FINAL

INTEGRATED PEST MANAGEMENT PLAN

FOR THE

NEW JERSEY ARMY NATIONAL GUARD

AUGUST 2019-2023

FINAL INTEGRATED PEST MANAGEMENT PLAN
NEW JERSEY ARMY NATIONAL GUARD

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Integrated Pest Management Plan
New Jersey Army National Guard
January 2019-2023

Signature Page

Approved by: Jemal J. Beale
Brigadier General, NJARNG
The Adjutant General

Jemal J. Beale

Date: 2/7/19

Approved by: Mark A. Piterski,
Brigadier General, NJARNG
The Deputy Adjutant General

Date: 2/7/19

Approved by: Viviene E. McNamara
LTC, LG, NJARNG
Construction & Facilities Management Officer

Date: 4 Feb 2019

Technical Review by: John T. Yunker
ARNG I & E Pest Manager

17 July 19

Reviewed by: Charles Appleby
Chief, Environmental Management Bureau (EMB)

Date: 4 Feb. 2019

EXECUTIVE SUMMARY

Pests can interfere with the military mission, damage real property and the environment, increase maintenance costs and expose personnel to diseases unless properly controlled. As per Army Regulation (AR) 200-1, the Army National Guard's (ARNG) pest management program uses integrated pest management (IPM) to achieve effective pest control with minimal environmental impacts. IPM, as used by the New Jersey ARNG, is an approach that utilizes all available techniques in an organized program to suppress pest populations in an effective, economical and environmentally safe manner. The techniques of IPM include cultural, physical, mechanical, biological, and chemical controls. IPM strategies depend on surveillance to establish the need for pest control and to monitor the effectiveness of management efforts. Pest control is done by need rather than by schedule with limited use of preventative treatments (common exceptions are pre-emergent herbicides, mosquito larvicide and some fungicide treatments). Pests are controlled to acceptable levels and not always completely eliminated.

The New Jersey Army National Guard (NJARNG) is responsible for integrated pest management (IPM) at its facilities in compliance with applicable local, state, and Federal laws and regulations, principally the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and related regulations, Executive Orders, and interagency agreements. This plan follows the management framework and principles established in Department of Defense (DOD) Instruction (DODI) 4150.07, DOD Integrated Pest Management Program.

The IPM plan applies to all of the facilities, activities, and individuals working, residing or otherwise conducting business on NJARNG sites. This IPM plan will be implemented to the maximum extent possible. At no time will IPM operations be performed in such a manner as to cause harm to personnel or the environment. IPM responsibility begins with those individuals occupying or maintaining buildings or open space on NJARNG property. Nonchemical control efforts will be used to the maximum extent possible before pesticides are used. All pesticide or herbicide applications on any NJARNG property will be made by certified applicators only, either contractor or NJARNG personnel. Pesticides and herbicides used on NJARNG property must be listed on the NJARNG State Pesticide Use List (SPUL) and approved by the ARNG Pest Management Consultant (PMS). The application of pesticides is governed by the label. No pesticides will be applied contrary to its label.

The mission of the NJARNG is twofold. On the Federal level, the NJARNG provides well-trained and well-equipped units that are available for use in the event of a national emergency or war. Additionally, the NJARNG provides military support to civil authorities under the direction of the Governor of New Jersey in the event of a natural, technological or man-made disaster or other domestic emergency. The Major Army National Commands are as follows:

1. The 42nd Regional Support Group located in Somerset.
2. The 50th Infantry Brigade Combat Team headquartered in Lawrenceville.
3. The 57th Troop Command located in Atlantic City.
4. The Joint Training and Training Development Center at Fort Dix.
5. The 254th Regiment located in Sea Girt.

The IPM plan for the NJARNG describes the pest management requirements; outlines the resources necessary for surveillance and control; and describes the administration, safety, and environmental requirements of the program. The program utilizes state-certified Pesticide Applicators and other manpower

(contractors, local city or county personnel, or armory personnel) as necessary to control pests. Pests addressed in the plan include rodents; cockroaches; bees and wasps; spiders; termites; mosquitoes; ants; ticks; flies; fleas; lice; stored product pests; nuisance crawling insects, such as earwigs and silverfish; bagworms; gypsy mouth larvae; vertebrate pests, such as skunks, deer, raccoons, birds, and feral cats and dogs; broadleaf and grassy weeds; and noxious and nonnative weeds. Without control, these pests could interfere with the military mission, damage real property and the environment, increase maintenance costs, and expose personnel to diseases.

- **Section 1- Signature Page:** Signature Page
- **Section 2- Executive Summary:** Document Overview
- **Section 3- Background:** Defines the purpose and objectives of the IPM plan
- **Section 4- Responsibilities:** Identifies the responsibilities of the NJARNG hierarchy with respect to the IPM program.
- **Section 5-IPM:** Provides IPM principals and regulatory drivers for this plan.
- **Section 6- Priority of Pest Management:** Provides information on IPM principles and the priority of pest management.
- **Section 7- Health and Safety:** Identifies human health and safety factors involved in IPM, both the threats and the guidelines for avoiding those threats.
- **Section 8- Environmental Considerations**: Identifies environmental threats and environmental protection guidelines for the NJARNG IPM program
- **Sections 9- Program Administration:** Provides program administrative information for the NJARNG.
- **Section 10- Sale and Distribution of Pesticides:** Provides pesticide purchasing information
- **Section 11- Pesticide Management Reference Materials:** Provides information on IPM program reference materials.
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- **Section 13- List of Appendices:** Appendices

2. BACKGROUND

2.1 Purpose

This integrated pest management (IPM) plan is a framework through which pest management is defined and accomplished by the New Jersey Army National Guard (NJARNG). The plan identifies elements of the program including responsibilities; pest identification and pest management; health and environmental safety; and environmental considerations. This plan is to be used as a tool to reduce reliance on pesticides, to enhance environmental protection, to maximize the use of IPM techniques, and to meet regulatory requirements.

The purpose of this IPM Plan is to meet Department of Defense (DOD) policy requirements pursuant to DOD Directive 4715.1, Environment, Safety, and Occupational Health (ESOH), DOD Instruction (DODI) 4150.07, DOD IPM Program, and Section 136 of Title 7, United States Code.

2.2 Authority

This IPM plan is written under the following authority:

- Federal Insecticide, Fungicide, and Rodenticide Act, (FIFRA)

- Integrated Pest Management Memorandum from the President. August 2, 1979
- Department of Defense Instruction DODI 4150.07, DOD IPM Program, 29 May 2008
- Army Regulation (AR) 200-1, Environmental Protection and Enhancement, 13 December 2007.
- Memorandum, ARNG-ILE, 04 February 2016, subject: Integrated Pest Management Program Policy

2.3 Program Objective

This plan provides guidance for operating and maintaining an effective IPM program. Principles of IPM are stressed in the plan. IPM consists of the judicious use of both chemical and nonchemical control techniques to achieve effective pest management with minimal environmental contamination. Adherence to the plan will ensure effective, economical, and environmentally acceptable pest management and will maintain compliance with pertinent laws and regulations.

2.4 Applicability

This plan and the requirements specified herein are applicable to all NJARNG personnel, facilities, training sites, armories, and operations.

2.5 Plan Maintenance

The IPM Coordinator (IPMC) maintains this plan. Updates to the plan are made when necessary by the IPMC. Updates to the plan can be in the form of an attached memorandum that is referenced in the affected section of the plan. Minor changes can also be notated directly in the plan and initialed by the IPMC.

Plan review and approval are conducted in accordance with DOD, Department of the Army (DA) and ARNG policies and directives. This IPMP will be reviewed annually by the IPMC during the preparation of the annual Plan Update Form (PUF) (an example PUF is in **Appendix H**). A completed PUF will be the documentation of the annual plan review. Annual updates of this plan are sent, via the PUF, to the ARNG Pest Management Consultant (PMC) no later than 15 October. Documentation of these updates and ARNG PMC approval will be maintained in **Appendix P**.

This plan will be revised every five years. Revisions will formally incorporate the annual updates and any other changes to the program that have occurred since the last revision. Complete rewriting of the IPMP during the revision process is not required unless substantial program changes have occurred. Revised IPMPs are reviewed by the ARNG PMC for technical sufficiency and are signed by the Adjutant General (TAG) (or designee). Additional signees of the IPMP are specified in DODI 4150.07.

2.6 NJARNG Installations and Facilities

The NJARNG manages approximately 1,065 acres of land and 2.25 million square feet of building, office, and industrial space. Installations and facilities include the following:

- Atlantic City Armory
- Bordentown Warrior Transition Center
- Bridgeton Armory
- Burlington Armory
- Cape May Armory/FMS
- Cherry Hill Armory
- Flemington Armory

- Freehold Armory
- Hackettstown Armory
- Hammonton Armory
- Jersey City Armory
- Joint Base MDL
    - Fort Dix (CST, HQ/JT2DC (3400-3600 Area), New Egypt Armory (old UTES))
    - Lakehurst (AASF, Building 129, Building 608, CLTF)
- Lawrenceville Armory
- Lodi Armory
- Morristown Armory
- Mount Holly Armory
- Picatinny FMS
- Princeton Warehouse (Closing)
- Riverdale Armory
- Sea Girt National Guard Training Center
- Somerset Armory/FMS
- Teaneck Armory/FMS
- Tom's River Armory
- Tuckerton Armory
- Vineland Armory/FMS
- Washington (Port Murray) Armory
- West Orange Armory/CSMS/Computer Shop
- West Trenton-Mercer Flight Facility (Closing)
- Westfield Armory/FMS
- Woodbridge Armory
- Woodbury Armory
- Woodstown Armory.

See **Appendix A** for more detailed information. A more complete description including climatic and soils information is maintained at the Construction Facilities Management Office, Environmental Management Bureau.

3. RESPONSIBILITIES

3.1 The Adjutant General (TAG)

The TAG is considered the "Installation Commander" of the virtual installation in regard to the requirements in DODI 4150.07, AR 200-1 and the ARNG Integrated Pest Management Program Policy Memorandum and has ultimate responsibility for pest management actions at both State and Federally-owned New Jersey ARNG sites.

The TAG is responsible for the following:

- Designate a NJARNG IPMC for all pest management activities. Approval of this plan constitutes the written appointment of the listed IPMC, or the IPMC can be appointed with a signed memo.
- Approve and support the Integrated Pest Management Plan.
- Ensure that NJARNG personnel performing pest control receive adequate training and achieve pest management certification (if required).
- Ensure that all pest management operations are conducted safely and have minimal impact on the environment.

3.2 Integrated Pest Management Coordinator

Following are the responsibilities of the IPMC:

- Function as NJARNG's Integrated Pest Management Coordinator (refer to Appendix I for appointment memo).
- Prepare and maintain the IPMP with 5-year revisions.
- Review and approve pesticide purchases for use by pesticide applicators. Review pesticides to be used by contracted pesticide applicators and ensure they are listed on the NJARNG State Pesticide Use List (SPUL) (Appendix C) prior to application at NJARNG sites. Ensure all pesticides used on NJARNG property are approved by the ARNG PMC prior to use. All pesticides used at all NJARNG sites are listed on the NJARNG SPUL (Appendix C) and have a current EPA/NJ State registration.
- Update the IPMP and submit changes yearly to the ARNG PMC. Ensure that all references, methods and materials are up-to-date and that effective management of all pests is included. Any changes in pest management requirements will be incorporated into the plan during annual revisions or more frequently as needed.
- Maintain adequate records of pest management operations; see **Appendix D**, NJARNG Pest Management Treatment Record Form. Submit electronic copy of previous fiscal year pesticide use to ARNG PMC by 1 October annually. For each application, this report must include product name, percent of active ingredient(s), volume used, pounds of active ingredient (PAI) used, and U.S. Environmental Protection Agency (USEPA) registration number; and indicate whether or not the product is a restricted use pesticide.
- Can act as the Pest Management Quality Assurance Evaluator (PMQAE) for contracted pest management operations.

- Coordinate with personnel conducting pest surveillance or controlling pests to ensure all applicable information is recorded and reported as required by this plan.
- Function as a point-of-contact between those individuals who store and apply pesticides (e.g., facility management, pest-control contractors) and activities or individuals who document or deal with pesticide use in their programs (e.g., Environmental Office, Safety Office, Fire Department, and Industrial Hygienist).
- Monitor certification and continuing pest management training for pesticide applicators at NJARNG facilities.
- Coordinate and monitor contracts dealing with pesticide application and keep a copy of each contract on file. Obtain review and approval of contracts and pesticide use submittals in accordance with DOD and ARNG policy and directives.
- Oversee, manage, monitor and document the technical aspects of the Self-Help Program (Appendix E) with respect to pest control products and training of program participants.
- Coordinate with local, state, and Federal agencies, as necessary, to conduct the NJARNG's pest management program.
- Provide answers to questions concerning pest management from Commanders, the Major Command, Department of the Army (DA), and interested state agencies.
- Coordinate with the CFMO to ensure that contracts including pest management activities at NJARNG sites are forwarded to the ARNG PMC for technical accuracy and sufficiency review prior to solicitation of the contract. For contracted pre-construction treatment of soil to control termites, ARNG PMC review and approval of the termite management section of contracts is not required if the contract language is in accordance with the current Unified Facilities Guide Specification for chemical termite control.
- Perform design and review of new construction projects to ensure that pest entry points and potential harborage have been eliminated and that proper preconstruction termite treatment is included in project specifications.
- Initiate requests for aerial application of pesticides when necessary. Prepare, with assistance from a PMC certified in DOD Category 11: Aerial Application Pest Control, an Aerial Spray Statement of Need (ASSON) for any potential aerial application of pesticides to NJARNG sites.
- Determine the pest management requirements for the NJARNG facilities and submit requests for funding.
- Coordinate with the New Jersey ARNG Natural Resources Manager (NRM) about pest control actions in semi-improved or unimproved grounds where there may be endangered, threatened or sensitive animals (including insects) or plants.
- Coordinate with the New Jersey ARNG Cultural Resources Manager (CRM) when pest control actions may impact native plants of interest to the Tribes, cultural sites, or affect a building eligible for the National Register of Historic Places.
- Coordinate with the NJARNG Directorate of Plans, Training, Mobilization and Security (DPTMS) for all pest management performed on training or maneuver land.
- Coordinate with local health officials to determine the prevalence of disease vectors and other public health pests in the area surrounding NJARNG sites. Oversee surveillance at NJARNG sites for known vectors for diseases such as West Nile, Dengue, Chikungunya and Zika viruses.

- Coordinate with the State Surgeon on any necessary measures for control of disease vectors and other public health pests at NJARNG sites.
- Obtain IPMC certification within two years of being appointed to the position and maintain certification with refresher training every three years.

3.3 Pest Management Quality Assurance Evaluator (PMQAE)

Following are the responsibilities of the PMQAE:

- The PMQAEs for pest management contracts are trained in the USEPA categories for which pest-control work is performed on the NJARNG site.
- Completion of authorized PMQAE Training or other training approved by the ARNG PMC is required for personnel who perform quality assurance of contractual pest-control services.
- Provides onsite surveillance for all termite treatments, and a written quality assurance surveillance plan to evaluate the work being performed by contractors.
- If an installation's pest management contract efforts are less than 0.25 work-years, the presence of a trained PMQAE at the installation is not mandatory.
- Obtain PMQAE certification and maintain certification with refresher training every three years.

3.4 Pest Management Provider (PMP)

Pest management personnel, both contracted and permanent employees, must adhere to the following:

- Use IPM techniques to the maximum extent possible.
- Maintain current DOD or State of New Jersey Department of Environmental Protection, Bureau of Licensing and Registrations (NJDEP BL&R) certification to apply pesticides in the category of pest control for work being done at New Jersey ARNG sites and comply with all state and federal regulations. Send a copy of the certification to the IPMC annually for inclusion in **Appendix K** of this plan.
- Control pests according to the provisions of this plan, and in accordance with DOD, Army and ARNG instructions, regulations and policies (DODI 4150.07, AR 200-1, ARNG Integrated Pest Management Program Policy Memorandum).
- Conduct surveillance for mosquitoes, ticks, cockroaches, or other pests that could adversely affect the health and welfare of installation personnel.
- Operate in a manner that minimizes risk to personnel and the environment.
- When using pesticides, always read and follow the label. The label is the law.
- Keep records of all pest surveillance and control efforts and provide reports to the IPMC using the format(s) and at the frequency as specified in this plan.
- Maintain effective liaison with county, state, and federal health and environmental officials, as necessary.

3.5 Pest Management Contractors

Contracted Pest management personnel must adhere to the following:

- Use IPM and conduct pest management in accordance with this plan, including ARNG PMC pre-approval of pesticides applied at NJARNG sites.
- Comply with all federal, state, and local laws and regulations.
- When using pesticides, always read and follow the label. The label is the law.
- Submit written records of all pest management activities to the IPMC using the format(s) and at the frequency as specified by the directives cited in Section 5.
- Use IPM Techniques to control pests on NJARNG property.
- Be State of New Jersey Department of Environmental Protection, Bureau of Licensing and Registrations (NJDEP BL&R)-certified in all applicable USEPA pesticide application categories.
- Control pests according to the provisions of this plan.
- Operate in a manner that minimizes risk of contamination to the environment and personnel.
- Ensure that facility managers are kept informed of changes in pest management requirements.
- Request pest management supplies and equipment in a timely manner and ensure appropriate personal protective equipment (PPE) is available to support operations.
- Submit records of surveillance activity and control efforts to the Armory/Facility Manager within 10 days of performing work see **Appendix D:** NJARNG Pest Management Treatment Records, for the type of information required.
- Carry the necessary pesticide spill equipment on pest-control vehicles as appropriate.
- Conduct pest surveillance to determine if chemical application is needed. This saves money, minimizes the development of pesticide resistance, and protects the public and environment from the potential problems related to the overuse of pesticides.
- Maintain copies of Safety Data Sheets (SDSs) for each pesticide.

3.6 Construction Facilities Management Office (CFMO)

Following are the responsibilities of the CFMO:

- Review NJARNG's IPM Plan.
- Coordinate with the IPMC, contracted pest controllers, and certified pest management personnel to ensure all applicable information is recorded and reported as required by this plan.
- Provide appropriate funding support for the pest management program through NJARNG's Environmental State Operating Budget (ESOB) and Real Property Operation and Maintenance (RPOM) budget.
- Request and monitor contracted pest control operations.
- Ensure all pest management activities, including those that are part of the Self-Help Program, are recorded in accordance with this plan and reports are provided to the IPMC at intervals as specified in this plan.

- Ensure that CFMO personnel obtain and maintain adequate supplies of pesticides and pesticide dispersal equipment, if required, and ensure that equipment is properly maintained.
- Ensure that CFMO personnel performing pest control receive adequate training and achieve pest management certification (if required).
- Coordinate with the IPMC to ensure that contracts including pest management activities at NJARNG sites are forwarded to the ARNG PMC for review for technical sufficiency prior to solicitation of the contract. For contracted pre-construction treatment of soil to control termites, ARNG PMC review and approval of the termite management section of contracts is not required if the contract language is in accordance with the current Unified Facilities Guide Specification for chemical termite control.
- Initiate requests for aerial application of pesticides, when necessary.

3.7 Directorate of Plans, Training, Mobilization and Security (DPTMS)

Following are the responsibilities of the DPTMS:

- Determine the pest management requirements for the NJARNG training and maneuver lands and request appropriate ITAM funding when pests are impeding training/maneuvers.
- For management of pests that are not impeding training/maneuvers (e.g., hornet nests in bivouac areas, noxious/invasive weeds in maneuver areas, etc.), use all non-chemical pest control techniques as recommended in the IPM outlines (**Appendix B**) before requesting further assistance from the CFMO-EMB for in-house or contracted pest control.
- Coordinate with the IPMC any pest management activities occurring on New Jersey ARNG training and maneuver lands.
- Initiate requests for aerial application of pesticides, when necessary.
- Ensure all pest management activities on training and maneuver lands, including those that are part of the Self-Help Program, are performed in accordance with this plan, including the recording and reporting of pesticide usage.

3.8 Facility Managers and Maintenance Personnel

Following are the responsibilities of the Armory Managers and other Facility Managers:

- Apply good sanitary practices, landscape maintenance, and materials management to prevent pest infestations.
- Use all non-chemical pest control techniques as recommended in the IPM outlines (**Appendix B**) before requesting further assistance from the CFMO for in-house or contracted pest control.
- Ensure all pest management activities, including those that are part of the Self-Help Program, are recorded in accordance with this plan and reports are provided to the IPMC at intervals specified in this plan.
- Cooperate fully with pest management personnel in scheduling pest management operations, to include preparing the areas to be treated.

- Obtain and maintain adequate supplies of approved self-help pesticides and pest control equipment and ensure that equipment is properly maintained.
- Have available on-site Safety Data Sheets (SDSs) for any pesticide stored or used on the premises.
- Ensure that NJARNG personnel performing pest control receive adequate training and achieve pest management certification (if required).
- CFMO-EMB (IPMC) will maintain adequate records of pest management operations.
- Obtain IPMC approval of all pest-control contracts initiated for organizational use prior to solicitation.

3.9 State Surgeon

- Evaluate the human health aspects of the IPM program
- Coordinate with the IPMC any necessary human health-related measures for control of disease vectors and other public health pests at New Jersey ARNG sites.

3.10 Unit Commanders/Officers-In-Charge

Following are the responsibilities of Unit Commanders/Officers-In-Charge:

- Ensure the proper use of the DOD repellent system and other protective measures while troops are exposed to potential disease vectors.
- NJARNG is required to appoint a field sanitation team for each company, troop, or battery size unit. Ensure that field sanitation teams are trained and supplied and mission capable prior to deployment (FM 21-10-1). Field Preventive Medicine.
- Brief troops on potential biological threats (such as poison oak) before training exercises.
- Contact the U.S. Army Public Health Command (USAPHC) or the Defense Pest Management Information Analysis Center (DPMIAC) prior to deployment.

3.11 Building Occupants

Following are the responsibilities of all building occupants:

- Apply good sanitary practices to prevent pest infestations. Areas need to be free of open food containers. Don't accumulate pest harborage materials such as empty boxes or dunnage.
- Cooperate fully with contractors and armory/facility personnel in scheduling pest management operations, to include preparing the areas to be treated.
- Use all nonchemical pest-control techniques as instructed in the IPM outlines before requesting further assistance from the NJARNG IPMC, facility maintenance, or certified pest management personnel.
- Report pest concerns and complaints in a timely manner to building managers and assist with pest surveillance and monitoring as needed.

3.12 Self-Help Program

- Keep all areas clean, dry, and sanitary. Areas need to be free of open food containers. Don't accumulate pest harborage materials such as empty boxes or dunnage.
- Using the IPM outlines in Appendix B, determine if Self-Help (**Appendix E**) is allowed for the pest problem.
- If Self-Help is appropriate, follow the requirements found in Appendix E covering the Self-Help Program. Only pesticides that are pre-approved for Self-Help Program use and listed as such on the New Jersey ARNG SPUL (Appendix C) are allowed. All training, recording, reporting, handling and storage of pesticides must be done as specified under the Self-Help Program (Appendix E) and in accordance with the pesticide label.
- If Self-Help is not appropriate for the pest or level of the pest problem, fill out a work-order requesting assistance with your pest problem and submit it to the Facility Manager.
- When using pesticides as part of the Self-Help Program, always read and follow the label. The label is the law.

4. INTEGRATED PEST MANAGEMENT

4.1 Laws and Regulations

4.1.1 Federal and State Laws

- Integrated Pest Management Memorandum from the President. August 2, 1979
- The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (7 United States Code [U.S.C.] 136 et seq.). Available online: http://www.epa.gov/region5/defs/html/fifra.htm
- Title 29, Code of Federal Regulations (CFR), 2004 revision, Section 1910, Occupational Safety and Health Standards. Access to all of the Occupational Safety and Health Administration (OSHA) regulations can be found at the following: http://www.osha.gov/comp-links.html
- New Jersey Pesticide Control Regulations: New Jersey Administrative Code Title 7 Chapter 30, Subchapters 1-13. See specifically, Subchapter 5-Commercial Pesticide Operators; and Subchapter 6-Commercial Pesticide Applicators. Available online: http://www.nj.gov/dep/enforcement/pcp/pcp-regs.htm
- **IPM in Schools.** On December 12, 2002, Senate Bill Number 137 was signed into law. The School Integrated Pest Management Act, as the bill is known, will require schools to adopt and implement a pest management policy that is consistent with the model developed by the New Jersey Department of Environmental Protection (NJDEP). While emphasizing an IPM approach to control, this law recognizes the need to protect children from pests such as cockroaches, stinging insects, and spiders. This need is reflected by the inclusion of a provision that allows for emergency treatments to address immediately potentially dangerous pest infestations without providing prior notice. The law also requires schools to notify parents and post signs at least 72 hours prior to certain pesticide applications and those schools should retain treatment records for 3 to 5 years, depending on the type of treatment. Current rules already require that persons applying pesticides in and around schools be certified by the NJDEP or supervised by someone who is. NJARNG personnel need to be aware of the requirements of this law and implement its provisions as they apply.

4.1.2 DOD Regulations

- DODI 4150.07, Department of Defense Pest Management Program, 29 May 2008
- AR 11-34, The Army Respiratory Protection Program, 15 February 1990
- AR 40-5, Preventive Medicine, 25 May 2007
- AR 200-1, Environmental Protection and Enhancement, 13 December 2007
- AR 385-10, Army Safety Program, 14 June 2010
- NGR No. 385-10, Army National Guard Safety Program, 12 September 2008.

4.2 IPM Principles

IPM is the judicious use of both nonchemical and chemical control to suppress or prevent pests from exceeding an acceptable population or damage threshold. Emphasis is placed on minimizing environmental disruption. IPM strategies depend on surveillance to establish the need for control and to monitor the effectiveness of management efforts. The four basic components of IPM are described in the following paragraphs and are used to manage pests on NJARNG facilities. Specific IPM measures can be found in

the IPM Outlines in **Appendix B**. Additional useful information can be found in the AFPMB, Technical Information Memorandum (TIM) No. 29, "Integrated Pest Management."

While any one of these methods can solve a pest problem, often several methods are used concurrently, particularly if long-term control is needed. For example, screens might be used to prevent mosquitoes from entering buildings, breeding areas might be filled in or drained to eliminate larval habitat, and pesticides might be used to kill adult mosquitoes. Screens will protect people inside, but do little to keep people from being bitten outdoors. Larval control might eliminate mosquito breeding on the installation, but might not prevent adult insects from flying onto the installation from surrounding areas. Chemicals can kill most of the flying mosquitoes during a given time period, but might miss others. Although chemical control is an integral part of IPM, nonchemical control is stressed. Chemical control is generally an expensive, temporary fix, and in the long run it is more expensive than nonchemical control methods designed to prevent infestation. Nonchemical control, which initially might be more expensive than chemicals, will usually be more cost-effective in the long run. Nonchemical controls also have the added advantage of being nontoxic, thereby reducing the potential risk to human health and the environment.

Mechanical and Physical Control. This type of control alters the environment in which a pest lives, traps and removes pests where they are not wanted, or excludes pests. Examples of this type of control include harborage elimination through caulking or filling voids, mechanical traps or glue boards, and screens and other barriers to prevent entry into buildings. The majority of pest problems encountered by the NJARNG should be solved using mechanical control techniques.

Cultural Control. Strategies in this method involve manipulating environmental conditions to suppress or eliminate pests. Elimination of food and water for pests through good sanitary practices is the most important cultural control method employed under this plan. General cleanliness in buildings, especially break rooms and storage areas, can prevent pest populations from becoming established or from increasing beyond a certain size.

Biological Control. With this control strategy, predators, parasites, or disease organisms are used to control pest populations. Biological control agents can be a very successful part of a noxious weed control program. Sterile flies can be released to lower reproductivity. Viruses and bacteria can be used which control growth or otherwise kill insects. Parasitic wasps can be introduced to kill eggs, larvae, or other life stages. Biological control could be effective alone, but is often used in conjunction with other types of control. Introduction of new biological controls is the responsibility of the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine, Biological Control Program.

Chemical Control. Pesticides kill living organisms. They can be used to control plants or animals. At one time, chemicals were considered to be the most effective control available, but pest resistance has rendered many pesticides ineffective. In recent years the trend has been to use pesticides with limited residual action. While this has reduced human exposure and lessened environmental impact, the cost of chemical control has risen due to requirements for more frequent application. Since personal protection and special handling and storage requirements are necessary with the use of chemicals, the overall cost of using chemicals as a sole means of control can be quite costly when compared with nonchemical control methods such as mechanical or cultural control. Chemical use in the NJARNG most commonly includes treatment for noxious weeds; other undesirable vegetation; and various insect pests such as ants, wasps, and bees.

5. PRIORITY OF PEST MANAGEMENT

Pest management requirements at the NJARNG sites vary considerably. **Table 3-1** provides a list of major pest categories of possible concern at NJARNG facilities. The priority will vary according to specific sites.

IPM outlines for pest surveillance and control for species of concern to the NJARNG are found in **Appendix B**. Each major pest or category of similar pests is addressed in a separate outline. New outlines will be added to **Appendix B** if additional pests at specific sites are encountered that require surveillance or control operations. Added outlines will be sent to the ARNG PMC for approval.

These outlines do not identify all of the precautions and directions identified on product pesticide labels. Pesticide applicators are responsible for being familiar with and following all precautions and directions on the pesticide label of the chemical being used.

Please also see **Appendix O** for New Jersey specific pests of emerging concern and FAQ sheets.

Table 3-1. Priority of Pest Management Work for the NJARNG

Category	Pest	Notes
Public Health-Related Pests	• Rats and mice • Cockroaches • Mosquitoes • Wasps, Yellow Jackets, and Hornets • Spiders • Ants • Filth flies • Ticks • Lice • Fleas	German and American Black widow and brown recluse
Stored Products Pests	• Pantry Moths • Varies	Set pheromone traps to identify stored product pest.
Real Property Pests	• Subterranean termites	
Nonnative or Nuisance and Quarantined Pests	• European starling • House sparrow • Crickets • Earwigs • Beetles • Silverfish • Gypsy moth larvae	

Ornamental Plant and Turf Pests, and Undesirable and Noxious Vegetation	• Bagworms • Broadleaf weeds • Grassy Weeds • Undesirable and Noxious Vegetation	Parade Fields, Lawns, and Other Common Grassy Areas. Utility Pole and Hydrant Bases, Sidewalks, Around Building Foundations, Parking Lots, and Fence Lines.
Vertebrate Pests	• Deer • Birds • Feral cats and dogs • Mammalian Wildlife Pests • Snakes	Pigeons, Geese Raccoons, Skunks, Tree squirrels, Opossums, Beaver

The following text highlights pests that can pose a serious threat to public health or to real property. Some of these pests can fall into multiple categories.

5.1 Disease Vectors and Public Health Pests

Ticks. The tick populations in the region are of concern both as a nuisance and a disease threat. Troops can be expected to encounter ticks during training. Edge habitats, such as where grassy fields meet stands of trees, bushes, and shrubs, are favorite places for deer to browse and mice to burrow or nest. These animals are commons hosts for ticks. Edge habitats are likely to be infested with ticks waiting for a passing host. Site-specific information can be obtained from local health authorities. Personnel conducting outdoor training activities can minimize tick exposure by wearing appropriate clothing, applying tick repellent, and performing personal hygiene inspections (with bathing) upon return to camp.

The most common tick-borne disease threat in New Jersey is Lyme disease. The primary vector of this disease is the black-legged tick (*Ixodes scapularis*). The black-legged tick is the primary vector of the Lyme disease spirochete, *Borellia burgdorferi*, and the rickettsia responsible for human granulocytic ehrlichiosis (HGE). Lyme disease is usually transmitted by the nymphs that are primarily active in late spring and early summer. Soldiers training should use personal protective measures to reduce the risk of contracting Lyme disease.

In general, chemical control of tick populations is not recommended. Stress should be placed on the use of personal protective measures followed by avoidance of tick habitat and habitat modification. Surveillance is necessary to determine the relative risk of exposure to tick borne diseases. Ticks found on personnel, pets, or during tick drags can be sent to USAPHC for identification and disease testing (see **Appendix F Points of Contact**).

Mosquitoes. Mosquito species found in the state have the potential to transmit several arboviral encephalitides (e.g., eastern equine and West Nile), Zika, dengue fever, malaria, Chikungunya and other diseases. West Nile occurs in New Jersey, but the other listed diseases have occurred very rarely or not at all in New Jersey for years. Recently, there has been an increased concern regarding transmission of Zika virus by Aedes species mosquitoes. The NJARNG is coordinating with local mosquito control agencies for surveillance of disease vectors. Mosquitoes are a known problem around NJARNG facilities, because of the favorable habitat.

A listing of mosquito species in a particular area, their habits, breeding sites, and the diseases they are capable of transmitting can usually be obtained from local, county, or state health departments. On large military installations this information is available from Preventive Medicine (Environmental Health) or pest-control personnel.

Personnel conducting outdoor activities can minimize mosquito bites by wearing appropriate clothing and applying tick. In general, chemical control of mosquitoes is not recommended. Stress should be placed on the use of personal protective measures.

Spiders. Black widow spiders (*Latrodectus mactans*) are known to occur in New Jersey and frequent undisturbed places in warehouses, storage areas, foxholes, and around other buildings. These spiders can produce painful bites and toxic reactions. Brown recluse spiders (*Loxosceles reclusa*) are found in New and pose a serious threat to personnel. The spiders are generally active at night. During the day they rest in undisturbed, dark, sheltered areas such as under rocks, woodpiles, and bark. They are frequently found in corners and crevices of buildings. The brown recluse normally bites when pressure is applied to it. Painful bites can cause restlessness and fevers. The healing of bites can take several weeks to months.

Bees and wasps. Bees and wasps are found throughout the region. The stings are painful and cause allergic reactions in some people.

Mice. Mice present a potential human health threat of Hantavirus pulmonary syndrome (HPS). This disease results from the inhalation of the aerosolized virus found in the feces and urine of rodents, particularly deer mice (*Peromyscus maniculatus*). Although this disease is relatively rare, the high fatality rate of 50 percent makes it important. Personnel who work in a closed space, stirring up dust where rodents are actively living or who handle mice and other small mammals should refer to the U.S. Army Medical Command memorandum dated 25 January 1995, SUBJECT: Policy on Protective Measures for Workers to Reduce the Risk of Hantavirus Exposure. Additional information can be obtained by calling USAPHC.

Rattlesnakes. Rattlesnakes are found in the state. Although rarely encountered, these snakes are capable of causing serious illness or death. A variety of nonpoisonous snakes are found in the state; although non-venomous, their bites can be painful and could lead to secondary infection. Snakes from unwanted areas are captured alive and relocated to other areas away from ongoing activities. Removal and relocation of snakes found in unwanted areas (e.g., under buildings) is occasionally required.

Skunks, Raccoons, Foxes, and Bats. These animals can be infected with rabies. Since these animals can be found in or under NJARNG buildings, the disease potential should be recognized.

Fleas. Fleas found in rodents can transmit plague. Human plague cases have occurred in the past, but are extremely rare occurrences.

5.2 Nonnative, Nuisance, Quarantine, and Regulated Pests

Birds roost in warehouses, aircraft hangars, and maintenance and other buildings and can damage equipment and supplies with their droppings. Birds requiring control include the starling, house sparrow, swallow, and pigeon.

The Gypsy moth (*Lymantria dispar*) is a Quarantine Pest found in New Jersey. Equipment and cargo must be inspected for presence of eggs, larvae, or adult moths prior to movement out of the area. The facility managers should coordinate with the local U.S. Department of Agriculture (USDA) inspector to determine requirements regarding inspections.

Regulated pests are those regulated by state or Federal laws such as noxious weeds, quarantine pests, or pests which might be found on retrograde cargo. Retrograde cargo such as tactical equipment returning from a foreign country is cleared by the USDA, Animal and Plant Health Inspection Service (APHIS) prior to arriving at NJARNG facilities.

Invasive plants are introduced species that have few, if any, natural controls in the United States and spread out of control. The NJARNG supports the National Strategy for Invasive Plant Management. The three goals of this strategy are prevention, control, and restoration. Examples of invasive plants are included in a Federal listing of invasive and noxious weeds found in **Appendix O**.

5.3 Vertebrate Pests

Mammalian Wildlife Pests. These animals, such as squirrels, skunks, beaver, and groundhogs, can damage structures and cause considerable property damage for which an ongoing maintenance program is necessary.

Stray Dogs and Cats. These animals occasionally need to be captured at NJARNG sites and should be accomplished by pest management technicians, the Military Police, contracted pest management services, or local municipal animal control authorities.

Deer. Deer have periodically required control throughout the state. Control efforts for regulated wildlife species such as deer will be coordinated with the USDA, APHIS, Animal Damage Control (ADC) and the NJDEP.

5.4 Structural/Real Property Pests

Subterranean Termites and Carpenter Ants. Termites cause damage to wooden buildings and other structures. Carpenter ants occasionally invade wooden structures, particularly where wet conditions exist. Damage is kept to a minimum by early detection of termite presence during annual surveys of wooden structures. These surveys are conducted by facility managers, building occupants, and contracted pest controllers.

Birds. Birds roost in warehouses, aircraft hangars, maintenance and other buildings and can damage equipment and supplies with their droppings. On occasion, bats also roost in structures.

5.5 Stored Products Pests

Food items located in dining facilities, in armory kitchens, or in food storage facilities can become infested by stored food product pests. Most susceptible items are moved and consumed before infestations occur. Infested foodstuffs are discarded.

5.6 Ornamental Plant and Turf Pests and Undesirable Vegetation

Weeds on firing ranges, around targets, along fence lines, on road shoulders, paved surfaces (including runways) and other areas could require control using appropriate herbicides. Herbicides should be applied directly to weeds to protect desirable vegetation and reduce contamination of natural resources. Some control of unwanted plants is done mechanically (e.g., mowing, string trimmers) or by using mulch materials around ornamental plants.

The use of native plants protects natural heritage and provides wildlife habitat. Native plant restoration can reduce the need for fertilizer, pesticides, and irrigation requirements because native plants are suited to the local ecosystem.

5.7 Pests of Emerging Concern in New Jersey

This section lists species of emerging concern for New Jersey. This section is updated annually with current invasive/nuisance pests. Please refer to **Appendix O** for fact sheets, reference materials, and NJ Department of Environmental Protection (NJDEP) and NJ Department of Agriculture (NJDOA) recommendations on targeting and treatment for such species.

Emerald Ash Borer: Emerald Ash Borer was discovered in New Jersey in May 2014 in Somerset County. Infestations throughout the U.S. and Canada have killed tens of millions of ash trees since 2002. On 19 May 2016 the New Jersey Department of Environmental protection launched an aggressive program to protect state owned lands from the EAB (See Appendix O). Through November 13, 2018, emerald ash borer has been found in New Jersey in Bergen, Burlington, Camden, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Somerset, Sussex and Warren counties. Report signs of the beetle to the Department of Agriculture at 609-406-6939.

Spotted Lanternfly: EMERGENCY RULE—SPOTTED LANTERNFLY QUARANTINE. The New Jersey Department of Agriculture (NJDA) has adopted emergency amendments to N.J.A.C. 2:20, to declare a quarantine on the spotted lanternfly. The spotted lanternfly is a planthopper insect native to Asia. The insect has recently been discovered and confirmed to be in Southern Warren and Northern Mercer counties in New Jersey. The quarantine will allow NJDA to take immediate action to prevent the further spread of this exotic insect pest and work to eliminate it from the state. NJDA is concurrently working on a permanent rulemaking that would promulgate the provisions of this emergency adoption through the normal administrative process. The emergency rulemaking became effective 30 JUL 18 and expires 28 SEP 18.

Aedes Mosquito (Zika Vector): Zika is a viral infection that is usually spread by the bite of an infected mosquito. The most common symptoms are fever, rash, joint pain or red eyes. Other common symptoms include muscle pain and headache. Outbreaks typically occur in tropical Africa and southeast Asia. In May 2015, Brazil reported the first outbreak of Zika in the Americas. Zika is now present in many countries and territories, although a widespread outbreak in the continental United States is not expected.

- Zika Monitoring took place at the NJ National Guard Training Center in Sea Girt, New Jersey during FY 17 by Monmouth County Mosquito Control Division, Department of Health. Results of the testing reported no signs of the Zika Virus. Community education remains paramount for protecting against any mosquito related illnesses. Please refer to **Appendix O** for more information regarding Zika Virus.

Asian Longhorned Beetles: This insect is a non-native, invasive wood-boring threat to the state's trees. Beetle larvae tunnel through tree stems causing girdling that cuts off the flow of nutrients, eventually killing the tree and resulting in coarse sawdust at the base of infested parts of the tree. Adult beetles leave round exit holes in the tree after they emerge. There is no known practical control for this wood-boring pest other than eliminating infested trees.

6. HEALTH AND SAFETY

6.1 Medical Surveillance of Pest Management Personnel

All NJARNG personnel who apply pesticides are included in a medical surveillance program. Medical surveillance for NJARNG pesticide applicators is coordinated by the Occupational Health Nurse. The medical surveillance program consists of the following elements. Please refer to Appendix K.

1. An initial physical examination will be conducted to establish that the individual is physically capable of wearing a respirator (if required) and to establish a baseline red blood cell (RBC) cholinesterase level. This physical examination also includes liver and kidney function tests, a complete blood count, and a respiratory evaluation. A physical examination of the same scope as the initial examination is conducted annually.

2. When cholinesterase-inhibiting substances (CISs) (e.g., carbamate or organophosphate insecticides) are applied on a regular basis, the RBC cholinesterase level will be monitored at least twice a year (before and after the summer spray season) and more frequently if CIS are heavily used or if the individual exhibits symptoms of CIS poisoning. Removal from work is instituted when the RBC cholinesterase level is depressed to 75 percent of the baseline level or less. Return to work is permitted when the level has returned to 80 percent or more of the baseline level. **Table 4-1** provides a summary of symptoms of CIS poisoning

3. State pest management technicians who handle or otherwise come into contact with wild animals on NJARNG sites receive rabies prophylaxis.

Table 4-1. Symptoms of Cholinesterase Inhibiting Substances Poisoning

Mild Poisoning	Moderate Poisoning	Severe Poisoning
Anorexia	Nausea	Diarrhea
Headache	Salivation	Pinpoint, nonreactive pupils
Dizziness	Lacrimation	Respiratory difficulty
Anxiety	Vomiting	Pulmonary edema
Tremors of tongue and eyelids	Perspiration	Heart block
Weakness	Abdominal cramps	Cyanosis
Miosis	Slow pulse	Loss of sphincter control
Impairment of visual acuity	Muscular tremors	Convulsions
		Coma

4. DoD 6055.05-M, OCCUPATIONAL MEDICAL EXAMINATIONS and SURVEILLANCE MANUAL, section C4.6.is used as a guide for medical monitoring of pesticide applicators.

5. Contractors performing pest management services are responsible for their own medical examinations and rabies prophylaxis from private sources at their expense.

6.2 Hazard Communication

State pest management personnel are given hazard communication (HAZCOM) training, to include hazardous materials in the work place. Following initial hazard communication classes, additional training is given to new employees or when new hazardous materials are introduced into the work place.

Safety Data Sheets (SDSs) for all pesticides and other toxic substances used in the pest management program are kept by the IPMC and by armory/facility maintenance personnel and made available to all individuals who would have contact with these chemicals. Copies of SDSs are kept on each pest-control vehicle for pesticides used that day. Additionally, all personnel who work with these chemicals are informed of the potential hazards and trained in the use of PPE.

6.3 Personal Protective Equipment

Approved masks, respirators, chemical-resistant gloves and boots, and protective clothing (as specified by applicable laws, regulations, or the pesticide label) are provided to pesticide applicators and contract quality assurance personnel at government expense. These items are used as required during the mixing and application of pesticides. Pesticide-contaminated protective clothing is not laundered at home. The clothing is laundered commercially. Severely contaminated clothing will not be laundered but is treated as pesticide-related waste and disposed of in accordance with current regulatory requirements. Contractors are responsible for providing these items and services to their employees at no additional expense to the government.

