FINAL
HISTORICAL RECORDS REVIEW
FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY

JANUARY 2006

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TABLE OF ACRONYMS

Acronym	Definition
AEC	Army Environmental Center
amsl	Above Mean Sea Level
AOC	Area of Concern
AR	Army Regulation
ARS	Advance Range Survey
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
CEA	Clarification Exception Area
CECOM	Army Material Command's Communication and Electronics Command
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
Commo	Communications
CSM	Conceptual Site Model
CWA	Charles Wood Area
CWHA	Charles Wood Housing Area
CWM	Chemical Warfare Materiel
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
DU	Depleted Uranium
EBS	Environmental Baseline Survey
ECP	Environmental Condition of Property
EOD	Explosive Ordnance Disposal
FUDS	Formerly Used Defense Site
FTMM	Fort Monmouth
FY	Fiscal Year
GIS	Geographic Information System

TABLE OF ACRONYMS

Acronym	Definition
HRR	Historical Records Review
IRP	Installation Restoration Program
ITRC	Interstate Technology and Regulatory Council
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
Meddac	Medical Department Activity
MMRP	Military Munitions Response Program
MP	Main Post
NFA	No Further Action
NJ	New Jersey
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List
NRHP	National Register of Historic Places
PAH	Polycyclic Aromatic Hydrocarbon
RA	Remedial Action
R&D	Research and Development
RG	Record Group
RI	Remedial Investigation
SDZ	Surface Danger Zone
SI	Site Investigation
TIC	Technical Information Center
TM	Technical Manual
TPH	Total Petroleum Hydrocarbons
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UXO	Unexploded Ordnance
WWI	World War I

TABLE OF ACRONYMS

Acronym	Definition
WWII	World War II
°F	Degrees Fahrenheit

GLOSSARY OF TERMS

Closed Range – A military range that has been taken out of service as a range and that either has been put to new uses that are incompatible with range activities or is not considered by the military to be a potential range area. A closed range is still under the control of a Department of Defense (DoD) component.

Defense Sites – Locations that are or were owned by, leased to, or otherwise possessed or used by the DoD. The term does not include any operational range, operating storage or manufacturing facility, or facility that is used for or was permitted for the treatment or disposal of military munitions.

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations.

Explosive Ordnance Disposal (EOD) – The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded ordnance and of other munitions that have become an imposing danger (for example, by damage or deterioration).

Explosives Safety – A condition where operational capability and readiness, people, property, and the environment are protected from the unacceptable effects or risks of potential mishaps involving military munitions.

Formerly Used Defense Site (FUDS) – A DoD program that focuses on compliance and cleanup efforts at sites that were formerly used by the DoD. A FUDS property is eligible for the Military Munitions Response Program if the release occurred prior to October 17, 1986; the property was transferred from DoD control prior to October 17, 1986; and the property or project meets other FUDS eligibility criteria.

Military Munitions – All ammunition products and components produced for or used by the Armed Forces for national defense and security, including ammunition products or components under the control of the DoD, the United States Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, and demolition charges; and devices and components of the above. The term does not include wholly inert items; improvised explosive devices; and nuclear weapons, nuclear devices, and nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 have been completed.

Munitions and Explosives of Concern (MEC) – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means unexploded ordnance, DMM or munitions constituents (e.g., trinitrotoluene [TNT], cyclotrimethylenetrinitramine [RDX]) present in high enough concentrations to pose an explosive hazard.

Munitions Constituents (MC) – Any materials originating from unexploded ordnance, DMM or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

Operational Range – A range that is under the jurisdiction, custody, or control of the Secretary of Defense and that is used for range activities or, although not currently being used for range activities, that is still considered by the Secretary to be a range and has not been put to a new use that is incompatible with range activities.

Other than Operational Range – Encompasses closed, transferred, and transferring ranges.

Range – A designated land or water area that is set aside, managed, and used for range activities of the DoD. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. The term also includes airspace areas designated for military use in accordance with regulations and procedures prescribed by the Administrator of the Federal Aviation Administration.

Transferred Range – A range that is no longer under military control and had been leased by the DoD, transferred, or returned from the DoD to another entity, including federal entities. This includes a military range that is no longer under military control, but that was used under the terms of an executive order, special-use permit or authorization, right-of-way, public land order, or other instrument issued by the federal land manager. Additionally, property that was previously used by the military as a range, but did not have a formal use agreement, also qualifies as a transferred range.

Transferring Range – A range that is proposed to be leased, transferred, or returned from the DoD to another entity, including federal entities. This includes a military range that was used under the terms of a withdrawal, executive order, special-use permit or authorization, right-of-way, public land order, or other instrument issued by the federal land manager or property owner. An active range will not be considered a transferring range until the transfer is imminent (generally defined as the transfer date is within 12 months and a receiving entity has been notified).

Unexploded Ordnance (UXO) – Military munitions that have been primed, fuzed, armed, or otherwise prepared for action; have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and remain unexploded whether by malfunction, design, or any other cause

1 INTRODUCTION

The United States (U.S.) Army's Base Realignment and Closure (BRAC) stated mission is to close or realign installations, conduct environmental cleanup, provide covenants, and expeditiously transfer excess properties. The first step in the environmental cleanup process is to determine whether any contamination is present and, if so, determine whether it presents a potential threat to future users of the land. In order to accomplish this, the Army is completing Environmental Condition of Property (ECP) reports to characterize the current environmental conditions at BRAC 2005 installations.

The purpose of this Historical Records Reviews (HRR) is to assist the Army Environmental Center (AEC) in collecting the data necessary to support the preparation of the ECP report for Fort Monmouth (FTMM) in Monmouth County, New Jersey. The HRRs will focus on properties eligible for action under the Military Munitions Response Program (MMRP), sites classified as operational training ranges/areas, and sites classified as other munitions related sites, which include explosives or munitions operating, storage, or manufacturing facilities and facilities that were or are used for, or are permitted for, the treatment or disposal of military munitions.

1.1 PURPOSE/SCOPE

The purpose of the HRR is to clarify supporting documentation for the Main Post (MP) and Charles Wood Area (CWA) of FTMM (these areas were included in the 2005 BRAC round). The primary goal of the HRR is to collect the appropriate amount of information necessary to document historical and other known information for MMRP eligible sites, operational training ranges/areas, and other munitions related hazard sites at each installation. The installation-wide HRR will address munitions and explosives of concern (MEC) hazards (including unexploded ordnance [UXO] and discarded military munitions [DMM]), as well as munitions constituents (MC) issues.

The secondary goals of the task are to collect the necessary information to develop a preliminary Conceptual Site Model (CSM) and to complete the Explosive and Chemical Warfare Materiel (CWM) modules of the Prioritization Protocol on sites where the potential for a munitions related release exists (non-response complete MMRP eligible sites, operational training ranges/areas, and other munitions related sites). The third module, the Health Hazard Evaluation, will also be completed if media sampling data exist for the site. The completed Prioritization Protocol sheets are included as Appendix A of this HRR.

1.2 PROJECT DRIVERS

1.2.1 MMRP

The regulatory structure for managing MMRP sites is guided by a mixture of federal, state, and local laws, as well as Department of Defense (DoD) and Army regulations and guidance. Key legislative and administrative precedents to date will undoubtedly influence the final regulatory framework for the MMRP. The key legislative and administrative precedents include:

Defense Environmental Restoration Program (DERP) Management Guidance (September 2001)

The DERP Management Guidance established an MMRP element for UXO, DMM, and MC defense sites. The history of DERP dates back to the Superfund Amendments and Reauthorization Act of 1986. The scope of the DERP is defined in 10 United States Code §2701(b), which states that the:

> Goals of the program shall include the following: … (1) The identification, investigation, research and development, and cleanup of contamination from hazardous substances, and pollutants and contaminants. (2) Correction of other environmental damage (such as detection and disposal of unexploded ordnance) which creates an imminent and substantial endangerment to the public health or welfare or to the environment.

Army DERP Management Guidance for Active Installations (November 2004)

The Army DERP Management Guidance provides guidance for active installations and non-BRAC excess properties on the management of the Army Installation Restoration Program (IRP), the MMRP, and the Building Demolition and Debris Removal Program categories that are

related to environmental cleanup. The Army DERP Management Guidance does not apply to Army restoration activities overseas, the BRAC Environmental Restoration Program, the Compliance-Related Cleanup Program, or the Formerly Used Defense Sites Restoration Program. The guidance document was provided to implement the Army's DERP in accordance with the DoD's DERP Management Guidance (September 2001). The Army DERP Management Guidance supplements the roles, responsibilities, and procedures contained in Army Regulation 200-1 (AR 200-1) and Department of the Army Pamphlet 200-1 (DA PAM 200-1).

National Defense Authorization Act (Fiscal Year [FY] 02) (Sections 311-312)

Sections 311-312 of the National Defense Authorization Act of FY02 reinforced the DoD's 2001 DERP Management Guidance by tasking the DoD to develop and maintain an inventory of defense sites that are known or suspected to contain MEC or MC. Section 311 requires the DoD to develop a protocol for prioritizing defense sites for response activities in consultation with the states and Tribes. Section 312 requires the DoD to create a separate program element to ensure that the DoD can identify and track munitions response funding.

The September 2001 DERP Management Guidance and the National Defense Authorization Act of FY02, described above, established the MMRP. The DERP and the MMRP provide guidance and methods for conducting a baseline inventory of defense sites containing, or potentially containing, UXO, DMM, or MC.

1.2.2 BRAC

A brief summary of the legal and regulatory requirements relating to BRAC property disposal is presented in the following paragraphs.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Section 120(h)(3))

The CERCLA, which was enacted in 1986, sets forth requirements for the transfer of properties by federal agencies. CERCLA applies regardless of disposal agent and requires:

1) Disclosure in the deed of known hazardous substance activity;

2) A deed covenant stating that all necessary remedial action has been taken prior to transfer; and

3) A covenant stating that any additional remedial action necessary will be performed by the United States and that access is reserved for such purpose.

Community Environmental Response Facilitation Act (CERFA) – amended CERCLA (Section 120(h)(4))

The CERFA, which was enacted in 1992, requires agencies to identify "uncontaminated" portions of a larger parcel. Uncontaminated portions are defined as portions of the parcel where no storage, release or disposal of hazardous substances or petroleum products occurred. Regulatory concurrence on this identification is required prior to the transfer of uncontaminated portions.

Early Transfer Authority CERCLA (Section 120(h)(3)(C))

The Early Transfer Authority (enacted in 1996) authorizes the deferral, under certain conditions, of the Section 120(h)(3) covenant that all remedial action has been taken. The Army makes a finding that the property is environmentally suitable for early transfer prior to the granting of the CERCLA 120(h)(3)(A) covenant. For sites on the National Priorities List (NPL), the U.S. Environmental Protection Agency (USEPA) must approve the early transfer with the Governor's concurrence. For non-NPL sites, the Governor's concurrence with the early transfer is sufficient.

Environmental Baseline Survey (EBS), American Society for Testing and Materials 6008-96

The EBS establishes a baseline of the environmental condition of the property and is a tool to support the identification of uncontaminated property in accordance with CERFA and the determination of the property as suitable for transfer or lease.

Environmental Condition of Property Categories

The ECP categories were established to permit the DoD components to classify properties upon closing and realigning installations to support a determination of which properties have not been subject to hazardous substance activity and are suitable for transfer for lease or by deed. Properties classified 1 through 4 are suitable for transfer.

1.3 ARMY RANGE INVENTORY

The Army Range Inventory program was conducted in three phases. The first phase (Phase 1) involved a data call issued through the AEC requesting general information about ranges on various installations under each Army Major Command. The Phase 1 Inventory was conducted using a questionnaire called the Advance Range Survey (ARS). The ARS allowed the Army to meet the short-term data goal of supporting the DoD's preparation of Senate Report 106-50. The ARS was not completed for FTMM.

The ARS allowed the Army to meet its short-term needs; however, the Army's long-term needs required a more detailed inventory of its ranges that was not achievable based on the information in the ARS. For management and budgetary reasons, the Army divided the detailed follow-on inventory into two phases. The Phase 2 Inventory addressed operational ranges, while the Phase 3 Inventory covered closed, transferring, transferred ranges and sites with MEC (UXO and/or DMM) and/or MC (MMRP eligible sites). The Phase 2 Inventory for FTMM was conducted on 12 March 2002. The Phase 2 Inventory report includes maps that delineate the operational range boundary. The remainder of the property within the installation boundary is designated non-operational by default. In 2002, the Phase 2 Inventory concluded that 9 % of FTMM was operational range area. A total of 15 operational ranges were identified at FTMM. The following operational ranges were identified within the MP: Communications (Commo) Training 1, Commo Training 2, Commo Training 3, Cowan Park, Greely Parade Field, Helipad 1, K-9 Training Area, Medical Department Activity (Meddac) Training Area, and Prep School Training Area. The following operational ranges were identified within the CWA: Area 1, Area 2, Bivouac, Explosive Ordnance Disposal (EOD) Area, Fire Training Center, and Helipad 2,

In 2003, the Phase 3 Inventory was completed for FTMM by Malcolm Pirnie, Inc. The site visit was conducted on 28 May 2003. The *Final Closed, Transferring, Transferred Range/Site Inventory Report for Fort Monmouth, NJ* was submitted to AEC on 19 September 2003. One MMRP eligible site was identified at FTMM, the Former Outdoor Firing Range.

1.4 REPORT ORGANIZATION

This HRR has the following sections:

Section 1 – Introduction

Section 2 – Site Description

Section 3 – Data Collection and Document Review Process

Section 4 – Summary of Findings

Section 5 – Conceptual Site Model

Section 6 – Conclusions

The following supporting information and analyses are appended to this HRR:

Prioritization Protocol (Appendix A)

Archive Records Searched/Data Sources (Appendix B)

Relevant Archival Documents (Appendix C)

Interview Records (Appendix D)

Munitions Technical Data Sheets (Appendix E)

2 SITE DESCRIPTION

2.1 INSTALLATION DESCRIPTION

FTMM is located 12 miles west of the Atlantic Ocean and 45 miles south of New York City, just north of Eatontown in Monmouth County, New Jersey. FTMM currently occupies approximately 1,100 acres and is divided into two pieces of property: the MP (636 acres) and the CWA (464 acres). The installation is the home of the Army Material Command's Communication and Electronics Command (CECOM). Its mission is to research, develop, procure, produce and sustain technologically superior prototypes of communications, and other electronic equipment for use by the U.S. Armed Forces. The CWA houses the research and development (R&D) area for CECOM and housing for the installation. The MP houses mostly administrative buildings. The Army established the FTMM-MP property in 1917 on about 590 leased acres of a former racetrack. It was originally called Signal Corps Camp at Little Silver and provided Army basic training in technical communications during World War I (WWI). Later in 1917, the installation was renamed Camp Vail. In 1925, the camp received permanent status, and the Army bought the property and renamed it Fort Monmouth. During World War II (WWII), the installation was expanded to its current size when various properties were acquired, including the former Monmouth Country Club, where CWA was established. The Evans Area was also acquired around this time. It used to be a hotel and a farm and is located 10 miles to the south of the MP, in Wall Township. The 1995 BRAC round affected two areas at FTMM: the Charles Wood Housing Area (CWHA) (102 acres) and the Evans Area (215 acres). Under BRAC, the CWHA was transferred to the Navy, while the Evans Area was transferred to the local township and community college. Recently, the Navy returned the CWHA to the Army.

2.2 PHASE 2 INVENTORY SITE DESCRIPTIONS

A total of 15 operational training ranges/areas were identified at FTMM during the 2002 Phase 2 Inventory (the location of each operational training ranges/areas is in parenthesis): Area 1 (CWA), Area 2 (CWA), Bivouac (CWA), Commo Training 1 (MP), Commo Training 2 (MP), Commo Training 3 (MP), Cowan Park (MP), EOD Area (CWA), Fire Training Center (CWA),

Greely Parade Field (MP), Helipad 1 (MP), Helipad 2 (CWA), K-9 Training Area (MP), Meddac Training Area (MP), and the Prep School Training Area (MP). The description of the sites that resulted from the Phase 2 Inventory is presented below. New information pertaining to the ranges as a result of the research conducted for this HRR is presented under the site-specific range sections in Section 4. Map 2-1 depicts those areas identified during the Phase 2 Inventory.

Area 1 (CWA): Area 1 is a 3.89-acre training facility at the CWA as identified in the Phase 2 Inventory. This area is situated directly east of Building 2700 (also referred to as the Hexagon building). This area is currently a maintained grass covered field. There are no historical uses listed for this training area.

Area 2 (CWA): Area 2 is an 8.00-acre training facility at the CWA as identified in the Phase 2 Inventory. This area is situated directly east of Area 1. This area is currently a maintained grass covered field. There are no historical uses listed for this training area.

Bivouac (CWA): The Bivouac is a 23.22-acre training facility at the CWA as identified in the Phase 2 Inventory. This area is located in the south central portion of the CWA. This area is undeveloped and heavily wooded. There are no historical uses listed for this training area.

Commo Training 1 (MP): Commo Training 1 is a 12.80-acre training area at the MP as identified in the Phase 2 Inventory. This area is located along the northern border of the MP. This area is currently a maintained grass covered field. There are no historical uses listed for this training area.

Commo Training 2 (MP): Commo Training 2 is a 2.99-acre training area at the MP as identified in the Phase 2 Inventory. This area is located on the northern border of the MP. This area is currently a maintained grass covered area and contains a fenced in area (activities that occur within the fenced in area are unknown; however, are not believed to be munitions relation due to the close proximity of buildings). There are no historical uses listed for this training area.

Commo Training 3 (MP): Commo Training 3 is a 1.87-acre training area at the MP as identified in the Phase 2 Inventory. This area is located in the eastern portion of the MP. This area is currently a maintained grass covered area and contains a fenced in area (activities that occur within the fenced in area are unknown; however, are not believed to be munitions relation due to the close proximity of buildings). There are no historical uses listed for this training area.

Cowan Park (MP): Cowan Park is a 5.93-acre Parade Drill Field at the MP as identified in the Phase 2 Inventory. This area is located in the northeastern portion of the MP. This area is currently a maintained grass covered field. There are no historical uses listed for this training area.

EOD Area (CWA): The EOD Area is a 2.25-acre light demolition range at the CWA as identified in the Phase 2 Inventory. This area is located in the southwestern portion of the CWA, adjacent to the Bivouac Area. The EOD Area is currently located within Building 289. Currently and historically the EOD Area has been used for administrative purposes only and includes the training of troops in the identification of various MEC utilizing completely inert props.

Fire Training Center (CWA): The Fire Training Center is a 4.27-acre fire fighting and rescue training area at the CWA as identified in the Phase 2 Inventory. This area is located in the southwestern corner of the CWA. This area is currently a maintained grass covered field that contains various fire fighting and rescue training props/apparatus.

Greely Parade Field (MP): Greely Parade Field is a 25.32-acre parade/drill field at the MP as identified in the Phase 2 Inventory. This area is located in the north central portion of the MP. This area is currently a maintained grass covered field. Historically this area was used as a parade field (activities conducted were not munitions related).

Helipad 1 (MP): Helipad 1 is a 0.87-acre rotary wing landing pad at the MP as identified in the Phase 2 Inventory. This area is located in the north central portion of the MP and adjacent to the

northeast border of Greely Parade Field. This area is currently paved. Currently and historically this area is used for rotary wing landings and take offs.

Helipad 2 (CWA): Helipad 2 is a 0.25-acre rotary wing landing pad at the CWA as identified in the Phase 2 Inventory. This area is situated directly east of Area 1 and west of Area 2. This area is currently paved. Currently and historically this area is used for rotary wing landings and take offs.

K-9 Training Area (MP): The K-9 Training Area is a 1.07-acre training facility at the MP as identified in the Phase 2 Inventory. This area is located on the eastern border of the MP. This area is currently a maintained grass covered field that contains various K-9 training props/apparatus (activities conducted within this area include the firing of blank ammunition).

Meddac Training Area (MP): The Meddac Training Area is a 4.05-acre maneuver/training area, for light forces at the MP as identified in the Phase 2 Inventory. This area is located in the south central portion of the MP. This area is currently a maintained grass covered field. There are no historical uses listed for this training area.

Prep School Training Area (MP): The Prep School Training Area is a 6.96-acre field training area at the MP as identified in the Phase 2 Inventory. This area is located on the western portion of the MP. This area is currently a maintained grass covered field in which physical training and recreational activities, such as football, occur. There are no historical uses listed for this training area.

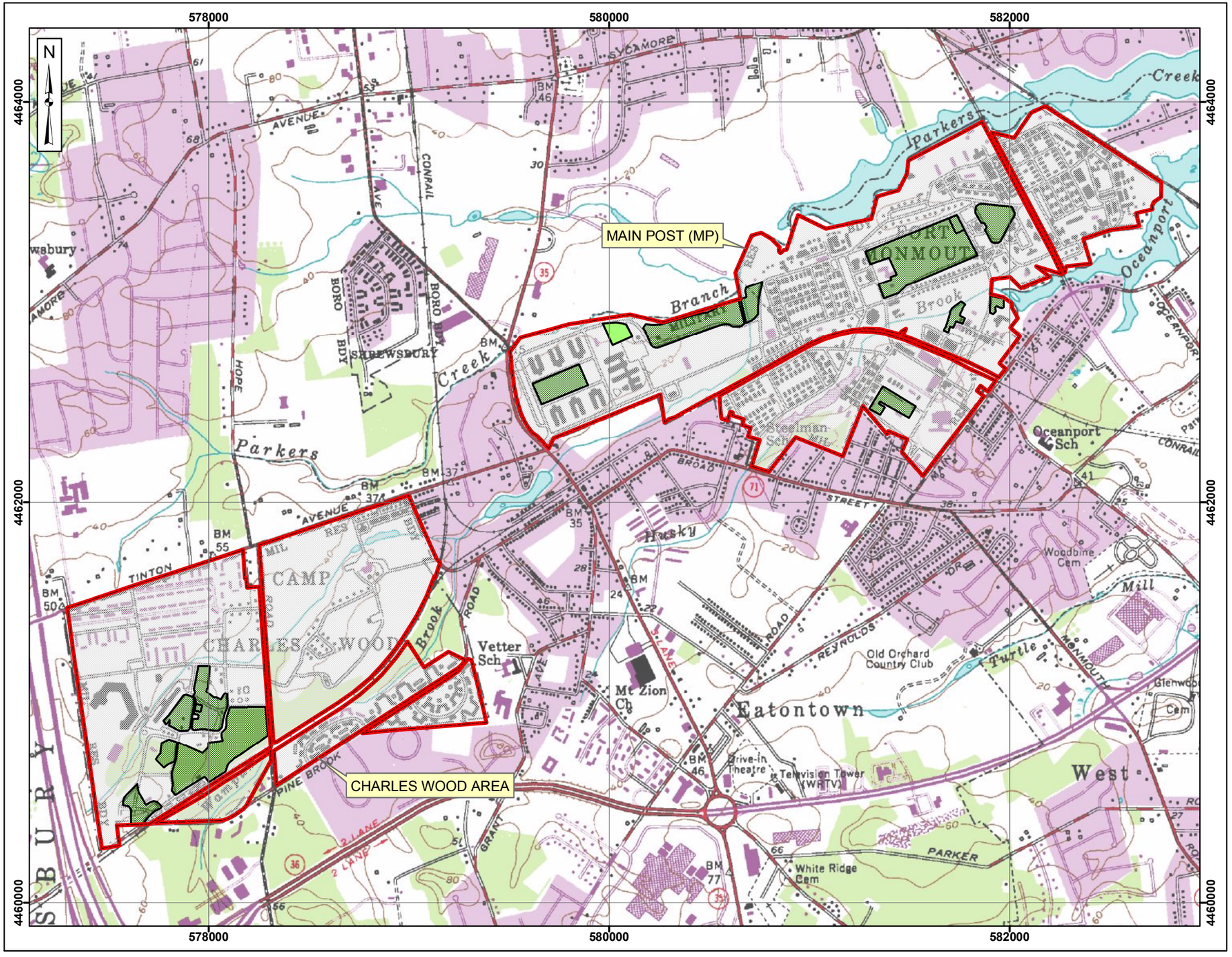
2.3 PHASE 3 INVENTORY SITE DESCRIPTIONS

MMRP eligible sites include other than operational ranges where UXO, DMM, and/or MC are known or suspected and the release occurred prior to 10 September 2002. Properties classified as operational ranges are not eligible; therefore, none of the training areas or ranges/sites included within them are eligible for the MMRP program. One MMRP eligible site was identified at FTMM MP during the Phase 3 Inventory (the Former Outdoor Firing Range). The

information obtained and the description of the site that resulted from the Phase 3 Inventory are presented below. New information pertaining to the range as a result of the research conducted for this HRR is presented under the site-specific range sections in Section 4.

