INTEGRATED PEST MANAGEMENT PLAN

FOR

U.S. ARMY GARRISON

YUMA PROVING GROUND

YUMA, ARIZONA

July 2021

INTEGRATED PEST MANAGEMENT PLAN
FOR
U.S. ARMY GARRISON
YUMA PROVING GROUND

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USAG YUMA PROVING GROUND

INTEGRATED PEST MANAGEMENT PLAN
FOR
U.S. ARMY YUMA PROVING GROUND,
YUMA, ARIZONA

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EXECUTIVE SUMMARY

U.S. Army Yuma Proving Ground (USAYPG) consists of approximately 1,310 square miles located in the Sonoran Desert in southwestern Arizona. As part of the Army's Test and Evaluation Command (ATEC), USAYPG is responsible for planning, conducting, and evaluating equipment and munitions and reporting the results to ATEC. USAYPG also reviews testing programs and monitors testing performed by equipment developers, producers, and government contractors. The warm and dry climate allows year-round testing. USAYPG is the Army’s premier hot desert test facility.

The contents of this plan apply to all activities occurring on the installation and to all individuals working, residing or otherwise doing business on the installation. At no time will pest management operations be done in a manner which will cause harm to personnel or the environment. Pest management responsibility will begin with those individuals who occupy or maintain buildings or open space on the installation. Use nonchemical control efforts before using pesticides. This plan will be a working document and will be annually updated to reflect actual pest management practices.

The Integrated Pest Management Plan for USAYPG describes the installation's pest management requirements, outlines the resources necessary for surveillance and control, and describes the administrative, safety and environmental requirements of the program. The program utilizes 1 ½ full-time equivalent (FTE) state licensed Pest Management Technicians, operating under contract, to control pests. Pests included in the plan are weeds and other unwanted vegetation, termites, mosquitoes and other medically significant arthropods, crawling insects (ants, crickets, cockroaches, etc.) and spiders, mice, gophers, and other vertebrate pests. Without control, these pests could interfere with the military mission, damage real property, increase maintenance costs and expose installation personnel to diseases. Actual pest management procedures are found in the Integrated Pest Management Outlines included as Appendix A.

A. BACKGROUND.

1. Purpose

This pest management plan is a framework through which integrated pest management is defined and accomplished on the installation. The plan identifies elements of the program to include health and environmental safety, pest identification, and pest management, as well as pesticide storage, transportation, use and disposal. This plan is to be used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of integrated pest management techniques.

2. Authority.

a. **AR 200-1, *Environmental Protection and Enhancement***, 13 December 2007. Supersedes and replaces AR 200-5, *Pest Management*, and AR 200-3, *Natural Resources – Land, Forest, and Wildlife Management.*

Other applicable Army regulations include:

b. **AR 40-5, *Preventive Medicine***, 12 May 2020 — establishes measures to protect human health from medically important pest related injury and disease, from occupational exposures to pesticides, and other risks from pest management operations.

c. **32 CFR Part 651, *Environmental Analysis of Army Actions*** July 2013 — implements NEPA requirements that assess environmental effects of pest management operations.

d. **AR 350-19, *The Army Sustainable Range Program***, 30 August 2005 — defines responsibilities and prescribes policies for implementing the Sustainable Range Program (SRP) on Army-controlled training ranges and training lands in the CONUS and OCONUS.

e. **AR 608-10, *Child Development Services***, 11 May 2017 — prohibits the use of herbicides around Child Development Centers.

f. **DA Pam 40-11, *Preventive Medicine*,** 18 May 2020 — outlines the goals of the Army's preventive medicine program, introduces traditional preventive medicine

topics including disease prevention and control, covers field preventive medicine and environmental health topics.

3. Program Objective.

This plan provides guidance for operating and maintaining an effective pest management program. Principles of integrated pest management are stressed in the plan. Integrated pest management (IPM) is an approach that considers action thresholds, and, when intervention is cost effective, the judicious use of physical, cultural, biological and/or chemical pest population management 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.

B. RESPONSIBILITIES. See Appendix B for a diagram of the major activities or individuals on the installation involved in the pest management program.

1. Garrison Manager.

a. Designates an Integrated Pest Management Coordinator for all pest management activities.

b. Approves and supports the Integrated Pest Management Plan.

c. Ensures that installation personnel performing pest control receive adequate training and obtain pest management certification as required.

d. Ensures that all pest management operations are conducted safely.

e. Ensures that all pest management operations have minimal impact on the environment.

2. Director of Public Works.

a. Determines the pest management requirements for the installation.

b. Initiates requests for aerial application of pesticides when necessary.

c. Requests and monitors contract pest management operations.

d. Obtains adequate supplies of pesticides and pesticide application equipment and ensures that equipment is properly maintained.

e. Maintains adequate records of pest management operations.

3. U.S. Army Health Clinic Preventive Medicine Service.

a. Conducts surveillance for pests which could adversely affect the health and welfare of individuals visiting, residing, or working on the installation.

b. Coordinates with local health officials to determine the prevalence of disease vectors and other public health pests in the area surrounding the installation.

c. Evaluates the health aspects of the pest management program.

4. Veterinary Services.

a. Conducts surveillance for pests which destroy food stored in installation facilities.

b. Provides advice to companion animal owners concerning pests which may adversely affect their animals.

5. Integrated Pest Management Coordinator.

a. Prepares, monitors, and updates the Installation Pest Management Plan.

b. Coordinates with activities conducting pest surveillance and/or control to ensure all applicable information is recorded and reported as required by this plan. .

c. Functions as a point of contact between those individuals who store and apply pesticides (e.g., Public Works, pest control contractors, tenant activities) and activities or individuals who document or deal with pesticide use in their programs, e.g., Environmental Office, Installation Safety Office, Fire Department, and Industrial Hygienist.

d. Monitors certification and continuing pest management training for pesticide applicators on the installation.

e. Coordinates and monitors contracts dealing with pesticide application and keeps a copy of each contract on file.

f. Coordinates with local, State and Federal agencies, as necessary, to conduct the installation's pest management program.

g. Provides answers to questions concerning pest management from the Senior Commander, Garrison Manager, USAEC Pest Management Consultant and Installation Management Command.

6. Building Occupants.

a. Use good sanitary practices to prevent pest infestations.

b. Cooperate fully with Public Works personnel and contractors in scheduling pest management operations, to include preparing the areas to be treated.

7. Pest Management Personnel.

a. Use integrated pest management techniques.

b. Control pests according to the provisions of this plan.

c. Operate in a manner that minimizes risk of contamination to the environment and personnel.

d. Assure that superiors are kept informed of changes in pest management requirements.

e. Request pest management supplies and equipment in a timely manner.

f. Maintain effective liaison with installation health and environmental officials.

C. GENERAL.

1. Installation Description.

a. U.S. Army Yuma Proving Ground (USAYPG) is located in the southwest corner of Arizona, and occupies portions of both Yuma and La Paz counties. USAYPG is bordered on the west by national wildlife refuge (NWR), Bureau of Land Management (BLM) lands, and the Colorado River. The northernmost boundary of the installation is approximately 10 kilometers (6.2 miles) south of Interstate 10 and the southern boundary roughly parallels Interstate 8 approximately the same distance north. The city of Phoenix lies approximately 241 kilometers (150 air miles) east northeast from the main facility. The city of Yuma (pop. 97,908, 2018 census estimate) is about 42 kilometers (26 miles) south southwest of the main base. Generalized maps of USAYPG can be found in Appendix C.

b. The 467-kilometer (290 miles) perimeter forms an irregular “U” shape. USAYPG originally comprised 361,210 hectares (892,570 acres, or 1395 square miles), but has subsequently been reduced to 339,033 hectares (837,770 acres, or 1309 square miles) in various real property transactions. Additional land transfers may occur in the future.

c. Kofa National Wildlife Refuge is situated within the "U" between the west and east arms of the base. The "U" configuration extends about 58 miles North-South and 54 miles East-West. In addition to the Kofa National Wildlife Refuge (NWR), USAYPG shares its western border with Imperial National Wildlife Refuge and BLM lands. Cibola NWR does not border USAYPG, but is near the western boundary. The remaining boundary is almost entirely shared with BLM, although there are small portions adjacent to state and private lands.

d. The geology, hydrology, climate, major soil association, wetland delineations, biotic characteristics including vegetation, and soil types found on USAYPG are discussed in the Integrated Natural Resource Management Plan (INRMP) (USAYPG 2017). The terrain is basin and range, with steep, very rugged volcanic mountains, bajadas, and washes. Level ground is often bare or covered with desert pavement and incised with washes. Most vegetation occurs within the washes, though some plants, notably creosote, are widely dispersed on level ground. USAYPG has some dunes.

2. Land Use and Layout of Facilities.

a. Inventory of Land Use. There are three categories of grounds on USAYPG. These are: improved, semi-improved and unimproved grounds. There are no commercial

forest stands or agricultural leases on USAYPG.

3. Improved Grounds.

a. Improved grounds include acreage on which intensive maintenance activities are planned and performed annually as fixed requirements. These activities include pest management, mowing, irrigation, dust and erosion control, drainage, planting for landscape effect and other intensive practices.

b. There is a total of approximately 1500 acres of developed land with about 90 acres requiring intensive annual maintenance. A summary of Improved Land Areas and developed land is found in Table 1, below.

Table 1. Improved Land Area Requiring Annual Maintenance

	HECTARES	ACRES
LAWNS	11.5	28.5
ATHLETIC FIELDS	0.7	1.7
PARADE AND DRILL FIELDS	5.1	12.7
POST CEMETERIES	0	0
PLAYGROUNDS AND PARKS	2.5	6.2
OTHER	16.8	40.5
TOTAL	36.6	89.6

4. Semi-Improved Grounds

a. Semi-improved grounds include areas on which periodic maintenance is performed but to a lesser extent than on improved grounds. Activities on this category of grounds normally include soil sterilization (for example, in case of waste line leaks), weed and brush control, drainage maintenance, and mowing for fire protection. Periodic maintenance is necessary on approximately 214 acres of a total 9,600 acres of semi-improved land at USAYPG. Included in this category are about 77 acres of airfields and heliports and 2,084 acres of test facility areas.

5. Unimproved Grounds

a. Unimproved grounds include areas under buildings and surfaced

areas and involve all other acreage not classified in the two previous categories. Activities on unimproved grounds do not occur on a regular basis and are generally unpredictable depending upon mission activities and changing conditions due to flood, fire, insects and other variables.

b. The approximately 826,670 acres of unimproved land at USAYPG requires little or no maintenance. The bulk of the land surface is in test areas, in-lease land, "temporary use" land, pavement, building structures, and ammunition storage. While the unimproved lands are not landscaped, buildings and other facilities require normal maintenance by Public Works.

6. Layout of Facilities.

a. The majority of present installation activities and most base improvements and facilities are located in the southwest and central portions of USAYPG. The geographic regions on USAYPG are:

i. George W. Howard Cantonment Area and associated facilities. are located in the southwestern portion of USAYPG and include a formal entry to the installation. The Howard Gate is approximately 26 miles northeast of the city of Yuma off State Highway 95. This portion of the installation is intensively developed with buildings, improved roads, and communications. Facilities include family housing, Unaccompanied Personnel Housing (UPH), troop housing (barracks), a community facility that includes recreational services, administrative headquarters, and training, utility and storage areas. Laguna Army Airfield, containing airfield pavement and buildings, is located about two miles east of the Howard Cantonment Area.

ii. Walker Gate and Cantonment Area are located approximately 3 miles east southeast of the Howard Cantonment Area. The Command group, Yuma Test Command, Garrison headquarters, offices, some repair and construction shops, and storage facilities are located in this area. Test facilities include mobility courses for testing and evaluation of wheeled and tracked vehicles, vehicle weapon systems, fuels and automotive chemical products.

iii. Kofa Cantonment Area/Kofa Firing Range begins 2 miles East of Laguna airfield and 4 miles east of the Howard Cantonment Area at the Kofa Firing Front. It runs East-West to the North of Poleline Road to the eastern edge of the installation. Improvements include federally maintained gravel roads, observation

towers, cleared impact sites, and storage structures. The range contains primary firing positions and storage facilities for weapons and munitions testing, principally of 22mm to 16-inch mortar and artillery. Castle Dome Heliport and Castle Dome Heliport Annex are located several miles northeast and north respectively of the Kofa Firing Range front. Facilities include small complexes of buildings accessed via paved roads.

iv. North and South Cibola Ranges comprise the West arm of USAYPG and are used for the testing of aircraft armament systems and air delivery systems (materiel and personnel drops). There are also firing positions and impact areas. Improvements include gravel roads, target areas, test and communications instrumentation, and three 300-feet electrically powered meteorological towers.

v. Middle East Cross-Country Course is located approximately 10 miles east southeast of the Howard Cantonment area. It is used for tracked and wheeled vehicle maneuver tests in an area where physiography closely resembles that of a Middle East desert.

vi. The East Arm - Little activity is conducted in the region except in close proximity to impact areas along the northeastern frontier of the Kofa Firing Range.

vii. The remainder of the Proving Ground is relatively undeveloped except for occasional single-lane gravel roads and tracks and trails passable only by four-wheeled drive vehicles, including OHVs.

7. Plan Maintenance.

a. The IPMC maintains the IPM Plan in accordance with DODI 4150.07. Pen and ink changes are made to the plan throughout the fiscal year. The plan is reviewed and updated annually (see the 5-year plan) to reflect all changes made in the pest management program during the fiscal year.

b. Annual updates of this plan will be sent to the U.S. Army Environmental Command (AEC) Pest Management Consultant not later than 30 September.

D. PRIORITY OF PEST MANAGEMENT WORK.

1. Disease Vectors and Medically Important Arthropods.

a. Mosquitoes are the most medically important pests on USAYPG. Although

some mosquito breeding takes place on the installation in, for example artificial containers and small temporary pools of water, most of the mosquitoes which bite installation personnel come from the extensive marsh west of the Howard Cantonment Area. Several viruses may be transmitted by species found on USAYPG. A listing of mosquito species which occur, their habits, breeding sites and the diseases they are capable of transmitting may be found in Appendix D.

b. Adult mosquitoes sometimes require fogging for control on the main post area. In addition, residual insecticides are applied to vegetative mosquito resting areas. When mosquito-borne diseases are found in Yuma County larval control may be required on the marsh. In the past, USAYPG has provided the equipment and larvicide for mosquito control on the marsh, even though the land does not belong to DoD. Coordination for mosquito control on the marsh is discussed in paragraph I, this plan. Larvicide is applied as needed to storm drains and a drainage pool outside Howard gate.

c. Western black widow spiders (*Latrodectus hesperus*) are often found in undisturbed places in warehouses, storage areas, and in and around other buildings. Although these spiders have venom which is toxic to humans, few, if any, bites have been reported on USAYPG. A recluse (violin) spider, *Loxosceles deserta*, occurs in southwest Arizona but is rarely encountered. *L. deserta* venom contains the same necrosis-inducing enzyme as *L. reclusa*, the brown recluse, and other tested species in the genus. Ninety percent of *Loxosceles* bites are unremarkable to mild. Reported spider bites are often cases of misdiagnosis, delaying appropriate treatment for serious problems such as bacterial skin infections. Individuals who are bitten should capture the spider, if possible, for identification. Most spiders can be killed by leaving them in a freezer for 24 hours, if needed for ease of handling.

d. Scorpions are commonly found in and around buildings on the installation. Like the black widow spider, they are usually encountered in undisturbed areas. They carry venom, but most cause few problems to personnel. One native scorpion, the Arizona bark scorpion, *Centruroides sculpturatus,* has toxic venom which is dangerous to humans, but fatalities in Arizona caused by venom of this scorpion are extremely rare. People stung by this scorpion should seek medical care, and if needed, receive supportive care in an ICU and/or administration of antivenin. Scorpions can be readily seen on moonless nights with the help of a black light.

e. Bees and wasps are found throughout the installation. The stings are painful and cause allergic reactions in some people. These insects have been a minor problem on USAYPG, but feral honey bees (almost entirely Africanized in southwest Arizona) have the

potential to sting in large numbers in defense of their hive, causing medically dangerous mass envenomation. Unlike European honey bees (the type usually used for honey production and pollination), Africanized bees are very sensitive to disturbance. Structures and landscaping should be monitored for feral honey bee nests, and colonies should be removed promptly from housing, the school, playgrounds, and administrative and similar heavily used areas. Individual stings have been a problem at test sites where honey bees are attracted to drinking water and air conditioner condensate.

f. Cone-nose or kissing bugs, *Triatoma* and possibly *Paratriatoma* spp. are widespread on USAYPG, and are usually associated with packrat nests. The bites are painless but usually cause at least localized reactions. Victims can become more sensitive with subsequent bites. Kissing bugs commonly feed on humans and are the most common cause of insect bite-caused anaphylaxis in the U.S. Kissing bugs can also vector *Trypanosoma cruzi*, the cause of Chagas disease. *T. cruzi* is endemic in central and southern Arizona and in southern California, at least, as well as parts of Latin America. Despite high rates of infection (possibly 50% or more) in kissing bugs in these states, rate of transmission to humans is very low. In contrast, the common kissing bug in South America, *Triatoma infestans*, lives in human dwellings and is a much more effective vector, and Chagas disease is common.

g. Management of kissing bugs is based on education of employees and physician awareness of the potential for Chagas disease in patients. Kissing bugs commonly emerge from packrat nests in May and June. Field-going personnel are advised to avoid sitting or camping in the vicinity of packrat nests. Bite victims experiencing systemic symptoms should seek medical attention, and those concerned about possible Chagas infection should consult a medical practitioner. Note that risk of infection through kissing bug bite in the U.S. is very small; as of 2010, 6 cases had been reported. Other Chagas cases in the U.S. have resulted from blood transfusion, organ transplant, congenital transmission, ingestion of contaminated comestibles, and laboratory accidents.

