.2s DATE: June 29, 2018 5:08 pm

DETAIL MAP - 5349421.2S



- 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
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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: VTS Smyrna ADDRESS: Smyrna Smyrna TN 37167 LAT/LONG: 36.000852 / 86.509568	CLIENT: AECOM CONTACT: Jacquelyn Harrington INQUIRY #: 5349421.2s DATE: June 29, 2018 5:10 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	1	NR	NR	NR	1
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-CESQG	0.250		1	1	NR	NR	NR	2
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	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
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		4	0	1	NR	NR	5
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		1	1	0	NR	NR	2
HIST_LUST CO	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		2	0	NR	NR	NR	2
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	1	0	NR	NR	1
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	1	0	NR	NR	1
SRP	0.500		1	2	0	NR	NR	3
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		1	0	0	NR	NR	1
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
PRIORITYCLEANERS	0.500		0	0	0	NR	NR	0
DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
HIST UST	0.250		2	0	NR	NR	NR	2
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		3	3	NR	NR	NR	6
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		1	0	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		1	0	0	0	NR	1
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
VAPOR	0.500		0	0	0	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	19	10	1	0	0	30

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

DOD **J. PERCY PRIEST LAKE** **DOD** **CUSA137979**
Region **N/A**

J. PERCY PRIEST LAKE (County), TN

< 1/8
1 ft.

DOD:
Feature 1: Army Corps of Engineers DOD
Feature 2: Not reported
Feature 3: Not reported
URL: Not reported
Name 1: J. Percy Priest Lake
Name 2: Not reported
Name 3: Not reported
State: TN
DOD Site: Yes
Tile name: TNDAVIDSON

A1 **ANDERSON AIRPORT EXXON** **EDR Hist Auto** **1021108720**
9 & B ST **N/A**
< 1/8 **SMYRNA, TN 37167**
1 ft.

Site 1 of 4 in cluster A

Relative: EDR Hist Auto
Lower

Actual:
512 ft.

Year:	Name:	Type:
1989	ANDERSON AIRPORT EXXON	Gasoline Service Stations
1990	ANDERSON AIRPORT EXXON	Gasoline Service Stations
1991	ANDERSON AIRPORT EXXON	Gasoline Service Stations
1992	ANDERSON AIRPORT EXXON	Gasoline Service Stations
1993	ANDERSON AIRPORT EXXON	Gasoline Service Stations
1994	ANDERSON AIRPORT EXXON	Gasoline Service Stations

A2 **SANFORD SPAN-JOIST INC OF TENN** **RCRA NonGen / NLR** **1000917630**
BLDG 435 9TH STREET **TND069096014**
< 1/8 **SMYRNA, TN 37167**
1 ft.

Site 2 of 4 in cluster A

Relative: RCRA NonGen / NLR:
Lower Date form received by agency: 11/19/1980

Actual:
512 ft.

Facility name: SANFORD SPAN-JOIST INC OF TENN
Facility address: BLDG 435 9TH STREET
SMYRNA, TN 37167
EPA ID: TND069096014
Contact: SANFORD SPAN-JOIST
Contact address: BLDG 435 9TH STREET
SMYRNA, TN 37167
Contact country: US
Contact telephone: 615-555-1212
Contact email: Not reported
EPA Region: 04
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

SANFORD SPAN-JOIST INC OF TENN (Continued) **1000917630**

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 08/08/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

A3 **EXXON AIRPORT SITE** **SRP** **S117735059**
BLDG. 525 NINTH AVENUE **N/A**
< 1/8 **SMYRNA, TN**
1 ft.

Site 3 of 4 in cluster A

Relative: SRP:
Lower
Site Control Number: Not reported
Actual: State Remediation Program Site Number: SRS750307
513 ft. Project Manager Initials: Not reported
Field Office: Not reported
Contaminants Of Concern: Not reported
Active?: Closed
Number Of Days In System: Not reported
Program: Voluntary
Subprogram: SRP
Latitude: 36.006998
Longitude: -86.506062
Acres: Not reported

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4 **SKEET RANGE** **UXO** **1023964247**
N/A
< 1/8 **SMYRNA, TN**
1 ft.

UXO:
Relative: DoD Component: FUDS
Lower Installation Name: SEWART AFB
Actual: Facility Address 2: Not reported
510 ft. Site ID: 19OEW

SKEET RANGE (Continued) **1023964247**

Site Type: Explosive Ordnance Disposal Area
Latitude: 36.005100
Longitude: -86.514702

A5 **FIBERGLASS SPECIALTIES LTD INC** **RCRA NonGen / NLR** **1000914633**
9TH AVE BLDG 570 **TND000423525**
< 1/8 **SMYRNA, TN 37167**
1 ft.

Site 4 of 4 in cluster A

Relative: Lower
Actual: 512 ft.

RCRA NonGen / NLR:
Date form received by agency: 11/19/1980
Facility name: FIBERGLASS SPECIALTIES LTD INC
Facility address: 9TH AVE BLDG 570
SMYRNA, TN 37167
EPA ID: TND000423525
Contact: FIBERGLASS SPECIALTIES
Contact address: 9TH AVE BLDG 570
SMYRNA, TN 37167
Contact country: US
Contact telephone: 615-555-1212
Contact email: Not reported
EPA Region: 04
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 03/08/1984
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

6
NE
< 1/8
0.006 mi.
30 ft.

DEPT OF HUMAN SERVICES
NINTH AVE & C ST
SMYRNA, TN 37167

LUST **S117040220**
N/A

Relative:
Lower

Actual:
511 ft.

LUST:

Region:	STATE
Facility Id:	750398
Current Status:	8 Case Closed
Product Released:	Not reported
Discovery Date:	OCT-01-1996
How Discovered:	2 Release Detection
Cause:	8 Other
Case Manager:	Annal Rollins
Case Description:	Not reported
Section:	FO
Priority:	Not reported
Company Name:	TN F&A
Owner Address:	Not reported
Owner City:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Telephone:	Not reported
Owner Address 2:	Not reported
fadd2:	Not reported
Site Number:	1
Contact:	Not reported
Cac Contact:	Not reported
Contact Title:	Not reported
Consultant Address 1:	Not reported
Consultant Address 2:	Not reported
Contact City:	Not reported
Contact State:	Not reported
Contact Phone:	Not reported
Contact zip:	Not reported
Cac Type:	Not reported

B7
ESE
< 1/8
0.026 mi.
138 ft.

RE RUN OF TENNESSEE, LLC
783 14TH AVENUE AND D STREET
SMYRNA, TN 37167

Site 1 of 4 in cluster B

SWRCY **S121449572**
N/A

Relative:
Lower

Actual:
506 ft.

SWRCY:

Facility Id:	SWP750001416
Contact Name:	Not reported
Mailing Address:	Not reported
Contact Phone:	Not reported
Counties Service:	Not reported
Business Type:	Not reported
Operation Radius:	Not reported
Provides Transportation:	Not reported
URL:	Not reported
Site Id:	61021
Permit Number:	SWP750001416
Permit Id:	1501
Permittee:	Re Run of Tennessee, LLC
Permit Type:	PROCESSING
Status:	Active

RE RUN OF TENNESSEE, LLC (Continued) **S121449572**

Issuance Date:	JAN-07-2011
Activity:	Non haz waste from Nissan Plant will be recycled.
Application Date:	DEC-31-2008
Latitude:	35.986944
Longitude:	-86.516111
Comments:	Not reported
Registered Materials:	Not reported

B8 **IMPERIAL FOODS INC** **LUST** **S107463689**
ESE **14TH AVE & D ST** **N/A**
< 1/8 **SMYRNA, TN 37167**
0.041 mi.
215 ft. **Site 2 of 4 in cluster B**

Relative: LUST:
Lower

Actual: Region:	STATE
507 ft. Facility Id:	5750338
Current Status:	1a Completed Tank Closure
Product Released:	Not reported
Discovery Date:	Not reported
How Discovered:	Not reported
Cause:	Not reported
Case Manager:	Annal Rollins
Case Description:	Not reported
Section:	FO
Priority:	Not reported
Company Name:	IMPERIAL FOODS INC
Owner Address:	14TH AVE & D STREET
Owner City:	SMYRNA
Owner State:	TN
Owner Zip Code:	37167
Owner Telephone:	(615) 459-2519
Owner Address 2:	Not reported
fadd2:	Not reported
Site Number:	1
Contact:	Not reported
Cac Contact:	Not reported
Contact Title:	Not reported
Consultant Address 1:	Not reported
Consultant Address 2:	Not reported
Contact City:	Not reported
Contact State:	Not reported
Contact Phone:	Not reported
Contact zip:	Not reported
Cac Type:	Not reported

B9 **IMPERIAL FOODS INC** **UST** **U004170017**
ESE **14TH AVENUE AND D ST.** **N/A**
< 1/8 **SMYRNA, TN 37167**
0.041 mi.
215 ft. **Site 3 of 4 in cluster B**

Relative: UST:
Lower

Actual: Facility ID:	5750338
507 ft. Facility Description:	Truck/Transporter
Owner ID:	306014

IMPERIAL FOODS INC (Continued) **U004170017**

Owner Name:	IMPERIAL FOODS INC
Owner Address:	783 D ST.
Owner Address 2:	Not reported
Owner City,St,Zip:	SMYRNA, TN 37167
Owner Description:	Private
Tank Number:	1
Tank ID:	33344
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33819
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	500
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Not Listed
Date Installed:	JUN-14-1959
Date Last Used:	JAN-01-1984
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	Not reported
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported
Tank Number:	2
Tank ID:	33345
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33820
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	1000
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Not Listed
Date Installed:	JUN-14-1959
Date Last Used:	JAN-01-1984
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel

IMPERIAL FOODS INC (Continued) **U004170017**

Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	Not reported
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

Tank Number:	3
Tank ID:	33346
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33821
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	2000
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Not Listed
Date Installed:	JUN-14-1959
Date Last Used:	JAN-01-1984
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	Not reported
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

Tank Number:	4
Tank ID:	33347
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33822
Compartment Letter:	A
Compartment Status:	Permanently Out of Use

IMPERIAL FOODS INC (Continued) **U004170017**

Compartment Capacity:	5000
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Gasoline
Date Installed:	JUN-14-1982
Date Last Used:	AUG-04-1997
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	FEB-08-1999
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

Tank Number:	5
Tank ID:	33348
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33823
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	10000
Small Delivery:	Not reported
Tank RD:	Tank_Tightness InvControl
Substance Description:	Diesel
Date Installed:	JUN-14-1982
Date Last Used:	DEC-22-1998
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	FEB-08-1999
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

IMPERIAL FOODS INC (Continued) **U004170017**

Tank Number:	6
Tank ID:	33349
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	33824
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	10000
Small Delivery:	Not reported
Tank RD:	Tank_Tightness InvControl
Substance Description:	Diesel
Date Installed:	JUN-14-1982
Date Last Used:	DEC-22-1998
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	FEB-08-1999
Pipe Material Desc:	Galvanized Steel
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

B10 **IMPERIAL FOODS INC** **HIST UST** **U001306801**
ESE **14TH AVENUE AND D ST.** **N/A**
< 1/8 **SMYRNA, TN 37167**
0.041 mi.
215 ft. **Site 4 of 4 in cluster B**

Relative: HIST UST:
Lower

Facility ID:	5-750338
Facility Description:	Truck/Transporter
Owner ID:	4517
Owner Name:	IMPERIAL FOODS INC
Owner Address:	783 D St.
Owner City,St,Zip:	Smyrna, TN 37167
Owner Telephone:	(615) 242-5676
Owner Description:	Private
Tank ID:	4
Tank Status:	**Permanently Out of Use**
Tank Capacity:	5000
Tank Contents:	Gasoline
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False

IMPERIAL FOODS INC (Continued) **U001306801**

Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1982
Tank Leak Detection Listed:	True
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	5
Tank Status:	**Permanently Out of Use**
Tank Capacity:	10000
Tank Contents:	Diesel
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	True
Tank Inventory Control:	True
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1982
Tank Leak Detection Listed:	False
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	U.S. Suction
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	3

IMPERIAL FOODS INC (Continued) **U001306801**

Tank Status:	**Permanently Out of Use**
Tank Capacity:	2000
Tank Contents:	Not Listed
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1959
Tank Leak Detection Listed:	True
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	1
Tank Status:	**Permanently Out of Use**
Tank Capacity:	500
Tank Contents:	Not Listed
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1959
Tank Leak Detection Listed:	True
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False

IMPERIAL FOODS INC (Continued) **U001306801**

Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	6
Tank Status:	**Permanently Out of Use**
Tank Capacity:	10000
Tank Contents:	Diesel
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	True
Tank Inventory Control:	True
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1982
Tank Leak Detection Listed:	False
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	U.S. Suction
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	2
Tank Status:	**Permanently Out of Use**
Tank Capacity:	1000
Tank Contents:	Not Listed
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False

IMPERIAL FOODS INC (Continued) **U001306801**

Spill Installed:	False
Cathodic Protection:	False
Date Installed:	06/14/1959
Tank Leak Detection Listed:	True
Pipe Material:	Galvanized Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

11
East
< 1/8
0.048 mi.
254 ft.

CMC INC DBA INTERNATIONAL DRUG
PO BOX 157
SMYRNA, TN 37167

RCRA NonGen / NLR **1000118832**
TND990651614

Relative:
Lower

Actual:
515 ft.

RCRA NonGen / NLR:

Date form received by agency:	11/18/1980
Facility name:	CMC INC DBA INTERNATIONAL DRUG
Facility address:	PO BOX 157 SMYRNA, TN 37167
EPA ID:	TND990651614
Contact:	EDWARD T GOLDSTEIN
Contact address:	PO BOX 157 SMYRNA, TN 37167
Contact country:	US
Contact telephone:	615-459-2583
Contact email:	Not reported
EPA Region:	04
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

CMC INC DBA INTERNATIONAL DRUG (Continued) **1000118832**

Evaluation Action Summary:
Evaluation date: 10/10/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

C12 **CUMBERLAND FREIGHT LINE INC** **LUST U004169881**
ENE **ONE SWAN DRIVE** **UST N/A**
< 1/8 **SMYRNA, TN 37167**
0.102 mi.
538 ft. **Site 1 of 7 in cluster C**

Relative:
Lower

Actual:
509 ft.

LUST:
Region: STATE
Facility Id: 5750093
Current Status: 1a Completed Tank Closure
Product Released: Not reported
Discovery Date: Not reported
How Discovered: Not reported
Cause: Not reported
Case Manager: Annal Rollins
Case Description: Not reported
Section: FO
Priority: Not reported
Company Name: CUMBERLAND FREIGHT
Owner Address: ONE SWAN DRIVE
Owner City: SMYRNA
Owner State: TN
Owner Zip Code: 37167
Owner Telephone: (615) 459-8900
Owner Address 2: Not reported
fadd2: Not reported
Site Number: 1
Contact: Not reported
Cac Contact: Not reported
Contact Title: Not reported
Consultant Address 1: Not reported
Consultant Address 2: Not reported
Contact City: Not reported
Contact State: Not reported
Contact Phone: Not reported
Contact zip: Not reported
Cac Type: Not reported

UST:
Facility ID: 5750093
Facility Description: Industrial
Owner ID: 306047
Owner Name: CUMBERLAND FREIGHT LINE INC
Owner Address: 1 SWAN DRIVE
Owner Address 2: ATT: TERRY AXUM
Owner City,St,Zip: SMYRNA, TN 37167
Owner Description: Private

Tank Number: 1
Tank ID: 33792
Tank Other Material: Not reported

CUMBERLAND FREIGHT LINE INC (Continued) **U004169881**

RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	34272
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	10000
Small Delivery:	Not reported
Tank RD:	ATG
Substance Description:	Gasoline
Date Installed:	APR-01-1956
Date Last Used:	SEP-01-1988
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	OCT-01-1988
Pipe Material Desc:	Bare Steel
Pipe Other Material:	Not reported
Pipe RD:	AutoLineLeakDet
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

Tank Number:	2
Tank ID:	33793
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	34273
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	10000
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Diesel
Date Installed:	APR-01-1956
Date Last Used:	SEP-01-1988
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	None
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	OCT-01-1988
Pipe Material Desc:	Bare Steel
Pipe Other Material:	Not reported

CUMBERLAND FREIGHT LINE INC (Continued) **U004169881**

Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

Tank Number:	3
Tank ID:	33794
Tank Other Material:	Not reported
RSN Red Tagged:	Not reported
Fac Red Tagged:	Not reported
Replacement:	Not reported
Compartment ID:	34274
Compartment Letter:	A
Compartment Status:	Permanently Out of Use
Compartment Capacity:	15000
Small Delivery:	Not reported
Tank RD:	NotListed
Substance Description:	Diesel
Date Installed:	JUN-06-1986
Date Last Used:	AUG-15-1997
Date Closed:	Not reported
Regulated:	Regulated
Tank Material Desc:	Asphalt Coated or Bare Steel
Tank Mod Desc:	Lined Interior
Tank Emergency:	Not reported
Tank No Fee:	Y
Overfill Type:	Not reported
Overfill Device Installed:	N
Spill Device Installed:	N
Date Removed From Ground:	AUG-27-1997
Pipe Material Desc:	Fiberglass Reinforced Plastic
Pipe Other Material:	Not reported
Pipe RD:	NotListed
Pipe Repaired:	N
Flex Piping Type:	Not reported
Year Flex Piping Installed:	Not reported

C13 **CUMBERLAND SWAN INC.** **LUST TRUST** **1003017966**
ENE **ONE SWAN DRIVE** **N/A**
< 1/8 **SMYRNA, TN**
0.102 mi.
538 ft. **Site 2 of 7 in cluster C**