- Appropriate respiratory protection (High-Efficiency Particulate Air (HEPA) filter cartridges) should be used when working in enclosed areas infested with rodents and rodent waste, as well as additional measures like disposable gloves and the use of disinfectants. Rodent waste is associated with Hantavirus and Hantavirus pulmonary syndrome.

6.4 Fire Protection

The usual hazards presented by a fire are compounded in the case of a pesticide fire by the danger of pesticide poisoning and contamination. The IPMC will conduct pre-fire coordination with the appropriate fire department and other emergency officials when pesticides are stored in NJARNG buildings. This coordination will be formalized in the armory/facility pre-fire plan. The pre-fire plan is updated by facility managers annually, or when changes occur in the amount or types of pesticides stored. A copy of this plan with annual updates is maintained by the IPMC. Copies are provided to the local fire departments plus other emergency activities. In those facilities where minor amounts of Self-Help type pesticides are stored (e.g., aerosol insecticides, over-the-counter ant or cockroach baits), a pre-fire plan is not required; however, facility personnel follow all label precautions which deal with the storage of the pesticides.

The pre-fire plan includes a pesticide inventory, storage area floor plan, list of evacuation routes, water runoff control plan, map of the surrounding area, emergency telephone numbers, medical assistance information, salvage/hazard assessment, and provisions for safety briefings of appropriate personnel. A detailed discussion of pre-fire planning can be found in paragraph 2 of AFPMB Technical Guide No. 16.

6.5 Pest Control Vehicles and Equipment

Whenever possible, pesticides are transported in a lockable storage compartment of an assigned vehicle. Vehicles which have been used to transport pesticides are not used to transport food, medical supplies, or other sensitive items which, if contaminated, would adversely affect human health. Transportation of pesticides is accomplished using the vehicle assigned to the pest controller. Pesticides are never transported in the passenger compartment of any vehicle. In addition, care is taken to secure pesticides to prevent damage to the containers and spillage of the chemicals. At no time are pesticides to be left unsecured in the vehicle when unattended. A portable eye lavage and spill kit is carried in each pest control vehicle (required for all NJARNG and contracted pest controllers).

Pest control equipment should be stored indoors whenever possible. Equipment such as sprayers, which are designed to store pesticides, should be stored on a mixing pad designed to contain leaks and potential spills.

6.6 Protection of the Public

Take precautions during pesticide application to protect the public, on and off New Jersey ARNG sites. Follow all precautions listed on the label. Pesticides are not applied outdoors when the wind speed exceeds label-specified levels. Whenever pesticides are applied outdoors, ensure that any drift is kept away from individuals, including the applicator. At no time are personnel permitted in a treatment area during pesticide application unless they are appropriately trained, have met the medical monitoring standards, and are protected in accordance with the pesticide label requirements.

6.7 Pesticide Storage

All pesticides must be stored in buildings, or rooms within buildings, designated for this purpose. The pesticides must be stored in their original containers. The buildings and rooms must be kept locked when not in use. The outside of the storage area must be labeled to indicate that pesticides are stored within.

All pesticides must be segregated as to kind of pesticide during storage (e.g., insecticides, herbicides, fungicides). Labels on all containers must be visible at all times. Pesticides must be stored in their original containers, and be stored in a manner that allows for the products acquired earliest to be used/sold first (first in, first out).

Pesticides that are classed as moderately or highly toxic must be stored in facilities that meet the criteria described in MIL-HDBK-1028/8A, Design of Pest Management Facilities. The local Fire Department should be furnished with an inventory of the kinds and amounts of pesticides present at each storage or mixing location. This inventory must be updated at least annually, at the end of each calendar year by the IPMC. See **Appendix C- Pesticide Use List** for New Jersey pesticide use list.

6.8 Pesticide Mixing

Guidelines for pesticide mixing include the following:

- Only authorized, trained, and certified personnel shall handle and mix pesticides.
- Personnel mixing pesticides will use a back-flow preventer to prevent contamination of the facility's water source.

- Contractors will not dispose of empty pesticide containers on government property.
- All pesticides shall be mixed and applied in accordance with the label directions. The certified pest controller will determine what pesticide to use, what rate to use, and how it should be mixed and applied.
- Self-Help pesticides will be handled and mixed by authorized, certified personnel only.
- Dispensing concentrates and mixing of all liquid pesticides must be done on a nonporous surface (e.g., cement, asphalt).
- Any pesticide contamination on the skin must immediately be washed off with soap and water. Contamination of the eyes must be flushed generously with water. After washing, the individual will secure immediate medical attention.
- Pesticide containers must be returned to their storage locations upon completion of mixing.
- When mixing liquid pesticides, the spray tank should be filled 1/3 to 1/2 full with the diluent, the pesticide shall be added, and the spray tank shall then be filled with diluent. All pesticide mixtures must be agitated.

6.9 Pesticide Application

Guidelines for pesticide applications include the following:

- Only authorized, trained, and certified personnel shall apply pesticides. This excludes Self-Help pesticides which may be applied by non-certified personnel.
- Pesticide application must be carried out in accordance with the label directions of the pesticide used and the manufacturer's operating instructions for the equipment used.
- Pesticide application operations shall be conducted as follows:
    - Dry, granular pesticide application must be conducted when the wind speed is less than 5 miles per hour to prevent drift. An approved respirator must be worn whenever required by the pesticide label. The operator must wear a respirator when pesticide dust is a hazard.
    - Outdoor liquid pesticide application must be conducted when the wind speed is less than 5 miles per hour to prevent drift. Approved respirators must be worn whenever required by the pesticide label.

7. ENVIRONMENTAL CONSIDERATIONS

7.1 Sensitive Areas

Special consideration must be given prior to conducting pest-control operations in sensitive areas that are identified on pesticide labels. No pesticides are applied directly to wetlands or water areas (e.g., lakes, rivers) unless their use is specifically approved on the label and in compliance with National Pollutant Discharge Elimination System (NPDES) regulations for application over or into waters of the United States. Separate NPDES permitting may be required in some instances and will require coordination with the New Jersey ARNG Environmental personnel. In addition to aquatic and marine habitats, sensitive areas also include critical habitat to endangered, threatened, or rare flora or fauna species, and unique geological and other natural features.

7.2 Endangered and Protected Species

The IPMC periodically evaluates ongoing pest control operations and evaluates all new pest control operations to ensure compliance with the Endangered Species Act. No pest management operations are conducted that are likely to have a negative impact on endangered or protected species or their habitats without prior approval from the Natural Resources Program Manager, NGB. Protected migratory birds (which pose a threat or nuisance concern) can periodically occur in the NJARNG region. These species cannot be controlled without a permit.

Birds may be scared or herded to encourage them to move (unless the birds are otherwise protected under separate authority such as the ESA). Nuisance nests may be destroyed (not collected) before eggs are laid or after chicks have fledged unless protected under the ESA or the Bald and Golden Eagle Protection Act (BGEPA)

See **Appendix M** for endangered or threatened species that have the potential to occur within the vicinity of NJARNG lands. Armory\facility personnel must review these lists to determine which species might be affected by pest management operations at their respective locations. Locations of endangered or threatened species are placed on maps of respective areas and made available to those individuals, either state or contract personnel, who are involved with outdoor pest control. The impact of pesticide storage, transportation, and use will be fully documented in the NJARNG integrated natural resources management plan.

Coordinate with the New Jersey ARNG NRM regarding pest control operations that could affect pollinators (such as insecticides and herbicides that kill flowering plants). All efforts should be made to reduce the use of pesticides that may affect pollinators. If pesticides must be used, apply the lowest toxicity pesticide available and apply pesticides at times of day and/or season when pesticide use will have the least impact on pollinators, but achieve pest contract objectives.

7.3 Cultural and Historical Sites

All IPM activities must be in accordance with the New Jersey ARNG Integrated Cultural Resources Management Plan (ICRMP). Follow the procedures and notifications specified in the ICRMP immediately after discovering cultural resources. In any native plants of interest to the Tribes are identified during the tribal consultation process, report their locations to the New Jersey ARNG Cultural Resources Manager. The New Jersey ARNG Cultural Resources Manager will review any necessary ground disturbance or work requiring alteration of a building eligible for the National Register of Historic Places.

7.4 Environmental Documentation

The Programmatic Environmental Assessment and Finding of No Significant Impact for the ARNG Pest Management Program were completed in 2004. ~~Contact IPMC for t~~The Record of Environmental Consideration for the implementation of this plan is in **Appendix G**.

Aerial application of pesticides to Federally-owned NJARNG sites (Appendix A) may require an Environmental Assessment (EA).

7.5 Pesticide Spills and Remediation

An adequate pesticide spill clean-up kit is maintained wherever pesticides are stored or used. Pesticide spill clean-up procedures, notification procedures, and a list of suggested components of a portable spill kit are provided in **Appendix N** of this plan. Additional information on pesticide spills can be found in AFPMB TIM 15. All pesticide spills are reported to the NJARNG site hazardous waste manager.

7.6 Climate Change

There is a potential for climate change to impact the control of pests on state and local levels. Shifts in precipitation regimes and temperature ranges can result in changes to vegetation that could impact training areas, promote noxious weed infestations, or compromise wildlife habitat. New Jersey ARNG supports the development of a vulnerability assessment to better understand the potential impacts related to a changing climate. However, the abundance and distribution of species and habitats at New Jersey ARNG sites are too small in scale to address comprehensive climate change vulnerabilities and New Jersey ARNG will instead utilize existing state and regional plans, partnerships, or reports that other agencies, universities, or non-profits are conducting to assess, develop and implement climate change adaptation strategies. In general, New Jersey ARNG will identify and implement sound IPM strategies, regardless of whether climate changes occur.

7.7 Pollution Prevention

The pest management program outlined in this plan complies, whenever possible, with Executive Order 12856 of August 3, 1993, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements. The control of pests with pesticides is considered only after nonchemical control methods have been exhausted. IPM strategies, which stress nonchemical control, provide the basic framework of IPM program.

National Pollutant Discharge Elimination System (NPDES) Pesticide Application Discharge Final Permit

On October 31, 2011, the USEPA issued a final NPDES Pesticide General Permit (PGP) for point source discharges from the application of pesticides to waters of the United States. The Agency's final PGP covers Operators that apply pesticides that result in discharges from the following use patterns: (1) mosquito and other flying insect pest control, (2) weed and algae control, (3) animal pest control, and (4) forest canopy pest control. The permit requires permittees to minimize pesticide discharges through the use of pest management measures and monitor for and report any adverse incidents (USEPA 2013).

In October 2011, the State of New Jersey issued the Final Pesticide Application Discharge Permit. The permit can be found at: http://www.nj.gov/dep/dwq/gp_pesticide.htm. The Request for Authorization (RFA) form can be found on the Division of Water Quality Web site at: http://www.nj.gov/dep/dwq/pdf/pgp_rfa.pdf. An RFA is required for the application of biological and chemical pesticides over large areas that leave a residue in water, when such applications are made in, over, or near surface waters of the State. The minimum threshold is 5 acres of wetlands or 100 linear feet of stream, whichever is more stringent. Applications smaller than the threshold values are automatically covered under the permit (NJDEP 2013a).

Pesticide Containers

- Triple rinse empty pesticide concentrate containers. Use rinsate as a diluent for the final pesticide formulation as applied. Do not save or collect rinsate.
- Dispose of all empty pesticide containers in accordance with the pesticide label directions.
- Ensure that all pesticide containers are classified as empty when disposed. Containers that can be triple-rinsed are rinsed and residue added to the application equipment. All other containers are classified as "empty" if they contain only minor residue on the bottom of the container or inner lining.

Equipment Cleaning

- Clean equipment at the site of application and apply rinse water to treatment site when complete. Equipment should not be cleaned on a wash rack with a drain that runs to sewer or septic system.
- Cleaning solvents may be used for flushing fogging machines and neutralizing residue in spray tanks. Use biodegradable cleaning solvents and apply to treatment site when complete.
- Pesticide contaminated clothing should not be home-laundered. Heavily contaminated clothing should be considered waste product and be disposed of according to the label instructions for pesticide waste.

7.8 Prohibited Activities

The following activities are prohibited in an effort to ensure the pest management activities are carried out in an environmentally sensitive and responsible manner:

- A pesticide is never to be used in a manner that is inconsistent with its label.
- No pesticide will be used for which the registration has been suspended or canceled by the USEPA or the state in which it is to be used.
- Water used for mixing or diluting pesticides will only be obtained from sources properly equipped with a backflow preventer.
- Contractors will not store pesticides on NJARNG facilities.
- Contractors will not dispose of pesticides or pesticide containers on NJARNG facilities.
- Regularly scheduled treatment of pests without surveillance showing presence or prior written approval by the ARNG PMC.

7.9 Cultural Resources

The IPMC periodically evaluates ongoing pest control operations and evaluates all new pest control operations to ensure compliance with existing Pest Management Requirements. No pest management operations are conducted that are likely to have a negative impact on Cultural Resources. All pesticide activities must be in accordance with the NJ Integrated Cultural Resource Management Plan (ICRMP). Any necessary ground disturbance or work requiring alteration of buildings or sites eligible for the National Register of Historic Places will be approved by the Cultural Resource Manager. Contact the New Jersey Army National Guard Cultural Resource Manager for facility specific information.

8. PROGRAM ADMINISTRATION

8.1 Pest Management Operations

Pest management operations will be conducted in accordance with this plan. If the pest problem cannot be solved by nonchemical methods, the problem is referred to the contractor. A summary of pesticide usage can be found in Appendix C NJARNG State Pesticide Use list (SPUL).

8.2 Work Orders

Work orders for pest control can be issued in response to complaints from facility/armory personnel to the work order desk. The contractor evaluates the problem and provides service if needed. If the pest problem does not fall within the scope of the pest control contract, the FMO can request additional assistance by submitting a Service Work Order.

8.3 Interservice Support Agreements

Joint Base McGuire-Dix-Lakehurst Entomology is responsible for application and recordkeeping at NJARNG facilities on the installation. The process involves work order requests through Base Civil Engineering. Contact IPMC for most recent Interservice Support Agreements.

8.4 Reports and Records

Pest surveillance and control operations will be recorded on the Pest Management Maintenance Record (DD Form 1532-1). See **Appendix D** for an example this form. The electronic copy of this plan contains the electronic pest management record file that can be used by each NJARNG facility. This file automatically calculates the pounds of active ingredient. All pesticides used must be reported in pounds of active ingredient. To calculate the amount of pesticides being applied by contractors, certain information should be obtained from the contractor. The type of information needed, and other information needed to fill out the DD Form 1532-1, can be found in **Appendix F**. This information must be provided by the contractor prior to payment.

CFMO-EMB (IPMC) will maintain adequate records of all pest management operations performed by contractors, and Self-Help (state garage inventories). Each month or quarter the Armory or Facility Manager will send the IPMC the pesticide application records if applicable. Records of pesticides used at NJARNG facilities will be compiled at the end of each fiscal year.

These records are maintained indefinitely at the site where the pest management operations are performed and are a permanent record of pest management activities.

The IPMC calculates and provides the data required for the annual PUF (an example PUF is in Appendix H). All pesticide usage will be reported in pounds of active ingredient (PAI) yearly via the PUF, or when requested by the ARNG PMC. The PUF is sent to the ARNG PMC. Only pest-management activities performed at NJARNG Federally-owned sites (Appendix A) are reported on the PUF.

For pest management activities at NJARNG State-owned sites (those not listed in Appendix A), the IPMC submits the data for annual pesticide use reporting as required by NJDEP.

The IPMC (or designee) provides the data required for the quarterly IPM Installation Status Report (ISR). This data is reported in square footage (indoor pest management) or acreage (outdoor pest management) treated and is reported to the State ISR Program Manager. Only Federally-funded pest management activities are reported in the ISR.

The IPMC (or designee) is responsible for answering all IPM-related data calls and submittal of information via the electronic reporting system as specified by ARNG-IEZ.

8.5 Training and Certification

All personnel (state, Federal, or contracted) who apply pesticides at NJARNG facilities must be properly certified in the appropriate categories.

State certification is required for Federal and state employees when any pesticides are used on state property. Federal employees of the NJARNG must be certified by the DOD or NJDEP BL&R when applying any pesticides on Federal property. State employees of the NJARNG must receive certification from the NJDEP BL&R certification program prior to applying pesticides on Federal or state property.

Certification is recommended for the IPMC in the appropriate categories of work involved if the Coordinator makes specific pesticide use recommendations. To comply with DODI 4150.07, individuals who evaluate the quality of work of pest control contracts (PMQAEs) must also be trained in the pest management category or categories of work being performed. To minimize costs, the IPMC can also be designated as a PMQAE for pest-control contracts at specific facilities.

Training and certification will be conducted at NJARNG expense for facility personnel. Certified pest control personnel shall be recertified in accordance with NJDEP BL&R or DOD requirements as specified. The pest controller must be certified and the PMQAE must be trained in the following categories, as appropriate, to perform pest-control operations directly, to supervise other employees conducting pest-control operations, or to evaluate contractor performance relating to pest control within these categories:

- Forest Pest Control (USEPA category 2)
- Ornamental and turf pest control (USEPA category 3)
- Right-of-way pest control (USEPA category 6)
- Industrial, Institutional, Structural, and Health Related pest control (USEPA category 7)
- Aerial Application (USEPA category 11).

Personnel who are involved in pesticide applications on a regular or seasonal basis, especially where mixing formulations is performed, are encouraged to attend local pest management classes, workshops, and seminars to keep abreast of pest problems and pest management techniques which are unique to the area surrounding the installation. This is particularly true when dealing with vegetation control since many of the herbicide labels indicate that choices in strength and application technique should be based on local conditions. By attending local seminars, pest management personnel learn to solve problems on the installation by talking to people in the same geographic area who have solved similar problems in the past. The time and labor expended in this type of training is easily recouped through improved efficiency in pest management operations on NJARNG sites. Local pest management training should consist of at least 8 hours per year; this is in addition to any offsite recertification training, such as the DOD course or state recertification requirements. Other personnel who deal directly with pest-control operations, but who might not need to be certified, are also encouraged to attend local seminars to understand pest management needs better. State Contract Augmentation contracts are used when essential pest management activities are beyond the capabilities of armory/facility personnel. Pest problems threatening the health, safety, or welfare of installation personnel are given priority. Contracts are administered in accordance with paragraph 2-14, AR 200-5 and with NJARNG contracting procedures. Facility Managers can contact the FMO Department of Public Works or the State Contracting Officer for guidance.

8.6 Pest Management Contracts and Contract Quality Assurance

DODI 4150.07 states that regularly scheduled, periodic pesticide applications are not approved for DOD property except in situations where the IPM plan clearly documents that no other technology or approach is available to protect personnel or property of high value.

It is the responsibility of facility personnel to establish a date and time for work to commence. Prior to any payment being made, an evaluation to confirm the satisfactory completion of all work is performed.

Contractors who conduct pest control on NJARNG facilities must

- Show proof of liability insurance.
- Have state commercial certification and licensing in the category or categories of work to be performed. All contracted pesticide applicators must be certified in the category of work being performed.
- Use USEPA or state-registered pesticides that are listed on the NJARNG SPUL.
- Furnish NJARNG personnel with legible copies of specimen labels and the SDSs of all pesticides proposed for use.
- Furnish NJARNG personnel with information which specifies the pests controlled, the pesticide(s) used (common name, trade name, USEPA registration number, strength of material applied, and the amount used), and the time expended for each pesticide application. This information is entered by facility personnel on the Pest Management Maintenance Record (DD Form 1532-1) for the building or site where the work was performed.
- Complete the appropriate IPM Outline for each pest and site where they provide contractual services following the format provided in **Appendix B**.
- All pesticide activities must be in accordance with the NJ Integrated Cultural Resource Management Plan (ICRMP). Any necessary ground disturbance or work requiring alteration of buildings or sites eligible for the National Register of Historic Places will be approved by the Cultural Resource Manager. Contact the New Jersey Army National Guard Cultural Resource Manager for facility specific information.

A copy of the statement of work (SOW) for the state pest-control contract can be found in **Appendix L**.

8.7 Self-Help Program

Currently, Shop Chiefs can obtain wasp spray for vehicle interiors through GSA for Federal use at the shops. Armory personnel use products from the state supply for personal protection. Information on the Army Guard Self-Help program can be found in **Appendix E**.

Appendix K provides clarification of the New Jersey statutes which address the status of state employees who apply pesticides with respect to certification and licensing. Copies of certifications can be found in **Appendix K**.

Information on DOD certification and training courses is available at:

https://www.acq.osd.mil/eie/afpmb/

Information on certification in the State of New Jersey is available at:

https://pestmanagement.rutgers.edu/pat/

8.8 Pesticide Security

Pesticides and pesticide equipment must be properly stored in facilities and safeguarded. Facilities must be well lighted with a secure perimeter. Video cameras, alarm systems, and self-locking doors are appropriate measures of security. Access to pesticides should be restricted with appropriate warning signs posted. Refer to the AFPMB Technical Guide No. 7, "Installation Pesticide Security" for more information on proper storage and security of pesticides. This technical guide can be found on the AFPMB website (go to: https://www.acq.osd.mil/eie/afpmb/ search for "AFPMB") or obtained from the ARNG PMC

8.9 Emergency Disease Vector Surveillance and Control

The New Jersey ARNG's State Surgeon will stay up-to-date of any new disease vectors entering the area and assess and disseminate information regarding any necessary surveillance and control measures.

8.10 Design/Review of New Construction

Construction projects on NJARNG sites are reviewed with pest prevention and control in mind. The IPMC reviews the design of new buildings or other structures and conducts a pest evaluation in the constructed facility prior to completion of the project to ensure that pest entry points and potential harborages have been eliminated and that preconstruction termite treatments are included in project specifications.

8.11 Coordination – Federal, State, and Local Agencies

The ARNG PMC and /additionally ARNG-IEN Natural Resources Program Managers, as necessary, will review the IPM plan and should be consulted prior to engaging in any of the following activities:

- Use of a restricted use pesticide
- Use of any pesticide that could significantly contaminate surface water or groundwater
- Use of any pesticide that covers 259 or more hectares (640 acres) in one application
- Use of any pesticide that could adversely affect endangered or other protected species or habitats
- Any aerial application of pesticides.

Liaison will be maintained between the IPMC and county and state health agencies to determine the prevalence of disease vectors and other public health pests in the area surrounding the armory/facility.

County health and environmental personnel are also coordinated with regarding proposed actions which could impact adjacent off-installation areas or where pests located in off-installation areas are impacting NJARNG property or personnel health.

A list of useful organizations and contacts who are involved with or who might impact the NJARNG Pest Management Program is found in **Appendix F**. A list of Federal resources, including their addresses, telephone numbers, and a description of their responsibilities is provided at **Appendix F**.

Predator control is coordinated with the USDA, APHIS, Wildlife Services regional office or local game enforcement officers when predator control is necessary,

Pest management personnel coordinate with the U.S. Army Corps of Engineers to ensure that pesticide application, such as termite pretreatment for new construction, is properly performed and documented.

NJARNG Site Managers may also coordinate with County Cooperative Extension offices, New Jersey Department of Natural Resources, New Jersey Department of Agriculture, and USDA Natural Resources Conservation Offices to obtain information about the identification and control of specific pests in their locale or to obtain County Soil Surveys.

9. SALE AND DISTRIBUTION OF PESTICIDES

No pesticides will be sold at New Jersey ARNG sites.

Pesticides sold in Army Air Force Exchange System (AAFES) facilities are registered by the USEPA for general use; restricted use products are not sold. Pesticide products are grouped into several separate categories: products applied to pets for ectoparasite control, repellents, household, and lawn and garden products. A spill clean-up kit is on hand in the immediate vicinity of the home and garden pesticide storage area. Store personnel are familiar with the use of the clean-up kit and with installation spill contingency procedures. Additional guidelines concerning pesticides in exchanges can be found in paragraph 4-7b5, DA PAM 40-11.

10. PEST MANAGEMENT REFERENCE MATERIALS

The following sections identify technical information that should be used to guide the implementation of this IPM plan.

10.1 Federal Laws

- Federal Noxious Weed Act
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Resource Conservation and Recovery Act (RCRA)
- Occupational Safety and Health Act (OSHA)
- Food Quality Protection Act (an amendment to FIFRA)
- Clean Water Act (CWA)
- Endangered Species Act (ESA)
- Federal Noxious Weed Act
- Pollution Prevention Act

10.2 Directives and Instructions

- EO 13751: Safeguarding the Nation from the Impacts of Invasive Species, 5 December 2016

- EO 13112: Invasive Species (Amended by EO 13286, Amendment of Executive Orders, and Other Actions, in Connection With the Transfer of Certain Functions to the Secretary of Homeland Security), 3 February 1999

- EO 13751: Safeguarding the Nation From the Impacts of Invasive Species, 5 December 2016

- Presidential Memorandum, "Integrated Pest Management", 2 August 1979

- Presidential Memorandum, "Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds", subject: Using Native Plants in Landscaping, 26 April 1994.

- DOD Regulations and Policy

- Department of Defense Instruction 4150.07, Department of Defense Pest Management Program, 29 May 2008.

- AR 11-34, The Army Respiratory Protection Program, 25 August 2013.

- AR 40-5, Preventive Medicine, 25 June 2007

- AR 200-1, Environmental Protection and Enhancement, 27 December 2007.

- NGR No. 385-10, Army National Guard Safety Program, 12 November 2008.

- ARNG-ILE Memorandum for Environmental Program Managers and Construction and Facilities Management Office for 54 States, Territories, and District of Columbia, Integrated Pest Management Policy, 4 February 2016

10.3 DOD Regulations and Policy

- Department of Defense Instruction 4150.07, Department of Defense Pest Management Program, 29 May 2008.

- AR 11-34, The Army Respiratory Protection Program, 25 August 2013.

- AR 40-5, Preventive Medicine, 25 June 2007

- AR 200-1, Environmental Protection and Enhancement, 27 December 2007.

- NGR No. 385-10, Army National Guard Safety Program, 12 November 2008.

- ARNG-ILE Memorandum for Environmental Program Managers and Construction and Facilities Management Office for 54 States, Territories, and District of Columbia, Integrated Pest Management Policy, 4 February 2016

10.4 Technical Manuals (TMs)

- TM 5-629, Weed Control and Plant Growth Regulation, 24 May 1989

- TM 5-632, Military Entomology Operational Handbook, Chapters 1-11, with Appendices, March 1994
- TM 5-630, Natural Resources – Land Management, 1 July 1982
- TM 5-633, Natural Resources – Fish and Wildlife Management, 1 February 1982

10.5 Technical Guides from the U.S. Army Public Health Command

Information from the USAPHC can be found at: http://phc.amedd.army.mil/Pages/Library.aspx

- No. 105, Environmental Sampling and Evaluation in the Investigation of Alleged Pesticide Incidents, April 1976
- No. 114, Guide for the Medical Surveillance of Pest Controllers, March 1976
- No. 116, Guide for Fish Kill Investigations, May 1980
- No. 133, Respiratory Protection Program for Pest Control Personnel, November 1982

10.6 Armed Forces Pest Management Board Technical Information Memorandums

The following technical guides are available online at http://www.afpmb.org/content/technical-guides

- TG 2 - Integrated Pest Management in Child Development Centers and Schools, November 2016
- TG 7 (CAC access only) - Installation Pesticide Security, August 2003
- TG 14 - Personal Protective Equipment for Pest Management Personnel, April 2011
- TG 15 - Pesticide Spill Prevention and Management, August 2009
- TG 16 - Pesticide Fires: Prevention, Control, and Cleanup
- TG 17 (CAC access only) - Military Handbook - Design of Pest Management Facilities, August 2009
- TG 18 - Installation Pest Management Program Guide, March 2013
- TG 21 - Pesticide Disposal Guide for Pest Control Shops
- TG 26 - Tick-Borne Diseases: Vector Surveillance and Control, November 2012
- TG 27 - Stored-Product Pest Monitoring Methods, November 2015
- TG 29 - Integrated Pest Management in and around Buildings, August 2009
- TG 34 - Bee Resource Manual with emphasis on The Africanized Honey Bee, November 2013
- TG 37 (CAC access only) - Integrated Management of Stray Animals on Military Installations, May 2012
- TG 38 - Protecting Meal, Ready-to-Eat Rations (MREs) and Other Subsistence During Storage, November 2015
- TG 39 - Guidelines for Preparing DoD Pest Control Contracts Using Integrated Pest Management, February 1997

- TG 41 - Protection from Rodent-borne Diseases, with special emphasis on occupational exposure to Hantavirus, December 2013
- TG 42 - Self-Help Integrated Pest Management, April 2015
- TG 44 - Bed Bugs - Importance, Biology, and Control Strategies, March 2012 (Supplemental Information)
- TG 47 - Aedes Mosquito Vector Control, March 2016

10.7 Other References, Manuals, Books, Guides, and Web sites

- MIL-HDBK-1028/8A, Design of Pest Management Facilities, 1 November 1991
- MIL-STD-904A, Guidelines for Detection, Evaluation, and Prevention of Pest Infestation of Subsistence, 12 January 1984
- TB Med 561, Occupational and Environmental Health, Pest Surveillance, June 1992.
- MIL-STD-903C, Sanitary Standards for Commissaries, 1 January 2000
- MIL-STD-904B, Guidelines for Detection, Evaluation and Prevention of Pest Infestation of Subsistence, 10 March 2000
- MIL-STD-3006A, Sanitation Standards for Food Establishments, 7 June 2002
- TB Med 530, Occupational and Environmental Health, Food Service Sanitation, November 1991. (under revision)
- Mallis Handbook of Pest Control, 7th Edition, PCT Books, 4012 Bridge Ave, Cleveland, OH 44113, 1100 pp.
- Soil Surveys of New Jersey Counties, New Jersey, USDA Natural Resources Conservation Service
- The USEPA pesticide information Web site: http://www.epa.gov/pesticides/
- USAPHC: http://phc.amedd.army.mil/Pages/default.aspx
- USEPA Endangered Species Protection Program (Pesticide Use Limitations): http://www.epa.gov/espp/litstatus/wtc/uselimitation.htm
- National Invasive Species Council: http://www.invasivespecies.gov/
- New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Threatened and Endangered Species Information:

  http://www.nj.gov/dep/fgw/tandespp.htm

11. 2019 IPMP REFERENCES

11.1 Plan References

Original Document, New Jersey Army National Guard (NJARNG) 2003 Integrated Pest Management Plan, Prepared by D. Wood Jr., U.S. Army Center for Health Promotion and Preventative Medicine.

ANG 2007	Air National Guard (ANG). 2007. AFPMB Approved Pesticides and Equipment for Appendix A adapted from ANG 2007 IPM Strategies Template.
NJARNG 2013	New Jersey Army National Guard (NJARNG). 2013. Sea Girt NGJTC Draft Final INRMP. February 2013.
NJDEP 2013a	New Jersey Department of Environmental Protection (NJDEP). 2013a. Bureau of Surface Water Permitting. Pesticide Application Discharge. Available at: *http://www.nj.gov/dep/dwq/gp_pesticide.htm* Accessed: March 2013.
NJDEP 2013b	NJDEP. 2013b. New Jersey's Endangered and Threatened Wildlife. Available at: *http://www.njfishandwildlife.com/tandespp.htm* Accessed: February 2013.
NJDEP 2013c	NJDEP. 2013c. Special Plants of New Jersey. Available at: *http://www.nj.gov/dep/parksandforests/natural/heritage/spplant.html* Accessed: February 2013.
USEPA 2013	U.S. Environmental Protection Agency (USEPA). 2013. EPA Pesticide General Permit for Discharges from the Application of Pesticides. Available at: *http://cfpub.epa.gov/npdes/home.cfm?program_id=410%20*. Accessed: March 2013.
USFWS 2013	U.S. Fish and Wildlife Service (USFWS). 2013. Endangered Species Program. New Jersey Threatened and Endangered Species. Available at: *http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=NJ&s8fid=112761032792&s8fid=112762573902* Accessed: February 2013

11.2 List of Preparers

The following 2019-2023 Integrated Pest Management Plan was updated and created based on the “Final Integrated Management Plan for the New Jersey Army National Guard” from May 2013. This IPM Plan was developed under the direction of the New Jersey Department of Military and Veterans Affairs, CFMO-EMB. The individuals who contributed to the preparation of this document are listed as follows.

Original Document, New Jersey Army National Guard (NJARNG) 2003 Integrated Pest Management Plan, Prepared by D. Wood Jr., U.S. Army Center for Health Promotion and Preventative Medicine.

Bridget Kelly Butcher	David Boyes, REM, CHMM	Cheryl Myers	Louise Baxter
HDR EOC	HDR EOC	HDR EOC	HDR EOC
B.S. Biology Certified Ecologist	M.S. Natural Resources B.S. Applied Biology	A.A.S. Nursing	M.P.A. Public Administration, B.S. Political Science
Years of Experience: 13	Years of Experience: 36	Years of Experience: 23	Years of Experience: 21

12. LIST OF APPENDICES

Appendix A. Federally Owned NJARNG Sites/ Installation and Facilities Description

Appendix B. Integrated Pest Management Strategies/Outlines

Appendix C. New Jersey Pesticide Use List (SPUL)

Appendix D. NJARNG Pest Management Treatment Record Form

Appendix E. NJARNG Self Help Program

Appendix F. Points of Contact and Federal Resources

Appendix G: NEPA Documentation

Appendix H. Program Update Form (PUF)

Appendix I. IPMC Appointment Memo

Appendix J. Definitions and Glossary

Appendix K. Pest Management Provider Certifications and Licensing

Appendix L. Pest Control Contracts and Performance Work Statement

Appendix M. Rare, Threatened, and Endangered Species

Appendix N. Pesticide Spill Cleanup Management

Appendix O. NJ Pest of Special Concern FAQ Sheets/Resources

Appendix P. Annual Updates

12.1 Appendix A- NJARNG Sites/ Installations and Facilities Descriptions

12.2 Appendix B- Integrated Pest Management Strategies/Outlines

12.3 Appendix C- NJARNG State Pesticide Use List (SPUL)

12.4 Appendix D- NJARNG Pesticide Management Treatment Record Form

12.5 Appendix E- NJARNG Self Help Program

12.6 Appendix F- Points of Contact and Federal Resources

12.7 Appendix G: NEPA Documentation

12.8 Appendix H: Program Update Form (PUF)

ELECTRONIC VERSIONS OF THE INSTALLATION INVENTORIES AND THE PESTICIDE USE PROPOSAL CAN BE FOUND ON THE CD FOR THE IPMP.

12.9 Appendix I: IPMC Appointment Memo

12.10 Appendix J- Definitions and Glossary

12.11 Appendix K- Pest Management Certification and Licensing

12.12 Appendix L- Pest Control Contracts and Performance Work Statement

Place in this appendix, copies of all contracts with certified pest control operators. In addition, include all Interservice Support Agreements.

12.13 Appendix M- Rare, Threatened, and Endangered Species

12.14 Appendix N- Pesticide Spill Cleanup Management

12.15 Appendix O- New Jersey Pests of Emerging Concern (FAQ/Resources)

12.16 Appendix P- Annual Updates

13.1 Appendix A- NJARNG Sites/ Installations and Facilities Descriptions

The NJARNG manages approximately 1,065 acres of land and 2.25 million square feet of building, office, and industrial space. Installations and facilities include the following:

- Atlantic City Armory
- Bordentown Warrior Transition Center
- Bridgeton Armory
- Cape May Armory/FMS
- Cherry Hill Armory
- Flemington Armory
- Freehold Armory
- Hackettstown Armory
- Hammonton Armory
- Jersey City Armory
- Joint Base MDL
    - Fort Dix (CST, HQ/JT2DC (3400-3600 Area), New Egypt Armory-old UTES)
    - Lakehurst (AASF, Building 129, Building 608, CLTF)
- Lawrenceville Armory
- Lodi Armory
- Morristown Armory
- Mount Holly Armory
- Picatinny FMS
- Princeton Warehouse (Closing)
- Riverdale Armory
- Sea Girt National Guard Training Center
- Somerset Armory/FMS
- Teaneck Armory/FMS
- Tom’s River Armory
- Tuckerton Armory
- Vineland Armory/FMS
- Washington (Port Murray) Armory
- West Orange Armory/CSMS/Computer Shop
- West Trenton-Mercer Flight Facility (Closing)
- Westfield Armory/FMS
- Woodbridge Armory
- Woodbury Armory
- Woodstown Armory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Atlantic City Armory/ 34A05	1008 Absecon Boulevard	Atlantic City	08401-1999
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Atlantic	Atlantic City	RP-6/1
POC:	**Title:**	**Telephone:**	**Fax:**
George Moore Michael Reeves	Armorer	(609) 441-3191 (609) 441-3190 ext 112	(609) 441-3857
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
4.01	<5 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Great Egg Harbor	Atlantic Coastal Basin	Within Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	80	West
Dr. Martin Luther King Jr. School Complex	475	West
Penrose Canal	1,800	West
Clam Creek	2,800	East

RARE SPECIES IN VICINITY:

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Urban site surrounded by residential, commercial, and industrial land use. Site is essentially flat, with runoff collecting in storm drains and a few low spots. Majority of property paved or mowed, and landscaped with a few trees, such as red cedar (*Juniperus virginiana*), sycamore (*Platanus occidentalis*), and ornamental shrubs.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 4

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1929	Eligible
00002	FMS	1956	Evaluate; over 50 years old
00003	Flam Storage	1957	Evaluate; over 50 years old
00004	Org Storage	2001	Less than 50 years old

Historic District: The installation does not contain a historic district nor is it included within a local historic district.

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

A total of 132 objects were catalogued at the Atlantic City Armory (USACE 1999). No exterior plaques, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	An Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_structure_area
Photograph_location_point
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00002 and 00003. May need to program MOA and mitigation measures if proposed renovations (incl. roof replacement) are determined to constitute an adverse effect to the character-defining features of the armory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/ FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Bordentown Armory/ 34A10	1048 Route 206 South	Bordentown	08505-2124
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Mercer	Trenton East	128/18
POC:	**Title:**	**Telephone:**	**Fax:**
Nick Torres	Armorer	(609) 291-8328/1897	(609) 291-9574
Total Acreage: 15	**Elevation (range):** 35-50 ft.	**Wetlands Acreage:** 0.03	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Crosswicks-Neshaminy	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residence	800	North
Bordentown High School	2,200	Southwest
Sucker Run	200	Southeast
Blacks Creek	425	Southwest

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The majority of the installation is paved or occupied by buildings. Hwy 206 forms the eastern boundary, which is landscaped by large pin oaks (*Quercus palustris*) and several ornamental species. The western portion of the property contain the largest area of vegetation, and this is dominated by black locust (*Robinia pseudoacacia*), cherry (*Prunus* sp.), ash (*Fraxinus* sp.), wild grape (*Vitis* sp.), and poison ivy (*Toxicodendron radicans*). Species such as multiflora rose (*Rosa multiflora*), blackberry (*Rubus* sp.), and japanese honeysuckle (*Lonicera japonica*) are dominant understory plants in some patches along the western boundary.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
INSTALLATION FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 15

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1956	Evaluate; over 50 years old
00002	FMS (UMTB)	1949	Not eligible
00003	Org Storage	2001	Less than 50 years old

Historic District: The installation does not contain a historic district nor it is within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects completed by the USACE in 1999 catalogued 32 objects at Bordentown Armory. The majority of these are awards in the form of plaques, documents, and trophies. No exterior plaques, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	An Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001

Complete a disturbance assessment of the unpaved acreage; consult with SHPO regarding need for inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Bordentown CSMS 34A15	US Hwy 130, Box 108	Bordentown	08505-9617
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
CSMS	Mercer	Trenton East	128/28
POC:	**Title:**	**Telephone:**	**Fax:**
Tom Redler	Armorer	(609) 298-1156	(609) 298-8362
Total Acreage: 11	**Elevation (range):** 70-90 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Corsswicks-Neshaminy	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	120	Southwest
Bordentown High School	800	Southeast
Blacks Creek	1,800	Northeast
Small Lake	600	Southwest

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Few-flowered tick-trefoil (*Desmodium paucifolium*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Site is mostly kept mowed, with some ornamental fruit trees and juniper shrubs, and woody species along the southern edge of the property (including red maple (*Acer rubrum*), red oak (*Quercus rubra*), white oak (*Q. alba*), and sweetgum (*Liquidambar styraciflua*)). This area is managed for picnicking and recreation.

Along the drainage channel which runs from the northwest corner to the east, a similar community of mixed hardwoods includes tulip poplar (*Liriodendron tulipifera*), cherry (*Prunus* sp.), dogwood (*Cornus* sp.), and staghorn sumac (*Rhus typhina*). In the understory, *Viburnum* sp., poison ivy (*Toxicodendron radicans*), *Smilax* sp., golden rod (*Solidago* sp.), and blackberry (*Rubus* sp.) are present.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No (**the 1998 PLS did not include a sensitivity assessment**)

Acreage Requiring Inventory: 7 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	CSMS	1953	Not eligible
00002	CSMS	1953	Not eligible
00003	CSMS	1953	Not eligible
00006	HazMat Storage	1997	Less than 50 years old
00012	Shed	1953	Evaluate; over 50 years old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No historic objects, exterior plaques, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Planning Level Survey	1998	USACE – St. Louis District	NJARNG Cultural Resources Planning Level Survey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00012
Complete an archeological sensitivity assessment and inventory of unpaved acreage.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Bridgeton Armory 34A25	State Hwy 77	Bridgeton	08302-9317
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Vacant	Cumberland	Bridgeton	70/2
POC:	**Title:**	**Telephone:**	**Fax:**
Frank Pimpinella	Armorer	(609) 463-0644	(609) 465-5396
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
26.64	85-100 ft.	5.05	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Cohansey-Maurice	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residence	1,100	Southeast
Country Kids Learning Center	1,125	North
Loper Run	Adjacent to western boundary	
Residence	1,100	Southeast

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The property is adjacent to Hwy 77 to the east and farmland to the north and south. Buildings and pavement are limited to a small area along Hwy 77. The lawn is maintained in this area, but immediately to the west, areas formerly used as tank trails have begun to support young cherry (*Prunus* sp.) trees, grasses, and other species.

The majority of the western property is a forested by upland vegetation, particularly red oak (*Quercus rubra*) and white oak (*Q. alba*). Along the small drainage channel that runs southeast to northwest, the dominant vegetation becomes red maple (*Acer rubrum*), common reed (*Phragmites australis*), and balsam poplar (*Populus balsamifera*).

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Model: No

Acreage Requiring Inventory: 24

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1964	No Cold War era significance; evaluate when 50 years old
00002	Shed	1949	Evaluate; over 50 years old

Historic District: The installation does not contain a historic district nor it is included within a local historic district.

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No historic objects have been catalogued at the Bridgeton Armory. No exterior plaques, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00002
Complete an archeological sensitivity assessment and inventory of unpaved acreage.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Burlington Armory 34A30	559 High Street	Burlington	08016-4516
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Burlington	Bristol	156/11
POC:	**Title:**	**Telephone:**	**Fax:**
Alisha Delsole	Armorer	(609) 386-0547	(609) 386-5935
Total Acreage: 1.20	**Elevation (range):** 20 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Crosswicks-Neshaminy	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residence	25	North
Wilbur Watts Intermediate School	150	West
Assiscunk Creek	1,600	East
Delaware River	3,250	North

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The installation sits between High Street on the west and Lawrence Street on the east, in a very urban area. Although the majority of the site consists mostly of buildings and pavement, a lawn with ornamental trees and shrubs is maintained along High Street. The surrounding land use is a mix of industrial and commercial property.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: <1

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1926	Eligible
00002	MVSB	1950	Not eligible
00003	Flam Mat	1950	Evaluate; over 50 years old

Historic District: The installation does not contain a historic district nor is it within a local historic district.