2. Quarantine Pests

a. There are currently no requirements for plant or animal quarantine on USAYPG. There are no anticipated pest problems arising from shipments of household goods and materiel shipped to USAYPG from other locations. Retrograde cargo (cargo evacuated from a field of operations) may be encountered infrequently, and will be inspected for pests on an individual basis.

3. Real Property Pests (Structural/Wood Destroying Pests)

a. Subterranean termites cause damage to wooden buildings and other structures on the installation. Annual surveys of wooden structures and treatment when termites are found have kept damage to a minimum.

4. Stored Products Pests

a. Food items stored in the Commissary, the AAFES Express, and in food service facilities may become infested by stored products pests. Stored products insects have been found infesting the Commissary in the past; cleanup and insecticide treatments have always eliminated the problems. Some of the pests found in stored food in the past include: saw-toothed grain beetles, red flour beetles, pea weevils, and carpet beetles and other dermestids.

5. Ornamental Plant and Turf Pests

a. Trees and shrubs on USAYPG can be infested by various insect and microbial pests, resulting in damage or destruction of the plants. Pests in this category have not required control on the installation in recent years. Desert mistletoe, *Phoradendron californicum*, is a native plant which occasionally infects native and exotic mesquite, palo verde, acacia, and ironwood within the Howard Cantonment Area. Infected branches may be removed. The mistletoe is of value to birds, particularly Phainopepla, and should be left in place in certain circumstances.

6. Undesirable Vegetation

a. Weeds along fence lines, on road shoulders, paved surfaces (including runways), etc. require control using mechanical means or appropriate herbicides. Buffelgrass (*Pennisetum cilare*) is a dangerous invasive weed that must be treated with herbicide in situations where mechanical removal is impractical. Similarly, tamarisk (*Tamarix* spp.) stumps require herbicide treatment to prevent successful regrowth. These plant species occur in the cantonments and on the range.

7. Vertebrate Pests

a. Mice occasionally invade buildings. Most of the pest management workload for mice is spent on surveillance. Gophers are found in lawn areas and require control.

b. Western sidewinders and diamondback, speckled, and Mojave rattlesnakes are found on USAYPG. Although infrequently encountered, bites of these snakes are capable of causing serious illness and rarely, death. A variety of harmless snakes are also found on the installation. Snakes found in areas where they are not wanted (e.g., in buildings) are captured alive and relocated to nearby habitat.

c. Wild horses and burros periodically require removal when their numbers exceed the Appropriate Management Level (AML) for the Herd Management Area (HMA). Most of the Cibola Range is within the Cibola-Trigo HMA, and most of the HMA is on USAYPG land. Wild horses and burros sometimes enter the cantonment areas and are a hazard on airfields and roads, and may be a nuisance in housing and administrative areas. USAYPG Police or ESD personnel escort wild horses and burros out of cantonments. Capture and permanent removal is coordinated by the Bureau of Land Management.

d. Stray dogs and cats are occasionally seen on the installation. USAYPG Police are responsible for stray animal control.

e. Coyote and, rarely, mountain lion problems are referred to the wildlife biologist in the Environmental Sciences Division, who may request aid from Arizona Game and Fish Department. Coyote problems on the installation are almost entirely caused by feeding of wildlife by misinformed personnel or residents.

f. Stray domestic horses and livestock are removed by the Yuma County Sheriff's office, acting for the State Livestock Officer.

8. Household and Nuisance Pests

a. Crawling insects (ants, cockroaches, crickets, beetles, etc.) and spiders may require control in billets, UPH, food service facilities, warehouses, offices and other administrative buildings. Cockroaches make up approximately 30 percent of the pest management workload, which is nearly divided evenly between surveillance and control. The remainder of the pests in this category constitutes a minor pest problem on the installation. Proper sanitation and housekeeping will do much to discourage these pests.

9. Other Pest Management Requirements

a. There are no other pest management requirements on USAYPG.

E. INTEGRATED PEST MANAGEMENT (IPM): Integrated pest management is an ecological approach to management to keep pest populations below a damage threshold. Managing a pest begins with clearly defined management goals, identification of the pests involved, knowledge of the pests' biology, and use of control strategies that minimize impacts on human health, the environment, and non-target organisms. Prevention of pest problems is a key component of IPM. Management techniques include modification of cultural practices, habitat manipulation, biological control, use of behavioral chemicals (pheromones), and use of pesticides, although the latter should only be used when monitoring indicates that pest populations have exceeded established guidelines, and that pesticide application is the optimal control strategy. Management techniques should be weighed in terms of their environmental, social, and economic impacts.

1. IPM Principles

a. The four control strategies described below are the heart of IPM, and are descriptive of the philosophy used at USAYPG to manage pests; specific IPM measures can be found in the IPM Outlines (Appendix A). While any one of these methods may solve a pest problem, often several methods are used concurrently, particularly if long-term control is needed. For example, screens may be used to prevent mosquitoes from entering buildings, breeding areas may be filled in or drained to eliminate larval habitat, and pesticides may be used to kill adult mosquitoes. Screens will protect people inside, but do little to keep people from being bitten outdoors. Larval control may eliminate mosquito breeding on the installation, but may not prevent adult insects from flying onto the installation from surrounding areas. Chemicals may kill most of the flying mosquitoes, but may miss others. Although chemical control is a part of IPM, nonchemical control is stressed. Chemical control is almost always a temporary measure and, in the long run, more expensive. Arthropods rapidly develop resistance to chemical pesticides, limiting their usefulness. Nonchemical control, which may initially be more expensive than chemicals, will usually be more cost effective in the long run.

b. Nonchemical controls also have the added advantage of being nontoxic, thereby reducing the potential risk to human health and the environment.

2. Mechanical and Physical Control

a. 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, screening, mechanical traps or glue boards and nets and other barriers to prevent entry into buildings.

3. Cultural Control

a. Strategies in this method involve manipulating environmental conditions to suppress or eliminate pests. For example, elimination of food and water for pests through good sanitary practices may prevent pest populations from becoming established or from increasing beyond a certain size. In agriculture, cultural control may involve actions such as growing a crop out of synchronicity with its primary pest, or interplanting with plants needed by insect parasites of the pest.

4. Biological Control

a. With this control strategy, predators, parasites or disease organisms are used to control pest populations. Biological control alone can be highly successful and eliminate the need for further management of a particular pest, or may be one tool used with other strategies to manage a pest. The practicality of biological control of a particular pest depends upon specifics of the biology and ecology of the pest, its natural enemies, and on the environment in which the organisms are operating.

5. Chemical Control

a. Pesticides are chemicals which kill living organisms. DDT (dichloro-diphenyl-trichloroethane), developed in the 1940s, was the first of the modern, synthetic insecticides. DDT's use on insect vectors of human diseases such as malaria and typhus, as well as for insect control on crops, in homes and institutions, and in gardens, led to a new era in pest control. DDT replaced "first generation" pesticides, such as arsenic and cyanide, which were ineffective against many pests and toxic to humans, livestock, and crops. In contrast, DDT was highly effective against a broad range of insect pests, inexpensive and persistent. Use of DDT against mosquitoes during WW II led to the eradication of malaria from many areas. DDT seemed like a miracle. The long term effects of the widespread use of DDT

(bioaccumulation, bio magnification, and die-offs of wildlife) became widely known as a result of the publication of Rachel Carson's *Silent Spring* in 1962.

b. For many years, chemicals were considered to be the most effective control available, but development of pesticide resistance by insects rendered many pesticides ineffective. In addition, broadly acting pesticides killed natural enemies and competitors of target pests, creating worse pest outbreaks. In recent years the trend has been to use pesticides which have 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 high when compared with nonchemical control methods.

6. IPM Outlines

a. Integrated Pest Management Outlines may be found in Appendix A. Each major pest or category of similar pests is addressed, by site, in separate outlines. New outlines will be added to Appendix A as new pests or sites are encountered that require surveillance or control.

7. Annual Workload for Surveillance, Prevention, and Control

a. The number of man- hours expended for surveillance, prevention, and control of pests on USAYPG can be found in Appendix E.

F. HEALTH AND SAFETY

1. Medical Surveillance of Pest Management Personnel

a. All personnel who apply pesticides on the installation (excluding self-help pest management) are included in a medical surveillance program. This program consists of the following elements:

b. An initial, pre-employment physical examination is 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.

c. When cholinesterase-inhibiting substances (CIS) (e.g., carbamate or organophosphate pesticides) are used, the RBC cholinesterase levels are monitored in accordance with DoD 6055.05 M.

d. DoD 6500.05M, Occupational Medical Examinations and Surveillance Manual, May 2, 2007, is used as a guide for medical monitoring of pesticide applicators.

e. At this time, ISSC pest management and landscape technicians are the only individuals requiring medical monitoring for exposure to pesticides. These contract employees are referred to the Yuma Regional Medical Center Primary Care - Foothills, Yuma, Arizona, for physical exams and blood tests. ISSC must have a written respirator protection program that contains all the elements of AR11-34 25 July 2013.

2. Hazard Communication

a. Installation pest management personnel are given hazard communication training, to include hazardous materials in his workplace. Following initial hazard communication classes, additional training is given to new employees or when new hazardous materials are introduced into the workplace.

b. Safety Data Sheets for all pesticides and other toxic substances used in the pest management program are kept in the ISSC pest management technician's office, Building 429.

3. Personal Protective Equipment

a. Personnel wearing approved masks, and respirators, must be medically cleared and fit tested. They must follow their company Respirator Protection Program. Chemical resistant gloves and boots, respirators, and protective clothing (as specified by applicable laws, regulations and/or the pesticide label) will be provided to pest control personnel by the contractor. Pesticide- contaminated protective clothing will not be home laundered, but will be laundered at the installation's expense. Severely contaminated clothing will not be laundered but will be treated as pesticide-related waste and disposed of in accordance with current regulatory requirements. The proper use and maintenance of personal protective equipment can be found in Appendices F (Pest Management Operations) and G (Maintenance and Care of Respirators).

4. Fire Protection

a. Building 416 and the surrounding open-sided enclosure contain the majority of pesticides stored by Public Works. Building 416 contains only aerosol cans of pesticides. The building, approximately 75 square feet in size, is located within a curbed cement area. Other pesticides are stored outside on the same-curbed site. The probability of a fire at this site is low. The pest management coordinator has provided floor plans for this facility to the fire department. In addition, pesticide inventories are sent to the fire department every six months. The USAYPG Fire Chief will determine, based on his pre-fire plan, which fire control efforts to employ depending on the size and type of fire at the time a fire call is reported. Maps and other information relating to fire control at Building 416 can be found in Appendix H.

b. Minor amounts of pesticides are also provided for sale or distribution at the Commissary and Post Exchange.

5. Pest Control Vehicle

a. Pesticides shall be transported only in the lockable storage compartments of the assigned vehicle. Pesticides will not be transported in the cab of the vehicle at any time. The use of the assigned vehicle for other than pest management purposes is not permitted. Transportation of pesticides (from supply, delivery of self-help type items, etc.) will be accomplished using the vehicle assigned to the pest management technician. Care should be taken to secure pesticides to prevent damage to the containers and spillage of the chemicals. At no time will pesticides be left unsecured in the vehicle when unattended. A portable eye lavage will be carried in the pest control vehicle when in use.

G. ENVIRONMENTAL CONSIDERATIONS

1. Protection of the Public

a. Precautions are taken during pesticide application to protect the public on and off the installation. Pesticides are not applied outdoors when the wind speed exceeds five miles per hour. Whenever pesticides are applied outdoors, care is taken to make sure that any spray drift is kept away from individuals, including the applicator. Pesticide application indoors is accomplished by individuals wearing the proper personal protective clothing and equipment. At no time are personnel permitted in a treatment area during pesticide application unless they have met the medical monitoring standards and are appropriately protected.

2. Sensitive Areas.

a. Sensitive areas listed on pesticide labels are considered before pest control operations are conducted. No pesticides are applied directly to wetlands or water areas (lakes, rivers, etc.) unless use in such sites is specifically approved on the label and the proposed application are approved by the Environmental Sciences Division. This last statement particularly applies to the marsh adjacent to the installation.

b. Special care is given when pesticides are applied in the child development center, in patient areas of the health clinic, or in areas where newborn infants are present. Pesticide label instructions and guidance provided in the AFPMB TG No. 20, Pest Management Operations in Medical Treatment Facilities, are followed.

c. Special Status Species including Threatened or Endangered Species and Critical Habitats.

d. The YPG Integrated Natural Resource Management Plan identifies the Federally listed and Arizona Species of Greatest Conservation Need likely to occur on YPG.

3. Sonoran Pronghorn

a. An experimental population of the federally endangered Sonoran pronghorn was established in pens on Kofa National Wildlife Refuge in 2011 under section 10j of the ESA. Pronghorn have been released on the refuge and YPG since 2013.

4. Sonoran Desert Tortoise

a. The Sonoran Desert tortoise was is a candidate for listing under ESA. YPG manages Tortoise through a Candidate Conservation Agreement. The Sonoran Desert tortoise occurs in low numbers on USAYPG. No critical habitat for this or other species has been designated on USAYPG.

5. Monarch Butterfly

a. The Monarch Butterfly (Danaus plexippus) was listed as a candidate species on December 27, 2020 as result of extreme population decline. This extreme

population decline is due to multiple stressors across the monarch's range, including the loss and degradation of overwintering groves; pesticide use, particularly insecticides; loss of breeding and migratory habitat; climate change; parasites and disease. The United States Fish and Wildlife Service provides the following Conservation Recommendations for Monarchs within the breeding and migratory zone.

b. Conduct management activities such as mowing, burning and grazing in monarch breeding and migratory habitat outside of the estimated timeframe when monarchs are likely present (December 1 to March 15).

c. Protect monarchs, other pollinators, and their habitats from pesticides (i.e., insecticides and herbicides).

d. Avoid the use of pesticides when monarchs may be present, when feasible (Figure 2, Recommended Management Timing Map, below).

e. Screen all classes of pesticides for pollinator risk to avoid harmful applications, including biological pesticides such as *Bacillus thuringiensis* (UC Integrated Pest Management).

f. Avoid the use of neonicotinoids or other systemic insecticides, including coated seeds, any time of the year in monarch habitat due to their ecosystem persistence, systemic nature, and toxicity.

g. Avoid the use of soil fumigants.

h. Consider non-chemical weed control techniques, when feasible (Cal-IPC Non-chemical BMPs).

i. Avoid herbicide application on blooming flowers. Apply herbicides during young plant phases, when plants are more responsive to treatment, and when monarchs and other pollinators are less likely to be nectaring on the plants.

j. Whenever possible, use targeted application herbicide methods, avoid large-scale broadcast applications, and take precautions to limit off-site movement of herbicides (e.g., drift from wind and discharge from surface water flows).

k. Separate habitat areas from areas receiving treatment with a pesticide-free spatial buffer and/or evergreen vegetative buffer of coniferous, non-flowering trees to

capture chemical drift. The appropriate monarch and pollinator habitat spatial buffer size is contingent upon several factors, including weather and wind conditions, but at a minimum, the habitat should be at least 40 feet from ground-based pesticide applications, 60 feet from air-blast sprayers, and 125 feet from any systemic insecticide applications or seed-treated plants.

l. To minimize the spread of the pathogen *Ophryocystis elektroscirrha* (OE), do not plant non-native tropical milkweed (*Asclepias curassavica*). OE can build up on tropical milkweed and infect monarchs, because these plants are evergreen and do not die back in the winter. OE can be lethal to monarchs.

m. Remove tropical milkweed that is detected, and replace it with native, insecticide-free milkweed and native, insecticide-free nectar plants appropriate for the location.

n. Report milkweed and monarch observations from all life stages, including breeding butterflies, to the Monarch Milkweed Mapper or via the project portal in the iNaturalist smartphone app.

o. To provide benefits for monarchs and other pollinators anywhere on the landscape within the breeding/migratory zone, install native, insecticide-free milkweed and native, insecticide-free nectar plants that bloom throughout the year, as is feasible for the location (Nectar Planting Lists; Milkweed Seed Finder).

p. There are several Arizona wildlife species of special concern on USAYPG, and most wildlife is protected under state law. Most bird species on USAYPG are protected under the Migratory Bird Treaty Act (MBTA), and as such, cannot be moved or destroyed without a permit from US Fish and Wildlife Service. Occasionally a nest must be moved, usually under the supervision of the wildlife biologist in the Environmental Sciences Division of the Public Works Directorate.

q. 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 AEC Pest Management Consultant.

r. Mosquito control off post is managed by Yuma County Pest Abatement District. Mosquito control on post sometimes involves treating sewage lagoons, a storm

basin, and other spots where rainwater accumulates. The Pest Management Coordinator reviews larvicide use in bodies of water used by wildlife.

6. Environmental Documentation

a. YPG's Integrated Natural Resource Management Plan integrates pest management into overall Natural Resource management and conservation. An environmental assessment has been prepared for the INRMP which specifically addresses the natural resource management including this IPMP. The IPMP is referenced in the assessment as documentation of pesticide use.

7. Pesticide Spills and Remediation

a. A pesticide spill cleanup kit is maintained in the pesticide storage area of Building 416. Pesticide spill cleanup procedures, notification procedures, and a list of components of the spill kit is provided in Appendix J of this plan. A spill cleanup kit is kept on each pest control vehicle. Additional information on pesticide spills can be found in AFPMB TIM 15 (Reference N5b) and Appendix K. All pesticide spills are reported to the installation hazardous waste manager.

8. Pollution Prevention (P2)

a. The pest management program, as outlined in this plan, complies with Executive Order 13514 of October 5, 2009. USAYPG implements integrated pest management to reduce and minimize toxic and hazardous chemicals acquired, used, and disposed of. Integrated pest management strategies which stress nonchemical control form the basic framework of the pest management program.