Relative: LUST TRUST:
Lower

Actual: Facility Id:	5750093
509 ft. Case Number:	1
Application Num:	94062
Deductible:	$10,000.00
Applied Requested:	Not reported
Applied Not Eligible:	Not reported
Applied Net Pay:	Not reported
Applied Deductible:	Not reported
Applied Payment:	Not reported
Total Requested:	$218,560.76
Total Not Eligible:	$42,997.17
Total Paid:	$165,563.59
Total Net Pay:	$175,563.59

CUMBERLAND SWAN INC. (Continued) **1003017966**

Case Status: **Closed**

C14 **CUMBERLAND FREIGHT LINE INC** **LUST** **S107463592**
ENE **ONE SWAN DR** **N/A**
< 1/8 **SMYRNA, TN 37167**
0.102 mi.
538 ft. **Site 3 of 7 in cluster C**

Relative: LUST:
Lower

Actual: Region:	STATE
509 ft. Facility Id:	5750057
Current Status:	8 Case Closed
Product Released:	Not reported
Discovery Date:	JAN-31-1992
How Discovered:	5 Site Check
Cause:	7 Unknown
Case Manager:	Annal Rollins
Case Description:	Not reported
Section:	FO
Priority:	Not reported
Company Name:	CUMBERLAND FREIGHT
Owner Address:	ONE SWAN DRIVE
Owner City:	SMYRNA
Owner State:	TN
Owner Zip Code:	37167
Owner Telephone:	(615) 459-8900
Owner Address 2:	Not reported
fadd2:	Not reported
Site Number:	1
Contact:	Not reported
Cac Contact:	Not reported
Contact Title:	Not reported
Consultant Address 1:	215 Centerview Drive
Consultant Address 2:	Suite 110
Contact City:	Brentwood
Contact State:	TN
Contact Phone:	6153733350
Contact zip:	37027
Cac Type:	CAC

C15 **CUMBERLAND FREIGHT LINE INC** **HIST UST** **U003712717**
ENE **ONE SWAN DRIVE** **N/A**
< 1/8 **SMYRNA, TN 37167**
0.102 mi.
538 ft. **Site 4 of 7 in cluster C**

Relative: HIST UST:
Lower

Actual: Facility ID:	5-750093
509 ft. Facility Description:	Industrial
Owner ID:	2312
Owner Name:	CUMBERLAND FREIGHT LINE INC
Owner Address:	1 Swan Drive Att: Terry Axum
Owner City,St,Zip:	Smyrna, TN 37167
Owner Telephone:	(615) 459-8900
Owner Description:	Private

CUMBERLAND FREIGHT LINE INC (Continued) **U003712717**

Tank ID:	2
Tank Status:	**Permanently Out of Use**
Tank Capacity:	10000
Tank Contents:	Diesel
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	04/01/1956
Tank Leak Detection Listed:	True
Pipe Material:	Bare Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	3
Tank Status:	**Permanently Out of Use**
Tank Capacity:	15000
Tank Contents:	Diesel
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	Lined Interior
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	False
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	True
Date Installed:	06/06/1986
Tank Leak Detection Listed:	True
Pipe Material:	Fiberglass Reinforced Plastic
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	False

CUMBERLAND FREIGHT LINE INC (Continued) **U003712717**

Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	True

Tank ID:	1
Tank Status:	**Permanently Out of Use**
Tank Capacity:	10000
Tank Contents:	Gasoline
Tank Material:	Asphalt Coated or Bare Steel
Tank 2ndary Trait:	None
Tank Manual Gauge:	False
Tank Tightness:	False
Tank Inventory Control:	False
Tank ATG:	True
Tank Vapor Monitor:	False
Tank Groundwater Monitor:	False
Tank Double Walled:	False
Tank 2nd Contained:	False
Tank SIR:	False
Overfill Installed:	False
Spill Installed:	False
Cathodic Protection:	False
Date Installed:	04/01/1956
Tank Leak Detection Listed:	False
Pipe Material:	Bare Steel
Pipe Other Material:	None
Pipe Type:	Not Listed
Pipe Auto Line Leak Detect.:	True
Pipe Leak Detection Listed:	False
Pipe Vapor Monitor:	False
Pipe Groundwater Monitor:	False
Pipe Dbl Walled:	Not reported
Pipe 2nd Contained:	False
Pipe SIR:	False
Pipe Leak Detection Listed:	False

C16 **VI - JON, INC** **RCRA-SQG** **1000118825**
ENE **ONE SWAN DRIVE** **TND083523936**
< 1/8 **SMYRNA, TN 37167**
0.102 mi.
538 ft. **Site 5 of 7 in cluster C**

Relative: RCRA-SQG:
Lower

Date form received by agency:	03/02/2017
Facility name:	VI - JON, INC
Facility address:	ONE SWAN DRIVE SMYRNA, TN 37167
EPA ID:	TND083523936
Contact:	CHASE LYLES
Contact address:	ONE SWAN DRIVE SMYRNA, TN 37167
Contact country:	US
Contact telephone:	615-459-8900

Actual:
509 ft.

VI - JON, INC (Continued) **1000118825**

Contact email: Not reported
EPA Region: 04
Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: VI-JON, INC.
Owner/operator address: PAGE AVENUE
ST. LOUIS, MO 63114
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 02/09/2007
Owner/Op end date: Not reported

Owner/operator name: VI-JON, INC.
Owner/operator address: PAGE AVENUE
ST. LOUIS, MO 63114
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 02/09/2007
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Universal Waste Summary:
Waste type: Batteries

VI - JON, INC (Continued) **1000118825**

Accumulated waste on-site: Yes
Generated waste on-site: No

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D019
. Waste name: CARBON TETRACHLORIDE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF

VI - JON, INC (Continued) **1000118825**

ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U205
. Waste name: SELENIUM SULFIDE

Historical Generators:
Date form received by agency: 02/11/2016
Site name: VI - JON, INC
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

VI - JON, INC (Continued) **1000118825**

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D019
. Waste name: CARBON TETRACHLORIDE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U205
. Waste name: SELENIUM SULFIDE

Date form received by agency: 02/13/2015
Site name: VI - JON, INC
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN

VI - JON, INC (Continued) **1000118825**

OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D019
. Waste name: CARBON TETRACHLORIDE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

VI - JON, INC (Continued) **1000118825**

. Waste code: U205
. Waste name: SELENIUM SULFIDE

Date form received by agency: 03/01/2014
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Date form received by agency: 02/11/2014
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011

VI - JON, INC (Continued) **1000118825**

. Waste name: SILVER

. Waste code: D019
. Waste name: CARBON TETRACHLORIDE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U205
. Waste name: SELENIUM SULFIDE

Date form received by agency: 02/28/2013
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

VI - JON, INC (Continued) **1000118825**

. Waste code: D003
. Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D018
. Waste name: BENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: P030
. Waste name: CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED

. Waste code: U003
. Waste name: ACETONITRILE (I,T)

. Waste code: U031
. Waste name: 1-BUTANOL (I)

VI - JON, INC (Continued) **1000118825**

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U213
. Waste name: FURAN, TETRAHYDRO-(I)

Date form received by agency: 02/21/2012
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D018
. Waste name: BENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

VI - JON, INC (Continued) **1000118825**

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U003
. Waste name: ACETONITRILE (I,T)

. Waste code: U031
. Waste name: 1-BUTANOL (I)

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U213
. Waste name: FURAN, TETRAHYDRO-(I)

Date form received by agency: 03/01/2011
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Date form received by agency: 02/28/2011
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D018

VI - JON, INC (Continued) **1000118825**

. Waste name: BENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U003
. Waste name: ACETONITRILE (I,T)

. Waste code: U031
. Waste name: 1-BUTANOL (I)

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U213
. Waste name: FURAN, TETRAHYDRO-(I)

Date form received by agency: 01/01/2010
Site name: VI - JON, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Date form received by agency: 03/04/2008
Site name: VI - JON, INC.
Classification: Large Quantity Generator

VI - JON, INC (Continued) **1000118825**

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT

VI - JON, INC (Continued) **1000118825**

MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U196
. Waste name: PYRIDINE

Date form received by agency: 02/22/2008
Site name: VI - JON, INC
Classification: Large Quantity Generator

Date form received by agency: 02/09/2007
Site name: VI - JON, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

VI - JON, INC (Continued) **1000118825**

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP

VI - JON, INC (Continued) **1000118825**

. Waste name: LAB PACK

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U196
. Waste name: PYRIDINE

Date form received by agency: 02/28/2006
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

VI - JON, INC (Continued) **1000118825**

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U196
. Waste name: PYRIDINE

Date form received by agency: 02/23/2006
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 02/28/2005
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

VI - JON, INC (Continued) **1000118825**

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS

VI - JON, INC (Continued) **1000118825**

LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U196
. Waste name: PYRIDINE

Date form received by agency: 02/27/2004
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

VI - JON, INC (Continued) **1000118825**

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: U080
. Waste name: METHANE, DICHLORO-

. Waste code: U112
. Waste name: ACETIC ACID ETHYL ESTER (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U196
. Waste name: PYRIDINE

Date form received by agency: 02/26/2004
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 03/03/2003
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002

VI - JON, INC (Continued) **1000118825**

. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U080
. Waste name: METHANE, DICHLORO-

Date form received by agency: 02/22/2002
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 03/06/2001
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 03/03/2000
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1999
Site name: CUMBERLAND SWAN HOLDINGS INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1997
Site name: PERRIGO COMPANY OF TENNESSEE

VI - JON, INC (Continued) **1000118825**

Classification: Large Quantity Generator

Date form received by agency: 03/01/1995
Site name: PERRIGO COMPANY OF TENNESSEE
Classification: Large Quantity Generator

Date form received by agency: 03/01/1994
Site name: CUMBERLAND-SWAN, INC
Classification: Large Quantity Generator

Date form received by agency: 02/27/1992
Site name: CUMBERLAND-SWAN, INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1990
Site name: CUMBERLAND-SWAN, INC
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 01/10/2018
Date achieved compliance: 01/24/2018
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 01/10/2018
Date achieved compliance: 01/24/2018
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 12/18/2013
Date achieved compliance: 12/18/2013
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported

VI - JON, INC (Continued) **1000118825**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 12/18/2013
Date achieved compliance: 05/16/2014
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 06/09/2009
Date achieved compliance: 11/06/2009
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11.03(4)(e)2(iv)
Area of violation: Generators - Pre-transport
Date violation determined: 11/01/2005
Date achieved compliance: 01/04/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.03(4)(e)2(iv)
Area of violation: Generators - Pre-transport
Date violation determined: 11/01/2005
Date achieved compliance: 01/04/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported

VI - JON, INC (Continued) **1000118825**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.03(4)(e)2(iii)
Area of violation: Generators - Pre-transport
Date violation determined: 11/01/2005
Date achieved compliance: 01/18/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.03(4)(e)2(ii)
Area of violation: Generators - Pre-transport
Date violation determined: 11/01/2005
Date achieved compliance: 01/04/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.03(4)(e)2(iv)
Area of violation: Generators - Pre-transport
Date violation determined: 11/01/2005
Date achieved compliance: 01/18/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.12(2)(e)5
Area of violation: Generators - General
Date violation determined: 08/11/2003
Date achieved compliance: 09/30/2003
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/19/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

VI - JON, INC (Continued) **1000118825**

Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.03(5)(c)1
Area of violation: Generators - Manifest
Date violation determined: 08/11/2003
Date achieved compliance: 09/23/2003
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/19/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 1200-1-11-.12(2)(d)4(i)(I)
Area of violation: Generators - General
Date violation determined: 08/11/2003
Date achieved compliance: 09/30/2003
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/19/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)3
Area of violation: Generators - Pre-transport
Date violation determined: 07/09/1997
Date achieved compliance: 09/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/20/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)3
Area of violation: Generators - Pre-transport
Date violation determined: 07/09/1997
Date achieved compliance: 09/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/14/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

VI - JON, INC (Continued) **1000118825**

Regulation violated: SR - .03(1)(b)
Area of violation: Generators - General
Date violation determined: 04/08/1997
Date achieved compliance: 06/12/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/20/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(ii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/14/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(ii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/20/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(ii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/17/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(ii)

VI - JON, INC (Continued) **1000118825**

Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/10/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(iii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/20/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(iii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/17/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(iii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/14/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(1)(b)
Area of violation: Generators - General

VI - JON, INC (Continued) **1000118825**

Date violation determined: 04/08/1997
Date achieved compliance: 06/12/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/14/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(1)(b)
Area of violation: Generators - General
Date violation determined: 04/08/1997
Date achieved compliance: 06/12/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/10/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(iii)
Area of violation: Generators - Pre-transport
Date violation determined: 04/08/1997
Date achieved compliance: 07/09/1997
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/10/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(2)(g)5
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(2)(g)4(iv)
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994

VI - JON, INC (Continued) **1000118825**

Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(4)(e)4
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(4)(c)5
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)?(ii)
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(4)(c)6
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994

VI - JON, INC (Continued) **1000118825**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):.05(4)(e)3
Area of violation: Generators - Pre-transport
Date violation determined: 03/04/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/08/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(i);0055
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0565
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.07(1)(b)1(ii);3510
Area of violation: TSD - General Facility Standards
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State

VI - JON, INC (Continued) **1000118825**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(i);0045
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0205
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-03(4)(e)1(iv);0197
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(ii);0515
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

VI - JON, INC (Continued) **1000118825**

Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(i);0065
Area of violation: Generators - Pre-transport
Date violation determined: 11/06/1992
Date achieved compliance: 01/08/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/19/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 01/24/2018
Evaluation: FOLLOW-UP INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/10/2018
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Universal Waste - Small Quantity Handlers
Date achieved compliance: 01/24/2018
Evaluation lead agency: State

Evaluation date: 01/10/2018
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/24/2018
Evaluation lead agency: State

Evaluation date: 09/08/2016
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 12/18/2013
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 05/16/2014
Evaluation lead agency: State

Evaluation date: 12/18/2013
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 12/18/2013

VI - JON, INC (Continued) **1000118825**

Evaluation lead agency: State

Evaluation date: 06/09/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Universal Waste - Small Quantity Handlers
Date achieved compliance: 11/06/2009
Evaluation lead agency: State

Evaluation date: 11/01/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/04/2006
Evaluation lead agency: State

Evaluation date: 11/01/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/18/2006
Evaluation lead agency: State

Evaluation date: 08/11/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 09/23/2003
Evaluation lead agency: State

Evaluation date: 08/11/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/30/2003
Evaluation lead agency: State

Evaluation date: 09/09/1997
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/09/1997
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/09/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 09/09/1997
Evaluation lead agency: State

Evaluation date: 07/09/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/09/1997
Evaluation lead agency: State

Evaluation date: 07/09/1997

VI - JON, INC (Continued) **1000118825**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/12/1997
Evaluation lead agency: State

Evaluation date: 06/12/1997
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/09/1997
Evaluation lead agency: State

Evaluation date: 06/12/1997
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Generators - General
Date achieved compliance: 06/12/1997
Evaluation lead agency: State

Evaluation date: 04/08/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/09/1997
Evaluation lead agency: State

Evaluation date: 04/08/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/12/1997
Evaluation lead agency: State

Evaluation date: 03/29/1996
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/04/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 04/05/1994
Evaluation lead agency: State

Evaluation date: 12/31/1992
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/06/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/08/1993
Evaluation lead agency: State

Evaluation date: 11/06/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 01/08/1993

VI - JON, INC (Continued) **1000118825**

Evaluation lead agency: State

Evaluation date: 11/06/1992
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

C17 **BERRY PLASTICS** **RCRA-CESQG** **1017788993**
ENE **1B SWAN DRIVE** **TNR000039362**
< 1/8 **SMYRNA, TN 37167**
0.120 mi.
632 ft. **Site 6 of 7 in cluster C**

Relative:
Lower

Actual:
508 ft.

RCRA-CESQG:
Date form received by agency: 03/30/2015
Facility name: BERRY PLASTICS
Facility address: 1B SWAN DRIVE
SMYRNA, TN 37167
EPA ID: TNR000039362
Mailing address: SWAN DRIVE
SMYRNA, TN 37167
Contact: DAVID PROCHASKA
Contact address: SWAN DRIVE
SMYRNA, TN 37167
Contact country: US
Contact telephone: 615-751-5748
Contact email: Not reported
EPA Region: 04
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: BERRY PLASTICS
Owner/operator address: SWAN DRIVE
SMYRNA, TN 37167
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 04/01/2013
Owner/Op end date: Not reported

BERRY PLASTICS (Continued) **1017788993**

Owner/operator name: BERRY PLASTICS
Owner/operator address: SWAN DRIVE
SMYRNA, TN 37167
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/01/2013
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Violation Status: No violations found

C18 **CUMBERLAND SWAN** **SRP** **S117734998**
ENE **1 SWAN DRIVE** **N/A**
1/8-1/4 **SMYRNA, TN**
0.129 mi.
681 ft. **Site 7 of 7 in cluster C**

Relative: **Lower**
Actual: **509 ft.**

SRP:
Site Control Number: Not reported
State Remediation Program Site Number: SRS750128
Project Manager Initials: Not reported
Field Office: Not reported
Contaminants Of Concern: Not reported
Active?: Closed
Number Of Days In System: Not reported
Program: Voluntary
Subprogram: SRP
Latitude: 36.002394

CUMBERLAND SWAN (Continued) **S117734998**

Longitude: -86.502111
Acres: Not reported

19
ENE
1/8-1/4
0.148 mi.
779 ft.

MI METALS INC SMYRNA
704 12TH AVE
SMYRNA, TN 37167

RCRA-LQG **1000401702**
TRIS **37167BTTRB12THG**
US AIRS
FINDS
ECHO

Relative:
Lower

Actual:
506 ft.