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 32 objects at the Burlington Armory, including one static display: 99.033.099 Armored Personnel Carrier, M-59, S/N USA H27TT16

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects at New Jersey Army National Guard Facilities
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00003
Program MOA and mitigation documentation if installation of the proposed fire suppression system will have an adverse effect on the character-defining features of the Armory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Cape May Court House/ 34A40	600 Garden State Pkwy.	Cape May Court House	08210-1699
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Cape May	Stone Harbor	115/17-A
POC:	**Title:**	**Telephone:**	**Fax:**
Frank Pimpinella	Armorer	(609) 463-0644	(609) 465-5396
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
21	<10 ft.	11.09	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Great Egg Harbor	Atlantic Coastal Basin	Within Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Vo-Tech School	140	North
Residence	700	Northwest
Pond	400	Northwest
Holmes Creek	Adjacent to southwest boundary	

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Bald eagle (*Haliaeetus leucocephalus*)
Stinking fleabane (*Pluchea foetida*)
Red-headed woodpecker (*Melanerpes erythrocephalus*)
Cope's gray treefrog (*Hyla chrysoscelis*)
Martha's pennant (*Celithemis martha*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The property is bordered on the west by the Garden State Parkway and on the South by a salt marsh and tidal creek. The northern half of the property contains buildings and parking lots, but the majority of this area is mowed lawn. Two types of wetland areas are found on the southern half of the property. Those areas farther from the tidal creek appear disturbed and are dominated by shrubs, small trees, and impenetrable vines. Approaching the tidal creek, the wetland community becomes dominated by common reed (*Phragmites australis*), eventually becoming a typical salt marsh community immediately surrounding the creek. This area is predominantly salt marsh cordgrass (*Spartina alterniflora and S. patens*).

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 18.7 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate prior to proposed undertaking
00002	FMS #4	1952	Evaluate; over 50 years old,
00003	Flam Storage	1964	No Cold War significance, evaluate when 50 yrs old
00004	Org Storage	2001	Less than 50 years old

Historic District: The installation does not contain a historic district, nor it is within a local historic district. The building is a numbered stop on a tour of municipal buildings within the same complex.

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 285 objects, including two static displays: a captured Iraqi anti-aircraft gun of Desert Storm vintage and an Honest John rocket on a static launcher. Both of the static displays are federal property.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00002; if eligible, may need to program for MOA and mitigation measures if proposed roof or window replacements will represent an adverse effect to the Armory

Complete an archeological sensitivity assessment and inventory

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Cherry Hill Armory/ 34A45	Grove Street & Park Blvd.	Cherry Hill	08002-2797
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Camden	Camden	49/1
POC:	**Title:**	**Telephone:**	**Fax:**
John Kelly	Armorer	(856) 486-2680	(609) 486-2699
Total Acreage: 10	**Elevation (range):** <25 ft.	**Wetlands Acreage:** 11.30	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Lower Delaware	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	75	North
Cooper River	Adjacent to southern boundary	

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The property sits along the north back of the Cooper River, and is bounded by Park Drive to the north. The Armory buildings, vehicles compound, and parking lots are concentrated along Park Drive, and areas The Armory buildings, vehicles compound, and parking lots are concentrated along Park Drive, and areas along the river are forested. The forested areas are comprised mostly of red oak (*Quercus rubra*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*), and the understory is kept open for picnicking and recreation. Vegetation on the river banks is similar, except for the appearance of black willow (*Salix nigra*), box elder (*A. negundo*), and green ash (*Fraxinus pennsylvanica*) and various herbaceous species.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 6.6 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1958	Evaluate when 50 years old
00002	FMS	1977	No Cold War significance; evaluate when 50 yrs old

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued six objects at Cherry Hill, one of which has been subsequently removed to Sea Girt. Objects include: an M-55 self-propelled howitzer and M-110 howitzer (federal property), both of which are housed in the equipment storage area rather than on display, and a muzzle-loading cannon (private) inside the Armory.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001 when 50 years old
Complete an archeological sensitivity assessment and inventory of the unpaved acreage.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Dover Armory/ 34A50	479 West Clinton Street	Dover/Rockaway	07801-1799
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Morris	Dover	151-A/1,2,3
POC:	**Title:**	**Telephone:**	**Fax:**
Randolph Martin	Armorer	(973) 631-6544	(973) 366-3123
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
18	615-645 ft.	2.93	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	South
Green Pond Brook	50	Northeast
Rockaway River	300	Southwest

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Wood turtle (*Clemmys insculpta*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Western portion of property borders Hwy 15 and contains Armory buildings and vehicle compound. The land on this half of the installation is generally mowed or paved, while the land on the eastern half remains forested. The area immediately east of the vehicle compound is best described as a red maple (*Acer rubrum*) swamp, with green ash (*Fraxinus pennsylvanica*) and coast pepperbush (*Clethra alnifolia*) dominating the understory. Farther east, the forest community is dominated by more upland species dominating the understory. Farther east, the forest community is dominated by more upland species such as oak (*Quercus* sp.) and beech (*Fagus grandifolia*).

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 11.9 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1963	Evaluate when 50 yrs old
00002	FMS	1958	Evaluate when 50 yrs old
00006	Org Storage	2001	Less than 50 years old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 30 items at Dover, including an M-151 utility truck, items in display cases or in frames, and a collection of documents and photographs related to the history of the 50th Support Battalion.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00002 when 50 years old
Complete an archeological sensitivity assessment and inventory of the unpaved acreage.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Picatinny Arsenal 34A55	Building 3801	Picatinny Arsenal	07806-5000
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
FMS #7/	Morris	Dover	Federal Military Reservation
POC:	**Title:**	**Telephone:**	**Fax:**
Charles Rissmiller	Regional Manager	(908) 684-3198	(908) 979-9371
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
28.48	850-905 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
Federal	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Community Recreation	300	South
BR Trailer Park		
Hibernig Brook	750	Southeast
Pond	525	Northeast
Lake Denmark	850	North

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

Barred owl (Strix varia)
Bobcat (*Lynx rufus*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Property is fenced and almost all the area within the fenced is mowed in order to provide open space for flight activities. However, the fenceline is bordered by an upland mixed hardwood forest, dominated by sugar maple (*Acer saccharum*), on three sides. The unmowed areas within the fenceline are vegetated by shrubs and herbaceous species, such as staghorn sumac (*Rhus typhina*), Russian olive (*Elaeagnus angustifolia*), and wild rose (*Rosa* sp.). A small seepage area runs northeast from the northwestern corner of the runway, continuing beyond the property fenceline into an area of deciduous wooded wetlands.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: Yes

Acreage Requiring Inventory: 10 (remaining acreage designated extremely disturbed)

Acreage Inventoried to Date: 10

Resources Identified: None

Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constr.	Evaluation Status
00001	Hangar	1978	Check Cold War era significance; otherwise, evaluate when 50 yrs old
03155	Storage	1995	Less than 50 years old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 49 items at Picatinny FMS, all but one of which is framed and mounted on the wall. The unframed item is a memorial plaque mounted outside the FMS entry.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Archeological Survey	2004	John Milner Associates	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities (Siegel, McVarish, and Tobias 2004)
Archeological Survey	2005	John Milner Associates	Phase 1B Archeological Investigations for the NJARNG for Ft. Dix, Picatinny, Lawrenceville, and Vineland Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Archeological_test_pit_point
Cultural_cleared_area
Cultural_survey_area
Cultural_survey_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

None

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Flemington Armory/ 34A80	State Hwy 12	Flemington/Raritan Twp.	08822-9511
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Hunterdon	Pittstown	42/14
POC:	**Title:**	**Telephone:**	**Fax:**
Brett Davala	Armorer	(908) 782-4872	(908)788-3679
Total Acreage: 13.07	**Elevation (range):** 525-535 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	East
Plum Brook	400	West

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Hwy 12 and Everetts Hill Road form the northern and southeastern boundaries of the installation, respectively. The area immediately surrounding the Armory is a mowed lawn with very few ornamentals. Along the northeastern boundary, a mixed oak forest community contains white oak (*Quercus alba*), chestnut oak (*Q. prinus*), northern red oak (*Q. rubra*), and hickory (*Carya* sp.), as well as many understory species. The southern end of the site is also forested, but has a much younger stand of similar tree species. A drainage ditch runs along the western boundary, and is populated by weedy species such as golden rod (*Solidago* sp.), sumac (*Rhus* sp.), and blackberry (*Rubus* sp.). Although this drainage meets another at the northwest corner, the area does not appear support wetland vegetation or hydric soils.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 10.4 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate when 50 yrs old
00002	MVSB	1950	Not eligible
00004	Flam Storage	1961	Evaluate when 50 yrs old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 34 items at the Flemington Armory, including an M-60 Sherman tank and an M-16 half-track. The M-60 tank remains on static display outside of the Armory; however, the M-16 half-track is no longer at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00006 when 50 years old
Complete an archeological sensitivity assessment and inventory of the unpaved acreage.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Franklin Armory/ 34A85	12 Munsonhurst Road	Franklin	07416
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Sussex	Franklin	74/15
POC:	**Title:**	**Telephone:**	**Fax:**
Charlie Rissmiller	Regional Manager	(908) 852-4400	(908) 979-9371
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
10.85	545-560 ft.	1.63	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Rondout	Wallkill River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	110	East
Hardyston Township Elementary	950	East
Franklin Pond Creek	Adjacent to eastern boundary	
Wallkill River	Adjacent to western boundary	

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Bog turtle (*Clemmys muhlenbergii*)
Wood turtle (*Clemmys insculpta*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The Wallkill River runs through the western portion of the property and lies within a sugar maple-oak-hickory forest. Old tank trails in the forest have left depressions that now support herbaceous wetland vegetation and sometimes contain standing water. Franklin Pond Creek runs along the northeastern boundary, and is only narrowly surrounded by vegetation such as white ash (*Fraxinus pennsylvanica*) and sycamore (*Platanus occidentalis*). The remaining central and southeastern property contains two buildings a parking lot and a helicopter landing zone.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 8.7 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1956	Evaluate; over 50 years old
00002	Shed	1949	Evaluate; over 50 years old

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No historic objects, exterior plaques, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00002
Complete an archeological sensitivity assessment and inventory of the unpaved acreage.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Freehold Armory/ 34A90	Jerseyville Rd. and State Hwy 33	Freehold	07728
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Monmouth	Freehold	108/401-5
POC:	**Title:**	**Telephone:**	**Fax:**
Jeff Whartenby	Regional Manager	(609) 562-0508	(609) 562-0504
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
2	155-160 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Mullica-Toms	Raritan River/Bay Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	350	South
Tributary of Debois Creek	700	Southwest

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

This property is located between Jerseyville Road to the north, and Hwy 33 to the south, and is surrounded by both industrial and residential land use. Much of the site is paved and occupied by buildings, but a forested lawn is maintained along Hwy 33. White pine (*Pinus strobus*) and pin oak (Quercus palustris) are planted in front of the ARMORY, as well as sugar maple (Acer saccharum) and northern red oak (Q. rubra).

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 2

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1940	Evaluate; over 50 years old
00002	Flam Storage	1963	Evaluate when 50 years old
00003	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 14 items at Freehold, including an M-114 armored personnel carrier (federal).

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE –St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001

Complete a disturbance assessment of the unpaved acreage and consult with the SHPO regarding the need for an inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Hackettstown Armory/ 34A95	901 Willow Grove Street	Hackettstown	07840-5099
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Warren	Hackettstown	44/2
POC:	**Title:**	**Telephone:**	**Fax:**
Charles Rissmiller	Regional Manager	(908) 684-3198	(908) 979-9371
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
16	620-650 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Musconetcong River	900	East
Unnamed Tributary	Adjacent to northern boundary	

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Willow Grove Street forms the eastern boundary of the installation. The length of the property extends to the railroad right of way to the west. Over 75 percent of the land is forested, as is most of the surrounding land which is encompassed by Stephens State Park. The vegetative community is dominated by red oak (*Quercus rubra)*, and cottonwood (*Populus deltoides*) in the canopy, and dogwood (*Cornus* sp.) in the subcanopy. Stands of white pines (*Pinus strobus*) are interspersed with the hardwoods, particularly in the northernmost corner and central region of the property. The eastern-most portion of land is cleared for the Armory buildings and parking lot. A small wetland area sits to the west of the pines along the southern boundary. This area contains common reed *(Phragmites australis)*, cattails (*Typha* sp.), and bulrush (*Scirpus* sp).

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 14.1 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate when 50 years old
00002	MVSB	1949	Not eligible
00003	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor does it lie within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No monuments, objects or displays have been catalogued at Hackettstown Armory.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001 when it turns 50 years old
Complete an archeological sensitivity assessment and inventory of unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Hammonton Armory/ 34B00	Egg Harbor Road, Box 469	Hammonton	08037-0469
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Atlantic	Hammonton	3702/3
POC:	**Title:**	**Telephone:**	**Fax:**
Frank Pimpinella	Regional Manager	(609) 463-0644	(609) 465-5396
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
10	65-80 ft.	3.16	Pinelands Town
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Great Egg Harbor	Atlantic Coastal Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Church	800	Northwest
Residence	1,000	Northwest
Hammonton Lake Tributary	Runs through eastern property	
Hammonton Creek	1,150	North

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Reversed bladderwort (*Utricularia resupinata*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Egg Harbor Road runs northwest-southeast, forming the upper boundary of the installation. A railroad which runs parallel to Egg Harbor Road forms the lower boundary. The surrounding land use is industrial, and recreational. On the eastern half of the property, an unnamed tributary of Hammonton Lake meanders through a forested wetland. The dominant species of this community are red maple (*Acerrubrum), alder (Alnus serrulata), Atlantic white cedar (Chamaecyparis thyoides), and black willow* (*Salix nigra*). Uphill from the tributary, the forest vegetation becomes more typical of upland communities, with some pitch pines (Pinus rigida), sassafras (Sassafras albidum), and more oaks (Quercus sp.) appearing. The western half of the property contains buildings and paved areas, and also a large, maintained lawn with minimal landscaping.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 7.3 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate when 50 years old
00002	MVSB	1949	Not eligible

Historic District: The installation does not contain a historic district, nor does it lie within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued one item, an Iraqi, towed, quad-mount anti-aircraft gun with Iraqi Ministry of Defense markings (federal). The unit previously assigned to the Armory painted over the Iraqi markings.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Armory National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001 when 50 years old
Complete an archeological sensitivity assessment and inventory of unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Jersey City Armory/ 34B05	678 Montgomery Street	Jersey City	07306-2208
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Hudson	Jersey City	1898/1-21, 30-39
POC:	**Title:**	**Telephone:**	**Fax:**
Collin Thomas	Armorer	(973) 839-4953	(201) 915-3512
Total Acreage: 2	**Elevation (range):** 75 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residence	15	Northeast
Greek Orthodox Church	200	East

RARE SPECIES IN VICINITY:

No Natural Heritage database search conducted for this installation

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Located in an urban area, the Armory encompasses most of a city block. Neighboring properties consist of residential and commercial buildings.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 2

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: This installation has no unpaved acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1934	Eligible

Historic District: The installation does not contain a historic district nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued only one item, a guidon for F Company, 50th Armored Division, at the Jersey City Armory. A plaque commemorating the building's construction as a Works Progress Administration Project in 1934 is affixed to the wall in the buildings main entrance.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

May need to program MOA and mitigation measures if proposed renovations/repairs to Armory are determined to constitute adverse effects.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Installation Name:	**Address:**	**City/Township:**	**Zip Code:**
Lakehurst CLTF/ 34B10	Highway 547	Highway 547	08648-2805
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
CLTF, AASF, Armory	Ocean	SE Lakehurst, NJ SW Lakehurst, NJ SE Cassville, NJ	
POC:	**Title:**	**Telephone:**	**Fax:**
Total Acreage: 7,900	**Elevation (range):** 70-120	**Wetlands Acreage:**	**Pinelands Designation:** Military Installation
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
Federal	Barnegat Bay	Barnegat Bay	Outside zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

NJARNG leases building space only.

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NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES: N/A (LEASED PROPERTY)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00129	Armory	1937	Contributing element to NR Historic District
00194	Hangar/ Shop	1943	Contributing element to NR Historic District
00608	AC MNT	1993	

Historic District: The two buildings contribute to the proposed Lighter Than Air (LTA) National Historic District at Lakehurst.

Historic Landscape: Although a number of landscape elements are included within the proposed LTA Historic District, the installation has not been evaluated to determine whether it contains a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? No

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No historic objects, monuments, objects, or static displays owned by the NJARNG are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Cultural Resources Survey	1994	Baystate Environmental Consultants	Cultural Resources Survey for Naval Air Engineering Station Lakehurst, New Jersey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Archival Search	1999	Parsons Engineering Science	Environmental Studies for the Proposed NJARNG MATES, NAES Lakehurst, New Jersey
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area Historic_district_area
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Section 106 Compliance Actions (MOA, HABS documentation) to mitigate affects of proposed alterations to Buildings 129 and 194

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Lawrenceville Complex/ 34B15	101 Eggert Crossing Rd.	Lawrenceville	08648-2805
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Armory & NJDMVA	Mercer	Princeton	80/13,14,15,17,20,21,22
POC:	**Title:**	**Telephone:**	**Fax:**
Al Wood	Armorer	(609) 530-6619	(609) 530-7100
Total Acreage: 78.14	**Elevation (range):** 80-120 ft.	**Wetlands Acreage:** 25.23	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	South
St. Ann's School/Rectory	250	East
Little Shabakunk Creek	1,750	Northeast

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Eggert Crossing forms the northern boundary of the site, which extends southward almost to Eldridge Avenue. The majority of the buildings and associated infrastructure are located on the northern portion of the property, whereas the southern portion is forested. Although mapping classifies the area as deciduous wooded wetlands, the vegetation is characteristic of uplands. Species such a hickory (*Carya* sp.), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), and tulip poplar (*Liriodendron tulipifera*) are dominant in the canopy. Many of the forested areas appear to be young, successional stands.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: Yes

Acreage Requiring Inventory: 50

Acreage Inventoried to Date: 50

Resources Identified: None

Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constr.	Evaluation Status
00001	DMAVA	1971	
00002	Armory	1927	Not eligible
00003	FMS	1927	Not eligible
00004	Storage shed	1927	Not eligible
00005	MVSB	1927	Not eligible
00006	Flam Storage	1960	Evaluate when 50 years old
00007	HOSCOE	1971	
00008	Flam Storage	1971	
00009	Org Storage	1971	
00010	CIF	1987	
00011	Armory	1987	
00012	Open Storage	1987	

Historic District: The installation does not contain a historic district nor is it located within a local district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 1,754 items at the Lawrenceville Complex, including eight static displays and two monuments. Inventory of the static displays and monuments in 2006 found the following: two M2 Towed guns, an M115 Towed Howitzer, an M42 Anti-aircraft gun, a Marmon-Herrington CTMS Light Tank, two M110A2 203mm Howitzers, an M55 8-inch Howitzer, an M114A2 Towed Howitzer, an M106A2 Self-propelled Mortar Carrier, an M109A 155mm Howitzer, an M578 Light Armored Recovery Vehicle, and M108 105mm Howitzer, an M48A5 Tank, an M60A3 Tank, a memorial to those who have fallen during the Global War on Terrorism, a Memorial for the fallen of the 112th Field Artillery, a plaque and tree commemorated to General Cantwell, and a memorial and tank commemorating the World War II fallen.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Planning Level Survey	1998	USACE – St. Louis District	NJARNG Cultural Resources Planning Level Survey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Archeological Survey	2004	John Milner Associates	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities

NATURAL AND CULTURAL RESOURCES

INVESTIGATION REPORTS (CONT'D)			
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Archeological_test_pit_point
Cultural_cleared_area
Cultural_survey_area
Cultural_survey_point
Historic_feature_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00006 when 50 years old
None

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
IFACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Lodi Armory/ 34B25	178 Essex Street	Lodi	07644-2795
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Non-military use	Bergen	Hackensack	286/1A
POC:	**Title:**	**Telephone:**	**Fax:**
Bob Kasica	Armorer	(973) 839-4953	(201) 368-9426
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
4.28	45 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	350	Southwest
Deciduous Wooded Wetlands	1,250	Northeast
Saddle River	2,300	West

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The property is bordered by both I-80 and Hwy 17, and surrounding land use is commercial and industrial. Generally, the land slopes downward toward Rt. 80. Mature oak trees (*Quercus rubra* and *Q. alba*) and mowed grass are the dominant vegetation types in the northeastern part of the property. Along the eastern boundary, the vegetation is successional. Staghorn sumac (*Rhus typhina*), poison ivy (*Toxicodendron radicans*), and goldenrod (*Solidago* sp.) dominate. The remaining property is largely paved or occupied by buildings.

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NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 1 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1958	Evaluate when 50 years old
00002	Shed	1948	Evaluate; over 50 years old
00003	Veh Str Shed	1948	Evaluate; over 50 years old
00004	Flam Storage	1959	Evaluate when 50 years old

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No monuments, historic objects, memorials, or static displays are housed at Lodi Armory.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate all buildings by 2009; if the roof replacement will not be done with "in kind" materials, consult with the SHPO regarding the need to evaluate the building prior to the roof replacement. If the Armory is determined eligible and the roof replacement is determined to constitute an adverse effect, may need to program MOA and mitigation measures

Complete an archeological sensitivity assessment and inventory of the unpaved acreage

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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Morristown Armory/ 34B40	430 Western Avenue	Morristown	07960-0499
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Morris	Mendham	330/1
POC:	**Title:**	**Telephone:**	**Fax:**
Randy Martin	Armorer	(973) 366-8780	(973) 631-6283
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
41.70	560-680 ft.	4.23	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	75	South
Villa Walsh School	800	North
Pond	1,800	Northeast
Catfish Brook	2,150	Southeast

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

Long-tail salamander (*Eurycea longicauda longicauda*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

About 70 percent of the property is characterized by a mature sugar maple (*Acer saccharum*) – mixed hardwood forest, although herbaceous species appear along the forest edges. In the western portion of the property, a deciduous wooded wetland area is fed by several intermittent stream channels. A pocket of herbaceous wetlands is also found on the property, to the east of the Armory building. This area is surrounded by forest and an open field which is predominantly vegetated by grasses. The land immediately surrounding the Armory is kept mowed, and a large gravel parking lot lies to the west of the building. The North and West property boundaries are formed by Western Ave. and Bailey Hollow Rd., respectively, and the South and East boundaries are adjacent to suburban properties.

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NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: Yes

Acreage Requiring Inventory: 18 (20 acres designated as extensively disturbed; 4 acres wetland)

Acreage Inventoried to Date: 18

Resources Identified: 0

Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1937	Eligible
00002	FMS	1956	50 years old; evaluate
00003	Flam Storage	1960	Evaluate when 50 years old
00005	HazMat	1999	
00006	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 137 items at Morristown, including four artillery pieces – a 75mm pack howitzer and three 105mm saluting howitzers; a reconstructed Napoleon 12-pounder cannon and two coehorn mortars, two WWII-era M-37 self-propelled howitzers, a self-propelled 155mm howitzer, and a 12-pounder brass muzzle loader. A site visit in 2006 found all of these items present except for the 75mm pack howitzer three 105-mm saluting howitzers, which have apparently been transferred to the Fort Dix UTES and other armories, respectively. The WWII-era M-37 howitzers are sitting off the side of an access road on the side of the installation and are in poor condition. A boy scout dedication marker and tree also are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Archeological Survey	2004	John Milner Associates (JMA)	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities
Building Survey	2005	JMA	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

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NATURAL AND CULTURAL RESOURCES

GIS DATA LAYERS	
The following GIS data sets are populated for this installation:	
Archeological_test_pit_point	Historic_structure_area
Cultural_cleared_area	Photograph_location_point (and PHOTOS)
Cultural_survey_area	Structure_existing_area
Cultural_survey_point	
Historic_feature_point	

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP
Evaluate the FMS (Building 00002)

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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Mount Holly Armory/ 34B45	1670 Route 38 East	Mount Holly Lumberton Twp.	08060-9701
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Burlington	Mount Holly	22/4-B
POC:	**Title:**	**Telephone:**	**Fax:**
Manuel Torres	Armorer	(609) 518-3036	(609) 518-3037
Total Acreage: 6.12	**Elevation (range):** 55-60 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Lower Delaware	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	90	South
South Branch Rancocas Creek	2,100	North

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Route 38 forms the northern boundary of the property, while Windmill and Stuyvesant Streets form the eastern and southern boundaries, respectively. The western boundary is marked by a line of shrubs, trees and grasses, since the majority of the property is mowed lawn. Buildings and parking lots occupy the northern half, while the southern portion is designated as a helicopter landing area. Several white ash (*Fraxinus americana*) trees are planted along Windmill Street.

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NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 4.5 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of the sensitive acreage

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1963	Check Cold War era significance; otherwise, evaluate when 50 yrs old
00003	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 61 items, most of which are documents, photographs, plaques, and trophies. The only federally-owned object is an M-59 armored personnel carrier.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete an archeological sensitivity assessment and inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Newark Armory/ 34B50	120 Roseville Avenue	Newark	07107
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Essex	Elizabeth	1905/28
POC:	**Title:**	**Telephone:**	**Fax:**
Billy Davis	Armorer	(973) 648-7012	(973) 877-1433
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
2	140-145 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passsaic	Passaic/Hackensack/NY Harbor Complex	Ouside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
St. Rose of Lima Church	80	South
First Hopewell Missionary Baptist Church		
River	2250	East

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Located in the middle of a city block, this installation is very urban and is surrounded on all sides by buildings or pavement.

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NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 2

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: This installation is entirely developed and has no potential for preservation of archeological deposits.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1899 (1910)	Not eligible

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 8 items at the Newark Armory, including an Armored Personnel Carrier (M-75, S/N 689) with Civil Defense markings. The APC is housed inside the drill hall and is not on display.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

None

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Newton Armory/ 34B55	Highway 206	Newton	07860-1436
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Sussex	Newton East	803/49-A
POC:	**Title:**	**Telephone:**	**Fax:**
Charles Rissmiller	Regional Manager	(908) 684-3169	(908) 979-9371
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
6	575-610 ft.	0.78	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Wetlands bordering property	100	East
Paulins Kill	650	Northeast

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Buildings and paved areas are clustered on the western portion of the installation. The southern corner contains herbaceous and deciduous wooded wetlands. Species such as red maple (*Acer rubrum*), swamp dogwood (*Cornus amomum*), green ash (*Fraxinus pennsylvanica*) and *Viburnum* sp. are dominant. A ravine which receives runoff from the area behind the vehicle compound runs eastward from the northern corner of the property. The steep slopes along this drainage are vegetated mainly by grasses, vines and a few large box elder (*A. negundo*) trees.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 4.5 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961 (1949)	Not eligible
00002	MVSB	1957	Evaluate, over 50 years old
00003	Flam Storage	1960	Evaluate when 50 years old
00004	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 53 items at Newton, including an M-60 tank on static display (federal).

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00002 and 00003

Complete an archeological sensitivity assessment and inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
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NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Plainfield Armory/ 34B75	1201 East 7th Street	Plainfield	07052-1907
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Union	Chatham	266/87
POC:	**Title:**	**Telephone:**	**Fax:**
Donald Emery	Armorer	(908) 226-7825	
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
2	110-135 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Raritan	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	Northeast
Cross of Life Lutheran Church	400	Northeast
Pond	1,200	Southeast

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

This installation consists primarily of the Armory building surrounding paved parking areas, and a narrow mowed lawn along the eastern and southern boundaries, which are formed by Seventh and Leland Streets, respectively. The lawn is landscaped with northern red oak (*Quercus rubra*) and a few shrubs, and is otherwise kept open. Weedy vegetation invades the site in some places through the fence line, but is generally restricted to the neighboring properties.

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FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 2

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1930	Eligible
00002	MVSB	1950	Not eligible

Historic District: The installation does not contain a historic district nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

One static display, an anchor commemorating the NJARNG Naval Militia, is located in front of the armory.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Conduct disturbance assessment or consult with the SHPO regarding need to complete an archeological inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Princeton Warehouse	River Road, PO Box 166	Princeton	08540-0166
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Warehouse	Mercer	Monmouth Junction	32.04/36
POC:	**Title:**	**Telephone:**	**Fax:**
Chris Harris	Armorer	(609) 924-2062	
Total Acreage: 8.2	**Elevation (range):** 65-90 ft.	**Wetlands Acreage:** 1.03	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Raritan	Delaware River Basin	

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	450	South
Church of Christ	1,300	South
Millstone River	850	East
Delaware & Raritan Canal	1,000	East

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

Robbin's pondweed (*Potamogenton robbinsii*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

River Road forms the easternmost boundary of the property, while the other three boundaries are not marked by any constructed features. The majority of the southern half of the property is dominated by a mixed hardwood forest, particularly species such as red maple (*Acer rubrum*), red cedar (*Juniperus virginiana*), and *Viburnum* sp. An intermittent stream runs close to the western boundary, and is surrounded by deciduous wooded wetlands. South of the parking lot, a small area of herbaceous wetlands is also fed by this drainage pattern. The stream channel continues to the northern section of the property, where it is contained within steep hillsides. A stand of white pines (*Pinus strobus*) dominates the ridge.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 7.1 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory/warehouse	1930	Evaluate; over 50 years old

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued two wagon wheels in the warehouse that had been converted to chandeliers.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001
Complete an archeological sensitivity assessment and inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Riverdale Armory/ 34B85	107 Newark-Pompton Tnpk	Riverdale	07457
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Morris	Pompton Plains	26/23,24
POC:	**Title:**	**Telephone:**	**Fax:**
Raul Chacon	Armorer	(973) 839-4953	(973) 835-1323
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
7.0	200-215 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	West
Sunshine School	250	North
Tributary of Pompton River	1,000	Northeast

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The western and southern property boundaries are formed by Newark-Pompton Turnpike and Riverdale Rd., respectively. The eastern boundary follows a railroad right of way, and the northern portion of the property is adjacent to NJDOT property. The majority of the installation is paved and contains several buildings for administrative and vehicle maintenance use, with the exception of the lawn and landscaping in the southwest corner.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 7

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1963	Evaluate when 50 years old
00002	FMS	1949	Not eligible
00003	Flam Storage	1960	Evaluate when 50 years old
00006	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 60 items at the Riverdale Armory, the majority of which are trophies and plaques. No static displays, monuments, memorials, or exterior plaques are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00003 when 50 years old

Complete a disturbance assessment for the unpaved acreage; consult with the SHPO regarding the need for inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Sea Girt NGTC/ 34B90	PO Box 277	Sea Girt	08750-0277
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Training Center	Monmouth	Point Pleasant	85/1
POC:	**Title:**	**Telephone:**	**Fax:**
Gary Schmitz	Facility Manager	(732) 974-5952	(732) 974-5969
Total Acreage: 171.02	**Elevation (range):** <20 ft.	**Wetlands Acreage:** 5.14	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Mullica-Toms	Atlantic Coastal Basin	Within Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	North
Sea Girt Elementary School	875	North
Stockton Lake	Adjacent to south property line	
Atlantic Ocean	Adjacent to east property line	

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

This property is surrounded by residential communities on the north, south, and west, and is adjacent to the Atlantic Ocean on the east. The majority of the land is maintained as open, mowed fields, although a few acres of dune habitat remain as a buffer between the installation and the shoreline. Disturbance has altered the vegetative composition of the dune community, but some pure patches of beach grass (*Ammophila breviligulata*) remain. The greatest concentration of buildings is in the northwest corner of the property, although a network of roads runs throughout the southern property. Also along the southern boundary, adjacent to Stockton lake and a tidal marsh community, is an area designated for camping. Additionally, two very different wetland communities exist in isolated patches; a scrub/shrub wetland in the southwest corner and an herbaceous community in the southeastern portion of the site.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:			
Predictive Model/Sensitivity Assessment: Yes			
Acreage Requiring Inventory: 101 (68 acres classed as extensively disturbed; 2 acres in wetland)			
Acreage Inventoried to Date: 101			
Resources Identified: 2 isolated artifacts (distal half of a chert transversely snapped biface/projectile point and a single chalcedony flake); no site numbers assigned			
Outstanding Requirements: No further archeological inventory required			
HISTORIC BUILDINGS AND STRUCTURES:			
Building	**Building Type**	**Date Constructed**	**Evaluation Status**
00001	Quarters 1	1930 (1925)	Eligible
00003	Transient UPH	1930	Not eligible
00004	Building	1930	Not eligible
00005	Shower Bldg	1930	Not eligible
00006	Transient UPH	1930	Not eligible
00007	Brigade Hdqs	1969	Evaluate when 50 years old
00008	Transient UPH	1970	Evaluate when 50 years old
00009	Forensic Lab	1970	Evaluate when 50 years old
00011	Dining Facility	1967	Evaluate when 50 years old
00014	Gen Instr	1930	Not eligible
00015	Transient UPH	1930	Not eligible
00017	Transient UPH	1930	Not eligible
00018	Transient UPH	1930	Not eligible
00019	Transient UPH	1930	Not eligible
00020	Transient UPH	1930	Not eligible
00021	Transient UPH	1930	Not eligible
00022	Transient UPH	1930	Not eligible
00023	Transient UPH	1930	Not eligible
00024	Transient UPH	1930	Not eligible
00025	Transient UPH	1930	Not eligible
00026	Gen Instr	1940	Not eligible
00027	Gen Instr	1940	Not eligible
00028	Hdqs	1989	Evaluate when 50 years old
00029	Gen Instr	1940	Not eligible
00030	Gen Instr	1940	Not eligible
00031	Gen Instr	1940	Not eligible
00032	Transient UPH	1940	Not eligible
00033	Gen Instr	1940	Not eligible
00034	Gen Instr	1940	Not eligible
00035	Armory	1977	Evaluate when 50 years old
00036	FMS #2	1977	Evaluate when 50 years old
00037	Gen Instr	2002	Evaluate when 50 years old

00041	Cmnd Ctr	2001	Evaluate when 50 years old
00054	Gen Instr	1930	Not eligible
00055	Gen Instr	1940	Not eligible
00056	Storage	1940	Not eligible
00058	Gen Instr	1930	Not eligible
00059	Shop	1936	Not eligible
00060	Storage	1936	Not eligible
00064	Health Clinic	1930	Not eligible
00065	Storage	1930	Not eligible
00066	Museum	1930	Not eligible
00071	Ammo Storage	1930	Not eligible
00072	Org Storage	2001	Evaluate when 50 years old
00073	Gen Instr	1930	Not eligible
00074	Bath House	2001	Evaluate when 50 years old
00080	Storage	1930	Not eligible
00081	Storage	1935	Not eligible
00093	Storage	1940	Not eligible
00094	Target House	1990	Evaluate when 50 years old
00095	Range Spt Bldg	1990	Evaluate when 50 years old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The National Guard Militia Museum of New Jersey is located at Sea Girt. The Inventory of Historical Objects (USACE 1999) catalogued over 4,100 items in the Museum collections, although not all of the items are currently housed here (some on loan). Of particular note, the Museum collection includes the “Intelligent Whale,” a Civil War-era submarine acquired by the Museum, a library, and a park containing static vehicle displays (armored fighting vehicles, aircraft, and helicopters).

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Planning Level Survey	1998	USACE – St. Louis District	NJARNG Cultural Resources Planning Level Survey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	An Inventory of Historic Objects for the NJARNG
Archeological Survey	2004	John Milner Associates	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET
NATURAL AND CULTURAL RESOURCES

INVESTIGATION REPORTS (CONT'D)

Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report
Archeological Survey	2006	John Milner Associates	Addendum Report, Archeological Investigations for the NJARNG for Sea Girt and West Orange Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Archeological_test_pit_point
Cult_probable_sensitive_area
Cultural_cleared_area
Cultural_survey_area
Cultural_survey_point
Historic_feature_area
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Get SHPO concurrence on evaluations of 1930s and 1940s buildings

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/ FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Somerset Armory/ 34B98	1060 Hamilton Street	Somerset/Franklin Twp.	08873
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Somerset	New Brunswick	103/2
POC:	**Title:**	**Telephone:**	**Fax:**
Robert Fallat	Armorer	((732) 418-3320 ext 110	(732) 418-3319
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
21.0	120-130 ft.	4.14	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Raritan	Raritan River/Bay Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	100	North
Emmanuel Tabernacle Baptist Apostolic Faith Church	400	West
Six Mile Run	3,000	West
Tributary of Delaware & Raritan Canal	2,750	North

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Hamilton Street forms the northern boundary of the installation. The majority of the property is occupied by buildings, parking areas, and a large vehicle compound. A helicopter landing area, which has been graded to collect drainage, also occupies a large area in the southeastern section. The northwestern corner of the property is forested, with red maple (*Acer rubrum*) and sugar maple (*A. saccharum*) being the dominant canopy species. Another forested area exists in the southeast corner, which is highly disturbed. The understory is denser in this area, and the canopy is dominated by black cherry (*Prunus serotina*), red oak (*Quercus rubra*), and balsam poplar (*Populus balsamifera*). Mapping of deciduous scrub/shrub wetlands does not appear accurate, and drainage patterns may have been altered by the artificial drainage system created in the helicopter landing zone.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 12.5 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1980	
00002	FMS#8	1980	
00005	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 45 items at the Somerset Armory including an M-5A1 tank (federal).

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete an archeological sensitivity assessment and inventory for the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Teaneck Armory/ 34C05	1799 Teaneck Road	Teaneck	07666-0687
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Bergen	Yonkers	5301/1
POC:	**Title:**	**Telephone:**	**Fax:**
Charles Parsons	Armorer	(201) 833-0784/9811	(201) 569-6301/833-0368
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
14.43	50-80 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Hackensack-Passaic	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	100	North
Church of God	100	North
Tributary of Overpeck Creek	550	East
Pond	900	East

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Most of the property is mowed grass, gravel or pavement, with a few mature trees such as red oak *(Quercus rubra)*, or honey locust *(Gleditsia triacanthos*) lining the streets (Teaneck, Liberty and Ward) that form the property boundary. The property slopes to the southeast.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 6.5 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1938	Eligible
00002	FMS	1955	Not eligible
00003	Flam Storage	1955	Evaluate; over 50 years old
00005	Org Storage	2000	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 69 items at Teaneck Armory, including an M-728 Combat Engineer Vehicle and an M-42A1"Duster" anti-aircraft gun.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYER

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete an archeological sensitivity assessment and disturbance assessment of the unpaved acreage; consult with SHPO first regarding need to complete an inventory

Evaluate Building 00003. May need to program MOA and mitigation measures if proposed renovations to the Armory are determined to constitute adverse effects.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Toms River Armory/ 34C10	1200 Whitesville Road	Toms River/Dover Twp.	08753-4130
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Ocean	Toms River	409/30-2
POC:	**Title:**	**Telephone:**	**Fax:**
Ed Torres	Armorer	(732) 797-0374	(732) 818-1406
Total Acreage: 30.21	**Elevation (range):** 25-45 ft.	**Wetlands Acreage:** 6.84	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Mullica-Toms	Atlantic Coastal Basin	Within Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residence	850	Northwest
Winding River Park	300	Northwest
Toms River	1,150	West
Pond	350	West

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

This installation is mostly forested, and the majority of the Armory buildings and parking lots are concentrated in the northern corner of the property. The eastern portion of the property encompasses a utility easement, which is frequently mowed. Some emergent wetlands in this area shows signs of recent cutting and disturbance. The composition of the forested communities ranges from red maple (*Acer rubrum*) or Atlantic white cedar (*Chamaecyparis thyoides*) dominated to an upland oak/pine community with shrub understory.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 27.3 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1956	Evaluate; over 50 years old
00002	Shed	1956	Evaluate; over 50 years old
00003	Flam Storage	1960	Evaluate when 50 years old
00004	UMTB	1987	
00005	Org Storage	2001	
00114	HazMat Bldg	1997	

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 4 items at Toms River Armory, including 2 trophies, a drawing, and a memorial plaque to Chief Warrant Officer Zarillo. A site visit to the installation in 2006 could not locate the memorial plaque or anyone who had ever seen it.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001, 00002, and 00003. If Building 00001 is determined eligible, may need to program MOA and mitigation measures if the proposed roof and window replacements are determined to constitute an adverse effect

Complete an archeological sensitivity assessment and inventory for the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Trenton–Mercer AASF/ 34C15	Mercer Airport-152 Scotch Rd.	West Trenton/Ewing Twp.	08628-1389
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
AASF #1	Mercer	Pennington	373/9
POC:	**Title:**	**Telephone:**	**Fax:**
Scott Redler	Armorer	(609) 530-8729	(609) 530-6685
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
20.48	160-180 ft.	0.74	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	100	South
Church	2,250	Southeast
West Branch Shabakunk Creek	Runs through eastern property	

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The majority of the site is occupied by buildings, pavement, and mowed lawn, which is maintained for flight operations. A small strip of oak/scrub-shrub forest remains along the northeastern boundary. The west branch of the Shabakunk Creek runs northwest-southeast through several culverts and supports a narrow strip of herbaceous wetlands along its banks. Most of the vegetation has been recently cleared from the banks of the creek, but a small patch of wetland vegetation, including willows (*Salix* sp.) and cattails (*Typha* sp.), remains.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 14.8 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: None

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Maint Hangar	1977	Evaluate when 50 years old
00002	FMS #6	1976	Evaluate when 50 years old
000F3	HazMat Bldg	1997	Evaluate when 50 years old

c District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No monuments, historic objects, memorials, or static displays are present at this installation:

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Planning Level Survey	1998	USACE – St. Louis District	NJARNG Cultural Resources Planning Level Survey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete a disturbance assessment for the unpaved acreage; consult with the SHPO regarding need for inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Tuckerton Armory/ 34C20	365 E. Main Street	Tuckerton	08087-2805
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Ocean	Tuckerton	49/3
POC:	**Title:**	**Telephone:**	**Fax:**
Mike Croskey	Armorer	(609) 567-8194	(609) 561-0613
Total Acreage: 16.09	**Elevation (range):** 20-35 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Mullica-Toms	Atlantic Coastal Basin	Within Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	60	Northeast
Thompson Creek	1800	South
Tributary to Jesses Creek	1800	East

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The majority of the installation is forested and the neighboring land is also forested to the north, south, and west. Main Street runs along the eastern boundary. The forested area of the property can be generally characterized as an oak/pine community, with areas of successional grassland within. These areas are utilized as driver training areas, and as a result are frequently disturbed. The dominant species of the forest are pitch pine (*Pinus rigida*), red oak (*Quercus rubra*), and hickory (*Carya* sp.) in the canopy and *Vaccinium* sp. in the understory.