9. Prohibited Activities

a. At no time will a pesticide be used in any manner which is inconsistent with its label.

b. No pesticide will be used whose registration has been suspended or canceled by the EPA or the State of Arizona.

c. Herbicides will not be used to control weeds at the Child Development Center nor in areas where children play.

H. ADMINISTRATION

1. Contracts

a. Pest control on USAYPG is performed under contract with the Installation Support Services Contract holder. One full time and one half-time employee (referred to as the ISSC Pest Management Technician) conduct all pest surveillance and control under the contract. The performance work statement (PWS) for this contract may be found in Appendix L A copy of this contract and the supporting quality assurance surveillance plan are on file in the office of the Pest Management Coordinator.

b. On-post privatized housing and hotels and the General Motors test facility have their own pest management contracts. These entities are required to provide monthly reports of pesticide use to the Pest Management Coordinator.

2. Job Orders

a. The ISSC Pest Management Technicians performs pest surveillance and control under six standing service orders (SSOs) (see Appendix M for examples of job order work sheets). The SSOs cover work performed indoors and outdoors in food

handling buildings, the Health Clinic and Child Development Center, which are serviced weekly.

b. All other buildings on the installation are serviced under a separate SSO.

c. Other projects, such as weed control on the range, are undertaken with individual job orders.

3. Interservice Support Agreements

a. There are no interservice support agreements for pest control in effect on USAYPG. One outlying site, the Blaisdell Railroad Siding, requires periodic weed control (see paragraph I2, this plan).

4. Agricultural Out Leases

a. At this time there are no agricultural out leases for Proving Ground lands. Neither agricultural grazing nor growing of crops are economically nor climatically practical, nor are such uses compatible with USAYPG's mission.

5. Resources (Current and Proposed)

a. For a more detailed discussion of resources than that found below, refer to Appendix E (Annual Workload).

6. Staffing

a. The following personnel are involved with pest management on USAYPG. See paragraph H7 for more detailed information.

i. Integrated Pest Management Coordinator.

ii. ISSC contract Pest Management Technicians.

iii. The Public Works Quality Assurance Evaluator (Q.A.E.) for pest management.

iv. Preventive Medicine Specialists.

v. Veterinary Food Inspectors.

7. Materials and Equipment

a. The Government furnishes all materials, buildings and equipment. Only pesticides and pesticide application equipment required by the program are maintained on the installation. Pesticides are ordered as required to maintain at least a three-month supply but not more than a one year supply in stock. Pesticides which are required for use during a specific time of year (e.g., herbicides applied in the spring when weeds are emerging) are ordered in a timely manner to ensure effective application. The inventory of pesticides provided as Appendix N lists the pesticides on hand at USAYPG. An inventory of pesticide application equipment used at USAYPG is provided as Appendix I. These inventories are updated as changes occur. As a minimum, an updated pesticide inventory is included in the plan's Annual Update. A book containing pesticide specimen labels and Safety Data Sheets for the pesticides used on USAYPG is available in the Pest Control Office, Building 429.

8. Facilities (Mixing and Storage Sites)

a. Pesticides are stored under a covered, open-sided area within the DPW work yard. This facility is surrounded by a climb-proof chain link fence. The surface of the area, made of cement, is curbed to contain pesticide spills. A small wooden building (Building 416), located within the covered area, is used to store aerosol pesticide formulations; all other pesticides are stored on pallets in the open area adjacent to the building. A plumbed eye lavage and deluge shower are provided within the enclosure. This facility conforms to Army and Federal standards. A floor plan for this facility is found in Appendix H.

b. Pesticides are mixed within the enclosure described above. A sink, used to fill small hand-held sprayers, is located within a curbed area on the cement pad. A hose is used to fill large spray tanks. The pipes, which supply water to the mixing area, are equipped with a backflow prevention device. Large sprayers are brought onto the curbed area for filling.

c. A pesticide spill kit will be maintained in the pesticide storage and mixing area.

9. Reports and Records

a. Adequate records of all pest management operations performed by Public Works personnel and contractors, privatized housing, hotels, and General Motors are maintained on the installation.

b. The ISSC PM Technicians maintain daily pesticide application and surveillance records using DD Form 1532-1 (Pest Management Maintenance Record). These forms, if properly maintained, provide a permanent historical record of pest management operations for each building, structure or outdoor site on the installation.

c. The ISSC Pest Management Technician maintains a current inventory of stored pesticides at all times. Copies of the inventory will be sent to the IPMC, Fire Department, Health Clinic, and Law Enforcement and Security as requested.

10. Training

a. Training and certification will be conducted by the State of Arizona for the ISSC Pest Management Technician; the IPMC and the individual who evaluates the quality of work of pest control contracts (Quality Assurance Evaluator) must be DOD-certified and accredited. Copies of training certificates can be found in Appendix O. Certified personnel shall be recertified every three years. The ISSC Pest Management Technician must be certified in the following Arizona State categories in order to perform pest control operations directly or to supervise other employees conducting pest control within these categories.

i. B1- General Pest/Public Health. B2- Wood Destroying (Treatment)
ii. B3- Right of Way (ROW) Weed
iii. B5- Turf & Ornamental
iv. B8- Wood Destroying (Inspection)
v. B9- Aquatics

b. Personnel who are certified in pesticide application attend local pest management classes, workshops, seminars, etc., in order to keep abreast of pest problems and pest management techniques, some of which may be 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, which 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 control operations on the installation. Local pest management training consists of at least eight hours per year; this is in addition to any offsite recertification training, such as the DOD course. Other personnel who deal directly with pest control operations, but who may not need to be certified, are also encouraged to attend local seminars to better understand the pest management needs of the installation.

11. Quality Assurance/Quality Control

a. The QAE for the pest management contract is DOD-accredited in Pest Management Quality Control.

b. A written quality assurance surveillance plan is used to evaluate the work being performed by the ISSC Pest Management Technicians.

12. Design/Review of New Construction

a. Construction projects on USAYPG are reviewed with pest prevention and control in mind. Engineering and medical personnel review the design of new buildings or other structures and conduct a pest evaluation in the constructed facility prior to completion of the project to ensure that insect and rodent entry points and potential harborage have been eliminated.

I. COORDINATION - DOD, OTHER FEDERAL, STATE AND LOCAL AGENCIES

a. The Army Pest Management Program is responsible for protecting personnel and material from illness and damage by pests, wherever in the world they may be. The program includes both medical and operational responsibilities. While these responsibilities do overlap, Medical Command (MEDCOM) focuses on preventing and minimizing medical consequences of pests and pest management operations while the Assistant Chief of Staff

for Installation Management and the Army Environmental Command concentrate on safe, effective implementation of day to day pest management operations and environmental considerations of pest management operations. A list of organizations involved with or who have impact on the Army Pest Management Program, including addresses and responsibilities, is found in Appendix P.

b. The AEC Pest Management Consultant reviews the IPM plan, and gives special attention to any pesticide application that uses restricted use pesticides, uses any pesticide that may significantly contaminate surface or ground water, includes 259 or more hectares (640 acres) in one pesticide application, may adversely affect endangered or other protected species or habitats, or involves aerial application of pesticides.

c. Liaison is maintained between the Pest Management Coordinator and Preventive Medicine personnel at the Health Clinic to determine the prevalence of disease vectors and other public health pests in the area surrounding the installation.

d. The USAYPG Police are responsible for capturing and removing stray dogs and cats on the installation. The Police Department also remove snakes from housing after hours, when Pest Management Technicians are not available.

e. The Pest Management Technicians relocate snakes and other small wildlife from buildings, and coordinate with the Environmental Sciences Division and police department for removal of larger wildlife (e.g., raccoons and coyotes).

f. Control of mosquito larvae on the large marsh adjacent to the installation (e.g., during an encephalitis outbreak) is coordinated with the following agencies:

g. States of Arizona and California - the marsh is divided between these two states. Proposed actions are coordinated with health officials and environmental personnel from each state.

h. County Health and Environmental Personnel - proposed actions are coordinated with personnel in counties affected.

i. Bureau of Land Management and U.S. Fish and Wildlife Service - these services are consulted whenever any proposed action may be detrimental to the endangered species of birds on the marsh.

j. Bureau of Reclamation - responsible for managing the waterways in and around the

marsh.

k. Arizona Game and Fish Department, U.S. Fish and Wildlife Service, and Bureau of Reclamation are responsible for managing sensitive wildlife and habitat in the Mittry Lake Wildlife Area.

l. Coordination is required between USAYPG Environmental Sciences Division personnel and the Bureau of Land Management, Yuma Resource Area, concerning the capture and removal of wild horses and burros on the installation when the animals are within cantonments or other areas where they present a hazard to residents, contractors, and employees.

m. Predator control, if required, must be coordinated with the Arizona Game and Fish Department, Yuma Region.

n. Installation personnel coordinate with the Army Corps of Engineers to assure that pesticide application, such as termite pretreatment for new construction, is properly performed and documented.

o. A list of local points of contact commonly used at the installation level, with telephone numbers, is found in Appendix Q.

J. SALE AND DISTRIBUTION OF PESTICIDES.

1. AAFES Post Exchange

a. Pesticides sold in the Post Exchange, building 707, are registered by the EPA 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 cleanup 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 cleanup kit and with installation spill contingency procedures. Additional guidelines on pesticides in exchanges can be found in paragraph 10-4h, AR 40-5.

2. Commissary

a. Pesticides sold in the Commissary, Building 536, are registered by the EPA for general use; restricted use products are not sold. Pesticide products are ready-to-use. A spill cleanup kit is on hand. Store personnel are familiar with the use of the cleanup kit and with installation spill contingency procedures. Additional guidelines on pesticides in

Commissaries can be found in paragraph 10-4h, AR 40-5.

3. Veterinary Clinic

a. Products containing pesticides are sold to Veterinary Clinic (Building 226) customers for their own use. These products are registered by EPA and are labeled for application to animals. Animals are not treated (e.g., dipped) for fleas, ticks or other ectoparasites in the clinic.

K. PEST MANAGEMENT SERVICES PROVIDED TO OTHER ACTIVITIES.

1. Tenant Activities

a. Pest control services are provided to all tenant activities on USAYPG. This includes: Health Clinic, Commissary, Post Exchange, Military Free Fall School and Light Armored Vehicle Test Directorate (LAV-TD).

2. Agencies Located Off the Installation

a. Control of weeds and other unwanted vegetation is occasionally required at the Blaisdell railroad-unloading platform. The siding, used for unloading ammunition in transit to USAYPG, is located along Blaisdell- Fortuna Road, east of Highway 95, along the main line of the Southern Pacific Railroad. There are no other agencies located off the installation which require pest management.

b. Invasive Plant Species

a. Invasive weeds are treated with herbicides on all of the installation, including the range, when requested by Public Works, Environmental Sciences Division, and when herbicide treatment is the optimal method for eliminating the weed in question.

L. REGULATED PESTS

1. Quarantine Pests

a. There are no requirements for plant or animal quarantine on USAYPG. There are no anticipated pest problems arising from shipments of household goods and materiel shipped to USAYPG from other locations.

2. Retrograde Cargo

a. Retrograde cargo, if transported onto the installation, will be inspected inside the common carrier (truck, aircraft, etc.) used for transport. If any signs of live pests or plant/soil material are present, then the shipping container will be sealed and impounded to prevent discharge of the contents. The local USDA inspector will be notified, and further disposition of the materiel will be made following a joint inspection.

3. Noxious Weeds

a. The installation complies with all Federal and State noxious weed laws. When noxious weeds are encountered on the installation, care is taken to ensure that nearby non-target plants are not adversely affected by removal activities.

M. PEST MANAGEMENT REFERENCES.

a. The following laws, regulations, and instructions apply to the Army pest management program:

i. The Federal Insecticide, Fungicide and Rodenticide Act, codified as 7 USC 136, effective 3 January 2012.
ii. AR 40-5, Preventive Medicine, 12 May 2020.
iii. AR 200-1, Environmental Protection and Enhancement, 13 December 2007
iv. AR 420-1, Facilities Management, 24 August 2012.
v. AR 385-10, Army Safety Program, 24 February 2017.
vi. DoDI 4150.07, DoD Pest Management Program, 22 January 2020.

b. Other references pertinent to pest management may be found in Appendix R.

c. Information on cone-nose bugs is from Klotz, John H., Patricia L. Dorn, Joy L. Logan, Lori Stevens, Jacob L. Pinnas, Justin O. Schmidt, and Stephen A. Klotz. 2010. “Kissing Bugs”: Potential disease vectors and cause of anaphylaxis. Clinical Infectious Diseases 50: 1629-1634.

Appendix A
Integrated Pest Management Outlines

INTEGRATED PEST MANAGEMENT OUTLINE NO. 1

PEST: German Cockroaches.

SITE: Unaccompanied Personnel Housing

1. Purpose: To control nymphal and adult cockroaches in Unaccompanied Personnel Housing.

2. Surveillance.

   a. Conducted by: Occupants. Pest Management Technicians between occupancy and when services are requested following self-help failure. Preventive Medicine upon special request.

   b. Methods: Visual observation and sticky traps.

   c. Frequency: As necessary.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

         a. Method and Location: Use sticky traps in kitchens and bathrooms when a minor infestation of cockroaches occurs. Eliminate cockroach harborage by caulking (or filling with other materials) minor cracks, crevices, holes in walls and floors, or other areas where the structure has provided small openings which could be used by cockroaches.

         b. Conducted by: Occupants - sticky traps and caulking materials can be obtained from Self-Help. Preventive Maintenance may also eliminate cockroach harborage when work is done between occupancy or during renovation.

      (2) Type: Biological.

      (a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

a. Method and Location: Clean up spilled food and place stored food items in closed containers. Keep papers, bags, boxes and other items off the floors in the kitchen and bathroom to eliminate harborage areas for the cockroaches. Be sure not to overlook items such as recycle materials, pet food, etc.

b. Conducted by: Occupants.

b. Chemical.

(1) Basis for Treatment: Presence of cockroaches in the quarters.

(2) Method and Location: Use self-help items where cockroaches have been seen. Apply bait stations in locations where cockroaches have been seen (e.g., kitchen and bathroom cabinets, under appliances, under sinks, etc.). Place the bait stations along the junction between walls and floors for maximum effectiveness.

(3) Conducted by: Occupants.

(4) Pesticide. See annual Pesticide Use Proposal

(PUP) (5)

Control Standard: Continue bait station use for 30-60 days. If cockroaches are still found, then call the Pest Management Technician for assistance. Bait stations should be removed when empty or after 60 days, whichever is shorter, to prevent
the empty containers from providing cockroach harborage.

c. Chemical.

(6) Basis for Treatment: Cockroaches still present after self-help measures have been used and failed to control the infestation.

(7) Method and Location: Apply residual pesticides to harborage areas in

kitchens, bathrooms and other areas where cockroaches are found.

(8) Conducted by: Pest Management Technicians.

(9) Pesticide: See annual Pesticide Use Proposal (PUP).

(10) Control Standard: No call backs indicate successful treatment. Spot treat quarters where follow-up control is indicated.

4. Precautions for Sensitive Areas: Cholinesterase inhibiting pesticides are not applied in areas that infants may occupy.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: None.

INTEGRATED PEST MANAGEMENT OUTLINE NO. 2

PEST: German Cockroaches.

SITE: Food Service Facilities.

1. Purpose: To control nymphal and adult cockroaches in food service facilities.

2. Surveillance.

   a. Conducted by: Food service personnel, Preventive Medicine, and Pest Management Technicians.

   b. Methods: Visual observations by workers. Sticky traps by other inspectors. Preventive medicine conducts inspections at night for cockroaches.

   c. Frequency: Daily by ood service personnel. During sanitation inspections or conducted as a special survey for cockroaches by Preventive Medicine. Weekly by Pest Management Technicians.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Eliminate cockroach harborage by caulking (or filling with other materials) minor cracks, crevices, holes in walls and floors, or other areas where the structure has provided small openings which could be used by cockroaches.

      (b) Conducted by: Pest Management Technicians and augmented by food service and maintenance personnel.

      (2) Type: Biological.

      (a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Use good sanitation to reduce food and water for cockroaches. Clean up spilled food from work surfaces, walls and floors. Wash dirty dishes and cooking containers following use - do not leave exposed food in the facility overnight. Remove bags, boxes and other potential harborage from kitchens, storerooms, etc. Keep food in sealed containers when not in use. Standing water should be eliminated and leaking pipes should be fixed.

(b) Conducted by: Food service personnel.

b. Chemical.

(1) Basis for Treatment: Cockroaches found during surveillance or a trap index of one or greater.

(2) Method and Location: Crack and crevice residual application.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No live cockroaches found 30 days following treatment. When sanitation and harborage present problems in a facility, a reduction in the number of cockroaches in sticky traps may indicate the effectiveness or limitation of chemical control efforts.

c. Chemical.

(1) Basis for Treatment: Presence of cockroaches.

(2) Method and Location: Place bait stations in locations where cockroaches have been seen (e.g., cabinets, under appliances, under sinks, etc.). Place the bait stations along the junction between walls and floors and in equipment voids for maximum effectiveness.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Leave bait stations in place until bait is gone. Remove empty bait stations to preclude cockroaches using them for harborage sites.

4. Precautions for Sensitive Areas: Do not apply to areas where aquariums are present.

5. Prohibited Practices: Do not apply pesticides on food items, utensils, or on food preparation surfaces. Do not let unauthorized personnel in the facility during treatment.

6. Environmental Concerns: None.

7. Remarks: Pesticides should be considered the last option in controlling cockroaches. As long as poor sanitation or harborage exist, the effectiveness of chemicals to control cockroaches may be limited.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 3

PEST: German Cockroaches.