Former Outdoor Firing Range (MP): This area is a 3.00-acre parcel located on the northwest portion of the MP. The Former Outdoor Firing Range was used for small arms training (both pistol and rifle training) from approximately 1940 to 1955. Munitions usage at the Former Outdoor Firing Range was limited to small arms. The ammunition was fired into a berm that has since been removed. The Former Outdoor Firing Range was closed with the onset of construction activities in the 1200 area. Small arms training was moved to Naval Weapons Station Earle following the closure of the Former Outdoor Firing Range. Currently, two buildings are on the location of the Former Outdoor Firing Range (Buildings 1213 and 1214). The location of the former range has been developed for over 40 years, and no evidence of the former range exists. Grounds in the general vicinity of the former range, which were not affected by construction, are completely grass covered. The range was designated as response complete in the IRP; however, the designation was made without any sampling being conducted.

Historical Records Review
Fort Monmouth, NJ



Map 2-1
Range Inventory Data

Legend

- Installation Boundary
- Closed Range (Phase III)
- Operational Range Area (Phase II)
- Installation Non-Range Property

0 500 1,000 Meters

Data Source: USGS Terraserver Online,
USGS Topographic Survey,
Downloaded 2005

Coordinate System: UTM Zone 18N
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004
Edition: Final
Date: January 2006

Fort Monmouth, NJ

3 DATA COLLECTION AND DOCUMENT REVIEW PROCESS

Five primary sources of information were researched as part of the data collection effort for the HRR. The sources of data include:

1) National and regional archives record groups (RGs) search
2) Web search
3) Installation site visit,
4) Technical Information Center (TIC)
5) U.S. Army Chemical Materials Agency

It is recognized that not all data types are of the same quality; for the purpose of this report, general data quality designations have been made. A verifiable data source, such as a document or map, is designated as high quality. Handwritten records and maps supported by verifiable data and personal accounts from interviews that either are corroborated by numerous interviewee accounts or are supported by verifiable data are considered medium quality. Examples of low quality data include formerly verifiable but no longer available records (e.g., recollections of lost documents and maps) and personal interviews without backup documentation or with contradictory documentation.

3.1 DATA COLLECTION METHODS

3.1.1 National and Regional Archives

Relevant archival record repositories and RGs were selected based on guidance set forth in the *Technical/Regulatory Guideline for Munitions Response Historical Records Review*, prepared by the Interstate Technology and Regulatory Council (ITRC) UXO Team and based on the process developed by the U.S. Army Corps of Engineers for performing Archive Search Reports (guidance provided at http://www.mvs.usace.army.mil/engr/ed-p/asr.htm). The record repositories that have historically proved to be most useful were the focus of the search. A complete listing of the archival repositories and RGs searched is provided in Appendix B.

Relevant archival documents are provided in Appendix C. The following archival repositories were searched for this HRR:

- National Archives, National Archives and Records Administration, College Park, Maryland
- Northeast Regional Archives, New York City, New York

3.1.2 Web Search

In addition to the data sources listed above, Malcolm Pirnie also conducted research on the Internet to supplement the archival data and information received from the installation. The list below presents the web sites that were searched for information on FTMM. Information collected from the web search is presented in Section 4.

- Fort Monmouth Home Page
  http://www.monmouth.army.mil/C4ISR/

- Global Security
  http://www.globalsecurity.org/military/facility/fort-monmouth.htm

- Environmental Restoration Information System
  https://aero.apgea.army.mil/pls/eris/eris.pmain.erishome

- U.S. Army Environmental Database – Restoration
  https://aero.apgea.army.mil/aedbr/Desktop.jsp

- U.S. Army Knowledge Online
  https://www.us.army.mil/suite/authenticate.do

- Geographic Information System Repository
  https://gis.hqda.pentagon.mil/

3.1.3 Installation Data Collection Visit

A data collection visit to FTMM was conducted on 17-19 October 2005, by Ms. Shelly Kolb, Ms. Jessica Forester, Ms. Ose Carr, Ms. Afton Hess, and Mr. Greg Firely of Malcolm Pirnie. The data collection visit was conducted to review relevant installation and site-specific records to complete the HRR and to develop a CSM for FTMM. While on-site, the Malcolm Pirnie team reviewed environmental reports and historical documents/maps for FTMM. Interviews with relevant personnel were also conducted. Results of the interviews are presented in Appendix D.

3.1.4 Technical Information Center

Malcolm Pirnie personnel conducted research at the TIC in Edgewood, Maryland, to obtain technical and historical documents that may have not been available through the other information sources researched. A list of the documents received from the TIC is provided in Appendix B.

3.1.5 U.S. Army Chemical Materials Agency

Malcolm Pirnie personnel conducted research at the U.S. Army Chemical Materials Agency in Edgewood, Maryland, to obtain any potential documents/information concerning any activities involving chemical warfare materiel that may have not been available through the other information sources researched. No documents concerning FTMM were identified at this repository.

3.2 ARCHIVAL/HISTORICAL RECORDS COLLECTED

The following subsections present the data collected from the various sources outlined in Section 3.1. Although additional records may have been reviewed from the sources presented above, the records listed in this section represent the data that were determined to be applicable to development of the HRR and CSM at FTMM.

3.2.1 Archival Records

Archival records (including memorandums, photographs, and maps) useful to the production of the HRR are included in Appendix C. A complete listing of the archival repositories and RGs searched are provided in Appendix B.

3.2.2 Historical Documents/Reports

Table 3-1 provides a list of historical documents/reports and previous investigations collected from sources other than the archives that provided relevant information for this HRR and CSMs for FTMM. Although additional documents may have been reviewed, those listed in Table 3-1 present data applicable to development of this HRR.

Table 3-1: Summary of Documents and Relevant Information

Document Name	General Installation	Environmental	General History	Munitions
Analysis of Existing Facilities Fort Monmouth, New Jersey. December 16, 1968.	X	X	X	
Installation Environmental Impact Assessment (EIA), Fort Monmouth, New Jersey. March 1, 1976.	X	X		
Installation Assessment of Fort Monmouth Report No. 171. U.S. Army Toxic and Hazardous Materials Agency. May 1980.	X	X	X	X
Installation Assessment Relook Program, Working Document, Fort Monmouth Complex Long Branch, New Jersey. The Bionetics Corporation. September 1985.	X	X		X
Final Analytical/Environmental Assessment Report on Plans for Future Development, Fort Monmouth, New Jersey. May 1987.		X		X

Document Name	General Installation	Environmental	General History	Munitions
Update of the Initial Installation Assessment of Fort Monmouth and Subinstallations: Charles Wood Area and Evans Area. U.S. Army Toxic and Hazardous Materials Agency. June 1988.	X	X	X	
Soil Survey of Monmouth County, New Jersey. U.S. Department of Agriculture, Soil and Conservation Service. April 1989.		X		
Final Environmental Impact Statement, Ft. Huachuca, Ft. Devens, Ft. Monmouth Base Realignment. May 1990.	X	X	X	
Aerial Photographic Site Analysis, Evans Area, Charles Wood Area, Fort Monmouth, New Jersey. December 1993.	X			
Final Investigation of Suspected Hazardous Waste Site Fort Monmouth, New Jersey. Weston. December 1993.	X	X	X	
Final Enhanced Preliminary Assessment Report, A Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. The Earth Technology Corporation. January 1994.	X	X		X
Version 2 Base Realignment and Closure (BRAC) Cleanup Plan, A Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. Earth Tech. March 1995.	X	X		X
Collection Summary for Fort Monmouth, New Jersey. U.S. Army Corps of Engineers, St. Louis District. December 1995.			X	
Final Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas. Weston. December 1995.		X		
Threatened and Endangered Species Survey Report for the Evans Area, Fort Monmouth, New Jersey. Earth Tech. January 1996.		X		

Document Name	General Installation	Environmental	General History	Munitions
Final Site Inspection Report for a Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. Earth Tech. April 1996.		X	X	X
Final Integrated Natural Resources Management Plan Fort Monmouth, New Jersey. U.S. Army Corps of Engineers, Mobile District. December 1999.	X	X	X	
U.S. Army Active/Inactive Range Inventory Fort Monmouth, New Jersey. July 25, 2002.	X		X	X
Final U.S. Army Closed, Transferring and Transferred Range/Site Inventory for Fort Monmouth, New Jersey. Malcolm Pirnie, Inc. September 19, 2003.	X		X	X
Integrated Cultural Resources Management Plan, Fort Monmouth, New Jersey. October 2003.	X	X		
Final Remedial Investigation Report M-18 Landfill Site. Versar. October 1, 2003.	X	X		
Fort Monmouth Installation Action Plan. 2004.		X		
Final Remedial Investigation Report and Sediment Quality Evaluation M-18 Landfill Site. Versar. February 23, 2004.	X	X		
Final Remedial Investigation Report for Near Surface Soils M-18 Landfill Site. Versar. March 17, 2004.	X	X		
Classification Exception Area Information for Various Sites, M-12 Landfill Site, M-18 Landfill Site, Site 80/166, Site 108, Site 283, Site 812, Site 1122 and Site 2567, Fort Monmouth, New Jersey. Versar. July 12, 2004.		X		
BRAC 2005 Army Recommendation, Fort Monmouth, NJ. 2005.		X		

Document Name	General Installation	Environmental	General History	Munitions
Final After Action Report Environmental Planning Workshop, Ft. Monmouth, NJ. June 30, 2005.				X
A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey. July 2005.	X		X	
FY2006, Fort Monmouth New Jersey Installation Action Plan. Printed August 2005.		X		
U.S. Army BRAC 2005 DRAFT – Environmental Condition Property Report, Fort Monmouth, New Jersey. August 26, 2005.	X	X	X	X
Final Remedial Action Report Site CW-4. Versar. September 9, 2005.		X		X
EDR Data Map Satudy Area Fort Monmouth, Fort Monmouth New Jersey 07703. Environmental Data Resources, Inc. September 29, 2005.		X		

3.2.3 Interviews

Interview records are included in Appendix D. Information gathered during the discussions has been incorporated throughout the HRR. The following interviews were conducted for FTMM:

- Dinkerrai Desai, Environmental Coordinator, Department of Public Works FTMM – employed at FTMM from 1981 - present
- Joe Fallon, Team Leader (Environmental Branch), Department of Public Works FTMM – employed at FTMM from 1988 - present
- Walter Gordon, Chief of Public Safety, Department of Public Safety FTMM – employed at FTMM from 1977 - present
- Doug Guenther, Restoration Manager, Department of Public Works FTMM – employed at FTMM from 2002 – present
- Theodore Hammer, Director of Logistics, Department of Logistics FTMM – employed at FTMM from 1974 - present
- Captain Shawn L. Kadlec, Commander, 754th Ordnance Company (EOD) FTMM – employed at FTMM from 1997 - present

- Sergeant Jeffery McLean, EOD Team Leader, 754th Ordnance Company (EOD) FTMM – employed at FTMM from 1997 - present
- Robert Melacaglia, Installation Master Planner, Department of Public Works FTMM – employed at FTMM from 1986 - present
- John Occhipinti, Director of Plans, Training, Mobilization, and Security, Department of Plans, Training, Mobilization, and Security – employed at FTMM from 2003 - present
- Steve Rauch, Command Historian for the U.S. Army Signal Center, Fort Gordon – employed at this position from 2003 - present
- Mike Ruane, Base Transition Coordinator, Headquarter CECOM – employed at FTMM from 1966 - present
- Mark Simeroth, EOD, U.S. Army Bomb Squad – employed at FTMM from 1997 - present
- John Stonska, Operations Planner, Department of Public Works FTMM – employed at FTMM from 1991 - present

4 SUMMARY OF FINDINGS

4.1 IN-DEPTH CHRONOLOGICAL HISTORY OF INSTALLATION

The MP was the first area at FTMM to be established. It was initially opened as a camp in June of 1917 and named Camp Little Silver. However, three months later on 15 September 1917, the camp achieved semi-permanent status and was re-named Camp Alfred Vail. A majority of the 636 acres that encompass the MP were originally Monmouth Park, a horse racing facility. The park closed in 1893, and the approximately 590-acre area was auctioned off to various private parties with the hopes of bringing the racing back to the park. An 1897 constitutional amendment against gambling and bookmaking squashed any hopes of a Monmouth Park revival. Deserted, the land fell into ruin and was leased by the U.S. Government in 1917 with the option to buy. This option was exercised in 1919, and the land was now property of the U.S. Government. In 1941, approximately 464 acres were purchased to the southwest, which became the CWA. In 1942, an additional adjacent 46 acres was purchased to the northeast of FTMM to accommodate field laboratories.

The initial mission of the camp was to train Signal Corps operators for service in WWI. All WWI armies utilized carrier pigeons for communications. As a result, the birds became a part of the Camp Vail training mission in 1917. The successful use of carrier pigeons in war led to the establishment of the Signal Corps Pigeon Breeding and Training Section at the camp. In the first 19 months of the camp's existence, 129 semi-permanent structures had been built, a tent camp was established on the site of a former swamp, and a parade ground was established on the site of a former marsh. Additionally, a radio laboratory and two airfields were established in 1918. After the war, Camp Vail was designated as the site of the Signal Corps School.

In 1925, Camp Alfred Vail became a permanent post and was renamed Fort Monmouth. The primary mission of FTMM continued to be Signal Corps training and electronics research. In 1934, the laboratory was consolidated in Squier Laboratory (Building 283), and research on radios and radar continued. During WWII, the pace of training increased tremendously at FTMM. The expanded laboratory effort was accomplished by starting laboratories at other

Army facilities. Squier Laboratory continued to be the principal laboratory on the MP until 1954, when the laboratory operations moved to the CWA. In 1955 and 1956, 72 WWII wooden structures on the MP were demolished to accommodate permanent structures. These new buildings were used for residential, administrative, commercial, and recreational purposes. A small number of additional administrative buildings were constructed during the 1970s and 1980s.

The CWA was purchased in 1941 by the Army and opened in 1942. The eastern half of the property was formerly a golf course, and the western half was residential land and farmland. During WWII, the camp was used for training Signal Corpsmen. Antenna shelters were constructed on 26.5 acres of land and used by the Signal Corps Laboratory for R&D purposes. This operation was placed under the command of the Army Air Force until 1951, when the operation moved to another post. Signal Corps training ceased after WWII.

A new R&D laboratory, the Hexagon (Building 2700), was completed in 1954. Research activities that had formerly been conducted at Squier Laboratory on the MP were transferred to the CWA. The laboratory continued to develop electronic equipment. A large amount of residential housing was built from 1953 to 1970. In 1956, 90 WWII wooden structures were razed. The Pulse Power Laboratory was built in the early 1980s.

The document, *A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey* (July 2005), describes a number of R&D activities that were performed by the laboratories at FTMM, which include the development of various kinds of communication devices.

FTMM has been impacted by the BRAC rounds performed in 1995 and 2005. BRAC 1995 ordered the closure of CWHA. BRAC 2005 has ordered the closure of the CWA and the MP.

A timeline of FTMM history is provided in the Table 4-1 (FTMM043).

Table 4-1: Timeline of Significant Events

Time Period	Significant Events
1910s	• June 1917 - The MP is established as Camp Little Silver. • September 1917 - The camp is re-named Camp Alfred Vail. • 1918-1919 - The Pigeon Breeding and Training Section is established to train pigeons and handlers.
1920s	• August 1925 - Camp Alfred Vail attains permanent status and is renamed Fort Monmouth. • August 1929 - The Signal Corps' Electrical Laboratories (Washington) and the Research Laboratory (New York) merge with the Radio Laboratories at FTMM to form the Signal Corps Laboratories.
1930s	• 1935 - Squier Hall is built at the MP for the laboratories.
1940s	• 1941 - Property is purchased for the CWA.
1950s	• 1954 - Laboratory operations at the MP's Squier Hall move to the CWA. • 1957 - The Pigeon Service is discontinued, and the pigeons are sold or donated to zoos.
1960s	• August 1962 - The Army disbands the technical services and establishes the Electronics Command at FTMM to manage Signal R&D and logistics support.
1970s	• 1974-1976 - The Signal School moves to Fort Gordon.
1980s	• 1981 - The Communications-Electronics Material Readiness Command and the Communications Research and Development Command merge to form the CECOM.
1990-present	• 1995 - BRAC 1995 ordered the closure of CWHA • 2005 - BRAC orders the closure of FTMM.

4.2 OPERATIONAL RANGE FINDINGS

Table 4-2 provides a summary of the Phase 2 Inventory findings. Map 4-1 depicts the areas identified during the Phase 2 Inventory. The 15 operational training areas/ranges are discussed in detail in Sections 4.2.1 through 4.2.15. Any changes to or additional information regarding the original Phase 2 Inventory ranges are also presented in the site-specific sections.

Table 4-2: Summary of Phase 2 Inventory Findings

Range/Site	Location	Acreage	Brief Description of Range/Site Use
Area 1	CWA	3.89	Field training and land maneuvers
Area 2	CWA	8.00	Field training and land maneuvers
Bivouac	CWA	23.22	Field training and land maneuvers
Commo Training 1	MP	12.80	Field training involving antenna set-up
Commo Training 2	MP	2.99	Field training involving antenna set-up
Commo Training 3	MP	1.87	Field training involving antenna set-up
Cowan Park	MP	5.93	Ceremonial activities
EOD Area	CWA	2.25	Light demolition
Fire Training Center	CWA	4.27	Fire and rescue training
Greely Parade Field	MP	25.32	Drill and parade
Helipad 1	MP	0.87	Rotary wing pad
Helipad 2	CWA	0.25	Rotary wing pad
K-9 Training Area	MP	1.07	K-9 training
Meddac Training Area	MP	4.05	Meddac training
Prep School Training Area	MP	6.96	Physical training and recreation

The references included in Table 4-3 significantly contributed to the findings made for the operational ranges/sites identified at FTMM.

Table 4-3: References/Key Sources of Data for the Operational Ranges/Sites at FTMM

Document Number	Date	Title	Source	General	Environmental	Munitions
FTMM001	30 June 1944	Office of the Post Engineer. Fort Monmouth, N.J. Post Layout & Reservation Map Camp Charles Wood.	Installation	X		
FTMM002	30 June 1944	Office of the Post Engineer. Fort Monmouth. Water Distribution System.	Installation	X		
FTMM003	13 March 1952	Fort Monmouth Additional Facilities (FY1952) Part 1. Site Location Plan. Fort Monmouth, New Jersey.	Installation	X		
FTMM004	21 June 1960	Office of the Facilities Engineer Fort Monmouth, N.J. Post Layout & Reservation Map. Charles Wood Area. Fort Monmouth, N.J.	National Archives	X		
FTMM005	19 April 1962	Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth.	Installation	X		
FTMM006	13 December 1972	Office of the Facilities Engineer Fort Monmouth. Post Layout & Reservation Map Fort Monmouth.	Installation	X		

Document Number	Date	Title	Source	General	Environmental	Munitions
FTMM007	04 June 1980	Office of the Facilities Engineer Fort Monmouth, New Jersey. Demolition & Removal of Buildings. Site Plan. Main Post Area. Fort Monmouth, New Jersey.	Installation	X		
FTMM008	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X		
FTMM009	01 November 1985	Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X		
FTMM010	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Map.	Installation	X		
FTMM011	01 November 1985	Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Plan.	Installation	X		
FTMM012	26 August 2005	U.S. Army BRAC 2005 DRAFT-Environmental Condition of Property Report Fort Monmouth, New Jersey.	USAEC	X		

4.2.1 Area 1 (CWA)

This area is currently situated directly east of administrative offices and on a land parcel zoned as Research, Development, and Testing (FTMM011). Areview of maps and documents indicate the presence of occupied buildings from 1944 through present to the north (e.g., barracks, administrative, mess halls) and a railroad spur/cargo and troop loading platform to the south established in the early to mid-1940s, precluding the establishment of an appropriate safety buffer (FTMM001, FTMM004, FTMM009, FTMM011, and FTMM012). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was utilized for field training and land maneuvers. The interviewees indicated that munitions related activities were not conducted at this area. Current and historical records and the interviews referenced above indicate it is unlikely that training activities conducted in this area used munitions; therefore, this area will not be discussed further in this HRR. Figure 4-1 is a photograph of the current conditions at Area 1.

Figure 4-1: Current conditions at Area 1

4.2.2 Area 2 (CWA)

This area is situated directly east of Area 1 on a land parcel zoned as Operations (FTMM011). A review of maps and documents indicate the presence of occupied buildings from 1944 through present to the north (e.g., barracks, administrative, mess halls) and a railroad spur/cargo and

troop loading platform to the south established in the early to mid-1940s, precluding the establishment of an appropriate safety buffer (FTMM001, FTMM004, FTMM009, FTMM011, and FTMM012). Currently, family housing is directly north of this area (as seen during the site visit). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was utilized for field training and land maneuvers. The interviewees indicated that munitions related activities were not conducted at this area. Current and historical records and interviews referenced above indicate it is unlikely that training activities conducted in this area used munitions; therefore, this area will not be discussed further in this HRR. Figure 4-2 is a photograph of the current conditions at Area 2.