RCRA-LQG:

Date form received by agency:	02/05/2018
Facility name:	MI METALS, INC.
Facility address:	704 12TH AVENUE SMYRNA, TN 37167
EPA ID:	TND004035739
Mailing address:	PO BOX 1128 OLDSMAR, FL 34677
Contact:	MEL MITCHELL
Contact address:	COMMERCE BLVD. OLDSMAR, FL 34677
Contact country:	US
Contact telephone:	813-855-5695
Contact email:	MMITCHELL@MIMETALS.COM
EPA Region:	04
Land type:	Private
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	MI METALS, INC., BROOK MASSEY, PRESIDENT
Owner/operator address:	P.O. BOX 1128 OLDSMAR, FL 34677
Owner/operator country:	US
Owner/operator telephone:	813-494-8039
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	09/06/2013
Owner/Op end date:	Not reported

Owner/operator name:	MI METALS, INC
Owner/operator address:	P. O. BOX 4490 CLEARWATER, FL 33758
Owner/operator country:	US

MI METALS INC SMYRNA (Continued) **1000401702**

Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1997
Owner/Op end date: Not reported

Owner/operator name: MI METALS, INC
Owner/operator address: P. O. BOX 4490
CLEARWATER, FL 33758
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1997
Owner/Op end date: Not reported

Owner/operator name: MI METALS, INC., BROOK MASSEY, PRESIDENT
Owner/operator address: P.O. BOX 1128
OLDSMAR, FL 34677
Owner/operator country: US
Owner/operator telephone: 813-494-8039
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 09/06/2013
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET,

MI METALS INC SMYRNA (Continued) **1000401702**

WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:
Date form received by agency: 02/27/2017
Site name: MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/18/2016
Site name: MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/02/2015
Site name: MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

MI METALS INC SMYRNA (Continued) **1000401702**

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/01/2015
Site name: MI METALS, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE,

MI METALS INC SMYRNA (Continued) **1000401702**

2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/01/2014
Site name: MI METALS, INC
Classification: Large Quantity Generator

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Date form received by agency: 02/24/2014
Site name: MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 10/09/2013
Site name: MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/25/2013
Site name: MI METALS, INC.
Classification: Large Quantity Generator

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/08/2012
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS

MI METALS INC SMYRNA (Continued) **1000401702**

CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/01/2011
Site name: MI WINDOWS & DOORS/MI METALS, INC
Classification: Large Quantity Generator

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Date form received by agency: 02/09/2010
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 01/01/2010
Site name: MI WINDOWS & DOORS/MI METALS, INC
Classification: Large Quantity Generator

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Date form received by agency: 02/02/2009
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

MI METALS INC SMYRNA (Continued) **1000401702**

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/04/2008
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 01/31/2008
Site name: MI WINDOWS & DOORS/MI METALS, INC
Classification: Large Quantity Generator

Date form received by agency: 02/14/2007
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT

MI METALS INC SMYRNA (Continued) **1000401702**

MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/13/2006
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE,

MI METALS INC SMYRNA (Continued) **1000401702**

2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/01/2006
Site name: MI WINDOWS & DOORS/MI METALS, INC
Classification: Large Quantity Generator

Date form received by agency: 02/09/2005
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006

MI METALS INC SMYRNA (Continued) **1000401702**

. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/09/2005
Site name: MI WINDOWS & DOORS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM;

MI METALS INC SMYRNA (Continued) **1000401702**

(2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/10/2004
Site name: MI HOME PRODUCTS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON

MI METALS INC SMYRNA (Continued) **1000401702**

STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/10/2004
Site name: MI HOME PRODUCTS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF

MI METALS INC SMYRNA (Continued) **1000401702**

ALUMINUM.

Date form received by agency: 02/03/2004
Site name: MI HOME PRODUCTS/MI METALS INC
Classification: Large Quantity Generator

Date form received by agency: 01/30/2003
Site name: MI HOME PRODUCTS/MI METALS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON

MI METALS INC SMYRNA (Continued) **1000401702**

STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/08/2002
Site name: MI HOME PRODUCTS INC-SMYRNA
Classification: Large Quantity Generator

Date form received by agency: 03/06/2001
Site name: MI HOME PRODUCTS INC-SMYRNA
Classification: Large Quantity Generator

Date form received by agency: 02/24/2000
Site name: MI HOME PRODUCTS INC-SMYRNA
Classification: Large Quantity Generator

Date form received by agency: 03/01/1999
Site name: MI HOME PRODUCTS INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1997
Site name: CARADON BETTER-BILT INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1995
Site name: CARADON BETTER-BILT INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1994
Site name: BETTER-BILT ALUMINUM PRODUCTS CO., INC.
Classification: Large Quantity Generator

Date form received by agency: 02/26/1992
Site name: BETTER-BILT ALUMINUM PRODUCTS CO., INC.
Classification: Large Quantity Generator

Date form received by agency: 03/01/1990
Site name: BETTER-BILT ALUMINUM PRODUCTS CO., INC.
Classification: Large Quantity Generator

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 18135.2

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A

MI METALS INC SMYRNA (Continued) **1000401702**

CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Amount (Lbs): 0

Waste code: D035
Waste name: METHYL ETHYL KETONE
Amount (Lbs): 36978.4

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 37307.7

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 36978.4

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 10/27/2015
Date achieved compliance: 10/27/2015
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)2(iv)
Area of violation: Generators - Pre-transport
Date violation determined: 02/08/2002
Date achieved compliance: 11/21/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002

MI METALS INC SMYRNA (Continued) **1000401702**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)3
Area of violation: Generators - Pre-transport
Date violation determined: 02/08/2002
Date achieved compliance: 11/21/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SS - TCA 68-212-304(a)(1)
Area of violation: Generators - General
Date violation determined: 02/08/2002
Date achieved compliance: 11/21/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)5(i)(II)
Area of violation: Generators - Pre-transport
Date violation determined: 02/08/2002
Date achieved compliance: 11/21/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4)(e)5(i)(I)
Area of violation: Generators - Pre-transport
Date violation determined: 02/08/2002
Date achieved compliance: 11/21/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .11(3)(c)3(i)
Area of violation: Generators - Pre-transport
Date violation determined: 09/15/1999
Date achieved compliance: 11/10/1999
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/22/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):265.16
Area of violation: Generators - Pre-transport
Date violation determined: 04/18/1996
Date achieved compliance: 06/21/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/1996
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):265.55
Area of violation: Generators - Pre-transport
Date violation determined: 10/28/1994
Date achieved compliance: 01/19/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):265.195
Area of violation: Generators - Pre-transport
Date violation determined: 10/28/1994
Date achieved compliance: 01/19/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - .03(4):262.32
Area of violation: Generators - Pre-transport
Date violation determined: 10/28/1994
Date achieved compliance: 01/19/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 0595
Area of violation: Generators - Pre-transport
Date violation determined: 06/04/1993
Date achieved compliance: 08/20/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/07/1993
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 0597
Area of violation: Generators - Pre-transport
Date violation determined: 06/04/1993
Date achieved compliance: 08/20/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/07/1993
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 0555
Area of violation: Generators - Pre-transport
Date violation determined: 06/04/1993
Date achieved compliance: 08/20/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/07/1993
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

MI METALS INC SMYRNA (Continued) **1000401702**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0126
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/09/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0597
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0595
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-03(4)(e)1(iv);0197
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0127
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0545
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0605
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0145
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0126
Area of violation: Generators - Pre-transport
Date violation determined: 07/26/1991
Date achieved compliance: 11/27/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(2)(b);0024
Area of violation: Generators - General
Date violation determined: 12/01/1987
Date achieved compliance: 01/31/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/09/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 12/01/1987
Date achieved compliance: 01/31/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/09/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 10/27/2015
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 10/27/2015
Evaluation lead agency: State

Evaluation date: 08/02/2011
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

MI METALS INC SMYRNA (Continued) **1000401702**

Evaluation date: 02/08/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 11/21/2002
Evaluation lead agency: State

Evaluation date: 02/08/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/21/2002
Evaluation lead agency: State

Evaluation date: 11/10/1999
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/15/1999
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 11/10/1999
Evaluation lead agency: State

Evaluation date: 06/21/1996
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Generators - Pre-transport
Date achieved compliance: 06/21/1996
Evaluation lead agency: State

Evaluation date: 04/18/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 06/21/1996
Evaluation lead agency: State

Evaluation date: 01/19/1995
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/28/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/19/1995
Evaluation lead agency: State

Evaluation date: 08/20/1993
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/04/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport

MI METALS INC SMYRNA (Continued) **1000401702**

Date achieved compliance: 08/20/1993
Evaluation lead agency: State

Evaluation date: 11/27/1991
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/26/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 11/27/1991
Evaluation lead agency: State

Evaluation date: 07/26/1991
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/01/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/31/1988
Evaluation lead agency: State

Evaluation date: 12/01/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 11/27/1991
Evaluation lead agency: State

Evaluation date: 10/24/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/24/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

TRIS:

Click this hyperlink while viewing on your computer to access
3 additional US_TRIS: record(s) in the EDR Site Report.

US AIRS (AFS):
Envid: 1000401702
Region Code: 04
County Code: TN149
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
D and B Number: Not reported
Facility Site Name: MI METALS, INC.

MI METALS INC SMYRNA (Continued) **1000401702**

Primary SIC Code: 3442
NAICS Code: 332321
Default Air Classification Code: SMI
Facility Type of Ownership Code: POF
Air CMS Category Code: SMI
HPV Status: Not reported

US AIRS (AFS):
Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-03-13 00:00:00
Activity Status Date: 2015-04-30 13:54:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-03-13 00:00:00
Activity Status Date: 2015-04-30 13:54:59
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-05-14 00:00:00
Activity Status Date: 2015-05-21 16:08:20
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-03-21 00:00:00
Activity Status Date: 2016-05-04 16:38:40
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147

MI METALS INC SMYRNA (Continued) **1000401702**

Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-03-24 00:00:00
Activity Status Date: 2016-05-04 16:41:08
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-05-12 00:00:00
Activity Status Date: 2016-09-16 16:29:25
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-06-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-07-18 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-08-11 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1992-07-08 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1993-04-29 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1994-03-10 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1995-11-03 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1999-03-09 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring

MI METALS INC SMYRNA (Continued) **1000401702**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2000-03-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2001-01-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2002-02-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2003-02-20 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

MI METALS INC SMYRNA (Continued) **1000401702**

Activity Date: 2004-04-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-11 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-04-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-04-20 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930

MI METALS INC SMYRNA (Continued) **1000401702**

Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2007-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2007-04-11 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2007-04-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-02-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-04-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2008-04-09 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2009-02-20 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2009-07-20 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2009-07-21 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	04
Programmatic ID:	AIR TN0000004714900147
Facility Registry ID:	110000765930
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2010-02-16 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring

MI METALS INC SMYRNA (Continued) **1000401702**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-07-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-07-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-03-04 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-03-07 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

MI METALS INC SMYRNA (Continued) **1000401702**

Activity Date: 2011-05-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-02-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-04-10 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-05-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-02-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930

MI METALS INC SMYRNA (Continued) **1000401702**

Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-03-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-03-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-04-03 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 04
Programmatic ID: AIR TN0000004714900147
Facility Registry ID: 110000765930
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-06-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

MI METALS INC SMYRNA (Continued) **1000401702**

FINDS:

Registry ID: 110000765930

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

AIR SYNTHETIC MINOR

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000401702
Registry ID:	110000765930
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000765930

D20 **CROSS CONTINENT AIRCRAFT SERVICES** **SRP** **S117734983**
North **634 A ST** **N/A**
1/8-1/4 **SMYRNA, TN**
0.172 mi.
908 ft. **Site 1 of 4 in cluster D**

Relative: **Lower**

Actual: **501 ft.**

SRP:

Site Control Number:	Not reported
State Remediation Program Site Number:	SRS750221
Project Manager Initials:	Not reported
Field Office:	Not reported
Contaminants Of Concern:	Not reported
Active?:	Closed
Number Of Days In System:	Not reported
Program:	Voluntary
Subprogram:	SRP
Latitude:	36.015191
Longitude:	-86.50944
Acres:	Not reported

D21 **SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI** **RCRA NonGen / NLR** **1000385833**
North **634-A ST.** **TND982161036**
1/8-1/4 **SMYRNA, TN 37167**
0.172 mi.
908 ft. **Site 2 of 4 in cluster D**

Relative: **Lower**

Actual: **501 ft.**

RCRA NonGen / NLR:

Date form received by agency:	02/18/2004
Facility name:	SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI
Facility address:	634-A ST. SMYRNA, TN 37167
EPA ID:	TND982161036
Mailing address:	SMYRNA AIRPORT 660 A STREET SMYRNA, TN 37167
Contact:	JOHN R BLACK-AIRPORT
Contact address:	634 A ST. SMYRNA, TN 37167
Contact country:	US
Contact telephone:	615-459-2651
Contact email:	Not reported
EPA Region:	04
Land type:	Other land type
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/13/1998
Site name: SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI
Classification: Not a generator, verified

Date form received by agency: 02/28/1992
Site name: CROSS CONTINENT AIRCRAFT SERVICES, INC.
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 12/05/1991
Date achieved compliance: 12/31/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(1)(c)1;0293
Area of violation: Generators - General
Date violation determined: 12/05/1991
Date achieved compliance: 12/31/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(2)(d);0027
Area of violation: Generators - General
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0195

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0174
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(1)(b);0010
Area of violation: Generators - General
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0135
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0285
Area of violation: Generators - Pre-transport

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0145
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0168
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0127
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0171
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0157
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0107
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0105
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0207
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0107
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(5)(a)3;0020
Area of violation: Generators - Records/Reporting
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(ii);0515
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0605
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0275
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0167
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(2)(c);0026
Area of violation: Generators - General
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0185
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iii);0525
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(i);0035
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0173
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0087
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(5)(a)1;0315
Area of violation: Generators - Records/Reporting
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0176
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0172
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0125
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0166
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0105
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/16/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0265
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0175
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0165
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0245
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0155
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0126
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0095
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-03(4)(e)1(iv);0197
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0128
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.07(1)(b)1(ii);3510
Area of violation: TSD - General Facility Standards
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0177
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0169
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0255
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: SR - ;3513
Area of violation: Generators - General
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Paid penalty amount: Not reported

Regulation violated: SR - 11-.03(4)(e)1(iv);0205
Area of violation: Generators - Pre-transport
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 03/23/1990
Date achieved compliance: 07/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 11/29/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/29/1994
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/18/1994
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/10/1993
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/10/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/01/1993
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/14/1992
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/01/1992
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/09/1992
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/09/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/05/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/31/1991
Evaluation lead agency: State

Evaluation date: 12/05/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 12/05/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 12/31/1991
Evaluation lead agency: State

Evaluation date: 12/05/1991
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Evaluation date: 12/02/1991
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/02/1991
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/16/1991
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/16/1991
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/20/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/20/1991
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/31/1990
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/20/1990
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/31/1990
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Records/Reporting

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1000385833**

Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/16/1990
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/02/1990
Evaluation lead agency: State

Evaluation date: 03/16/1990
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

22
East
1/8-1/4
0.177 mi.
932 ft.

CHEMICAL RECOVERY SRVS CO **INST CONTROL** **S109376552**
733 14TH AVE **VCP** **N/A**
SMYRNA, TN

Relative:
Lower

Actual:
516 ft.

INST CONTROL:
Facility ID: 75501
EFO: Nashville
Control Type: Institutional
Control Description: Land Use Restriction
Section: VOAP
Date Review: Not reported
Date Recorded: Not reported
Date Removed: Not reported
Map: 019
Parcel: 029901
Deed Book: Not reported
Page Number: 3041
Acreage: 25

CHEMICAL RECOVERY SRVS CO (Continued) **S109376552**

Other Contaminants:	Not reported
Commercial Restriction:	Not reported
Residential Restriction:	No
Daycare Restriction:	No
School Restriction:	No
Church Restriction:	No
Groundwater Restriction:	No
Invasive Activity:	Not reported
Other Restrictions:	Not reported
Facility Id:	75501
EC Access:	Not reported
EC Cap:	Not reported
EC Monitor:	Not reported
EC Systems:	Not reported
Lattitude:	35.999657
Longitude:	-86.501242
COC Media:	Groundwater
COC Type:	VOCs/SVOCs
Known COCs:	BENZENE
Site Status:	Closed
Total Site Acreage:	.34

VCP:

Facility ID:	75501
Facility Status:	Closed
Program:	Voluntary
SubProgram:	Voluntary
EFO:	Nashville
Latitude:	35.999657
Longitude:	-86.501242
Acres:	0.34

D23 **TENNESSEE TECHNICAL SERVICES LLC** **RCRA NonGen / NLR** **1004782896**
North **634 FITZHUGH BLVD** **FINDS** **TNR000009282**
1/8-1/4 **SMYRNA, TN 37167** **ECHO**
0.177 mi.
937 ft. **Site 3 of 4 in cluster D**

Relative:
Lower

Actual:
501 ft.

RCRA NonGen / NLR:

Date form received by agency:	10/19/2017
Facility name:	TENNESSEE TECHNICAL SERVICES LLC
Facility address:	634 FITZHUGH BLVD SMYRNA, TN 37167
EPA ID:	TNR000009282
Mailing address:	FITZHUGH BLVD SMYRNA, TN 37167
Contact:	JONATHAN K ACKLEY
Contact address:	634 FITZHUGH BLVD SMYRNA, TN 37167
Contact country:	US
Contact telephone:	615-223-7801
Contact email:	Not reported
EPA Region:	04
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

TENNESSEE TECHNICAL SERVICES LLC (Continued) **1004782896**

Owner/Operator Summary:

Owner/operator name:	FARHAD AZIMA/DAVE HOFFSTETTER
Owner/operator address:	634 FITZHUGH BLVD
	SMYRNA, TN 37167
Owner/operator country:	US
Owner/operator telephone:	615-223-7801
Owner/operator email:	D.HOFFSTETTER@TENNSSEETECHNICAL.COM
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1990
Owner/Op end date:	Not reported

Owner/operator name:	FARHAD AZIMA/DAVE HOFFSTETTER
Owner/operator address:	634 FITZHUGH BLVD
	SMYRNA, TN 37167
Owner/operator country:	US
Owner/operator telephone:	615-223-7801
Owner/operator email:	D.HOFFSTETTER@TENNSSEETECHNICAL.COM
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1990
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/02/2001
Site name:	TENNESSEE TECHNICAL SERVICES LLC
Classification:	Small Quantity Generator

Date form received by agency:	01/12/2000
Site name:	TENNESSEE TECHNICAL SERVICES LLC
Classification:	Small Quantity Generator

Violation Status: No violations found

FINDS:

TENNESSEE TECHNICAL SERVICES LLC (Continued) **1004782896**

Registry ID: 110005008008

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1004782896
Registry ID: 110005008008
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005008008

D24 **SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI** **RCRA-CESQG** **1004782810**
North **660 FITZHUGH BLVD** **FINDS** **TNR000008136**
1/8-1/4 **SMYRNA, TN 37167** **ECHO**
0.177 mi.
937 ft. **Site 4 of 4 in cluster D**

Relative:
Lower

Actual:
501 ft.