SITE: Barracks, Offices and other Administrative Buildings.

1. Purpose: To control nymphal and adult cockroaches in building areas where people store and/or eat food on an occasional basis (e.g., break areas, coffee rooms, vending areas,
etc.).

2. Surveillance.

   a. Conducted by: Pest Management Technicians when services are requested. Preventive medicine upon special request.

   b. Methods: Visual observation and sticky traps.

   c. Frequency: As necessary.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Use sticky traps in break areas or in other areas where food is eaten or stored when a minor infestation of cockroaches occurs. Eliminate cockroach harborage by caulking minor cracks, crevices, and holes where cockroaches may hide. This may not be required in these types of facilities; however, should cockroaches get out of hand (repeat professional treatment required), then harborage elimination may be required.

      (b) Conducted by: Pest Management Technicians when services are requested.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

      (a) Method and Location: Place stored food items in closed containers. Keep break areas clean and clean up spilled food immediately. Rinse out food containers (e.g., soda cans, coffee cups, etc.) to reduce cockroach food. Keep papers, bags, boxes
      and other items off the floors in areas where food is present to eliminate harborage areas for the cockroaches.

      (b) Conducted by: Occupants.

b. Chemical.

(1) Basis for Treatment: Presence of cockroaches.

(2) Method and Location: Apply bait stations in locations where cockroaches have been seen (e.g., cabinets, desks, under sinks, etc.). Place the bait stations along the junction between walls and floors for maximum effectiveness.

(3) Conducted by: Pest Management Technician

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Continue bait station use for 30-60 days. If cockroaches are still found, then call the Pest Management Technicians for assistance.

c. Chemical.

(1) Basis for Treatment: Cockroaches still present after self-help measures have been used and failed to control the infestation.

(2) Method and Location: Apply residual pesticides to harborage areas in kitchens, bathrooms and other areas where cockroaches are found.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs indicate successful treatment. Spot treat quarters where follow-up control is indicated.

4. Precautions for Sensitive Areas: Cholinesterase inhibiting pesticides are not applied in areas that infants may occupy.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Cockroach elimination usually responds to good sanitation and light chemical treatment.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 4

PEST: American Cockroaches.

SITE: Sewers, Steam Tunnels, and Crawl Spaces.

1. Purpose: To prevent cockroach infestations in basements, crawl spaces, and other below- ground or on-ground areas in buildings which are connected to the utility and sewer systems.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observation in manholes, crawl spaces, and other places where these cockroaches have been a problem.

   c. Frequency: Quarterly.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Eliminate moisture in basements and other below-ground areas in buildings that could support cockroaches - this is most likely to occur in the main post area. Ventilate wet or damp areas under buildings. In buildings which experience frequent invasion of American cockroaches, drains, particularly those in the basements or on ground level, should have grates or screens over the openings with a mesh size less than 1/8-inch. Utility doors should fit tightly, and pipe chases and other entry points should be sealed.

      (b) Conducted by: Public Works personnel.

      (2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: American cockroaches found in sewers.

(2) Method and Location: Space treatment.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No live cockroaches in treated sewers 30 days following treatment.

c. Chemical.

(1) Basis for Treatment: American cockroaches found in basements, crawl spaces, utility tunnels, etc.

(2) Method and Location: Apply residual pesticide with a 2-gallon sprayer to harborage areas and other areas where cockroaches are found.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs indicate successful treatment. Spot treat quarters where follow-up control is indicated.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: American cockroaches are not a problem as long as they stay in the sewer system. However, at times the cockroaches invade Unaccompanied Personnel 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 other harborage sites in the sewers or other underground places. If this is not done, then treatment in underground cockroach harborage sites may drive additional insects into buildings not previously experiencing problems.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 5

PEST: Filth Flies.

SITE: Food Service Facilities.

1. Purpose: To control filth flies in facilities where food is prepared or served.

2. Surveillance.

   a. Conducted by: Food service personnel, Preventive Medicine, and Pest Management Technicians.

   b. Methods: Visual observations. Fly grids may be used by Preventive Medicine when fly infestations are heavy and need to be quantified; however, most fly problems at food service facilities are relatively easy to determine visually.

   c. Frequency: Daily by food service personnel. During sanitation inspections or conducted as a special survey for flies by Preventive Medicine. Weekly by Pest Management
Technicians.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Sticky fly traps may be used in areas which are not directly over prepared food or food preparation surfaces. This method may be effective
when a few flies are found indoors. Fly grids designed to stun and capture flies on a sticky surface may be used in kitchen and eating areas (as opposed to older fly grids which are designed to electrocute flies causing them to explode and fragment).

      (b) Conducted by: Food service personnel.

      (2) Type: Mechanical and Physical.

(a) Method and Location: Screens should be used to preclude fly entry when doors and windows are to be left open. Automatic self-closing devices should be placed on outer doors to reduce the time open doors permit fly entry. Air curtains may also Be used at entry points, but must be installed and maintained correctly to blow flies away from the entrance and not into the entrance and should cover the entire door width.

(b) Conducted by: Building maintenance personnel. However, keeping doors closed when not in use is the responsibility of food service personnel.

(3) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(4) Type: Cultural.

(a) Method and Location: Use good sanitation to reduce food and water which attract flies. Clean up spilled food from work surfaces, walls and floors. Wash dirty dishes and cooking containers following use - do not leave exposed food in the facility overnight. Place garbage in sealable bags. Place the bags in containers with tight fitting lids and keep containers closed when not in use. Do not place dumpsters within 50 feet of the facility.

(b) Conducted by: Food service personnel.

b. Chemical.

(1) Basis for Treatment: Flies found within the facility.

(2) Method and Location: Contact treatment with aerosol insecticide.

(3) Conducted by: Food service personnel.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Flies are killed on contact.

4. Precautions for Sensitive Areas: See pesticide label for precautions.

5. Prohibited Practices: Do not apply pesticides on food items or on food preparation surfaces.

6. Environmental Concerns: None.

7. Remarks: Good sanitation should virtually eliminate fly problems at food service facilities. 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 Public Works personnel would be notified to look into the problem. Refuse containers need to be cleaned weekly in the summer months to preclude fly breeding.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 6

PEST: Stored Products Insects.

SITE: Food Storage Warehouses (Commissary) and Food Handling Buildings (FHB).

1. Purpose: To control insects which damage food and fiber products.

2. Surveillance.

   a. Conducted by: Veterinary Food Inspectors, Preventive Medicine Specialists, and Pest Management Technicians.

   b. Methods: Visual observations for insects and/or conditions that could favor insect infestations in stored food products. Particular attention should be given to rodent bait stations when they are in use since most baits are subject to insect infestation. Augment visual observations with pheromone traps. Locations to be surveyed include:

   Building 537 - Bowling Alley (includes snack bar) Building 707 - PX
   Building 451 - Cactus Club (food service) Building 536 - Commissary
   Building 1102 - Child Development Center Building 3507 – Road Runner
   Cafe Building 2105 – Rock Cafe
   Building 1001 – Youth Center Other buildings on request

   c. Frequency: Monthly in food service facilities - Preventive Medicine, weekly by Pest Management Technicians; daily in the Commissary and its warehouses - Veterinary Inspectors.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

(a) Method and Location: Clean up spilled food materials which may attract and provide a food source for insects at least daily. Vacuuming works better than sweeping in particle-filled cracks and crevices.

(b) Conducted by: Facility personnel.

(2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Damaged goods should be kept in tight-fitting containers. Infested products are removed immediately upon discovery.

(b) Conducted by: Facility personnel.

b. Chemical.

(1) Basis for Treatment: Insects found in products or in the food storage areas.

(2) Method and Location: 2-gallon sprayer - apply around pallets, floor/wall junctures, and other areas where insects may be present.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No evidence of insects for 30 days following treatment.

4. Precautions for Sensitive Areas: Do not apply pesticides to food products or packages/outer wrappings of food.

5. Prohibited Practices: Do not treat when building is occupied.

6. Environmental Concerns: None.

7. Remarks:

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 7

PEST: Mosquitoes.

SITE: Cantonment Area.

1. Purpose: To control adult mosquitoes on the main post area.

2. Surveillance.

   a. Conducted by: Pest Management Technicians and Preventive Medicine personnel.

   b. Methods: Larval surveys in standing water on main post; six light traps distributed on main post in areas where people are most concentrated at night (when mosquitoes bite).

   c. Frequency: Larval surveys done weekly; adult light traps operated twice per week.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Screens should be placed on windows on buildings occupied at night to exclude adult mosquitoes. Temporary standing water sites should be graded or filled to eliminate mosquito breeding. Precautions must be taken not to damage wetlands. Eliminate artificial container breeding sites.

      (b) Conducted by: Public Works personnel.

      (2) Type: Biological. *Bacillus thuringiensis* (Bti).

      (a) Method and Location: Applied to mosquito larvae found in standing water between the front gate on main post and the canal. If effective, no live mosquito larvae should be present 5 days after treatment.

(b) Conducted by: Pest Management Technicians.

(3) Larvicide: See annual Pesticide Use Proposal (PUP).

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Adult mosquitoes found in light traps exceed 25 female mosquitoes/trap/night.

(2) Method and Location: ULV sprayer – permethrin applied as a fog in housing areas and recreation sites (e.g., ball field).

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Mosquito numbers are reduced in trap below the 25 mosquito level.

c. Chemical.

(1) Basis for Treatment: Tree line treated when adult mosquitoes are first found in light traps exceed 25 female mosquitoes/trap/night.

(2) Method and Location: Carbaryl applied with a power sprayer to tree line on main post perimeter. As long as the counts remain at or above this level, then the tree Line will be retreated twice a week.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Mosquito numbers are reduced in trap below the 25 mosquito level.

4. Precautions for Sensitive Areas: Do not apply fog when wind speeds are in excess of 10 miles per hour. Refer to the local list of sensitive individuals before applying fog.

5. Prohibited Practices: Do not apply pesticides in areas where honey bees can be harmed.

6. Environmental Concerns: Do not damage or eliminate wetlands.

7. Remarks: Mosquito control discussed in this worksheet is for larvae and adult mosquitoes found on the installation. If disease (e.g., encephalitis) is found in the mosquito population in the surrounding counties, then consideration treating the large marsh (not DoD property) adjacent to the installation with larvicides should be considered.

Pest: **MOSQUITOES-Container Breeding Aedes**	Site: **CANTONMENT AREA AND TRAINING AREAS**

1. **Purpose:** To control Container Breeding *Aedes* mosquitoes thereby reducing human annoyance and the risk of disease

Aedes aegypti (left) and *Aedes albopictus* (right) mosquitoes can be distinguished from each other by the presence of a white stripe on the thorax of *Aedes albopictus*.

…iers, (2) bottles, (3) coconut husks, (4) tires, (5) barrels, (6) water storage tanks, (7) bromeliads and axils of banana trees, (8) obstructed roof gutters, (9) plant pot saucers, (10) broken bottles fixed on walls to deter burglars, (11) holes in unused construction blocks, and (12) the upper edge of block walls. From Rozendaal, 1997.

2. Surveillance of Container Breeding Aedes

2.1 Conducted By: Installation Preventive Medicine. Special requests for surveillance support for a specific health threat can be obtained from USAPHC-Regions. Pest Management Technicians.

2.2 Methods & Frequency: Installation personnel detect and report biting mosquitoes. Inspect water containing objects (rain buckets, cemetery flower urns, rain gutters, discarded tires or other water containing objects). Seasonal conditions (Typically April/May – Oct/Nov) and breeding habitat are noted on an ongoing basis.

2.3 Specific Surveillance Measures:

2.3.1. The BG-Sentinel Trap (Preventive Medicine)

The BG-Sentinel™ trap is specifically designed to collect daytime-feeding mosquitoes, and has been found to collect *Ae. aegypti* and *Ae. albopictus* more effectively than the standard CDC light trap. Traps should be baited with CO2 from dry ice, when available. Also, commercially available lures that can improve a trap's effectiveness have been designed specifically to attract *Ae. aegypti* and *Ae. albopictus.* The BG- SentinelTM trap requires a lure for effective trapping. Product manuals detail specific setup procedures and instructions for use of each piece of surveillance equipment. Take care when handling the BG-SentinelTM trap, as some components have durability limitations.

Equipment	**NSN**
BG SentinelTM Trap	3740-01-628-9326
BG-Lure® for BG SentinelTM Trap (Note: trap will not work without lure)	3740-01-628-9325
Catch Bag for BG SentinelTM Trap	3740-01-628-9327
Wall charger for BG SentinelTM Trap	3740-01-628-9324

2.3.2 Black Jar for egg collection and larval identification:

A manufactured ovitrap is available in the DoD stock system (Mosquito Trap-and-Kill, NSN 6840-01-628-4751), and ovitraps can also be constructed with any dark colored container. Simply fill the container partially with water and place a wooden tongue depressor or paper towels along the inside of the cup. Check the tongue

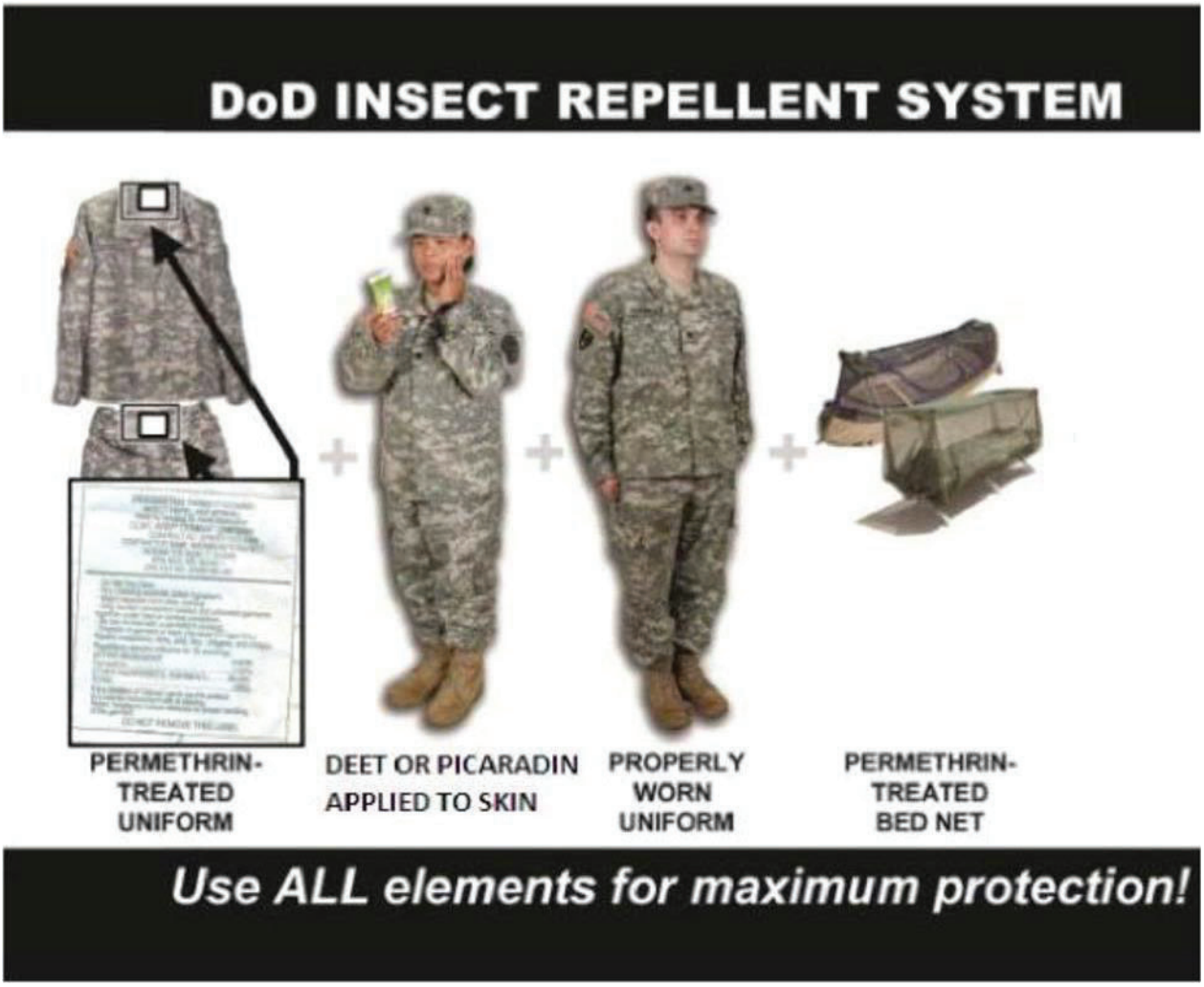
depressor and paper towels regularly for the presence of eggs.

3. Integrated Control of Container Breeding Aedes

3.1 Mechanical and Physical Control

3.2 Method & Location: Ensure placement of screens in windows on buildings occupied at night to exclude adult mosquitoes. Temporary standing water sites (e.g., tire ruts) should be graded or filled to eliminate mosquito breeding. Precautions must be taken not to damage wetlands. Eliminate artificial container (e.g., tires, wrinkled tarps, refuse, neglected equipment, and neglected toys) breeding sites.
Conducted By: Installation Maintenance Personnel

3.3 Method & Location: Proper wearing of clothing including wearing long sleeve shirts rolled down.



Conducted By: Installation Personnel
See AFPMB Tech Guide 36: Personal Protective Measures against Insects and other Arthropods of Military Significance

4. Type: Cultural

4.1 Method & Location: Remove and discard any refuse or materials capable of holding water such as tires and broken equipment. Potential for breeding exists particularly at vehicle storage yards where waste tires may accumulate.