Figure 4-2: Current conditions at Area 2

4.2.3 Bivouac (CWA)

This area is currently not used for training and is located on the southern border of the CWA. This area overlaps two land parcels zoned as Reserved Land/Buffer and Recreation (FTMM011). A review of maps and documents indicate the presence of occupied buildings from 1944 through the present to the north (e.g., barracks, administrative, mess halls) and a railroad spur/cargo and troop loading platform to the south established in the early to mid-1940s, precluding the establishment of an appropriate safety buffer (FTMM001, FTMM004, FTMM009, FTMM011, and FTMM012). A 1944 map identifying the area of the Bivouac location includes an area labeled “Training Area”; however, a 1960 map indicates that this area is a 22-acre parcel that is underutilized (FTMM002 and FTMM004). Based on the 1960 map, it is assumed that this area

has not been used for training activities since the 1960s. According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was utilized for field training and land maneuvers. However, the interviewees were unable to provide information regarding the possible munitions related activities that may have been conducted at this area. The documentation received for this HRR did provide information regarding whether or not munitions related activities were conducted during training related activities. Therefore, it is assumed that the training activities conducted at the Bivouac were not munitions related and this area will not be discussed further in this HRR. Figure 4-3 is a photograph of the current conditions at the Bivouac area.

Figure 4-3: Current conditions at Bivouac

4.2.4 Commo Training 1 (MP)

This area is located at the MP near the north central border adjacent to Lafetra Brook (FTMM008 and FTMM010). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was used for communications training involving setting up radio antennas. (According to FTMM012, a Radio Tower Building and a Transmitter Building have been active since 1958.) The interviewees indicated that munitions related activities were not conducted at this area. The conclusion that no munitions use occurred at Commo Training 1 is also supported by the review of maps and documents that indicate the presence of occupied buildings from 1944 through present (e.g., Child Care Center directly to the west) (FTMM002, FTMM003, FTMM005, FTMM006, FTMM008, FTMM010, and FTMM012). Since munitions related activities are not conducted at Commo Training 1, this area will not be discussed further in this HRR. It should be noted that the Former Outdoor Firing Range (1940-1955 Pistol Range) and the Former Skeet Range were located within the operational footprint of Commo Training 1. These ranges will be discussed in detail in Sections 4.3 and 4.4, respectively. Figure 4-4 is a photograph of the current conditions at Commo Training 1.

Figure 4-4: Current conditions at Commo Training 1

4.2.5 Commo Training 2 (MP)

This area is located on the northwestern border of the MP in a highly developed area (FTMM008 and FTMM010). This area is located directly west of the Bowling Center (Building 689), which has been active since 1967, and Troop Housing (FTMM002, FTMM003, FTMM005, FTMM006, FTMM008, FTMM010, and FTMM012). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was used for communications training involving setting up radio antennas. The interviewees indicated that munitions related activities were not conducted at this area. Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted at this area; therefore, this area will not be discussed further in this HRR. Figure 4-5 is a photograph of the current conditions at Commo Training 2.

Figure 4-5: Current conditions at Commo Training 2

4.2.6 Commo Training 3 (MP)

This area is currently and was historically surrounded by buildings (FTMM008 and FTMM010). According to archival documents, this area was surrounded by storage buildings to the southwest and administrative offices to the southeast. For example, Building 906 (located to the southeast of this area) has been active since 1942 as an administration/esting facility (FTMM002, FTMM003, FTMM005, FTMM006, FTMM008, FTMM010, and FTMM012).. According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area was used for communications training involving setting up radio antennas. The interviewees indicated that munitions related activities were not conducted at this area. Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted at this area; therefore, this area will not be discussed further in this HRR. Figure 4-6 is a photograph of the current conditions at Commo Training 3.

Figure 4-6: Current conditions at Commo Training 3

4.2.7 Cowan Park (MP)

This area is located in the northeastern region of the MP on a parcel of land zoned as Administration (FTMM008 and FTMM010). This area was listed on maps as Myer Park until approximately the mid-1980s (FTMM007 has the area listed at Myer Park, while FTMM008 has the area listed as Cowan Park). According to Mr. Fallon, Cowan Park is used for ceremonial activities, including cannon and rifle salutes (these activities utilize blank ammunition only). Directly west of Cowan Park is the main administrative building (Building 286 - Russell Hall), which has been active since 1936 for administrative/general purposes (FTMM012). Since munitions related activities are not conducted at this area, it will not be discussed further in this HRR. Figure 4-7 is a photograph of the current conditions at Cowan Park.

Figure 4-7: Current conditions at Cowan Park

4.2.8 EOD Area (CWA)

During the Phase 2 Inventory, an EOD Area that was proposed to be built at the CWA was identified as an operational training range/area. The EOD Area identified during the Phase 2 Inventory is currently under construction. According to Captain Kadlec of the 754th Ordnance Company, the current EOD Area is located on the MP in Building 289; however, this area is

strictly used for administrative purposes. Building 289 has been active since 1941 as the 754th Ordnance Detachment Commanding Officer Headquarters Building (FTMM012). The 754th Ordnance Company utilized Building 676 (which has been active since 1941) through the 1980s, and then relocated to Building 289 (FTMM012). Based on the interview with Captain Kadlec and the proximity of the locations of surrounding buildings on both current and historical maps, both of these locations are believed to have been used for administrative purposes only (FTMM006, FTMM008, and FTMM010). For example, Building 295 is located to the east of the EOD Area/Building 289, and Building 295 has been active since 1969 for general purpose/administrative uses (FTMM006 and FTMM012). According to Captain Kadlec, the activities that occur in Building 289 include training troops in the identification of various MEC utilizing completely inert props. Historical mapping and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR.

4.2.9 Fire Training Center (CWA)

This area is located in the southwestern corner of the CWA and encompasses two parcels zoned as Supply/Storage and Research, Development and Testing (FTMM011). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area is used for fire fighting and rescue training. The interviewees indicated that munitions related activities are not conducted at this area. Various buildings are in the near vicinity of the Fire Training Center. For example, Buildings 2501 through 2507 are located to the south of this area; they have been active since 1942 as various kinds of shops (FTMM001, FTMM004, and FTMM009). Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-8 is a photograph of the current conditions at the Fire Training Center.

Figure 4-8: Current conditions at the Fire Training Center

4.2.10 Greely Parade Field (MP)

Greely Parade Field is a parcel of land zoned Recreation (FTMM010) and is situated with family housing (active since 1929) directly to the north and south and a chapel to the west (FTMM002, FTMM003, FTMM005, FTMM006, FTMM008, and FTMM012). Russell Hall) is located to the east and has been active since 1936 for administrative/general purposes (FTMM008, FTMM010, and FTMM012). According to interviews with Mr. Occhipinnti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area is utilized as a parade/drill field. The interviewees indicated that munitions related activities are not conducted at this area. Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-9 is a photograph of the current conditions at Greely Parade Field.

Figure 4-9: Current conditions at Greely Parade Field

4.2.11 Helipad 1 (MP)

This area is located in the north central region of the MP and adjacent to the northeast border of Greely Parade Field (FTMM008 and FTMM010). Helipad 1 is situated on a parcel of land which is zoned Operations (FTMM010). This area first appears on a 1944 map with no structures within its vicinity; however, a 1952 map depicts the presence of various buildings (FTMM002 and FTMM003). Family housing units are directly to the north, and Russell Hall (Building 286) is located to the east (FTMM010 and FTMM012). The family housing areas have been present since 1929, and Building 286 has been active since 1936 for administrative/general purposes (FTMM012). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area is utilized for rotary wing landings and take offs. Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-10 is a photograph of the current conditions at Helipad 1.

Figure 4-10: Current conditions at Helipad 1

4.2.12 Helipad 2 (CWA)

This area is utilized for rotary wing landing and take offs and is situated directly east of Area 1 and west of Area 2 (FTMM008 and FTMM010). Helipad 2 is located on a land parcel zoned within the CWA as Operations (FTMM011). This area first appears on a 1960 map and is

labeled as "Landing Pad"; an area identified as a "Cafeteria" (Building 2537) is located to the east of this area (FTMM004). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area is utilized for rotary wing landings and take offs. Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-11 is a photograph of the current conditions at Helipad 2.

Figure 4-11: Current conditions at Helipad 2

4.2.13 K-9 Training Area (MP)

This area is located on the eastern border of the MP on a parcel of land identified as wetlands (FTMM010). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, this area is utilized for K-9 training, including the firing of blank ammunition. Historical maps show Buildings 900-902 located to the south of this area; these buildings have been active since 1941 for tactical motor pool warehouse/administrative uses (FTMM002, FTMM003, and FTMM012). Historical mapping also depicts Building 977 as being located to the south of this area. It has been active since 1953 as the Police Station/PM Office (FTMM005, FTMM006, FTMM008, and FTMM012). Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-12 is a photograph of the current conditions at the K-9 Training Area.

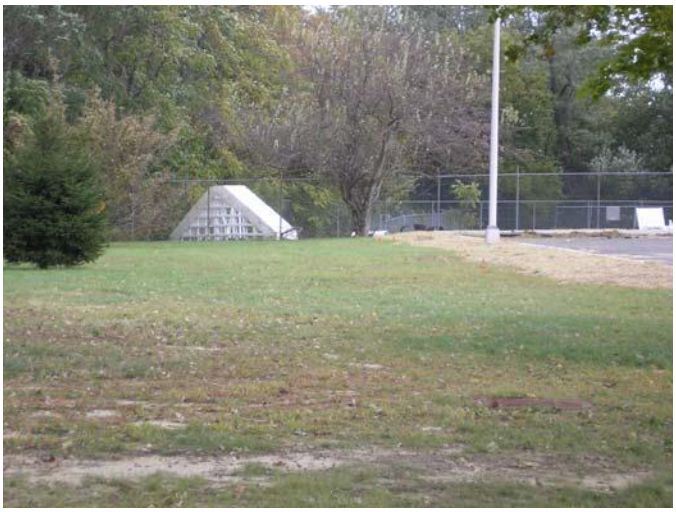


Figure 4-12: Current conditions at the K-9 Training Area

4.2.14 Meddac Training Area (MP)

This area is located in the south central area of the MP and encompasses two land parcels zoned as Supply/Storage and Medical/Dental (FTMM010). According to interviews with various installation personnel, munitions related activities are not conducted at this area. Historical mapping depict various buildings/structures within and surrounding this area (within an area bounded by Alexander, Todd, Cockayne, and Stephenson avenues) (FTMM002, FTMM0003, FTMM005, FTMM006, and FTMM008). These buildings/structures consist of a gazebo, running track, football field, and picnic pavilion, as well as areas used for administrative and general purposes (FTMM012). Building 876 (depicted on a 1972 map and a 1985 map) is located within this area and has been used since 1967 by MEDDAC/Vet Command (FTMM006, FTMM008, and FTMM012). Historical mapping and interviews with personnel at FTMM, confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-13 is a photograph of the current conditions at the Meddac Training Area.

Figure 4-13: Current conditions at Meddac Training Area

4.2.15 Prep School Training Area (MP)

This area is located on the western side of the MP on a parcel of land zoned as Recreation (FTMM010). According to interviews with Mr. Occhipinti, Mr. Ruane, Mr. Stonska, and Mr. Gordon, the only activities that occur in this area are physical training and recreational activities such as football. Directly to the north and south of this area are family housing and base administrative buildings (FTMM008 and FTMM010). Historical mapping depicts Buildings 675-678 to the north of this area; these buildings have been active since 1941 for the Inspector General, legal, and administrative offices (FTMM002, FTMM008, and FTMM012). Historical maps and interviews with personnel at FTMM confirm that munitions related activities were not conducted in this area; therefore, this area will not be discussed further in this HRR. Figure 4-14 is a photograph of the current conditions at the Prep School Training Area.

Figure 4-14: Current conditions at the Prep School Training Area

4.3 MMRP SITE FINDINGS

One area not identified during the Phase 2 or Phase 3 inventories, the Former Pistol Range (1935-1940 Pistol Range), was discovered during the HRR through a review of archival information. This area is discussed in more detail in Section 4.3.1. The Phase 3 Inventory previously identified one MMRP eligible area at FTMM, which is presented in Section 4.3.2. Any changes to or additional information regarding the original Phase 3 Inventory MMRP site are also discussed. Map 4-1 and Map 4-2 depict the MMRP site findings.

The references included in Table 4-4 significantly contributed to the findings made for the MMRP sites identified at FTMM.

Table 4-4: References/Key Sources of Data for the MMRP Ranges/Sites at FTMM

Document Number	Date	Title	Source	General	Environmental	Munitions
FTMM003	13 March 1952	Fort Monmouth Additional Facilities (FY1952) Part 1. Site Location Plan. Fort Monmouth, New Jersey.	Installation	X		
FTMM005	19 April 1962	Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth.	Installation	X		
FTMM008	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X		
FTMM012	26 August 2005	U.S. Army BRAC 2005 DRAFT-Environmental Condition of Property Report Fort Monmouth, New Jersey.	USAEC	X		
FTMM013	11 September 1925	Correspondence. The Itinerary for the Small Arms Inspector.	National Archives			X
FTMM014	19 January 1926	Correspondence. Inspection of Small Arms Material On Hand At Fort Monmouth.	National Archives			X
FTMM015	01 February 1935	Construction Division. Office of the Constructing Quartermaster. Fort Monmouth, N.J. Topographic Map with Post Utilities.	Installation	X	X	X

Document Number	Date	Title	Source	General	Environmental	Munitions
FTMM016	August 1938	Correspondence. Construction of Signal Corps Photographic Laboratory at Fort Monmouth, N.J.	National Archives	X		X
FTMM017	03 December 1941	Office of the Post Engineer. Fort Monmouth. Post Plan Fort Monmouth, N.J.	Installation	X		X
FTMM018	18 December 1941	Increase of Signal Corps School and Officers Candidate School.	National Archives			X
FTMM019	03 March 1942	Correspondence. Subject: Rifles.	National Archives			X
FTMM020	04 June 1942	Correspondence. Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.	National Archives			X
FTMM021	27 August 1942	Correspondence. Subject: .30 Caliber Rifles.	National Archives			X
FTMM022	17 November 1942	Revised Estimate of Ammunitions Requirements.	National Archives			X
FTMM023	18 March 1944	Training Equipment for Eastern Signal Corps Unit Training Center, Fort Monmouth, New Jersey.	National Archives			X
FTMM024	June 1950	Fort Monmouth, N.J. Map a-1 June 1950.	Installation	X		X

Document Number	Date	Title	Source	General	Environmental	Munitions
FTMM025	December 1993	Final Investigation of Suspected Hazardous Waste Site Fort Monmouth, New Jersey.	Installation	X	X	
FTMM026	December 1995	Final Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas.	Installation	X	X	
FTMM027	September 2003	Final U.S. Army Closed, Transferring and Transferred Range/Site Inventory for Fort Monmouth, NJ.	AEC	X	X	X
FTMM028	July 2004	Fort Monmouth 2004 Installation Action Plan.	Installation	X	X	X

4.3.1 Former Pistol Range (1935-1940 Pistol Range) (MP)

The Former Pistol Range (1935-1940 Pistol Range) was first identified on a 1935 map and encompassed 0.42 acres at the MP (FTMM015). The portion of the map depicting the Former Pistol Range and its berm is presented in Figure 4-15.. Historical documents indicate that small arms were on hand/inventoried at Fort Monmouth as early as 1925; however, historical mapping does not depict the presence of any small arms ranges until 1935 (FTMM013, FTMM014, and FTMM015).

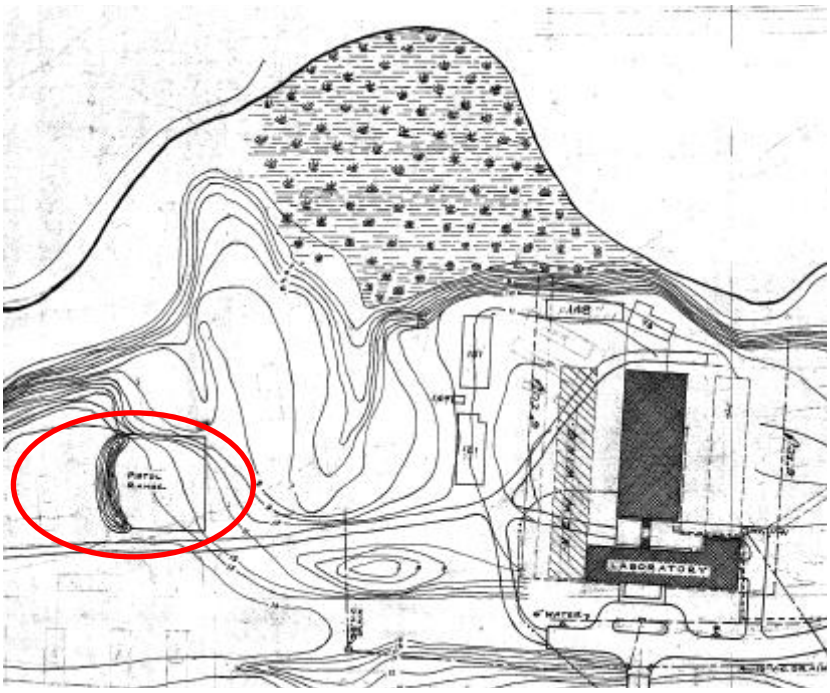


Figure 4-15: Former Pistol Range (1935-1940 Pistol Range) as identified in 1935 (FTMM015)

In 1940, the Former Pistol Range (1935-1940 Pistol Range) was relocated to another site in preparation for the construction of the Sanitary Treatment Plant. The Sanitary Treatment Plant was built in 1941, closed in 1975, and demolished in 1983 (FTMM017, FTMM005, and FTMM008). Currently, the area is flat and grass covered. Soil sampling for metals was performed for the Sanitary Treatment Plant area (IRP Site Area of Concern [AOC] 3) in the vicinity of the Former Pistol Range (1935-1940 Pistol Range) (i.e., within the firing fan boundaries) in 1995 (FTMM026). Figure 4-16 depicts the Former Pistol Range (1935-1940 Pistol Range) and the sampling locations of the activities conducted in 1995. The green shading on Figure 4-16 indicates the boundaries of the Former Pistol Range (1935-1940 Pistol Range) and the firing fan area. No further action (NFA) was recommended for the Sanitary Treatment Plant area (IRP Site AOC 3) (FTMM026). No investigations of the Former Pistol Range (1935-1940 Pistol Range), including sampling activities, have been conducted within the former berm area (FTMM026). The berm was depicted on a 1935 map; however, the berm area was not depicted on the 1941 map that shows the Sanitary Treatment Plant. Therefore, it is assumed that the berm was removed/demolished prior to the construction of the Sanitary Treatment Plant

(FTMM015 and FTMM017). The primary MC of concern is lead. Other associated MC less likely to be of concern may include: antimony, arsenic, copper, magnesium, nickel, strontium, tin, zinc, and lead styphnate/lead azide.

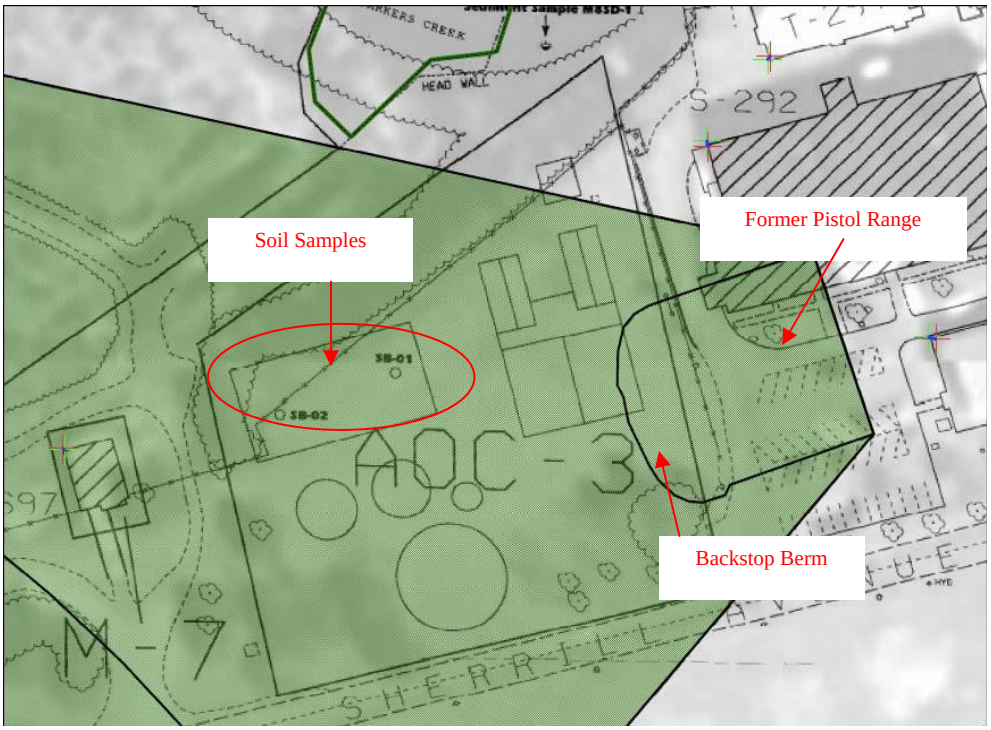


Figure 4-16: Soil sample locations on the Former Pistol Range (1935-1940 Pistol Range) (IRP Site AOC 3) (FTMM026)

The surface danger zone (SDZ) is defined as the ground and airspace designated within the training complex (to include associated safety areas) for vertical and lateral containment of ammunition, bullet fragments, target fragments, and debris resulting from the firing of small arms weapons. For small arms ranges, the SDZ represents the portion of the former range that included the area where the weapons, when fired from the firing arc/line, were a potential hazard to personnel. The SDZ was used to define the area that included the firing arc/line, target area(s), impact area(s) (e.g., shotfall zone, backstop berm), ricochet trajectory area, and secondary danger area.

Various historical documents indicate that small arms ammunition was used at Fort Monmouth, including the Former Pistol Range (1935-1940 Pistol Range) (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023). Based on these documents, it is assumed that

.22-caliber, .30-caliber, and .45-caliber ammunition may have been used at the Former Pistol Range (1935-1940 Pistol Range). A 1942 archival document indicates a request for .50-caliber ammunition; however, further correspondence indicates that the request was not met and .22-caliber ammunition was supplied as an alternative (FTMM020).

According to Army Regulation (AR) Technical Manuals (TM) (referenced as AR 750-10 and TM 9-855), the maximum range for .22-caliber weapons is 4,500 feet with a muzzle velocity of 1,100 feet per second. The maximum range for .45-caliber weapons is 4,800 feet with a muzzle velocity of 802 feet per second. The SDZ for a .45-caliber pistol range extends downrange from each end of each firing line at a five-degree angle for 4,800 feet. An additional SDZ, also originating from each end of each firing line, extends downrange at a 25-degree angle for 3,600 feet. An example of a typical SDZ for a pistol range is provided in Figure 4-17. The SDZ for the Former Pistol Range (1935-1940 Pistol Range) is shown on Map 4-2 (based on the typical SDZ for a .45-caliber pistol range). A CSM for the Former Pistol Range (1935-1940 Pistol Range) is presented in Section 5.1.