RCRA-CESQG:
Date form received by agency: 02/13/2001
Facility name: SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI
Facility address: 660 FITZHUGH BLVD
SMYRNA, TN 37167
EPA ID: TNR000008136
Mailing address: FITZHUGH BLVD
SMYRNA, TN 37167
Contact: LOIS VALLANCE
Contact address: 660 FITZHUGH BLVD
SMYRNA, TN 37167
Contact country: US
Contact telephone: 615-459-2651
Contact email: Not reported
EPA Region: 04
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1004782810**

Owner/Operator Summary:
Owner/operator name: TOWN OF SMYRNA & COUNTY OF RUT
Owner/operator address: 660 FITZHUGH BLVD
SMYRNA, TN 37167
Owner/operator country: Not reported
Owner/operator telephone: 615-459-2651
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/06/1999
Site name: SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI
Classification: Conditionally Exempt Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110005007321

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1004782810

SMYRNA/RUTHERFORD COUNTY AIRPORT AUTHORI (Continued) **1004782810**

Registry ID: 110005007321
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005007321

25
East
1/8-1/4
0.197 mi.
1040 ft.

SCREW MACHINE PRODUCTS **RCRA NonGen / NLR** **1000224967**
727 "F" ST. (AIRPORT) **TND982133753**
SMYRNA, TN 37167

Relative:
Lower

Actual:
518 ft.

RCRA NonGen / NLR:
Date form received by agency: 02/28/1994
Facility name: SCREW MACHINE PRODUCTS
Facility address: 727 "F" ST. (AIRPORT)
SMYRNA, TN 37167
EPA ID: TND982133753
Mailing address: "F" ST.
SMYRNA, TN 37167
Contact: WILLIAM C BOLINGER
Contact address: 727 "F" ST. (AIRPORT)
SMYRNA, TN 37167
Contact country: US
Contact telephone: 615-459-6542
Contact email: Not reported
EPA Region: 04
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 03/01/1992
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

26
NE
1/8-1/4
0.228 mi.
1203 ft.

TN REHABILITATION CENTER
460 9TH STREET
SMYRNA, TN 37167

LUST TRUST **S104780535**
N/A

Relative:
Lower

Actual:
500 ft.

LUST TRUST:

Facility Id:	0750398
Case Number:	1
Application Num:	98279
Deductible:	Not reported
Applied Requested:	Not reported
Applied Not Eligible:	Not reported
Applied Net Pay:	Not reported
Applied Deductible:	Not reported
Applied Payment:	Not reported
Total Requested:	Not reported
Total Not Eligible:	Not reported
Total Paid:	Not reported
Total Net Pay:	Not reported
Case Status:	**N/A**

27
East
1/4-1/2
0.476 mi.
2512 ft.

RYDER TRUCK RENTAL INC
250 WEAKLEY LN
SMYRNA, TN 37167

LUST **S107463694**
N/A

Relative:
Higher

Actual:
520 ft.

LUST:

Region:	STATE
Facility Id:	5750357
Current Status:	1a Completed Tank Closure
Product Released:	Not reported
Discovery Date:	Not reported
How Discovered:	Not reported
Cause:	Not reported
Case Manager:	Annal Rollins
Case Description:	Not reported
Section:	FO
Priority:	Not reported
Company Name:	HEITT-WAITE CONSTRUCTION CO INC
Owner Address:	2329 SALEM ROAD HWY 99
Owner City:	Murfreesboro
Owner State:	TN
Owner Zip Code:	37129
Owner Telephone:	(615) 896-1572
Owner Address 2:	Not reported
fadd2:	Not reported
Site Number:	1
Contact:	Not reported
Cac Contact:	Not reported
Contact Title:	Not reported
Consultant Address 1:	Not reported
Consultant Address 2:	Not reported
Contact City:	Not reported
Contact State:	Not reported
Contact Phone:	Not reported
Contact zip:	Not reported
Cac Type:	Not reported

Count: 28 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LAVERGNE	S106706477	KWIK SAK #18	I-24 & WALDRON ROAD	37086	LUST TRUST
SMYRNA	S109376555	SMYRNA FIRING RANGE	HWY 41 & SAM RIDLEY PRKWY		VCP
SMYRNA	1016257632	SMYRNA LAND COMPANY LTD	HIGHWAY 41 & SAM RIDLEY PKWY	37167	FINDS, ECHO
SMYRNA	1004782884	SMYRNA LAND COMPANY LTD	HIGHWAY 41 & SAM RIDLEY PKWY	37167	RCRA NonGen / NLR
SMYRNA	U003614905	TOWN OF SMYRNA LIFT STATION #4	8TH ST. SMYRNA AIR BASE	37167	HIST UST
SMYRNA	U004169993	TOWN OF SMYRNA LIFT STATION #4	8TH ST. SMYRNA AIR BASE	37167	UST
SMYRNA	1021990193	SMYRNA EXXON AUTOMOTIVE	BLDG 525 9TH AVE	37167	EDR Hist Auto
SMYRNA	S114844139	TOWN OF SMYRNA LIFT STA 4	EIGHTH ST SMYRNA AIR BASE		RGA LUST
SMYRNA	S107463671	TOWN OF SMYRNA LIFT STA 4	EIGHTH ST SMYRNA AIR BASE	37167	LUST
SMYRNA	S120976380	MARKET PLACE AT SMYRNA (FKA COLONI	INDUSTRIAL BLVD NORTHEAST OF I		NPDES
SMYRNA	S120976381	MARKET PLACE AT SMYRNA (FKA COLONI	INDUSTRIAL BLVD NORTHEAST OF I	37167	NPDES
SMYRNA	S120976653	MARKET PLACE AT SMYRNA (FKA COLONI	INDUSTRIAL BLVD NORTHEAST OF I	37167	NPDES
SMYRNA	S111814256	THORNTON'S CONVENIENCE MARKET - SM	SOUTHEAST INTERSECTION OF SAM		NPDES
SMYRNA	S113873884	THE SUMMIT AT SMYRNA	MOTLOW COLLEGE BLVD. & SAM RID	37167	NPDES
SMYRNA	S114842818	SMYRNA GOLF COURSE	100 SAM RIDLEY PKY		RGA LUST
SMYRNA	S111816239	TOWN OF SMYRNA 2009 REPURIFIED WAT	SAM RIDLEY PKWY E., SAM RIDLEY		NPDES
SMYRNA	U004169967	SMYRNA GOLF COURSE	100 SAM RIDLEY PKWY.	37167	LUST, UST
SMYRNA	S114844138	TOWN OF SMYRNA LIFT STA 3	A ST SMYRNA AIR BASE		RGA LUST
SMYRNA	S107463670	TOWN OF SMYRNA LIFT STA 3	A ST SMYRNA AIR BASE	37167	LUST
SMYRNA	U003614904	TOWN OF SMYRNA LIFT STATION #3	A ST. SMYRNA AIR BASE	37167	HIST UST
SMYRNA	U003614879	SMYRNA AIRPORT MQY	A ST.	37167	HIST UST
SMYRNA	U004169992	TOWN OF SMYRNA LIFT STATION #3	A ST. SMYRNA AIR BASE	37167	UST
SMYRNA	U004169966	SMYRNA AIRPORT MQY	A ST.	37167	UST
SMYRNA	S101135360	SMYRNA AIRPORT MQY	A STREET	37167	HIST_LUST CO
SMYRNA	1003868746	JOHN P SAAD/SMYRNA AIRPORT SITE	A STREET	37167	SEMS-ARCHIVE
SMYRNA	S111813557	THE HOME DEPOT - SMYRNA	SWQ OF SAM RIDLEY PKWY & OLD N	37167	NPDES
SMYRNA	S111813542	THE HOME DEPOT - SMYRNA	SWQ OF SAM RIDLEY PKWY & OLD N	37167	NPDES
SMYRNA	1003868668	MILLS DRUM SITE	WEAKLEY RD	37167	SEMS-ARCHIVE

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.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
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 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

NPL LIENS: 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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

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: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/06/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list 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). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS 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 the 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. The 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 potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

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. 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). Transporters are individuals or entities that move hazardous waste from the generator offsite 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: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

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. 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). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

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. 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). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

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. 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.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/16/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 78

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/09/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

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: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
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: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

Federal ERNS list

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: 03/19/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

SHWS: Promulgated Sites

"Inactive hazardous substance sites that constitute an imminent, substantial danger" is an inactive hazardous substance site where there is a threat of danger to the public health, safety, or environment which is both real and presently existing. Such situations may include, but are not limited to one or more of the following: an immediate action is necessary to minimize an ongoing threat to the public health or pollution of the environment, an inactive hazardous substance site where there is an active release, where direct access to the hazardous substance is not controlled, or where incompatible hazardous substances are found in close proximity. Also known as Promulgated Sites List.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 09/16/2016
Number of Days to Update: 70

Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 04/02/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Disposal Facilities

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: 03/12/2018
Date Data Arrived at EDR: 03/15/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 8

Source: Department of Environment and Conservation
Telephone: 615-532-0804
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Fund Eligible Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank site locations.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 17

Source: Department of Environment and Conservation
Telephone: 615-532-0945
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/06/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

LUST TRUST: LUST TRUST Fund Database

This list contains information on sites that had accidental releases of petroleum and are eligible for reimbursement from the TN Petroleum UST Fund.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 17

Source: Department of Environment & Conservation
Telephone: 615-532-0971
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Semi-Annually

HIST_LUST CO: Leaking Underground Storage Tanks Sites

A listing of leaking underground storage tank site locations from the Columbia Field Office. The listing is no longer updated.

Date of Government Version: 10/18/1994
Date Data Arrived at EDR: 10/24/1994
Date Made Active in Reports: 12/30/1994
Number of Days to Update: 67

Source: Department of Environmental Conservation, Columbia Field Office
Telephone: 931-380-3371
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

UST: Facility and Tank Report

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.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 17

Source: Department of Environment and Conservation
Telephone: 615-532-0945
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Semi-Annually

AST: Aboveground Storage Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 10/01/1999
Date Data Arrived at EDR: 10/12/1999
Date Made Active in Reports: 11/05/1999
Number of Days to Update: 24

Source: Department of Environment and Conservation
Telephone: 615-532-0965
Last EDR Contact: 04/20/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: No Update Planned

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 01/13/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
Sites that have engineering controls.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 52
Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Semi-Annually

INST CONTROL: Institutional Control Sites
Sites that have institutional controls.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 52
Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Semi-Annually

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup, Oversight and Assistance Program Sites
The Voluntary Cleanup Oversight and Assistance Program (VOAP) offers people the opportunity to work proactively with state government to address necessary cleanup of a property to return it to productive use. In return for their efforts, participants can receive a No Further Action letter and a release of liability for areas where investigation and cleanup is conducted. The program is open to everyone with an interest in addressing contamination at a site.

Date of Government Version: 12/18/2017
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 32
Source: Department of Environmental & Conservation
Telephone: 615-532-0912
Last EDR Contact: 05/17/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Semi-Annually

SRP: State Remediation Program List
The State Remediation Program (SRP) was established in 1994 within the Division of Solid Waste Management for the purpose of providing owners, prospective purchasers and other interested parties the means to voluntarily investigate, clean up or monitor contaminated sites not regulated under RCRA, CERCLA or the Tennessee Division of Underground Tanks (UST).

Date of Government Version: 12/18/2017
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 32
Source: Department of Environemtn & Conservation
Telephone: 615-532-0853
Last EDR Contact: 05/17/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Semi-Annually

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Superfund VOAP Listing
Brownfields sites included on the Superfund Voluntary Cleanup, Oversight & Assistance Program listing.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 09/14/2016
Number of Days to Update: 68

Source: Department of Environment & Conservation
Telephone: 615-532-0912
Last EDR Contact: 04/02/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: Recycling Facilities Listing
A listing of recycling facility locations.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/12/2018
Number of Days to Update: 46

Source: Department of Environment & Conservation
Telephone: 615-532-8657
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 05/04/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

CDL: Registry of Contaminated Properties

Pursuant to TCA 68212509 the following properties have been quarantined because of methamphetamine production, but have not been cleaned and certified within the 60day time frame allotted by the statute. These properties are hereby registered by the Tennessee Department of Environment and Conservation as unremediated methamphetamine sites. This is not a comprehensive list of quarantined properties. These are properties that TDEC has been notified as being quarantined, but have not been cleaned within the 60 day grace period. Other properties where methamphetamine production residues are a concern may not have been quarantined, may not have been reported to TDEC, or may not have passed the 60day grace

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 29

Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

PRIORITY CLEANERS: DCERP Remediation Sites Listing
Drycleaner Environmental Response Program remediation sites.

Date of Government Version: 01/29/2018
Date Data Arrived at EDR: 01/30/2018
Date Made Active in Reports: 03/07/2018
Number of Days to Update: 36
Source: Department of Environment & Conservation
Telephone: 615-253-3876
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

DEL SHWS: Deleted State Hazardous Waste Sites
A listing of sites removed from the Promulgated Sites Listing.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 09/14/2016
Number of Days to Update: 68
Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 04/02/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

HIST UST: Underground Storage Tank Database
This database is no longer updated by the agency. It contains records and detail fields that the current UST database does not.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 17
Source: Department of Environment & Conservation
Telephone: 615-532-0945
Last EDR Contact: 05/14/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Liens Information
A listing of sites with environmental liens information.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 04/07/2015
Date Made Active in Reports: 04/30/2015
Number of Days to Update: 23
Source: Department of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 04/02/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 94

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

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

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

SPILLS: State Spills
A listing of spills locations.

Date of Government Version: 01/05/2015
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 02/10/2015
Number of Days to Update: 35

Source: Department of Environment & Conservation
Telephone: 615-532-0109
Last EDR Contact: 04/02/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
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. 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). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/25/2018
Next Scheduled EDR Contact: 09/03/2018
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: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/15/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/08/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Every 4 Years

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: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/25/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/09/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Annually

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: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 94

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/20/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

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
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

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: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
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: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 04/09/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

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: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/04/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/03/2018
Date Data Arrived at EDR: 01/04/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

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: 12/31/2017
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 79

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

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.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Biennially

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: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

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: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US 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: 01/25/2018
Date Data Arrived at EDR: 02/28/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 72

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 87

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 02/21/2018
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 28

Source: EPA
Telephone: (404) 562-9900
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 06/01/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 02/25/2018
Date Data Arrived at EDR: 03/17/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

AIRS: Listing of Permitted Sources

A listing of permitted sources issued by the Division of Air Pollution Control.

Date of Government Version: 05/01/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/04/2018
Number of Days to Update: 32

Source: Department of Environment & Conservation
Telephone: 615-532-0545
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

DRYCLEANERS: Registered Facilities List
A list of all active registered drycleaner facilities, There may be some inactive facilities included.

Date of Government Version: 03/21/2018
Date Data Arrived at EDR: 04/18/2018
Date Made Active in Reports: 06/01/2018
Number of Days to Update: 44
Source: Dept. of Environment & Conservation
Telephone: 615-532-0900
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

LEAD CERT: Lead Safe Housing Registry
A listing of Tennessee properties that have achieved a lead safe designation.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/06/2017
Date Made Active in Reports: 01/04/2018
Number of Days to Update: 29
Source: Department of Environment & Conservation
Telephone: 615-532-8011
Last EDR Contact: 06/01/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

NPDES: Permitted Facility Listing
A listing of permitted wastewater facilities.

Date of Government Version: 02/21/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 29
Source: Department of Environment & Conservation
Telephone: 615-253-2245
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

VAPOR: Vapor Intrusion
A listing of sites that have a potential for vapor intrusion

Date of Government Version: 02/21/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 29
Source: Department of Environment & Conservation
Telephone: 615-532-0930
Last EDR Contact: 04/26/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: 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.

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 Hist Auto: EDR Exclusive Historical Auto 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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 Hist Cleaner: EDR Exclusive Historical 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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 RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environment and Conservation in Tennessee.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Environment and Conservation
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environment and Conservation in Tennessee.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Environment and Conservation
Telephone: N/A
Last EDR Contact: 06/01/2012
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: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: No Update Planned

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: 04/30/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/21/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 01/12/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/13/2018
Number of Days to Update: 25

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 04/16/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). 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.

Electric Power Transmission Line Data

Source: PennWell Corporation

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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.

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.

Daycare Centers: Child Care Listing
Source: Department Of Human Services
Telephone: 615-313-4778

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Environment & Conservation
Telephone: 651-532-0052

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

VTS SMYRNA
SMYRNA
SMYRNA, TN 37167

TARGET PROPERTY COORDINATES

Latitude (North):	36.000852 - 36° 0' 3.07''
Longitude (West):	86.509568 - 86° 30' 34.44''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	544202.2
UTM Y (Meters):	3983953.8
Elevation:	519 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5943388 LA VERGNE, TN
Version Date:	2013
Northeast Map:	5943378 GLADEVILLE, TN
Version Date:	2013
Southeast Map:	5943264 WALTERHILL, TN
Version Date:	2013
Southwest Map:	5943250 SMYRNA, TN
Version Date:	2013

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 principal 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).