The central portion of the property along Main Street contains the Armory building and associated infrastructure, such as the maintenance shop, vehicle compound and asphalt parking lots. In addition, the unpaved areas surrounding the buildings are mowed lawns with no landscaping.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 14.8 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate when 50 years old
00002	MVSB	1954	Over 50 years old; evaluate

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

No monuments, historic objects, memorials, or static displays are present at this installation:

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00001 and 00002; if Building 00002 is determined eligible, may need to program MOA and mitigation measures if the installation of the proposed fire suppression system will constitute an adverse effect

Complete an archeological sensitivity assessment and inventory for the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Vineland Armory/ 34C25	2560 South Delsea Drive	Vineland	08360-7093
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Cumberland	Milleville	962/1
POC:	**Title:**	**Telephone:**	**Fax:**
Phillip Fiore	Armorer	(609) 794-5793	(609 696-6798
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
46.18	70-100 ft.	0.06	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Cohansey-Maurice	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Straton Hall/Cumberland	575	West
Christian School Residences	225	South
Closed lake	2,000	Northeast
Parvin Branch of Maurice River	3,600	North

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Hwy 47, or Delsea Drive, forms the eastern property boundary, and the main Armory facilities are located along this road. In the front of the Armory is an expansive lawn, and behind it is a vehicle compound and fields of successional grass communities. A network of unpaved roads navigates throughout the oak/pine forest to the west, south, and east of the Armory. A successional pitch pine *(Pinus rigida)* community is dominant in the areas immediately adjacent to bare ground and roads, eventually becoming a mixed oak community in the western regions of the installation.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
INSTALLATION FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model: Yes

Acreage Requiring Inventory: 42 (3 acres designated as extensively disturbed)

Acreage Inventoried to Date: 42

Resources Identified: None

Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1941	Eligible
00002	FMS #10	1956	50 years old, evaluate
00003	Org Storage	2001	
00004	Flam Storage	1960	Evaluate when 50 years old

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historic Objects (USACE 1999) catalogued 57 items, including two M-60 tanks flanking the flagpole and an M-4 Sherman tank.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	An Inventory of Historic Objects for the NJARNG
Archeological Survey	2004	John Milner Associates	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report
Archeological Survey	2005	John Milner Associates	Phase 1B Archeological Investigations for the NJARNG for Ft. Dix, Picatinny, Lawrenceville, and Vineland Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Archeological_test_pit_point
Cultural_cleared_area
Cultural_survey_area
Cultural_survey_point
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Buildings 00002 and 00004)

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Washington Armory (Port Murray)/ 34C30	550 Route 57	Port Murray Mansfield Twp.	07865
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Warren	Washington	1509/6-A
POC:	**Title:**	**Telephone:**	**Fax:**
Charles Rissmiller	Regional Manager	(908) 684-3198	(908) 979-9371
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
34.6	560-580 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Middle Delaware-Musconetcong	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
NJ Dept. of Education Regional School, Warren Co.		On property
Residences	50	East
Stream	1,850	Northwest
Tributary to Musconetcong River	3,000	East

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Hwy 57 forms the northern boundary of the property, and the Armory facilities are concentrated in the northern section. The greater part of the installation is occupied by fields, occasionally separated by a line of trees. The vegetation in these areas consists of scarlet oak (Quercus coccinea), white ash (*Fraxinus americana*), cherry (*Prunus* sp.), birch (*Betula* sp.), and sumac (*Rhus* sp.), with a dense understory of blackberry (*Rubus* sp.). Many of the field areas are frequently mowed, especially in the southeastern portion of the property. Weedy herbaceous species such as chickory (*Cichorium intybus*), golden rod (*Solidago* sp.), and ragweed (*Ambrosia artemisiifolia*) are abundant in these areas.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 30.5 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1958	Evaluate when 50 years old
00003	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 49 items at the Washington Armory, including two armored vehicles (federal); an M-113 APC and an M-60 MBT.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001; if the renovations proposed for the Armory are scheduled prior to 2008, evaluate the Armory in conjunction with Section 106 review of the proposed renovations. May need to program MOA and mitigation measures if Armory is determined to be eligible and proposed renovations are determined to constitute an adverse effect.

Complete an archeological sensitivity assessment and inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
West Orange Armory/ 34C40	1299 Pleasant Valley Way	West Orange	07052-5269
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Armory & CSMS	Essex	Caldwell	171/1
POC:	**Title:**	**Telephone:**	**Fax:**
Richard King	Armorer	(973) 669-8962	(973) 736-9073
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
64.57	385-600 ft.	0.90	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Sandy Hook- Staten Island	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Kessler Institute for Rehabilitation	350	North
Residences	60	South
West Branch Rahway River	600	East

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The installation is bordered on the east by Pleasant Valley Way, and extends westward into a deciduous hardwood forest. The majority of the Armory facilities are located on the eastern third of the property, except for a tank training area located in the northwest section. As a result of the steep increase in elevation from east to west, a rocky outcropping separates the tank training area from the forest to the west. Sugar maple (*Acer saccharum*), beech (*Fagus grandifolia*), hickory (*Carya* sp.), and oak (*Quercus* sp.) are the dominant trees of the forest. Several pockets of associated wetlands occur along the western boundary, including species such as *Juncus effusus*, *Carex* sp., and *Panicum* sp. A stream channel also runs through a low-lying area of the western property, and species such as red maple (*Acer rubrum*), blackgum (*Nyssa sylvatica*), and green ash (*Fraxinus pennsylvanica*) appear along its floodplain.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: Yes

Acreage Requiring Inventory: 46 (18 acres classed as extensively disturbed)

Acreage Inventoried to Date: 46

Resources Identified: None

Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constr.	Evaluation Status
00001	Armory	1937	Eligible
00002	Comp Repair	1977	
00003	CSMS	1958	Evaluate when 50 years old
00004	CSMS	1958	Evaluate when 50 years old

Historic District: The installation does not contain a historic district, nor it is within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 785 items at the West Orange installation, most of which are the property of the Essex Troop Association. Among the federally-owned objects inventoried in 1999 were 2 anti-tank guns, an armored personnel carrier, and an M-48 tank. State-owned items consist of a "Gamma Goat" and two trucks at the 50th CSMS. A site visit to the installation in 2006 found 1 anti-tank gun, the APC, and the M-48 tank on display in front of the Armory. The second anti-tank gun has been transferred to the museum at Sea Girt, and the "Gamma Goat" has been transferred to Lawrenceville. The two trucks were not located.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Planning Level Survey	1998	USACE – St. Louis District	NJARNG Cultural Resources Planning Level Survey
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	An Inventory of Historic Objects for the NJARNG
Archeological Survey	2004	John Milner Associates (JMA)	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities
Building Survey	2005	JMA	Architectural Inventory of NJARNG Armories Supplementary Report
Archeological Survey	2006	JMA	Addendum Report, Archeological Investigations for the NJARNG for Sea Girt and West Orange Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

NATURAL AND CULTURAL RESOURCES

GIS DATA LAYERS
The following GIS data sets are populated for this installation: Archeological_test_pit_point Cultural_cleared_area Cultural_survey_area Cultural_survey_point Cult_probably_sensitive_area Historic_feature_point Historic_structure_area Photograph_location_point (and PHOTOS) Structure_existing_area
CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP
Evaluate Buildings 00003 and 00004

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Westfield Armory/ 34C35	500 Rahway Avenue	Westfield	07090-3335
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Union	Roselle	751/40
POC:	**Title:**	**Telephone:**	**Fax:**
Paul O. Rios	Armorer	(732) 815-4875	(732) 499-5025
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
12.05	125-155 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Sandy Hook- Staten Island	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	50	Southeast
Westfield High School	250	Northeast
Robinsons Brook	950	Southeast

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

None

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The installation is bordered by Rahway Avenue on the northeastern side and extends in the southwest direction for several blocks. The Armory facilities encompass almost all of the property, with the exception of the forested area along the southeastern edge. This forest community appears mature, with a mix of sweetgum (*Liquidambar styraciflua*), northern red oak (*Quercus rubra*), white oak (*Q. alba*), beech (*Fagus grandifolia*), and hickory (*Carya* sp.) in the canopy. The western boundary appears more disturbed, but is also densely vegetated.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 6.4 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1925	Eligible
00002	FMS	1949	Not eligible
00003	Flam Storage	1960	Evaluate when 50 years old
00005	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 430 items at the Westfield installation, most of which relate to the history of the 117th Cavalry Association. No monuments, memorials, plaques, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete an archeological sensitivity assessment and disturbance assessment of the unpaved acreage; consult with SHPO first regarding need for inventory

Evaluate Building 00003. May need to program MOA and mitigation measures if proposed renovation and construction projects at the Armory are determined to constitute adverse effects

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	Address:	City/Township:	Zip Code:
Woodbridge Armory/ 34C45	625 Main Street	Woodbridge	07095
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Middlesex	Perth Amboy	189/1
POC:	**Title:**	**Telephone:**	**Fax:**
John Murray	Armorer	(732) 815-4922	(732) 499-5217
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
4.0	125-155 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Sandy Hook- Staten Island	Passaic/Hackensack/NY Harbor Complex	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	Distance (ft):	Direction:
Residences		West
Pond	900	East
Heards Brook	2400	North

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Main Street forms the northern boundary of the installation, while the New Jersey Turnpike forms the southern boundary. The majority of the property is occupied by buildings and pavement, and the vegetated areas are predominantly mowed lawns with a few landscaping trees. Successional species such as winged sumac (Rhus copallina), black cherry (Prunus serotina), rasberry (Rubus sp.), and sweetgum (Liquidambar styraciflua) grow along the southern boundary.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 2.2 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1961	Evaluate when 50 years old
00002	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued two M-114 APCs at Woodbridge.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00001

Complete a disturbance assessment for the unpaved acreage; consult with the SHPO regarding need for inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Woodbury Armory/ 34C50	North Evergreen Avenue	Woodbury	08096-1399
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Gloucester	Woodbury	BA-0150-A/1,2,3
POC:	**Title:**	**Telephone:**	**Fax:**
George Moore, Jr.	Armorer	(856) 384-3772 ext 119	(609) 384-3773
Total Acreage: 4.83	**Elevation (range):** 25-35 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Lower Delaware	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Residences	100	North
St Stephan's Lutheran Church	1,200	South
Stewart Lake	675	South
Pond	1,800	East

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The installation is bordered on the north, south, east, and west by Dare, Red Bank, Evergreen, and Roosevelt streets, respectively. Buildings and pavement occupy the majority of the property, with the vehicle compound encompassing over half of the area. Along Evergreen Street, the lawn is maintained and several large red maples (*Acer rubrum*), sugar maples (*A. saccharum*), red oaks (*Quercus rubra*), and white ash (*Fraxinus americana*) trees are planted.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: 5

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation (suggest contacting SHPO for inventory waiver due to previous disturbance)

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1929	Eligible
00002	FMS	1941	Eligible
00003	MVSB	1941	Eligible
00004	MVSB	1941	Eligible
00005	Flam Storage	1960	Evaluate when 50 years old
00006	Org Storage	2001	

Historic District: The installation does not contain a historic district, nor is it within a local historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as "of concern or significance" to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 103 items at Woodbury, including an M-114 APC.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Building Survey	2005	John Milner Associates	Architectural Inventory of NJARNG Armories Supplementary Report

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:

Cult_probable_sensitive_area
Historic_feature_point
Historic_structure_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate Building 00005

Complete a disturbance assessment of the unpaved acreage; consult with SHPO regarding need for inventory

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	Address:	City/Township:	Zip Code:
Woodstown Armory/ 34C53	501 North Main Street	Woodstown Borough & Piles Grove Twp	08098-9549
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
Readiness Center	Salem	Woodstown	13/17-1
POC:	**Title:**	**Telephone:**	**Fax:**
Frank Pimpinella	Regional Manager	(609) 463-0644	(609) 465-5396
Total Acreage:	**Elevation (range):**	**Wetlands Acreage:**	**Pinelands Designation:**
8.09	60-70 ft.	0	Outside Reserve
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
State	Cahansey-Maurice	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	Distance (ft):	Direction:
Residences	130	Southwest
Morning Star Baptist Church	750	Southwest
Tributary to Salem River	250	North

RARE SPECIES IN VICINITY

No Natural Heritage database search conducted for this installation.

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The majority of the property is mowed lawn, with several red oaks (*Quercus rubra*) planted along the southwest and northwest perimeters. The eastern half of the property is designated as a helicopter landing area and is kept mowed. The Armory building and parking areas are located on the western property. In the northwest corner, a successional community, including black cherry (*Prunus serotina*), rose (*Rosa multiflora*), maples (*Acer* sp.), red cedar (*Juniperus virginiana*), and *Viburnum* sp., has become established.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/ Sensitivity Assessment: No

Acreage Requiring Inventory: 6.4 (unpaved acreage only)

Acreage Inventoried to Date: 0

Resources Identified: n/a

Outstanding Requirements: Develop a sensitivity assessment for the installation and complete an archeological inventory of sensitive acreage.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
00001	Armory	1981	
00002	Flam Storage	1981	
00003	Org Storage	2001	

Historic District: The installation does not contain a historic district

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? Yes

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS

The Inventory of Historical Objects (USACE 1999) catalogued 4 items at Woodstown, including a bronze memorial plaque dedicated to MSG James F. Snodgrass from the now-closed Pitman Armory. No monuments, markers, memorials, or static displays are present at this installation.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Cult_probable_sensitive_area
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Complete an archeological sensitivity assessment and inventory of the unpaved acreage

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name/FAC#:	**Address:**	**City/Township:**	**Zip Code:**
Fort Dix Training Site/ 34C55	Bldg 3650	Fort Dix	08640-7600
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
HQ & JT2DC	Burlington	Columbus	Federal Military Reservation
POC:	**Title:**	**Telephone:**	**Fax:**
Andy Middleton / Mike Nieves	Armorer	(609) 562-0626	(609) 562-0502
Total Acreage: 44.30	**Elevation (range):** 175-195 ft.	**Wetlands Acreage:** 0	**Pinelands Designation:** Military & Federal Installation Area
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
Federal	Crosswicks-Neshaminy	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**
Saylors Pond	1,100	West
Tributary of Barkers Brook	1,400	North

RARE SPECIES IN VICINITY: (results from Natural Heritage Database Search on 7/6/98):

Barred owl (*Strix varia*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

Florida Avenue forms the eastern boundary of the NJARNG property, which consists of several buildings, paved parking lots, a large, fenced-in vehicle compound, and an expansive lawn along Florida Avenue. This area is also landscaped with a few willow oaks (*Quercus phellos*) and red cedars (*Juniperus virginiana*). The western portion of the property is adjacent to a mixed hardwood forest community, including beech (*Fagus grandifolia*), red maple (*Acer rubrum*), sassafras (*Sassafras albidum*) and several oaks (*Quercus* sp.). In the southern end of the site, between Technology Drive and Florida Ave., a large field of wildflowers thrives in the growing season.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:
Predictive Model: Yes
Acreage Requiring Inventory: 16 (28 acres determined to be extensively disturbed)
Acreage Inventoried to Date: 16
Resources Identified: None
Outstanding Requirements: No further archeological inventory required

HISTORIC BUILDINGS AND STRUCTURES:			
Building	**Building Type**	**Date Constructed**	**Evaluation Status**
03601	JT2DC	1986	
03602	Storage	1990	
03603	Storage	2001	
03604	Storage	1992	
03652	Storage	1990	
05910	Challenge	1968	
05920	Classroom	1954	Evaluate; over 50 years old
05921	Classrooms	1988	
05922	Shop Area	1969	
05923	Shop Area	1969	
05924	Classrooms	1969	
05925	Dispatch	1969	
05926	POL Bldg	1969	
05930	Oil Stge Bldg	1969	
06749	Ready Bldg	1941	Evaluate; over 50 years old
10002	FMS#9	1990	
P3650	Army Reserve Ctr	1990	
Historic District: The installation does not contain a historic district, nor is it included within a historic district on Fort Dix			
Historic Landscape: The installation does not contain a historic landscape.			

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS
Has consultation occurred regarding this installation? Yes
Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe? No

MONUMENTS, OBJECTS OR DISPLAYS
The Inventory of Historical Objects (USACE 1999) catalogued 10 items at Fort Dix Brigade HQ, most of which are items on loan from the family of MG Edward Wolfe. A visit to the installation in 2006 identified three static displays next to building 03601: a UH-1 helicopter, an M60A3 tank, and an M1 tank with the words “Beats Walkin” painted on the gun tube.

INVESTIGATION REPORTS			
Investigation Type	**Date Completed**	**Authors**	**Title**
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities
Inventory	1999	USACE – St. Louis District	Inventory of Historical Objects for the New Jersey Army National Guard
Archeological Survey	2004	John Milner Associates	Archeological Investigations for the NJARNG for Sea Girt, Morristown, Ft. Dix, Picatinny, Lawrenceville, Vineland, and West Orange Facilities

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

AGREEMENT DOCUMENTS
There are currently no agreement documents (MOAs) in place for this installation.
GIS DATA LAYERS
The following GIS data sets are populated for this installation: Archeological_test_pit_point Historic_feature_point Cultural_survey_area Cultural_survey_point Cult_probably_sensitive_area Cultural_cleared_area Photograph_location_point (and PHOTOS) Structure_existing_area
CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP
No required projects

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

Site Name:/FAC#	**Address:**	**City/Township:**	**Zip Code:**
Fort Dix UTES/ 34C55	PO Box 278	New Egypt	08533-0278
Type of Facility:	**County:**	**USGS Quad:**	**Block/Lot Number:**
ARMORY/UTES	Ocean	Cassville	Federal Military Reservation
POC:	**Title:**	**Telephone:**	**Fax:**
David Lohman	Shop Supervisor	(609) 758-3732	(609) 758-3277
Total Acreage: 27.67	**Elevation (range):**	**Wetlands Acreage:** 0	**Pinelands Designation:** Mitary & Federal Installation Area
Land Owner:	**Watershed:**	**Drainage Basin:**	**CAFRA Zone:**
Federal	Crosswicks-Neshaminy	Delaware River Basin	Outside Zone

NEAREST NOISE SENSITIVE RECEPTORS AND SURFACE WATERS:

Receptor:	**Distance (ft):**	**Direction:**

RARE SPECIES IN VICINITY (results from Natural Heritage Database Search on 7/6/98):

Barred owl (*Strix varia*)

SITE DESCRIPTION (I.E. MAJOR LAND USE, ECOLOGICAL COMMUNITIES PRESENT):

The Armory facilities are concentrated in the northwestern portion of the property, while the southeastern property is predominantly forested. A network of sandy, unpaved road runs throughout this pine/oak community, as well as along the perimeter of the Armory. The dominant species of this community are pitch pine (*Pinus rigida*) and blackjack oak (*Quercus marilandica*), and the vegetation is relatively uniform throughout.

NEW JERSEY DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
FACT SHEET

NATURAL AND CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES:

Predictive Model/Sensitivity Assessment: No

Acreage Requiring Inventory: None, leased

Acreage Inventoried to Date: 0

Resources Identified: 0

Outstanding Requirements: The NJARNG leases the land under the UTES from McGuire AFB. If ground-disturbing activities are proposed, the NJARNG must coordinate with McGuire AFB to have the parcel surveyed for archeological resources.

HISTORIC BUILDINGS AND STRUCTURES:

Building	Building Type	Date Constructed	Evaluation Status
09365	UTES	1990	
09361	Admin	1959	These three structures are part of Historic District related to a former BOMARC system that is spread across three installations
09362	Control Tower	1959	
09363	Control Tower	1959	

Historic District: Structures 09361, 09362, and 09363 are components of a former BOMARC system, the other components of which are at Fort Dix proper and McGuire AFB. No formal evaluation completed, but SHPO feels that complex is eligible

Historic Landscape: The installation does not contain a historic landscape.

TRADITIONAL CULTURAL PLACES/NATIVE AMERICAN CONCERNS

Has consultation occurred regarding this installation? N/a

Have any resources or areas of the installation been identified as “of concern or significance” to a federally recognized Tribe?

MONUMENTS, OBJECTS OR DISPLAYS

A static display, consisting of an M60A3 tank, is present outside of the UTES building.

INVESTIGATION REPORTS

Investigation Type	Date Completed	Authors	Title
Cultural Resources Survey	1995	Headquarters Air Mobility Command (AMC)	Archaeological and Historic Resources Inventory, McGuire Air Force Base (includes the Fort Dix UTES)
Building Survey	1999	R. Christopher Goodwin and Associates	Architectural Inventory of NJARNG Facilities

AGREEMENT DOCUMENTS

There are currently no agreement documents (MOAs) in place for this installation.

GIS DATA LAYERS

The following GIS data sets are populated for this installation:
Photograph_location_point (and PHOTOS)
Structure_existing_area

CULTURAL RESOURCES PROJECTS TO BE PROGRAMMED INTO STEP

Evaluate structures 09361, 09362 and 09363

13.2 Appendix B- Integrated Pest Management Strategies/Outlines

INTEGRATED PEST MANAGEMENT OUTLINES

1. Public Health Related Pests

1.1. Rats and Mice

Source: http://www.genome.gov/10001855

Brown rat (*Rattus norvegicus*)

Source: http://student.biology.arizona.edu/honors2007/group17/home17.html

House mouse (*Mus musculus*)

Distinguishing Features

Brown rat: Also known as Norway rat. Adults weigh about 5-9 ounces, 7-10 inches long. The tail is longer than the head and body combined. They have smooth (not shaggy) fur, large ears and a pointed nose.

House mouse: The adult house mouse is small and slender and about 1-2 inches long, excluding tail. It has large ears, pointed nose, and small eyes. The tail is as long as the head and body combined. The fur color varies, but it is usually a light grey or brown, but could be darker shades.

Reference:
Wilson, D. E., and D. M. Reeder (editors). 1993. Mammal Species of the World: a Taxonomic and Geographic Reference. Second Edition. Smithsonian Institution Press, Washington, DC. xviii + 1,206 pp. Available online at: http://www.nmnh.si.edu/msw/.

1.1.1. Reason for Control

- Directly transmitted diseases such as rat-bite-fever, salmonella, leptospirosis, and Hantavirus.
- Indirectly transmitted diseases such as typhus and the plague, which can be contracted when lice, fleas, mites, or ticks bite a disease-infected rat, then a person.
- Rat burrows can cause structural damage by undermining the foundations of buildings, roads, and walkways.
- Rats and mice can cause damage by gnawing, damaging plastic and lead pipes, doorframes, upholstery, and electric wires; and through the destruction and contamination of food crops and stored foods.

1.1.2. Site

All buildings, warehouses, and storage areas along with the adjacent landscaped areas should be monitored for rodent activity.

1.1.3. Surveillance

Non-poison glue boards can be used to monitor for rodent activity.

Responsible Entity

Facility managers and building occupants, food service personnel, and grounds maintenance personnel, in coordination with the certified pest controller, are responsible for surveillance. Pest management QAEs can perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Observations of droppings, nests, commodity and/or food damage, and reports of sightings from occupants. (Visual)	In and around buildings	Daily
Reports of foul odors, holes, and burrows. (Smell)	In and around buildings	Daily
Scratches and sharp gnawing marks on the bottoms and corners of doors and walls, on ledges, and on stored material. (Visual)	In and around buildings	Daily
Inspection of traps (glue traps, bait stations, and boxes).	In and around buildings	Daily / Monthly
Dark, greasy rub marks caused by the rat's oily fur repeatedly brushing against painted surfaces or wooden beams. (Visual)	In and around buildings	Daily
Check for tracks and tail draglines on dusty surfaces indoors and in loose soil and mud outdoors. (Visual)	In and around buildings	Daily

1.1.4. Control

Control Standard

- Management efforts should continue until all visible signs of infestation are absent in and around buildings and adjacent landscaped areas.
- Monitoring for the detection of new infestations should continue year-round.
- The action threshold is any observed animal or sign of infestation (nests, droppings).
- Control is defined as a significant reduction in the number of droppings or mounds seen around bait stations and turf areas within 30 days after treatment.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Identify source of rodents outside the building.
- Eliminate entryways for mice and rats by repairing holes in walls, crack, and crevices with 1/4-inch galvanized hardware cloth or copper mesh and caulk.
- Seal gaps around exterior doors with weather stripping. Door sweeps can be used to prevent rodent entry.

- Repair, replace damaged, or missing window screens. Repair roof soffits and seal all openings on the roof.
- Inspect and repair damaged air vents, louvers, vent pipes and shafts, tile roofs, and gaps around the chimney.
- Check attic and sub-area vent screens for entry points.
- Check areas where pipes and wires enter or leave the building.
- Glue boards and snap traps are usually the most effective devices for controlling small numbers of rodents. Killing rodents instantly with a trap is possibly the most humane method of control. If using a trap, use expanded-trigger traps whenever possible.
- Use effective baits: for Norway rats, use a piece of bacon or a slice of a hot dog; for roof rats, raisins, and nuts; for mice, gumdrops, and raisins. Since rats are sensitive to changes in the environment, traps should be pre-baited. Place baited traps out for several days without setting the trap. Check traps daily to see if bait was taken. Once rats take the bait, add fresh bait, and set the trap.
- Set three traps side-by-side and perpendicular to the wall with the triggers facing the wall. Alternatively, set two traps end-to-end and parallel to the wall, with the trigger facing out.
- Traps should be inspected daily, and stale baits should be replaced.

Responsible Entity

- The certified pest controller.
- Maintenance personnel can make building modifications to exclude rodents.
- Building occupants can set snap traps or place glue boards for minor infestations.

Biological Control Methods

- Not applicable for occupied areas; however, canines (particularly coyotes), felines (domestic and feral cats and bobcats), raptors, and owls are natural predators.

Cultural Control Methods

- Eliminate food sources and habitat. Train facility personnel on the importance of sanitation and good housekeeping. Remove all available food sources making sure that all food residues are removed. Store any remaining food in rodent-proof containers.
- Food items are stored on shelving which is at least 24 inches from walls and 12 inches above floors or on shelves with rollers to permit routine cleaning, inspection, and rodent control.
- Do not leave food or crumbs on counters, tables, or on the floor overnight.
- Regularly clean under the refrigerator and stove. Open the stovetop and remove food and grease.
- Rinse all cans, bottles, and plastic containers before recycling and discarding.
- Clean out debris in attics, basements, closets, lockers, and lounge areas.
- Empty trash containers every night, and remove to dumpsters.
- Collected waste must be stored for pickup in rodent-proof containers or kept in a rodent-proof room constructed of materials that cannot be easily gnawed. Make sure garbage can and dumpster lids seal tightly when closed. Regularly clean dumpsters, garbage cans, and other trash containers thoroughly.
- Building grounds, loading docks, and interior space at street level and below should be kept as free as possible of debris that rodents can use for shelter. Anything soft, such as rolled carpeting, insulation, or padded furniture, should be removed.

- Remove or relocate away from buildings, woodpiles, building materials, and other items that might serve as hiding or nesting sites.
- Keep grass mowed to about 2 ½ to 3 inches and keep shrubs and other low plants pruned, to facilitate monitoring.
- Clear away brush, weeds, and heavy ground covers, especially around foundations.
- Cut back trees 6 to 10 feet from roof or where branches touch the building.
- Vegetation around food handling buildings is kept cut at least 6 inches away from building perimeters.

Responsible Entity

- Sanitation is performed by building occupants and maintenance personnel.
- Plumbing repair or replacement is conducted by facility maintenance staff.
- Vegetation control around buildings is performed by building occupants or grounds maintenance personnel or contractors.

Chemical Control Methods

- Chemical treatment is initiated when non-chemical treatments fail to eliminate rodent infestations.
- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.

Responsible Entity

The certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Bromadiolone-Supercaid	6840-01-151-4884	7173-188	Bait Station from Section 12 of the DoD Pest Management Material List
Brodifacoum	6840-01-508-6085	100-1050, 100-1051, 100-1052, 100-1057	Bait Station from Section 12 of the DoD Pest Management Material List
Bromadiolone	6840- 01-501-2858	12455-79	Bait Station from Section 12 of the DoD Pest Management Material List
Brodifacoum	6840-01-503-5348	12455-89	Bait Station from Section 12 of the DoD Pest Management Material List
Sodium Salt of Diphacinone	6840-00-753-4972	12455-61	Liquid dispenser

1.1.5. Sensitive Areas

See pesticide label for precautions.

1.1.6. Prohibited Practices

Bait should be placed in tamper proof containers. Do not use rodenticides where there is a possibility of contaminating food or surfaces that come in direct contact with food.

1.1.7. Environmental Concerns

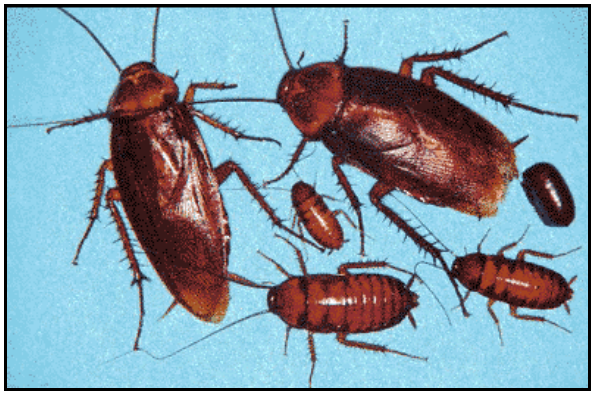
- Some rodenticides are toxic to fish and wildlife. Do not apply directly to water or where surface water is present.
- Follow label cautions and instructions to reduce hazards to non-target animals from off-target impact from drift, runoff, groundwater contamination, and/or spills.

1.1.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Ensure that all compliance issues are addressed before beginning any site modification activities on a historic structure.
- As long as entry points into buildings exist, then trapping or baiting may be the only alternatives for control.
- Rodenticides are considered the last option in controlling mice and rats. Use of nonchemical methods will assist in achieving Measure of Merit 2 goals.
- Rodenticides will be placed in lockable bait stations.
- The presence of spilled food products and/or poor housekeeping (e.g., pallets against walls, old boxes and equipment kept in the warehouse, etc.) will adversely impact any baiting or trapping program. Building occupant cooperation to store items off the floors and away from the walls is critical in achieving effective rodent control in food handling areas.

1.2. Various Cockroaches

Examples of cockroaches



Source: http://nelson.beckman.uiuc.edu/courses/neuroethol/models/cockroach_escape/roach_escape.html

American cockroach (*Periplaneta americana*)

Source: http://insects.tamu.edu/extension/youth/bug/bug013.html

German cockroach (*Blattella germanica*)

Distinguishing Features

Oval-shaped body, six legs, long antennae, flat and low-lying body, fast-moving, winged.

Reference:
Ch. 2 of Handbook of Pest Control, by Mallis, 9th Edition, GIE Media, Inc.

1.2.1. Reason for treatment

- Cockroach droppings, or frass, contain allergens, which have been shown to trigger asthma attacks in children.
- Although there is no direct evidence linking cockroaches to actual disease outbreaks, cockroaches have been shown experimentally to transport a number of pathogenic bacteria and viruses on their legs and bodies. Thus, cockroaches, through their nocturnal feeding habits, represent a serious potential health problem.
- Cockroaches can cause damage to stored goods.

1.2.2. Site

- American cockroach- sewers, steam tunnels, and crawl spaces.
- German cockroach- offices, buildings, warehouses, food service facilities, and barracks.

1.2.3. Surveillance

Visual observation combined with sticky traps. Additional information on surveillance and mapping can be found on the USAPHC web site:
http://phc.amedd.army.mil/topics/envirohealth/epm/Pages/MappingPestPopulationsGC.aspx

Responsible Entity

Certified pest controller, facility managers, building occupants, and food service personnel. Pest management QAEs can perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual assessments of sticky traps to determine infestation rates. (Visual)	All Buildings	Visual- Daily Traps- Quarterly or 1 to 2 weeks after chemical application.
Rare use of a pyrethrin aerosol (as a flushing agent applied directly into harborage sites).	Where needed	As needed and Preferably at Night

1.2.4. Control

Control Standard

- Cockroach treatments should be triggered by trap counts when minor infestations are observed within living and working areas (including food handling establishments).
- Trap counts containing more than two cockroaches in a 2-square-foot area or more than six cockroaches found at any building would trigger additional action.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Sticky traps.
- Eliminate cockroach harborage by caulking (or filling with other material) minor cracks, crevices, holes in walls or floors where cockroaches can enter.
- Steam clean or pressure wash all possible structural crevices and equipment in food handling and trash storage areas where appropriate. Vacuum all possible structural crevices and equipment in food handling and trash storage areas when steam cleaning or pressure washing is inappropriate.
- Fix leaks, improve drainage, and install screened vents to increase airflow in high moisture areas.
- Weather-strip around doors and windows where roaches can enter.
- Basement floor drains should be fitted with screens or basket inserts with a mesh size of less than 1/8 of an inch that are cleaned regularly.

Responsible Entity

- The certified pest controller.
- Building occupants.
- Maintenance personnel can make building modifications.

Biological Control Methods

None.

Cultural Control Methods

- Clean cupboards, drawers, floor drains, kitchen appliances, and sinks to remove food particles and grease.
- Put garbage in a container with a tight-fitting lid or in a sealed plastic bag and take out daily.

- Store foods in the refrigerator or seal them in roach-proof containers.
- Keep kitchen counters and shelves clean; do not leave dirty dishes out overnight.
- Mop floors regularly.
- Remove stacked boxes, cartons, rolled carpeting, and any stored paper or cardboard materials, particularly in dark, damp locations.

Responsible Entity

All building and food service personnel.

Chemical Control Methods

- Chemical treatment is initiated when non-chemical treatments fail to eliminate infestations.
- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.

Responsible Entity

The certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Fipronil	6840-01-224-1269	64240-34	None
Fipronil	6840-01-471-5650	432-1259	None
Gentrol Point Source	01-501-2905	2724-469	None

1.2.5. Sensitive Areas

Food handling and storage areas

Pesticide applicators will coordinate with food service personnel to ensure the safety, effectiveness, and efficiency of the pesticide treatment. Do not apply pesticides on food items, utensils, or on food preparation surfaces. Do not let unauthorized personnel in treatment areas until applied materials have dried and vapor odors have subsided.

1.2.6. Prohibited Practices

- At no time will pesticides be applied in a food-handling establishment without current or historical surveillance data documenting the pest infestation.
- Pesticide treatments will be conducted only when the food preparation area is not in operation and must be used according to the pesticide label precautions.

1.2.7. Environmental Concerns

Some pesticides are toxic to fish and wildlife. Do not apply directly to water or where surface water is present. Follow label cautions and instructions to reduce hazards to non-target animals from off-target impact from drift, runoff, groundwater contamination, and/or spills.

1.2.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Good sanitation is a fundamental to cockroach elimination. As long as poor sanitation or harborage exist, the effectiveness of chemicals can be limited.
- Contracts will also emphasize routine surveillance, mandate nonchemical controls such as caulking, and provide chemical control only after cockroach populations have exceeded an acceptable threshold.
- Use non-chemical controls (including sanitation, pest avoidance, use of physical barriers, and pest source reduction) prior to applying pesticides.
- Only those materials registered for use against cockroaches and recommended for the needs of the particular situation, should be used. In most cases, a bait station should be used for cockroach control. Bait stations are very effective, but are slower acting than liquid chemical sprays. It is common to still see roaches for a few days after the baits have been positioned.
- American cockroaches are not a problem as long as they stay in the sewer system. However, at times the cockroaches invade family housing units or other buildings on main post (e.g., break in the sewer line). Treatment should proceed from the place where cockroaches cause problems in buildings back to their harborage sites in the sewers or other underground places. If this is not done, then treatment in underground cockroach harborage sites could drive additional insects into buildings not previously experiencing problems.
- Smoky brown cockroaches are typically found in drier sites such as attics, storage areas, and utility closets. Smoky brown cockroaches have replaced American cockroaches in peridomestic situations. Insecticide rotation for these larger cockroaches is not normally necessary.

1.3. Mosquitoes

Examples of mosquitoes

Source: http://www.vetmed.ucdavis.edu/ucmrp/events/

Southern house mosquito (*Culex quinquefasciatus*)

Source: http://www.vetmed.ucdavis.edu/ucmrp/events/

Anopheles mosquito *(Anopheles gambiae)*

Distinguishing Features

Mosquitoes have small slender bodies with six long legs and one pair of membranous wings. They are related to flies. What distinguishes the mosquito from other true flies are its long, slender mouthparts (proboscis).

References:
http://www.mosquito.org/
Identification and Geographical Distribution of the Mosquitoes of North America, North of Mexico. Darsie, R.F. and R.A. Ward. 2004.

1.3.1. Reason for Control

- Mosquito-transmitted viral diseases causing brain inflammation/encephalitis such as West Nile Virus (WNV), St. Louis encephalitis, LaCrosse encephalitis, and eastern and western encephalitis.
- Dog heartworm (Dirofilaria immitis).

1.3.2. Site

Cantonment areas.

1.3.3. Surveillance

Conducted through water sampling for larvae and the use of light and gravid traps for adult mosquitoes.

Responsible Entity

The certified pest controller.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Sampling of standing water sources for larvae using a dip sampler along with nightly monitoring of light and gravid traps for adult mosquitoes.	Cantonment areas	As needed
Surveillance of selected dead birds for WNV, in accordance with current Centers for Disease Control and Prevention guidelines. (Visual)	NA	As needed

1.3.4. Control

Control Standard

Control is defined as when the weekly average of adult females captured is less than 25 adult female mosquitoes per night or when the number of larval mosquitoes captured in a dip sampler is below 25 larvae in 10 dips.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Screens should be placed on windows to exclude adult mosquitoes.
- Temporary standing water sites should be graded or filled to reduce mosquito breeding; however precautions must be taken not to damage wetlands.
- Empty containers that might serve as mosquito breeding sites should be removed.
- Change the water in birdbaths every 4 days.
- Repair leaky faucets, air conditioners, and pipes.
- Control aquatic vegetation on water bodies (e.g.,cattails, water lettuce); however, precautions must be taken not to damage wetlands.

Responsible Entity

Facility maintenance personnel perform screening work. Facility operations personnel perform habitat modifications.

Biological Control Methods

Bacillus thuringiensis israeliensis can be applied to the periphery of ponds, lakes, flooded orchards, ditches, pastures, sewage or animal waste lagoons, roof gutters, and run-off areas where mosquito larvae are present. If effective, no live mosquito larvae should be present 5 days after treatment.

Responsible Entity

The certified pest controller.

Cultural Control Methods

- Do not overwater landscape areas. Irrigate lawns and gardens carefully to prevent water from standing for several days.
- Use insect repellent on exposed skin when outdoors. Use an EPA-registered insect repellent such as those with N,N-diethyl-m-toluamide (DEET), picaridin, or oil of lemon eucalyptus.
- When weather permits, wear long sleeves, long pants, and socks when outdoors. Mosquitoes can bite through thin clothing, so spraying clothes with repellent containing permethrin or another EPA-registered repellent will give extra protection.
- Education programs to encourage public participation to reduce artificial mosquito breeding habitats around their homes and work sites and to implement personal protection techniques are used to minimize risk for acquiring a mosquito-borne disease.

Responsible Entity

All building personnel.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Larviciding activities should commence when non-chemical techniques fail to reduce the weekly average of adult females captured to less than 25 adult female mosquitoes per night or when the number of larval mosquitoes captured in a dip sampler exceeds 25 larvae in 10 dips.
- Follow the DOD repellent program: http://phc.amedd.army.mil/topics/envirohealth/epm/Pages/DoDInsectRepellentSystem.aspx

Responsible Entity

The certified pest controller.

The following table contains a list of approved AFPMB larvicides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Bacillus thuringiensis subspecies israelensis solids, spores and insecticidal toxins	6840-01-377-7049	6218-47	Hand or backpack sprayer from Sections 1 or 3 of the DOD Pest Management Material List
S-Methoprene	6840-01-424-2495	2724-421	None

1.3.5. Sensitive Areas

See label for precautions. Do not apply aerosols when wind speeds are in excess of 5 miles per hour. Refer to a local list of pesticide sensitive individuals before applying ULV aerosols.

1.3.6. Prohibited Practices

Do not apply pesticides in areas where honey bees can be harmed. Do not apply larvicide to sites if heavy precipitation is likely to wash away the insecticides.

1.3.7. Environmental Concerns

- Do not damage or eliminate wetland ecosystems. For determining locations of wetland ecosystems, refer to the Integrated Natural Resources Management Plan and consult the Training Site Environmental Officer or the State Natural Resources Manager.
- Some pesticides used for mosquito control are toxic to fish, aquatic invertebrates, bees, aquatic life stages of amphibians, and other wildlife. Refer to the product label for specific application restrictions.

1.3.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- If a mosquito-borne disease (e.g., encephalitis) is detected in the area (found in the mosquito population or reported human cases) coordination for surveillance and control is made with the USAPHC-North, Entomological Sciences Division, ATTN: MCHB-AN-ES, Fort Meade,

Maryland 20755-5225, telephone number DSA: 923-6205 or commercial number: (301) 677-6205, and other federal (i.e. Centers for Disease Control and Prevention), state, or local health agencies.

- The use of materials that control larva are far more effective in the control of mosquitoes. BT granules and methoprene briquettes and pellets can be applied directly to mosquito-infested bodies of water.
- Coordination with the state department of agriculture (or other state lead agency) might be necessary for control of mosquito-borne diseases such as West Nile Virus.

1.4. Wasps, Yellow Jackets, and Hornets

Source: http://www.oardc.ohio-state.edu/grapeipm/common_name.htm

Baldfaced hornet (*Dolichovespula maculata*)

Source: http://whatcom.wsu.edu/ag/homehort/pest/yellowjackets.htm

Yellow jacket (*Paravespula [Vespula], Polistes* spp.)

Distinguishing Features

Hornet: Mostly black with a white pattern on most of its face, hence the common name, "baldfaced." They build large grayish-brown carton-like structures, often hanging from a tree or bush. They are considered wasps.

Wasp: Many are reddish-brown or dark red. Some species are more orange, while others have varying bright stripes of red and yellow. About 1 inch in length, but a few can be as small as ½ inch or as large as 1 ½ inches.

Reference:
Handbook of Pest Control, by Mallis, 9th Edition, GIE Media, Inc.

1.4.1. Reason for Control

- Allergic reactions to bee and wasp stings include non-life-threatening reactions such as hives, swelling, nausea, vomiting, abdominal cramps, and headaches and life-threatening reactions such as shock, dizziness, unconsciousness, difficulty in breathing, and laryngeal blockage. Death can occur from severe allergic reactions or multiple stings occurring in a single encounter.
- A secondary reaction, because of multiple stings, occurs days after the incident. Proteins in the venom act as enzymes: one dissolves the cement that holds body cells together, while another perforates the walls of cells. This damage liberates tiny tissue debris that would normally be eliminated through the kidneys. If too much debris accumulates too quickly, the kidneys become clogged and the individual can die from kidney failure.
- Carpenter bees cause damage to wooden structures by boring into timbers and siding to prepare nests. The nests weaken structural wood and leave unsightly holes and stains on building surfaces causing economic loss.

1.4.2. Site

- Exterior and interior sections of walls, electric control panels, attics, picnic and outdoor recreational areas, and other areas as determined by surveillance.
- Nests can be found underground, under eaves, in wall voids, in trees, logs, rock piles, and other protected sites.

1.4.3. Surveillance

Visual observation.

Responsible Entity

Primarily building occupants or maintenance personnel. Facility management personnel or certified pest controller in response to service requests where professional assistance is needed (typically when the nests are difficult to reach or find). Pest management QAEs can perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Conduct an initial inspection to eliminate potential nesting sites on all buildings.	All Buildings	Yearly
Regularly inspect the exterior of to facilitate detection of incipient nests.	All Buildings	Daily

1.4.4. Control

Control Standard

- No major infestations or medical emergencies associated with wasp or hornet stings.
- Target pests are killed following treatment and control maintained for 7 days. Exposed wasp and hornet nests are removed.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.
- Call local beekeepers for honey bee swarms and hives. There is a shortage of bees in the United States and abroad due to Colony Collapse Disorder.

Mechanical Control Methods

- When feasible, exterior portions of buildings should be constructed out of hardwoods or other materials unsuitable for carpenter bee nesting.
- Fill depressions and cracks in exterior wood surfaces so they are less attractive as nesting sites. Caulk any holes and cracks in the building that can be used by bees or wasps to gain access into the structure.
- Paint or varnish exposed surfaces regularly to reduce weathering. Protect the ends of timbers with wire screening or metal flashing.
- Windows and screens should be tight fitting and in good condition. Screens should be replaced if torn. Door sweeps can be installed to eliminate access points.
- Remove potential water sources by repairing leaky outdoor faucets and directing air conditioner drainage to areas where water will not pool.
- Sticky traps can be used to reduce small numbers of foraging wasps in an area.
- Nest removal and trapping should be conducted by a certified pest controller.

Responsible Entity

- The certified pest controller.
- Building occupants or facility operations personnel perform building maintenance work.

Biological Control Methods

None.

Cultural Control Methods

- Since garbage is a prime foraging/predation site for wasps, garbage containers should have tight-fitting lids and should be emptied and cleaned frequently. Disposable liners can be used and replaced when soiled or damaged. Dumpsters should be cleaned frequently by washing them with a strong stream of water.
- Flowering plants, such as hollies or *Euonymus* species shrubs, which attract wasps, are not planted close to frequented sidewalks, outdoor benches and picnic tables, or building entrances.