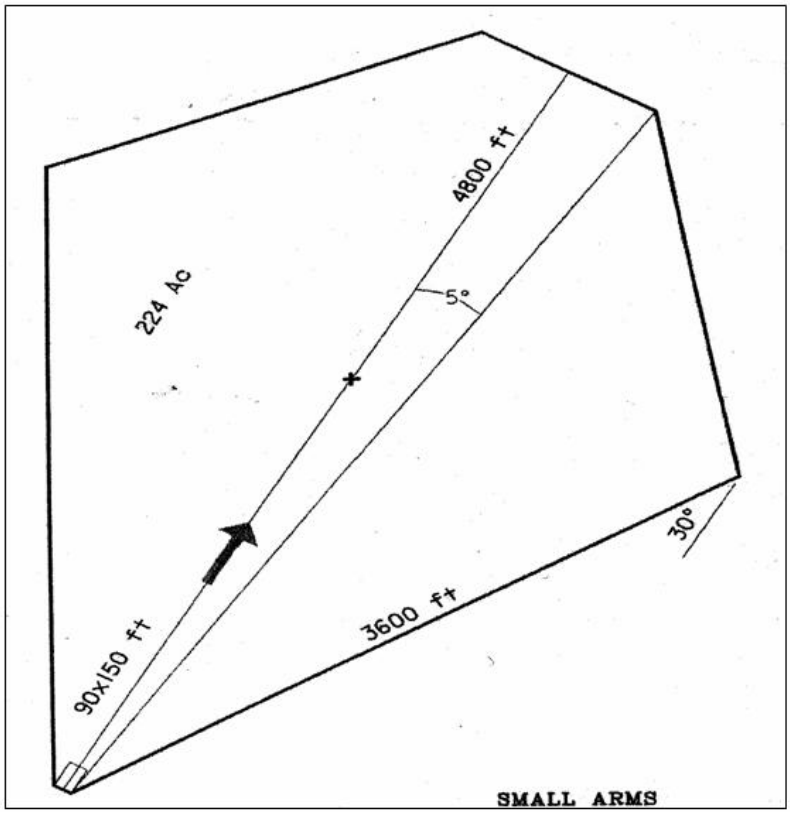


Figure 4-17: SDZ for a typical .45-caliber pistol range (AR 750-10 and TM 9-855)

4.3.2 Former Outdoor Firing Range (1940-1955 Pistol Range) (MP)

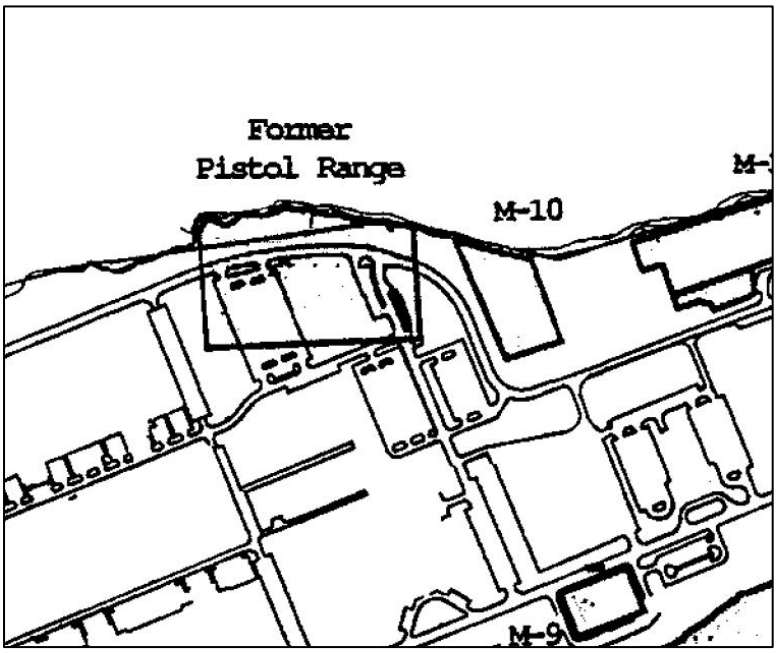


Figure 4-18: Location of the Former Outdoor Firing Range (1940-1955 Pistol Range) (FTMM025)

The Former Outdoor Firing Range was identified during the Phase 3 Inventory as a 3.00-acre area located on the northwest corner of the MP where small arms training occurred (FTMM027). The suspected location of this area was identified in 1993 during an investigation of suspected hazardous waste sites (FTMM025). The portion of the map depicting the location of the Former Outdoor Firing Range is presented in Figure 4-18. The investigation report states that the location may not be accurate (FTMM025). Based on the research conducted for this HRR, the location of the Former Outdoor Firing Range proposed in the Phase 3 Inventory should be adjusted. A 1941 map indicates the location of a pistol range (Figure 4-19) (FTMM017). Based on the research for this HRR, it is believed the area labeled "Former Pistol Range" in the investigation report is incorrect, and the actual location of the Former Outdoor Firing Range was the site to which the Former Pistol Range (1935-1940 Pistol Range) was relocated (Figure 4-19) (FTMM025). Therefore, the Former Outdoor Firing Range will be referred to as the Former Outdoor Firing Range (1940-1955 Pistol Range).

The Former Outdoor Firing Range (1940-1955 Pistol Range) was a 0.16-acre area that was located on the northwestern area of the MP where small arms training occurred (FTMM017). The Former Pistol Range (1935 – 1940 Pistol Range) was shut down and relocated here due to the construction of the Sanitary Treatment Plant. The Former Outdoor Firing Range (1940-1955 Pistol Range) was constructed as a replacement at the location seen in Figure 4-19. The range was used for both pistol and rifle training from 1940 until approximately 1955 (FTMM028). A

1950 map and a 1952 map indicate the presence of the range; however, a 1962 map indicates that the range is no longer present (FTMM003, FTMM005, FTMM024). Munitions usage at the Former Outdoor Firing Range (1940-1955 Pistol Range) is assumed to have been limited to small arms ammunition (FTMM013, FTMM014, FTMM016, FTMM018 through FTMM023). It is assumed that the small arms were fired into a backstop berm that has since been demolished/removed. (The presence of a berm was not identified on historical maps or during the site visit.) The range was closed due to construction activities in the area of Building 1200, which has been active since 1953 as the Central Boiler Plant-Main Boiler Plant for MP (FTMM012). The former range area has been redeveloped and maintained as an open field for over 40 years, and no evidence of the former range exists (FTMM005, FTMM010, interviews and visual survey). Grounds in the general vicinity of the Former Outdoor Firing Range (1940-1955 Pistol Range) that were not affected by construction are currently grass covered (based on visual survey). For small arms, the primary MC of concern is lead from bullets. Small arms ammunition is not considered MEC. No MC or evidence of MEC use were observed during the Phase 3 Inventory range survey or during the site visit (FTMM027). However, it is possible that MC may be present in the surficial soil horizon. The Phase 3 Inventory report indicates that further investigation would be required to verify the presence or absence of MC and, possibly, to determine the disposition of the berm soil that was demolished/removed (FTMM027).

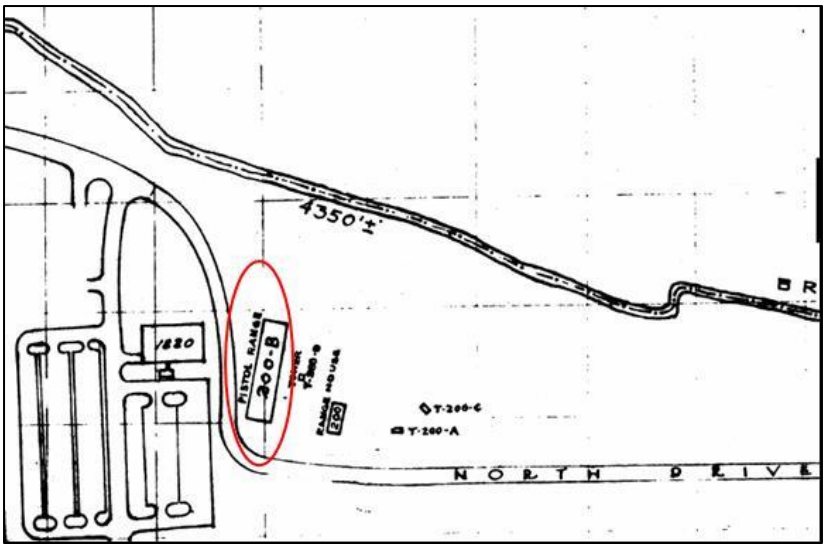


Figure 4-19: Location of the Former Outdoor Firing Range (1940-1955 Pistol Range) (FTMM017)

Various historical documents indicate that small arms ammunition was used at Fort Monmouth, including the Former Outdoor Firing Range (1940-1955 Pistol Range) (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023). Based on these documents, it is assumed that

.22-caliber, .30-caliber, and .45-caliber ammunition may have been used at the Former Outdoor Firing Range (1940-1955 Pistol Range). A 1942 archival document indicates a request for .50-caliber ammunition; however, further correspondence indicates that the request was not met and .22-caliber ammunition was supplied as an alternative (FTMM020).

Section 4.3.1 discusses the typical SDZ for a pistol range. The SDZ for the Former Outdoor Firing Range (1940-1935 Pistol Range) is shown on Map 4-2 (based on the typical SDZ for a .45-caliber pistol range). A CSM for the Former Outdoor Firing Range (1940-1955 Pistol Range) is presented in Section 5.2.

4.4 OTHER MUNITIONS RELATED SITES

This HRR also includes areas classified as other, which includes explosives or munitions operating storage or manufacturing facilities and facilities that were or are used for, or are permitted for, the treatment or disposal of military munitions. Areas classified as other are discussed in more detail in the following sections. Map 4-2 depicts those areas identified as other munitions related ranges/sites.

The references included in Table 4-5) significantly contributed to the findings made for the other munitions related ranges/sites identified at FTMM.

Table 4-5: References/Key Sources of Data for the Other Munitions Related Ranges/Sites at FTMM

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM001	30 June 1944	Office of the Post Engineer. Fort Monmouth, N.J. Post Layout & Reservation Map Camp Charles Wood.	Installation	X		

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM004	21 June 1960	Office of the Facilities Engineer Fort Monmouth, N.J. Post Layout & Reservation Map. Charles Wood Area. Fort Monmouth, N.J.	National Archives	X		
FTMM005	19 April 1962	Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth.	Installation	X		
FTMM008	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X		
FTMM013	11 September 1925	Correspondence. The Itinerary for the Small Arms Inspector.	National Archives			X
FTMM014	19 January 1926	Correspondence. Inspection of Small Arms Material On Hand At Fort Monmouth.	National Archives			X
FTMM016	August 1938	Correspondence. Construction of Signal Corps Photographic Laboratory at Fort Monmouth, N.J.	National Archives	X		X
FTMM017	03 December 1941	Office of the Post Engineer. Fort Monmouth. Post Plan Fort Monmouth, N.J.	Installation	X		X
FTMM018	18 December 1941	Increase of Signal Corps School and Officers Candidate School.	National Archives			X

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM019	03 March 1942	Correspondence. Subject: Rifles.	National Archives			X
FTMM020	04 June 1942	Correspondence. Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.	National Archives			X
FTMM021	27 August 1942	Correspondence. Subject: .30 Caliber Rifles.	National Archives			X
FTMM022	17 November 1942	Revised Estimate of Ammunitions Requirements.	National Archives			X
FTMM023	18 March 1944	Training Equipment for Eastern Signal Corps Unit Training Center, Fort Monmouth, New Jersey.	National Archives			X
FTMM024	June 1950	Fort Monmouth, N.J. Map a-1 June 1950.	Installation	X		X
FTMM028	July 2004	Fort Monmouth 2004 Installation Action Plan.	Installation	X	X	X
FTMM029	23 June 1938	Annual Inspection of Fort Monmouth, N.J., FY1938.	National Archives			X
FTMM030	07 February 1936	Report of Inspection at Fort Monmouth.	National Archives			X
FTMM031	03 July 1956	Alterations to Indoor Firing Range Building.	National Archives	X		
FTMM032	May 1987	Analytical Environmental Assessment Report on Plans for Future Development.	Installation	X	X	X

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM033	January 2003	Characterization and Remediation of Soils at Closed Small Arms Firing Ranges.	ITRC Guidance			X
FTMM034	October 2003	Final Remedial Investigation Report M-18 Landfill Site.	Installation	X	X	X
FTMM035	August 2005	FY2006 Fort Monmouth New Jersey Installation Action Plan.	Installation	X	X	X

4.4.1 Former Indoor Small Arms Range (CWA)

The Former Indoor Small Arms Range was formerly located in Building T-2537 at the CWA (FTMM035). Building T-2537 was labeled as 2537 with the nomenclature "Cafeteria" in 1944; however, the building did not have this nomenclature in 1960 (the building was labeled T-2537) (FTMM001 and FTMM004). The range was a one-story structure built in 1945. (It is assumed that Building 2537 was converted from a cafeteria to an indoor small arms range in 1945) (FTMM035). Figure 4-20 is a photograph of the Indoor Small Arms Range in 1958. The small arms were fired into a metal baffle that deflected the rounds into a sand pit. The sand was then sifted, and the rounds were disposed off-site (FTMM035). Spent rounds and shell casings were

4-20: 1958 photograph of the Former Indoor Small Arms Range (FTMM031)

visable at the surface of a bare patch of soil approximately five feet in diameter northeast of the building (FTMM035). A remedial investigation (RI) was conducted in 1997 and confirmed the presence of lead in the soil. Remedial action (RA) was completed in July 1997 and included removing spent rounds, casings and contaminated soil outside of the building (FTMM035). A post-RA report is being prepared and will recommend an NFA determination from the New Jersey Department of Environmental Protection (NJDEP) (FTMM035). Since an NFA determination has been made for the site and an RA has taken place, it will not be discussed further in this HRR.

4.4.2 Former Magazine Area (MP)

Four former magazines were located just south of Avenue of Memories, adjacent to Mill Brook and encompassed 0.86 acres at the MP (FTMM017). According to Captain Kadlec, the magazine area was identified on a 1941 map. The portion of this map depicting the magazine area is presented in Figure 4-21 (FTMM017). However, historical documents indicated that the magazines were present in 1936 (FTMM029 and FTMM030). According to a 1987 , the magazine area was used to store Class A (1.1) explosives until 1998 (FTMM032). The report also states that the explosives stored were of a type and amount that did not present a significant hazard (FTMM032). The 1987 report also indicates that the fragment distance for the Class 1.1 explosives extended approximately 600 feet into a residential area of Eatontown, New Jersey (FTMM032). The required distance arc from the storage location for 400 pounds of Class 1.1 explosives is set at not less than 1,250 feet from inhabited buildings. The stored amount of Class 1.1 explosives did not exceed 300 pounds. Itwas placed in an igloo-type magazine and a small bunker, each of which had three sides covered with earth, with the fourth side facing the installation (FTMM032). A waiver had been granted for the storage of these Class 1.1 explosives at the location of the Former Magazine Area (FTMM032). Figure 4-22 displays the Safety Clearance Boundary as depicted in the 1987 report

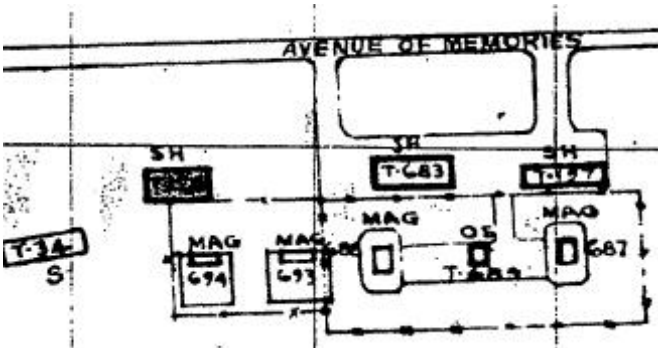


Figure 4-21: Magazine Area location (FTMM017)

(FTMM032). Based on interviews with installation personnel, there have been no releases, explosions, or EOD responses associated with the magazines. Therefore, the magazines will not be discussed further in this HRR.

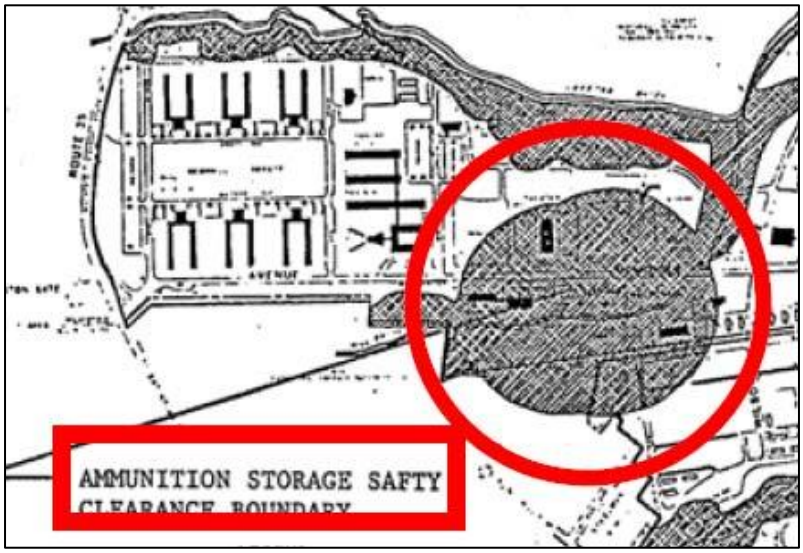


Figure 4-22: Safety Clearance Boundary for the Former Magazine Area (FTMM032)

4.4.3 Former Training Area (Former M-18 Landfill) (MP)

A Former Training Area was identified at the MP located between Parkers Creek to the north and Buildings 283, 289, 293, and 294 to the south (FTMM005, , FTMM008, and FTMM028). The Former Training Area is 4.1 acres in size and overlaps the M-18 Landfill area (FTMM034). The M-18 Landfill area was a former training area utilized by the Army Signal School and other Army units after 1919; munitions related activities were not conducted at the site (FTMM035). The site is partially paved, and the remaining portion is an open sandy area adjacent to a tidal marsh (FTMM035). The 2004 Installation Action Plan indicated that diesel and gasoline generators, along with other types of military vehicles, were used at this site (FTMM028). The plan also states that numerous fuel spills occurred at this site as a result of these activities (FTMM028). Sampling activities were conducted (as part of a site investigation [SI] and soil samples were collected and analyzed for volatile organic compounds and total petroleum hydrocarbons [TPHs]; however, no compounds of concern were detected above NJDEP Direct Contact Soil Cleanup Criteria (FTMM028). During the SI, groundwater samples were collected

and analyzed for target compound list + 30 parameters, target analyte list metals, and TPH (FTMM028). Arsenic, lead, and 4,4 dichlorodiphenyldichloroethane were detected in downgradient monitoring wells above NJDEP Ground Water Quality Criteria (FTMM028). A geophysical survey was also conducted under the SI, which identified waste materials buried at the site (FTMM028). An RI was conducted in order to evaluate the potential for environmental contaminants being present within the existing landfill cover and an NFA determination was made regarding the landfill cover material (FTMM028). A classification exception area (CEA) for site groundwater was filed with NJDEP; the CEA restricts the use of groundwater within a defined area until such time that contaminants of concern (benzene and metals) achieve compliance with NJDEP Ground Water Quality Criteria (FTMM028). Figure 4-23 depicts a portion of the M-18 Landfill area and the sampling activities conducted there. Note the green shading indicates the Former Training Area. An RI report presents a groundwater flow and transport model to evaluate the migration of benzene and metals in groundwater that was submitted to NJDEP in October 2003 (FTMM034). An NFA determination was requested for the M-18 Landfill area (FTMM034). Currently, as part of a long term monitoring program, quarterly groundwater sampling is conducted (FTMM028). To evaluate surface water quality and ensure that groundwater seepage from the M-18 Landfill area is not adversely impacting the surface water, it was recommended that surface water samples be collected and analyzed for arsenic, cadmium, chromium, and lead in conjunction with the groundwater samples collected on a quarterly basis (FTMM034). Since the Former Training Area (M-18 Landfill area) has been recommended for NFA in regards to soil and a long term monitoring program is

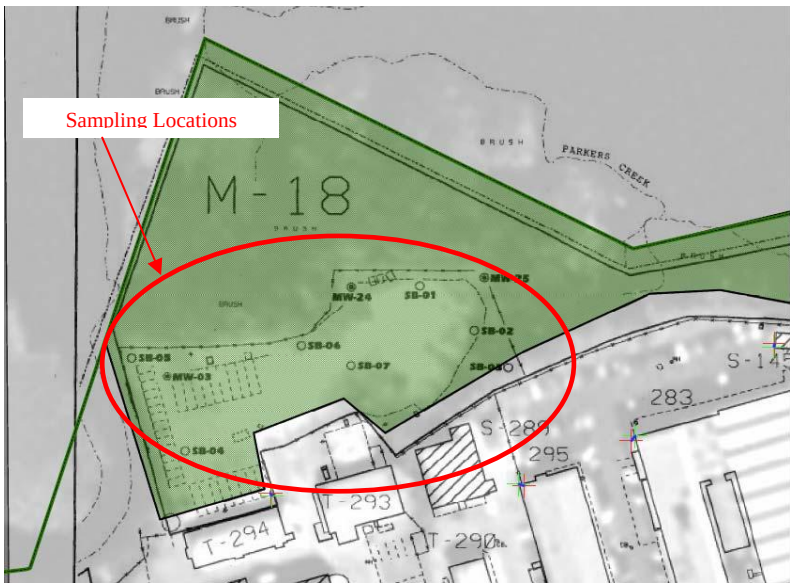


Figure 4-23: Soil sample locations at the M-18 Landfill (Former Training Area) (FTMM034)

recommended for groundwater and surface water, this area will not be discussed further in this HRR.

4.4.4 Former Skeet Range (MP)

The Former Skeet Range was located east of the Former Outdoor Firing Range (1940-1955 Pistol Range) and was used during the same time period (FTMM017 and FTMM024). The Former Skeet Range and four trap houses (Buildings T-50 – T-53) were identified on a 1941 map (FTMM017). Figure 4-24 depicts a portion of this map that presents the location and layout of the Former Skeet Range. According to AR 750-10 and TM 9-855, the typical shooting field (i.e., firing arc) for a skeet range (shotgun range) was historically laid out as a 63-foot radius semi-circle with concrete/asphalt walkways. According to AR 750-10 and TM 9-855, the SDZ (which includes the downrange hazard area and safety fan) historically consisted of a semi-circle with a 900-foot radius that utilized the same apex as the shooting field. Figure 4-25 depicts a typical SDZ for a skeet range (shotgun range). According to AR 750-10 and TM 9-855, for a single field range, the acreage of the SDZ was historically approximately 30 acres. The actual size of the Former Skeet Range at FTMM is approximately 41.2 acres, which encompasses the firing arc, target area, and impact area (Map 4-2) where the lead shot and broken clay targets would most likely be found. The acreage for the Former Skeet Range was based on a 1941 map that depicted the layout of the range (FTMM017). Map 4-2 depicts the dimensions of the Former Skeet Range, along with the typical SDZ for a skeet range (shotgun range).