4.2 Table indicating appropriate cultural management practices for various water containing objects on the installation.

Larval Habitats	Empty/Clean Regularly	Store Under Roof	Fill with Sand	Throw away/recycle
Buckets	Yes	Yes		Yes
Discarded Containers				Yes
Flower Pot Saucers	Yes		Yes	
Roof Gutters	Yes			
Tires		Yes		Yes
Tree Holes			Yes	

4.3 Examples of outdoor breeding sites of *Aedes* spp. (1) discarded cans/plastic containers, (2) bottles, (3) coconut husks, (4) tires, (5) barrels, (6) water storage tanks, (7) bromeliads and axils of banana trees, (8) obstructed roof gutters, (9) plant pot saucers, (10) broken bottles fixed on walls to deter burglars, (11) holes in unused construction blocks, and (12) the upper edge of block walls. From Rozendaal, 1997. Conducted By: Installation Personnel

5. Personal Protection for Biting Mosquitos

5.1 Basis for Treatment: Mosquitoes (and other biting arthropods) in the area

5.2 Method & Location: Installation personnel (treatment of uniforms with Permethrin and use of DEET on skin only).

Insect Repellent, personal application, Ultrathon
EPA Reg # 58007-1; NSN 6840-01-284-3982

Insect Repellent, clothing application, aerosol (Permethrin Arthropod Repellent)
EPA Reg # 50404-6-58188; NSN 6840-01-278-1336

Insect Repellent, personal application & sunscreen, 20% DEET/SPF15 (Sunsect)
EPA Reg # 66306-1; NSN 6840-01-288-2188

Insect Repellent, personal application & sunscreen, 20% DEET/SPF15 (Sunsect)
EPA Reg # 66036-1; NSN 6840-01-452-9582

Insect Repellent, clothing application, permethrin (IDA) (**FOR MILITARY USE ONLY**) EPA Reg # 63120-3; NSN 6840-01-345-0237

Insect Repellent, personal application, 30% DEET (SP532-Ultra30/LippoDEET) EPA Reg # 82810-1-58188; NSN 6840-01-584-8393

Insect Repellent, personal application, 25% DEET , pump spray bottles(Cutter Backwoods DEET Insect Repellent) EPA Reg # 305-61-121; NSN 6840-01-584-8598

Insect Repellent, personal application, 20% Picaridin, pump spray bottle (NATRAPEL Insect Repellent) EPA Reg # 39967-53-56575; NSN 6840-01-619-4795

6. Chemical pest management techniques for Container Breeding *Aedes*
(Before applying/using any chemical treatment, consult your Command IPM consultant first. Verify the product is registered for use in the US State or IAW with the Final Governing Standard for the Host Nation)

6.1 Basis for Treatment: Confirmed mosquito presence in area. Confirmed mosquito-borne disease, as determined by the Preventive Medicine Environmental Health office and local health department officials.

6.2 Method & Location: Treatment of breeding sites that cannot be addressed in a non-chemical manner. Conducted By: Pest Management Technicians. Preventive Medicine Environmental Health personnel.

Altosid EPA Reg #: 2724-421 NSN 6840-01-424-2495

Summit Bactimos (BTI) EPA Reg #: 6218-47 NSN 6840-01-377-7049

Ovitrap Mosquito Trap-N-Kill (Dichlorovas) EPA Reg # 8730-50-66433 NSN 6840-01-628-4751

6.3 Control Standard: Mosquitoes not on personnel during potential exposure period. Mosquito trap and larval counts low.

6.4 Precautions and Concerns when doing Chemical Control

6.4.1 PRECAUTIONS FOR SENSITIVE AREAS: Do not use repellents on individuals who may show a chemical sensitivity to their ingredients. This is particularly true when dealing with infants and children under 12 years of age.

6.4.2 PROHIBITED PRACTICES: The use of repellents not in accordance with label instructions.

6.4.3 ENVIRONMENTAL CONCERNS: Do not alter or disrupt designated wetlands. Do not treat uniforms where excess permethrin residue or spray-over would

contaminate the environment. Targeted adulticide treatments only considered if disease threat exists.

6.4.4 REMARKS: Source elimination and larval control are the best strategies to reduce the threat of mosquitoes.

7. Where to go for more information:

Armed Forces Pest Management Board: http://www.afpmb.org/

Army Public Health Center (APHC) Zika Virus website: http://phc.amedd.army.mil/topics/discond/diseases/Pages/Zika.aspx

Centers for Disease Control and Prevention: http://www.cdc.gov/

Contingency Pest Management Guide. AFPMB Technical Guide 24: http://www.afpmb.org/sites/default/files/pubs/techguides/tg24.pdf

Guide to Pest Surveillance during Contingency Operations. AFPMB Technical Guide 48: http://www.afpmb.org/sites/default/files/pubs/techguides/TG48/TG48.pdf

Personal Protective Measures against Insects and other Arthropods. AFPMB Technical Guide 36: http://www.afpmb.org/sites/default/files/pubs/techguides/tg36.pdf

Ultra Low Volume Dispersal of Insecticides using Ground Equipment. AFPMB Technical Guide 13: http://www.afpmb.org/sites/default/files/pubs/techguides/tg13.pdf

Walter Reed Biosystematics Unit: http://www.wrbu.org/index.html

Rozendaal, J. A. 1997. Vector Control: Methods for Use by Individuals and Communities. World Health Organization, Geneva. 412 pp.
http://www.who.int/mediacentre/factsheets/zika/en/

INTEGRATED PEST MANAGEMENT OUTLINE NO. 8

PEST: Ants.

SITE: Unaccompanied Personnel Housing Units

1. Purpose: To eliminate ants from Unaccompanied Personnel Housing units.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations following occupant complaints.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Ant bait stations, available through self-help, can be placed along baseboards or runways used by ants.

      (b) Conducted by: Occupant.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

      (a) Method and Location: Spilled food items, to include pet food, should be cleaned up immediately. Food products which are not being used should be kept in containers with tight fitting lids.

      (b) Conducted by: Occupants.

   b. Chemical.

(1) Basis for Treatment: Ants seen in the quarters.

(2) Method and Location: Place ant bait stations in areas where ants are seen.

(3) Conducted by: Occupants.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Ants are controlled within 30 days following treatment.

b. Chemical.

(1) Basis for Treatment: Ants seen in the quarters.

(2) Method and Location: 2-gallon sprayer - pesticide applied to foundations and door sills outside buildings.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs to treated quarters within 30 days following treatment.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Ants are a minor problem - placement of a barrier around external building openings appears to control ants before they can enter. Ant problems occasionally occur however, the same information contained in this outline apply.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 9

PEST: Spiders.

SITE: Buildings and Other Structures.

1. Purpose: Eliminate poisonous spiders (black widow and brown spiders) and nonpoisonous spiders from buildings or other workplaces.

2. Surveillance.

   a. Conducted by: Building occupants.

   b. Methods: Visual observations - spiders are frequently found in dry, cool, usually undisturbed places inside buildings; in carports, utility sheds and other outdoor storage areas; and under buildings.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Spiders and their webs can be eliminated by using a broom or vacuum cleaner in most cases. Maintenance of screens and weather stripping around doors and windows will keep out small insects which the spiders use for food. Sticky traps can also be placed next to door jambs to intercept incoming spiders (if it is suspected they are coming into the building from outside) the traps can also be used to determine if further control efforts are needed, depending on the number and species of spiders caught. Sticky traps are available through self-help.

      (b) Conducted by: Building occupants.

      (2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Spiders can be discouraged through good housekeeping, both inside and outside. Keep boxes, old equipment, and other items neatly stored on shelves, particularly in garages and basements; clean up and dispose of trash, debris, old equipment, etc.

(b) Conducted by: Building occupants.

b. Chemical.

(1) Basis for Treatment: Spiders present in or around building or structure.

(2) Method and Location:

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Application of pesticide by the pest management technicians should not be done unless the occupants have first tried self-help and their efforts have failed to control the spiders. No complaints or call backs should be received within 30 days after treatment.

4. Precautions for Sensitive Areas: Do not apply in areas with children less than one-year-old.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Spiders need to eat insects and other arthropods to maintain an infestation. When spiders are simply seeking shelter from the outside, they will die if a food source is not readily available. For this reason, good housekeeping is essential in preventing or suppressing spider infestations.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 10

PEST: Crickets.

SITE: Unaccompanied Personnel Housing.

1. Purpose: To eliminate crickets from Unaccompanied Personnel Housing units.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations following occupant complaints.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Sticky traps, available through self-help, can be placed along baseboards in areas where crickets are seen or heard. This methods may work if one or two crickets are the problem. However, if numerous crickets are the problem, then the pest management technicians should be called.

      (b) Conducted by: Occupant.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

(a) Method and Location: Crickets often hide in areas which are cluttered with trash, old boxes, and other debris; cleanup of these types of items may help to reduce the cricket infestation.

(b) Conducted by: Occupants.

b. Chemical.

(1) Basis for Treatment: Crickets seen or heard in the quarters.

(2) Method and Location: 2-gallon sprayer - foundations outside buildings; baseboards and voids inside buildings where crickets may hide.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs to treated quarters within 30 days following treatment.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: None.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 11

PEST: Earwigs, Ground Beetles and Other Crawling Insects.

SITE: Unaccompanied Personnel Housing.

1. Purpose: To control crawling insects in Unaccompanied Personnel Housing units.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations following occupant complaints.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Eliminate openings to housing units which provide entry to these insects. Minor repairs can be made with supplies obtained from self-help.

      (b) Conducted by: Occupant.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

      (a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Crawling insects seen in the quarters.

(2) Method and Location: 2-gallon sprayer - pesticide applied to foundations and other areas where insects tend to enter the building.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs to treated quarters within 30 days following treatment.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: These insects are minor pests and are easily controlled with light residual sprays.

INTEGRATED PEST MANAGEMENT OUTLINE NO. 12

PEST: Bees and Wasps.

SITE: Occupied Buildings.

1. Purpose: To control stinging insects in and around occupied buildings.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations following occupant complaints.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Screen windows and doors if appropriate; remove wasp nests. Bee swarms should be left alone for a few days to allow them to move on, while advising building occupants to stay away from the swarm. Beekeepers are unlikely to collect swarms from YPG because of the distance of the installation from town and the high likelihood that swarms on YPG are Africanized.

      (b) Conducted by: Windows and doors are screened by DPW Operations and Maintenance. Pest Management Technicians remove wasp nests and bee swarms, when required.

      (2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Bees and wasps found in or around buildings. Insects must present a health risk or interfere with mission accomplishment to warrant chemical control.

(2) Method and Location: Power sprayer. Pesticide applied to nest sites or directly to the insects.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No call backs to treated buildings within 5 days following treatment.

4. Precautions for Sensitive Areas: Some insecticides are extremely toxic to bees and will harm domesticated honey bees and wild native pollinators.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 13

PEST: Subterranean Termites.

SITE: Buildings and Other Structures.

1. Purpose: To prevent termites from damaging wooden structures on the installation.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observation for termites and/or conditions that could favor termite infestations

   c. Frequency: Annually - may be done in conjunction with service orders for other pests whenever practical.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Eliminate water sources that could support termite colonies - this is most likely to occur in the main post area where grass watering or broken utility lines provide water next to foundations and under buildings. Ventilate wet or damp areas under buildings. Repair and replace infested wood and structural material.

      (b) Conducted by: Public Works personnel.

(2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Pre-treat soil under new construction. Treat active termite infestations when they are found.

(2) Method and Location: Soil injection.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No subsequent termite infestations or damage from treated structures for five years after application.

4. Precautions for Sensitive Areas: Avoid getting pesticide in areas where water can become contaminated, and in air ducts of buildings. Do not apply when people are in buildings.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks:

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 14

PEST: Silverfish.

SITE: All Buildings.

1. Purpose: To control silverfish in buildings where they are a nuisance or damage products (paper goods).

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations in: 1) warehouses where paper products are stored (done in conjunction with other pest inspections), and 2) other buildings following occupant complaints.

   c. Frequency: Monthly in warehouses; as required in other buildings.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: None.

      (b) Conducted by:

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

(a) Method and Location: Good sanitation - elimination of old boxes, paper and other trash from warehouses and other buildings.

(b) Conducted by: Building occupants.

b. Chemical.

(1) Basis for Treatment: Silverfish observed in the building.

(2) Method and Location: 2-gallon sprayer - pesticide applied to areas where insects are observed.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP) .

(5) Control Standard: No call backs to treated buildings within 30 days following treatment.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: These insects are minor pests on the installation.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 15

PEST: Scorpions.

SITE: Trailers at the Airfield.

1. Purpose: To control scorpions in and around trailers at the airfield.
2. Surveillance.
    a. Conducted by: Trailer occupants.
    b. Methods: Visual observations.
    c. Frequency: As required.
3. Pest Management Techniques.
    a. Nonchemical.
        (1) Type: Mechanical and Physical.
        (a) Method and Location: None.
        (b) Conducted by:
        (2) Type: Biological.
        (a) Method and Location: None.
        (b) Conducted by:
        (3) Type: Cultural.
        (a) Method and Location: None.
        (b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Scorpions observed in or around the building.
(2) Method and Location: 2-gallon sprayer - pesticide applied to areas where scorpions are observed and around and under the base of the trailers (outside).

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP) .

(5) Control Standard: No call backs to treated buildings within 30 days following treatment.

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Scorpions are a minor nuisance around the airfield trailers. These arthropods seek shelter from the heat around and under the structures and occasionally get inside.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 16

PEST: Mice.

SITE: Food Storage Warehouses.

1. Purpose: To control mice in the Commissary and AAFES Shoppette.

2. Surveillance.

a. Conducted by: Food service personnel, Veterinary Food Inspectors, and Pest Management Technicians.

b. Methods: Visual observations for mouse damage or droppings.

c. Frequency: Daily by warehouse, AAFES Express, Commissary, and Veterinary personnel. Weekly by Pest Management Technicians.

3. Pest Management Techniques.

a. Nonchemical.

(1) Type: Mechanical and Physical.

(a) Method and Location: Eliminate openings to the buildings which are greater than 1/4-inch. Particular attention should be given to loading doors since they do not always close tightly. Snap traps may be used to capture mice when an infestation is found.

(b) Conducted by: Public Works preventive maintenance personnel are usually requested to make building modifications such as weather stripping, door repair, etc. Facility personnel may set traps or place glue boards for minor infestations; the Pest Management Technicians usually set traps when extensive trapping is required.

(2) Type: Biological.

(a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Utilize good sanitation to reduce food and water for mice. Clean up spilled food products immediately or daily at the latest. Remove bags, boxes and other potential harborage from food storage areas. Keep salvage areas and break areas clean at all times; keep food in closed containers. Store pallets of food at least 24 inches from walls to permit routine cleaning, inspection, and rodent control.

(b) Conducted by: Warehouse, Express, or Commissary personnel.

b. Chemical.

(1) Basis for Treatment: Mice or evidence of mice found during surveillance.

(2) Method and Location: Bait stations maintained at:

Building 537 - Bowling Alley (includes snack bar)
Building 707 - PX
Building 451 - Cactus Cafe (food service)
Building 536 - Commissary
Building 1001 – Youth Center
Building 1102 - Child Development
Center Building 3507 – Roadrunner Cafe
Building 2105 - ROC Snack Bar
Building 3008A – Wildhorse Cafe
Other buildings as necessary

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: No product damage from mice. If mouse baiting is instituted following evidence of a large mouse infestation, then significant reduction in the number of droppings should be seen in and around bait stations within the first 30 days following bait placement. If there is no evidence of mice following 30 days of baiting, then the bait stations

should be removed unless there is a past history of repeated infestations (e.g., 3-4 times per year). Bait stations should be serviced at least monthly.

4. Precautions for Sensitive Areas: See pesticide labels for precautions.

5. Prohibited Practices: Do not place rodenticides where the bait will be accessible to children or pets. Bait should be placed in tamper proof containers.

6. Environmental Concerns: None.

7. Remarks: Pesticides should be considered the last option in controlling mice. As long as entry points into buildings exist, then trapping or baiting may be the only alternatives for control. 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.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 17

PEST: Mice.

SITE: Unaccompanied Personnel Housing, Offices, Barracks, and Other Administrative Buildings.

1. Purpose: To control mice in the Unaccompanied Personnel Housing and in other administrative areas on the installation.

2. Surveillance.

   a. Conducted by: Building occupants.

   b. Methods: Visual observations for mouse damage or droppings.

   c. Frequency: As required.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Snap traps may be used to capture mice when an infestation is found. Traps can be obtained from self-help sources. Eliminate openings to the building which are greater than 1/4-inch; particular attention should be given to doors and areas on the outside of the building where pipes and other utilities lines enter.

      (b) Conducted by: Facility personnel may set traps for minor infestations; the Pest Management Technicians usually set traps when extensive trapping is required. Public Works preventive maintenance personnel are usually requested to make building modifications such as weather stripping, door repair, etc.

      (2) Type: Biological.

      (a) Method and Location: None.

(b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Utilize good sanitation to reduce food and water for mice. Clean up spilled food products immediately or daily at the latest. Remove bags, boxes and other potential harborage from basements, kitchens, closets, etc.

(b) Conducted by: Building occupants.

b. Chemical.

(1) Basis for Treatment:

(2) Method and Location: None.

(3) Conducted by:

(4) Pesticide.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas:

5. Prohibited Practices:

6. Environmental Concerns: None.

7. Remarks: As long as entry points into buildings exist, then trapping may only be successful as long as other mice do not enter from the outside. The presence of spilled food products and/or poor housekeeping (e.g., boxes and equipment kept in basements, closets, etc.) will provide harborage for mice, allowing them to breed in the structure. If this occurs, and trapping by occupants fails to control the problem, then the Pest Management Technicians should be contacted to evaluate the situation.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 18

PEST: Gophers.

SITE: Lawns (Unaccompanied Housing Units), Parade Fields, and Other Maintained Grassy Areas.