Responsible Entity

Sanitation practices are performed by building occupants and vegetation selection and planting is performed by facility operations personnel or contractors.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical treatment should be initiated as a last resort when non-chemical treatments fail.
- Outdoor ground nests can be similarly controlled by approaching the nest at night and dusting the entrance; this procedure should be followed by plugging the entrance with dusted steel wool.

Responsible Entity

The certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
d-trans Allethrin; Phenothrin	6840-00-459-2443	499-362	None
Lambda-cyhalothrin (synthetic pyrethroid)	6840-01-431-3357	53883-70	Hand or backpack sprayer from Sections 1 or 3 of the DOD Pest Management Material List.

1.4.5. Sensitive Areas

Do not apply insecticide diluted with water into electrical wire areas. Extreme caution is used around electrical lines when using metal ladders and aerosol extension poles.

1.4.6. Prohibited Practices

- Whenever pesticides are applied outdoors, care is taken to make sure that spray drift to off-target-sites is avoided.

1.4.7. Environmental Concerns

- Treat areas carefully to prevent loss of any desirable honey bees. Proper species identification is a must before chemical treatment is used.

- Most wasps provide an extremely beneficial service by eliminating large numbers of other pest insects through predation and should be protected and encouraged to nest in areas of little human or animal activity.

1.4.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Ensure that all compliance issues are addressed before beginning any site modification activities on a historic structure.
- Exposed nests of wasps and hornets are removed and disposed of away from the treatment site after the live wasps are killed. Relocate shrubs which are planted close to sidewalks, building entrances, and other public use areas. Entrance holes of yellow jacket nests in the ground are covered with soil immediately after treatment.
- Beekeepers are called when swarms of bees are found in order to preserve the queen and her workers and removal of live honey bees from within walls is encouraged.
- The use of vacuums is a method of wasp and yellow jacket control which will help achieve Measure of Merit 2 goals.

1.5. Spiders

Examples of spiders

Source: http://www.californiadesert.gov/animals.php

Black widow (*Latrodectus variolus, L. mactans*, and *L. hesperus)*

Source: http://www.oralchelation.com/research/spider/page10f.htm

Brown recluse (*Loxosceles spp*.)

Source: http://communication.utsa.edu/mbatch/3413/site3x/csweet/funnel.html

Hobo spider (*Tegenaria agrestis*)

Distinguishing Features

Eight legs with no wings or antennae. Their bodies have only two sections: a fused head and thorax, and an abdomen. All spiders have a pair of jaw-like structures with a hollow, claw-like fang at the end.

Reference:
Kaston, B.J. 1972. How to Know the Spiders. Wm C. Brown Company Publishers, Dubuque, Iowa. 272 p.

1.5.1. Reason for Control

Most spiders are too small or have venom too weak to harm humans and many suspected spider bites are actually caused by insects (e.g., fleas, bedbugs, mosquitoes) or mites (e.g., scabies, bird mites). However, reactions to the venom of poisonous spiders can range from mild to life-threatening (primarily for small children, the elderly, or people who are hypersensitive), but death is unlikely in most cases. If the bite of any spider causes an unusual or severe reaction, contact a physician.

The following three spider groups are of medical importance:

- Black widow
- Brown recluse (or violin) spider
- Aggressive house (or hobo) spider.

1.5.2. Site

Buildings and other structures.

1.5.3. Surveillance

Visual observation.

Responsible Entity

Primarily building occupants by visual observation. Facility management personnel or certified pest controllers in rare situations where professional assistance is needed (e.g., black widow or brown recluse spiders present). Pest management QAEs can perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Sticky traps can be placed along floorboards to provide an idea of population levels in a structure.	All buildings. Spiders are frequently found in dry, cool, usually undisturbed places inside buildings; in carports, utility sheds and other outdoor storage areas; and under buildings.	Daily or As Needed

1.5.4. Control

Control Standard

- No visual signs of webs or spiders indoors or on equipment outdoors.
- No signs of black widows, brown recluse, and hobo spiders from sticky traps within 30 days after chemical treatment.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.
- Chemical treatments should be initiated only as a last resort when non-chemical methods fail.

Mechanical Control Methods

- Spiders and their webs can be eliminated by using a broom or vacuum cleaner in most cases.
- Areas adjacent to buildings should be kept free of trash, leaf litter, heavy vegetation, and other accumulations of materials.
- Plants should be trimmed away from structures to discourage spiders from taking up residence near the structure then moving indoors.
- Keep lawns mowed to a height of 3 inches or less.
- Install yellow or sodium vapor light bulbs at outside entrances. These lights are less attractive than incandescent bulbs to night-flying insects, which, in turn, attract spiders. Outdoor lighting should be turned away from windows and doorways.
- Sweep, mop, hose, or vacuum webs and spiders off buildings regularly.
- Eliminate building entry points by caulking; repairing window and door screens; and filling cracks and crevices around windows, doors, and foundations, with materials such as expanding polyurethane foam or caulking.
- Weather strip doors or install a door sweep to eliminate gaps.
- To reduce harborage areas, place boxes off the floor and away from walls and seal the boxes with tape. Clean up clutter in garages, sheds, basements, and other storage areas.
- Eliminate excess moisture in crawl spaces by increasing venting, placing plastic over bare soil, and repairing leaks.

- Increase lighting in crawl spaces by the addition of screened vents.

Responsible Entity

Building occupants and possible janitorial services perform cleaning in most facilities. Maintenance personnel install, repair, or replace weather-stripping and screens.

Biological Control Methods

None.

Cultural Control Methods

- Vacuum or sweep windows, corners, storage areas, basements, and other infrequently used areas to remove spiders and their webs.
- Ensure food and organic wastes are stored properly to prevent insect infestations.
- Wear shoes at all times and use gloves when moving rocks, wood, or other debris.
- Do not leave clothes, shoes, sleeping bags, or other items on the floor and shake out all items prior to use.
- Ensure adequate lighting when working in crawl spaces or other infrequently used areas.

Responsible Entity

All building personnel.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical control of spiders inside buildings is not recommended and should be considered only as a last resort. Residual sprays are not recommended for use in buildings that are occupied or will be occupied in the near future. If residual materials are used in unoccupied buildings or in areas where other methods fail, applications are recommended only along baseboards, door casements, and corners, and only where spiders are present.
- Sorptive dusts containing amorphous silica gel (silica aerogel) and pyrethrins, which can be applied by professional pest control applicators only, might be useful in certain indoor situations. Particles of the dust affect the outer covering of spiders (and insects) that have crawled over a treated surface, causing them to dry out.
- Insecticides will not provide long-term control and should not be used against spiders outdoors. Typically, pesticide control of spiders is difficult unless the pesticide is sprayed directly on the spider.

Responsible Entity

Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Lambda-cyhalothrin (synthetic pyrethroid)	6840-01-431-3357	53883-70	Hand or backpack sprayer from Sections 1 or 3 of the DOD Pest Management Material List
B-Cyfluthrin, cyano methyl 3-2, 2-dimethylcyclopropane-carboxylate	6840-01-383-6251	432-1377	Hand or backpack sprayer from Sections 1 or 3 of the DOD Pest Management Material List.

1.5.5. Sensitive Areas

Do not apply pesticides on food, utensils, or food preparation surfaces.

1.5.6. Prohibited Practices

Do not let unauthorized personnel in treatment areas until applied materials have dried and vapor odors have subsided.

1.5.7. Environmental Concerns

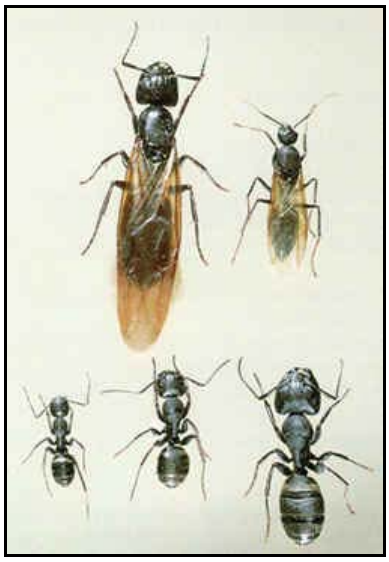
- Spiders are beneficial to humans because they control a wide variety of insect pests such as mites, flies, and mole crickets. Spiders should be left alone in gardens, shrubbery, and other vegetated areas.
- To remove a non-venomous spider from indoor areas, invert a wide-mouthed jar, cup, or bowl over the spider. Using a piece of stiff paper or thin cardboard large enough to cover the mouth of the container, slide it slowly under the jar while keeping the jar pressed against the surface on which the spider is standing. Hold the paper over the top as a cap, carry the jar outside and release the spider by shaking the container.

1.5.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Suspected brown recluse spiders can be sent to: USAPHC-North, Entomological Sciences Division, ATTN: MCHB-AN-ES, Fort Meade, Maryland 20755-5225 for identification.

1.6. Ants

Example pest ant



Source: http://faculty.spokanefalls.edu/LHansen/SummaryCarpenterArtBiology.htm

Carpenter ant (*Camponotus spp*,)

Distinguishing Features

- The body of an ant is clearly divided into three sections: the head, the thorax, and the gaster.
- Ants are social insects living in colonies composed of one or a few queens, and many workers. The queen generally stays deep and safe within a nest. Most ants that you see are workers and these are all females. Depending on species, workers might be similar in size, or come in a range of sizes.
- Ants tend to come in dark or earth tones. Different species are black, earth-tone reds, pale tans, and basic browns.

Reference:
Identification guide to the ant genera of the world by Barry Bolton.

1.6.1. Reason for Control

- Ants will consume and contaminate food.
- Build unsightly mounds on property.
- Cause structural damage by hollowing out wood for nesting (carpenter ants).

1.6.2. Site

The inside of buildings. For carpenter ants, buildings with wood elements of construction.

1.6.3. Surveillance

Visual observation.

Responsible Entity

Facility managers and building occupants, in coordination with certified pest controllers, are responsible for surveillance.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation of ants, trails, or nests.	All Buildings	Daily or As Needed

1.6.4. Control

Control Standard

There is no single threshold level for house-infesting ants. Threshold levels need to be set separately for each site. For example, a single ant in a first-aid station could be one too many. In an eating area, control actions might be initiated if there were more than a half-dozen ants in a day, while most people's tolerance for ants in a rustic and open recreation room would likely be much higher.

For bait stations, no live ants observed 4 days after treatment began and for a period of 5 weeks following the treatment start date.

For boric acid dust, no live ants observed 7 days after treatment began and for a period of 9 weeks following the treatment start date.

Control Methods

- Priority should be given to using non-chemical control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- The most effective ant control results from the destruction of the queens and the nest itself through mechanically destroying the nest.
- Building occupants apply caulking materials. Assistance to caulk is occasionally performed by maintenance personnel or management technicians.

Responsible Entity

- Certified pest controller.
- Building occupants apply caulking materials. Assistance to caulk is occasionally performed by maintenance personnel or management technicians.

Biological Control Methods

None.

Cultural Control Methods

- Building occupants should clean up all food spills when they occur.
- Educate personnel on the importance of employing good sanitation techniques anywhere food is handled, stored or prepared.
- Ensure that food containers are clean and kept in closed ant-proof (glass containers with rubber gaskets or plastic containers with tight-fitting, snap-top lids) containers when not in use.
- Use soapy water or rinse any bottles, cans, wrappings, and other items that might have food residues before storing them for recycling. These items should be disposed of regularly.

- Keep attractive substances, like sugar and honey, in a refrigerator.
- Keep organic waste and garbage in closed, tight-sealing containers as far away from buildings as possible.
- Empty trash from the building frequently.
- Place garbage in sealed plastic bags before placing it into a dumpster or other storage receptacle.
- Ant-proof structures by sealing crack and crevices with caulk and silicon sealers. Repair torn screens and install door sweeps.
- Modify ant habitat: trim branches and trees close to structures so the branches do not act as runways from nest sites to roof or siding; alter landscaping to minimize the number of aphids and other honeydew-producing insects that attract ants; move firewood outdoors; and don't stack wood next to structures.

Responsible Entity

Building occupants. Janitorial services (in-house or contract remove trash from offices, etc.).

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical treatment should be initiated as a last resort when non-chemical treatments fail.
- For ants observed in buildings, the use of ant bait stations is the major chemical control method used. Baits are placed in cabinets, along baseboards or runways used by ants or in other areas where ants have been observed

Responsible Entity

The certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Boric acid	01-287-3938	499-384	None
Fipronil	01-28-1122	432-1264	None
Fipronil	01-483-3072	432-1256	None

1.6.5. Sensitive Areas

None.

1.6.6. Prohibited Practices

Do not apply pesticides to food, utensils, and food preparation surfaces. Keep residual insecticides off of ant bait stations, so ants are not repelled from the bait.

1.6.7. Environmental Concerns

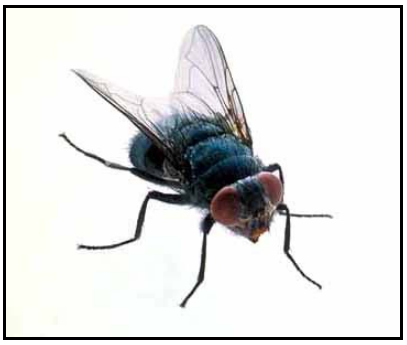
None.

1.6.8. Additional comments

- Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law. All pesticides must be used in strict accordance with the label directions.
- Ants are normally a minor problem, and carpenter ants are normally a rare problem.
- Baits which provide colony control are the primary method of chemical control.
- Boric acid dust will control existing ant populations and provide a residual for long term control.

1.7. Filth Flies

Example filth flies



Source: http://www.maricopa.gov/envsvc/vectorcontrol/fly/flyinfo.aspx

House Fly (*Musca domestica*)

Source: http://www.extension.umn.edu/yardandgarden/YGLNews/YGLNews-Oct0106.html

Fruit Fly (*Drosophila* spp.)

Distinguishing Features

- The order Diptera is composed of the "true flies," and is one of the largest groups of insects. Diptera means "two wings." True flies have only two wings (one pair), instead of four wings (two pair) found in most other types of winged insects.
- Filth flies can be divided into two groups, determined by their appearance and food preferences. Filth flies, such as the house fly, blow flies, and flesh flies, are relatively small, soft-bodied insects with large eyes. They are strong fliers. Other filth flies, e.g., drain flies, fruit flies, and phorid flies, are smaller with more delicate bodies and legs.

	Large Filth Flies	**Small Filth Flies**
Adult	stout bodies, short legs	slender bodies, long legs
Larvae	maggot	maggot or worm-like
Food Preferences	manure, carrion, garbage	drain sludge, organic debris, rotting plant material

Reference:
Urban Entomology. Walter Ebeling; http://www.entomology.ucr.edu/ebeling/

1.7.1. Reason for Control

Filth flies are vectors of diseases including hookworm, whipworm, tapeworm, pinworm, roundworm, cholera, bacillary dysentery, infantile diarrhea, typhoid, paratyphoid, and food poisoning. Filth flies pick up pathogenic organisms from sewage, garbage, manure, decaying bodies, and other such sources, picking up dangerous organisms with their mouth and other body parts. The organisms are then passed on to humans and animals through the feces and vomitus of the fly.

1.7.2. Site

All buildings, food service facilities, warehouses, and storage areas should be monitored.

1.7.3. Surveillance

Visual observation.

Responsible Entity

Facility managers and building occupants, and cleaning and maintenance personnel, in coordination with the certified pest controller, are responsible for conducting surveillance. Pest management QAEs may conduct surveys to determine control effectiveness achieved by contractual services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation of flies and the use of sticky fly tape. Fly tapes are not placed directly over stored food or over food preparation surfaces.	All Buildings	As Needed

1.7.4. Control

Control Standard

Fewer than living 5 flies observed after treatment indoors for a period of 24 hours.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- In addition to fly swatting, mechanical fly control includes trapping. Sticky fly paper is one type of fly trap. Ultraviolet light traps are another, often used to supplement fly control in commercial buildings. To be effective, light traps must be properly placed. This type of trap should be placed where it cannot be seen from outside the building, no more than 5 feet above the floor (where most flies fly), and away from competing light sources and food preparation areas. Bulbs should be changed at least once per year.
- The use of air curtains at all doorways will help to stop flies from entering the building. All windows that open require tight-fitting screens.

Responsible Entity

- Building maintenance personnel install, repair, and replace screens, doors, door closing devices, air curtains, and electric fly grids.
- Keeping doors closed when not in use and the use of fly swatters is the responsibility of building occupants.

Biological Control Methods

Although animals prey on flies (including birds, reptiles, amphibians, spiders, and parasitic wasps), adequate biological control is generally not achieved in human-occupied areas.

Cultural Control Methods

The key to managing all filth flies is sanitation. Eliminating fly breeding sites, i.e., the material to which they are attracted to and on which they lay eggs, is usually sufficient to eliminate and prevent fly infestations. Conversely, without thorough sanitation, other control methods are largely ineffective. Trash should be kept in sealed containers (in trash bags and/or cans with tight-fitting lids). Dumpsters should be kept as clean as possible, emptied regularly and kept 50 feet away from buildings. Manure and

other decaying plant and animal material should be promptly removed. Also, eliminate areas of excessive moisture.

Chemical Control Methods

- Chemical treatment is initiated when non-chemical treatments fail to eliminate infestations.
- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- While the use of pesticides is usually not the best means of managing filth fly problems, sometimes chemical control can be a valuable component of an integrated fly management program. Pesticide-releasing fly strips can be placed in attics and smaller, unoccupied enclosed rooms where filth flies are a problem. Contact (non-residual) pesticides labeled for fly control can be applied as a space treatment ("fogged") to kill adult flies. This type of control provides only temporary relief, however, and cannot be relied upon to eliminate the problem. Residual pesticides – those that remain active for some time – can be applied to outdoor surfaces where flies rest. Some pesticide bait formulations are also available for outdoor fly control, including use around dumpsters.

Responsible Entity

Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Methomyl	6840-01-183-7244	270-255	None
Imidacloprid	6840-01-518-5807	432-1375	None
Nithiazine	6840-01-467-0994	2724-461	None

1.7.5. Sensitive Areas

See label for precautions.

1.7.6. Prohibited Practices

- Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law. All pesticides must be used in strict accordance with the label directions.
- Do not apply pesticides on food items, utensils, or on food preparation surfaces.

1.7.7. Environmental Concerns

Whenever pesticides are applied outdoors, care is taken to make sure that spray drift to off-target sites is avoided.

1.7.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Good sanitation should virtually eliminate fly problems at most building sites. The pesticide listed above should be the only chemical control used. If flies are coming into the facility from a nearby source (e.g., farm, dump, etc.), then facility management personnel would be notified to look into the problem.

1.8. Ticks

Examples of ticks

Source: http://www.cdc.gov/ncidod/dvrd/rmsf/natural_hx.htm

American dog tick (*Dermacentor variabilis*)

Source: http://blogs.law.harvard.edu/desultor/2006/06/17/alewife-tick-patch/

Deer tick (*Ixodes scapularis*)

Distinguishing Features

- Ticks are related to mites, spiders, and scorpions. Most adult ticks are the size of a sesame seed, and nymphs are the size of a poppy seed.
- Ticks do not have wings and can't jump. Instead, they climb up long blades of grass or low brush, and then attach themselves to animals or people passing through the vegetation.

Reference:
Handbook of Pest Control, by Mallis, 9th Edition, GIE Media, Inc.

1.8.1. Reason for Control

There are 80 species of ticks in the United States., but only a dozen have important health concerns. Ticks can act as vectors for a variety of diseases such as:

- Rocky Mountain Spotted Fever
- Lyme disease
- Ehrlichiosis.

1.8.2. Site

- Ticks are commonly encountered in woody or overgrown areas where the ground is covered with brush, thick weeds, or high grass.
- Ticks can also be found in semi-rural communities and in suburban areas that support semi-domestic populations of deer and other wildlife.

1.8.3. Surveillance

Visual observation or reports of ticks on vegetation, pets, or individuals. Reports of any tick-borne disease.

Responsible Entity

Individuals who work or train in tick habitats.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Flagging (or dragging) should be conducted in areas suspected of tick infestation. Flagging is done by dragging a white cloth over dense, low-level vegetation. Ticks that are looking for passing hosts will attach to the cloth.	NA	As needed

1.8.4. Control

Control Standard

- When tick counts reach 18 or greater during flagging, non-chemical control measures should be initiated.
- Chemical control is defined as having no live ticks found on tick drags 30 days following treatment.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods..

Mechanical Control Methods

- Keep lawns mowed to a height of 3 inches or less. This lowers the humidity at ground level, making it difficult for ticks to survive. Coordinate with the Natural Resource staff or Facilities maintenance administrators.
- Bivouac areas are raked clean of litter and tall grasses are cut short within a two meter perimeter from tents and other inhabited areas.
- Remove brush, weeds, leaf litter, and other debris away from buildings, outside break areas, and recreational areas.
- Avoid using plants in landscape areas that are attractive to deer, mice, chipmunks, and other host species. The local county extension agent can recommend plants for a particular area.
- Keep picnic tables, lawn furniture, and children's play areas as far away as possible from woods, shrubs, and undergrowth.
- Use wood chips or gravel to create a barrier between wooded and landscaped areas.
- Move woodpiles, birdbaths, or other items that would attract hosts away from buildings and high-use areas.
- Eliminate host entryways into buildings by sealing cracks, crevices, and gaps.
- Warning signs should be posted in areas with high tick infestations.

Responsible Entity

- Maintenance and landscape personnel.
- Site users, particularly soldiers in the field.

Biological Control Methods

None.

Cultural Control Methods

- When a site has a high population of ticks present, an alternate site should be selected for activities whenever possible.
- Avoid brushing up against vegetation while working outdoors.
- Eliminate food sources and habitat for host species inside of buildings by proper sanitary habits.
- Keep garbage cans tightly covered to discourage opossums, raccoons, and other wildlife from entering high-use areas.
- While working in wooded or tick-infested areas, wear a hat, long-sleeved shirt, pants, and boots. Wear light colored clothing so ticks are easier to see and tuck pant legs into socks, boots, or shoes to prevent ticks from crawling under clothing. Tape can be used around the ankles, wrists, and waist for added protection.
- Individuals should thoroughly inspect themselves and small children after leaving wooded or tick-infested areas. Pay particular attention to the hair, shoulders, armpits, waist, and inner thighs. Normally, ticks must attach for several hours before a disease agent is passed.
- Vacuum regularly to remove ticks from furniture, carpets, drapes, and walls.
- Discourage feeding of wild animals to reduce encounters with host populations.
- Use of controlled fires prior to site use can be useful to provide season long tick control.

Responsible Entity

All personnel.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical treatment is initiated when non-chemical treatments fail to control tick infestations. However, controlling ticks in outdoor areas is extremely difficult and choosing an alternate site or relying on personal applications of repellents is preferred to spraying outside areas with pesticides. While several insecticides are labeled for outdoor tick control, these products are usually not effective in eliminating large numbers of ticks for extended periods. However, limited insecticide spraying to the edges of lawns can be temporarily effective in minimizing tick movement into these areas.
- Individuals can apply commercially available insect repellents containing DEET to boot or shoe tops, around the waist, and on exposed skin. In heavily infested areas, use permethrin on clothing. Permethrin is not for use on skin (see label for directions). Follow the DOD repellent program: http://phc.amedd.army.mil/topics/envirohealth/epm/Pages/DoDInsectRepellentSystem.aspx .

Responsible Entity

- All personnel are responsible for the use of personal relief products.
- Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Permethrin	6840-01-278-1336	50404-5	None
N,N-diethyl-M-toluamide (DEET)	6840-01-288-2188	66306-4	None

1.8.5. Sensitive Areas

See label for precautions.

1.8.6. Prohibited Practices

None.

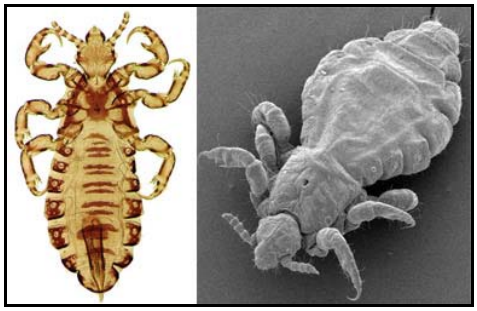
1.8.7. Environmental Concerns

Use of residual insecticides for area control of ticks should be the last alternative selected for control since the pesticide kills other arthropods as well as ticks.

1.8.8. Additional Comments

- The main emphasis for tick control is proper wearing of the uniform and use of repellents. For additional information see AFPMB Technical Information Memorandum No. 26, Lyme Disease, Vector Surveillance and Control and No. 36, Personal Protective Techniques Against Insects and Other Arthropods of Military Significance. These can be viewed at: http://www.afpmb.org/pubs/tims/tims.htm
- To remove a tick, grab it as close to the skin as possible, preferably with tweezers. Pull the tick out without twisting or jerking. Wash the bite location with soap and water. Avoid removing ticks with bare fingers. Remove any mouthparts that break off in the wound (consult a physician if necessary). The mouthparts could be contaminated with other bacteria that can cause painful secondary infections. Care must be taken not to crush ticks because infections can be acquired through skin abrasions.
- Whenever an attached tick is removed from a person, it should be saved for later identification in case the person experiences an illness within the following month.
- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.

1.9. Lice



Source: http://www.biology.utah.edu/bionews2.php?story=clayton100404.txt

Lice (*Pediculus humanus)*

Distinguishing Features

- Small, flattened body
- Wingless and colorless
- Short, stubby antennae
- Legs with hooked tarsi adapted to gripping their hosts
- Chewing or biting mouthparts (biting lice) or piercing and sucking mouthparts (sucking lice)

Reference:
Snetsinger RJ. 1990. *In* Handbook of Pest Control. 7th Edition. Story K, Moreland D (eds.).Franzak & Foster Co., Cleveland, OH. pp 583-596.

1.9.1. Reason for Control

- Head lice and crab lice rarely transmit infectious diseases and are considered more of a nuisance than a health risk problem. However, the intense itching that may accompany an infestation can result in a secondary bacterial infection requiring antibiotic therapy. In extreme cases, the infested person may experience fatigue, chills, leg cramps, and rashes. In addition, they can cause problems for children attending school. Most schools have adopted a "no nit" policy states that children with head lice must not be allowed in school, as long as nits (lice eggs) can be found in their hair.
- Body lice can cause epidemics of typhus (caused by *Rickettsia prowazekii*) and trench fever (caused by a spirochete, *Borrelia recurrentis*). Though typhus is no longer widespread, epidemics still occur during times of war, civil unrest, natural disasters, in refugee camps, and prisons where crowded conditions and unsanitary conditions persist. Homeless individuals are also prone to carry body lice. Typhus still exists in places where climate, chronic poverty, and social customs prevent regular changes and laundering of clothing.

1.9.2. Site

All occupied buildings.

1.9.3. Surveillance

Institute a routine screening program in occupied buildings and respond to all reports or observations of lice infestations.

Responsible Entity

- All personnel.

- Preventative Medicine personnel are responsible for monitoring lice activity.
- Educate personnel on the signs and symptoms of lice infestation.
- Respond promptly to all reported infestations.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Screening should take place when an infestation has been reported.	All buildings where infestations have been reported.	As needed

1.9.4. Control

Control Standard

Incorporate a "no-nit" policy for head lice at ARNG facilities.

Control Methods

Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.

Mechanical Control Methods

- Nit combs can be used to help remove lice and eggs.
- Rugs, mattresses, and upholstered furniture should be thoroughly vacuumed each day.

Responsible Entity

Infested individuals or building personnel.

Biological Control Methods

None.

Cultural Control Methods

- Wash all potentially infested clothing in hot water and dry clothing on the hottest setting for 20 minutes.
- Pillows should be placed in a dryer at the hottest setting for 20 minutes.
- Non-washable clothes should be dry-cleaned. Non-washable items should be put in a sealed plastic bag for 2 weeks.
- Thoroughly clean toilets and floors in latrines.
- Clean combs and brushes by soaking them overnight in the lice treatment.

Responsible Entity

Infested individuals or building personnel.

Chemical Control Methods

- Enzyme detergents, such as Kleen Kill® or borax should be used in areas where an infestation has occurred.
- A physician should be consulted for further information on pesticidal shampoos.

Responsible Entity

Infested individuals.

1.9.5. Sensitive Areas

Not applicable.

1.9.6. Prohibited Practices

None.

1.9.7. Environmental Concerns

Not applicable.

1.9.8. Additional Comments

- Personnel with lice infestations should first be directed to the local medical treatment facility. Treatment of the individual is a medical problem. Consult a physician about whether to repeat any treatments or what other steps to take if live lice or new nits are found at least 7 days after the initial treatment.
- Head and pubic lice rarely leave the body or clothing of the infested individual. Laundering clothing and bedding should be done before any pesticide application is considered.

1.10. Fleas

Source: http://www.castlemorpeth.gov.uk/services/environment/environmental_health/Pest_Control/Documents/fleas.PDF

Flea (*Siphonaptera* spp.)

Distinguishing Features

Adult fleas are about 1/16 to 1/8-inch long, dark reddish-brown, wingless, hard-bodied (difficult to crush between fingers), have three pairs of legs (hind legs enlarged enabling jumping) and are flattened vertically or side to side (bluegill or sunfish-like) allowing easy movement between the hair, fur or feathers of the host. Fleas are excellent jumpers, leaping vertically up to seven inches and horizontally thirteen inches. (An equivalent hop for a human would be 250 feet vertically and 450 feet horizontally.) They have piercing-sucking mouthparts and spines on the body projecting backward. Also, there is a row of spines on the face known as a genal comb. Spine I (first outer spine) is shorter than Spine II (next inner spine) in dog fleas. Both spines are about the same length in the cat flea. The rabbit flea has a vertical genal comb with blunt spines. The genal comb is absent in both rat fleas. Eggs are smooth, oval and white. Larvae are 1/4-inch long, slender, straw-colored, brown headed, wormlike, bristly-haired creatures (13 body segments), that are legless, have chewing mouthparts, are active, and avoid light. Pupae are enclosed in silken cocoons covered with particles of debris.

Reference:
Potter, M. 1997. *Ridding Your Home of Fleas.* Lexington: University of Kentucky. http://www.uky.edu/Agriculture/Entomology/entfacts/struc/ef602.htm and http://www.uky.edu/Agriculture/Entomology/entfacts/struc/ef628.htm

1.10.1. Reason for Control

Adult fleas are not only a nuisance to humans and their pets, but can cause medical problems including flea allergy dermatitis (FAD), tapeworms, secondary skin irritations and, in extreme cases, anemia. Although bites are rarely felt, the resulting irritation caused by the flea salivary secretions varies among individuals. Some may witness a severe reaction (general rash or inflammation) resulting in secondary infections caused by scratching the irritated skin area. Others may show no reaction or irritation acquired after repeated bites over several weeks or months. Most bites usually found on the ankles and legs may cause pain lasting a few minutes, hours or days depending on one's sensitivity. The typical reaction to the bite is the formation of a small, hard, red, slightly raised (swollen) itching spot. There is a single puncture point in the center of each spot. In addition, fleas may transmit bubonic plague from rodent to rodent and from rodent to humans. Oriental rat fleas can transmit murine typhus (endemic typhus) fever among rats

and from rats to humans. Tapeworms normally infest dogs and cats but may appear in children if parts of infested fleas are accidentally consumed.

1.10.2. Site

Individuals and buildings.

1.10.3. Surveillance

Visual observation or reports of fleas in buildings, on animals, or on individuals.

Responsible Entity

Primarily building occupants by visual observation of fleas or flea bites on pets or occupants. Facility management personnel or certified pest controllers where professional assistance is needed. Pest management QAEs may perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation of fleas.	All Buildings, on Stray Animals	As Needed

1.10.4. Control

Control Standard

No visual sign of fleas.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Vacuuming carpets and upholstered furniture will help to control fleas - be sure to empty the cleaner bag immediately after vacuuming since the fleas which have been removed are usually not killed. Host animals are removed and excluded from buildings.
- Access doors and vents to building crawl areas will be maintained in good repair to prevent flea host (i.e. cats, skunks) entry to under structures.

Responsible Entity

Building occupants or janitorial services are responsible for vacuuming. Facility maintenance personnel are responsible for all structural maintenance and repairs.

Biological Control Methods

None.

Cultural Control Methods

- Stray dogs and cats will not be encouraged to be in the area by deliberate feeding or by poor sanitation.
- Refuse receptacles have tight-fitting lids which prevent potential fleas hosts access to food.

Responsible Entity

Building occupants and refuse collection personnel.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- IGRs (previously mentioned) can be used as part of the IPM treatment plan.

Responsible Entity

Certified pest controller.

The following Table contains a list of the approved AFPMB Pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Malathion	6840-00-655-9222	655-777	Sprayers from Sections 1-9 of the DOD Pest Management Material List.
Carbaryl	6840-00-932-7297	432-1226	Sprayers from Sections 1-9 of the DOD Pest Management Material List.

1.10.5. Sensitive Areas

Do not contaminate food, feed, food preparation surfaces, or utensils.

1.10.6. Prohibited Practices

Do not permit unauthorized personnel in treatment areas until applied materials have dried and vapor odors have subsided.

1.10.7. Environmental Concerns

Do not apply pesticides directly to water or when runoff is likely.

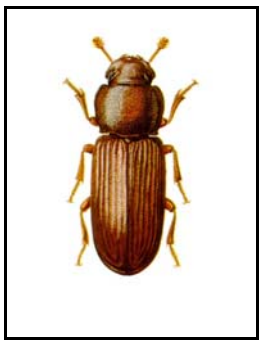
1.10.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Fleas can be a problem in buildings which have feral cats or other wild animals such as skunks or raccoons living under them. Adult fleas may enter the first floors of the buildings through small cracks or other openings and subsequently bite people working inside. For this reason host removal and exclusion must also be performed.

2. Pests Found In and Around Buildings

2.1. Stored-Products Pests

Examples of stored-products pests



Source: http://agspsrv34.agric.wa.gov.au/ento/pestweb/Query1_1.idc?ID=-1919870117

Rust-red Flour Beetle (*Tribolium castaneum*)

Source: http://agspsrv34.agric.wa.gov.au/ento/pestweb/Query1_1.idc?ID=904293464

Rice weevil (*Sitophilus oryzae*)

Distinguishing Features

Various species. Pests found in stored products.

Reference:
Urban Entomology. Walter Ebeling. http://www.entomology.ucr.edu/ebeling/

2.1.1. Reason for Control

Stored-product pests contaminate food with their bodies and waste-products, which can result in human health problems and economic loss.

2.1.2. Site

Food storage areas (i.e. Commissaries and Troop Issue Subsistence Activity warehouses and other food handling areas).

2.1.3. Surveillance

Visual surveillance.

Responsible Entity

Facility managers and building occupants, food service personnel, cleaning staff, and maintenance personnel are responsible for surveillance of stored-product pests in coordination with preventative medicine personnel and the certified pest controller. Pest management QAEs may conduct surveys to determine control effectiveness achieved by contractual services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Examine food and other susceptible products for damage, check for insects, excrement, and other signs of infestation. Particular attention should be given to rodent bait stations when they are in use since most baits are subject to insect infestation.	Food service areas and other food storage areas.	Daily
Use pheromone insect detection traps to determine population levels and reduce infestations near food handling or storage areas.	Food service areas and other food storage areas.	As Needed

2.1.4. Control

Control Standard

- Management efforts should continue until all visible signs of infestation are absent.
- No signs of product damage observed in all buildings, warehouses, and storage facilities where food, paper, or other susceptible products are stored.
- No stored-product pests observed all buildings, warehouses, and storage facilities where food, paper, or other susceptible products are stored.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Clean up spilled food materials which may attract and provide a food source for insects at least daily. Vacuuming is encouraged to remove insects and food spillage.
- Eliminate harborage by caulking (or filling with other material) minor cracks, crevices, holes in walls or floors.
- Fix leaks, improve drainage, and install screened vents to increase airflow in high- moisture areas.
- Weather-strip around doors and windows to eliminate entry points. All windows, air exchangers, and vents should be screened with 16-mesh screen, unless fitted with operable louvers. Loading-dock and warehouse doors should be equipped with full-length vinyl strips or inflatable boots whenever possible.
- Basement floor drains should be fitted with screens or basket inserts that are cleaned regularly.
- In storage areas, stock like commodities together and products should be stacked a minimum of 18 inches away from all walls and partitions. Control aisles should be maintained at a minimum of 18 inches between each three stacks or rows of product.

Responsible Entity

Building, maintenance, and food service personnel.

Biological Control Methods

None.

Cultural Control Methods

- Rotate food stock (first in first out). Date all deliveries.
- Store susceptible food or other products in airtight containers or in a refrigerator or freezer.
- Store infrequently used food items (e.g., pancake flour, grains, spices) in the freezer.
- Locate and remove the food source when insects are found. If the infestation is found before it spreads to other packages, control can be relatively easy.
- Immediately seal and dispose of infested products.
- Carefully inspect all packages, especially those that have been opened or exposed. Do not purchase broken or damaged packages of food materials and dispose of all products that have any sign of infestation.
- Do not mix old and new lots of foodstuffs. If the old material is infested, the pest will quickly invade the new.
- Clean containers before filling them with fresh food.
- Store bulk materials, such as pet foods, in containers with tight-fitting lids.
- Keep storage units dry.
- Stored-product pests can also breed in rodent baits. Do not place rodent bait in food storage areas.
- Clean cupboards, drawers, floor drains, kitchen appliances, and sinks to remove food particles and grease.
- Steam clean or pressure wash all possible structural crevices and equipment in food handling and trash storage areas where appropriate. Vacuum all possible structural crevices and equipment in food handling and trash storage areas when steam cleaning or pressure washing is inappropriate.
- Wash shelves with soap and water, and scrub corners and crevices or vacuum them with a crevice attachment to remove eggs and pupae after an infestation has been found.
- Put garbage in a container with a tight-fitting lid or in a sealed plastic bag and take out daily.
- Keep kitchen counters and shelves clean, do not leave dirty dishes out overnight.
- Mop floors regularly.
- Remove stacked boxes, cartons, rolled carpeting and any stored paper or cardboard materials, particularly in dark, damp locations.
- Spilled food, waste packaging or packing material, broken pallets, trash containers, and other debris should be cleaned up and disposed of at the end of each workday. Spills or debris should not be allowed to collect within a storage area for more than 24 hours.
- The grounds surrounding the perimeter of a facility that stores food should be maintained in a clean and orderly manner with bulk trash receptacles positioned away from the building and covered at all times.

Responsible Entity

Building and food service personnel.

Chemical Control Methods

- Chemical treatment is initiated when non-chemical treatments fail to eliminate infestations.
- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.

Responsible Entity

Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Delta Dust	6840-01-431-3345	432-772	Hand or power dusters from Sections 2 and 3 of the DOD Pest Management Material List.

2.1.5. Sensitive Areas

Food Handling Areas

Pesticide applicators will coordinate with food service personnel to ensure the safety, effectiveness, and efficiency of the pesticide treatment.

2.1.6. Prohibited Practices

- Do not apply pesticides on food, utensils, food containers, or food preparation surfaces.
- Do not let unauthorized personnel in treatment areas until applied materials have dried and vapor odors have subsided.

2.1.7. Environmental Concerns

None.

2.1.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Armed Forces Pest Management Board Technical Information Memorandum Number 27 (TIM #27), provides guidance on pheromone traps.

3. Real Property Pests

3.1. Subterranean Termites

Examples of subterranean termites

Source: http://www.oeb.harvard.edu/faculty/pierce/people/Kenji/Kenji.html

Source: http://www.oeb.harvard.edu/faculty/pierce/people/Kenji/Kenji.html

Subterranean termites (*Reticulitermes* spp.)

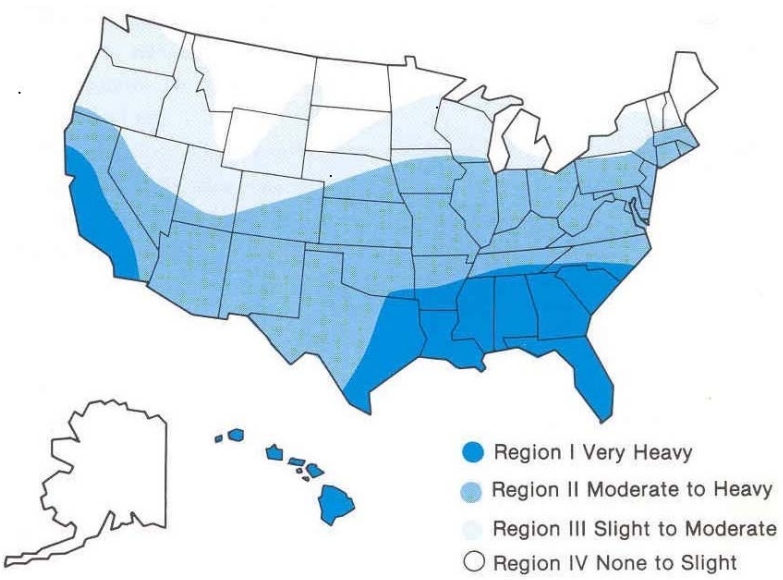
Distinguishing Features

- Reproductive males and females can be winged (primary) or wingless (secondary or tertiary). The bodies of primary reproductives, also called swarmers or alates, vary by species from coal black to pale yellow-brown. Wings are pale or smoky gray to brown and have few distinct veins. Swarmer termites are about 1/4 to 3/8 inches long. Secondary and tertiary reproductives in the colony are generally white to cream-colored and may have short wing buds.
- Workers are wingless, white to creamy white, and 1/4 to 3/8 inches long.
- Soldiers resemble workers in color and general appearance, except that soldiers have large, well-developed brownish heads with strong mandibles or jaws.

Reference:
Urban Entomology. Walter Ebeling. http://www.entomology.ucr.edu/ebeling/

3.1.1. Reason for Control

- Subterranean termites damage wood, which reduces the structural integrity of buildings.
- Economic loss from building repairs.
- Termites damage wooden structures and incidental wood in steel and concrete buildings, such as trim or molding, paneling, furring strips, or door and window frames. Files, stacked books, or any other cellulose material, such as fiberboard sheathing or insulation panels, could also be attacked. Most termite problems in large office buildings involve subterranean colonies that persist for years on buried scrap wood and constantly explore upwards for new sources of food. These colonies are often a nuisance because of the periodic emergence of large numbers of winged "swarmers" that find their way into occupied space.
- The following map shows the relative hazard of termite infestations in the United States.



- Relative Hazard of Subterranean Termite Infestations in the United States. Source: Armed Forces Pest Management Board, Technical Guide No. 29, Integrated Pest Management (IPM) in and Around Buildings. See also http://www.agoodinspector.com/termite_map.htm

3.1.2. Site

- All structures that are constructed wholly or partially of wood (e.g., eaves, crawl spaces, foundations, siding) and stored lumber.
- All building foundations, crawl spaces, walls, sinks, bathtubs, and toilet areas should be monitored for subterranean termite activity.
- All planning for construction activities should consider the relative hazard of termite infestation [see: AFPMB TG-29] and designs should incorporate physical barriers or chemical treatments prescribed in the Unified Facilities Guide Specifications.

3.1.3. Surveillance

- Visual observation.
- Subterranean termites are usually found in soil with tunnels connecting the nest to outside sources of wood. Early detection and control are necessary to prevent damage to wooden structures and cellulose-containing materials inside buildings. Because contact with air dehydrates termites, they tunnel into wood, often undetected, inside mud tubes. Significant damage can occur even though the surface of the wood is intact. But termites can be detected before they cause structural damage. Careful inspections at regular intervals will detect termite infestations before significant damage occurs.
- Incidental surveys are conducted by building occupants who may discover termite damage or termite swarms at the work site. Certified pest controllers are the primary surveyors for termites. Certified pest management QAEs perform 100% inspection of all contracted termite control operations.