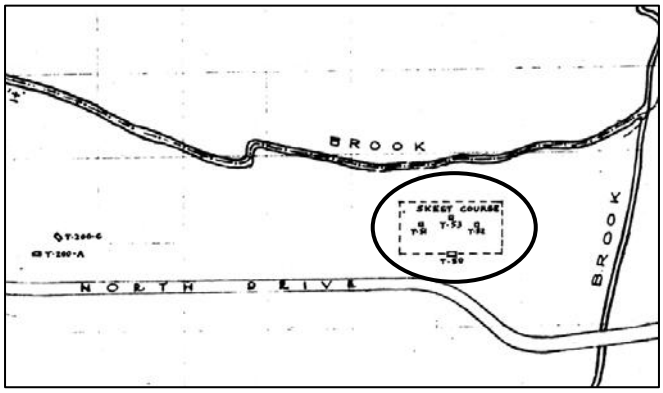


Figure 4-24: Former Skeet Range (FTMM017)

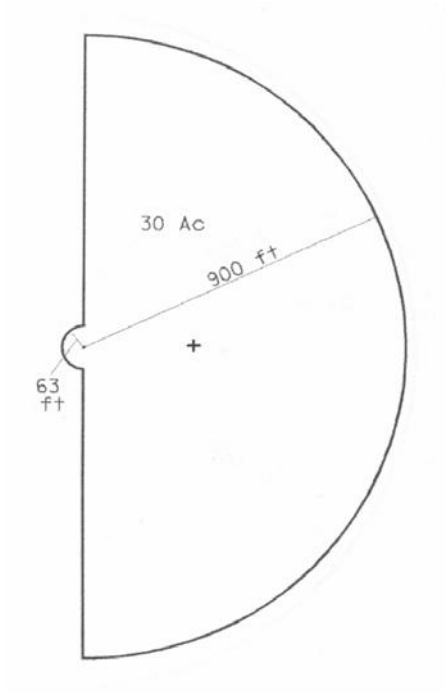
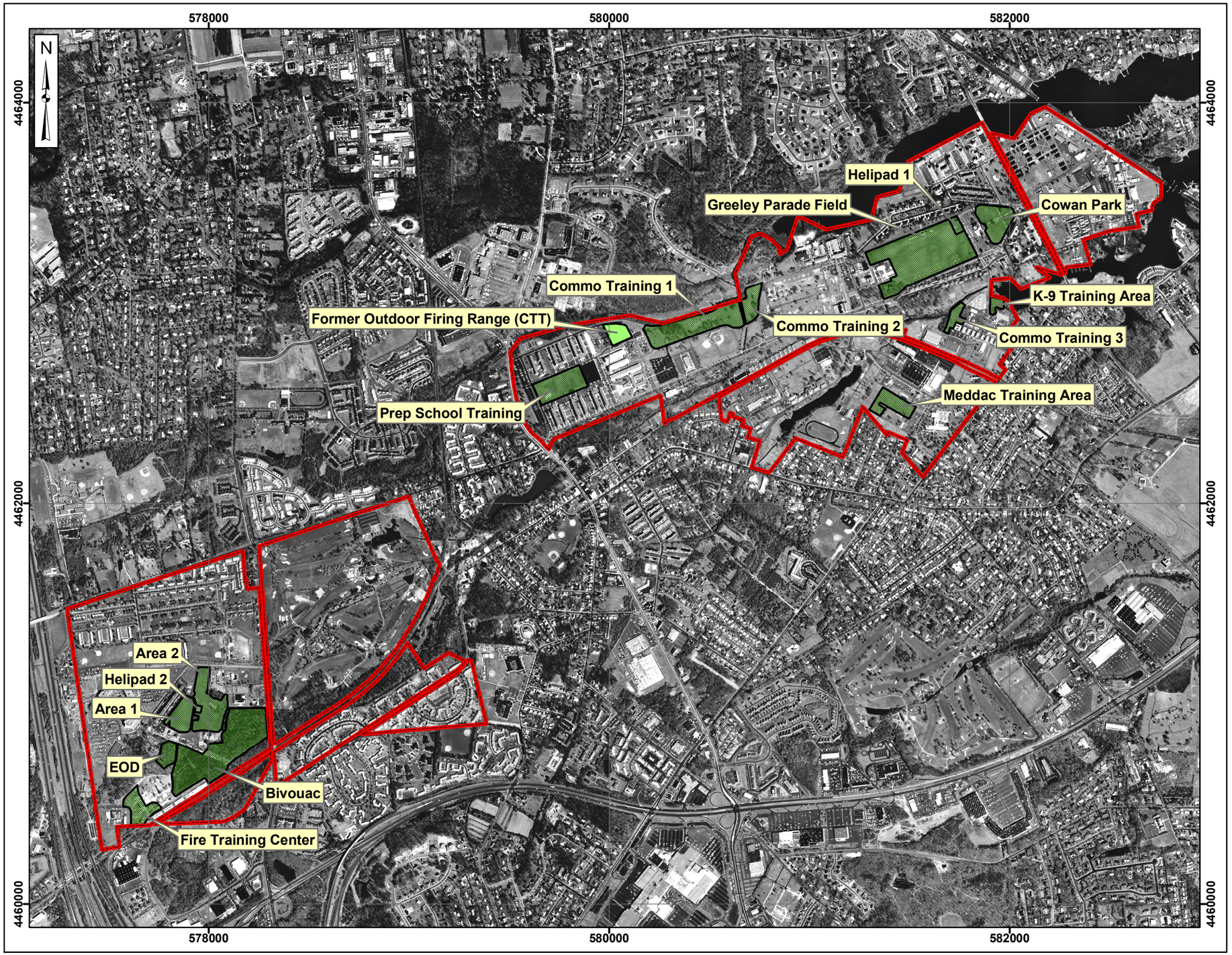


Figure 4-25: Typical SDZ for a single field shotgun range (AR 750-10 and TM 9-855)

Based on historical documents and information obtained during the data collection process, munitions usage at the Former Skeet Range is assumed to be limited to small arms (FTMM013, FTMM014, FTMM016, FTMM018 through FTMM023). The primary MC of concern is lead. Other MC of concern include antimony, arsenic, nickel, and lead styphnate/leads azide. It is assumed that clay targets were used in conjunction with the Former Skeet Range; therefore, polycyclic aromatic hydrocarbons (PAHs) associated with the targets may also be present (PAHs are a component used to manufacture clay targets) (FTMM033). The concentration of PAHs in clay targets varies from one manufacturer to the next, but may be as high as 1000 milligrams/kilogram (FTMM033). However, existing studies show that PAHs are bound within the limestone matrix of the target and are, therefore, not bioavailable (this statement is site-specific and may not hold true for the Former Skeet Range) (FTMM033). A CSM for the Former Skeet Range is presented in Section 5.3.

Historical Records Review
Fort Monmouth, NJ



Map 4-1
Ranges / Sites
(Previously Identified)

Legend

- Installation Boundary
- Closed Range
- Operational Training Area

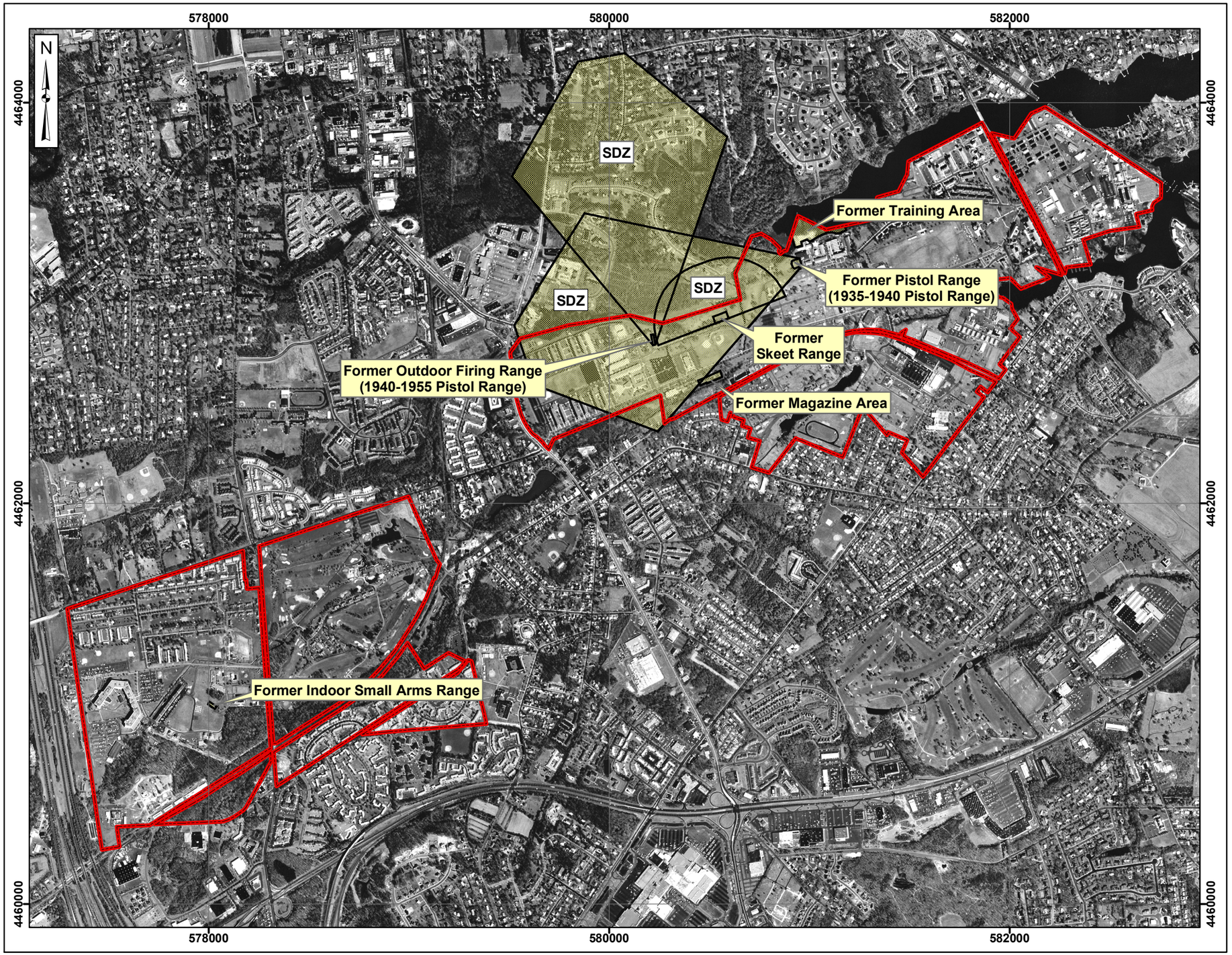
0 500 1,000 Meters

Data Source: USGS Terraserver Online,
Digital Orthophoto,
Downloaded 2005

Coordinate System: UTM Zone 18N
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004
Edition: Final
Date: January 2006

Historical Records Review
Fort Monmouth, NJ



Map 4-2
Ranges / Sites
(Not Previously Identified)

Legend

- Installation Boundary
- Other Munitions Related Site

0 500 1,000 Meters

Data Source: USGS Terraserver Online,
Digital Orthophoto,
Downloaded 2005

Coordinate System: UTM Zone 18N
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004
Edition: Final
Date: January 2006

5 CONCEPTUAL SITE MODEL

In Section 4, 15 operational ranges, 2 MMRP ranges/sites, and 4 other munitions related ranges/sites were evaluated to determine whether munitions-related activities may have resulted in MEC hazards or MC issues at the sites. Based on the findings presented in Section 4, there is evidence to suggest a potential for munitions or MC at only three of the sites. Therefore, CSMs will be presented for the following three sites (all located within the MP): the Former Pistol Range (1935-1940 Pistol Range), the Former Outdoor Firing Range (1940-1955 Pistol Range), and the Former Skeet Range.

The references included in Table 5-1 significantly contributed to the findings made for the ranges/sites identified at FTMM with a potential for munitions or MC.

Table 5-1: References/Key Sources of Data for the Ranges/Sites with Potential for Munitions or MC

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM003	13 March 1952	Fort Monmouth Additional Facilities (FY1952) Part 1. Site Location Plan. Fort Monmouth, New Jersey.	Installation	X		
FTMM005	19 April 1962	Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth.	Installation	X		
FTMM008	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X		

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM010	01 November 1985	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Map.	Installation	X		
FTMM012	26 August 2005	U.S. Army BRAC 2005 DRAFT-Environmental Condition of Property Report Fort Monmouth, New Jersey.	USAEC	X		
FTMM013	11 September 1925	Correspondence. The Itinerary for the Small Arms Inspector.	National Archives			X
FTMM014	19 January 1926	Correspondence. Inspection of Small Arms Material On Hand At Fort Monmouth.	National Archives			X
FTMM016	August 1938	Correspondence. Construction of Signal Corps Photographic Laboratory at Fort Monmouth, N.J.	National Archives	X		X
FTMM017	03 December 1941	Office of the Post Engineer. Fort Monmouth. Post Plan Fort Monmouth, N.J.	Installation	X		X
FTMM018	18 December 1941	Increase of Signal Corps School and Officers Candidate School.	National Archives			X
FTMM019	03 March 1942	Correspondence. Subject: Rifles.	National Archives			X

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM020	04 June 1942	Correspondence. Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.	National Archives			X
FTMM021	27 August 1942	Correspondence. Subject: .30 Caliber Rifles.	National Archives			X
FTMM022	17 November 1942	Revised Estimate of Ammunitions Requirements.	National Archives			X
FTMM023	18 March 1944	Training Equipment for Eastern Signal Corps Unit Training Center, Fort Monmouth, New Jersey.	National Archives			X
FTMM026	December 1995	Final Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas.	Installation	X	X	
FTMM033	January 2003	Characterization and Remediation of Soils at Closed Small Arms Firing Ranges.	ITRC Guidance			X
FTMM036	December 1968	U.S. Army Electronic Command Fort Monmouth, New Jersey: Analysis of Existing Facilities.	Site Visit	X	X	
FTMM037	01 March 1976	Installation Environmental Impact Statement Fort Monmouth, New Jersey.	Site Visit	X	X	

Document Number	Date	Title	Source	General	Environmental	Munitions /Storage
FTMM038	May 1980	Installation Assessment Report No. 171.	Site Visit/ TIC	X	X	
FTMM039	1981	Fort Monmouth United States Geological Service Quad Map (1954 edited 1981).	National Archives		X	
FTMM040	September 1985	Installation Assessment Relook Program.	TIC	X	X	
FTMM041	May 1990	Final Environmental Impact Statement for Fort Devens, Fort Monmouth, and Fort Huachuca.	TIC	X	X	
FTMM042	December 1999	Final Integrated Natural Resources Management Plan Fort Monmouth, New Jersey.	Site Visit	X	X	
FTMM043	Current	http://www.monmouth.army.mil/C4ISR/.	Website	X		

5.1 FORMER PISTOL RANGE (1935-1940 PISTOL RANGE)

5.1.1 Site Profile

5.1.1.1 Area and Layout

The Former Pistol Range (1935-1940 Pistol Range) (hereinafter referred to as the Former Pistol Range) was approximately 550 feet to the west of the Squire Laboratory (FTMM015). The Former Pistol Range is shown in Map 5-1.

5.1.1.2 Structures

Review of the maps and historical documents collected during the archive search conducted for this HRR revealed that the Former Pistol Range was demolished for the construction of Sanitary Treatment Plant (IRP Site AOC 3), which was built in 1941, closed in 1975, and demolished in 1983 (FTMM017, FTMM005, and FTMM008). Currently, the area is flat and grass covered.

5.1.1.3 Utilities

A review of historical documents revealed that sewage piping was formerly located in the area of the Former Pistol Range (FTMM0036). This was removed with the demolition of the Sanitary Treatment Plant. Review of geographic information system (GIS) mapping layers provided by the installation during the site visit reveals that two water hydrants and one water well are currently within the boundary of the Former Pistol Range. The GIS mapping layers also indicate that within the firing fan of the Former Pistol Range there are currently several storm sewer inlets, several water wells, several water hydrants, communication duct bank lines, natural gas lines, and storm sewer headwall lines.

5.1.1.4 Boundaries

To the north and south of the Former Pistol Range are administrative buildings, to the east is the remaining portion of the Sanitary Treatment Plant, and to the west is undeveloped land (FTMM010 and FTMM012).

5.1.1.5 Security

Access to FTMM is restricted by guards and surveillance at every entrance. Access to the Former Pistol Range is not restricted once on the installation; however, based on historical mapping, a fence surrounds the former Sanitary Treatment Plant (FTMM008).

5.1.2 Physical Profile

5.1.2.1 Climate

FTMM is located in the temperate zone of the middle Atlantic. The mean annual temperature at FTMM is 53 degrees Fahrenheit (°F). Summers are generally warm, with an average

temperature of 72°F, and winters are moderate, with an average temperature of 33°F. The average annual precipitation at FTMM is 45.18 inches. Thunderstorms generally occur in the summer and may combine high winds with heavy rainfall. The average seasonal snowfall is 25 inches, with the greatest amounts falling in December, January, and February (FTMM038)..

5.1.2.2 Geology

FTMM lies within the Outer Coastal Plain subprovince of the New Jersey section of the Atlantic Coastal Plain physiographic province, which generally consists of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations were deposited on Precambrian and lower Paleozoic rocks and typically strike northeast-southwest, with a dip that ranges from 10 to 60 feet per mile. Coastal Plain sediments date from the Cretaceous through the Quaternary Periods and are predominantly derived from deltaic, shallow marine, and continental shelf environments. The formations record several major transgressive/regressive cycles. Regressive upward-coarsening deposits, such as Englishtown and Kirkwood formations and the Cohansey Sand, are usually aquifers, while transgressive deposits, such as the Merchantville, Marshalltown, and Navesink formations, act as confining units. The thicknesses of these units vary greatly, ranging from several feet to several hundred feet, and thicken to the southeast.

The Cretaceuos Age Red Bank and Tinton Sands crop out at the MP. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at a slope of 35 feet per mile. The upper member of the Red Bank sand (Shrewsbury) is yellowish-gray to reddish-brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica, and glauconite. The lower member of the Red Bank sand (Sandy Hook) is a dark gray to black medium- to fine-grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank sand and varies in color from dark yellowish-orange or light brown to moderate brown and from light olive to grayish brown. The Tinton sand ranges from a clayey medium to very coarse-grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The upper member of the Tinton sand may contain

60% to 80% glauconite. The upper member of the Tinton is often highly oxidized and iron-oxidized encrusted (FTMM037, FTMM038, and FTMM040).

5.1.2.3 Topography

The land surface at the MP is relatively flat and level, with the exception of short, steep slopes along streams and waterways. Elevations at the MP range from about 6 feet above mean sea level (amsl) at stream edges to 30 feet amsl near the center of MP. The elevation at the Former Pistol Range is 13 feet amsl (FTMM037, FTMM038, and FTMM040).

5.1.2.4 Soil

The MP can be generally described as the Freehold-Urban Land Holmdel-Urban Land Complex association. Soils within the MP are primarily mapped as Udorhents, which consist of areas of soils that have been altered by excavating or filing. The soil types at the MP primarily include Freehold sandy loam, Downer sandy loam, and Kresson loam. Freehold and Downer soil types are somewhat well drained soils that occur on upland areas. Also found on upland areas is the Kresson soil type, which is a poorly drained soil. Both the Freehold and Downer soil types have slight limitations for dwellings and small commercial buildings and severe limitations for shallow excavations. The severe limitations of these soils are due to the tendency of excavation walls to cave in. The Kresson soil type has severe limitations for excavations, dwellings, and small commercial buildings. The severe limitations of the Kresson soil type are associated with wetness (FTMM042).

5.1.2.5 Hydrogeology

FTMM lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region and is underlain by underformed unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. In areas underlain by glauconitic sediments, the water chemistry is dominated by calcium, magnesium, and iron (e.g., Red Bank and Tinton sands). The sediments in the vicinity of FTMM were deposited in fluvial-deltaic to nearshore environments.

The water table aquifer at the MP area is identified as part of the "composite confining units", or minor aquifers, which include the Navesink Formation, the Red Bank sand, Tinton sand, Hornerstown sand, Vincentown Formation, the Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Water in the upper hydrogeologic units of the Red Bank and Tinton sands is typically encountered at shallow depths (2 to 9 feet below ground surface [bgs]). The shallow water table conditions in the Tinton and Red Banks sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Water in this water table aquifer will flow east towards the Atlantic Ocean. Additionally, local topography will tend to deflect the flow toward local depressions.

Groundwater is not used as a potable water source/water supply at FTMM.

(Note: The hydrogeology information was obtained from FTMM037, FTMM038, and FTMM040.)

5.1.2.6 Hydrology

The MP is drained via several waterways that generally flow from west to east. Mill Brook enters FTMM along the southwest boundary and flows east and then north to Lafetra Creek. Lafetra Creek, originating off-post to the west, flows east along the northern boundary of the MP. Parkers Creek originates at the convergence of Lafetra Creek and Mill Brook and flows along the northern boundary of the MP until it discharges to the Shrewsbury River.

The southern portion of the MP is drained by Husky Brook. Husky Brook is a freshwater stream that originates southwest of the MP. A portion of the stream has been dredged, widened, and dammed to form the Husky Brook Lake, which is used for recreational purposes. Downstream from the lake, Husky Brook is piped for approximately 1,100 feet before it surfaces and flows east into Oceanport Creek. Oceanport Creek is a tidal stream that flows along a portion of the southern boundary of the MP before discharging into the Shrewsbury River. The Former Pistol Range is approximately 300 feet south of Lafetra Creek.

Surface water is used as a potable water source/water supply at FTMM. Site-specific hydrologic information was not available.

(Note: The hydrology information was obtained from FTMM037, FTMM038, and FTMM040.)

5.1.2.7 Vegetation

Plant communities at FTMM consist of mixed hardwood-pine forest, flood plain salt marshes and other wetlands. Lawns, ball fields, parade grounds, and roadside areas in the MP are planted in grass mixtures that may include Kentucky bluegrass (*Poa pratensis*), Merion bluegrass (*Poa sp*.), Chewings fescue (*Festuca sp*.), and perennial ryegrass (*Lolium perenne*). The Former Pistol Range is currently a grass covered field (FTMM037, FTMM038, FTMM040, and FTMM042).

5.1.3 Land Use and Exposure Profile

5.1.3.1 Current Land Use/Activities

The Former Pistol Range is undeveloped (FTMM008 and FTMM010).

5.1.3.2 Current Human Receptors

Human receptors are limited to visitors/trespassers, contractors, and authorized installation personnel (FTMM008, FTMM010, and FTMM043).

5.1.3.3 Potential Future Land Use

The installation will be closed in accordance with BRAC protocols; however, the potential future land use is unknown.

5.1.3.4 Potential Future Human Receptors

As any change in land use is unknown at this time, the future human receptors of potential MC are assumed to include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted.

5.1.3.5 Zoning/Land Use Restrictions

A review of historic documents reveals that historic buildings and potential archaeological sites are known to exist at FTMM. The MP has an historic district that contains buildings eligible for the National Register of Historic Places (NRHP). The majority of these buildings are residential. Potential archaeological sites have also been identified at FTMM; however, the NRHP determination of these sites is unknown (FTMM010 and FTMM037).