1. Purpose: To prevent gophers from destroying maintained grassy areas.

2. Surveillance.

   a. Conducted by: Pest Management Technicians.

   b. Methods: Visual observations for mounds or gophers.

   c. Frequency: As required. Surveillance is usually done in conjunction with other maintenance on grassy areas. Special surveys are performed following calls from installation personnel.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Gopher traps placed into gopher burrows.

      (b) Conducted by: Pest Management Technicians.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Gophers in lawns.

(2) Method and Location: Hand application of bait.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See annual Pesticide Use Proposal (PUP).

(5) Control Standard: Discontinue baiting when there are no active signs of gopher activity (new mounds).

4. Precautions for Sensitive Areas: Bait must be applied to the burrows underground - above ground uses are prohibited. Applicator must wear gloves. Care must be taken to avoid spilling any material at the job site or on the pest control vehicle.

5. Prohibited Practices: Do not use bait for gopher control in Unaccompanied Housing Unit lawns or at the Child Care Center.

6. Environmental Concerns: None.

7. Remarks: Use bait only when large numbers of gophers are present, making trapping methods impractical from a manpower standpoint.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 19

PEST: Coyotes.

SITE: Cantonment Area.

1. Purpose: To control coyotes in the main post area.

2. Surveillance.

   a. Conducted by: YPG Police.

   b. Methods: Visual observation.

   c. Frequency: In response to complaints.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Live trapping (wire or wood cage traps) or other traps as recommended by the YPG Wildlife Biologist.

      (b) Conducted by: Personnel holding a Wildlife Services Permit from AZ Game and Fish Department.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment:

(2) Method and Location: None.

(3) Conducted by:

(4) Pesticide.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Coyotes are occasional pests; they may prey on small dogs or cats and have the potential to bite residents. Permits to capture coyotes (predator control) must be obtained from the Arizona Game and Fish Department prior to trapping. Captured coyotes will be dispatched by qualified personnel (e.g. AZGFD Game Manager) or taken to the YPG Veterinary Clinic where the animals will be euthanized and disposed of. The number of coyotes removed in this manner should have no significant impact on the coyote population in the YPG area. Coyotes are attracted to cantonments by food. Feeding of wildlife is prohibited by Senior Commander's Policy Statement No. 19S – Feeding or Watering Wildlife (17 September 2013).

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 20

PEST: Other Vertebrate Pests.

SITE: Cantonment Area.

1. Purpose: To control vertebrate animals (skunks, raccoons, etc.) in the main post area.

2. Surveillance.

   a. Conducted by: Pest Management Technicians/ESD Wildlife Biologist

   b. Methods: Visual observation.

   c. Frequency: In response to complaints.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Live trapping with wire or solid cage traps.

      (b) Conducted by: Pest Management Technicians/ESD Wildlife Biologist

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

      (a) Method and Location: Change human behavior or use physical barriers or change vegetation to prevent access by wildlife to food (such as garbage or pet food) or access to places where the animals are a nuisance. For example, where raccoons were a nuisance on a residential roof, trees were trimmed to prevent access to the roof.

      (b) Conducted by: Pest Management Technicians, ESD Wildlife

Biologist, and Maintenance employees (O & M).

b. Chemical.

(1) Basis for Treatment:

(2) Method and Location: None.

(3) Conducted by:

(4) Pesticide.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: As a last resort, wild vertebrates (skunks, raccoons, etc.) are trapped by the Pest Management Technicians and/or ESD Wildlife Biologist and released off the main post area. This technique is rarely effective because the animals either die in their new environment or return. Handling vertebrate pests must be done in conjunction with ESD Wildlife Biologist and Arizona Game and Fish Department.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 21

PEST: Wild Horses and Burros.

SITE: Within cantonments and on Open Space on the Installation.

1. Purpose: To remove excess animals from the installation which are above the normal carrying capacity, and nuisance animals which are living within cantonments.

2. Surveillance.

   a. Conducted by: ESD biologists and BLM wild horse and burro technician.

   b. Methods: Visual counts.

   c. Frequency: As required - done in conjunction with BLM studies in surrounding areas.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Live capture and removal of unwanted animals.
      (b) Conducted by: BLM personnel.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

      (a) Method and Location: None.

      (b) Conducted by:

b. Chemical.

(1) Basis for Treatment:

(2) Method and Location: None.

(3) Conducted by:

(4) Pesticide.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Capture and removal of wild horses and burros is done in conjunction with area- wide efforts to reduce the numbers of these animals. BLM is the responsible agency involved with the program. The wild horses and burros are hazards on Highway 95 and installation roads. Because of the extreme lack of water on YPG horses often gather where landscape irrigation water, car wash, stand pipes, etc., provide water. Burros come onto the Howard Cantonment to escape high populations of biting flies along the Colorado River and to receive treats from Travel Camp guests.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 22

PEST: Stray Dogs and Cats

SITE: In or near cantonments.

1. Purpose: To capture stray dogs and cats and return them to their owners, or find new homes.

2. Surveillance.

   a. Conducted by: Police Department.

   b. Methods: Visual.

   c. Frequency: As required when complaints are submitted.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Live capture and temporary housing of animals.

      (b) Conducted by: Police Department personnel.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment:

(2) Method and Location: None.

(3) Conducted by:

(4) Pesticide.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks:

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 23

PEST: Snakes.

SITE: Cantonment area/Other Mission Areas.

1. Purpose: To remove snakes, especially poisonous species, from the main post area or other areas where they interfere with the mission or other post activities.

2. Surveillance.

   a. Conducted by: All YPG personnel.

   b. Methods: Visual observation.

   c. Frequency: As necessary when snakes are encountered in an unwanted area.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Capture with snake loop and removal.
      (b) Conducted by: Pest Control Technicians and YPG police (after hours).

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

      (3) Type: Cultural.

(a) Method and Location: Avoidance - if at all possible, bypass snakes. Snakes generally prefer to avoid people. Most encounters with snakes can be avoided by simply allowing the snake to leave the area. The biggest risk of snake bites comes from people going out of their way to handle or otherwise provoke snakes into a defense attitude. If snakes cannot be avoided, Pest Control should be called. DO NOT HARM OR KILL SNAKES!!!

(b) Conducted by: Personnel encountering snakes.

b. Chemical.

(1) Basis for Treatment: Complaints from housing residents of snakes by houses.

(2) Method and Location: Product sold as snake repellant.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: The repellant has been tested and is not effective, and cannot take the place of educating housing residents.

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard:

4. Precautions for Sensitive Areas: None.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Snakes, both poisonous and nonpoisonous, will be captured alive and removed to a location where they will not cause any harm or disrupt post activities. Snakes should not

be moved across the Colorado River (to California) or more than ½ mile from where they were captured.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 24

PEST: Weeds in lawns and other landscaped areas within the cantonments.

SITE: Parade Fields, Unaccompanied Personnel Housing Lawns, Other Common Grassy Areas, and in other developed landscaping.

1. Purpose: To control weeds in cantonments

2. Surveillance.

   a. Conducted by: Grounds maintenance personnel and ESD biologists

   b. Methods: Visual observations.

   c. Frequency: Weekly through the early growing season (March through May) and bi- weekly from June through September.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Mowing grass to maintain a uniform height may result in control of some broadleaf weeds by preventing flower and seedformation. However, some weeds have the ability to adapt to mowing condition by flowering just above the surface of the ground, but below the height of most commercial mowers. Because of the relatively small amount of maintained grass in the cantonment area, hand removal of some weeds may be practical.

      (b) Conducted by: Roads and Grounds personnel.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: Proper fertilization and watering of grassy areas promotes good grass growth. This practice will prevent many broadleaf weeds from taking hold and growing.

(b) Conducted by: Roads and Grounds personnel.

b. Chemical.

(1) Basis for Treatment: Invasive species such as buffelgrass and sandbur which cannot be reasonably controlled using mechanical or biological means

(2) Method and Location: primarily within lawns

(3) Conducted by: Pest Management Technicians

(4) Pesticide: See current pesticide use proposal (PUP).

(a) Common Name:

(b) EPA Registration Number:

(5) Control Standard: Three years with no reappearance of weed species on the site.

4. Precautions for Sensitive Areas:

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: Buffelgrass (*Pennisetum cilare*) must be eradicated from the installation. Some populations cannot be mechanically removed because of hazards (UXO), presence of cultural artifacts, or because they are too numerous for manual removal. Sandbur (*Cenchrus* spp., native) and puncturevine (*Tribulus terrestris*, nonnative) have painful burrs which are primarily a concern in lawn areas where children play. Because the burrs are very readily moved on fur and clothing, all plants of these species should be removed from the cantonments. Puncture vine is easily removed mechanically.

INTEGRATED PEST MANAGEMENT OUTLINE
NO. 25

PEST: All Vegetation.

SITE: Utility pole and hydrant bases, sidewalks, around building foundations, parking lots, and fence lines.

1. Purpose: To control all vegetation to reduce vegetative damage to paved surfaces, poles and fences, and to reduce the risk of fire or security breaches.

2. Surveillance.

   a. Conducted by: Pest Management Technicians and ESD Ecologists

   b. Methods: Visual observations.

   c. Frequency: At least weekly; usually done in conjunction with other service orders.

3. Pest Management Techniques.

   a. Nonchemical.

      (1) Type: Mechanical and Physical.

      (a) Method and Location: Weed eaters can be used, but are very labor-intensive. In addition, once vegetation is cut, new growth will quickly replace those parts of the plants which have been removed. This method is practical when very few sites (less than 10) are maintained.

      (b) Conducted by: Roads and Grounds personnel.

      (2) Type: Biological.

      (a) Method and Location: None.

      (b) Conducted by:

(3) Type: Cultural.

(a) Method and Location: None.

(b) Conducted by:

b. Chemical.

(1) Basis for Treatment: Vegetation around the bases of hydrants and utility poles, vegetation along fence lines, and vegetation on or along sidewalks and building perimeters.

(2) Method and Location: Hand or power sprayer. Chemical is applied IAW label directions to unwanted vegetation.

(3) Conducted by: Pest Management Technicians.

(4) Pesticide: See current pesticide use proposal (PUP).

4. Precautions for Sensitive Areas: Avoid contact with foliage, green stems or fruit of crops, desirable plants and trees. Avoid direct application to any body of water. Avoid drift which could damage desirable plants; do not spray if wind is over 5 miles per hour.

5. Prohibited Practices: None.

6. Environmental Concerns: None.

7. Remarks: None

APPENDIX B

LIFE HISTORIES OF MOSQUITOES FOUND ON YUMA PROVING GROUND, ARIZONA

LIFE HISTORIES OF MOSQUITOES FOUND ON YUMA PROVING GROUND, ARIZONA

Mosquito Species	Human Pest	Adults Emerge	Larval Habitat*	Time Most Abundant	Activity Period	Diseases*	Other Information
Aedes dorsalis	yes	Spring, Summer	1,4,7,8, 9,11,12	Jun-Sep	day/evening	CE, WEE	major pest, flight range up to 10 miles
Aedes taeniorhynchus	yes	Spring	2,8,9	Jun-Oct	evening	CE, SLE	flight range 20 miles or more
Aedes thelcter		Spring, Summer	1,11,13	May-Sep	evening	VEE	
Aedes vexans	yes	Summer	3,4,11	May-Oct	day/evening	CE, WEE	major pest, flight range up to 5 miles
Anopheles franciscsnus	no	Spring, Summer	4,6,9,11	May-Sep	dawn/dusk		rarely bites man, prefers large animals
Culex erythrothorax	yes	Spring, Summer	4,8	Apr-Sep	day/evening		
Culex quinquefasciatus	yes	Spring, Summer	3,6,7,10	Apr-Oct	evening	CE, WEE	major pest
Culex tarsalis	yes	Spring,	3,4,6	May-Oct	evening	CE, WEE	major pest

Summer

Mosquito Species	Human Pest	Adults Emerge	Larval Habitat*	Time Most Abundant	Activity Period	Diseases*	Other Information
Culiseta inornata	no	Fall, Winter, Spring	1,6	Mar-Jun Sep-Nov	evening	CE	rarely bites man
Psorophora confinnis	yes	Summer	4,6,	Jun-Oct	day/evening	CE, SLE, VEE	major pest
Psorophora signipennis	no	Summer	1,4	Jul-Sep	day		rarely bites man

* definitions of symbols are found on p. D-3

LIFE HISTORIES OF MOSQUITOES FOUND ON YUMA PROVING GROUND, ARIZONA

DEFINITION OF SYMBOLS

Larval Habitat

1. Pools filled by spring rains.
2. Eggs laid in mud or vegetation in frequently flooded marshes.
3. Temporary or semi-permanent shallow shaded pools.
4. Grassy, unshaded temporary pools.
5. Ponds and lakes with emergent or surface growing vegetation.
6. Artificial containers (e.g., tires, cans, etc.).
7. Deep shaded pools.
8. Freshwater marshes.
9. Brackish marshes.
10. Sewage lagoons, catch basins, and other polluted waters.
11. Irrigation or stream overflow.
12. Alkaline water, sometimes or by preference.
13. Sinkholes, or limestone depressions.

Diseases Vectored

CE California Encephalitis
SLE St. Louis Encephalitis
VEE Venezuelan Equine Encephalitis
WEE Western Equine Encephalitis
WNV West Nile Virus

APPENDIX C

ANNUAL WORKLOAD FOR SURVEILLANCE, PREVENTION AND CONTROL OF THE TARGET PESTS IDENTIFIED IN THE PEST MANAGEMENT PROGRAM

	SURVEILLANCE TIME			CONTROL TIME		
TARGET PEST	**PM**	**VET**	**PC**	**OTHER**	**PC**	**OTHER**
German Cockroaches - Food Service Facilities	72		72		260	
German Cockroaches - Barracks, Offices and Admin Bldgs				40		50
American Cockroaches	6	6	10		20	
Filth Flies - Food Serving Facilities	15		15		2	
Stored Products Insects		40	12		40	
Mosquitoes	100		30		346	
Ants			20		100	
Spiders			10		35	
Crickets			5		25	
Earwigs, Ground Beetles, and other Crawling Insects			10		20	
Bees and Wasps	5		5		10	
Subterranean Termites			80		80	
Silverfish			2		10	
Scorpions			2		5	
Mice - Food Storage Warehouses		60	80		160	
Mice - UPH, Offices, Barracks,			40		40	
and Other Administrative Buildings						
Gophers			90		130	
Coyotes			5			10 (YP)
Other Vertebrate Pests			10		20	
Wild Horses and Burros				30 (EC)		120 (EC)
Snakes			5		2	
Weeds in Landscaping			10		20	60 (EC)
All Vegetation			10		30	

TOTAL (Man Hours)	**198**	**106**	**523**	**40**	**1355**	**50**
				30 (EC)		**130 (EC/YP)**
PM - Preventive Medicine VET - Veterinary PC - Pest Control YP - YPG Police EC - Ecologist BLM - Bureau of Land Management						

APPENDIX D

PEST MANAGEMENT OPERATIONS

1. PURPOSE. To outline procedures for handling pesticides and operating pest control equipment, and safety precautions associated with these operations.

2. GENERAL.

a. Those pesticides generally used on YPG include insecticides, herbicides and rodenticides.

b. Handling concentrated pesticides during shipment, storage and preparation of dilute formulations and during application of dilute formulations is hazardous in that personal contamination can result in extreme illness, skin damage or death.

c. Pesticide applications shall be carried out by Certified Pest Controllers or under the direct supervision of a Certified Pest Controller.

Note: The term "under the direct supervision of" means in the direct line of sight of the Certified Pest Controller.

d. Pesticides shall be procured under the supervision and approval of the Pest Management Coordinator.

e. All locations used for pesticide storage and mixing shall be marked to designate pesticide operations.

3. PROCEDRES.

a. Training and Certification.

(1) The IPMC and personnel who evaluate the quality of work of pest control contracts (Quality Assurance Evaluator (QAE)) must also be certified. To minimize costs, the Pest Management Coordinator can also be the QAE.

(2) When pest control requirements necessitate that uncertified personnel assist the Certified Pest Controller, training of these personnel in the handling, mixing and application of pesticides shall be done by the Certified Pest Controller.

b. Pest Control Equipment.

(1) Only authorized, trained, personnel shall operate pest control equipment.

(2) Cleaning and storage of pest control equipment shall be done only by authorized, trained personnel in accordance with manufacturer's instruction manuals for the specific equipment item.

(3) Maintenance and adjustment of pest control equipment shall be carried out in accordance with the manufacturer's instructions for the specific equipment item.

(4) All equipment used in pest control activities shall be marked "Contaminated with Pesticides".

c. Protective Clothing and Equipment.

(1) Protective clothing and equipment shall be available to installation pest control personnel and, when not in use, stored in the space provided for this use in Building 408. The following minimum protective clothing and equipment will be provided:

(a) Chemical resistant gloves, aprons and boots.

(b) Full face shield.

(c) Splash goggles.

(d) Respirators approved for use with pesticides used at YPG.

(e) Work uniform or coveralls.

(2) Work uniforms shall be worn when handling or applying pesticides. External personal clothing shall not be worn during pesticide operations.

(3) Work uniforms that have become contaminated with pesticides through spillage or during normal use shall be returned to the pest control shop for replacement and laundering. Laundering shall be done at the installation's expense; operators shall not take pesticide contaminated clothing home to be laundered.

(4) Splash goggles, face shields and pesticide respirators shall be cleaned and sanitized

as necessary.

(5) All chemical resistant protective equipment, such as aprons, gloves and boots, shall be washed at the end of each day of use and properly stored in the lockers.

(6) Respirators shall be worn during the following operations:

(a) While handling pesticide concentrates and adding diluents to spray tanks.

(b) While spreading granular pesticides when there is danger of breathing the dust.