Responsible Entity

Facility managers and maintenance personnel, in coordination with the certified pest controller, are responsible for surveillance.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Termite inspections are conducted in accordance with AFPMB TG-29. Inspections performed by pest controllers are recorded on floor plans drawn to scale which indicate the locations of infestations, damage, and favorable conditions for termite infestations.	Installation-wide	Yearly
Monitor for mud tubes, wood damage, mud in cracks and crevices, peeling paint, and swarming.	Installation-wide	Yearly

3.1.4. Control

Control Standard

- Effective control is defined as no sign of termites or new wood damage within 30 days after the treatment period ends (baiting might take a few months for effective control).
- Effective control is also defined as no sign of termites in buildings that incorporated physical barriers or chemical treatments into the construction.
- No subsequent termite infestations or damage from treated structures for five years after application. Structural modifications made such as drilling holes, cutting tiles or linoleum, and installing bath trap access panels are repaired or replaced to match existing adjacent surfaces in quality and finish. All debris, including dust, caused by drilling or other work is removed from the treatment site.

Control Methods

- For existing buildings and structures, consideration should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Ensure proper drainage around buildings by installing, repairing, or relocating gutters, siding, roofing, vents, drains, downspouts, and vapor barriers to reduce moisture under buildings.
- Repair leaking pipes, drains, sinks, showers, toilets, and air conditioners.
- Grade areas around buildings to direct landscape irrigation, rain, and surface water away from building foundations.
- Turn sprinkler heads so water is not directed toward buildings.
- Coat foundation walls with rubberized asphalt membranes to reduce moisture under the building.
- Install a sump pump or French drain in extremely wet areas.
- Seal all cracks in the foundation, flooring, and walls.
- Sand barriers composed of grains of sand with particles ranging from 10 to 16 mesh (2.0 mm to 1.2 mm) can be used to prevent subterranean termites from gaining access to a building.
- Replace damaged wood with treated lumber or other termite resistant material wherever possible.
- Pre-treated lumber can be used to replace existing lumber to prevent reinfestation in areas of potential termite activity.
- As appropriate, incorporate mesh termite barriers or basaltic termite barriers into construction plans.

- Ensure wood does not come in contact with soil. Generally wood should be at least 8 inches above the soil. Wood that is in contact with soil must be replaced with concrete. Check local building codes for appropriate clearances.
- Remove all wood debris and stumps within 10 feet of foundations.
- Swarming termites should be collected with a vacuum cleaner, and then destroyed.

Responsible Entity

Building occupants, facility operations, or contractors perform mechanical and physical controls.

Biological Control Methods

The fungus *Metarhizium anisopliae* has recently been formulated into a microbial pesticide that is effective against a number of termites. The fungus is extremely infectious among termites and is spread in the termite colony by direct contact, grooming, and trophallaxis (the exchange of alimentary fluids) and causes death within 8 to 11 days.

Responsible Entity

Certified pest controller.

Cultural Control Methods

- Do not store firewood or lumber directly on the ground. Use cinder blocks or other non-wood material to raise wood at least 8 inches away from soil.
- Never bury lumber, tree branches, or other wood cuttings near buildings.
- Inspect new lumber or other wood items for termite infestations prior to purchasing. Examine treated wood products to determine the presence of the American Lumber Standard Committee accredited inspection agency quality marking.

Responsible Entity

Building occupants, maintenance personnel, or contractors.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical treatment is warranted when non-chemical treatments fail to control infestations.
- Termite baiting is preferred over pesticide applications because of the lower risk of contamination and potential elimination of entire termite colonies (conventional chemical barrier treatments only try to prevent termites from entering a structure).
- In masonry buildings with minor termite damage or localized swarming, satisfactory control can often be accomplished with pressurized injection of insecticide directly into the wood, or into the crevices from which the swarmers are emerging. If possible, the crevices should then be caulked or otherwise sealed.
- Subterranean termite problems that cannot be solved with spot injection and sealing must be treated with far more extensive insecticide application. Standard techniques involve pumping the chemical into holes drilled through the building's slab and/or into the soil around the building's foundation.

- All new construction projects for buildings receive preconstruction treatment in the soil. Structures not previous treated which are receiving rehabilitation work that includes additions or new floor work will be treated. All active termite infestations in structures are treated.
- New construction sites are treated by broadcasting and trenching the insecticide per label directions. Injection and horizontal rodding is used only with post-construction treatment. Barrier treatment along foundations, around support beams, and along piers are trenched and not rodded to provide a more even distribution of insecticide.

Responsible Entity

Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Fipronil	6840-01-483-3068	7969-210	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DOD Pest Management Material List.
Fipronil	6840-01-483-3072	7969-209	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DOD Pest Management Material List.

3.1.5. Sensitive Areas

Avoid getting pesticide in areas where water can become contaminated, and in air ducts of buildings. Do not allow unauthorized personnel in the treatment area during termiticide application until the termiticide has dried and vapor odors have subsided.

3.1.6. Prohibited Practices

- Ensure no termiticide gets in storm drains or other areas where water can be contaminated and in air ducts underneath buildings. Do not treat beneath structures that contain cisterns or wells. Do not treat soil that is water-saturated or frozen.
- Do not apply pesticides when buildings are occupied and never apply them where they might wash into the sanitary sewer or into outside storm drains.

3.1.7. Environmental Concerns

None.

3.1.8. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Records of inspections and treatment will be kept indefinitely.
- Coordination is made with the Corps of Engineers and Facility Operations to ensure that all specifications for new construction and rehabilitation projects involve proper termite protection materials and techniques and quality assurance will be performed on all contracted termite control projects.

- All treatment operations involve placing a termite treatment notification sign which legibly states the termiticide used, treatment date, and applicators name (and company name for contractors) in the interior of the circuit breaker box.
- Moisture in or on wood is the single most important predisposing condition for wood damage and structural failure. Eliminating the source of moisture will effectively control subterranean termite infestations.
- Ensure that all compliance issues are addressed before beginning any site modification activities on a historic structure.

4. Nonnative or Nuisance and Quarantined Pests

4.1. European Starling

Source: http://dwrcdc.nr.utah.gov/rsgis2/Search/Display.asp?FlNm=sturvulg

European Starling (*Sturnus vulgaris)*

Distinguishing Features

Adult in breeding plumage is iridescent black with a yellow bill. Distinguished in flight from other black birds by short, square tail, stocky body, and short, broad-based pointed wings that appear pale gray from below.

Reference:
National Geographic. Field guide to the birds of North America. Fourth Edition.

4.1.1. Reason for Control

- Known carriers of diseases such as avian flu and West Nile Virus, transmissible gastroenteritis (TGE), blastomycosis, and salmonella.
- Known carrier of various human bacterial pathogens and the fungus *Histoplasma capsulatum* that cause human histoplasmosis.
- Out-competes numerous protected native bird species for food and nest sites.
- Flocks can invade fields and yards recently planted with seeds and decimate the number of seeds planted.
- Starlings are common invaders of buildings and can cause sanitation problems because of their droppings.
- Flocks can cause slip hazards, corrosion to cars, buildings, and statues because of their droppings.
- Flocks in the size of thousands invade and devastate large amounts of crops and gardens.

4.1.2. Site

Warehouses, loading docks, and other buildings. Can be an issue on grassy areas.

4.1.3. Surveillance

Surveillance is conducted through visual assessment for birds, including droppings, nests, feeding locations such as bird feeders, and reports of sightings from maintenance personnel and building occupants.

Responsible Entity

Building occupants or maintenance personnel can occasionally conduct incidental surveys by visual observation at the work site. Facility management personnel certified pest controllers conduct surveys in response to service requests. Pest management QAEs may perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation.	Areas around buildings.	Aggressive monitoring and management will vary depending on geographic location due to differences in breeding season (anywhere between January and June). Less aggressive monitoring and management should take place during the non-breeding season.
Identification of species specific nests.	Areas around buildings.	
Identification of large amounts of bird droppings in areas known to be visited by starlings.	Areas around buildings.	

4.1.4. Control

Control Standard

- Management efforts should be continual and aggressive in all areas where flocking occurs. Following dispersal or eradication of large congregations, regular but less intensive efforts should take place year-round in order to detect and prevent the beginning of a new infestation.
- The acceptable quality limit for effective control is a significant reduction in the number of visual sightings, including the number of droppings found in areas known to be frequented by starlings.

Control Methods

- Pest controllers should be instructed on the dangers posed by European starlings and their droppings. They should be instructed on how the infectious diseases are transmitted, preventive measures to reduce exposure, symptoms of the disease, and when to seek medical attention. It is mandatory that PPE be worn by pest controllers while employing the use of chemical methods, removal of dead birds, conducting surveys or any other procedure when exposure to bird droppings is necessary. See **Section 6.2** for additional control methods.

Mechanical Control Methods

- Covering/closing all building openings not regularly used that are greater than 1 inch in diameter.
- Installation or application of porcupine wires or polybutenes (semi-adhesive material that deters perching) on ledges, rafters, and any place that can be used as a perch.
- Use of netting to cover fruit trees and gardens.
- Employing nest-box traps during the breeding season.
- Installation of plexiglass at a 45-degree angle on commonly used roosting ledges.
- When permitted by local laws, shooting in and around structures with a pellet gun at night is an effective method used to control small populations. Because shooting may be hazardous and labor intensive it is rarely used. Night shooting is practiced because fewer people are typically in the control area and birds are found at roost sites.
- Nest destruction in buildings is performed during the nesting season. This method is usually done in conjunction with other control methods.

Responsible Entity

Maintenance personnel perform exclusion work. Some exclusion work for specific sites may be contracted. Contractors perform exclusion work that is incorporated into new construction. Trapping, nest destruction, and shooting is performed by pest management technicians. Trapping operations are coordinated with local health department officials in surrounding communities to initiate controls where pest birds are coming from locations outside the NJARNG responsibility.

Biological Control Methods

None.

Cultural Control Methods

- Reduce the availability of food and water.
- Prune branches and thinning of trees in commonly used roosting areas.
- Use of starling-excluding bird houses.

Responsible Entity

Maintenance and building personnel.

Chemical Control Methods

None.

4.1.5. Sensitive Areas

Shooting activity is coordinated with local law enforcement officials.

4.1.6. Prohibited Practices

Inhumane treatment of captured birds.

4.1.7. Environmental Concerns

Protected bird species are released unharmed from traps.

4.1.8. Additional Comments

- Microorganisms in bird droppings are typically contracted through inhalation when the excrement is dry and becomes airborne. Germicides are sometimes applied to accumulated excrement prior to cleaning; however, thorough saturation with water and the use of a respirator are usually sufficient protective measures. Removed excrement should be collected in plastic bags, sealed, and disposed of at a sanitary landfill.
- Bird excrement removal on public buildings should not be performed during normal working hours. All work should be done from the outside of the building and barricades and signage must be provided to keep the public clear of the work site.
- Ensure that all compliance issues are addressed before beginning any site modification activities on a historic structure.

4.2. House Sparrow

Source: http://dwrcdc.nr.utah.gov/rsgis2/search/Display.asp?FlNm=passdome

House Sparrow (*Passer domesticus)*

Distinguishing Features

Male in breeding plumage has gray crown, chestnut nape, black bib, and black bill. Female is best identified by the combination of streaked back, buffy eye stripe, and unstreaked breast.

Reference:
National Geographic. Field guide to the birds of North America. Fourth Edition.

4.2.1. Reason for Control

- House sparrows transmit bacterial diseases, such as salmonellosis (*Salmonella* food poisoning) and tuberculosis, the fungal disease *Sarcosporidiosis*, viral diseases including eastern equine, Venezuelan, and western equine encephalitis, and Newcastle disease.
- Transmission of diseases through feces.
- Transmission of Newcastle diseases to native fowl.
- Compete aggressively with native birds for food and nesting sites.
- Can contaminate food prepared or handled in outdoor areas.
- Accumulation of droppings on roosting sites such as eaves, ledges, and on the ground underneath porches and overhangs can cause concern to building occupants.

4.2.2. Site

Warehouses, loading docks, and other buildings.

4.2.3. Surveillance

Surveillance is conducted through visual assessment for birds, including droppings, nests, feeding locations such as bird feeders, and reports of sightings from maintenance personnel and building occupants.

Responsible Entity

Building occupants or maintenance personnel may occasionally conduct incidental surveys by visual observation at the work site. Facility management personnel certified pest controllers conduct surveys in response to service requests. Pest management QAEs may perform surveys for quality assurance of contractual pest management services.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation.	Areas around buildings.	Continuous monitoring and management is required due to potential human health implications. Building surveys should be performed frequently during the nesting season.
Identify locations of droppings, feeding locations, and nesting sites.	Areas around buildings.	
Look for droppings around any structural openings large enough for a sparrow to seek refuge in, such as an attic vent.	Areas around buildings.	
In areas where Newcastle disease might be present, birds found dead without obvious reason should be sent to a licensed and certified disease facility for testing.	Areas around buildings.	

4.2.4. Control

Control Standard

- Management efforts in problem areas should continue until the bird is successfully excluded. Special management strategies might need to be implemented in the case of severe disease outbreaks in humans and native fowl. Monitoring for new disease and reoccurrences should continue year-round.
- Continuous monitoring and management is required when there are serious potential human health implications. Building surveys are performed on a monthly basis, and any problems with sparrows will be addressed promptly.

Control Methods

- Pest controllers should be instructed on the dangers posed by disease transmission through sparrows and sparrow droppings. They should be instructed in how these diseases are transmitted, preventive measures to reduce exposure, symptoms of the disease, and when to seek medical attention. It is mandatory that PPE be worn by pest controllers while maintaining bait stations, removing dead birds, or any other procedure when exposure to birds or droppings is possible. See **Section 6.2** for other control methods.

Mechanical Control Methods

- A 3/4-inch mesh is the largest size that will eliminate entry of sparrows.
- Installation or application of porcupine wires or polybutenes (semi-adhesive material that deters perching) on ledges, rafters, and any place that can be used as a perch.
- Use of netting to cover fruit trees and gardens.
- Employing nest-box traps during the breeding season.
- Installation of plexiglass at a 45-degree angle on commonly used roosting ledges.
- When permitted by local laws, shooting in and around structures with a pellet gun at night is an effective method used to control small populations. Because shooting may be hazardous and labor intensive it is rarely used. Night shooting is practiced because fewer people are typically in the control area and birds are found at roost sites.
- Nest destruction in buildings is performed during the nesting season. This method is usually done in conjunction with other control methods.

Responsible Entity

Maintenance personnel perform exclusion work. Some exclusion work for specific sites may be contracted. Contractors perform exclusion work that is incorporated into new construction. Trapping, nest destruction, and shooting is performed by pest management technicians. Trapping operations are coordinated with local health department officials in surrounding communities to initiate controls where pest birds are coming from locations outside the NJARNG responsibility.

Biological Control Methods

None.

Cultural Control Methods

- Reduce the availability of food and water.
- Prune branches and thinning of trees in commonly used roosting areas.
- Use of sparrow excluding bird houses.

Responsible Entity

Maintenance and building personnel.

Chemical Control Methods

None.

4.2.5. Sensitive Areas

Shooting activity is coordinated with local law enforcement officials.

4.2.6. Prohibited Practices

Inhumane treatment of captured birds.

4.2.7. Environmental Concerns

- The European sparrow or house sparrow is an invasive species that takes over food sources and nesting sites once available to native fowl. This invasive species has also become a serious vector of disease transmission to native fowl. Special effort should be made at controlling house sparrow populations in areas where sparrows might impact endangered, threatened, or sensitive species.
- Protected bird species are released unharmed from traps.

4.2.8. Additional Comments

- Microorganisms in bird droppings are typically contracted through inhalation when the excrement is dry and becomes airborne. Germicides are sometimes applied to accumulated excrement prior to cleaning; however, thorough saturation with water and the use of a respirator are usually sufficient protective measures. Removed excrement should be collected in plastic bags, sealed, and disposed of at a sanitary landfill. Additional information on the removal of bird fecal matter can be found in TG-142 Management of Bird and Bat Manure.
- Bird excrement removal on public buildings should not be performed during normal working hours. All work should be done from the outside of the building and barricades and signage must be provided to keep the public clear of the work site.
- Ensure that all compliance issues are addressed before beginning any site modification activities on a historic structure.

4.3. Crickets, Earwigs, Beetles, and Silverfish

Source: www.organicgardeninfo.com

Cricket

Source: www.floridannature.com

Earwig

Source: www.ipm.iastate.edu

Asian Lady Beetle

Source: www.insects.tamu.edu

Silverfish

4.3.1. Reason for Control

These miscellaneous crawling insects can be a nuisance to building occupants.

4.3.2. Site

All buildings.

4.3.3. Surveillance

Sticky traps are placed along baseboards in areas where crickets are seen or heard. This method is used to help control minor cricket infestations. When large infestations occur, a certified pest controller is used. Pest management QAEs may perform surveys for quality assurance of contractual pest management services.

Responsible Entity

- Building occupants use sticky traps and can perform minor window screen and weather-stripping maintenance.

- Maintenance personnel perform structural repairs including screening, weather-stripping, and street light installation.
- Certified pest controller can monitor sticky traps.

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation and sticky traps.	Areas in and around buildings.	Daily or As needed

4.3.4. Control

Control Standard

- No live insects 24 hours after treatment and for a period of 30 days indoors.
- When sanitation and harborage present problems in a facility, a reduction in the number of insects in sticky traps can indicate the effectiveness or limitation of chemical control efforts.

Control Methods

Priority should be given to using non-chemical control techniques. Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Sticky traps are placed along baseboards in areas where crawling arthropods are seen or heard. This method is used to help control minor infestations.
- To prevent infestations indoors, arthropods are excluded from buildings with tight-fitting doors and window screens.

Responsible Entity

Building occupants or maintenance personnel.

Biological Control Methods

None.

Cultural Control Methods

- Sanitation is practiced to reduce harborage. Arthropods often hide in areas which are cluttered with trash, old boxes, and other debris; cleanup of these types of items could help to reduce infestations.
- Weeds and grasses are cut or removed around building perimeters. Reduce harborage and excessive moisture by pruning branches of deciduous and broad-leafed evergreen shrubs to create a minimum 6-inch space above the ground.
- Excess moisture sources around building exteriors (i.e., leaking faucets or improperly installed downspouts or splashguards) are eliminated.
- Unnecessary plant debris, mulches, and rocks are removed away from building perimeters.
- Yellow light bulbs are used for night-lights at building entrances to reduce the effect of lights attracting these insects. Installation of high-pressure sodium streetlights, which attract insects much less than the typical mercury vapor lights, is encouraged.

Responsible Entity

Building occupants or maintenance personnel.

Chemical Control Methods

- NOTE: Pest control contractors perform pesticide selection which requires local contracting officer and Major Command pest management consultant approval or specific pesticides are identified in contracts.
- Chemical treatment should be initiated as a last resort when non-chemical treatments fail.

Responsible Entity

Certified pest controller.

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Delta Dust	6840-01-431-3345	432-772	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DoD Pest Management Material List.
Tempo SC Ultra	6840-01-313-7359	3125-498	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DoD Pest Management Material List.
Demand CS	6840-01-428-6646	100-1066	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DoD Pest Management Material List.

4.3.5. Sensitive Areas

Do not contaminate food, utensils, food preparation surfaces, or food containers.

4.3.6. Prohibited Practices

Do not permit unauthorized personnel in treatment areas until applied materials have dried and vapor odors have subsided.

4.3.7. Environmental Concerns

None.

4.3.8. Additional comments

All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.

4.4. Gypsy Moth Larvae

Source: http://www.fs.fed.us/ne/morgantown/4557/gmoth/

Gypsy moth caterpillar

Source: http://www.padil.gov.au/viewPestLargeImage.aspx?id=342&img=2439

Gypsy moth (*Lymantria dispar)*

Distinguishing Features

- Egg masses appear as 1.5 inch (4 cm) tan or buff-colored hairs on tree trunks, outdoor furniture or the sides buildings.
- Gypsy moth caterpillars change appearance as they grow. Young caterpillars are black or brown and about ¼ inch (.6 cm) in length. As they grow, bumps develop along their backs along with coarse, black hairs. Each of the 11 sections of a developed caterpillar will have two colored spots, the first five pairs, blue, and the last six, red. Mature caterpillars can be as long as 2 ½ inches (6.35 cm).
- Gypsy moths are seen only in mid-summer. Males are grayish brown and can fly; females are larger, whitish with black marks and cannot fly.

Reference:
McManus, Michael L.; Houston, David R.; Wallner, William E. 1979. The homeowner and the gypsy moth: Guidelines for control. Home and Gard. Bull. 227. Washington, DC: U.S. Department of Agriculture. p.4-33.

4.4.1. Reason for Control

- The gypsy moth is one of North America's most devastating forest pests. The species originally evolved in Europe and Asia and has existed there for thousands of years. In either 1868 or 1869, the gypsy moth was accidentally introduced near Boston, MA by E. Leopold Trouvelot. About 10 years after this introduction, the first outbreaks began in Trouvelot's neighborhood and in 1890 the state and Federal Government began their attempts to eradicate the gypsy moth. These attempts ultimately failed and since that time, the range of gypsy moth has continued to spread. Every year, isolated populations are discovered beyond the contiguous range of the gypsy moth but these populations are eradicated or they disappear without intervention. It is inevitable that gypsy moth will continue to expand its range in the future.
- The gypsy moth is known to feed on the foliage of hundreds of species of plants in North America, but its most common hosts are oaks and aspen. Gypsy moth hosts are located through most of the coterminous US but the highest concentrations of host trees are in the southern Appalachian Mountains., the Ozark Mountains., and in the northern Lake States.

4.4.2. Surveillance

Visual observation for egg masses and/or larvae. Pheromone traps can be used to survey for adult males.

Responsible Entity

U.S. Forest Service

Methods, Locations, and Frequency

Method (Devices)	Locations	Frequency
Visual observation	Trees Installation-wide	April through September as required.

4.4.3. Control

Control Standard

Management efforts should continue until visible signs of moths are absent in forest environments.

Control Methods

- Priority should be given to using non-chemical (mechanical, biological, and cultural) control techniques.
- Chemical controls should only be used after careful consideration of alternative methods.

Mechanical Control Methods

- Sticky or slippery bands can be placed around tree trunks to help curtail, though not necessarily prevent, the caterpillars movement into and out of the tree canopy. They should be put on the tree when the caterpillars are about an inch long. Small caterpillars usually stay in the tree canopy. Sticky bands can be purchased or made using a nonporous material that can be wrapped around a tree trunk, then coated with a commercially made, vegetable based sticky material. Never put sticky material directly on the tree trunk as this will permanently stain the bark and may harm the tree. Sticky bands eventually lose their effectiveness and need to be reapplied periodically. Bands covered completely with caterpillars need to be cleaned or replaced.
- Burlap or cloth bands can be placed around the tree trunks to provide a hiding place for the caterpillars. Some of the caterpillars descend the tree in the morning hours in search of a secluded daytime resting spot and they will hide under the flap of the band. Bands must be checked regularly – preferably daily. Remove and destroy the caterpillars by scraping them into a bucket of soapy water.
- Remove sticky bands and fabric bands after the caterpillars reach the pupae stage because this is a good place for the female to lay her eggs. Leaving the bands up year round could girdle the tree.
- In addition to destroying egg masses, homeowners can spray the small caterpillars with a garden hose, which has sufficient water pressure to knock them off leaves. It can also kill many of them. Caterpillars can also be sprayed with an insecticidal soap which can be purchased from garden centers. Spraying the caterpillars with a hose & an attachment to dispense the soap can be very effective.

Responsible Entity

Facility personnel.

Biological Control Methods

- A variety of natural agents are known to kill gypsy moths in nature. These agents include over 20 insect parasitoids and predators that were introduced over the last 100 years from Asia and Europe. Small mammals are perhaps the most important gypsy moth predator, especially at low population densities. Birds are also known to prey on gypsy moths but at least in North America

this does not substantially affect populations. A nucleopolyhedrosis virus usually causes the collapse of outbreak populations and recently an entomopathogenic fungus species has caused considerable mortality of populations in North America.

- Apply *Bacillus thuringiensis* (Bt) in accordance with label directions.

Responsible Entity

U.S. Forest Service and facility personnel.

Cultural Control Methods

- Discourage gypsy moth survival by removing unnecessary yard objects, dead branches, firewood, and debris on the ground that could provide shelter for resting larvae and egg masses. Be watchful when obtaining firewood from areas infested by gypsy moth.
- The gypsy moth is in the egg mass form for nearly nine months. Search, scrape, and destroy egg masses by looking on tree trunks, under dead bark, in rock walls, under rocks, on lawn furniture, etc. Don't scrape the egg masses onto the ground and try to crush them with your feet. Scrape them into a jar of soapy water, diluted chlorine bleach, or diluted alcohol. Remember, each egg mass destroyed probably eliminates 400–500 caterpillars.
- Water when rainfall is insufficient and fertilize when needed to keep trees from being stressed. Keeping trees and shrubs healthy will help lessen the damage done if they are attacked.
- Diversify tree species by encouraging or planting trees least preferred by the gypsy moth, such as walnut, ash, tulip poplar, locust, or sycamore. This reduces the potential for seeing high numbers of caterpillars in the future.

Responsible Entity

Facility personnel.

Chemical Control Methods

- If the number of egg masses per acre exceeds the local maximum established by the U.S. Forest Service, chemical control methods can be considered.
- Aerial application is coordinated with the U.S. Forest Service.

Responsible Entity

U.S. Forest Service

The following table contains a list of approved AFPMB pesticides and equipment.

Chemical Name/ Active Ingredient	National Stock Number	EPA Registration Number	Equipment
Bacillus thuringiensis (B.t.)	01-565-8241	73049-56	Hand, manually carried, and backpack sprayers from Sections 1, 2, and 3 of the DoD Pest Management Material List.

4.4.4. Sensitive Areas

See pesticide label for precautions. Do not apply over exposed personnel.

4.4.5. Prohibited Practices

See pesticide label for precautions. Do not apply over exposed personnel.

4.4.6. Environmental Concerns

See pesticide label for precautions. Do not apply over exposed personnel.

4.4.7. Additional Comments

- All pesticides must be used in strict accordance with the label directions. Using a pesticide in a manner inconsistent with its label directions is a violation of Federal law.
- Coordinate with state, county, and federal officials for aerial applications. Prepare Environmental Assessment. Conduct program IAW ARs 200-2, 40-574, and 420-76.

13.3 Appendix C- New Jersey Pesticide Use List (SPUL)

FY2019 SPUL

Title	PreviousEPARegNo	Label Name	AI-1	Percent AI-1	AI-2	Percent AI-2	Restricted Use	Target Pest	Target Site
100-1066		Demand (Patrol) CS Insecticide	lambda-Cyhalothrin	0.097			No	Insects, Scorpions, Spiders, Wasps, Bees, & Hornets	Building Exteriors, Building Interiors, Ornamental/Gardens, Outdoor Areas, Turf/Lawns
100-1483	352-651	Advion Insect Granule (Mole Cricket Bait)	Indoxacarb	0.0022			No	Ants, Nuisance, Cockroaches, Crickets, Crickets, Mole, Earwigs, Silverfish	Building Exteriors, Building Interiors, Golf Course Areas, Ornamental/Gardens, Turf/Lawns
100-1485	352-664	Advion Ant Bait Arena	Indoxacarb	0.001			No	Ants, Nuisance	Building Exteriors, Building Interiors
100-1498	352-746	Advion Ant Gel	Indoxacarb	0.0005			No	Ants, Nuisance	Building Exteriors, Building Interiors
100-1501	352-776	Arilon Insecticide	Indoxacarb	0.2			No	Insects	Building Exteriors, Building Interiors
1021-1761-72113		Speckoz Flusher	n-Octyl bicycloheptene	0.016	Piperonyl butoxide	0.01			
12455-79		Contrac All Weather Blox (Rat & Mouse Bait)	Bromadiolone	0.00005			No	Mice, Rats, Voles	Building Exteriors, Building Interiors, BUILDING EXTERIORS, BUILDING INTERIORS, INTERIOR
12455-89		Final All-Weather Blox	Brodifacoum	0.00005			No		BUILDING EXTERIORS, BUILDING INTERIORS, INTERIOR
241-392		Phantom (SD) Termiticide-Insecticide	Chlorfenapyr	0.2145			No	Ants, Nuisance, Bed Bugs, Beetles, Ground, Centipedes & Millipedes, Cockroaches, Earwigs, Flies, House/Filth, Pillbugs & Sowbugs, Silverfish, Spiders, Termites, Subterranean, Wasps, Bees, & Hornets	Building Interiors, Food Storage/ Handling Areas, Office/Administrative Areas, Warehouses-Nonfood
279-3168		Eliminator Fire Ant Killer Granuals (Talstar One/PL Granular) Insecticide	Bifenthrin	0.002			No	Ants, Fire, Ants, Nuisance, Crickets, Mole, Turf/Ornamental Insects	Improved Grounds, Ornamental/Gardens, Training Areas, Turf/Lawns
279-3206		Talstar TC Flowable Termaticide/Insteciticde (P, One, P Profressional, PL)	Bifenthrin	0.079			No	Insects	Building Exteriors, Building Interiors, Office/Administrative Areas, Ornamental/Gardens, Training Areas, Turf/Lawns
432-1264	64248-21	Maxforce FC Professional Insect Control Ant Killer Bait Gel	Fipronil	0.00001			No	Ants, Carpenter, Ants, Nuisance	Building Exteriors, Building Interiors
432-1363		Tempo SC Ultra Insecticide	beta-Cyfluthrin	0.118			No		BUILDING EXTERIORS, BUILDING INTERIORS, EXTERIOR, INTERIOR
432-1483		Temprid SC Insecticide	beta-Cyfluthrin	0.105	Imidacloprid	0.21	No	Insects	Building Exteriors, Building Interiors

432-1527		Temprid Ready-To-Spray Insecticide	beta-Cyfluthrin	0.00025	Imidacloprid	0.0005	No	Ants, Nuisance, Bed Bugs, Beetles, Wood Boring, Centipedes & Millipedes, Cockroaches, Crickets, Earwigs, Flies, House/Filth, Insects, Pillbugs & Sowbugs, Silverfish, Spiders, Wasps, Bees, & Hornets	Barracks, Building Exteriors, Building Interiors, Office/Administrative Areas, Warehouses-Nonfood
432-763		Suspend SC Insecticide (K-Othrine® SC Insecticide)	Deltamethrin	0.0475			No	Insects, Spiders	Building Interiors, Outdoor Areas
432-772		Delta Dust	Deltamethrin	0.0005			No	Insects	Building Exteriors, Building Interiors
499-294		Avert Dry Flowable Cockroach Bait Formula 1	Abamectin	0.0005			No	Cockroaches	Building Interiors
499-561		Alpine WSG	Dinotefuran	0.4			No	Ants, Carpenter, Ants, Fire, Ants, Nuisance, Bed Bugs, Centipedes & Millipedes, Cockroaches, Crickets, Earwigs, Fleas, Flies, House/Filth, Pillbugs & Sowbugs, Spiders, Wasps, Bees, & Hornets	BARRACKS, BUILDING EXTERIORS, BUILDING INTERIORS, INTERIOR, OFFICE/ADMINISTRATIVE AREAS
53883-261		Cyzmic (Lamba CSI 9.7) CS	lambda-Cyhalothrin	0.097			No		BUILDING EXTERIORS, BUILDING INTERIORS, EXTERIOR, INTERIOR, ORNAMENTAL/GARDENS, OUTDOOR AREAS, TURF/LAWNS, WAREHOUSES-NONFOOD
64405-2		Niban (Redzone) Granular Bait	Boric Acid	0.05			No	Ants, Nuisance, Cockroaches, Crickets, Silverfish	Building Exteriors, Building Interiors, Outdoor Areas
7173-258		First Strike (Lipha Tech) (Difethialone Paste Place Packs)	Difethialone	0.000025			No	MICE, RATS	EXTERIOR, INTERIOR
8033-109-279		Transport Mikron Insecticide	Acetamiprid	0.05	Bifenthrin	0.06	No		EXTERIOR, INTERIOR
83923-2		Bithor SC	Bifenthrin	0.04	Imidacloprid	0.05			
9688-190-8845		Chemisco (Spectricide/Hot Shot) Wasp & Hornet Killer (LE)	lambda-Cyhalothrin	0.0001	Prallethrin	0.00025	No	Wasps, Bees, & Hornets	Building Exteriors, Outdoor Areas

BUILDING/AREA					SIZE	TYPE OF CONSTRUCTION	USE DESIGNATION				
Date	Units Serviced	Work Origin	Unit of Measure	Target Pest	Control Operation	If Pesticide is Used				Labor Time	Appli-cator Initials
						Name	EPA Reg	% Conc	Amount		

Form Approved. OMB No. 0704-0188 **REPORT CONTROL SYMBOL:**

PEST MANAGEMENT MAINTENANCE RECORD

MEASUREMENT UNITS
MSF = 1,000 square feet
MCF - 1,000 cubic feet
LFF = Linear feet
AC = Acres

ORIGIN OF WORK
SW = Scheduled work
WR = Work request
SC = Service or trouble call
R = Routine inspection

TYPE OF CONSTRUCTION
CO = Concrete
BL = Block
BV = Brick veneer
ST = Steel, sheet metal
WO = Wood
OT = Other

DD FORM 1532-1, AUG 96

Appendix E – NJARNG Self-Help Program

The NJARNG Self-Help Program allows maintenance workers, facility managers, building occupants and unit personnel to use Integrated Pest Management (IPM) measures for control of minor pests. This program features ready-to-use, low toxicity pesticides pre-approved by the ARNG Pest Management Consultant (ARNG PMC).

NJARNG Self-Help Program participants may only perform pest management actions listed at the end of Appendix E.

Only pesticides that are specifically listed on the NJARNG SPUL for use in the Self-Help Program (Appendix B) may be used and participants must review the educational materials for the pest and the control method prior to their use.

All application, safety, storage, disposal and recording requirements as outlined on the pesticide label, the Self-Help training materials, this IPMP and the IPM Outlines (Appendix B) are to be followed.

When pest management actions are performed in accordance with the requirements of the NJARNG Self-Help Program, participants are not required to be certified pesticide applicators.

Step 1. Determine if Self-Help is appropriate. Use the IPM Outlines (Appendix B) to help identify the pest, assess the level of the pest problem and determine what IPM controls can be used to reduce pest presence to acceptable levels.

Step 2. If, there is not a IPM Outlines (Appendix B) for the pest, Self-Help control is NOT appropriate for the pest or if the level of the pest problem is greater than can be controlled with Self-Help, contact the NJARNG IPMC.

Step 3. If Self-Help control is appropriate for the pest and the level of the pest problem, use the Self-Help control methods in the order they are given in the Self-Help IPM Outline for the pest. Use all Self-Help cultural, mechanical and physical control methods before using Self-Help chemical control methods. Also, keep in mind that it is rarely possible to completely eradicate a pest and the goal is to control the pest to acceptable levels.

Step 4. If non-chemical Self-Help control methods do not control the pest(s) to acceptable levels, Self-Help-approved pesticides, as listed in the IPM Outlines (Appendix B) may be used. A list of approved Self-Help Program pesticides is on page E-4. These are low-toxicity, ready-to-use pesticides and are the only pesticides allowed for use by Self-Help Program participants.

Pesticides that require dilution are not allowed for use in the Self-Help Program at NJARNG Federally-owned (Appendix A) sites.

Step 5. Obtain pesticides/equipment listed on Self-Help SPUL from the IPMC and/or through the Federal supply system and/or by direct purchase.

All pesticides used for Self-Help MUST have the exact EPA Registration Number as the pesticide listed on the NJARNG SPUL as approved for Self-Help Use. Pesticide approval is based on the EPA Registration Number of the pesticide and, even if the active ingredient is the same and the pesticide contains the same concentration, a pesticide is not approved for use unless it is listed on the SPUL with that specific EPA Registration Number.

If a Self-Help pesticide for the pest(s) with the listed EPA Registration Number cannot be reasonably procured, contact the IPMC to determine if there is a substitute available. The IPMC can request the addition of pesticides to the Self-Help Program list by submitting the pesticide name, manufacturer, EPA registration number, target pest and target site to the ARNG PMC for review and approval.

Step 6. Review the educational materials as specified in the IPM Outlines (Appendix B) and the pesticide label(s) BEFORE applying any Self-Help pesticides.

After reviewing the training materials and label(s), sign and submit a NJARNG Self-Help Training Acknowledgement of Understanding (Appendix E, Page 5) to the IPMC and keep a copy locally. The pest/pesticide-specific educational materials must be reviewed at least annually and a NJARNG Self-Help Training Acknowledgement of Understanding is to be resubmitted to the IPMC at that time.

The pesticide label must be reviewed before EVERY application of the pesticide since label requirements can change.

Step 7. Apply the pesticides in accordance with the label and the pest-specific IPM Outlines (Appendix B). Pesticide labels are legal documents and all directions and restrictions on the label MUST be followed.

Step 8. Report pesticide applications using the Self-Help Pest Management Treatment Record (Appendix E, Page 5). This report is to be completed at time of application and a copy of each instance should be sent to the IPMC Program Manager annually. Complete all fields in the section marked “Self-Help”.

Step 9. Store and dispose of pesticides as directed by Section 7.7 of the NJARNG IPMP and in accordance with label directions.

Step 10. If the Self-Help control methods in the IPM Outline do not control the pest to acceptable levels, contact the NJARNG IPMC.

Pesticides Approved for use by Self-Help Program Participants:

(See: https://gkoportal.ng.mil/arng/ie/D01/B30/Lists/APUL/19SPULSelfHelp.aspx for the most up-to-date list.)

Approved Self-Help Pesticides

1. Cockroach and ant control bait stations.
    - Combat (regular size traps) – NSN 6840-01-180-0167.
    - Combat (large size traps) – NSN 6840-01-224-1269.
    - Maxforce – NSN 6840-01-298-1122.
    - Dual Choice – NSN 3740-01-426-5472.

2. Cockroach sticky traps – NSN 3740-01-096-1632.

3. Spring mousetrap – NSN 3740-00-252-3384.

4. Rodent glueboards – NSN 3740-01-240-6170.

5. Wasp/hornet spray (pyrethrin formulation).
    - PT 515 Wasp Freeze & Hornet Killer/Wasp Stopper II Plus/Wasp & Hornet Killer II - NSN 6840-00-459-2443.
    - PT 565 Plus XLO Pyrethrin Aerosol Insecticide - NSN 6840-00-823-7849.

6. Fly swatters - NSN 3740-00-252-3383.

7. Fly sticky tape/ribbon - NSN 3740-01-412-9363.

8. Incandescent yellow light bulbs – (Local Purchase Item – for exterior use around building entrances to reduce attracting insects to lights at night).

9. Glysophate (Roundup) – (For weed/plant control around buildings. Can be used around facilities with specific approval from the IPMC. Only ready-to-use formulations are allowed. No container larger than 2.5 gals can be purchased).
    a. Roundup Ready-To-Use NSN 6840-01-377-7113.

10. Boric acid
    a. Aerosol – NSN 6840-01-287-3938.
    b. 99% dust – (Commercial Purchase Item - 1 lb can or less).

11. Rodenticidal bait (0.005% diphacinone) – (must be placed in a container to avoid contamination and for safety reasons) NSN 6840-00-089-4664. Please note that this bait may only be used as self-help for STATE FACILITIES ONLY. Please use a certified pest applicator at federal facilities.

12. Rodent bait plastic container - NSN 3740-01-423-0737.

*NSNs ARE PROVIDED FOR USE IN PURCHASING THE ITEM THROUGH THE FEDERAL STOCK SYSTEM.

NJARNG SELF-HELP TRAINING

Acknowledgement of Understanding

Type of Pest: _____

Control Methods: _____

_____

1. I have read and understand the instructions for performing Self-Help pest control for _____ and have read and understand the pesticide label(s). I will follow the label instructions and all other instructions given to me. If I do not understand the instructions, I will have a qualified person explain them to me before continuing. I understand that any pesticide application not in accordance with the label is a violation of the Federal Insecticide, Fungicide, and Rodenticide Act.

2. I will make sure pets, children, and individuals who may be sensitive or allergic to pesticides will not be present during any application nor will they be allowed back into the treated area(s) before thorough post-treatment ventilation.

3. I will perform the control procedures myself, at my facility area only.

4. Once I have received the Self-Help pest control items, I will not use any of the products in a manner inconsistent with the label. Unused items and empty containers will be disposed of as specified by the Integrated Pest Management Coordinator (IPMC) and the product label.

5. I will record and report Self-Help actions as directed by the IPMC.

Name/Title (print): _____

Signature: _____ Date: _____

Facility Name/Building Number: _____

NJARNG Self-Help Pest Management Treatment Record
Non-Chemical/Chemical

Facility Name:_____ 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?)

Self-Help & Non-Chemical Pest Management Actions:
Mandatory self-help training is required prior to pesticide application. Only pesticides listed as "approved for self-help program" on the state pesticide use list (SPUL) are allowed to be used as self-help.

Self-Help Applicator Name(s):_____

_____

Methods Used/Product(s) Applied: _____

_____

_____

_____

_____

File the original of this record on site as part of your permeant record and SUBMIT a copy to CFMO-Environmental Management Bureau, Sarah.Helble@dmava.nj.gov

Appendix F- Points of Contact and Federal Resources

NJANG Contacts:

Name: Charles Appleby Integrated Pest Management Coordinator	*Phone: 609 530-7135* *Email: Charles.Appleby.civ@mail.mil*
Name: William McBride Natural Resources/Conservation Manager	*Phone: 609-530-7136* *Email: William.McBride@dmava.nj.gov*
Name: Sarah Helble Cultural Resources Manager	*Phone: 609 530-7134* *Email: Sarah.Helble@dmava.nj.gov*
Name: Charles Appleby Environmental Program Manager	Phone: 609 530-7135 Email: Charles.Appleby.civ@mail.mil
Name: Matthew E. Munoz Facilities Manager	*Phone:* 609-530-6907 *Email: Matthew.Munoz@dmava.nj.gov*
Name: John Hicks Safety/Occupational Health Manager	*Phone: 609-562-0510* *Email: john.r.hicks1.mil@mail.mil*
Name: Robert Hill Fire Code Inspector	*Phone: 609-530-7139* *Email: Robert.Hill@dmava.nj.gov*

Federal Resources – Department of Defense

Army National Guard (ARNG-IEN)
Command Pest Management Consultant (PMC) 703-601-8275
Melina Tye melina.k.tye.civ@mail.mil

Office of the Assistant Chief of Staff Installation Management (OACSIM)
Environmental Protection Specialist
Victor Millan 571-256-9708

Chief Army Env. Programs
Mary Williams-Lynch 571- 56-1327

Army Environmental Center (AEC)
Pest Management Consultant 210-466-1599
Dr. William B. Miller william.b.miller54.civ@mail.mil

Army Medical Department Center and School (AMEDD C&S)
https://www.cs.amedd.army.mil/appd.aspx
AMEDDC&S AMEDD Personnel Proponent Directorate:(210) 221-9936 DSN 471

2377 Greeley Road, Suite A | Fort Sam Houston, TX 78234-7584

Army Regional Health Command – Atlantic
https://www.army.mil/rhcatlantic
Building 4411 Llewellyn Ave
Fort George G. Meade, MD 20755-5225

Armed Forces Pest Management Board (AFPMB)
Forest Glen Section 301-295-7476
Walter Reed Army Medical Center FAX: 301-295-7473
http://www.acq.osd.mil/eie/afpmb/ osd.pentagon.ousd-atl.mbx.afpmb@mail.mil

Walter Reed Army Institute of Research (WRAIR)
Center for Infectious Diseases Research 301-319-3226
Entomology Branch, UWF-B
503 Robert Grant Avenue
Silver Spring, MD 20910

DOD Pesticide Hotline 410-436-3773 / DSN 312-584-3773
usarmy.apg.medcom-phc.mbx.pesticide-hotline@mail.mil

State Resources

Kelly Registration Systems State Regulatory Data
General Information Number: (609) 984-6507
Search for Registered Pesticides: http://www.kellysolutions.com/

National Pesticide Information Retrieval System (NPIRS) - State
Search for Registered Pesticides: http://npirspublic.ceris.purdue.edu/state/
New Jersey Contact Information:
Bureau of Pesticide Operations – NJDEP
State Contact: Patricia Conti
(609) 984-6507
Trish.conti@dep.state.nj.us

NEW JERSEY POINTS OF CONTACT

The following is a list of contacts and resources prepared by the NJDEP, Pesticide Control Program. It is intended for use by public health officials, medical examiners and other government officials, and the general public in the event of a pesticide poisoning incident.