Wetland areas are considered to be environmentally sensitive and are recommended to be left in a natural state. Approximately 12.5 acres of wetlands occur on the MP. Most of these wetland areas are associated with Parkers Creek, Oceanport Creek, and Husky Brook (FTMM042). Based on review of the GIS mapping layers, no wetlands are located at the Former Pistol Range. The Former Pistol Range area is currently zoned as Research, Development and Testing, as well as Administrative (FTMM010). Land use restrictions specific to the Former Pistol Range were not identified.

5.1.3.6 Beneficial Resources

Wetlands are present at the MP; Parkers and Oceanport Creeks are classified as estuarine intertidal aquatic beds. The area of Parkers Creek northwest of Building 294 and the portion of Oceanport Creek/Husky Brook west of Murray Drive and east of Building 551 are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek, which are located 300 feet to the north and 1600 feet to the east, respectively, are classified as riverine lower perennial open water/unknown bottom. Husky Brook Lake is classified as palustrine open water/unknown bottom. All of these wetland types provide valuable habitat for a variety of species (FTMM039 and FTMM042

No information was identified concerning beneficial resources specific to the Former Pistol Range.

5.1.3.7 Demographics/Zoning

FTMM lies entirely within Monmouth County, New Jersey. The 2004 U.S. Census listed the population of Monmouth County at 636,298 residents. A review of maps indicates that much of the land surrounding FTMM consists of administrative and residential subdivisions and the

associated commercial developments (FTMM008 and FTMM010). Approximately 7,000 military and civilian personnel are employed at FTMM. In addition, approximately 1,173 dependents live on the MP or the CWA in family housing, bringing the total combined installation population to over 8,000 (FTMM043).

5.1.4 Ecological Profile

5.1.4.1 Habitat Type

The natural areas at FTMM consist of oak, pine (*Pinus spp*.), honey locust (*Gleditsia triacanthos*), black locust (*Robinia pseudoacia*), huckleberries (*Gaylussacia spp.*), and ferns in the genus Aythrium. Along the banks of Oceanport Creek and Parkers Creek on the MP are reeds, sedges, and marsh grasses.

Mammals that are commonly seen at FTMM consist of the woodchuck (*Mannota monax*), eastern cottontail rabbit (*Sylvilagus floridanus*), and eastern gray squirrel (*Sciurus carolinensis*). Other mammals that are likely to be found at the installation include the raccoon (*Procyon lotor*), striped skunk (*Memphitis mephitis*), eastern chipmunk (*Tamias striatus*), muskrat (*Ondatra zibethica*), and Norway rat (*Rattus norvegicus*).

The installation provides bird habitat for a variety of birds, including songbirds, wading birds, and shorebirds. Bird species found in Monmouth County that are likely to occur at FTMM include the Canada goose (*Branta Canadensis Leucopareia)*, herring gull (*Larus argentatus*), mallard (*Anas platyrhynchos*), blue jay (*Cyanocitta cristata*), European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*), Carolina chickadee (*Parus carolinensis*), tufted titmouse (*Parus bicolor*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), red-winged blackbird (*Agelaius phoeniceus*), northern cardinal (*Cardinalis cardinalis*), house finch (*Carpodacus mexicanus*), and song sparrow (*Melospiza melodia*).

Parkers Creek and Oceanport Creek, located on the northern and southern boundaries of the MP, respectively, are brackish, tidally influenced creeks. Fish that are known to occur in these creeks include menhaden (*Brevooritia tyrannus*), blueback herring (*Alosa aestivales*), and alewife

(*Alosa pseudoherengus*). Freshwater creeks on the MP include Mill Brook, Lafetra Creek, and Husky Brook. Fish species that may be found in these creeks include white perch (*Montone Americana*), carp (*Cyprinus carpio*), catfish (*Ictalurus spp*.), sunfish (*Lepomis spp*.), and crappie (*Pomoxis spp*.). Fish found in Husky Brook Lake include rainbow trout (*Oncorhynchus mykiss*) and largemouth bass (*Micropterus salmoides*).

(Note: The habitat type information was obtained from FTMM037, FTMM038, FTMM040, FTMM041, and FTMM042.)

A review of the above documents and the GIS mapping, as well as observation during the site visit indicate that the Former Pistol Range is currently grass covered.

5.1.4.2 Degree of Disturbance

The Former Pistol Range is currently undeveloped; therefore, the degree of disturbance in this area is low (FTM008 and FTMM010). Any future development of the area would create an additional degree of disturbance.

5.1.4.3 Ecological Receptors

Review of historic documents reveasl that there are no federally or state listed or proposed threatened or endangered flora or fauna on FTMM (FTMM037, FTMM038, FTMM040, FTMM041, and FTMM042). As previously discussed, the Former Pistol Range is currently undeveloped; therefore, there is a potential for species to reside in this area.

5.1.5 Munitions/Release Profile

5.1.5.1 Munitions Types and Release Mechanisms

This section describes the munitions or munitions related materials known or suspected to be at the site, including the types and estimated maximum penetration depths. This includes both MEC and non-hazardous munitions related debris (e.g., fragmentation, base plates, inert mortar fins). Potential ordnance concentration areas are presented along with a discussion on the

presence of any special consideration ordnance. Information on the SDZ for the range can be found in Section 4.3.1.

The data collection team was able to locate correspondence and reports that provide detail on the types of ammunition used at FTMM during the time period the Former Pistol Range was operational. (Note: Historical documents indicate that small arms were on hand/inventoried at Fort Monmouth in 1925; however, historical mapping does not depict the presence of any small arms ranges until 1935 [FTMM013, FTMM014 and FTMM015]). The following is a list of known/suspected types of ordnance used at the range based on the review of various historical documents (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023).

- .22-caliber
- .30-caliber
- .45-caliber

Technical data sheets on these items are included in Appendix E. The Former Pistol Range is not suspected to contain CWM filled munitions, electrically fuzed munitions, or depleted uranium (DU) associated munitions. Since the Former Pistol Range was assumed to be used for small arms training only, MEC and non-hazardous munitions related debris are not known or suspected to have been present at the site.

5.1.5.2 *Maximum Probable Penetration Depth*

The depth to which munitions penetrate below the ground surface depends on many factors, including the type of soil, the angle of impact, the size of the munitions, the velocity at impact, and site-specific environmental conditions. Over the years, the DoD has studied and modeled munitions penetration depths and has issued various guidance and technical documents on the subject. However, these guidance documents do not apply to small arms since, by design, small arms ammunition is not intended to penetrate the ground surface. The ITRC guidance presents information on the general layout of small arms ranges, as well as information on the areas that may be impacted with MC and/or MEC as a result of range use and characteristics of the munitions used (FTMM033). According to the ITRC guidance, the penetration depth of small arms ammunition on the range floor is 1 foot or less (FTMM033). The document also states that

rounds that impact the range floor are typically a flat trajectory that fell short of the berm or those that resulted from ricochet, and these fragments are usually found within the top 6 inches of soil. Assuming that soil was not reapplied to the berm, penetration depths within the berm vary depending on the soil type, but are expected to be 1 foot or less. The bullet fragments found in the SDZ are almost exclusively the result of ricochet and, unless earth moving has been done, will be found on the surface of the soil.

According to the ITRC guidance, depending on the soil types present and specific soil characteristics, penetration depths may increase because of settlement and erosion (FTMM033). The ordnance items may slowly descend within the soil matrix if wind or water erosion is present. Information about specific soils types was not available for the Former Pistol Range. The location and dimensions of the berm were depicted on a 1935 map (FTMM015). The berm at the Former Pistol Range is no longer present; however, it is uncertain as to whether the berm was spread over the surface soil for the construction of the Sanitary Treatment Plant or the berm was removed.

Map 5-1 depicts the dimensions of the Former Pistol Range (FTMM015), the berm location/dimensions (FTMM005), the firing line location (assumed based on the known location of the berm), and the typical SDZ for a .45-caliber pistol range (AR 750-10 and TM 9-855).

5.1.5.3 MEC Density

No MEC are anticipated at the Former Pistol Range because only small arms ammunition was assumed to have been used on this range, and small arms ammunition is not considered MEC (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023).

5.1.5.4 Munitions Debris

No munitions debris was observed at the Former Pistol Range during the site visit.

5.1.5.5 Associated Munitions Constituents

The primary MC of concern associated with the Former Pistol Range is lead. According to AR 750-10 and TM 9-855, small arms ammunition is mainly composed of lead (approximately 85%

by weight of the projectile). Metallic lead is insoluble in water, but in the geochemical environment of most ranges, it may slowly convert to other oxidized forms. Depending on the environment (e.g., soil characteristics, hydrogen ion concentration [pH], and organic matter present), oxidation products can become mobile. However, lead mobility is effectively controlled by adsorption under a majority of conditions found on small arms ranges. Based on studies conducted by ITRC and the USEPA on small arms ranges, an exponential decline in lead concentrations has been observed in very short vertical distances due to adsorption or exchange reactions with clay, metal oxides, or organic matter in soil. As such, lead mobility is not likely to be an issue at most ranges (FTMM033).

Other MC may include antimony, arsenic, copper, nickel, zinc, iron, strontium, magnesium, lead styphnate, lead azide, and constituents associated with black or smokeless powder. However, these constituents are present at the ammunition item in only minor amounts/concentrations (AR 750-10 and TM 9-855 and FTMM033).

Sampling conducted within the firing fan boundaries of the Former Pistol Range in 1995 (associated with the closure of the Sanitary Treatment Plan [IRP Site AOC 3]),) indicated that no heavy metals were present at the site in the surface soil or sediment at concentrations above regulatory screening criteria and no further investigation of the site was warranted (FTMM026). However, further investigation is required due to the fact that prior sampling efforts may not have characterized the area of concern (not within the boundary of the Former Pistol Range or within the firing fan/SDZ) (FTMM027). Further investigation is also required because it is unclear as to whether the berm was spread over the surface soil when the Former Pistol Range was closed or the berm was removed (historical mapping and documents do not provide information regarding the berm removal/demolition).

5.1.5.6 *Transport Mechanisms/Migration Routes*

The primary transport mechanisms identified for the Former Pistol Range are assumed to include(FTMM037, FTMM038, FTMM040, and FTMM042):

Erosion: The Former Pistol Range area may be disturbed periodically by flooding of Parkers Creek or Laftetra Creek and other nearby streams during storm events, which could result in erosion.

Soil Disturbance: The current degree of disturbance at the Former Pistol Range is low, as the area is currently undeveloped. As previously discussed, erosion due to flooding presents the most likely source of soil disturbance.

Infiltration: The potential exists for MC to migrate from one environmental medium to another (surface to subsurface soil to groundwater) through infiltration.

5.1.6 Pathway Analysis

5.1.6.1 MEC

Based on historical documents and information obtained during the data collection process, there is no evidence of MEC at the Former Pistol Range as only small arms ammunition was assumed to have been used (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023). Therefore, the entire Former Pistol Range is not suspected to contain MEC.

5.1.6.2 MC

The pathway analysis for MC is shown in Figure 5-1. Potential current receptors include human receptors (authorized installation personnel, contractors, and visitors/trespassers) and ecological receptors (biota) who may contact the source medium or other media at the site that may be impacted. Potential future human receptors include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted. Pathways are shown for each medium and are discussed below.

<u>Groundwater</u>

The New Jersey American Water Company supplies potable water to the installation (FTMM042). Since groundwater is not used as a source of potable water at the installation, the

groundwater exposure pathways are considered to be incomplete for current human and ecological receptors. Incomplete groundwater pathways exist for potential future human receptors (except for construction/maintenance workers who may experience incidental ingestion and dermal contact during any subsurface construction or maintenance work).

Surface Water/Sediment

During the years of operation of the Former Pistol Range, Parkers Creek was within 550 feet of the former range and within its firing fan (FTMM015 and Map 5-1). Munitions could have come in direct contact with Parkers Creek. Surface water/sediment impacts are considered to be potentially complete for current/potential future human receptors (except for industrial/office workers) and current ecological receptors due to the fact that previous sediment sampling activities were not conducted within the area of concern (FTMM026). Further investigation may be required within the boundaries of the Former Pistol Range and its firing fan/SDZ.

Food Chain

Since the Former Pistol Range is undeveloped, the likelihood of vegetation occurring at the site is high; therefore, the food web pathway via vegetation is considered to be potentially complete for biota (FTMM008 and FTMM010). Based on its former use as a Sanitary Treatment Plant and its current conditions, there are assumed to be no domestic animals on or near the Former Pistol Range location. Therefore, these exposure pathways are considered to be incomplete. To the north of the Former Pistol Range is a branch of Parkers Creek, which is located in a wildlife habitat; therefore, the game/fish/prey exposure pathways are considered to be potentially complete for all current human receptors and all ecological receptors (FTMM008, FTMM042 and as depicted on Map 5-1). Potentially complete pathways exist for potential future human receptors (recreational and residential).

Surface Soil

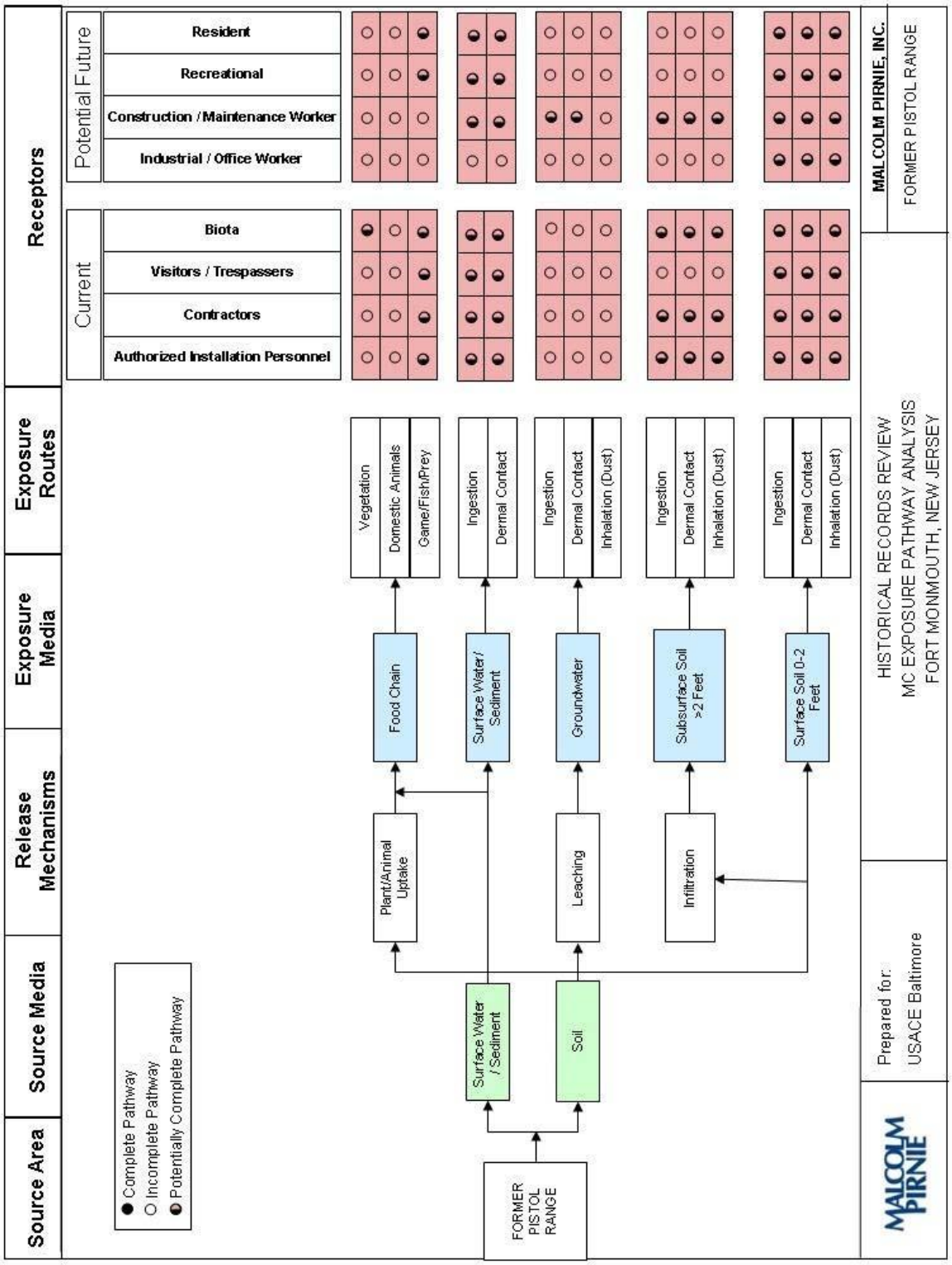
The Former Pistol Range was removed for the construction of the Sanitary Treatment Plant in 1940 (FTMM017 and FTMM005). This facility was in operation for over 40 years. It was demolished and removed in 1983 (FTMM008 and FTMM026). Soil sampling was conducted in the vicinity of the Former Pistol Range for the closure of the Sanitary Treatment Plant area (IRP

Site AOC 3), and no heavy metals were detected above NJDEP criteria. Previous sampling activities were not conducted in the area of the former the berm location (indicating that the presence/absence of MC is inconclusive); therefore, potentially complete exposure pathways exist for surface soil for all current and future human and ecological receptors.

Subsurface Soil

The potential for subsurface soil impacts at the Former Pistol Range area is considered to exist since previous sampling activities were not conducted in the area of the former berm location (FTMM026); therefore, potentially complete exposure pathways exist for subsurface soil if intrusive activities occur on-site (i.e., construction, excavation, or drilling activities) for current human receptors (installation personnel and contractors), as well as all ecological receptors. A potentially complete exposure pathway exists for subsurface soil for potential future human receptors (construction/maintenance workers).

Figure 5-1: MC Exposure Analysis Pathway – Former Pistol Range



5.2 FORMER OUTDOOR FIRING RANGE (1940-1955 PISTOL RANGE)

5.2.1 Site Profile

5.2.1.1 Area and Layout

The Former Outdoor Firing Range (1940-1955 Pistol Range) (hereinafter referred to as the Former Outdoor Firing Range) occupied the northwest corner of the MP and encompassed 0.16 acres (FTMM017). The Former Outdoor Firing Range is shown on Map 5-1.

5.2.1.2 Structures

Review of maps and historical documents collected during the archive search conducted for this HRR revealed that a Range House (Building 200) built in approximately 1940, as well as T-000-A and T-200-C, were associated with the Former Outdoor Firing Range (labeled 200-B) (FTMM014). Building 200 has been active since 1958 as a Radio Tower Building/Transmitter Building (FTMM012). Currently, no structures affiliated with the Former Outdoor Firing Range exist (FTMM008, FTMM010, and visual survey). Currently, the Former Outdoor Firing Range is an undeveloped area (FTMM008, FTMM010, and visual survey).

5.2.1.3 Utilities

A review of historical documents revealed that no utilities were located in the area of the Former Outdoor Firing Range (FTMM036). Review of GIS mapping layers provided by the installation during the site visit revealed that no utilities are currently within the boundary of the Former Outdoor Firing Range. The GIS mapping layers also indicate that within the firing fan of the Former Outdoor Firing Range, there are currently two storm sewer inlets and a communication duct bank line.

5.2.1.4 Boundaries

The Former Outdoor Firing Range is bordered in all directions by undeveloped land (FTMM010 and FTMM012).

5.2.1.5 Security

Access to FTMM is restricted by guards and surveillance at every entrance. However, access to the Former Outdoor Firing Range is not restricted once on the installation (based on observation during the site visit).

5.2.2 Physical Profile

5.2.2.1 Climate

Climate is general installation information and is presented in Section 5.1.2.1.

5.2.2.2 Geology

Geology is general installation information and is presented in Section 5.1.2.2.

5.2.2.3 Topography

Information on the topography of the MP is presented in Section 5.1.2.3. The elevation at the Former Outdoor Firing Range is 20 feet amsl (FTMM037, FTMM038, and FTMM040).

5.2.2.4 Soil

General information about the soil types present on FTMM is presented in Section 5.1.2.4

5.2.2.5 Hydrogeology

General information about the hydrogeologic conditions at FTMM is presented in Section. 5.1.2.5.

5.2.2.6 Hydrology

General information about hydrologic conditions at FTMM is presented in Section 5.1.2.6.

5.2.2.7 Vegetation

General information about vegetation at the installation is presented in Section 5.1.2.7. The area of the Former Outdoor Firing Range is currently a maintained grass covered field; the areas to

the north of the site, located along Lafetra Creek, consist largely of marsh vegetation (FTMM010 and observation during the site visit).

5.2.3 Land Use and Exposure Profile

5.2.3.1 Current Land Use/Activities

The Former Outdoor Firing Range is currently undeveloped. No activities are known to occur at this site (FTMM010 and FTMM012).

5.2.3.2 Current Human Receptors

Human receptors are limited to visitors/trespassers, contractors, and authorized installation personnel (FTMM008, FTMM010, and FTMM043).

5.2.3.3 Potential Future Land Use

The installation will be closed in accordance with BRAC protocols; however, the potential future land use is unknown.

5.2.3.4 Potential Future Human Receptors

As any change in land use is unknown at this time, the future human receptors of potential MC are assumed to include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted.

5.2.3.5 Zoning/Land Use Restrictions

General information about zoning and land use restrictions at FTMM is presented in Section 5.1.3.5. No wetlands are located at the Former Outdoor Firing Range (FTMM037). The Former Outdoor Firing Range area is currently zoned as Utilities and Administrative (FTMM010). Land use restrictions specific to the Former Outdoor Firing Range were not identified.

5.2.3.6 Beneficial Resources

General information about beneficial resources at FTMM is presented in Section 5.1.3.6. No information was identified concerning beneficial resources specific to the Former Outdoor Firing Range.

5.2.3.7 Demographics/Zoning

Demographics are general installation information and are presented in Section 5.1.3.7.

5.2.4 Ecological Profile

5.2.4.1 Habitat Type

General information on habitat types at FTMM is provided in Section 5.1.4.1. A review of various documents and GIS mapping, as well as observation during the site visit indicated that the Former Outdoor Firing Range is currently grass covered (FTMM037, FTMM038, FTMM040, FTMM041, and FTMM042).

5.2.4.2 Degree of Disturbance

The current degree of disturbance at the Former Outdoor Firing Range is low, as the area is undeveloped (FTMM008 and FTMM010). Any future development of the area would create an additional degree of disturbance.

5.2.4.3 Ecological Receptors

General installation information on ecological receptors is provided in Section 5.1.4.3. As previously discussed, the Former Outdoor Firing Range is currently undeveloped; therefore, there is a potential for species to reside in this area.

5.2.5 Munitions/Release Profile

5.2.5.1 Munitions Types and Release Mechanisms

This section describes the munitions or munitions related materials known or suspected to be at the site, including the types and estimated maximum penetration depths. This includes both

MEC and non-hazardous munitions related debris (e.g., fragmentation, base plates, inert mortar fins). Potential ordnance concentration areas are presented along with a discussion on the presence of any special consideration ordnance. Information on the SDZ is presented in Section 4.3.2.