(c) While applying any pesticide which states on the label that the vapors or dusts should not be breathed.

(d) When the operator is located downwind during any spraying operation.

(e) While cleaning up a pesticide spill.

(7) Approved respirators will effectively prevent the inhalation of pesticide fumes and dust if the procedures for fitting, cleaning, cartridge replacement and storage are conducted as follows:

(a) Each respirator facepiece will be numbered for identification.

(b) Masking tape will be attached to each respirator cartridge when it is placed in the respirator. The user will write the amount of time the cartridge is used on this tape. The user will replace the cartridges when eight hours of use have been recorded, when the odor of pesticides is noticed while wearing the respirator, when breathing resistance becomes excessive, or in accordance with manufacturer's instructions.

(c) Each individual will use the same respirator facepiece for the duration of the job. If the facepiece becomes dirty or contaminated, it will be cleaned and sanitized. Facepieces will be cleaned and sanitized before being used by different individuals.

(d) Cartridges will be threaded into receptacles making sure that the gaskets are in proper position and hand-tightened to prevent damage to threads or gaskets.

(e) To don the respirator, the facepiece should be fitted onto the bridge of the nose, making sure the individual is able to breathe through the nose. Then the bottom of the facepiece should be swung into contact with the chin. Position headbands with the long straps above the ears and the short straps below the ears. The adjustment slides can be moved to achieve a comfortable fit.

(f) To test the respirator for leakage, remove the exhalation valve cover and hold the rubber valve against the seat. Create a slight positive pressure inside the face cushion by exhaling. If any leakage is detected around the face seal, readjust head harness straps and repeat the test until there is no leakage. If other than face seal leakage is detected, the condition must be investigated and corrected before another test is made. The face piece must pass this test before the user should attempt to enter any toxic atmosphere. The mask will not furnish protection unless all inhaled air is drawn through approved cartridges. Replace the valve cover after completion of the test. This procedure does not negate the need to be fit-tested for the respirator by medical personnel, but is used as a final check on the device before use.

Note: The procedures for use of respirators mentioned above applies to devices which rely on replaceable cartridges. When disposable respirators are used, the entire mask, including facepiece and cartridges, is discarded and replaced. Replacement of disposable respirators will follow the same procedures as those outlined for cartridges in paragraph 3c(7)(b), above.

(g) Consult Appendix G of this plan for further information concerning respirator maintenance.

d. Pesticide Storage.

(1) All pesticide shall be stored in Building 416 or under the adjacent covered enclosure. The pesticides shall be stored in their original containers. Building 416 and the covered enclosure area shall be kept locked when not in use.

(2) All pesticides shall be segregated as to kind of pesticide during storage. Labels on all containers shall be visible at all times. Pesticides that are classed as moderately or highly toxic must be stored in facilities that meet the criteria described in 40 CFR 165.10 (Reference 4e).

(3) The Fire Department shall be furnished with an inventory of the kinds and amounts of pesticides present at each storage or mixing location. This inventory shall be

updated at least annually, at the end of each calendar year.

e. Pesticide Transportation.

(1) Only authorized operators shall transport pesticides.

(2) When transporting pesticides, operators shall have with them protective clothing and equipment.

(3) Pesticides will not be transported in the cabs or passenger compartments of vehicles.

(4) Pesticides will not be left unattended or unsecured in the vehicle.

f. Pesticide Mixing.

(1) Only authorized, trained and certified personnel shall handle and mix pesticides.

(2) Dispensing concentrates and mixing of all liquid pesticides shall be done on the curbed paved area adjacent to Building 416.

(3) Any pesticide contamination on the skin shall immediately be washed off with soap and water. Contamination of the eyes shall be flushed generously with water. After washing, the individual will secure immediate medical attention.

(4) Pesticide containers shall be returned to the storage sites upon completion of mixing.

(5) All pesticides shall be applied in accordance with the label directions. The certified pest controller shall determine what pesticide to use, what rate to use and how it should be mixed and applied.

(6) When mixing liquid pesticides, the spray tank shall 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 shall be agitated.

g. Pesticide Application.

(1) Only authorized, trained and certified personnel shall apply pesticides.

(2) Pesticide application shall be carried out in accordance with the label directions of the pesticide used and the manufacturer's operating instructions for the equipment used.

(3) Pesticide application operations shall be conducted as follows:

(a) Dry, granular pesticide application shall be conducted when the wind speed is less than 10 miles per hour to prevent drift. An approved respirator shall be worn whenever required by the pesticide label. The operator shall wear a respirator when pesticide dust is a hazard.

(b) Outdoor liquid pesticide application shall be conducted when the wind speed is less than 10 miles per hour to prevent drift. Approved respirators shall be worn whenever required by the pesticide label.

h. Pesticide Spill Cleanup Kit.

(1) A pesticide spill cleanup kit is located in Building 416. Contents of this kit are listed in Appendix J of this plan (latest revision).

(2) The pesticide spill cleanup kit shall be used in accordance with Appendix K (latest revision). All items in the kit that have been used shall be replaced as soon as possible.

i. Pesticide Container Disposal.

(1) Liquid pesticide containers shall be triple rinsed, with the rinse water placed in the spray tank and used as a diluent. The empty container shall then be punctured and placed in a sanitary landfill. Pesticide containers shall not be used for any purpose except that of holding the pesticide shown on the label.

(2) Dry, granular pesticide containers (bags and/or sacks) shall be emptied thoroughly and placed in a sanitary landfill. Pesticide bags or sacks shall not be burned or stored near heat or open flame.

j. Reporting.

(1) Adequate records of all pest management operations performed by engineer personnel and contractors will be maintained by the Pest Management Coordinator.

(2) The Pest Controller will maintain complete daily pesticide application and surveillance records using DD Form 1532-1 (Pest Management Maintenance Records). These records will account for all operations and will provide a permanent historical record of pest control operations for each building, structure, or outdoor site.

(3) DD Form 1532 (Pest Management Report) is no longer required to be maintained or distributed. However, the installation may keep this record and forward it accordingly.

4. REFERENCES.

a. AR 200-5, Pest Management, 29 October 1999.

b. TM 5-632, Military Entomology Operational Handbook, December 1973.

c. Equipment Manufacturer's Handbooks and Manuals.

d. Pesticide Labels and Manufacturer's Literature.

e. Title 40, Code of Federal Regulations, 1994 rev, Section 165.10, Recommended Procedures and Criteria for Storage of Pesticides and Pesticide Containers.

f. Appendix G, Maintenance and Care of Respirators (latest revision).

g. Appendix J, Pesticide Spill Cleanup Management (latest revision).

h. Appendix K, Yuma Proving Ground Spill Contingency Plans (latest revision).

APPENDIX E

MAINTENANCE AND CARE OF RESPIRATORS

1. PURPOSE. To establish a program for proper maintenance and care of respirators. Respirators shall be properly maintained to retain their original effectiveness.

2. GENERAL. Basic elements of the program are as follows:

   a. Inspection for defects.

   b. Cleaning and disinfecting.

   c. Repair.

   d. Storage.

3. PROCEDURES. Only respirators recommended by NIOSH for use with pesticides will be used during pesticide operations on YPG. After respirators have become contaminated, each pest controller will initiate the following procedures:

   a. Inspection for Defects. Each respirator shall be checked for tightness of connections and the condition of the facepiece and head band. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration.

Note: If a disposable respirator is used during pesticide application, the device should be inspected for defects before reuse during subsequent pesticide applications.

   b. Cleaning and Disinfecting.

      (1) Remove any filters or cartridges from the respirator.

      (2) Wash the facepiece in cleaner/disinfectant solution.

      (a) Add one package (1 oz.) of powdered MSA Cleaner-Sanitizer (or other suitable cleaner/sanitizer), to a gallon of warm water (about 120° F).

      (b) Immerse soiled equipment in the solution and scrub gently with a soft brush until clean. Care should be taken to clean the exhalation valve in the face piece and all other parts that exhaled air contacts.

Note: Respirators contaminated heavily with organophosphate pesticides should also be washed with alkaline soap and rinsed with 50 percent alcohol (ethanol or isopropanol) before normal cleaning procedures.

(3) Rinse completely in clean, warm water.

(4) Air dry in a clean area (preferably overnight).

(5) Place in plastic bag for storage and label as to date cleaned and initial.

c. Repairs. Replacement of parts or repairs shall be done only with parts designed for the respirator by the manufacturer. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations.

d. Storage. After inspection, cleaning, and necessary repairs, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals. Pesticide approved respirators will be stored in clean, pesticide-free area in Building 408.

e. Use. Respirators will be used in accordance with para 3c, Appendix F of this plan, pesticide labels and manufacturer's instructions.

4. REFERENCES.

a. Manufacturer's Instructions.

b. TB MED 502, Respiratory Protection Program, February 1982.

c. Appendix F, Pest Management Operations (latest revision).

APPENDIX F PREFIRE PLAN

The YPG Integrated Wildland Fire Management Plan is housed in Emergency Services, Building 304.

The YPG Fire Department maintains the annual TIER II – Emergency Hazardous Chemical Inventory report. Pesticides (insecticides, herbicides, and rodenticides) are not included in this report.

The ISSC maintains an inventory of names and quantities of pesticides. Pesticides are stored in a shaded and fenced enclosure surrounding Bldg. 416. The inventory is updated monthly and the list provided to the Installation Pest Management Coordinator and the Natural Resources Manager.

APPENDIX G

PESTICIDE SPILL CLEANUP MANAGEMENT

1. 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 Pest Controllers to prevent spillage of pesticides during storage, transportation, mixing, application or any other handling of pesticides.

b. All pesticide spills shall be immediately reported to the Fire Department, Pest Management Coordinator, and the Environmental Coordinator.

c. All pesticide spills shall be handled in accordance with this Appendix and the Spill Prevention Control and Countermeasure Plan (SPCCP). A complete copy of this document can be found at the Environmental Sciences Directorate office, Building 307.

d. A pesticide spill cleanup kit will be maintained in Building 416. Contents of the kit are given in paragraph 3j, this Appendix. The cleanup kit shall be used to clean up pesticide spills anywhere on the installation.

e. The pest controllers must wear appropriate protective clothing and equipment while conducting a rescue of injured and/or contaminated personnel or cleaning up a pesticide spill. Protective clothing and equipment are stored in Building 416.

3. PROCEDURES. When a pesticide spill occurs or is discovered, the following procedures must be followed:

a. Reporting. The pesticide spill must be reported to the Fire Department (911). This may be done by telephone. Any need for first aid or fire equipment must be

reported. The Spill Response Team may be reached at cell phone no. (928) 920-1736.

b. Identification. Identify the pesticide involved in the spill. Retain the container and label for Spill Response personnel.

c. Care of Injured and/or Contaminated Personnel. Immediately determine if the 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.

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 Environmental Coordinator and/or 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. The following table is a guide for decontaminating certain pesticides:

Use Lye or	Use Chlorine	Do not use any decontamination
Lime for:	Bleach for:	Chemicals for these Pesticides:
acephate	calcium cyanide	alachlor
atrazine	chlorpyrifos	chloramben
captan dalapon	Fonop hos diuron	chlorinated hydrocarbons carbaryl methoxychlor
diazinon dichlorvos dimethoate malathion naled propoxur		pentachlorophenol picloram 2,4-D bromacil glyphosate simazine

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.

(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 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 bleaching powder is used, first mix it with water (one gallon of water per pound of bleach) and add a small amount of liquid detergent. 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 only to be swept up. When there is doubt concerning which decontaminant is appropriate, only water and a detergent should be used.

(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.

(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 Environmental Coordinator and the Spill Response Team.

i. Supervision. All containment and control, cleanup, decontamination and disposal activities shall be carried out under the direct supervision of the Environmental Coordinator and the Spill Response Team.

j. The pesticide spill kit shall contain the following:

1 - 55-gallon open-head drum
1 - 50-pound bag of absorbent material
3 - 1-gallon jugs of household bleach
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 - polyethylene bags w/ties

Whenever any of the above items are used, they shall be cleaned and/or replaced.

4. EMERGENCY TELEPHONE NUMBERS. Appendix Q 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,August 2009.

b. Appendix Q, Points of Contact (latest revision).

c. Final Spill Prevention Control and Countermeasure Plan (SPCCP), U.S. Army

Yuma Proving Ground, Yuma, Arizona, January, 2015 (available in Environmental Sciences Division, building 307).

SECTION

C.7.3 PEST

CONTROL

C.7.3. PEST CONTROL

C.7.3.1 General Requirements: The Contractor's responsibility includes; providing integrated pest management services to all buildings, dwelling units, facilities, and grounds at YPG. The Contractor's responsibilities include scheduling, supervision, performance and/or monitoring of all pest control services. All pest management services must comply with the intent, objective and procedures for a sound pest management program as prescribed in the Installation Integrated Pest Management. All work shall comply with the latest edition of Federal, Army, State, County and YPG regulations and standards. These regulations and standards are available over the YPG, State and Federal Internet. It is the Contractors responsibility to become familiar with the regulation and standards that pertain to their area of responsibility. During the first year of full performance, the Contractor shall review, coordinate with appropriate installation personnel, update and resubmit the Installation Pest Management Plan to the Installation Pest Management Coordinator (IPMC) and COR for plan review before it is submitted to the Army Environmental Center (AEC) for technical approval. In addition to planning the Pest Control Program the Contractor shall explain in detail the method of scheduling and accomplishment for all work required in this section. The Integrated Pest Management Plan must also address all relevant safety and environmental issues pertaining their efforts in the pest management area. The Integrated Pest Management Plan shall be updated and resubmitted to the IPMC and COR for annual review approval every year thereafter in the month of August.

C.7.3.2 Personnel: The Contractor shall provide fully trained and State of Arizona Certified personnel to perform the pest control functions. **Certification:** Pesticide applicators competency requires certification in accordance with the State of Arizona Structural Pest Control Commission. **Business License:** The Contractor must also provide a current pest control business license issued by the same state of Arizona agency. Pesticide applicators must be certified in all pest control categories required to meet the Yuma Proving Ground installation's requirements. These categories are: General Pest Control, Wood Destroying, Aquatic, Right-of- Way, Public Health turf and ornamental and weeds. Evidence of such permits and licenses shall be provided to the COR prior to full performance and as required thereafter. The Pest Controller(s) should attend at least 1 state or industry sponsored pest control training session every year. See www.az.gov Arizona Structure Pest Commission.

C.7.3.3 Integrated Pest Control: Integrated Pest Management (IPM) practices shall be used which reduce pesticide exposure to humans and the environment. The Contractor must provide integrated pest management control practices that include cultural, biological, mechanical, physical and chemical control of pests. Integrated pest management (IPM) techniques will be used to control pests as required by the installation pest management plan.

C.7.3.4 Specific Tasks: The Contractor is responsible for the following specific tasks:

C.7.3.4.1 Dining Facilities: On a weekly basis, the Contractor shall inspect for and control rodents and arthropod pests in all YPG dining, food service, childcare and health clinic facilities. These facilities are located in Buildings 451, 504, 536, 537, 990, 1001, 1102, 2105, 3507, and the snack trailer located at LAAF. Preventive pesticide applications in the absence of pests in prohibited unless approved by the IPMC or COR.

C.7.3.4.2 Pest Identification: Identification of the pest, determine the full extent of the pest damage and/or potential for pest infestation.

C.7.3.4.3 Control: Render non-chemical control techniques first and if required to reduce the high pest populations use the least toxic pesticide applications (baits and gel for roaches and ants to abate, control, prevent or otherwise mitigate the pest(s) infestation and their habitat.

C.7.3.4.4 Evaluation and Control Measures: Evaluate the effectiveness of the control measures by employing sanitary and pest control industry standard surveillance techniques.

C.7.3.4.5 Inspection Requirements: All inspection and survey findings shall be documented in writing. The Contractor shall utilize daily logs/reports to document the name, amounts, percent of active ingredient, etc., and locations of all pesticide use inside and outside of facilities and on grounds, including subcontractor operations. DD Form 1532-1, titled "Pest Management Maintenance Record", shall be used to record pesticide use and non-chemical pest control work and submit the form monthly to the COR for review. A type written Pest Management Report (DD Form 1532) shall be submitted to the COR monthly for submission to higher headquarters. The report must be within 2 working days follow the last day of the month. The Contractor shall provide the IPMC and annual report of pesticide usage, which includes the formulation, and total pounds of active ingredient for each pesticide used on the installation. Insect bait stations will be reported by how many stations were used, not by weight. This report will be provided to the IPMC NTL 15 October each year.

C.7.3.4.6 Family Housing Self Help: All pesticides carried and distributed by the Family Housing Self-Help Supply will be approved by AEC.

C.7.3.5 Materials and Equipment: All materials and equipment necessary for the performance of the contract requirements will be provided as Government Furnished Materials and Equipment. The Contractor will submit to the COR, a list of pesticides to be used on the installation for the new FY. Pesticides will be EPA and state registered. This list shall be submitted to the COR in the month of August.

C.7.3.5.1 Pesticide Facilities: The Contractor must ensure that pesticide mixing and storage facilities continue to meet the all state and federal requirements.

C.7.3.5.2 Pesticide Inventory: A complete, accurate pesticide inventory must be maintained at all times and furnished to the COR as requested. A quarterly inventory report will be required as a minimum.

C.7.3.5.3 Equipment: All pesticide dispersal equipment will be maintained in good working condition, free of leaks and will be calibrated in accordance with the

manufacturer's instruction manual and/or pesticide label. All movable pesticide equipment must be marked "CONTAMINATED WITH PESTICIDES".

C.7.3.5.4 Excess Pesticides and Pesticide Wastes: All excess pesticides, pesticide waste, empty containers and residue, including equipment rinse water, shall be disposed of as stated in the

pest management plan. Currently all such material is disposed of at the YPG Hazmart located at Building 2075.