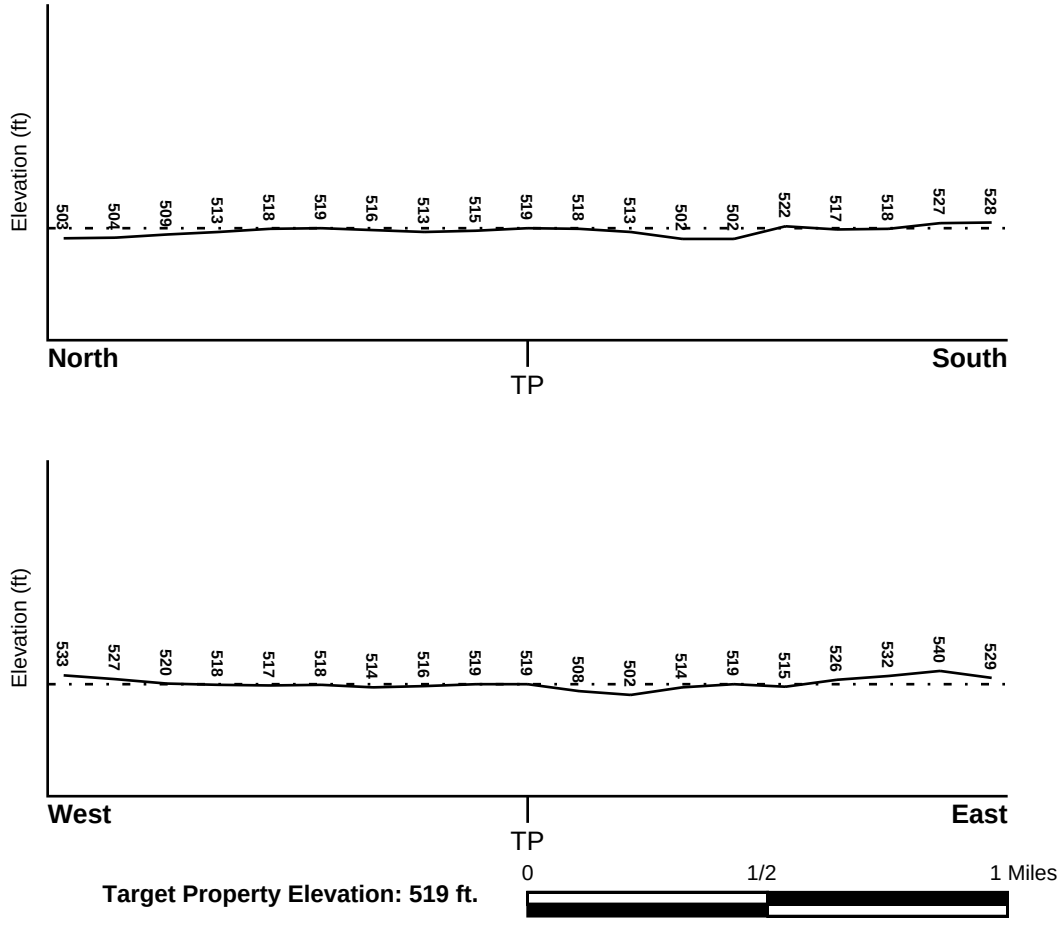
TOPOGRAPHIC INFORMATION

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 SE

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

Flood Plain Panel at Target Property	FEMA Source Type
47037C0400F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
47149C0040J	FEMA FIRM Flood data
47149C0020J	FEMA FIRM Flood data
47149C0107J	FEMA FIRM Flood data
47149C0126J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LA VERGNE	YES - refer to the Overview Map and Detail Map

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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
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

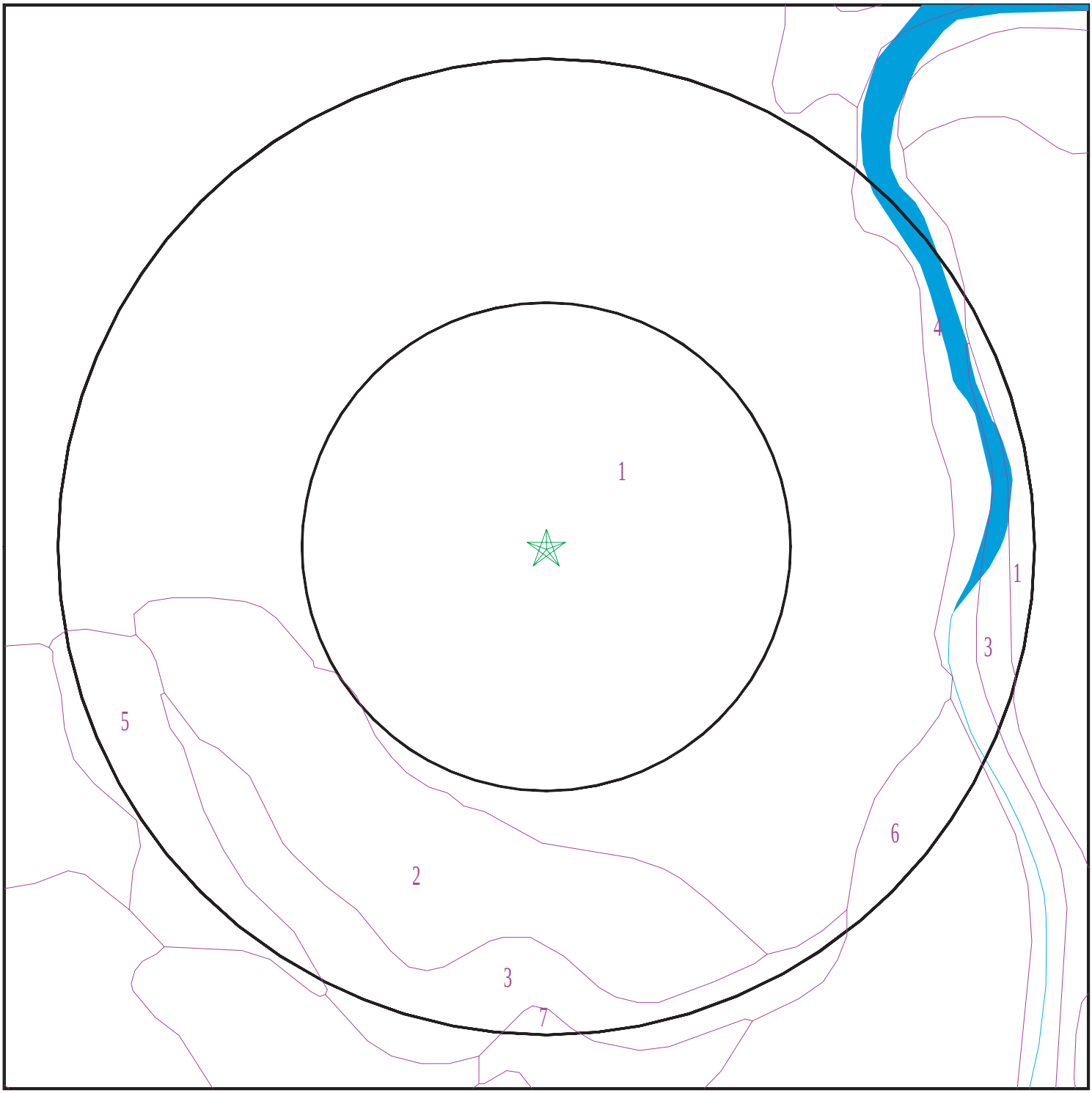
Era:	Paleozoic
System:	Ordovician
Series:	Middle Ordovician (Mohawkian)
Code:	O2 *(decoded above as Era, System & Series)*

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).

SSURGO SOIL MAP - 5349421.2s



SITE NAME:	VTS Smyrna	CLIENT:	AECOM
ADDRESS:	Smyrna Smyrna TN 37167	CONTACT:	Jacquelyn Harrington
LAT/LONG:	36.000852 / 86.509568	INQUIRY #:	5349421.2s
		DATE:	June 29, 2018 5:10 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: BRADYVILLE

Soil Surface Texture: silty clay 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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 6 Min: 5.1
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 7.8 Min: 5.1
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 2

Soil Component Name: BRADYVILLE

Soil Surface Texture: silt 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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 6 Min: 5.1
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 7.8 Min: 5.1
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 3

Soil Component Name: BRADYVILLE

Soil Surface Texture: silt 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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 6 Min: 5.1
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 7.8 Min: 5.1
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 4

Soil Component Name: WATER

Soil Surface Texture: silt 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:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 5

Soil Component Name: BRADYVILLE

Soil Surface Texture: silty clay 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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 6 Min: 5.1
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 7.8 Min: 5.1
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 6

Soil Component Name: ARRINGTON

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 153 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1
2	27 inches	57 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1
3	57 inches	70 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1

Soil Map ID: 7

Soil Component Name: ARMOUR

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
2	7 inches	46 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	46 inches	62 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1

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

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

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

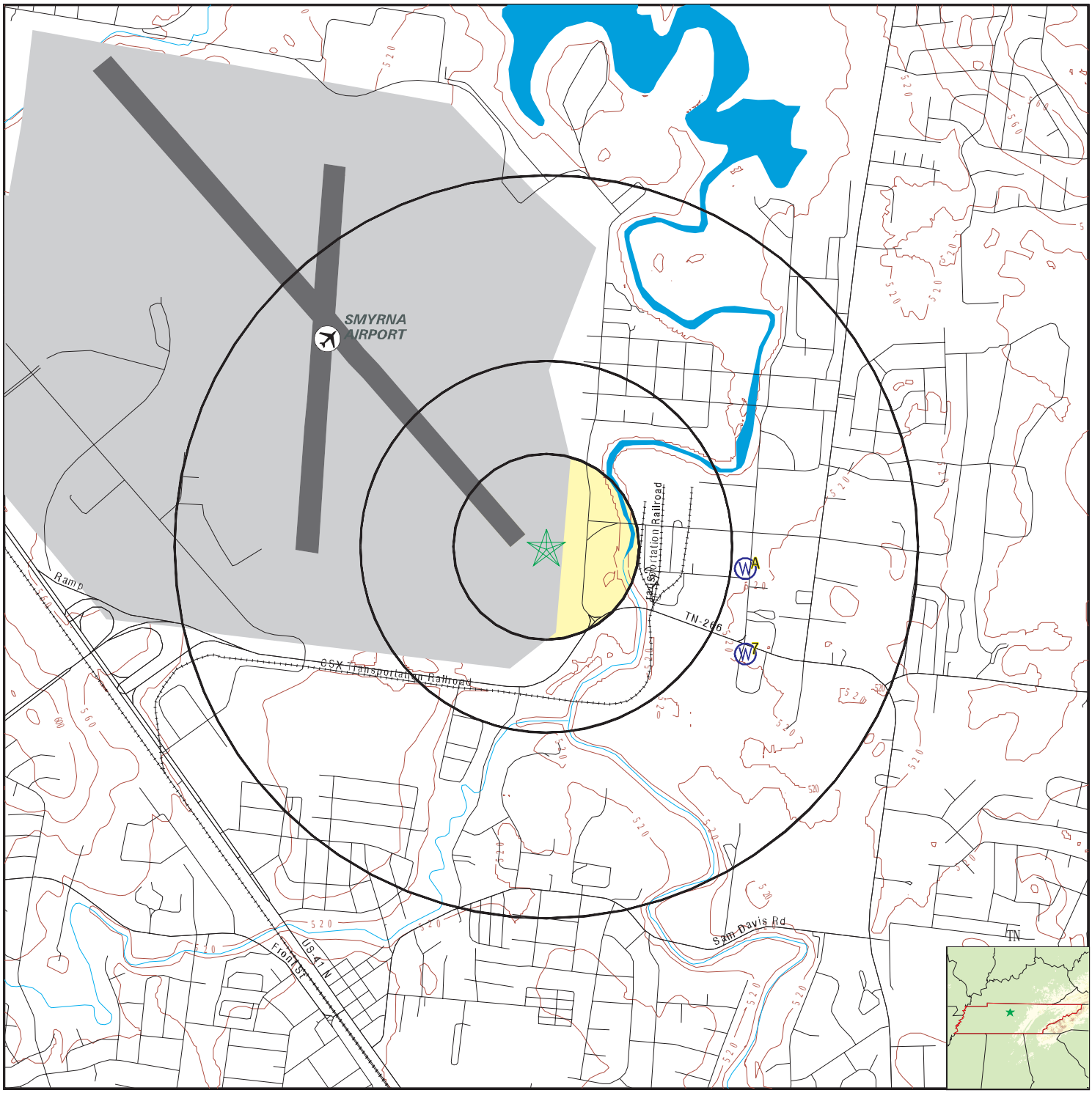
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

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

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	TN6000000108685	1/2 - 1 Mile East
A2	TN6000000108740	1/2 - 1 Mile East
A3	TN6000000108986	1/2 - 1 Mile East
A4	TN6000000108679	1/2 - 1 Mile East
A5	TN6000000108466	1/2 - 1 Mile East
A6	TN6000000108601	1/2 - 1 Mile East
7	TN6000000162672	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 5349421.2s



- 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
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME: VTS Smyrna	CLIENT: AECOM
ADDRESS: Smyrna Smyrna TN 37167	CONTACT: Jacquelyn Harrington INQUIRY #: 5349421.2s
LAT/LONG: 36.000852 / 86.509568	DATE: June 29, 2018 5:10 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1 **East** **1/2 - 1 Mile** **Lower**	**TN WELLS**	**TN6000000108685**

County nam:	RUTHERFORD
Well numbr:	14903127
Driller na:	HALE, THOMAS M
Addr line1:	HOLLANDALE RD
License co:	593
Cmpltn dat:	18-MAY-87
Latitude:	360000
Cmpltn tot:	300
Cmpltn est:	0
Wlts quad :	0311SE9
Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	20
Wbz:	300
Descriptio:	Residential
Driller re:	1432590
Site id:	TN6000000108685

A2 **East** **1/2 - 1 Mile** **Lower**	**TN WELLS**	**TN6000000108740**

County nam:	RUTHERFORD
Well numbr:	14903182
Driller na:	HALE, THOMAS M
Addr line1:	HOLLANDALE RD
License co:	593
Cmpltn dat:	03-AUG-87
Latitude:	360000
Cmpltn tot:	325
Cmpltn est:	0
Wlts quad :	0311SE9
Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	20
Wbz:	205
Descriptio:	Residential
Driller re:	1432645
Site id:	TN6000000108740

A3 **East** **1/2 - 1 Mile** **Lower**	**TN WELLS**	**TN6000000108986**

County nam:	RUTHERFORD
Well numbr:	14903431
Driller na:	BYRD, LARRY
Addr line1:	Not Reported
License co:	647
Cmpltn dat:	19-SEP-88
Latitude:	360000
Cmpltn tot:	390
Cmpltn est:	30
Wlts quad :	0311SE9
Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	23
Wbz:	380
Descriptio:	Residential
Driller re:	1432891
Site id:	TN6000000108986

A4
East
1/2 - 1 Mile
Lower

TN WELLS **TN6000000108679**

County nam:	RUTHERFORD
Well numbr:	14903121
Driller na:	MORGA, MICHAEL BU
Addr line1:	HOLLANDALE RD
License co:	593
Cmpltn dat:	13-MAR-87
Latitude:	360000
Cmpltn tot:	245
Cmpltn est:	8
Wlts quad :	0311SE9
Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	25
Wbz:	225
Descriptio:	Residential
Driller re:	1432584
Site id:	TN6000000108679

A5
East
1/2 - 1 Mile
Lower

TN WELLS **TN6000000108466**

County nam:	RUTHERFORD
Well numbr:	14902906
Driller na:	PHILPS, VERA
Addr line1:	POOLDE KNOB
License co:	91
Cmpltn dat:	Not Reported
Latitude:	360000
Cmpltn tot:	195
Cmpltn est:	3
Wlts quad :	Not Reported

Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	61
Wbz:	185
Descriptio:	Residential
Driller re:	1432371
Site id:	TN6000000108466

A6
East
1/2 - 1 Mile
Lower

TN WELLS **TN6000000108601**

County nam:	RUTHERFORD
Well numbr:	14903043
Driller na:	SPIEVY, JIM
Addr line1:	POODLE KNOB
License co:	634
Cmpltn dat:	Not Reported
Latitude:	360000
Cmpltn tot:	85
Cmpltn est:	7
Wlts quad :	Not Reported
Driller ta:	Not Reported
Longitude:	863000
Accuracy:	Not Reported
Casing fee:	21
Wbz:	85
Descriptio:	Residential
Driller re:	1432506
Site id:	TN6000000108601

7
ESE
1/2 - 1 Mile
Lower

TN WELLS **TN6000000162672**

County nam:	RUTHERFORD
Well numbr:	20041055
Driller na:	GARVIN, RICHARD
Addr line1:	351 QUE CREEK RD.
License co:	647
Cmpltn dat:	19-APR-04
Latitude:	355948
Cmpltn tot:	310
Cmpltn est:	70
Wlts quad :	0070NE3
Driller ta:	D0064394
Longitude:	863000
Accuracy:	F
Casing fee:	20
Wbz:	95
Descriptio:	Commercial
Driller re:	1491775
Site id:	TN6000000162672

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: TN Radon

Radon Test Results

County	Total Sites	Avg	Max	<4 pCi/L	4-10 pCi/L	10-20 pCi/L	20-50 pCi/L	50-100 pCi/L	>100 pCi/L
RUTHERFORD	55	2.2	23.5	49	5	0	1	0	0

Federal EPA Radon Zone for RUTHERFORD County: 1

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: 37167

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.725 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	17.500 pCi/L	0%	100%	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.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Environment & Conservation
Telephone: 651-532-0052

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 Service (NRCS)
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 Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, 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

County Water Wells in Tennessee
Source: Department of Environment and Conservation
Telephone: 615-532-0191
Water well locations for the entire state.