The data collection team was able to locate correspondence and reports that provided detail on the types of ammunition used at FTMM during the time period the Former Outdoor Firing Range was operational. (Note: Historical documents indicate that small arms were on hand/inventoried at Fort Monmouth in 1925; however, historical mapping does not depict the presence of any small arms ranges until 1935 [FTMM013, FTMM014 and FTMM015]). The following is a list of known/suspected types of ordnance used at the range based on the review of various historical documents (FTMM013, FTMM014, FTMM016, and FTMM018 through FTMM023).

- .22-caliber
- .30-caliber
- .45-caliber

Technical data sheets on these items are included in Appendix E. The Former Outdoor Pistol Range is not suspected to contain CWM filled munitions, electrically fuzed munitions, or DU associated munitions. Since the Former Outdoor Firing Range was assumed to have been used for small arms training only, MEC and non-hazardous munitions related debris are not known or suspected to have been present at the site.

5.2.5.2 Maximum Probable Penetration Depth

The maximum probable penetration depth for small arms ammunition is presented in Section 5.1.5.2. Based on the review of historical documents, the presence of a berm was never confirmed(FTMM017). However, based on the known/suspected use of the Former Outdoor Firing Range, it is assumed that a berm was present during the time of use. The berm at the Former Outdoor Firing Range is no longer present; however, it is uncertain as to whether the berm was spread over the surface soil during various construction activities or the berm was removed.

Map 5-1 depicts the dimensions of the Former Outdoor Firing Range (FTMM017), the assumed berm locations/dimensions, the assumed firing line location, and the typical SDZ for a .45-caliber pistol range (based on AR 750-10 and TN 9-855).

5.2.5.3 MEC Density

No MEC are anticipated at the Former Outdoor Firing Range. Only small arms ammunition was assumed to have been used on the range, and small arms are not considered MEC (FTMM013, FTMM014, FTMM016, FTMM018 through FTMM023).

5.2.5.4 Munitions Debris

No munitions debris was observed at the Former Outdoor Firing Range during the site visit.

5.2.5.5 Associated Munitions Constituents

Associated MC for small arms ammunitions are presented in Section 5.1.5.5. No soil samples have been analyzed for explosives or metals within the boundary of the Former Outdoor Firing Range; therefore, it is not known whether explosives are present within the area or metals are present in concentrations that exceed regulatory levels.

5.2.5.6 Transport Mechanisms/Migration Routes

The primary transport mechanisms identified for the Former Outdoor Firing Range are assumed to include (FTMM037, FTMM038, and FTMM040):

Erosion: The Former Outdoor Firing Range area may be disturbed periodically by flooding of Parkers Creek or Lafetra Creek and other nearby streams during storm events, which could result in erosion.

Soil Disturbance: The current degree of disturbance at the Former Outdoor Firing Range is low, as the area is undeveloped. As previously discussed, erosion due to flooding presents the most likely source of soil disturbance.

Infiltration: The potential exists for MC to migrate from one environmental medium to another (surface to subsurface soil to groundwater) through infiltration.

5.2.6 Pathway Analysis

5.2.6.1 MEC

Based on historical documents and information obtained during the data collection process, there is no evidence of MEC at the Former Outdoor Firing Range as only small arms ammunition was assumed to have been used (FTMM013, FTMM014, FTMM016, and FTM018 through FTMM023). Therefore, the entire area of the Former Outdoor Firing Range is not suspected to contain MEC.

5.2.6.2 MC

The pathway analysis for MC is shown in Figure 5-2. Potential current receptors include human receptors (authorized installation personnel, contractors, and visitors/trespassers) and ecological receptors (biota) who may contact the source medium or other media at the site. Potential future human receptors include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted. Pathways are shown for each medium and are discussed below.

Groundwater

The New Jersey American Water Company supplies potable water to the installation (FTMM042). Since groundwater is not used as a source of potable water at the installation, the groundwater exposure pathways are considered to be incomplete for current human and ecological receptors. Incomplete groundwater pathways exist for potential future human receptors (except for construction/maintenance workers who may experience incidental ingestion and dermal contact during any subsurface construction or maintenance work).

Surface Water/Sediment

During the years of operation of the Former Outdoor Firing Range, Lafetra Creek was within 300 feet of the former range and within its firing range (FTMM015 andMap 5-1). Munitions could

have come in direct contact with Lafetra Creek; therefore, surface water/sediment pathways are considered to be potentially complete for current human receptors (except for industrial/office workers) and ecological receptors. Potentially complete pathways exist for the following potential future human receptors: recreational users, residents, and construction/maintenance workers.

Food Chain

Since the Former Outdoor Firing Range is undeveloped, the likelihood of vegetation occurring at the site is high; therefore, the food chain pathway via vegetation is considered to be potentially complete for biota (FTMM008 and FTMM010). Based on the current conditions of the site, here are assumed to be no domestic animals on or near the Former Outdoor Firing Range location; therefore, these exposure pathways are considered to be incomplete. To the north of the Former Outdoor Firing Range is a branch of Parkers Creek, which is located in a wildlife habitat; therefore, the game/fish/prey exposure pathways are considered to be potentially complete for all current human receptors and all ecological receptors (FTMM008, FTMM042 and Map 5-1). Potentially complete pathways exist for potential future human receptors (recreational users and residential).

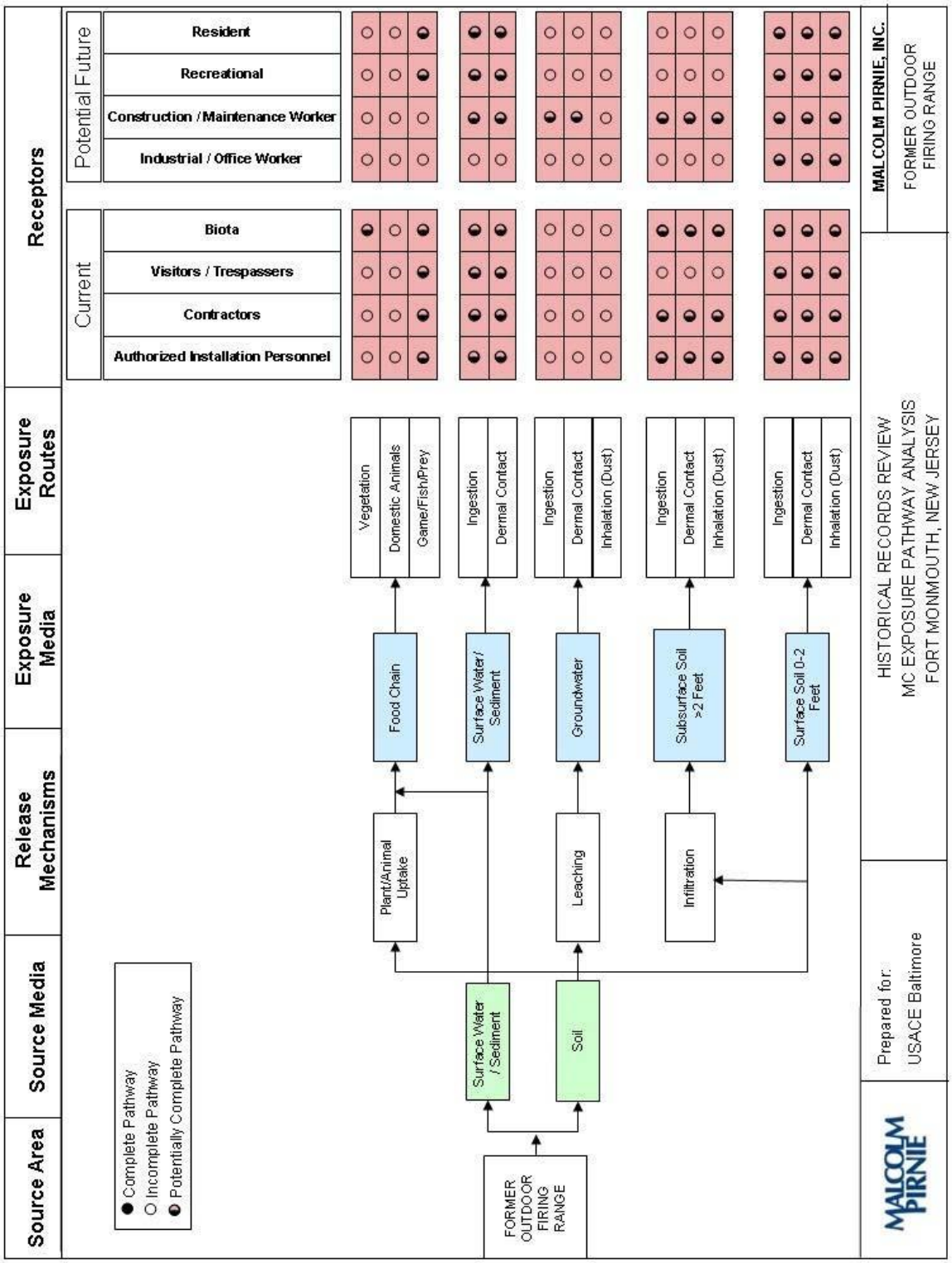
Surface Soil

Potentially complete exposure pathways exist for surface soil for all current and future human and ecological receptors.

Subsurface Soil

The potential for subsurface soil impacts at the Former Outdoor Firing Range area is considered to be low, as the MC associated with its activities are not likely to migrate to subsurface soil to an appreciable degree. However, potentially complete exposure pathways exist for subsurface soil if intrusive activities occur on-site (i.e., construction, excavation, or drilling activities) for current human receptors (installation personnel and contractors), as well as all ecological receptors. A potentially complete exposure pathway exists for subsurface soil for potential future human receptors (construction/maintenance workers).

Figure 5-2: MC Exposure Analysis Pathway – Former Outdoor Firing Range



5.3 FORMER SKEET RANGE

5.3.1 Site Profile

5.3.1.1 Area and Layout

The Former Skeet Range encompassed 0.63 acres and was approximately one-quarter mile east of the Former Outdoor Firing Range within the MP. The direction of fire for the Former Skeet Range was directly north towards Lafetra Creek (FTMM017). The Former Skeet Range is shown in Map 5-1.

5.3.1.2 Structures

The Former Skeet Range is currently an open field (based on observation during the site visit). The structures associated with the Former Skeet Range included T-50 through T-53. The buildings associated with the Former Skeet Range (i.e., target storage, target house, and control house) have all been demolished and removed. These structures were present on a 1941 map; however, they were no longer present on a 1952 map or during the site visit (FTMM003, FTMM017).

5.3.1.3 Utilities

A review of historical documents revealed that no utilities were located in the area of the Former Skeet Range(FTMM036). Review of GIS mapping layers provided by the installation during the site visit revealed that no utilities are currently within the boundary of the Former Skeet Range. The GIS mapping layers also indicate that within the firing fan of the Former Skeet Range are several water wells and storm sewer inlets, two water hydrants, communication duct bank lines, and natural gas lines.

5.3.1.4 Boundaries

The Former Skeet Range is bordered to the north and south by undeveloped land with some forest area and to the west and east by undeveloped land (FTMM010).

5.3.1.5 Security

Access to FTMM is restricted by guards and surveillance at every entrance. However, access to the Former Skeet Range is not restricted once on the installation (based on observation during the site visit).

5.3.2 Physical Profile

5.3.2.1 Climate

Climate is general installation information and is presented in Section 5.1.2.1.

5.3.2.2 Geology

Geology is general installation information and is presented in Section 5.1.2.2.

5.3.2.3 Topography

General installation topography is presented in Section 5.1.2.3. The elevation at the Former Skeet Range is 20 feet amsl (FTMM037, FTMM038, and FTMM040).

5.3.2.4 Soil

General information about the soil types on FTMM is presented in Section 5.1.2.4. There is no site-specific information regarding the soils.

5.3.2.5 Hydrogeology

General information about the hydrogeologic conditions at FTMM is presented in Section. 5.1.2.5.

5.3.2.6 Hydrology

General information about the hydrologic conditions at FTMM is presented in Section 5.1.2.6. The Former Skeet Range was located within 150 feet south of the Lafetra Creek (FTMM017 and Map 5-1).

5.3.2.7 Vegetation

General information about vegetation at the installation is presented in Section 5.1.2.7. The predominant vegetation in the area of the Former Skeet Range is a maintained grass field (based on observation during the site visit).

5.3.3 Land Use and Exposure Profile

5.3.3.1 Current Land Use/Activities

The Former Skeet Range is currently undeveloped (FTMM008 and FTMM010).

5.3.3.2 Current Human Receptors

Human receptors are limited to visitors/trespassers, contractors, and authorized installation personnel (FTMM008, FTMM010, and FTMM043).

5.3.3.3 Potential Future Land Use

The installation will be closed in accordance with BRAC protocols; however, the potential future land use is unknown.

5.3.3.4 Potential Future Human Receptors

As any change in land use is unknown at this time, the future human receptors of potential MC are assumed to include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted.

5.3.3.5 Zoning/Land Use Restrictions

General information about zoning and land use restrictions at FTMM is presented in Section 5.1.3.5. No wetlands are located at the Former Skeet Range (FTMM037). The Former Skeet Range is currently zoned as Recreation. Land use restrictions specific to the Former Skeet Range were not identified (FTMM010).

5.3.3.6 Beneficial Resources

General information about beneficial resources at FTMM is presented in Section 5.1.3.6. No information was identified concerning beneficial resources specific to the Former Skeet Range.

5.3.3.7 Demographics

Demographics are general installation information and are presented in Section 5.1.3.7.

5.3.4 Ecological Profile

5.3.4.1 Habitat Type

General information on habitat types at FTMM is provided in Section 5.1.4.1.

5.3.4.2 Degree of Disturbance

The Former Skeet Range is currently undeveloped; therefore, the degree of disturbance is low (FTMM008 and FTMM010). Any future development of the area would create an additional degree of disturbance.

5.3.4.3 Ecological Receptors

General installation information on ecological receptors is provided in Section 5.1.4.3. As previously discussed, the Former Skeet Range is currently undeveloped; therefore, there is a potential for species to reside in this area.

5.3.5 Munitions/Release Profile

5.3.5.1 Munitions Types and Release Mechanisms

This section describes the munitions or munitions related materials known or suspected to be at the site, including the types and estimated maximum penetration depths. This includes both MEC and non-hazardous munitions related debris (e.g., fragmentation, base plates, inert mortar fins). Potential ordnance concentration areas are presented, along with a discussion on the presence of any special consideration ordnance. Information on the SDZ for the range is presented in Section 4.4.4.

Detailed records of the types and quantities of small arms ammunition used at the Former Skeet Range were not available. However, it is assumed that the area's use was limited to small arms (shotgun) ammunition (FTMM013, FTMM014, FTMM016, and FTMM018 and FTMM023) and clay targets (assumed based on the typical use of a skeet range). Technical data sheets for shotgun ammunition and clay skeet are provided in Appendix E. The Former Skeet Range is not suspected to contain CWM filled munitions, electrically fuzed munitions, or DU associated munitions. Since the Former Skeet Range was used for small arms training only, MEC and non-hazardous munitions related debris are not known or suspected to have been present at the site.

5.3.5.2 Maximum Probability Penetration Depth

The depth to which munitions penetrate below the ground surface depends on many factors, including the type of soil, the angle of impact, the size of the munitions, the velocity at impact, and site-specific environmental conditions.

For trap and skeet ranges, the ammunition is dispersed as pellets over a small area in the direction of fire. Pellets dispersed from a shotgun would be deposited on the ground surface and not significantly penetrate the ground unless disturbed (FTMM033).

Map 5-1 depicts the dimensions of the Former Skeet Range (FTMM017), the assumed firing line location, and the typical SDZ for a skeet range (based on AR 750-10 and TM 9-855).

5.3.5.3 MEC Density

No MEC are anticipated at the Former Skeet Range because only small arms ammunition was assumed to have been used on the range and small arms ammunition is not MEC.

5.3.5.4 Munitions Debris

No munitions debris was observed at the Former Skeet Range during the site visit.

5.3.5.5 Associated Munitions Constituents

The primary MC of concern associated with the Former Skeet Range is lead. As discussed in Section 5.1.5.5, small arms ammunition is mainly composed of lead. Other MC may include

antimony, arsenic, nickel, lead styphnate/lead azide. Because clay targets were assumed to have been used in conjunction with the Former Skeet Range, PAHs associated with the targets may also be present (FTMM033, also see Section 4.4.4).

5.3.5.6 Transport Mechanisms/Migration Routes

The primary transport mechanisms identified for the Former Skeet Range area assumed to include (FTMM037, FTMM038, FTMM040, and FTMM042):

Erosion: The Former Skeet Range area may be disturbed periodically by flooding of Parkers Creek or Lafetra Creek and other nearby streams during storm events, which could result in erosion.

Soil Disturbance: The current degree of disturbance at the Former Skeet Range is low, as the area is undeveloped. As previously discussed, erosion due to flooding presents the most likely source of soil disturbance.

Infiltration: The potential exists for MC to migrate from one environmental medium to another (surface to subsurface soil to groundwater) through infiltration.

5.3.6 Pathway Analysis

5.3.6.1 MEC

Based on historical documents and information obtained during the data collection process, there is no evidence of MEC at the Former Skeet Range as only small arms were assumed to have been used (FTMM013, FTMM014, FTMM016, FTMM018 through FTMM023). Therefore, the entire Former Skeet Range is not suspected to contain MEC.

5.3.6.2 MC

The pathway analysis for MC is shown in Figure 5-3. Potential current receptors include human receptors (authorized installation personnel, contractors, and visitors/trespassers) and ecological receptors (biota) who may contact the source medium or other media at the site that may be

impacted. Potential future human receptors include recreational users, residents (residential), construction/maintenance workers, and industrial/office workers who may contact the source medium or other media at the site that may be impacted. Pathways are shown for each medium and are discussed below.

Groundwater

The New Jersey American Water Company supplies potable water to the installation (FTMM042). Since groundwater is not used as a source of potable water at the installation, the groundwater exposure pathways are considered to be incomplete for current human and ecological receptors. Incomplete groundwater pathways exist for potential future human receptors (except for construction/maintenance workers who may experience incidental ingestion and dermal contact during any subsurface construction or maintenance work).

Surface Water/Sediment

During the years of operation of the Former Skeet Range, Lafetra Creek was within 150 feet of the former range and within the firing fan of the former range (FTMM008 and Map 5-1). Munitions could have come in direct contact with Lafetra Creek; therefore, surface water/sediment pathways are considered to be potentially complete for current human receptors (except for industrial/office workers) and ecological receptors. Potentially complete pathways exist for the following potential future human receptors: recreational users, residents, and construction/maintenance workers.

Food Chain

Since the Former Skeet Range is undeveloped, the likelihood of vegetation occurring at the site is high (FTMM008 and FTMM010). Therefore, the food chain pathway via vegetation is considered to be potentially complete for biota. Based on current conditions of the site, there are assumed to be no domestic animals on or near the Former Skeet Range location; therefore, these exposure pathways are considered to be incomplete. To the north of the Former Skeet Range is a branch of Parkers Creek, which is located in a wildlife habitat; therefore, the game/fish/prey exposure pathways are considered to be potentially complete for all current human receptors and

all ecological receptors (FTMM008 and Map 5-1). Potentially complete pathways exist for potential future human receptors (recreational users and residential).

Surface Soil

Potentially complete exposure pathways exist for surface soil for all current and future human and ecological receptors.

Subsurface Soil

The potential for subsurface soil impacts at the Former Skeet Range area is considered to be low, as the MC associated with its activities are not likely to migrate to subsurface soil to an appreciable degree. However, potentially complete exposure pathways exist for subsurface soil if intrusive activities occur on-site (i.e., construction, excavation, or drilling activities) for current human receptors (installation personnel and contractors), as well as all ecological receptors. A potentially complete exposure pathway exists for subsurface soil for potential future human receptors (construction/maintenance workers).