C.7.3.5.5 Pesticide Equipment Maintenance: The Contractor shall perform routine equipment maintenance activities to insure that tanks, hoses, pumps, control valves and gauges shall be free of visible deterioration, shall not leak, and shall operate at the manufacturer's recommended rates and pressures. Equipment that has failed shall be replaced and/or repaired prior to resuming operations. Ultra-Low Volume (ULV) equipment shall be calibrated to assure proper flow rate and droplet size of pesticide as required by the label. The ULV equipment shall be calibrated in accordance with the manufacturer's recommendations. The Contractor shall ensure that the droplet size determination is conducted in accordance with the dispersal equipment directions.

C.7.3.5.6 Vehicle and Equipment Safety: Vehicles used to transport pesticides shall be equipped with a fire extinguisher, spill and decontamination kit, emergency wash water, and eye wash lavage. All pesticides carried on vehicles shall be secured in locked compartments at all times. Vehicles shall not be left unattended at any time unless they are properly locked and secured.
Vehicles shall be clearly marked as Pest Control vehicles and shall be used for no other purpose.

C.7.3.6 Performance: The Contractor shall perform the following tasks.

C.7.3.6.1 Rodent Bait Placement: The Contractor shall establish and maintain a sufficient combination of rodent bait stations and/or traps to insure an acceptable level of control is achieved, especially prior to expected seasonal influxes. The filling and placement of rodent bait stations and traps by the Contractor shall be as follows:

C.7.3.6.1.1 Anticoagulant: Rodent bait shall be placed only in distinctively marked, tamper and spill proof approved bait stations inaccessible to personnel, pets and wildlife. Poison bait shall not be placed in areas where food is prepared, or served. Bait stations will be labeled “Danger, Poison” and contain the name and concentration of the active ingredient, and emergency phone number accessible 24 hours a day in case of accidental poisonings.

C.7.3.6.1.2 Rodent Control: Distinctively marked rodent bait stations shall be maintained around building perimeters, landfills, sewage treatment plants, and any other areas as required to-eliminate rodent activity. All anticoagulant formulations shall be used in strict accordance with label directions. Treated burrows shall be sealed after one week. Reopened burrows shall be treated and resealed until all rodent activity ceases. The Contractor shall provide maps showing locations of bait stations where poison baits are used to the building occupant and to the COR. These maps shall be revised as required.

C.7.3.6.2 Fly Control: The Contractor shall control flies and related insects in and

around food service areas, loading platforms, trash areas, transportable garbage containers, and other areas as required. Aerosols including ULV/ULD applications shall not be applied on a recurring schedule for control of flies. The Contractor shall report to the COR any unsanitary conditions contributing to or causing fly problems and make recommendations for flying insect pest exclusion to facilities.

C.7.3.6.3 Arthropod Control: The Contractor shall control venomous arthropods (bees, wasps, hornets, spiders, scorpions and other biting, stinging and urticating/vesicating arthropods) in and around buildings, transportable garbage containers, and other areas as required.
Honeybees will not be destroyed if a practical alternate method is available for their removal.

C.7.3.6.4 Termite Control: The Contractor shall control termites and other wood-destroying organisms. EPA approved pesticides shall be used IAW label directions to prevent and eliminate termite infestations in all Installation facilities. Upon discovery of termite damage, the COR shall be notified. The Contractor shall provide pre-construction and post construction termite treatments as required.

C.7.3.6.5 Cockroach Control: Based on results obtained from the required surveillances in food service, food storage areas, the Contractor shall control of cockroaches in all identified buildings maximizing non-chemical control techniques such as vacuuming, sealing harborage areas, caulking, etc, and the application of the least toxic pesticides such as baits and gels applied precisely to areas where cockroaches are found. Residual spray applications is limited to wide spread, heavy infestations where immediate knockdown of the population is required, otherwise residual treatment will be the treatment of last resort. All work shall be accomplished after duty hours, when buildings have secured operations for the day. The Contractor shall coordinate the schedule with the building custodian for access to buildings. The Contractor shall ensure that there are no signs of active cockroaches within 30 days after treatment.

C.7.3.6.6 Ornamental Plant Pest Control: In coordination with the COR the Contractor shall control pests attacking trees and ornamental plantings on an as required basis so as to control infestation and preserve trees, shrubs and other ornamentals.

C.7.3.6.7 Weed Control: The Contractor shall be responsible for the control of all weeds and undesirable woody vegetation in and around improved, semi-improved grounds, fences, sidewalks, and runways as required. Undesirable vegetation shall be controlled IAW the guidance and procedures in the Installation Pest Management.

C.7.3.6.8 Mosquito Abatement and Control: Develop and execute a mosquito abatement program that conforms to guidance and protocols established by local and state health agencies or local mosquito abatement district to include Army guidance for an effective mosquito surveillance and control program. Conditions that are conducive to mosquito breeding (improper drainage, artificial water containers, pot holes, etc) will be reported to for corrective action to eliminate mosquito-breeding sites. Treatment is normally required between the months of April and November and is determined on light-trap and larval surveys conducted by YPG Preventive Medicine and the Contractor. As determined by the COR, when mosquito population (either larval or adult) exceeds acceptable levels the contractor will employ appropriate ground control techniques to control the mosquito population levels. ULV (ground fogging) mosquito adulticiding will only be performed during hours when mosquitoes are most active and weather

conditions are favorable. Least toxic pesticides will be applied for both larval and adult mosquitoes.

The current mosquito abatement program includes twice weekly fogging and residual treatment of the bushes and trees between the MAA and Metry Lake. However, daily treatment has been required during extreme wet conditions.

C.7.3.7 Application Safety: The Contractor shall apply pesticides in strict accordance with label directions. The Contractor shall maintain an inventory of all pesticide MSD sheets and labels used for pest control services.

C.7.3.7.1 Filling Spray Equipment: The Contractor shall fill hydraulic spraying equipment tanks and hand sprayers from designated areas only. These areas are located beside and in Building 416, and have approved backflow prevention devices.

C.7.3.7.2 Spillage and Runoff Prevention: Caution shall be exercised by the Contractor to insure that toxicants do not run off as surface flow or contaminate any ditch, culvert, drainage system, or standing body of water. Accidental spills will be contained to the maximum extent possible and reported immediately to the YPG Environmental Science Office and COR.

C.7.3.8 Pesticide Safety: The Contractor shall ensure the application of the following pesticide safety requirements:

a. No space treatments shall be made in occupied spaces until all occupants, and pets have vacated the premises.

b. No pest control chemicals shall be allowed to contact any exposed food. If utensils or work surfaces are contaminated with chemicals, the Contractor shall immediately make all arrangements for the proper cleaning of these utensils or surfaces.

c. The Contractor shall notify the COR, Installation Safety Office and Environmental Science Office of any chemical spill.

d. The Contractor is responsible for cleanup of pesticide contamination of any exposed working surfaces, utensils, or materials in food-handling buildings.

e. The Contractor must inform building and housing occupants in advance of any pesticide application so proper preparations are made and of the necessity to clean food contact surfaces after any pesticide application.

f. Minor indoor pesticide drips shall be cleaned immediately with a disposable cloth.

C.7.3.9 Emergency Service: The Contractor is required to perform emergency pest control (such as snakes, spiders, bees, rodents, etc.) during and after normal working hours and on non-working days on an "as required" basis.

APPENDIX H

ISSC PEST CONTROL WORK DOCUMENTS (samples)

FY14 Annual Plan Update Form (PUF) Submission Date: October 7, 2015

1. **INSTALLATION:** The following information describes your installation

Installation Name	State/Country	County	IMCOM Region
Yuma Proving Ground	AZ	Yuma	West

Do you have an approved Integrated Pest Management Plan?	**YES**
When was the original Plan prepared, reviewed and approved (signed) by the Garrison Commander/Manager?	**Mar. 2003**
Name and rank of the Garrison Commander/Manager?	**Richard Martin /YC-02**
Date Plan was last reviewed and technically validated by USAEC?	**Oct. 2010**
Are you planning to rewrite/revise your IPMP: If yes, when?	**On-Going**

2. **STAFFING:** The following information defines installation resources used to support the pest management (PM) program. Resources can be either in-house or contracted. NOTE: If space in tables is inadequate, list additional staff on a separate page.

	Name	E-Mail Address	Telephone No.	Organization	Certification and/or Accreditation Number
PM Coordinator	METTS, WILLIAM P.	william.p.metts.civ@mail.mil	(928) 328-3087	DPW	
PM Quality Assurance Evaluator	SAME				
PM Quality Assurance Evaluator					
PM Quality Assurance Evaluator					

Please provide the following information about the pesticide applicators (either in-house or contracted.) NOTE: Also include any Army employees who are in training for certification.

Name	Organization	DoD/State Cert. Number and Exp. Date	Category/Subcategory Number(s)

			or Letter(s)
Michael Hirth (QCA)	Facility Services Management	License # 30308	B1/B2/B8
Daniel McDaniel	Facility Services Management	License # 050658	B1/B3/B5

3. **PEST MANAGEMENT OPERATION:**

a. The following table shows the distribution of the pest management workload in terms of specific in-house and contracted operations. (For each area, check the appropriate box or leave blank if not applicable).

Area	In-house	Contract	Government Purchase Card Without Formal Contract
Government Housing (Indoors & Outdoors)	☐	x	☐
Residential Community Initiative Housing (Indoors & Outdoors)	☐	x	☐
Golf Course		☐	
Ranges & Other Training Areas		x	
Dependent Schools – (Indoors & Outdoors)		x	
Child Development Centers – Youth Services Centers (Indoors & Outdoors)	☐	x	☐
All Food Handling Buildings (Indoors)	☐	x	☐
Barracks, BEQ, BOQ, Guest Housing	☐	x	☐
Miscellaneous Buildings (Offices, warehouses, depot buildings)	☐	x	☐
Lawn & Ornamental		x	
Nuisance Wildlife		x	
Hospital or Clinic	☐	x	☐
Ground Maintenance	☐	x	☐
Forestry & Conservation Areas	☐	☐	☐
AAFES	☐	x	☐
Commissary	☐	x	☐

4. **PESTICIDE USE:**
   a. The installation baseline (average of FY15) was 100.98 Pounds Active Ingredient (P.A.I.).
   b. Reported P.A.I. for last FY 15 100.98
   c. Do you have an Agriculture Outlease program on your installation? **No**
   d. What was the amount of P.A.I. from Agriculture Outlease during the last FY? **N/A**
   e. Do you use any biological control agent (fungi, bacteria, insects)? If yes, please list: **No**
   e. Additional comments on P.A.I. increases/decreases during the last FY: **N/A**

5. **PLAN MAINTENANCE:** Please list any minor program changes (i.e., personnel changes, certifications, other programming changes or challenges, etc) to the plan for the new FY. Major plan revisions require re-submittal of the entire updated plan.

Certification name change from Qualifying Party to Qualified, Certified Applicator

6. **PESTICIDE USE PROPOSAL (PUP)**: Please attach the current FY pesticide use proposal.

7. **ON-SITE HELP?** Please indicate if you would like an assistance visit this year and briefly describe the reason for such a visit..

8. **AERIAL APPLICATION OF PESTICIDES PLANNED DURING UPCOMING FY? No**

9. **IF YES, DO YOU HAVE AN APPROVED AERIAL SPRAY STATEMENT OF NEED? No**

Appendix I

RESOURCES AVAILABLE TO SUPPORT THE INSTALLATION PEST CONTROL PROGRAM

Armed Forces Pest Management Board (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) (DSN: 291-5365). DPIMAC maintains a military entomology and pest management information data base. Scientific information pertinent to the military pest management program is indexed, abstracted, stored, analyzed, disseminated, and retrieved on request.

Armed Forces Pest Management
Board WRAMC, Forest Glen Annex,
Bldg 172 6900 Georgia Ave,
Northwest Washington, DC 20307-
5001
Phone : (301) 295-7476

DEPARTMENT OF THE ARMY

(DA)

The conservation division of the Directorate 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 provides 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.

Web site: http://www.acsim.army.mil/installationservices/environmental.html

THE ARMY ENVIRONMENTAL COMMAND

The USAEC Integrated Pest Management Program (IPMP) protects the Army's Soldiers, Civilians and their Families from insects and other pests by using IPM. We help sustain

infrastructure used for training, working and living by providing professional guidance to reduce or eliminate impact from all plant, insect, fungus and vertebrate pests. The AEC is responsible for managing the IMCOM Pest Management Program. This includes approving Installation Pest Management Plans, certification of pest controllers, reviewing DD Form 1532's, and managing special projects.

U.S. Army Environmental
Command Pest Management
Consultant
210-466-1599/DSN450-1599
http://www.aec.army.mil/Services/Conserve/PestManagement.aspx

US ARMY PUBLIC HEALTH CENTER (PROVISIONAL)

Entomological Sciences Program

The Entomological Sciences Program strives 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 and the entire DOD community.

Contact Information
Name: Entomological Sciences Program
Email Address: usarmy.apg.medcom-aphc.list.org-ehe-ofcdir@mail.mil Telephone: 410-436-3613
DSN: 584-3613

Mailing Address: Army Public Health Center ATTN: MCHB-IP-EEN
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21010

US ARMY PUBLIC HEALTH COMMAND-WEST

To serve as the world class Center of Excellence in the western United States for the systematic prevention of environmental, occupational, and disease threats to public health in our regional military communities.

Contact Information
Name: PHCR-West
Email Address: usarmy.jblm.medcom-mamc.list.phcr-west-command@mail.mil
Telephone: 253.966.0008
DSN: (312) 347.0008

Mailing Address: USA Public Health Command Region-
West ATTN: MCHB-RW
Box 339500, MS 115
Joint Base Lewis-McChord, WA 98433-9500

FedEx/UPS Address:
USA Public Health Command Region-
West 9030 5th Street
Joint Base Lewis-McChord, WA 98433-9500

ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL (AMEDD)

The medical zoology branch of AMEDD 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
Preventive Medicine Division, Medical Zoology
Branch ATTN: HSHA-MP
Fort Sam Houston, TX 78234-6142
Phone: DSN 471-5270/4278

Appendix J
PEST MANAGEMENT REFERENCES.

A. Federal Laws.

1. The Federal Insecticide, Fungicide and Rodenticide Act (through PL 100-460, 100-464 to 100-526, and 100-532).

2. Title 29, CFR, Current revision, Section 1910, Occupational Safety and Health Standards.

3. Federal Noxious Weed Act [7 U.S.C. 2801-2814]:

4. Food Quality Protection Act (FQPA), 1996, Section 303

5. Endangered Species Act, 1973

6. Food, Drug, and Cosmetic Act

7. Occupational Safety and Health Act, 29 U.S.C 651-678

8. Pollution Prevention Act of 1990, PL 101-508

B. Directives and Instructions

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

2. DoDM 4150.07, Volume 1, DoD Pest Management Training: The DoD Plan for the Certification of Pesticide Applicators, May 2013

3. DoDM 4150.07, Volume 2, DoD Pest Management Training and Certification Program: The DoD Plan for Non-Federal Insecticide, Fungicide, and Rodenticide Act Pesticide Applicators, May 2013

4. DoDM 4150.07, Volume 3, DoD Pest Management Training and Certification Program: The DoD Plan for Federal Insecticide, Fungicide, and Rodenticide Act Pesticide Applicators, May 2013

C. Regulations.

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

2. AR 40-5, Preventive Medicine, 25 May 2007.

3. AR 200-1, Environmental Protection and Enhancement, 13 December 2007.

4. AR 385-10, The Army Safety Program, RAR: 4 Oct 2011.

D. Technical Manuals.

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

TB Med 561, Occupational and Environmental Health, Pest Surveillance, June 1992.

E. Armed Forces Pest Management Board Technical Guides.

- TG 6 - Delousing Procedures for the Control of Louse-borne Disease During Contingency Operations, November 2011
- TG 7 (CAC access only) - Installation Pesticide Security, August 2003
- TG 11 - Hydrogen Phosphide Fumigation with Aluminum Phosphide, March 2013
- TG 13 - Dispersal of Ultra Low Volume (ULV) Insecticides by Cold Aerosol and Thermal Fog Ground Application Equipment, July 2011
- 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 PestManagement Facilities, August 2009
- TG 18 - Installation Pest Management Program Guide, March 2013
- TG 20 - Pest Management Operations in Medical Treatment Facilities, December 2012

- TG 21 - Pesticide Disposal Guide for Pest Control Shops
- TG 22 - Guidelines for Testing Experimental Pesticides on DoD Property, June 2001
- TG 24 (CAC access only) - Contingency Pest Management Guide, September 2012
- 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 30 - Filth Flies: Significance, Surveillance and Control in Contingency Operations, October 2011
- TG 31 - Guide for Agricultural and Public Health Preparation of Military Gear and Equipment, February 2012
- TG 34 - Bee Resource Manual with emphasis on The Africanized Honey Bee, November 2013
- TG 36 - Personal Protective Measures Against Insects and Other Arthropods of Military Significance, November 2015
- 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 40 (CAC access only) - Methods for Trapping and Sampling Small Mammals for Virologic Testing, September 1995 (Reviewed March 2013)
- 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 45 (CAC access only) - Storage and Display of Retail Pesticides, November 2012
- TG 46 (CAC access only) - DoD Entomological Operational Risk Assessments, April 2011
- TG 47 - Aedes Mosquito Vector Control, March 2016
- TG 48 (CAC access only) - Contingency Pest and Vector Surveillance, November 2013
- TG 49 - Sand Flies (Diptera: Psychodidae: Phlebotominae): Significance, Surveillance, and Control in Contingency Operations, January 2015

F. USAEC Documents

Final Programmatic Environmental Assessment for the Implementation of US Army Integrated Pest Management Program, August 2010

State Rules and Regulations