OTHER STATE DATABASE INFORMATION

RADON

State Database: TN Radon
Source: Department of Environment & Conservation
Telephone: 615-299-9725
Radon Test Results

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

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

VTS Smyrna

Smyrna

Smyrna, TN 37167

Inquiry Number: 5349421.5

July 02, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

07/02/18

Site Name:

VTS Smyrna
Smyrna
Smyrna, TN 37167
EDR Inquiry # 5349421.5

Client Name:

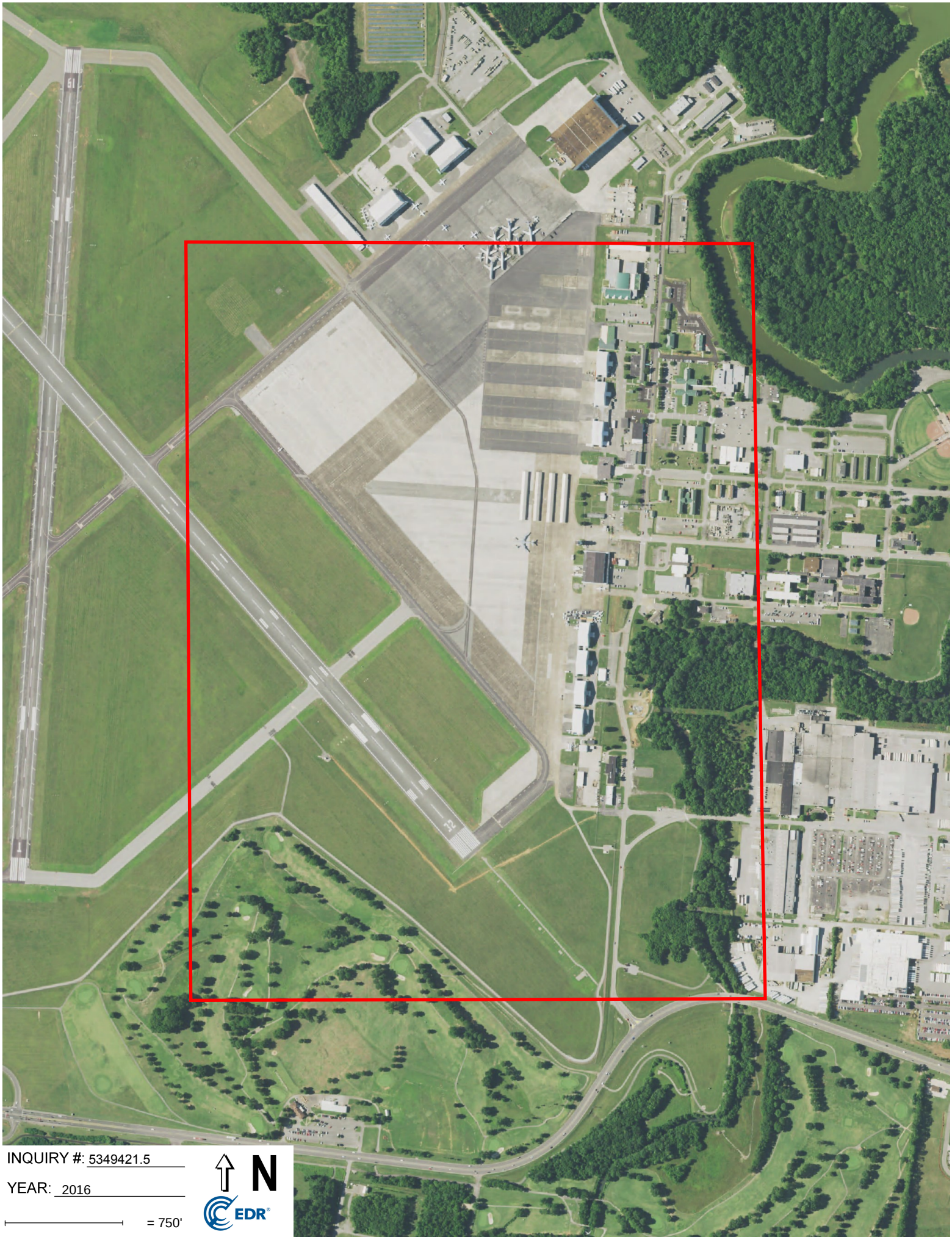
AECOM
12120 Shamrock Plaza
Omaha, NE 68154
Contact: Jacquelyn Harrington

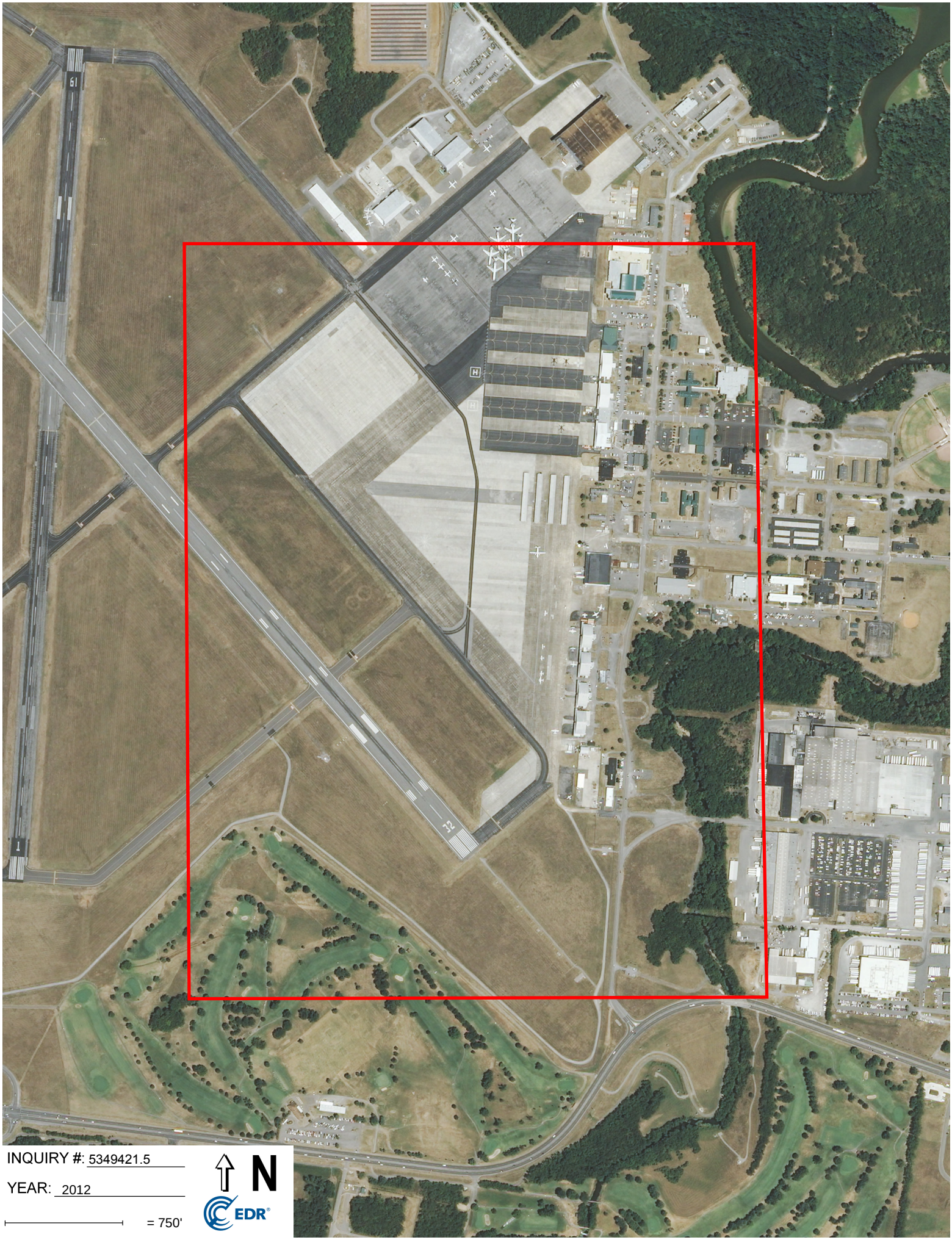
Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial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

Search Results:

Year	Scale	Details	Source
2016	1"=750'	Flight Year: 2016	USDA/NAIP
2012	1"=750'	Flight Year: 2012	USDA/NAIP
2008	1"=750'	Flight Year: 2008	USDA/NAIP
1997	1"=500'	Acquisition Date: March 11, 1997	USGS/DOQQ
1992	1"=750'	Flight Date: February 21, 1992	USGS
1985	1"=750'	Flight Date: April 25, 1985	USDA
1980	1"=750'	Flight Date: April 19, 1980	USDA
1974	1"=750'	Flight Date: December 04, 1974	USDA
1971	1"=750'	Flight Date: February 24, 1971	USDA
1953	1"=750'	Flight Date: October 23, 1953	USGS
1951	1"=750'	Flight Date: March 20, 1951	USGS
1938	1"=750'	Flight Date: December 20, 1938	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.


INQUIRY #: 5349421.5
YEAR: 2016
= 750'
N
EDR



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YEAR: 2012

= 750'

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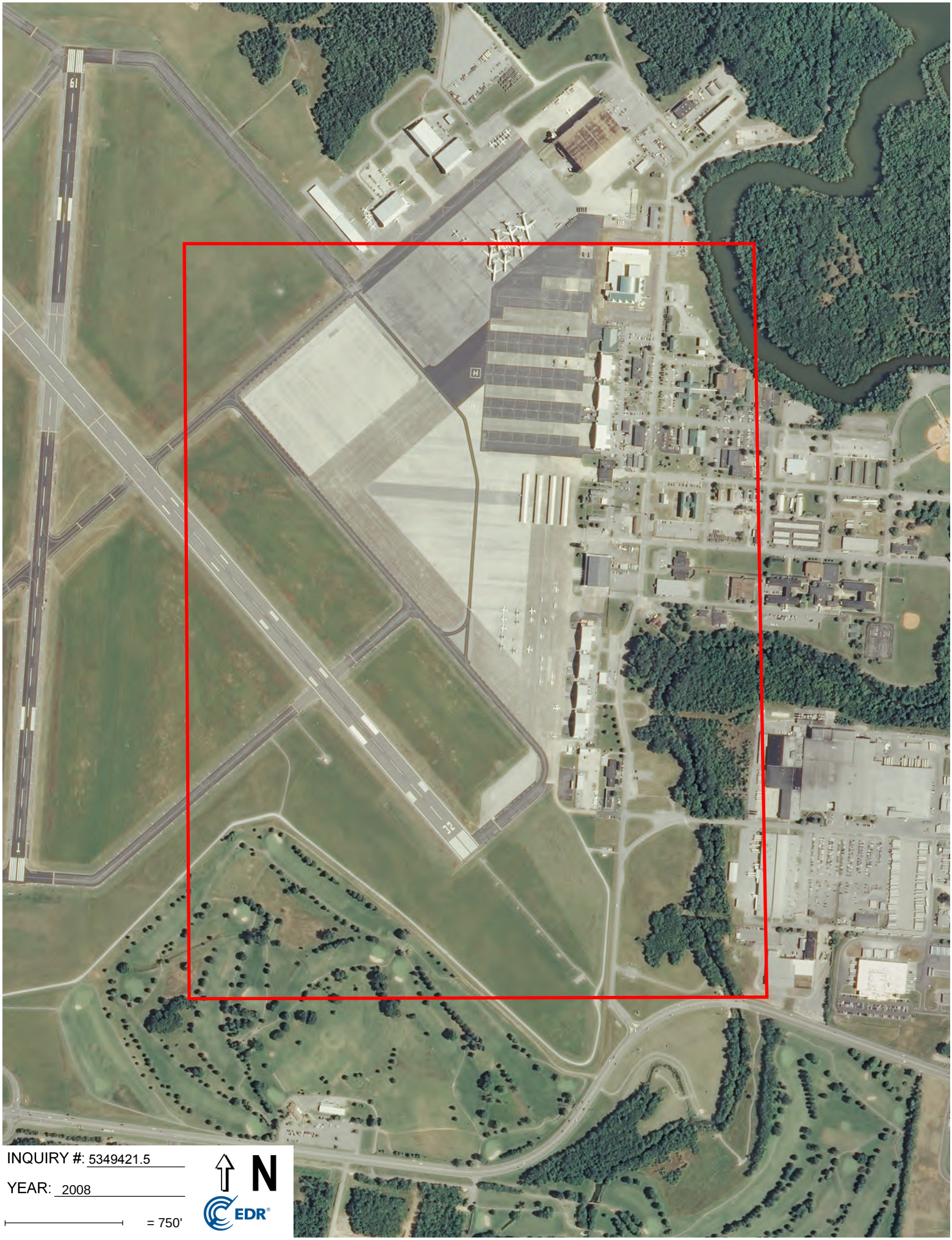
EDR



INQUIRY #: 5349421.5

YEAR: 2008

= 750'

N

EDR

INQUIRY #: 5349421.5

YEAR: 1997

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5349421.5

YEAR: 1997

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5349421.5

YEAR: 1997

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5349421.5

YEAR: 1997

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5349421.5

YEAR: 1992

= 750'

N

EDR

INQUIRY #: 5349421.5

YEAR: 1985

= 750'

N

EDR

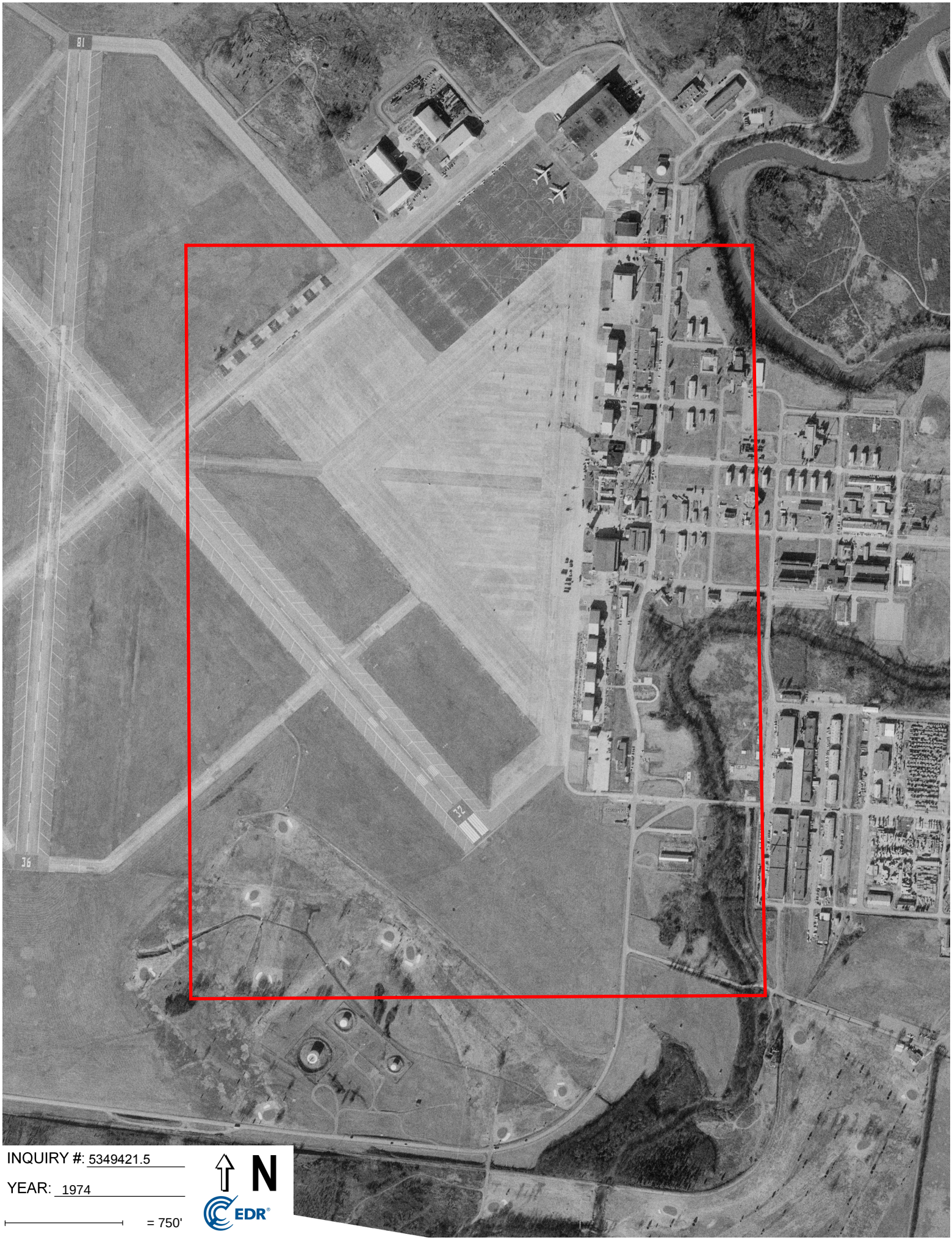
INQUIRY #: 5349421.5

YEAR: 1980

= 750'