New Jersey Poison Information and Education System (NJPIES)
Non-profit organization providing services to New Jersey. Suspected pesticide exposures or poisonings should be referred to this number first. NJPIES is New Jersey's regional drug and poison information program. Located at the Newark Beth Israel Medical Center.
1-800-222-1222 njpies.org

National Pesticide Telecommunications Network (NPTN)
Partially funded by EPA and maintained at Oregon State University. Besides providing a wealth of pesticide information on subjects such as pesticide products, poisonings, toxicology and environmental chemistry, this organization has a toxicologist on staff.
1-800-858-7378 nptn.orst.edu

Northeast Center for Agricultural Medicine and Health (NEC)
Funded by NIOSH and private foundations. NEC provides information services to health professionals, community organizations, libraries, business and rural citizens seeking to improve health and safety in agriculture and other rural-based occupations. The phone number given is for the New York Center for Agricultural Medicine and Health, a branch of NEC.
607-547-6023 nycamh.org/about/staff/

Environmental & Occupational Health Sciences Institute (EOSHI)
Jointly sponsored by the University of Medicine and Dentistry of New Jersey and Rutgers University. EOHSI sponsors research, education and service programs in the areas of environmental health, toxicology, occupational health, exposure assessment and public policy.
732-445-0201 nj.gov/dep/cleanair/agenda/ag0409.htm

New Jersey Pesticide Control Program (NJPCP)
The New Jersey Department of Environmental Protection is the regulatory agency concerning pesticide registration and use.
Compliance Chief 1 609 984-6568 Operations 1 609 984-6647

NATIONAL GUARD BUREAU
Mrs. Robin Ferguson
Natural Resources Program Manager/
111 S George Mason Drive
Arlington, VA 22204
(703) 607-7619

CHEMTREC
1-800-424-9300
For assistance in a chemical emergency involving a spill, leak or exposure.

NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK
1-800-858-7378
Up-to-date technical reference material on toxicity, human and environmental health effects, disposal, and proper use of each pesticide.
http://npic.orst.edu/

DEPARTMENT OF DEFENSE (DOD)

Armed Forces Pest Management Board (AFPMB)
https://www.acq.osd.mil/eie/afpmb/

The mission of the AFPMB is to recommend policy, provide scientific advice, and enhance coordination among the DOD components on all matters related to pest management. The AFPMB approves introduction, stockage, and deletion of pest management material in the DOD supply system; coordinates and develops requirements for pest management related research and testing within DOD; and operates the Defense Pest Management Information Analysis Center (DPMIAC). DPMIAC maintains a military entomology and pest management information database. Scientific information pertinent to the military pest management program is indexed, abstracted, stored, analyzed, disseminated, and retrieved on request.

Armed Forces Pest Management Board
Forest Glen Section
2460 Linden Lane, Building 172
Silver Springs, MD 20910
Comm: (301) 295-7476
Fax: 7473

Defense Pest Management Information Analysis Center
24 hour telephone recorder for information about Armed Forces Pest Management Board information and publications such as Technical Information Memorandum and the Technical Information Bulletins.
Comm: (301) 295-7473
Fax: 7482

DEPARTMENT OF THE ARMY (DA)

The conservation division of the Director of Environmental Programs is responsible for developing Army policies, standards, and procedures relative to pest management programs, operations, pesticides, and related issues. Performs reviews to assure adherence to policies and provide technical advice as appropriate. Represents Army installations on the AFPMB, and with other government agencies. Establishes Army program requirements relative to Research and Development; interacts with other DA programs and disciplines.

https://armypubs.army.mil/default.aspx
Headquarters, Department of the Army
600 Army Pentagon
Washington, DC 20310-0600

***U. S. Army Public Health Command (USAPHC*)**
Civilian entomologist s together with active duty Army and Army reserve entomologists (commissioned officers) focus on the impact of insects and other pests on the health of soldiers world-wide. The mission of the Entomological Sciences Program at the USAPHC is to foster the prevention of exposure to vector-borne diseases, hazardous plants/animals and pesticides by providing expert diagnostic, investigative and educational services in direct support of Soldiers, their families, the civilian workforce, and public health leadership.

Entomological Sciences Division: DSN 584-3613

DOD Pesticide Hotline
For information concerning federal pesticide information, EPA or state registered pesticides, and pesticide labels.

DSN: 584-3773
Comm: (410) 436-3773
Usarmy.apg.medcom-aphc.mbx.pesticide-hotline@mail.mil
USAPHC-North
ATTN: MCHB-AN-ES (C, ESD)
FORT MEADE, MARYLAND 20755-5225
Comm: (301) 677-6502

NOTE. For those installations serviced by USAPHC other than USAPHC-North listed above, the following information, as applicable, should be referenced:
USAPHC-West

ATTN: MCHB-AW-ES (C, ESD)
Fitzsimons Army Medical Center
Aurora, Colorado 80045-5001

NOTE. For those installations serviced by USAPHC other than USAPHC-North listed above, the following information, as applicable, should be referenced:

Army Medical Department Center and School (AMEDD C&S)
The Medical Zoology Branch of the AMEDD C&S is the Army's designated center for DoD pest management certification training. Provides training to enlisted, officer, and civilian personnel. Involved in development of educational materials, including videos and graphic aids. Provides technical input to correspondence course.

Army Medical Department Center and School
D-4, Preventive Medicine Division, Medical Zoology Branch
ATTN: HSHA-MP
Fort Sam Houston, TX 78234-6142

Walter Reed Army Institute of Research (WRAIR)
The Department of Entomology, WRAIR, implements an extensive program of basic and applied research on vectors of arthropod-borne diseases of military significance. Major areas of emphasis include: 1) design and evaluation of improved methods of biosystematics to include vector genetics, molecular taxonomy, and development and production of computerized interactive taxonomic keys

deployed preventive medicine personnel; 2) selection and development of rapid assays for detection and identification of parasites in vectors; 3) identification of arthropods responsible for transmission of infectious diseases and maintenance of reference insect collections of important vectors; 4) investigation of parasite vector host interactions and risk factors for prediction and disruption of natural transmission cycles; 5) culturing of malaria and *Leishmania* parasites and development of animal models to support vaccine development and diagnostics studies; 6) investigation of repellent mechanisms and optimization, composition, formulation and delivery of candidate repellents; 7) preparation of field sites for vaccine, drug, and repellent testing, and 8) design and evaluation of integrated vector control measures for preventing diseases.

Walter Reed Army Institute of Research
Department of Entomology

503 Robert Grant Avenue
Silver Springs, MD 20910
301-319-9000
wrair.army.mil/ReAndDevelop_InfectDisRe_Entomology.aspx

1.1 Appendix G- NEPA Documentation

Enviro Tracking #:	ARNG ENVIRONMENTAL CHECKLIST	State ARNG
	Enter information in the yellow shaded areas.	

PART A - PROJECT INFORMATION

1. PROJECT NAME:

Update to the NJARNG Integrated Pest Management Plan 2019-2023 (IPMP 19-23)

2. PROJECT NUMBER: (MILCON if applicable)

3. DATE PREPARED:

30 December 2018

4. DESCRIPTION AND LOCATION OF THE PROJECT/PROPOSED ACTION:

a. Location (Include a detailed map, if applicable):

NJARNG State and Federal Facilities

b. Description:

The updated Integrated Pest Management Plan (IPMP) incorporates revisions to the existing 2013-2018 IPMP. The plan outlines continuing management requirements to provide pesticide management to NJARNG Federal and State facilities. The IPMP will be made available to all required state and local agencies.

c. The proposed action will involve (check all that apply):

- ☐ Training activities/areas
- ☐ Maintenance/repair/rehabilitation
- ☐ Innovative readiness training project
- ☐ Other (Explain):
- ☐ Construction
- ☐ Real estate action
- ☐ Natural resource management
- ☒ Environmental plans/surveys

d. Project size (acres): 171 (if applicable)

Acres of new surface disturbance (proposed): (if applicable)

5. START DATE of PROPOSED ACTION (dd-mmm-yy): 1 January 2019 Note: This must be a future date.

6. PROGRAMMED FISCAL YEAR (if applicable): FY19-FY2023

7. END DATE (if applicable): 31 December 2023

PART B - DECISION ANALYSIS GUIDE

To use a categorical exclusion, the project must satisfy the following three screening criteria: no segmentation, no exceptional circumstances and a qualifying categorical exclusion that covers the project. The following decision tree will guide the application and documentation of these three screening criteria. The criteria were extracted from 32 CFR Section 651.29 and represent the most common screening conditions experienced in the ARNG. NOTE: Each question in Part B must have an applicable block checked for concurrence with REC.

1. Is this action segmented (the scope of the action must include the consideration of connected, cumulative, and similar actions)? ☐ YES (go to #30) ☒ NO (go to #2)

2. Is there reasonable likelihood of significant environmental effects (direct, indirect,and cumulative)? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ☒ NO (go to #3)

3. Is there a reasonable likelihood of significant effects on public health, safety or the environment? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ☒ NO (go to #4)

4. Is there an imposition of uncertain or unique environmental risks? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ☒ NO (go to #5)

5. Is the project of greater scope or size than is normal for the category of action? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ☒ NO (go to #6)

6. Does the project introduce or employ unproven technology? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ☒ NO (go to #7)

PART B - DECISION ANALYSIS (continued)

7. Will there be reportable releases of hazardous or toxic substances as specified in 40 CFR Part 302? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.

☐ YES (go to #30) ■ NO (go to #8)

8. If proposed action is in a non-attainment or maintenance area, will air emissions exceed de minimus levels or otherwise require a formal Clean Air Act (CAA) conformity determination? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ■ NO (go to #9) ☐ NA (go to #9)

9. Will the project have effects on the quality of the environment that are likely to be highly controversial? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.

☐ YES (go to #30) ■ NO (go to #10)

10. Will the project establish a precedent (or make decisions in principle) for future or subsequent actions that are reasonably likely to have future significant effects? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ YES (go to #30) ■ NO (go to #11)

11. Has federal funding been secured for the Innovative Readiness Training (IRT) project?

■ N/A (go to #13) ☐ YES (go to #13) ☐ NO (go to #12)

12. NOTE: IRT projects not currently funded can secure approved NEPA documentation. However, once funding is secured State ARNG is required to coordinate with ARNG-ILE-T to complete natural and cultural surveys via proponent funding.

☐ CONFIRMED (go to #27)

13. Do you have a species list from the U.S. Fish and Wildlife Service that is less than 90 days old?

■ YES (go to #14) Date of List: ☐ NO (update species list return to #13)

14. In reviewing the species list, what determination was made by the State ARNG?

■ No species present (go to #16)
☐ No affect (go to #16)
☐ May affect but not likely to adversely affect (go to # Date of USFWS concurrence:
☐ May affect likely to adversely affect (go to #15)

15. Does an existing Biological Opinion cover the action?

☐ YES (go to #16) Date of BO: ☐ NO (go to #30)

16. Have the Endangered Species Act, Section 7 requirements completed?

■ YES (go to #17) Date of Documentation: ☐ NO (complete documentation, return to #16)

17. Does the project involve an undertaking to a building or structure that is 50 years of age or older?

☐ YES (go to #18) ■ NO (go to #20)

18. Has the building or structure been surveyed for the National Register of Historic Places?

☐ YES (go to #19) ☐ NO (complete inventory, return to #18)

19. Is the building or structure eligible for or listed on the National Register of Historic Places?

☐ YES (go to #20) ☐ NO (go to #20)

20. Does the action involve ground disturbing activities?

☐ YES (go to #21) ■ NO (go to #22)

21. Has an archaeological inventory or research been completed to determine if there are any archeological resources present?

☐ YES (go to #22) ☐ NO (complete inventory or conduct research, return to #21)

22. In reviewing the undertaking, under the National Historic Preservation Act (NHPA) (for both above and below ground resources), what determination was made by the State ARNG?

■ No 106 undertaking; no additional consultation required under NHPA (go to question #27)
☐ No properties affected (go to #24) Date of SHPO Concurrence:
☐ No adverse effect (go to #24) Date of SHPO Concurrence:
☐ Adverse effect (go to #23)

23. Has the State ARNG addressed the adverse effect?

☐ YES (place date of MOA or existing PA and explanation of mitigation in box below, go to #24) ☐ NO (go to #30)

23a.

PART B - DECISION ANALYSIS (continued)

24. Per DoDI 4710.02 did the state ARNG determine that tribal consultation was necessary for this project?

☐ YES (go to #25)

☐ NO (Provide reason in this block 24a, go to #27)

24a.

25. Did the Tribes express an interest or respond with concerns about the project?

☐ YES (go to #26) ☐ NO (go to #27) Date of Documentation:

26. Has the State ARNG addressed the Tribal concerns?

☐ YES (place date of MOU or explanation of how State ARNG addressed tribal concerns in box below, go to #27)

☐ NO (address concerns, return to #26)

Complete only if additional documentation is required in question #26

26a.

27. Does the project involve an unresolved effect on areas having special designation or recognition such as those listed below? For any yes responses go to #30 otherwise go to #28. If any No response is a result of negotiated and/or previously resolved effects please describe resolution in box 27a below.

TYPE	Unresolved Effects?	TYPE	Unresolved Effects?
a. Prime/Unique Farmland	no	e. Wild/Scenic River	no
b. Wilderness Area/National Park	no	f. Coastal Zones	no
c. Sole-Source Aquifer	no	g. 100-year Floodplains	no
d. Wetlands	no	h. National Wildlife Refuges	no

27a.

28. Is this project addressed in a separate EA or EIS review?

■ YES (complete table below; go to Part C, Determination) ☐ NO (go to #29)

Document Title:	Finding of No Significant Impact (FNSI)
Lead Agency:	National Guard Bureau
Date of Decision Document:	9 Aug 2004

29. Does the project meet at least one of the categorical exclusions listed in 32 CFR 651 App B?

■ YES (complete table below; go to Part C, Determination) ☐ NO (go to #30)

List primary CAT EX code	B-3: Preparation of regulations, procedures, manuals, and other…
Descibe why CAT EX applies	The project provides for updates to the existing IPMP over the term of the previous document, and supports longterm, ongoing management requirements that regularly occur with coordination with federal, state, and local environmental regulatory officials.

30. At this time your project has not met all the qualifications for using a categorical exclusion under 32 CFR 651. Unless the scope of the project is changed, it will require an Environmental Assessment or possibly an Environmental Impact Statement. If you feel this is in error, please call your NEPA Regional Manager to discuss. If needed, go to Part C Determination.

Additional Information (if needed):

PART C - DETERMINATION

On the basis of this initial evaluation, the following is appropriate:

- ☐ 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)	Environmental Program Manager
Sarah Helble	Charles M. Appleby
Printed Name of Proponent (Requester)	Printed Name of Env. Program Manager
30 December 2018	30 December 2018
Date Signed	Date Signed

Other concurrence (as needed):

Signature	Signature
Printed Name	Printed Name
Date Signed	Date Signed
Signature	Signature
Printed Name	Printed Name
Date Signed	Date Signed
Signature	Signature
Printed Name	Printed Name
Date Signed	Date Signed

Enviro Tracking #:	ARNG Record of Environmental Consideration	State ARNG
	Enter information in the yellow shaded areas.	

1. PROJECT NAME:

Update to the NJARNG Integrated Pest Management Plan 2019-2023 (IPMP 19-23)

2. PROJECT NUMBER: (MILCON if applicable)	3. DATE PREPARED: 30 December 2018

4. START DATE of PROPOSED ACTION (dd-mmm-yy): 1 January 2019 Note: This must be a future date

5. PROGRAMMED FISCAL YEAR: FY19 - FY2023

6. END DATE (if applicable): 30 December 2023

7. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:

a. Location (Include a detailed map, if applicable):

The Integrated Pest Management Plan is applicable to all NJARNG state and federally owned facilities.

b. Description:

The updated Integrated Pest Management Plan (IPMP) incorporates new revisions to the existing IPMP for NJARNG Facilities. The plan provides management requirements for all pest management operations.

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

- [x] An existing environmental assessment* adequately covers the scope of this project. Attach FNSI if EA was completed by another federal agency (non-ARNG).
  - EA Date (dd-mmm-yy): 9 AUG 2004 Lead Agency: National Guard Bureau
- [ ] An existing environmental impact statement* adequately covers the scope of this project.
  - EIS Date (dd-mmm-yy): Lead Agency:
- [ ] After reviewing the screening criteria and completing the ARNG environmental checklist, this project qualifies for a
  - Categorical Exclusion Code:
  - See 32 CFR 651 App. B
  - Categorical Exclusion Code:
  - **See 32 CFR 651 App. B**
  - Categorical Exclusion Code:
  - **See 32 CFR 651 App. B**
- [ ] This project is exempt from NEPA requirements under the provisions of:
  - Cite superseding law:

*Copies of the referenced EA or EIS can be found in the ARNG Environmental Office within each state.

9. REMARKS:

Signature of Proponent (Requester)	Environmental Program Manager
Sarah Helble	Charles M. Appleby
Printed Name of Proponent (Requester)	Printed Name of Env. Program Manager
30 December 2018	
Date Signed	Date Signed

Proponent Information:

10. Proponent: New Jersey Department of Military and Veteran's Affairs

11. Address: 101 Eggerts Crossing Rd., Lawrenceville, NJ 08648

12. POC: Charles M. Appleby

13. Comm. Voice: 609-530-7135

14. Proponent POC e-mail: Charles.M.Appleby.civ@mail.mil

Finding of No Significant Impact (FNSI)
For the
Army National Guard
Pest Management Program

A. Description of Proposed Action and Alternatives.

The National Guard Bureau (NGB), as a major command under the Department of Army, has taken the general guidelines from the Department of Defense (DOD) Pest Management policy and is continuing to develop the Pest Management Program for the Army National Guard (ARNG). The ARNG's pest management program objective is to use an integrated pest management approach for the judicious use of both non-chemical and chemical control techniques to achieve effective pest controls with minimal environmental impacts. Integrated pest management, as used by the ARNG, is a decision making process designed to (1) identify the conditions causing a particular pest problem to occur; (2) devise ways to change those conditions to discourage recurrence of the problem; and (3) select the least-toxic mix of strategies and tactics to directly suppress the pest populations.

The ARNG proposes to use the integrated pest management approach by developing Installation Pest Management Plans (IPMPs) to reduce the use of chemical treatment techniques by 50% over historic usage levels while also achieving effective pest control. These plans cover certification, reporting, and all other pest management activities. The reduction of chemical control techniques will, in some cases, be accompanied by an increase in the use of mechanical, cultural, and biological approaches. The goals of the pest management plans are (1) to promote health, safety, and welfare of unit personnel through an effective pest management program; (2) to promote installation protection; (3) to ensure a professionally trained pest management force while supporting the mission of the ARNG to provide combat ready units for the national defense; and (4) minimize impacts on the natural and human environment.

The affected environment of the proposed action includes facilities administered by the National Guard of the 50 states, the District of Columbia, and the territories of Puerto Rico, the Virgin Islands, and Guam.

The analysis of the potential environmental impacts is provided in the Programmatic Environmental Assessment (PEA) for the ARNG Pest Management Program. Alternative B is the preferred alternative. This alternative is an integrated approach that provides for the protection of personnel and the environment, while offering the greatest long-term potential for effective pest control. Areas considered in this document include: land use, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomic resources, environmental justice, infrastructure, hazardous materials and toxic wastes, and cumulative impacts. Other alternatives considered in the analysis include strict non-chemical pest management (Alternative A) and strict chemical pest control techniques (Alternative C), as well as the No Action Alternative (Alternative D). Alternative A was not considered to be an effective pest management technique under most circumstances and Alternative C would have greater potential negative impacts on personnel and the environment. The No Action Alternative

would also be a less effective means of pest management in lieu of more effective, integrated approaches proposed by the Preferred Alternative.

B. Potential Environmental Impacts.

The preferred alternative would have minor, but not significant, negative impacts on the following:

1. Air resources. Air resources may be affected by temporary and limited site-specific impacts due to non-chemical management techniques such as mechanical removal or prescribed burns, and chemical techniques such as hand-spraying. In order to minimize these effects the ARNG would utilize Best Management Practices (BMPs) such as coordinating mechanical removal or control burn operations with appropriate government agencies and performing spray operations in strict accordance with product labels and EPA-approved guidance. Pesticides would not be sprayed when wind speeds exceed 15 mph.

2. Noise: Noise levels may temporarily increase to non-significant levels, caused by outside weed management techniques.

3. Soils: Soil erosion may occur from mechanical vegetation removal. However, using appropriate pest management practices would minimize impacts. Soils that are subjected to substantially increased surface water runoff, or wind- or water-induced soil erosion because of weed removal would be reseeded with native seed stocks according to ARNG policy. Pesticide use could potentially contaminate local soils. These risks would be lowered by using and applying the pesticide as specified by the manufacturer, properly disposing of it, and making an appropriate choice of pesticides with short residual times.

4. Water resources: Water resources may be affected by minor, site-specific soil erosion caused by increased sediment runoff resulting from the mechanical removal of vegetation. To minimize these effects the ARNG would use BMPs such as reseeding effected areas with native seed stock. Using and applying pesticides as specified by the manufacturer and choosing pesticides with short residual effects would further minimize risks. During any aquatic or wetlands application of pesticides a buffer would be established around floodplains and areas of surface waters. Techniques, such as spot application, using short residual pesticides, and avoiding sensitive areas would be employed to reduce pesticide runoff and leachate.

5. Biological resources. The introduction of exotic species for pest control could potentially have a local impact on flora and fauna. However, impacts from introducing exotic species would be minimal. Only biological materials approved by the U.S. Department of Agriculture would be used, and their use would be coordinated with the appropriate Federal and State officials.

There is a potential for short term impacts caused by the mechanical removal of vegetation located in and around wetlands. Impacts would be mitigated through the use of BMPs such as establishing buffer zones around such sensitive areas.

Direct impacts to threatened or endangered individuals could occur at the site-specific level. To reduce this potential, no pesticides would be applied within 100-feet of known threatened or endangered species unless use in such a site is specifically approved by the agency with jurisdiction by law. When compared to current practices, impacts to non-target species, endangered and threatened species, and wetlands would be less likely to occur.

C. Commitment to Implementation.

The National Guard Bureau (NGB) affirms its commitment to implement this PEA in accordance with NEPA. Implementation is dependent on funding. The NGB will ensure that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in this PEA.

D. Public Review and Comment.

The Draft Environmental Assessment was made available for public comment from 15 April – 15 May 2004. No comments were received. The Final Environmental Assessment and the Draft FNSI were made available for public review from 15 June through 15 July 2004. Copies of the Final Environmental Assessment and DFNSI were made available be obtained on the Internet at http://www.arng.army.mil/nepa/, or by calling MAJ Steve Morgan at (703) 607-7958 or emailing MAJ Steve Morgan at Stephen.Morgan@ ngb.army.mil. No comments were received.

E. Finding of No Significant Impact.

A careful review of the Programmatic Environmental Assessment has concluded that the implementation of the preferred alternative for the ARNG Pest Management Program would not constitute a major federal action significantly affecting the quality of the natural or human environment. This analysis fulfills the requirements of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations. An Environmental Impact Statement will not be prepared and the National Guard Bureau is issuing this Finding of No Significant Impact.

9 AUGUST 2004
Date

Gerald I. Walter
Lieutenant Colonel, US Army
Chief, Environmental
Programs Division

13.8 Appendix H: Program Update Form (PUF)

Modified	11/16/2018 13:40
State	New Jersey
Fiscal Year	18
Pest Management Operations - In-House	Lawn & Ornamental, Ground Maintenance, Right-of-Way & Roadsides, Nuisance Wildlife
Pest Management Operations - Contracted	Barracks, BEQ, BOQ, Guest Housing, Miscellaneous Buildings (Offices, Warehouses, Depot buildings), Food Handling Buildings (Interior), Lawn & Ornamental, Ground Maintenance, Right-of-Way & Roadsides
Pest Management Operations - Credit Card Purchase w/o Contract	None
FY18 Pesticide PAI Applied	16.754
FY17 Pesticide PAI Applied (DO NOT CHANGE)	23.8
Itemized Pesticide PAI List	
1st Most-Treated Pest (based on Reporting Year PAI)	Rodents
2nd Most-Treated Pest (based on Reporting Year PAI)	Cockroaches
3rd Most-Treated Pest (based on Reporting Year PAI)	Ants
PercentChangePAI	-42%
PAI Increase or Decrease above 25%	Yes
Explanation for more than a 25 percent increase or decrease in PAI between FY17 and FY18?	Less use of Cyzmic on exteriors.
Do you have an Agriculture Outlease program in your State?	No
PAI of Pesticides Applied to Outlease in Reporting Year	0
Any Biological Control Agents Used?	None
Aerial Application of Pesticides at Federally-Owned Sites	No
ASSON?	N/A

Does your State have an Integrated Pest Management Plan (IPMP)?	Yes
Enter date IPMP was signed and approved by TAG	1/1/2014
FY18 IPMP Updates?	Other Updates to IPMP (list below)
Other Reporting Year IPMP Updates	Currently in revision for FY19-22. Updating into new format/template.
Has an IPM Coordinator (IPMC) been designated in writing?	Yes
IPMC-Primary	Helble, Sarah . Ms. NJ
IPMC-Primary-Email	sarah.helble@dmava.nj.gov
IPMC-Primary-Phone	609-530-7134
IPMC-Alt1	Appleby, Charles M. Mr. NJ
IPMC-Alt1-Phone	609-530-7135
IPMC-Alt1-Email	charles.m.appleby.civ@mail.mil
IPMC-Alt2	McBride, William . Mr. NJ
IPMC-Alt2-Phone	609-530-7136
IPMC-Alt2-Email	william.mcbride@dmava.nj.gov
IPMC not on IEPOC List	
Would you like an On-Site assistance visit?	No

13.9 Appendix I: IPMC Appointment Memo

STATE GENERAL ORDER NO. 6, Appointment of Pest Management Coordinator, 23 August 2016

http://www.nj.gov/military/publications/sgo/2016/SGO-2016-6-Appointment-of-NJARNG-PMC.pdf

State of New Jersey
DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
POST OFFICE BOX 340
TRENTON, NEW JERSEY 08625-0340

CHRIS CHRISTIE
Governor
Commander-in-Chief

☆
MICHAEL L. CUNNIFF
Brigadier General
The Adjutant General

STATE GENERAL ORDER NUMBER 6*

23 August 2016

SUBJECT: Appointment of NJARNG Pest Management Coordinator (PMC)

1. I hereby appoint Mr. Charles M. Appleby, LSRP, as the NJARNG Pest Management Coordinator (PMC), in accordance with DoD Instruction 4150.7-I, Department of Defense Pest Management Program and AR 200-5, Environmental Quality, Pest Management.

2. Authority: The Adjutant General, NJDMAVA

3. Period: Indefinite

4. Purpose: To perform the inherent governmental responsibilities of the Pest Management Coordinator, to include implementation of the Integrated Pest Management Plan (IPMP).

5. Additional Instructions:

a. Prepare and staff the Integrated Pest Management Plan and submit the plan and annual updates to the command consultant for review.

b. Notify the command consultant of program reviews by non-DoD government agencies.

c. Maintain records on the status of PMQAES and pesticide applicators.

d. Ensure the completeness and accuracy of installation pest management records and summarize and report pest management information to the command consultant.

e. Maintain records of hazardous pesticide disposal actions

f. Prepare and coordinate the validation plan for emergency aerial pesticide applications and notify the command consultant of planned regional aerial applications by non-DoD government agencies if these involve the installation.

**** Supersedes State General Order No. 13-1, dated 17 September 2013.***

g. Identify and address findings of adverse Safety and Occupational Health reports on the installation pest management operations.

h. Notify the command consultant if pest management operations undergo a Commercial Activities review.

i. Forward contracts for pest management services to the command consultant for review and maintain records of these contracts.

6. Effective: 23 August 2016

MICHAEL L. CUNNIFF
Brigadier General
The Adjutant General

DISTRIBUTION: A, B, F

13.10 Appendix J- Definitions and Glossary

AEBD-EQ: Army Environmental Database Environmental Quality

AEC: Army Environmental Command

AFPMB: Armed Forces Pest Management Board

AMEDD C&S: Army Medical Department Center and School

AR: Army Regulation

ARNG: Army National Guard

ARNG-IEZ: Army National Guard Directorate Installation and Environment Division

NJARNG: New Jersey Army National Guard

ARS: Agricultural Research Service

ASSON: Aerial Spray Statement of Need

BGEPA: Bald and Golden Eagle Protection Act

CAC: Common Access Card

CFMO: Construction and Facilities Management Office

CRM: Cultural Resources Manager

CWA: Clean Water Act

DA: Department of the Army

DEQ: Department of Environmental Quality

DOD: Depart of Defense

DODI: Department of Defense Instruction

EA: Environmental Assessment

EO: Executive Order

EPA: United States Environmental Protection Agency

ESA: Endangered Species Act

FIFRA: Federal Insecticide Fungicide and Rodenticide Act

General-use pesticide: Pesticides that may only be applied by Certified pesticide applicators (DOD or State) at New Jersey ARNG [OPTIONAL: Federally-owned (Appendix A)] sites unless they are part of a Self-Help program as outlined in the State's IPMP. At State-owned New Jersey ARNG sites, need for certification is dependent on the New Jersey laws and regulations.

HAZCOM: Hazard Communication

HEPA: High-Efficiency Particulate Air

HQAES: Headquarters Army Environmental System

ICRMP: Integrate Cultural Resources Management Plan

INRMP: Integrated Natural Resources Management Plan

IPM: Integrated Pest Management

Integrated Pest Management Coordinator (IPMC): Oversees the New Jersey ARNG Integrated Pest Management Program.

IPMP: Integrated Pest Management Plan

ISR: Installation Status Report

NEPA: National Environmental Policy Act

NPDES: National Pollutant Discharge Elimination System

NRM: Natural Resources Manager

PAI: Pounds Active Ingredient (of a pesticide)

PEA: Programmatic Environmental Assessment

Pests: Arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds, and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

Pesticide: Any substance or mixture of substances intended to prevent, destroy, repel or mitigate any pest. The term pesticide includes herbicides, insecticides, fungicides, and various other substances used to control pests.

Pest Management Consultant (PMC): Command-level personnel who provide oversight of Command Integrated Pest Management Program and act as the Command's technical expert for all pest management actions.

Plan Update Form (PUF): Means of reporting requested annual IPM program data to the ARNG PMC.

PMP: Pest Management Provider

PMQAE: Pest Management Quality Assurance Evaluator

PPE: Personal Protective Equipment

OACSIM: Office of the Assistant Chief of Staff Installation Management

OSHA: Occupational Health and Safety Act

RCRA: Resource Conservation and Recovery Act

Ready-to-use (RTU) pesticide: Pesticides that require no dilution, mixing or addition of other products before use.
REC: Record of Environmental Consideration

RFA: Request for Authorization

Restricted-use pesticide (RUP): Pesticides not available to the general public in the United States that may only be applied by Certified Pesticide Applicators (DOD or State), regardless if applied at State or Federally-owned New Jersey ARNG site.

SDS: Safety Data Sheet

Self-Help Program: A program that allows for New Jersey ARNG facility managers or site personnel to use IPM measures for control of minor pests. The Self-Help Program is documented in the Appendix E of this plan and features ready-to-use, low toxicity pesticides pre-approved by the ARNG Pest Management Consultant, as well as training of participants, proper storage, accountability and disposal of pest control products, and reporting of pest control measures.

SPUL: State Pesticide Use List

TAG: The Adjutant General

TIM: Technical Information Memorandum

TM: Technical Manual

USDA: United State Department of Agriculture

USDA APHIS: United State Department of Agriculture Animal Plant Health Inspection Service

USFS: United States Forest Service

USFWS: United States Fish and Wildlife Service

Virtual Installation: Each State, commanded by the Adjutant General, under which are Readiness Centers or sites. Per AR 600-20, Army Command Policy, 6 November 2014.
WRAIR: Walter Reed Army Institute of Research

1.1 Appendix K- Pest Management Certification and Licensing

The Federal Insecticide, Fungicide, and Rodenticide Act of 1972 (FIFRA) required each state to set up a program to certify users of pesticides. This certification is designed to demonstrate a certain level of competency by pesticide users on the safe use of pesticides. New Jersey, through the Pesticide Control Program (PCP), began its certification program in 1975. Users of pesticides are classified as either private applicators or commercial applicators. The definition of each is as follows:

Private Applicator - any person who uses, or supervises the use, of pesticides for the purpose of raising an agricultural commodity. The application can be done on land owned or rented by the applicator or the applicator's employer. Examples of private applicators are dairy farmers, vegetable or fruit growers, greenhouse growers, ranchers, nurserymen, and home gardeners. Request a private exam application if your occupation requires private certification.

Commercial Applicator - any person who applies pesticides for non-agricultural purposes. Any person who uses, or supervises the use, of pesticides on a "for hire" basis (see note), no matter what for. Also, any person who applies pesticides as part of his job with any governmental agency. Examples of commercial applicators are those who work for exterminators; landscapers; tree services; aerial applicators; weed control firms; pet groomers; apartments, motels, nursing homes, restaurants, etc. who do their own pest control work; and governmental agencies such as mosquito extermination commissions, public school systems, Departments of Public Works, Departments of Health, the DOT, etc. If you are not sure whether you are classified as a private or commercial applicator, call the PCP at (609) 530-4070.

Note: If you apply pesticides "for hire" in New Jersey, State law requires that your business be licensed with the PCP as a Pesticide Applicator Business. The definition of a Pesticide Applicator Business is a business (or person) who, either wholly or in part, holds himself out for hire to apply pesticides. Examples are: pet groomers, exterminators, landscapers, tree services, aerial applicators, etc. The Pesticide Applicator Business License is in addition to your Certified Pesticide Applicator license. Call the PCP at (609) 984-6507 with any questions.

Commercial Applicator Certification - Certification is accomplished by passing pesticide applicator certification exams. Everyone must pass the basic "Core" certification exam. This exam is based on the Pesticide Applicator Training Manual - Core. In addition to the Core exam, one or more "Category" certification exams must be passed. The Category exams needed depend on the type of pest control that will be done. Category exams currently available:

1A-Agricultural-Plant	7E-Wood Preserving
1B-Agricultural-Animal	7F-Antifoulant
2 -Forest	8A-General Public Health
3A-Ornamental	8B-Mosquito
3B-Turf	8C-Campground
3C-Interior Plantscaping	8D-Cooling Water
4 -Seed Treatment	8E-Sewer Root Control
5 -Aquatic	8F-Pet Grooming
6B-Right-of-Way	9 -Regulatory
7A-General & Household	10-Demo & Research
7B-Termite & Other Wood Destroying	11-Aerial
7C-Fumigation	12A-Water Sanitization
7D-Food Processing	12B-Sterilization

The Category exams are based on information contained in specific Category training manuals. The training manuals for all of the exams can be obtained from your County Cooperative Extension Office. The Core exam is a closed-book exam, but the category exams are open-book. There is a limit of one hour and forty-five minutes for taking each exam. Exam sessions are held monthly throughout the state. You can take a maximum of three exams at each session (any combination of Core and Category). Visit the Exam Schedule & Sign-up page. You can also call the PCP at (609) 984-6614 to sign-up for the certification exam. When you have passed the Core exam and at least one Category exam, you are fully certified, unless you have taken either the Category 10 or 11 exam. For Category 10 and 11, you must pass at least one other category exam in order to be fully certified. Because Categories 10 and 11 are general categories, an additional category exam, which is more specific to the type of pesticide work being done, must be taken. You must become fully certified within 120 days of passing any certification exam or the exams previously passed will become invalid. Once you are fully certified, you will automatically receive licensing information in the mail. You cannot "use" your certification until you have received a license. Once you are fully certified, you must maintain your certification. This is accomplished by meeting the requirements of recertification.

The Recertification of Commercial Pesticide Applicators

Once you are fully certified, your certification is good for a minimum of 5 years. Each certification exam you have passed will have its own 5 year recertification date. The recertification date will be an October 31st date and is calculated by adding 5 years to the next October 31st date following the date you passed the exam (example: pass exam May 15, 1996; next October 31st date is October 31, 1996; recertification date is October 31, 2001).

Recertification can be accomplished in two ways. One way is to retake the exams during the 5th year. The other way, which is encouraged, is to accumulate units of recertification credit over the 5 year period by attending PCP approved courses, seminars and meetings. A Commercial applicator must accumulate 8 units (one unit equals 30 minutes of instruction time) of Core subject matter credit and 16 units of Category subject matter credit (for each Category of certification) over the 5 years. The PCP itself does not offer any recertification courses. Course information can also be obtained by contacting your County Cooperative Extension Office, industry associations, and private companies which offer such courses. You will receive an update of your recertification status at least once a year with your license renewal. The "Recertification Update Form" will tell you when your 5 year period is up for each area you are certified in, how many units you have accumulated and how many more you need. If there are any questions on Commercial applicator certification, call the PCP at (609) 530-4070.

NJARNG CERTIFIED PESTICIDE APPLICATORS

Name	Certifying Authority (State/DoD)	Date of Certification	Certificate Expiration Date	Certificate Number	Categories
Ross Greene	NJ STATE	2010	10/30/2019	53480B	Ornamental and Turf (DoD Cat 3 or State equivalent)
Robert Matthews	NJ STATE	2010	10/30/2019	53484B	Ornamental and Turf (DoD Cat 3 or State equivalent)
John Kojsza	NJ STATE	2017	10/30/2019	59024B	Ornamental and Turf (DoD Cat 3 or State equivalent)

Appendix L- Pest Control Contracts and Performance Work Statement

Place in this appendix, copies of all contracts with certified pest control operators. In addition, include all Interservice Support Agreements.

G0295_18-r-24567	PEST CONTROL SERVICE (DPMC)	TRI COUNTY PEST CONTROL	44647

VENDOR INFORMATION	
Vendor Name & Address:	TRI COUNTY PEST CONTROL ACH-ELECTRONIC PAYMENTS 189 DELAWARE AVE CARNEYS POINT, NJ 08069
Contact Person:	UNKNOWN
Contact Phone:	000-000-0000
Order Fax:	000-000-0000
Contract#:	44647
Expiration Date:	04/30/21
Terms:	NONE
Delivery:	183 DAYS ARO
Small Business Enterprise:	YES
Minority Business Enterprise:	NO
Women Business Enterprise:	NO
Cooperative Purchasing *:	YES
*** WILL VENDOR EXTEND CONTRACT PRICES TO COOPERATIVE PURCHASING PARTICIPANTS?**	

ENVIRONMENTAL COMPLIANCE

Includes recycling and resource recovery programs, pollution prevention, environmental compliance, and programs aimed at management and control of hazardous materials—does include clean up and disposal of hazardous materials/hazardous waste. Services will be consistent with Common Output Level Standards (COLS).

ENTOMOLOGY SERVICES

Includes abatement and control measures directed against insects, rodents, weeds, fungi, and other animals or plants that are determined to be undesirable in buildings, equipment, supplies, and on grounds.

SUPPLIER WILL:

1. Provide services at the Common Output Level Standards (COLS).

RECEIVER WILL:

1. Inform supplier when additional service is required. Reimbursable.

SUPPLIER WILL:

1. (Single Point of Contact) Supplier will serve as the single point of contact with all regulatory agencies including requests for interpretation of regulations, coordinating inspections, and submitting reports and correspondence. The receiver will serve as the point of contact related to Safe Drinking Water Act (SDWA) Clean Water Act (CWA), and Clean Air Act (CAA) requirements of Receiver owned and operated systems[1].

2. (Regulatory Actions) Upon receipt by Supplier, Supplier will provide Receiver timely notification of regulator actions that are attributable to Receiver.

3. (Regulator Contacts) Supplier will immediately notify Receiver of any relevant regulator visits and requests for information.

4. (Record Keeping) Supplier will act as the central repository for all environmental records required by law or regulation except for Receiver owned and operated SDWA, CWA, and CAA regulated facilities[1].

5. (Guidance) Supplier will provide general operational environmental policy guidance, and detailed requirements and procedures for environmental document processing, coordination, and approval by Supplier for Receiver actions.

6. (Information Distribution) Supplier will include Receiver in the distribution of any relevant new or changed environmental requirements of which the Supplier becomes aware.

7. (Planning) Supplier will, prior to implementation, consult with Receiver regarding local Environmental plans and instructions that relate to Receiver's activities.

8. (EPC) Supplier will offer Receiver the opportunity to participate in the installation Environmental, Safety and Occupational Health Council (ESOHC) as a member, [or observer], and on ESOHC subcommittees as appropriate.

9. (EIAP) Supplier will administer the Environmental Impact Analysis Program (EIAP) in accordance with the AFI 32-7061 for all activities.

10. (ESOHCAMP) Supplier will not include Receiver in Environmental, Safety, and Occupational Health Assessment Management Program (ESOHCAMP) evaluations, and

RECEIVER WILL:

1. Receiver will serve as the single point of contact with all regulatory agencies including requests for interpretation of regulations, coordinating inspections, and submitting reports and correspondence for SDWA, CWA, and CAA requirements related to Receiver owned and operated systems. For all other media areas the receiver will cooperate with Supplier in Supplier's contacts with regulatory agencies regarding Receiver's activities. Non-reimbursable.

2. Receiver will notify Supplier immediately of enforcement actions (e.g., notices of violation, warning letters, and notices to comply) taken by regulators attributable to receiver. Receiver will notify supplier immediately of any Receiver action or event which either results in, or may result in, environmental, natural resource, or cultural resource degradation, or that has a potential for controversy. In the event archaeological materials are discovered on the premises, Receiver will immediately notify Supplier and protect the site and material from further disturbance until Supplier approval is granted to proceed. Non-reimbursable.

3. Receiver will immediately notify Supplier of any regulator visits and requests for information. Non-reimbursable.

4. Receiver will act as the central repository for all environmental records required by law or regulation related to CWA, SDWA, and CAA systems owned and operated by Receiver. Receiver will provide copies of environmental records as requested by Supplier to meet record-keeping requirements. Non-reimbursable.

5. Receiver will make environmental compliance requirements that pertain to its mission known to Supplier's environmental planning function. Non-Reimbursable.

6. Receiver will provide to Supplier all requested environmental information on a timely basis (subject to security requirements). Non-reimbursable.

forward the findings to the Commander or civilian equivalent of the Receiver activity. Supplier understands that the Receiver implements their own Environmental Compliance Assessment System (ECAS) and is very similar to ESOHCAMP. Supplier will cooperate with the performance of any environmental compliance assessment under the ECAS program, including providing requested information (subject to security requirements), and will respond to any noted deficiencies in a timely manner.

11. (Sampling) Supplier will provide sampling and/or analysis support as available. The results of any sampling conducted by Supplier will be provided to Receiver no later than 30 calendar days after obtaining the sample.

12. (Training) Supplier will include Receiver's environmental training requirements in its training schedule. Supplier will notify Receiver of environmental training available on the installation and make such training available to Receiver. Supplier will recognize that the Receiver provides environmental training for its employees and Supplier's training will be in addition to Receiver's training on an as needed basis. Supplier will provide training materials to Receiver for incorporation into Receiver's training program no later than 14 calendar days from Receiver requesting such information.