N

EDR



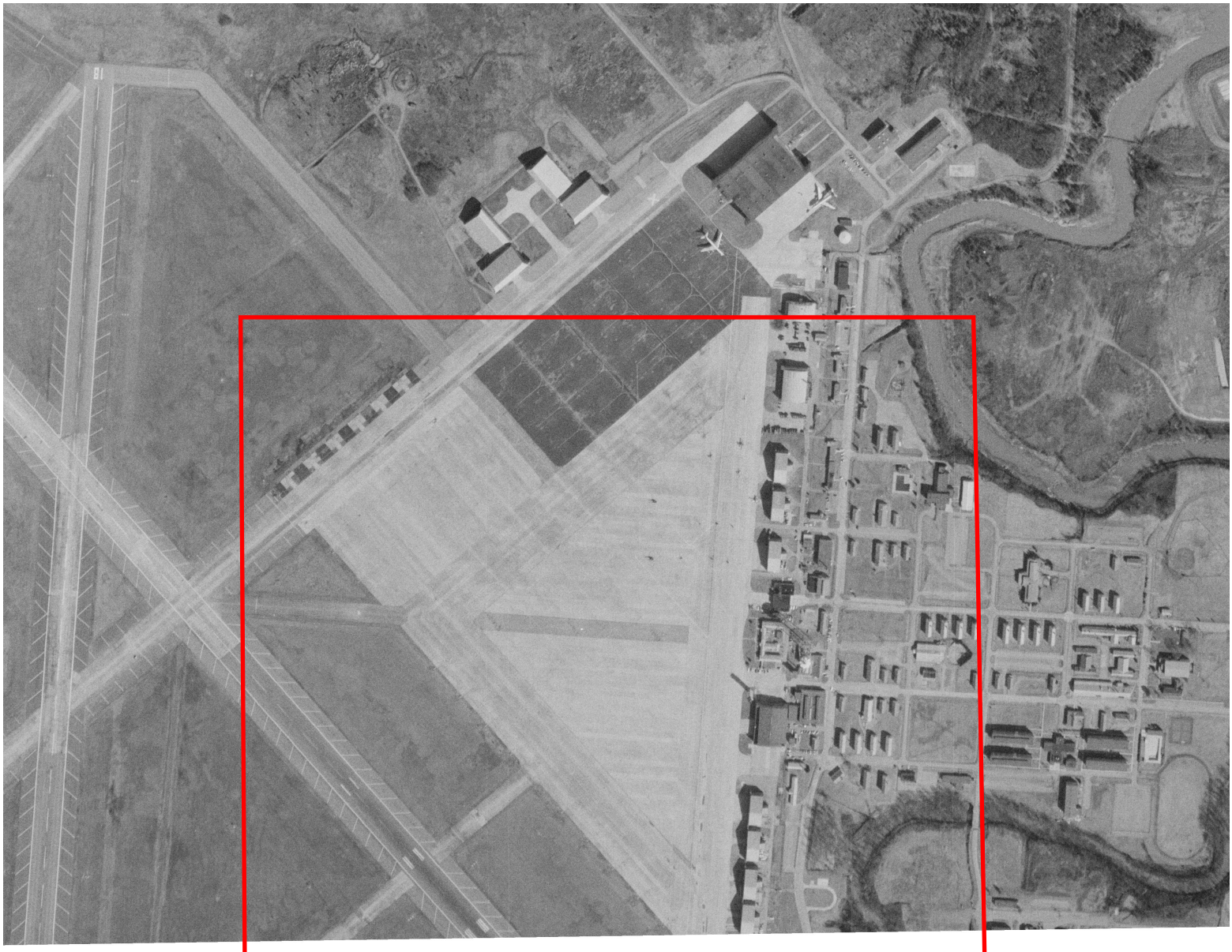
INQUIRY #: 5349421.5

YEAR: 1974

= 750'

N

EDR



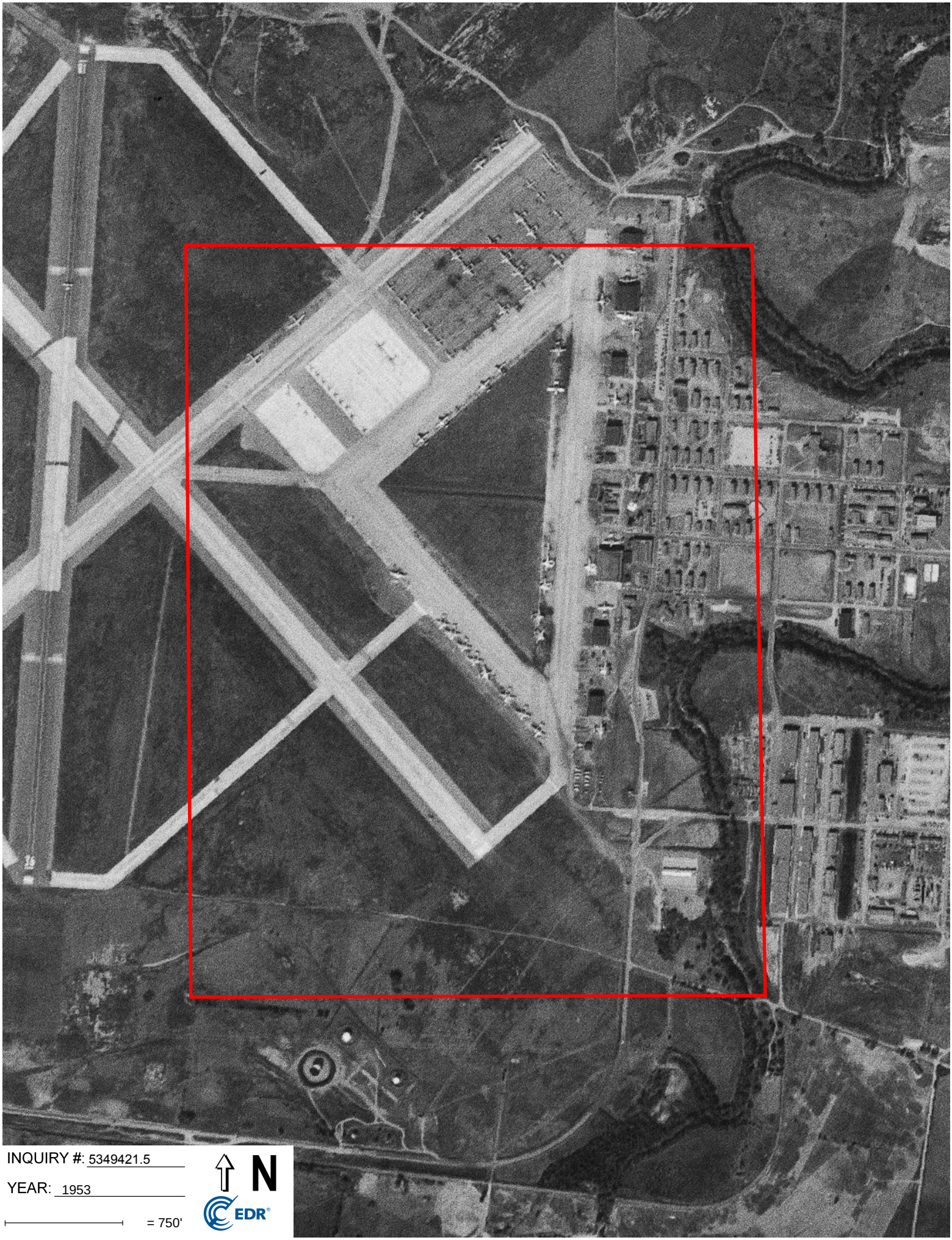
INQUIRY #: 5349421.5

YEAR: 1971

= 750'

N

EDR



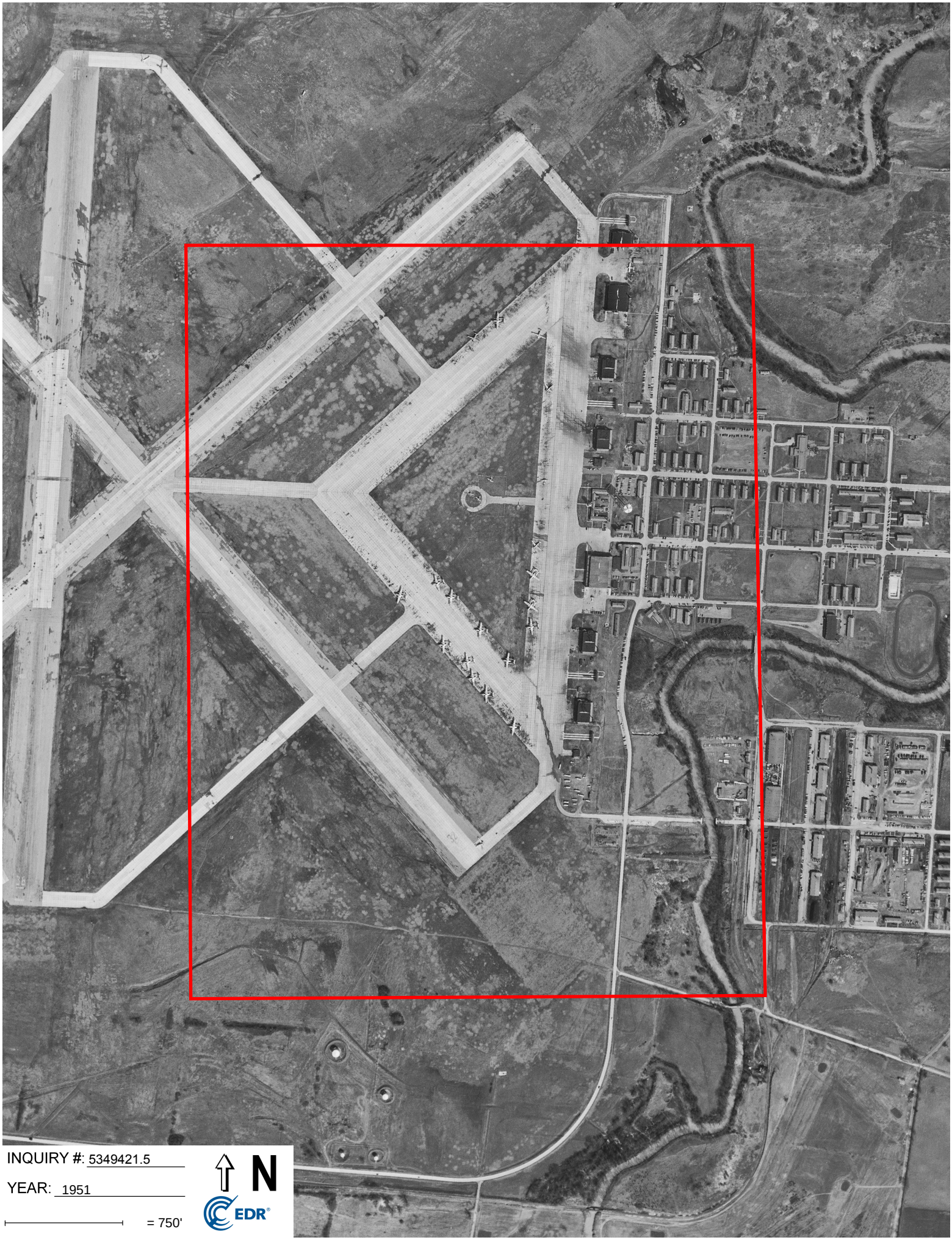
INQUIRY #: 5349421.5

YEAR: 1953

= 750'

N

EDR



INQUIRY #: 5349421.5

YEAR: 1951

= 750'

N

EDR

INQUIRY #: 5349421.5

YEAR: 1938

= 750'

N

EDR

Appendix B

Preliminary Assessment Documentation

Appendix B.1
Interview Records

VTS-S p 1:6

PA Interview Questionnaire - Environmental Manager

Facility: VTS - Smyrna
Interviewer: Singer & Davis
Date/Time: 20 May 2016

- Mike Helms - Maintenance Chief VTS-S
- CW3 Michael Sawyer - Safety Officer/Test Pilot @ AASF#1

Interviewee: Stephanie Henry - Env Mgr **Title:** TNARNG **Phone Number:** Sawyer - 6153645962 **Email:**	Can your name/role be used in the PA Report? (Y) or N Can you recommend anyone we can interview? (Y) or N Staff at AASF#1 previously assigned at VTS-S

1. Roles or activities with the Facility/years working at the Facility.

   2002 Sawyer
   2014 Helms

2. Where can I find previous facility ownership information?

   USAF previously. ARNG took over facility in late 1950s

3. What can you tell us about the history of PFAS including aqueous film forming foam (AFFF) at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

   Maintenance X
   Fire Training Areas X
   Firefighting (Active Fire) X
   Crash X
   Fire Suppression Systems (Hangers/Dining Facilities) hanger systems and apron (carts)
   Fire Protection at Fueling Stations Yes (cart)
   Non-Technical/Recreational/ Pest Management No
   Metals Plating Facility No
   Waterproofing Uniforms (Laundry Facilities) No
   Other

4. Fill out CSM Information worksheet with the Environmental Manager.

5. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing the AFFF/suppression system? Do you have "As Built" drawings for the buildings?

   All hangars (3) have AFF systems that are in place but not reliable
   Portable extinguishers have AFFF
   No testing of AFFF conducted. No release since 2006 fire
   Helms: It had been 10 years since facility inspected and now everything up to code. Believes the hanger fire suppression systems installed in ~ 2004/2005
   He shut off AFFF tanks (2) and tagged out but and does not know quantity stored. Needs disposed.

VTS S- 2:6

PA Interview Questionnaire - Environmental Manager

Facility:____________
Interviewer:____________
Date/Time:____________

6. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? If retrofitted, when was that done? Currently American Fire Protection (vendor) (formerly Tyco Simplex) tests system annually (682N) ~~Water at AFFF tank tagged out for~~ + 681 + 682S (water only)
7. How is AFFF procured? Do you have an inventory/procurement system that tracks use? Was ~~was~~ obtained from installer (Bldg. 682N)
8. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)? 3% last sample results (682N)
9. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material? Bldg 681 - 900 gal AFFF tank shut off and tagged - maintenance (vehicle now) 682S 900 gal AFFF tank " " " " 682N 900 gal AFFF tank charged and tested annually as only active aircraft hangar 681 + ~~683~~ 682S - use water only at AFFF tagged closed
10. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them? No. Annual w/ hand fire extinguisher training on tarmac (past PORFO-JOHNs) Less than 1/2 gallon expended. Rolling carts moved to Nashville 4/1/2015 when facility staff/operations moved there from VTS-S.

VTS-S 3.6

PA Interview Questionnaire - Environmental Manager

Facility: VTS-S
Interviewer: Steve Dawe
Date/Time: 20 May 2016

11. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

No releases beyond testing of cart where drains or infiltrate (unit water) of <1-2 gal; 682 flight line drains to storm sewer and nearby lake
Inside hangar drains go to OWS and WWTP
Henry: 2 sumps between hangars and Bldg 680

12. Can you recall specific times when city, county, and/or state personnel came on-post for training? If so, please state which state/county agency or military entity? Do you have any records, including photographs to share with us?

No

13. Did military routinely or occasionally fire train off-post? List the units that you can recall used/trained at various areas.

Not w/ AFFF or certs
Train with Fire Dept 1-2x/year for emergency response

14. Did individual units come with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

2006 hangar fire
possibly smaller fires in shops (cigarettes, etc) where dell extinguisher only used

15. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

Henry: Believe a Smyrna/Rutherford airport FD report available on their website for response to the 2006 fire.
Sawyer - was not onsite for fire but reports staff say the hangar did NOT fill with foam as system did not deploy possibly due to fire between walls of hangar (not inside) Planes were pulled out of hangar as smoke filling space but system did not deploy
Not interviewed officially
CIZ Bot Myers Fixed wing mechanic (Dyncorp contractor) maintains TBI aircraft

VTS-S - 9:6

PA Interview Questionnaire - Environmental Manager

Facility:_____
Interviewer:_____
Date/Time:_____

16. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

None > 5 gal minor spills use absorbent / cleaned up

AST Fuel farm to be removed and demo'd by contractor (contracting underway)

17. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

No

18. Are there mutual aid/use agreements between county, city, and local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement?

Use Had agreement w/ Smyrna/Rutherford FD. No records on site

19. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste treatment plants, and AFFF ponds)?

1 cart in Bldg 602N (TN Bureau of Investigation aircraft stored here)

7 carts moved to Nashville in 2015

2 carts on flight line

2/10 total historically

20. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

No

VTS-S-516

PA Interview Questionnaire - Environmental Manager

Facility: VTS-S
Interviewer: Steger / Davis
Date/Time: 20 May 2016

21. Are there past studies you are aware of with environmental information on plants/animals/ groundwater/soil types, etc., such as Integrated Cultural Resources Management Plans or Integrated Natural Resources Management Plans?

VTS-S INRMP ~2012

22. What other records might be helpful to us (environmental compliance, investigation records, admin record) and where can we find them?

Henry will provide available information.

23. Do you have or did you have a chrome plating shop on base? What were/are the years of operation of that chrome plating shop?

No

24. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control? If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

No

25. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

Contract initiated. NGB to dispose

VT3-5 6:6

PA Interview Questionnaire - Environmental Manager

Facility:_____
Interviewer:_____
Date/Time:_____

26. Do you recommend anyone else we can interview? If so, do you have contact information for them?

staff at ATSF #1 Nashville

Horns 1.5

PA Interview Questionnaire – Fire Station

Facility: Smyrna Airport
Interviewer: Shaw
Date/Time: 5/24/18 3:30p

615 462 7369

Interviewee: Jeff Horns **Title:** Smyrna Rutherford Airport Authority **Phone Number:** **Email:** jhorns@smyrnairport.com	Can your name/role be used in the PA Report? (Y) or N Can you recommend anyone we can interview? Y or N

1. Roles or activities with the Facility/years working at the Facility.

Fire Chief since April 2017, special events prior, from another FD before that. At airshow Blue Angel crash. (2016)

2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

they have foam on 2 fire trucks
1 - 195 gallons 6yo
2 - 95 gallons 3yo.
at station inside fence
refill on truck from 5gal plastic jugs as needed (rare)

Maintenance (e.g., ramp washing)
Fire Training Areas
(Firefighting (Active Fire))
(Crash)
Fire Suppression Systems (Hangers/Dining Facilities)
Fire Protection at Fueling Stations
Non-Technical/Recreational/ Pest Management

3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?