13. (Waste Handling) Supplier will provide guidance, including direction on hazardous waste, management and disposal. Supplier will allow storage of Receiver generated waste in Supplier's facilities, and allow use of available Supplier contracts for waste disposal.

14. (Waste Disposal) Supplier will provide to Receiver waste disposal services the same as or equivalent to waste disposal services used by Supplier. Supplier will provide a report at least quarterly to the Receiver detailing type and quantity of waste disposed and disposal cost by facility.

15. (HAZMAT) Supplier will operate a hazardous materials management program, which may include hazardous materials pharmacy and pollution prevention program.

16. (Pollution Prevention) Supplier will operate a waste minimization program, and provide waste minimization guidance and assistance to Receiver.

17. (Recycling) Supplier will operate a recycling program and collect and recycle Receiver's paper, cardboard, plastic, metal cans, wood, electronic equipment, and glass recyclable materials. Supplier will recognize that the Receiver will recycle all scrap metal. No later than the 1st of each month, the Supplier will report the amount of each item recycled for the previous month.

18. (Permits) Supplier will provide Receiver all necessary information and support required to obtain, maintain, or renew permits covering SDWA, CWA, and CAA Receiver owned and operated activities[1]. Suppliers will apply for, maintain, and renew all required permits, and be the point of contact regarding all associated environmental actions except for SDWA, CWA, and CAA and permits required for construction. Supplier will assist Receiver with application, maintenance, renewal and modification of construction and SDWA, CWA, and CAA.

19. (Requirements) Supplier will inform Receiver of all permit

7. Receiver will provide timely review and response on any local environmental plans and instructions referred to it. Receiver will, prior to implementation, coordinate its local environmental plans and instructions with Supplier. Non-reimbursable.

8. Receiver will participate in the ESOHC and ensure that all relevant. Receiver activities are briefed and coordinated with the ESOHC. Non-reimbursable.

9. Receiver will request EIAP support and, upon identification of a proposed action, submit to Supplier Environmental Planning Function (EPF) an AF Form 813 in advance of proposed action. Action cannot commence until EIAP is completed. Reimbursable.

10. Receiver will cooperate with the performance of any environmental compliance assessment under the ESOHCAMP,
including providing requested information (subject to security requirements), and will respond to any noted deficiencies in a timely manner. Receiver will provide Supplier with the results any ECAS survey in a timely manner. Non-reimbursable.

11. Receiver will perform desired sampling and analysis in a timely manner related to Receiver owned and operated SDWA, CWA, and CAA regulated facilities. Non-Reimbursable.

12. Receiver will ensure that its personnel and contractors are properly trained in accordance with applicable statutes and regulations. Receiver will identify environmental training requirements to Supplier. Reimbursable for training that is unique to the Receiver's organization. Non-reimbursable for Supplier providing training and/or copies of training materials to Receiver

13. Receiver will handle, store, and otherwise manage its solid wastes, including hazardous wastes, in a manner consistent with all relevant laws and installation procedures. Reimbursable.

14. Receiver will notify Supplier of the types and amounts of solid waste, including hazardous wastes, it is likely to generate in sufficient time for Supplier to accommodate handling and disposal of such wastes. Reimbursable.

15. Receiver will comply with, and participate in, Supplier's hazardous materials management program, including pharmacy and pollution prevention programs. In a timely manner, Receiver will provide Supplier with a list of all hazardous materials used/stored at all Receiver owned and operated facilities. Receiver will provide all information necessary to assist Supplier in determining storage and disposal requirements of any hazardous/non-hazardous materials under Receiver's control. Reimbursable.

requirements Supplier knows to be relevant to Receiver's activities.

20. (CAA Conformity) Supplier has ultimate authority to make final determinations regarding conformity with the Clean Air Act for activities on the installation. Supplier may request information from Receiver related to Receiver's activities to ensure compliance.

21. (ERP). Supplier will investigate and remediate as required, past practices and previous spills that may have caused environmental contamination in accordance with the Environmental Restoration Program ([ERP] AFI 32-7020). The Supplier will also manage the Environmental Restoration Program, and provide adequate notification of any Environmental Restoration Program activity affecting Receiver's activities

22. (Emergency Response) Supplier will provide emergency response support and necessary follow-up for incidents beyond Receiver's capabilities. Supplier shall recognize that Receiver maintains its own emergency response contract and if Supplier cannot respond to Receiver's emergency response request in a timely manner, the Receiver will implement its contract. Supplier will also notify the appropriate regulatory agencies and submit incident reports as required by law or regulation.

23. (Exercises) Supplier will include Receiver in exercise scenarios as appropriate. Supplier shall provide an after action report on the exercise scenario that details the response narrative, personnel involved, and a critique of the Receiver's response actions. Supplier shall recognize that the Receiver conducts its own exercise scenarios. If requested, the Supplier will participate in exercises conducted by the Receiver.

24. (Notification) Supplier will notify Receiver immediately of any enforcement actions or notices to comply taken by environmental regulators in which the violation may be attributed with the action or inaction of the Receiver. Supplier will provide Receiver with a copy of the enforcement action, with all supporting documentation, and a synopsis of reasons for concluding that Receiver is responsible for the violation.

25. (Review) For fines or penalties attributable to Receiver, Supplier will provide Receiver a reasonable opportunity, in relation to any payment deadline, to review and coordinate the proposed fine or penalty, and to participate in preparing any response to the enforcement action-involving Receiver.

26. (Coordination) For enforcement actions, fines, or penalties attributable to Receiver, Supplier will coordinate with Receiver all strategies to resolve such enforcement actions, fines, or penalties, including negotiation and litigation, and will serve as the final decision-maker with respect to such efforts.

27. (Payment) If a civil fine or penalty is being sought in connection with an alleged violation, Supplier will request that the regulatory agency provides a breakdown of the civil fine or penalty for each violation. Based upon the breakdown received, or the enforcement policies of the relevant agencies, Supplier will identify to Receiver that portion of the civil fine or penalty it believes is attributable to violations by Receiver, along with a statement of reasons in support of that conclusion.

16. Receiver will comply with all Supplier policies and procedures for waste minimization. Reimbursable.

17. Receiver will participate in the installation's paper, cardboard, plastic, metal cans, wood, electronic equipment, and glass recycling program. Receiver will segregate all recyclable materials from other wastes as necessary to fully comply with the requirements of the recycling program. Receiver will recycle all scrap metal using its own recycling program. Reimbursable.

18. Receiver shall apply for, maintain, and renew all required permits, and be the point of contact regarding all associated environmental actions related to Receiver owned and operated CWA, SDWA, and CAA facilities. Receiver will in a timely manner, provide Supplier all necessary information and support required to obtain, maintain, or renew permits covering Receiver activities except that Receiver will procure and obtain all permits required for its facilities for construction and SDWA, CWA, and CAA permits. Non-Reimbursable.

19. Receiver will not commence any activities until the permit is formally approved (e.g. construction), and will immediately notify Supplier of any Receiver activity that may constitute a permit violation. Receiver will notify Supplier and obtain Supplier's prior approval for all new, modified or decommissioned pollution sources or regulated activities on the installation used by Receiver or its contractors. Examples include, but are not limited to, well closures, tank removals, and use of temporary sources such as generators. Reimbursable.

20. Receiver will provide in a timely manner, any information that relates to Receiver's activities that might have an impact upon the installations air conformity status. Non-Reimbursable.

21. Receiver will fully cooperate with the implementation of the Environmental Restoration Program, and notify Supplier in advance of any Receiver activities affecting the Environmental Restoration Program. Reimbursable for any expenses supplier incurs to investigate and remediate any environmental contamination as a result of the receiver's activities. Non-Reimbursable.

22. Receiver will immediately report all hazardous waste or hazardous material releases to the installation emergency response activity, and fully cooperate with any emergency response in accordance with Supplier plans and directives. Receiver will clean up small spills if it can be done safely and is within their capabilities to do so. Generally, a spill of only a few gallons will be recovered by the Receiver using absorbent materials or a Spill Kit. Recovered product and contaminated materials will be packaged and staged for disposal in accordance with Suppliers hazardous waste procedures. Reimbursable for remediation and disposal of materials and contract

28. (Planning) In accordance with item 9 above, the Supplier will evaluate all proposed construction, building renovation, and proposed changes in use of Facilities described in the ISSA for conformance with the National Environmental Policy Act (NEPA) and a determination of any environmental permit requirements. The Supplier must review and approve any Receiver produced NEPA document following the Army National Guard format.

29. (Environmental Management Systems) The Supplier shall recognize that Receiver maintains its own Environmental Management System (EMS) program. However, the Supplier will provide the Receiver with the opportunity to participate in the installation's EMS program.

costs, not for Air Force personnel.

23. Receiver will participate in exercises conducted by Supplier. Receiver shall conduct its own exercise scenarios at a minimum of once per year and provide and after action report to the Supplier no later than 30 calendar days after conducting the exercise. Reimbursable for exercises that are unique to the Receiver's organization.

24. Receiver will provide Supplier with timely comments or positions on the propriety of any enforcement action, including civil fines and penalties. Non-reimbursable.

25. Receiver will assist Supplier as needed in all efforts to resolve enforcement actions, including payment of civil fines or penalties. In addition, Receiver will take appropriate action to correct the violation that led to, or contributed to, the enforcement action. Reimbursable.

26. Where resolution of enforcement actions, fines, or penalties involve implementation of Supplemental Environmental Projects (SEP's), Receiver will provide Supplier with a list of all projects, which may qualify as a SEP. Reimbursable for any expenses supplier incurs to implement SEPs due to environmental contamination from the receiver's activities.

27. For all fines and penalties for which Receiver is determined to be responsible and which are paid directly by Supplier, Receiver shall promptly transfer funds to Supplier for payment of such fines or penalties. Reimbursable.

28. The Receiver will provide the Supplier with plans and specifications of any proposed facility change during the term of the ISSA at least ninety days prior to the award of any contract to allow the Supplier to determine NEPA compliance and permit requirements. The Receiver is responsible for conducting all NEPA analysis and obtaining any permits for the proposed action. Timely coordination with the Supplier is required. The supplier will review and approve all permit applications before they are submitted to regulatory agencies for approval. The Receiver shall produce all NEPA documents including Records of Environmental Consideration, NEPA Checklists, Environmental Assessments, and Environmental Impact Statements in accordance with the most current National Guard Bureau NEPA Handbook. The Receiver shall provide a copy of any NEPA document to the Supplier for their review and approval. Non-Reimbursable.

29. The Receiver will continue to implement its own EMS program and participate in any EMS assessment conducted by the Supplier. The Receiver will participate in the installation EMS program. The Receiver shall provide any EMS findings to the Supplier no later than 30 calendar days from

conducting the assessment. The Receiver will incorporate the Supplier's EMS principles and procedures into their facility's operations. Non-Reimbursable.

1.1 Appendix M- Rare, Threatened, and Endangered Species

Installation	Common Name	Scientific Name	Federal Status	State Status
Atlantic City Armory	-	-	-	-
Bordentown Warrior Transition Center	Bald Eagle	*Haliaeetus leucocephalus*		Endangered
	Cooper's Hawk	*Accipiter cooperii*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Few-flower Tick-trefoil	*Desmodium pauciflorum*		Endangered
	Spotted-sheath Panic Grass	*Panicum dichotomum*		Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	
Bridgeton Armory	Northern Long-Eared Bat	*Myotis septentrionalis*	Endangered	
	Swamp Pink	*Helonias bullata*	Threatened	
	Pink Streak	*Faronta rubripennis*		Rare
Cape May Armory/FMS	Cope's Gray Treefrog	*Hyla chrysoscelis*		Endangered
	Eastern Tiger Salamander	*Ambystoma Tigrinum Tigrinum*		Endangered
	Red Knot	*Calidris canutus rufa*		Threatened
	Bald Eagle	*Haliaeetus Leucocephalus*		Endangered
	Black Skimmer	*Rynchops niger*		Endangered
	Barred Owl	*Strix varia*		Threatened
	Black-Crowned Night Heron	*Nycticorax Nycticorax*		Threatened
	Cattle Egret	*Bubulcus ibis*		Threatened
	Common Tern	*Sterna hirundo*		Threatened
	Cooper's Hawk	*Accipiter Cooperii*		SOC
	Glossy Ibis	*Plegadis Falcinellus*		SOC
	Great Blue Heron	*Ardea Herodias*		SOC
	Gull-Billed Tern	*Gelochelidon nilotica*		SOC
	Little Blue Heron	*Egretta Caerulea*		SOC
	Osprey	*Pandion Haliaetus*		SOC
	Snowy Egret	*Egretta Thula*		SOC
	Tricolored Heron	*Egretta Tricolor*		SOC

Installation	Common Name	Scientific Name	Federal Status	State Status
Cape May Armory/ FMS cont…	Yellow-Crowned Night-Heron	*Nyctanassa Violacea*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Endangered	
	Moth	*Cucullia Alfarata*		Threatened
	American Chaffseed	*Schwalbea Americana*	Endangered	
	Swamp Pink	*Helonias Bullata*	Threatened	
Cherry Hill Armory	-	-	-	-
Dover Armory	Great Blue Heron	*Ardea herodias*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Bobcat	*Lynx rufus*		Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	
	Wood turtle	*Clemmys insculpta*		Endangered
Flemington Armory	Blue-headed Vireo	*Vireo solitaries*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Northern Parula	*Parula americana*		SOC
	Veery	*Catharus fuscenscens*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
Fort Dix	Great Blue Heron	*Ardea herodias*		SOC
	Northern Parula	*Parula americana*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	American Chaffseed	*Schwalbea americana*	Threatened	
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	
	Jefferson Salamander	*Ambystoma jeffersonianum*		SOC
	Bald Eagle	*Haliaeetus leucocephalus*		Endangered

Installation	Common Name	Scientific Name	Federal Status	State Status
Fort Dix cont…	Northern Goshawk	*Accipiter gentilis*		Endangered
	Red-shouldered Hawk	*Buteo lineatus*		Endangered
	Barred Owl	*Strix varia*		Threatened
	Black-billed Cuckoo	*Coccyzus erythropthalmus*		SOC
	Blackburnian Warbler	*Dendroica fusca*		SOC
	Black-throated Blue Warbler	*Dendroica caerulescens*		SOC
	Black-throated Green Warbler	*Dendroica virens*		SOC
	Brown Thrasher	*Toxostoma rufum*		SOC
	Canada Warbler	*Wilsonia Canadensis*		SOC
	Cerulian Warbler	*Dendroica cerulia*		SOC
	Cooper's Hawk	*Accipiter cooperii*		SOC
	Golden-winged Warbler	*Vermivora chrysoptera*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Least Flycatcher	*Empidonax minimus*		SOC
	Veery	*Catharus fuscescens*		SOC
	Winter Wren	*Trolodytes troglodytes*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Worm Eating Warbler	*Helmitheros vermivorum*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Bobcat	*Lynx rufus*		Endangered
	Tricolored Bat	*Perimyotis subflavus*	Candidate	
	Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered	
	Small Whorled Pogonia	*Isotria medeoloides*	Threatened	
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Endangered
	Wood Turtle	*Glyptemys insculpta*		Endangered
Freehold Armory	-	-	-	-

Installation	Common Name	Scientific Name	Federal Status	State Status
Hackettstown Armory	Barred Owl	*Strix varia*		Threatened
	Brown Thrasher	*Toxostoma rufum*		SOC
	Cerulean Warbler	*Dendroica cerulean*		SOC
	Cooper's Hawk	*Accipiter cooperii*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Hooded Warbler	*Wilsonia citrina*		SOC
	Veery	*Catharus fuscescens*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Worm Eating Warbler	*Helmitheros vermivorum*		SOC
	Arrowhead Spiketail	*Cordulegaster obligua*		SOC
	Tiger Spiketail	*Cordulegaster erronea*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	Endangered
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Bobcat	*Lynx rufus*		Endangered
	Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered	Endangered
	Swamp pink	*Helonias bullata*	Threatened	Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Endangered
Hammonton Armory	Bald Eagle	*Haliaeetus leucocephalus*		Endangered
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	Threatened
	American caffseed	*Schwalbea americana*	Endangered	
	Knieskern's Beaked-Rush	*Rhynchospoea knieskernii*	Threatened	Endangered
	Reversed Bladderwort	*Utricularia resupinata*		Endangered
	Swamp Pink	*Helonias bullata*	Threatened	Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Endangered
Jersey City Armory	-	-	-	-
Lakehurst CLTF	Barred Owl	*Strix varia*	Candidate	Threatened
	Black-throated Green Warbler	*Dendroica virens*		SOC
	Brown Thrasher	*Toxostoma rufum*		SOC
	Great Blue Heron	*Ardea herodias*		SOC

Installation	Common Name	Scientific Name	Federal Status	State Status
Lakehurst CLTF cont…	Worm-eating Warbler	*Helmitheros vermivorum*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	Threatened
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Threatened
	Northern Pine Snake	*Pituophis melanoleucus*		Threatened
	Pine Barrens Tree Frog	*Hyla andersonii*		Threatened
	Timber Rattlesnake	*Crotalus horridus*	Endangered	
	Dotted Skipper	*Hesperia attalus slossonae*		SOC
	New Jersey Pine Barrens Tiger Beetle	*Cicindela patruela consentanea*		SOC
	American chaffseed	*Schwalbea american*	Endangered	
	Knieskern's Beaked-rush	*Phynchospora knieskerni*	Threatened	
	Swamp pink	*Helonias bullata*	Threatened	
Lawrenceville Armory	Bald Eagle	*Haliaeetus leucocephalus*		Endangered
	Cooper's Hawk	*Accipiter cooperii*		SOC
	Great Blue Heron	*Ardea Herodias*		SOC
Lodi Armory	-	-	-	-
Mercer Armory	Great Blue Heron	*Ardea herodias*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*		Threatened
Morristown Armory	Canada Warbler	*Wilsonia Canadensis*		SOC
	Cooper's Hawk	*Accipiter cooperii*		SOC
	Hooded Warbler	*Wilsonia citrine*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Veery	*Catharus fuscescens*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	Endangered
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Long Dash	*Polites mystic*		SOC

Installation	Common Name	Scientific Name	Federal Status	State Status
Morristown Armory cont…	Tiger Spiketail	*Cordulegaster erronea*		SOC
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	
	Wood Turtle	*Glyptemys insculpta*		Threatened
Mount Holly Armory	-	-	-	-
Newark Armory	-	-	-	-
New Egypt- Former UTES	Barred Owl	*Strix varia*		Threatened
	Great Blue Heron	*Ardea herodias*		SOC
	Argos Skipper	*Atrytone arogos*		Endangered
	Bucholz's Gray	*Hypomecis buchholzaria*		SOC
	Coastal Bog Metarranthis	*Metarranthis pilosaria*		SOC
	Dotted Skipper	*Hesperia attalus slossonae*		SOC
	Hand-maid Moth	*Datana ranaeceps*		SOC
	Silver-bordered Fritillary	*Boloria selene myrina*		Threatened
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	American Chaffseed	*Schwalbea americana*	Endangered	
	Knieskern's Beaked-rush	*Rhynchospora knieskernii*	Threatened	Endangered
	Swamp Pink	*Helonias bullata*	Threatened	Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Endangered
	Northern Pine Snake	*Pituophis melanoleucus melanoleucus*		Threatened
	Timber Rattlesnake	*Crotalus horridus*		Endangered
	Wood Turtle	*Glyptemys insculpta*		Endangered
Picatinny FMS	Barred Owl	*Strix varia*		Threatened
	Blackburnian Warbler	*Dendroica fusca*		SOC
	Black-throated Green Warbler	*Dendroica virens*		SOC
	Blue-headed Vireo	*Vieo solitarius*		SOC
	Canada Warbler	*Wilsonia Canadensis*		SOC
	Cerulean Warbler	*Dendroica cerulia*		SOC

Installation	Common Name	Scientific Name	Federal Status	State Status
Picatinny FMS cont…	Cooper's Hawk	*Accipiter cooperii*		SOC
	Golden-winged Warbler	*Vermivora chrysoptera*		Endangered
	Great Blue Heron	*Ardea herodias*		SOC
	Hooded Warbler	*Wilsonia citrina*		SOC
	Northern Goshawk	*Accipiter cooperii*		Endangered
	Red-headed Woodpecker	*Melanerpes erythrocephalus*		Threatened
	Red-shouldered Hawk	*Buteo lineatus*		Endangered
	Veery	*Catharus fuscescens*		SOC
	Winter Wren	*Trolodytes troglodytes*		SOC
	Wood Thrush	*Hylocichla mustelina*		SOC
	Worm Eating Warbler	*Helmitheros vermivorum*		SOC
	Arrowhead Spiketail	*Cordulegaster obliqua*		SOC
	Brush-tipped Emerald	*Somatochlora walshii*		SOC
	Long Dash	*Polites mystic*		SOC
	New England Bluet	*Enalagma laterale*		SOC
	Sable Clubtail	*Gomphus rogersi*		SOC
	Ski-tailed Emerald	*Somatochlora elongata*		SOC
	Spatterdock Darner	*Rhionaeschna*		SOC
	Williamson's Emerald	*Somatochlora williamsoni*		SOC
	Indiana bat	*Myotis sodalist*	Endangered	Endangered
	Northern long-eared Bat	*Myotis septentrionalis*	Endangered	
	Bobcat	*Lynx rufus*		Endangered
	Floatingheart	*Nymphoides cordata*		SOC
	Purple Bladderwort	*Utricularia purpurea*		SOC
	Robbin's Pondweed	*Potamogeton robbinsii*		Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	

Installation	Common Name	Scientific Name	Federal Status	State Status
Picatinny FMS cont…	Northern Copperhead	*Agkistrodon contortrix mokasen*		SOC
	Timber Rattlesnake	*Crotalus horridus horridus*		Endangered
	Wood Turtle	*Glyptemys insculpta*		Threatened
Princeton Warehouse	Red-headed Woodpecker	*Melanerpes erythrocephalus*		Threatened
	Great Blue Herron	*Ardea herodias*		SOC
	Bald Eagle	*Haliaeetus leucocephalus*		Endangered
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Endangered	
	Robbin's Pondweed	*Potamogeton robbinsii*		Endangered
Riverdale Armory	-	-	-	-
Somerset Armory/FMS	-	-	-	-
Teaneck Armory/FMS	-	-	-	-
Toms River Armory	Common Tern	*Sterna hirundo*		SOC
	Glossy Ibis	Plegadis falcinellus		SOC
	Little Blue Heron	Egretta Caerulea		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Red-shouldered Hawk	*Buteo lineatus*		SOC
	Snowy Egrert	*Egretta Thula*		SOC
	Tricolored Heron	*Egretta tricolor*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Knieskern's Beaked-Rush	*Rhynchospora knieskernii*	Threatened	Endangered
	Swamp Pink	*Helonias bullata*	Threatened	Endangered
Tuckerton Armory	Red Knot	*Calidris canutus rufa*	Threatened	
	Black Skimmer	*Rynchops Niger*		Endangered
	Black-Crowned Night Heron	*Nycticorax Nycticorax*		Threatened
	Caspian Tern	*Hydroprogne Caspia*		SOC
	Common Tern	*Sterna Hirundo*		SOC
	Glossy Ibis	*Plegadis Falcinellus*		SOC
	Gull-Billed Tern	*Gelochelidon Nilotica*		SOC
	Little Blue Heron	*Egretta Caerulea*		SOC
	Osprey	*Pandion Haliaetus*		Threatened

Installation	Common Name	Scientific Name	Federal Status	State Status
Tuckerton Armory cont…	Snowy Egret	*Egretta Thula*		SOC
	Tricolored Heron	*Egretta Tricolor*		SOC
	Northern Long-Eared Bat	*Myotis septentrionalis*	Endangered	
	Crested Yellow Orchid	*Platanthera Cristata*		SOC
	Whorled Marsh-pennywort	*Hydrocotyle Verticillata var. verticillata*		SOC
	Marsh Rattlesnake-master	*Eryngium Aquaticum var. aquaticum*		SOC
	Awned Mountain-Mint	*Pycnanthemum Setosum*		SOC
	Swamp Pink	*Helonias bullata*	Threatened	
	Red Milkweed	*Asclepias Rubra*		SOC
Vineland Armory/FMS	Brown Thrasher	*Toxostoma rufum*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	Threatened
	Coastal Bog Metarranthis	*Metarranthis pilosaria*	Threatened	Endangered
	Swamp Pink	*Helonias bullata*	Threatened	Endangered
Washington (Port Murray) Armory	American Kestrel	*Falco sparverius*		Threatened
	Bobolink	*Dolichonyx oryzivorus*		Threatened
	Savannah Sparrow	*Passerculus sandwichensis*		Threatened
	Indiana bat	*Myotis sodalist*	Endangered	
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	Endangered
	Wood Turtle	*Glyptemys insculpta*		Threatened
West Orange Armory/CSMS/Computer Shop	Great Blue Heron	*Ardea Herodias*		SOC
	Northern Long-eared bat	*Myotis Septentrionalis*	Endangered	
	Indiana Bat	*Myotis Sodalis*	Endangered	Endangered
	Bog Turtle	*Clemmys Muhlenbergii*	Threatened	Endangered
Westfield Armory/FMS	-	-	-	-
Woodbridge Armory	-	-	-	-
Woodbury Armory	-	-	-	-
Woodstown Armory	Bobolink	*Dolichornyx oryzivorus*		Threatened

Installation	Common Name	Scientific Name	Federal Status	State Status
Woodstown Armory cont…	Eastern Meadowlark	*Sturnella magna*		SOC
	Great Blue Heron	*Ardea herodias*		SOC
	Horned Lark	*Eremophila alpestris*		Threatened
	Upland Sandpiper	*Bartramia longicauda*		SOC
	Northern long-eared Bat	*Myotis septentrionalis*	Threatened	
	Swamp Pink	*Helonias bullata*	Threatened	Endangered
	Bog Turtle	*Clemmys muhlenbergii*	Threatened	

BR = breeding population, NB = nonbreeding population, SOC= Species of Concern

Sources: USFWS 2013, NJDEP 2013b, NJDEP 2013c

Threatened and Endangered Nesting Birds and Plants at Sea Girt NGTC

Common Name	Scientific Name	Federal Status	State Status	General Location
Osprey	*Pandion haliaetus*		T (BR)	Adjacent to Stockton Lake
Least tern	*Sterna antillarum*		E	Beach
Piping plover	*Charadrius melodus*	T	E	Beach
Seabeach amaranth	*Amaranthus pumilus*	T	E	Beach
Seabeach knotweed	*Polygonum glaucum*		E	Beach

Source: NJARNG 2013
T = threatened, E = endangered, BR = breeding population only.

Other Rare Species with Potential to Occur at Sea Girt NGTC

Although the following rare nesting bird and plant species have not been documented nesting/growing at Sea Girt NGTC, they might colonize the beach in the future, based on the availability of potentially suitable habitat. Each of the rare bird species have been documented on site, however are not known to have nested at the installation (NJARNG 2013):

- American oystercatcher (*Haematopus palliatus*) – beach-nesting shorebird, state Species of Special Concern
- Black skimmer (*Rynchops niger*) – colonial beach-nesting sea bird, state-listed as endangered
- Common tern (*Sterna hirund)* – beach-nesting sea bird, state Species of Special Concern
- Seabeach evening primrose (*Oenothera humifusa*) – beach and dune habitats, state-listed as endangered
- Sea-milkwort (*Glaux maritima*) – beach and salt marsh habitats, state-listed as endangered
- Seabeach sandwort (*Honckenya peploides*) – beach and dune habitats, state Species of Special Concern; and Seabeach purslane (*Sesuvium maritimum*) – beach habitats, state Species of Special Concern.

13.14 Appendix N- Pesticide Spill Cleanup Management

PURPOSE. To outline procedures for the containment, cleanup and decontamination of pesticide spills and the safety precautions associated with these operations.

2. GENERAL.

a. Extreme caution shall be exercised by the New Jersey Army National Guard (NJARNG) personnel and contractors applying pesticides on NJARNG facilities to prevent spillage of pesticides during storage, transportation, mixing, application or any other handling of pesticides.

b. All pesticide spills shall be handled in accordance with this Appendix and applicable Spill Contingency Plans.

c. A pesticide spill cleanup kit will be maintained in buildings where pesticides are stored. Contents of the kit are given in paragraph 3.j., this Appendix. The cleanup kit shall be used to cleanup pesticide spills anywhere on the installation.

d. Spill cleanup personnel must wear appropriate protective clothing and respiratory protective equipment while cleaning up a pesticide spill. Spill cleanup and rescue personnel must wear appropriate protective clothing and respiratory protective equipment while conducting a rescue of injured and/or contaminated personnel. Protective clothing and equipment are available from NJARNG personnel responsible for pest control.

3. PROCEDURES. When a pesticide spill occurs or is discovered, the following procedures must be followed:

a. Reporting. All pesticide spills shall be immediately reported to the NJARNG Environmental Officer. Any need for first aid or fire equipment must be reported. If a "reportable quantity" of the pesticide has been spilled, spill containment, cleanup and reporting procedures specified in NJARNG spill contingency plan will be initiated immediately.

b. Identification. Identify the pesticide involved in the spill. Retain the container and label for the Facility Manager or armory maintenance personnel.

c. Care of Injured and/or Contaminated Personnel. Immediately determine if any Pest Controllers or other individuals are injured and/or contaminated.

(1) Remove injured and/or contaminated personnel from the spill site to a safe area upwind from the spill.

(2) If necessary, remove contaminated clothing from the victim and wash all contamination off the victim using soap and water.

(3) Seek and/or administer first aid for the injured and/or contaminated personnel which may include flushing contaminated eyes with clean water for 15 minutes. Remember that exposure by inhalation may be an important factor.

d. Site Security. Secure the spill site from entry by unauthorized personnel by roping off the area and posting warning signs.

e. Containment and Control.

(1) If the pesticide container is still leaking, prevent further leakage by repositioning the pesticide container or repackaging.

(2) Prevent the spill from spreading by trenching or encircling the area with a dike of sand, absorbent material, or, as a last resort, soil or rags.

(3) Cover the Spill: If the spill is liquid, use an absorbent material; if dry material, use a polyethylene or plastic tarpaulin and secure. Note: Use absorbent materials sparingly as they must be disposed of as hazardous wastes.

f. Cleanup. Adequate cleanup of spilled pesticides is essential in order to remove any health or environmental hazards. When cleaning up pesticide spills, it is advisable not to work alone and to make sure the area is properly ventilated.

(1) Dry spills (dusts, wettable powders, granular formulations) should be picked up in the following manner:

(a) Immediately cover dry spills to prevent them from becoming airborne (if indoors, a cover may not be necessary). This can be done by placing a polyethylene or plastic tarpaulin over the spilled material. Weight the edges of the tarp. Simultaneously roll the tarp and sweep up the spilled pesticide using a broom, shovel or dust pan. Do not allow the pesticide to become airborne while sweeping.

(b) Collect the pesticide and place it in heavy duty plastic bags. Properly secure and label the bags, identifying the pesticide. Set the bags aside for later disposal.

(2) Liquid spills should be cleaned up in the following manner:

(a) Place an appropriate absorbent material (floor sweeping compound, sawdust, kitty litter, etc.) over the spilled pesticide. Work the absorbent into the spill using a broom or other tool to force the absorbent into close contact with the spilled pesticide.

(b) Collect all of the spent absorbent material and place into a properly labeled leak-proof container (e.g. a heavy duty plastic bag). Set the containers aside for later disposal.

(c) Contaminated soil should be removed to a depth of at least three inches below the wet surface line and placed in properly labeled leak-proof drums for disposal.

g. Decontamination.

(1) Decontamination solutions can be used for decontaminating surfaces and materials where spills of dust, granular, wettable powders, or liquid pesticides have occurred. The bulk of the spilled pesticide should be cleaned up or removed prior to applying any decontaminant.

(2) Several materials may be used to decontaminate pesticides. Due to the many different pesticides available and the necessity to use the correct decontamination material, all decontamination activities must be carried out only after appropriate decontamination methods have been determined by the NJARNG Environmental Officer or the Spill Response Team. Many pesticides,

especially the organophosphates, decompose when treated with lye or lime. Fewer pesticides are decomposed by bleach. Other pesticides cannot be effectively decontaminated and should only be treated with detergent and water to assist in removal. See the table below for guidance on decontaminating certain pesticides.

(a) Pesticides amenable to treatment using lye or lime may be decontaminated when mixed with an excess quantity of either of these materials. Lye or lime can be used in either the dry form or as a 10% solution in water. CAUTION: caustic soda (lye) can cause severe eye damage to personnel not properly protected. Protect against contact by wearing unventilated goggles, long sleeved work clothes with coveralls, neoprene or nitrile gloves, and a chemical resistant apron. An approved respirator should also be worn. Do not use lye on aluminum surfaces.

(b) For pesticides that can be degraded by treatment with bleach, in general use one gallon of household bleach (which contains approximately 5% sodium hypochlorite) per pound or gallon of pesticide spilled. If dry decontaminants are used, first spread them thinly and evenly over the spill area. Then using a watering can, lightly sprinkle the area with water to activate the decontaminant. For safety reasons, a preliminary test must be run using small amounts of bleach and the spilled pesticide. The reaction resulting from this test must be observed to make sure the reaction is not too vigorous. Do not store in close proximity to, or mix chlorine bleach with amine containing pesticides. Mingling of these materials can cause a violent reaction resulting in fire. Calcium hypochlorite is not recommended as a decontaminating agent because of the fire hazard.

(c) Spilled granular/bait materials need to be swept up only. When there is doubt concerning which decontaminant is appropriate, only water and a detergent should be used.

Pesticide Decontaminants

Use Lye or Lime For:		Use Chlorine Bleach For:	Don't use any Chemicals For:	
Atrazine	EPN	Calcium cyanamide	Alachlor	hloramben
Propoxur	Dimethoate	Calcium cyanide	Diuron	2,4-D
Captan	Carbaryl	Chlorpyrifos	Maneb	Methoxychlor
Diazinon	Temephos	Fonophos	Picloram	Toxaphene
Naled	Malathion	Merphos	Trifluralin	
Acephate	TCA	Lethane	Pentachlorophenol	
Rotenone	Cyanazine		Chlorinated hydrocarbons	
Dalapon	Dichlorvos			

A practical guide for applying decontaminants is as follows:

Percent Active Ingredient	Amount of Decontaminant Needed
1-10	Use an amount of decontaminant equal to the quantity of pesticide spilled.
11-79	Use an amount of decontaminant equal to 1.5 times the quantity of pesticide spilled.
80-100	The amount of decontaminant should be equal to twice the quantity of pesticide spilled.

WARNING: There is a slight potential for creating toxic by-products when using these procedures. In critical situations, samples of affected soil, sediment, water, etc. should be sent to a laboratory for analysis to determine if decontamination was successful. Information or assistance for laboratory analyses may be obtained from the USAPHC, Entomological Sciences Program, DSN: 584-3773/3613 or commercial (410) 436-3773/3613.

(3) Nonporous surfaces should be washed with detergent and water. The decontamination solution determined to be correct should be thoroughly worked into the surface. The decontamination solution should then be soaked up using absorbent material. The spent absorbent material is then placed into a labeled leak-proof container for disposal.

(4) Porous materials such as wood may not be adequately decontaminated. If contamination is great enough to warrant, these materials should be replaced. This is especially important for oil based formulations.

(5) Tools, vehicles, equipment and any contaminated metal or other nonporous objects can be readily decontaminated using detergent and the appropriate decontamination solution.

h. Disposal. All contaminated materials that cannot be effectively decontaminated as described above must be placed in properly labeled, sealed, leak-proof containers. Disposal of these containers shall be in accordance with instructions determined by the NJARNG Environmental Officer.

i. Supervision. All containment and control, cleanup, decontamination and disposal activities shall be carried out under the direct supervision of the certified Pest Controller or Spill Response Team.

j. The pesticide spill kits for NJARNG pesticide storage areas shall contain those items listed below.

4. EMERGENCY TELEPHONE NUMBERS. Appendix C lists points of contact and their telephone numbers. CHEMTREC can be called for assistance in the event of a pesticide spill, leak or exposure using their toll-free number: (800) 424-9300.

5. REFERENCES.

a. Armed Forces Pest Management Board Technical Information Memorandum No. 15: Pesticide Spill Prevention and Management, June 1992.

b. Appendix F, Points of Contact.

LARGE PESTICIDE SPILL KIT	SMALL PESTICIDE SPILL KIT
1 - COPY OF THIS APPENDIX 1 - 55-GALLON OPEN-HEAD DRUM 1 50-POUND BAG OF ABSORBENT MATERIAL 2 - PAIRS OF NEOPRENE OR NITRILE GLOVES 2 - RESPIRATORS WITH PESTICIDE CARTRIDGES 2 - PAIRS OF RUBBER BOOTS 2 - APRONS (CHEMICAL RESISTANT) 3 - 1-GALLON JUG OF HOUSEHOLD BLEACH 1 - 25-POUND CONTAINER OF LIME 1 - 1-GALLON JUG OF LIQUID DETERGENT 1 - 24-INCH PUSH BROOM 1 - SQUARE POINT "D" HANDLE SHOVEL 1 - SHOP BRUSH (DUST PAN BRUSH) 1 - DUST PAN 12 - 30-GALLON POLYETHYLENE BAG W/TIES 1 - FIRST AID KIT	1 - 5-GALLON, OPEN-HEAD DRUM 10 - POUNDS OF ABSORBENT MATERIAL 1 - 5-POUND CONTAINER OF LIME 2 - PAIRS OF NEOPRENE OR NITRILE GLOVES 1 - SHOP BRUSH (DUST PAN BRUSH) 1 - DUST PAN 4 - 30-GALLON POLYETHYLENE BAG W/TIES 1 - 1-QUART OR EQUIVALENT QUANTITY CONTAINER OF HOUSEHOLD BLEACH 1 - 1-PINT OR EQUIVALENT QUANTITY CONTAINER OF LIQUID DETERGENT

WHENEVER ANY OF THE ITEMS FROM THE PESTICIDE SPILL KITS ARE USED, THEY SHALL BE CLEANED AND/OR REPLACED.

13.15 Appendix O- NJ Pests of Emerging Concern

FAQ Sheets and Resources

Emerald Ash Borer

State of New Jersey
Department of Environmental Protection

news releases

FOR IMMEDIATE RELEASE
May 19, 2016

Contact: Lawrence Hajna (609) 984-1795
Caryn Shinske (609) 984-1795
Rob Geist (609) 633-7588

DEPARTMENT OF ENVIRONMENTAL PROTECTION LAUNCHES AGGRESSIVE PROGRAM TO PROTECT STATE-OWNED LANDS FROM EMERALD ASH BORER INFESTATION

(16/47) TRENTON – The New Jersey Division of Parks and Forestry is targeting state-owned lands in at least nine counties for aggressive emerald ash borer prevention measures in a comprehensive effort to stem the spread of the destructive insect and protect the beauty and health of wooded landscapes, Department of Environmental Protection Commissioner Bob Martin announced today.

DEP foresters are working with the New Jersey Department of Agriculture, U.S. Department of Agriculture and Rutgers University as part of the New Jersey Emerald Ash Borer Task Force, which is coordinating efforts with municipalities and counties to protect trees on state lands and communities that surround them.

"The Department of Environmental Protection is committed to working closely with all of our partners to vigorously attack the spread of this destructive insect," said Commissioner Martin. "Ash trees make up a considerable component of our forested lands. They also beautify streets, parks and yards in hundreds of communities."

"The Emerald Ash Borer Task Force has proactively worked for the last two years to raise awareness of the threat to New Jersey ash trees from the emerald ash borer," said New Jersey Secretary of Agriculture Douglas H. Fisher.

New Jersey's population of ash trees is estimated at 24.7 million and they are a significant component of the state's landscape, making up nearly a quarter of New Jersey's forested lands. The greatest numbers of ash trees are found in central and northern New Jersey.

The DEP's prevention efforts on state lands consists of aggressive monitoring through traps, ground and aerial surveillance, and targeted pesticide treatment to prevent infestation in vulnerable areas threatened by spread of the invasive insect, a native of Asia.

The locations targeted for these efforts include Liberty State Park, Hudson County; Round Valley Recreation Area, Hunterdon County; Hermitage Museum, Bergen County; Ringwood State Park, Passaic County; Delaware & Raritan Canal State Park, Somerset, Middlesex and Mercer counties; Swartswood State Park, Sussex County; Hopatcong State Park, Morris County; and Washington Crossing State Park, Mercer County.

Foresters have checked ash trees in these areas and found them to be in good health. But without treatment, the trees would be susceptible to infestation from emerald ash borers, which the U.S. Department of Agriculture calls a "significant threat to our urban, suburban, and rural forests." Infestation can kill a tree in three years.

The emerald ash borer is currently active in 14 towns in six counties: Hillsdale, Bergen County; Edgewater Park and Westampton, Burlington County; Ewing, Hamilton Township, Hopewell, Princeton, West Windsor, Mercer County; Monroe and South Brunswick, Middlesex County; Bridgewater, Franklin Township and Hillsborough, Somerset County; and Allentown, Monmouth County.

The Department of Agriculture this week began its trapping program, placing purple, sticky traps in areas surrounding those where EAB is active. The Department is seeking volunteers for trap placement this year. If interested, please call Joseph Zoltowski at 609-406-6939.

In addition, in an effort to protect the state's ash trees, the Department of Agriculture this week began a program to release biocontrol parasitoids for EAB in areas of Mercer and Somerset counties. Releases will be made every two weeks throughout the beetle's active season.

The Department of Agriculture confirmed the state's first emerald ash borer infestation in Bridgewater Township, Somerset County in 2014. By fall of 2015, infestations were also found in Bergen, Burlington, Mercer, Middlesex, and Monmouth counties.

The tiny beetle, smaller than a penny and with metallic-green wings, was first discovered in the United States in 2002, in Michigan. Since then, the beetle has killed hundreds of millions of ash trees in North America, with some of the heaviest losses in the Midwest and Southeast.

"Protecting New Jersey's trees and forests from the damaging effects of the emerald ash borer is critical to preserving our natural resources," said Assistant Director of Parks and Forestry/State Forester John Sacco. "We must take these proactive measures now to ensure the health and safety of our trees, and to those who visit our wooded areas to enjoy nature."

Ash trees can be infested by the emerald ash borer years before the tree begins to show symptoms of infestation, which begins when female beetles lay eggs on the bark of ash trees. The eggs hatch and larvae bore into the bark to vessels underneath that carry fluid.

As the larvae feed and develop, they cut off the flow of nutrients, eventually killing the tree within three to five years. Symptoms of infestation include canopy dieback, woodpecker activity, missing bark, D-shaped exit holes, shoots sprouting from the trunk, and S-shaped larval galleries under the bark.

If an ash tree is already infested or in poor health, it may be best to remove the tree before it poses a hazard to people and surrounding structures, Sacco said. Communities, businesses and residents with high-value, healthy ash trees can treat the trees before any infestation occurs.

Anyone who sees emerald ash borer or suspected evidence of tree damage is urged to call the New Jersey Department of Agriculture as soon as possible at (609) 406-6939 or a DEP forest health specialist at (609) 984-3861.

A Certified Tree Expert can help evaluate, treat or remove impacted ash trees. Call the Board of Certified Tree Experts at (732) 833-0325 or e-mail njtreeexperts@gmail.com for a list of tree professionals serving your area.

As part of its coordinated effort with towns and counties, DEP has provided an Action Kit with printable materials, templates, and other guidance for managing ash trees.

For more information from the DEP on how to identify emerald ash borers, the damage they cause and tips to control the pest, visit:
http://www.state.nj.us/dep/parksandforests/forest/community/Emerald_Ash_Borer.htm

For more information on the emerald ash borer from the New Jersey Department of Agriculture, visit:
www.emeraldashborer.nj.gov

For a national perspective on emerald ash borer, visit: http://na.fs.fed.us/fhp/eab/

13.16 Appendix P- Annual Updates

JAN 2019- IPM update complete.