N/A

4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?

N/A

5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?

Airport authority - He does not. They rarely use due to high cost

Hom 2.5

PA Interview Questionnaire – Fire Station

Facility: _____
Interviewer: _____
Date/Time: _____

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

manuf. unknown

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

poured directly into trucks tank
No problems w/ truck tank leakage

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

5 gal plastic jugs + 2 trucks only (see above)

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

at station No spills

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

#1 firetruck
#2 " "

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

No, No testing except during annual FAA Part 139 operation inspections conducted at point identified by inspector on airfield <5 gallons used. they don't train w/ foam.

Harris 3:5

PA Interview Questionnaire – Fire Station

Facility: Smyrna Rutherford Airport Auth
Interviewer: [illegible]
Date/Time: 5/21/18 3:30p

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

None

13. What types of fuels/flammables were used at the FTAs?

—

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

Recalls during Blue Angel crash in 2016 foam was used at scene. Environmental contractor for Navy excavated surface soil at crash site and disposed offsite. South of Approach for Runway 32.

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

City of Smyrna, Airport authority FD only respond to aircraft fires or fires on airport. Would respond to structural fire at hangar.

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Joint training occurs, recalls one exercise in 2016. Blackhawk set up for full scale exercise. Foam was not used.

Hams 1:65

PA Interview Questionnaire – Fire Station

Facility:_____
Interviewer:_____
Date/Time:_____

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

NA

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

Submit FOIA for Blue Angel crash report.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

No. Don't respond off airport.

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

No.

Jeff Harris 5:65 Rutherford

PA Interview Questionnaire – Fire Station

Facility: Smyrna Airport Author.
Interviewer: _____
Date/Time: 5/21/18 3:30p

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved? No
23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L? Unknown
24. Do you recommend anyone else we can interview? If so, do you have contact information for them? No

A follow-up phone interview with Chief Harris was conducted on 21June2018. He reported in addition to the 2006 hangar fire and the 2016 Blue Angel crash, a Jet A fuel spill occurred on 6 October 2017 at Hollingshead Aviation, near the airport tower. In response to the spill, Hollingshead personnel reportedly used foam for vapor suppression. It was estimated that 10 gallons of foam was used for this purpose. Some of the foam evaporated and a small amount drained to the storm sewer system, approximately 100 feet from the spill site. Chief Harris recalled Hollingshead hired Evergreen AES for spill response services, including removal of foam that had drained to the storm sewer. Chief Harris emailed a copy of the 2017 incident report.

With respect to interview question 15, Chief Harris clarified that the Smyrna Rutherford Airport Authority Fire Department provides emergency response to aircraft fires. The City of Smyrna Fire Department provides emergency response to structural fires at the airport, which was the case with the 2006 TN ARNG hangar fire. Chief Harris emailed a copy of the 2006 hangar fire incident report.

When asked, Chief Harris indicated there was no fire incident report available for the 2016 Blue Angel crash response. He indicated the crash site was off the airport property behind the Historic Sam Davis Home. He recalled hearing that the only AFFF used at that scene was for a wing burning in a field, but he had no additional information regarding quantities used.

Shriger PFAS/AFFF TN sites 5/22 p1

Smyrna VTS add'l interviews conducted at MASF #1 with staff previously at VTS-5

WG/2 Poorman, Aircraft Mechanic

regarding 2006 hangar fire ...

saw smoke, alarm then went off.
removed planes from hangar before
suppression system (foam) ~~engo~~
triggered. smoke filled hangar
believes Fire Dept (FD) used water.

after

cleaned hangar floor, squeegee floor
with soap/water mix and to drain
~~dock~~ (per Sawyer) to sanitary sewer
(WWTP)

SG1st class William Guard - Fire Marshall
at Smyrna. He serviced AFFF systems
from 2000 - ~~200~~ 2015
During 2006 fire, 2 mobile carts
each with 50 gallons of AFFF
were extinguished (used) and 1½"
fire hose (water) before foam
system triggered. About 1 hour later
the Smyrna FD arrived and used
foam (contrary to Poorman's account)
Cleaned foam after SmyrnaFD (i.e. airport
authority) did clean up.
Annual training used 50 gal. AFFF discharged

Re: VTS - Smyrna (interviews conducted at AASF when VB3S/Eff now work)

5/22 p 2

to sewer (sanitary) * (below)

E6 Dillain Willingham - No fuel spills
No use of AFFF
He worked at Smyrna from 2004 - 2015

* Mgt. Guard recalls the Buffalo hangar had AFFF premixed with water
TriMax pressured system (6% mix)
pressurized by at FD
Spent AFFF discharged to floor drain

CW3 Sawyer (at foam)
2006 fire from welding hangar door AFFF sys. didn't deploy
early 1990s Santa claus candle on roof started minor fire
all 3 hangars have AFFF systems
No aircraft crash/fire history

carts: NOVEC 360 replacing AFFF - waiting change out and disposal of AFFF to be determined Jackson AASF #3 has changed out but AASF pending, some carts are out-of-date + past hydrostatic testing
They contain w/ FD on tarmac. No non-standard AFFF ask.

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: Shnger Davis

Recorded by: Shnger

ARNG Contact: Joe Davis

Date and Time: 5/21/18

Method of visit (walking, driving, adjacent): Walking

Source/Release Information

Site Name / Area Name / Unique ID: VTS - Smyrna

Site / Area Acreage:

Historic Site Use (Brief Description): AASF

Current Site Use (Brief Description): Vehicle Maintenance

Physical barriers or access restrictions: gate / guard

1. Was PFAS used (or spilled) at the site/area? **Y / N**

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2006 fire

2. Has usage been documented? **Y / N**

2a. If yes, keep a record (place electronic files on a disk):

FD report believed to be prepared

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site

4. Is this site located at an airport/flightline? **Y / N**

4a. If yes, provide a description of the airport/flightline tenants:

Y

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? **Y / N** (Y)

1a. If yes, indicate which type of AFFF has been used:

Y

1b. If yes, describe maintenance schedule/leaks:

Contractor fills pumps annual. Not operational testing

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

inside bldgs go to sump, has pumped at Septic service company (2009 since)

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? **Y / N** (Y)

1a. If so, note observation and location: Stewart Ck

2. Is there channelized flow within the site/area? **Y / N** (N)

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site? **Y / N** (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? **Y / N** (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? **Y / N**

5a. If so, please note and observe the location. unknown

6. Does an adjacent non-ARNG PFAS source exist? **Y / N**

6a. If so, please note the source and location. unknown - (Blue Angel Creek possibly)

6b. Will off-site reconnaissance be conducted? **Y / N**

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? **Y / N**

1a. If so, please describe change (ex. Structures no longer exist): hangar w/ fire 2006 was gutted and rebuilt

2. Is the site/area vegetated? **Y / N**

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion? **Y / N**

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water? **Y / N**

4a. If yes, describe the location and extent of the ponding:

Receptor Information

1. Is access to the site restricted? **Y / N**

1a. If so, please note to what extent: guarded gate

2. Who can access the site? **Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological**

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site? **Y / N**

3a. If so, please note the location/distance: No > 3/4 mi estimated

4. Are any schools/day care centers located near the site? **Y / N**

4a. If so, please note the location/distance/type:

No pumont res. & No daycare on site Summer/weekend training only

5. Are any wetlands located near the site? **Y / N**

5a. If so, please note the location/distance/type:

Yes to NRWP

Visual Survey Inspection Log

Additional Notes AST pump to be demo'd (contracts pending)

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: VTS-Smyrna

Why has this location been identified as a site?

AFFF release during 2006 ARNG hangar fire

Are there any other activities nearby that could also impact this location?

Blue angel aircraft crash on airport in 2016

Training Events

Have any training events with AFFF occurred at this site? Hand/wall fire extinguisher only

If so, how often? annually

How much material was used? Is it documented? <1-2 gallon estimated

Identify Potential Pathways: Do we have enough information to fully understand over land surface water flow, groundwater flow, and geological formations on and around the facility? Any direct pathways to larger water bodies?

Surface Water: (see Smyrna INRAMP)

Surface water flow direction? E-NE toward Steward Creek (lake) 2 stormwater outfalls on Stewart Ck

Average rainfall? ~55 inches annually

Any flooding during rainy season? yes

Direct or indirect pathway to ditches? Surface and culvert/ditches

Direct or indirect pathway to larger bodies of water? both

Does surface water pond any place on site? no

Any impoundment areas or retention ponds? no

Any NPDES location points near the site? 2 stormwater outfalls on Stewart Ck

How does surface water drain on and around the flight line? To storm sewer and Stewarts creek. Other drainage conveys to sanitary sewer to oil water separator (OWS) and then to WWTP (airport)

Preliminary Assessment – Conceptual Site Model Information

Groundwater: unknown – no wells onsite

Groundwater flow direction?

Depth to groundwater?

Uses (agricultural, drinking water, irrigation)?

Any groundwater treatment systems?

Any groundwater monitoring well locations near the site?

Is groundwater used for drinking water? no

Are there drinking water supply wells on installation? no

Do they serve off-post populations?

Are there off-post drinking water wells downgradient

Waste Water Treatment Plant: airport maintained – details unknown

Has the installation ever had a WWTP, past or present? yes

If so, do we understand the process and which water is/was treated at the plant?

Do we understand the fate of sludge waste?

Is surface water from potential contaminated sites treated?

Equipment Rinse Water

1. Is firefighting equipment washed? No Where does the rinse water go?

2. Are nozzles tested? How often are nozzles tested? Where are nozzles tested? Are nozzles cleaned after use? Where does the rinse water flow after cleaning nozzles? No nozzle testing

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker

Construction Worker

Recreational User

Residential

Child

Ecological

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?

Documentation

Ask for Engineering drawings (if applicable). Drawings provided by Henry

Has there been a reconstruction or changes to the drainage system? No When did that occur?

Appendix C

Photographic Log

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Volunteer Training Site-Smyrna	Rutherford County, Tennessee

Photograph No. 1

Description:

AST Field, now inactive

Photograph No. 2

Description:

Building 682S, rebuilt after 2006 fire, now inactive

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Volunteer Training Site-Smyrna	Rutherford County, Tennessee

Photograph No. 3

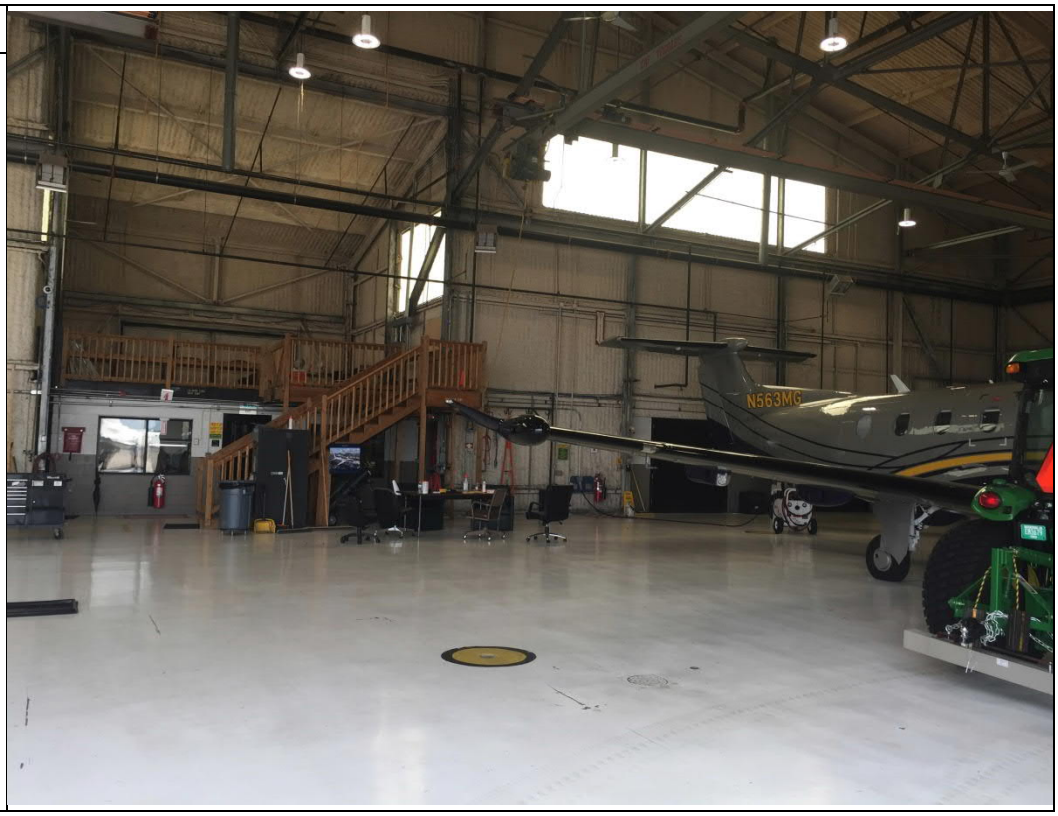
Description:

Building 682N, apron drain to oil water separator

Photograph No. 4

Description:

Building 682N, TN Attorney General's aircraft



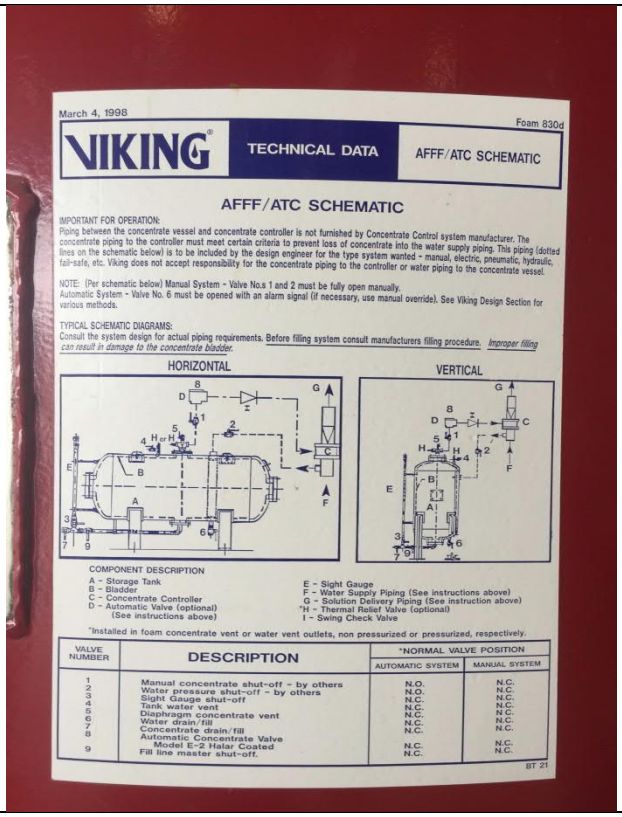
APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Volunteer Training Site-Smyrna	Rutherford County, Tennessee

Photograph No. 5

Description:

AFFF tank in Building 682N, 900 gallon AFFF tank label



March 4, 1998 — Foam 830d

VIKING — TECHNICAL DATA — AFFF/ATC SCHEMATIC

AFFF/ATC SCHEMATIC

IMPORTANT FOR OPERATION:
Piping between the concentrate vessel and concentrate controller is not furnished by Concentrate Control system manufacturer. The concentrate piping to the controller must meet certain criteria to prevent loss of concentrate into the water supply piping. This piping (dotted lines on the schematic below) is to be included by the design engineer for the type system wanted - manual, electric, pneumatic, hydraulic, fail-safe, etc. Viking does not accept responsibility for the concentrate piping to the controller or water piping to the concentrate vessel.

NOTE: (Per schematic below) Manual System - Valve No.s 1 and 2 must be fully open manually.
Automatic System - Valve No. 6 must be opened with an alarm signal (if necessary, use manual override). See Viking Design Section for various methods.

TYPICAL SCHEMATIC DIAGRAMS:
Consult the system design for actual piping requirements. Before filling system consult manufacturers filling procedure. *Improper filling can result in damage to the concentrate bladder.*

HORIZONTAL

VERTICAL

COMPONENT DESCRIPTION
A - Storage Tank
B - Bladder
C - Concentrate Controller
D - Automatic Valve (optional) (See instructions above)
E - Sight Gauge
F - Water Supply Piping (See instructions above)
G - Solution Delivery Piping (See instruction above)
*H - Thermal Relief Valve (optional)
I - Swing Check Valve

*Installed in foam concentrate vent or water vent outlets, non pressurized or pressurized, respectively.

VALVE NUMBER	DESCRIPTION	*NORMAL VALVE POSITION	
		AUTOMATIC SYSTEM	MANUAL SYSTEM
1	Manual concentrate shut-off - by others	N.O.	N.C.
2	Water pressure shut-off - by others	N.O.	N.C.
3	Sight Gauge shut-off	N.C.	N.C.
4	Tank water vent	N.C.	N.C.
5	Diaphragm concentrate vent	N.C.	N.C.
6	Water drain/fill	N.C.	N.C.
7	Concentrate drain/fill	N.C.	N.C.
8	Automatic Concentrate Valve Model E-2 Halar Coated	N.C.	N.C.
9	Fill line master shut-off.	N.C.	N.C.

BT 21

Photograph No. 6

Description:

AFFF tank in Building 682N, 900 gallon AFFF tank

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Volunteer Training Site-Smyrna	Rutherford County, Tennessee

Photograph No. 7

Description:

AFFF tank in Building 682N, showing system piping

Photograph No. 8

Description:

AFFF tank in Building 682N, fluid level registering as full

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Volunteer Training Site-Smyrna	Rutherford County, Tennessee

Photograph No. 9

Description:

Panoramic photograph of interior of Building 681 Vehicle Maintenance shop, with 900 gallon AFFF tank visible (system tagged inactive)

Photograph No. 10

Description:

TriMax 30 cart containing AFFF