Figure 5-3: MC Exposure Analysis Pathway – Former Skeet Range

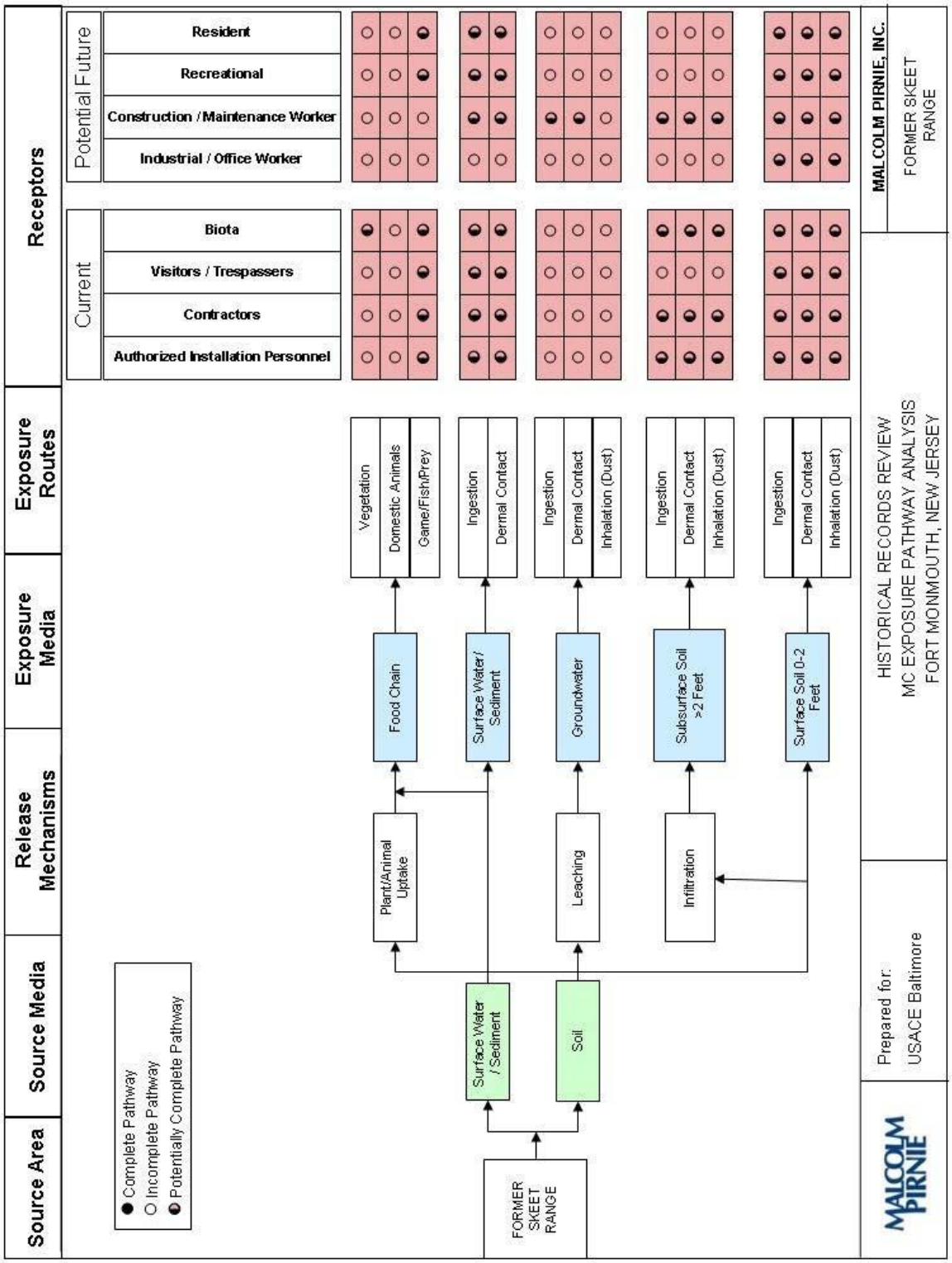
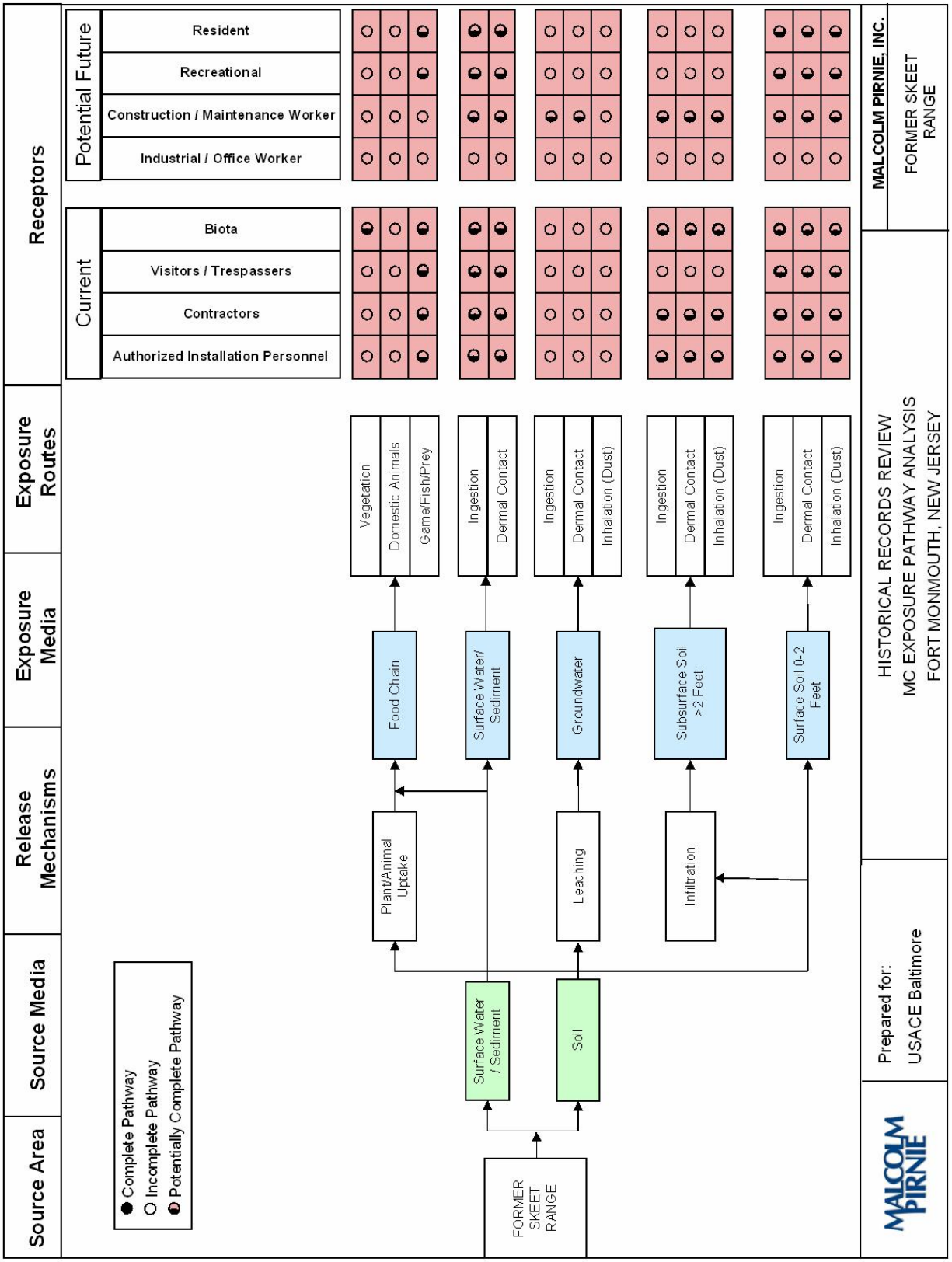


Figure 5-3: MC Exposure Analysis Pathway – Former Skeet Range



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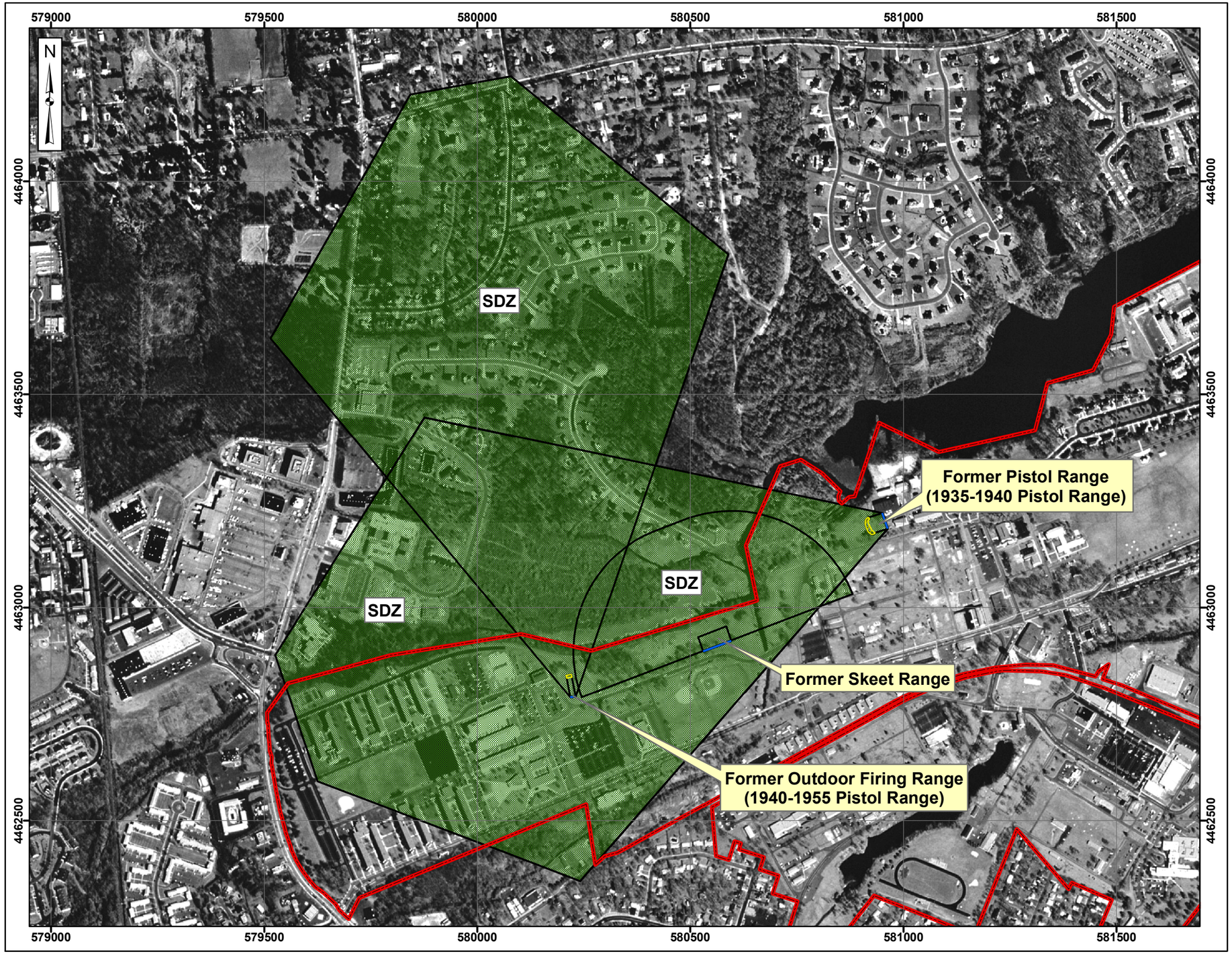
Fort Monmouth, NJ

MALCOLM PIRNIE

Map 5-1
Range/Site Details



Legend

- Installation Boundary
- Firing Line
- Berm
- Former Range Area

0 200 400 Meters

Data Source: USGS Terraserver Online,
Digital Orthophoto,
Downloaded 2005

Coordinate System: UTM Zone 18N
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004
Edition: Final
Date: January 2006

6 CONCLUSIONS

6.1 SUMMARY OF FINDINGS

Table 6-1, Table 6-2, and Map 6-1 provide summaries and the rationale for the recommended course of action for each site identified at FTMM (during Phase 2 Inventory, Phase 3 Inventory, and this HRR). Based on the findings of this HRR, further investigation is only necessary for the Former Outdoor Firing Range, the Former Pistol Range, and the Former Skeet Range. Conclusions regarding potential MC and environmental impacts for these sites are presented in Sections 6.2 through 6.4.

Table 6-1: Range/Site Recommended Course of Action for the Current Operational Areas

Range/Site	Recommended Post-BRAC Action	Rationale for Action
Current Operational Areas		
Area 1	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Area 2	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Bivouac	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Commo Training 1	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Commo Training 2	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Commo Training 3	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Cowan Park	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
EOD Area	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Fire Training Center	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.

Range/Site	Recommended Post-BRAC Action	Rationale for Action
Current Operational Areas		
Greely Parade Field	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Helipad 1	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Helipad 2	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
K-9 Training Area	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Meddac Training Area	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.
Prep School Training Area	NFA	• Associated records and interviews with installation personnel specify no munitions related activities were conducted at this area.

Table 6-2: Range/Site Recommended Course of Action for the Munitions Related Areas

Range/Site	Recommended Post-BRAC Action	Rationale for Action
Munitions Related Areas		
Former Pistol Range (1935-1940 Pistol Range)	Further investigation	• Associated building records, historical records, and interviews with installation personnel specify this area was used only for small arms. • No investigations of the Former Pistol Range, including sampling activities, have been conducted within the former berm area. • MC of concern include: lead, antimony, arsenic, copper, tin, zinc, iron, strontium, magnesium, and lead styphnate/lead azide.
Former Outdoor Firing Range (1940-1955 Pistol Range)	Further investigation	• Associated building records, historical records, and interviews with installation personnel specify this area was used only for small arms. • No investigations of the Former Pistol Range, including sampling activities, have been conducted within the former berm area. • MC of concern include: lead, antimony, arsenic, copper, tin, zinc, iron, strontium, magnesium, and lead styphnate/lead azide.

Range/Site	Recommended Post-BRAC Action	Rationale for Action
Munitions Related Areas		
Former Indoor Small Arms Range	NFA	• Associated building records, historical records, and interviews with installation personnel specify this indoor range was used only for small arms. • A RI was performed in 1997 which indicated lead contamination in the soil. • A RA was preformed (took place from June 1997 through July 1997) and included removing spent rounds, casings, and contaminated soil outside of the structure. • A post-RA report is being prepared and will recommend NFA from the NJDEP.
Former Magazine Area	NFA	• Associated building records, historical records, and interviews with installation personnel specify this area was used to store Class A (1.1) Explosives. • The magazine area was demolished in 1989, and this area is currently undeveloped. • MC are not anticipated at concentrations that pose a risk to human health or the environment (due to the fact the area was comprised of indoor structures that have since been removed and no historical evidence of disposal exists).
Former Training Area	NFA	• Historical records and interviews with installation personnel indicated this area was used for military training exercises (non-munitions related activities only). • This area overlaps the M-18 Landfill area. • Groundwater, soil, and surface water sampling were conducted between 1997 and 2001 at the M-18 Landfill area (included metals analysis with elevated concentrations of several metals; however, concentrations are linked to the M-18 Landfill activities and not former training activities). • NFA for groundwater and long-term monitoring for surface water was recommended in 2003 for M-18 Landfill area (pending approval).
Former Skeet Range	Further investigation	• Associated building records, historical records, and interviews with installation personnel specify this area was used only for small arms. • MC of concern include: lead from shot and PAHs from pitch tar used in clay pigeons. Other associated MC less likely to be of concern may include antimony, arsenic, nickel, and lead styphnate/lead azide.

6.2 FORMER PISTOL RANGE (1935-1940 PISTOL RANGE)

The Former Pistol Range was identified through the research for this HRR. It was used from approximately 1935 through 1940. Range structures and the backstop berm were assumed to have been removed/demolished in 1940 for the construction of the Sanitary Treatment Plant. Munitions associated with the Former Pistol Range are assumed to be small arms ammunition only; therefore, no MEC and limited MC are anticipated.

Small arms ammunition is mainly comprised of lead (approximately 85% by weight of the projectile). As such, the primary MC of concern associated with small arms ranges is lead. Other MC may include antimony, arsenic, copper, zinc, and constituents associated with black or smokeless powder. MC, if present, would likely be located in surface soils adjacent to the backstop berm, and possibly near the firing line. No investigations of the Former Pistol Range, including sampling activities, have been conducted within the berm area; therefore, further investigation of lead impacts may be warranted.

6.3 FORMER OUTDOOR FIRING RANGE (1940-1955 PISTOL RANGE)

The Former Outdoor Firing Range was identified during the Phase 3 Inventory; however, based on the research for this HRR, the location identified during the Phase 3 Inventory was found to be incorrect. The Former Outdoor Firing Range was used from approximately 1940 through 1955. The small arms firing that occurred at the Former Pistol Range (1935-1940 Pistol Range) was relocated to the Former Outdoor Firing Range (1940-1955 Pistol Range) location around 1940 when the Sanitary Treatment Plant was constructed on the old range location. Range structures and the backstop berm at the Former Outdoor Firing Range are assumed to have been removed/demolished. Munitions associated with the Former Outdoor Firing Range are assumed to be small arms ammunition only; therefore, no MEC and limited MC are anticipated.

The primary MC associated with small arms ranges is lead. Other MC include antimony, arsenic, copper, tin, zinc, iron, strontium, magnesium, and lead azide. Sampling has not been conducted at the Former Outdoor Firing Range; therefore, further investigation of the site for MC impacts may be warranted.

6.4 FORMER SKEET RANGE

The Former Skeet Range was identified through research for this HRR. The range was used starting in 1940 until approximately 1955. Range structures are assumed to have been removed/demolished. Munitions associated with the Former Skeet Range are assumed to be small arms ammunition only; therefore, no MEC and limited MC are anticipated.

The primary MC associated with small arms ammunition is lead. Other MC may include antimony, arsenic, copper, nickel, zinc, and constituents associated with black or smokeless powder. Because clay targets are assumed to have been used at the former range, PAHs associated with the targets would also be expected at the site. MC would likely be located in surface soils of the firing arc. For skeet and trap ranges, the area where the clay targets typically accumulated during the active life of the range extended 300 feet from the firing arc; lead shot accumulated to approximately 600 feet. Sampling has not been conducted at the Former Skeet Range; therefore, further investigation of the site for MC impacts may be warranted.

6.5 DATA GAPS/DATA UNCERTAINTY

The following is a bulleted list of various data gaps identified during the research for this HRR:

- Aerial photographs from times of significant military munitions activity (from 1930 through 1960)
- Data on range frequency of usage during times of significant military munitions activity (from 1930 through 1960)
- Documentation of removal and/or spreading of the berms for the Former Pistol Range and Former Outdoor Firing Range
- Official removal/demolition documentation regarding range structures for the Former Pistol Range, Former Outdoor Firing Range, and Former Skeet Range

Historical Records Review
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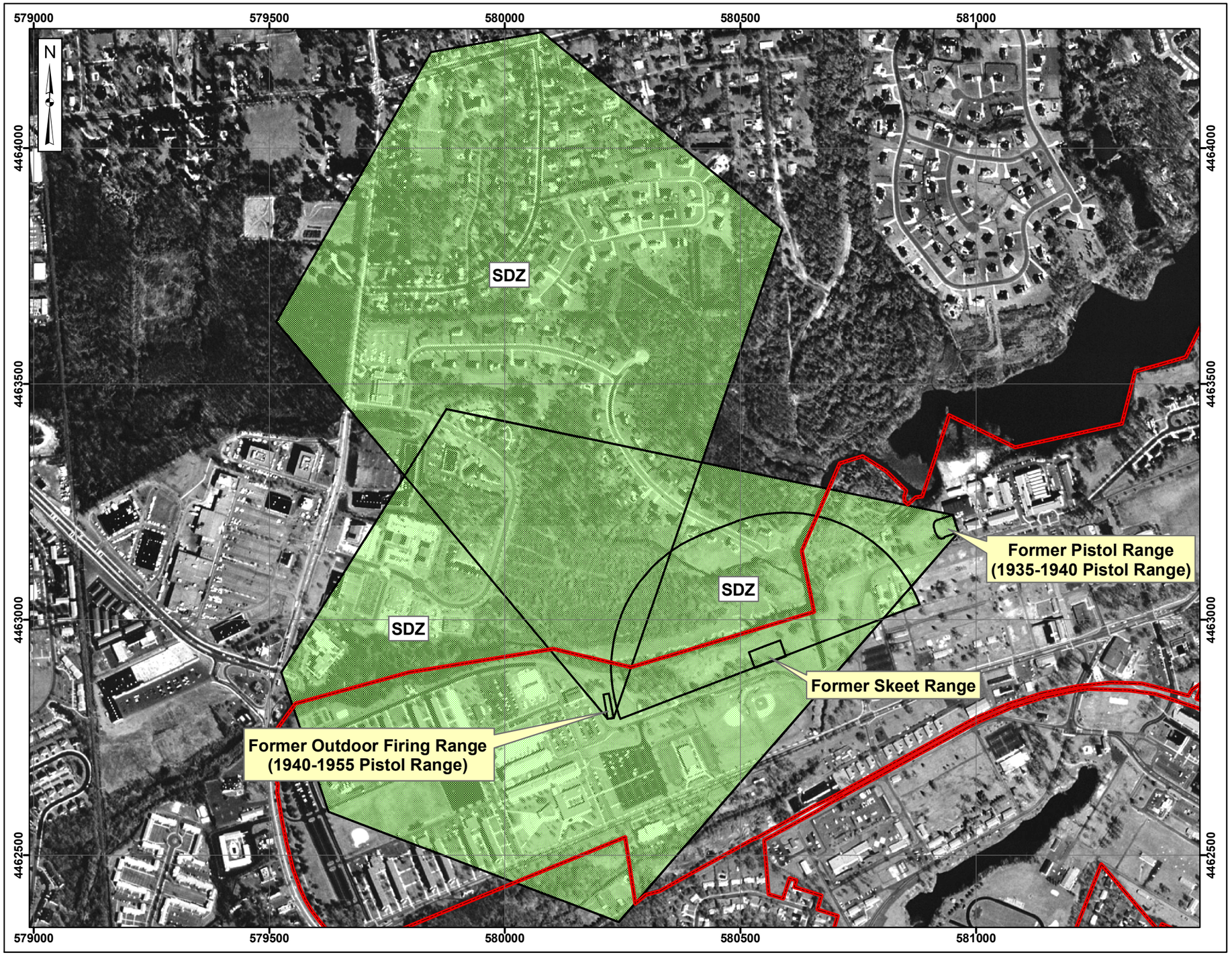


Map 6-1
Range/Site Conclusions

Legend

- Installation Boundary
- Areas Requiring Further Investigation

0 200 400 Meters

Data Source: USGS Terraserver Online, Digital Orthophoto, Download 2005

Coordinate System: UTM Zone 18N
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004
Edition: Final
Date: January 2006

Appendix A: Prioritization Protocol

Munitions Response Site Prioritization Protocol, Final Rule, October 2005

(Final Version, 05 October 2005)

Installation Name:	Fort Monmouth	**EHE Module Rating/Priority:**	G (29)
Site Name:	Former Pistol Range (1935-1940 Pistol Range)	**CHE Module Rating/Priority**:	No Known or Suspected CWM Hazard
Completed By:	Ms. Afton Hess Malcolm Pirnie, Inc.	**HHE Module Rating/Priority:**	Evaluation Pending
Date Completed:	16 January 2006	**Overall Site Rating/Priority:**	8

Background

The Munitions Response Site Prioritization Protocol (MRSPP) reflects the statement in 10 U.S.C. § 2710(b)(2) that the priority assigned should be based on the overall conditions at each location, taking into consideration various factors relating to safety and environmental hazard potential. As required under 10 U.S.C. § 2710(b)(1), the priority assigned to each munitions response site (MRS) will be included with the inventory information made publicly available. The requirement for an inventory of munitions response sites known or suspected of containing unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC) is found at 10 U.S.C. § 2710(a). The assigned priority will be updated annually to reflect new information that becomes available.

The Department of Defense first published the MRSPP in the Federal Register as a proposed rule on 22 August 2003. The rule was finalized on 05 October 2005 under the authority of Section 311(b) of the National Defense Authorization Act, codified at Section 10 U.S.C. § 2710(b). The following tables reflect the changes incorporated in the final rule, many of which pertained to clarification of terms and definitions based on new statutory definitions promulgated in the National Defense Authorization Act for 2004 and codified at 10 U.S.C. § 101. The following tables also include the revised module that evaluates potential health hazards associated with MC. This module now has seven potential outcomes (i.e., A through G) rather than the three potential outcomes described in the proposed rule (i.e., high, medium, and low).

Description

The MRSPP evaluates the following potential explosive safety and environmental hazards:

- Explosive hazards posed by UXO and DMM;
- Hazards associated with the effects of chemical warfare materiel (CWM); and
- The chronic health and environmental hazards posed by MC or other chemical contaminants.

The DoD recognizes the different hazards inherent to each class of materials. To address these differences, the MRSPP has three hazard evaluation modules, each of which is specific to each type of hazard:

- Explosive hazards are evaluated using the Explosives Hazard Evaluation (EHE) module;
- CWM-related hazards are evaluated using the Chemical Warfare Materiel Hazard Evaluation (CHE) module; and
- Health and environmental hazards posed by MC and other chemical contaminants are evaluated using the Health Hazard Evaluation (HHE) module.

DoD recognizes that sufficient data to apply all three of the hazard evaluation modules may not be immediately available for some munitions response sites. In such cases where data are available for only one or two of the modules, the priority will be assigned based on the modules for which sufficient data are available. This initial priority may change when additional data are collected and all three modules are evaluated. Modules for which there are insufficient data will be assigned a status of "evaluation pending."

Upon completion of all necessary munitions responses at a munitions response site, the status "prioritization no longer required" will be assigned. The sequencing of munitions response sites for environmental restoration activities will be based primarily on the priority assigned using this Protocol, but may also reflect other relevant information, such as stakeholder concerns, economic issues, and program management considerations.

Instructions

Enter the appropriate score for each "Classification" in the "Site Score" column. Enter the highest Site Score in the last row of each table. Transfer the scores from Table 1 through 9 to Table 10. Follow the matrix presented in Table 10 to determine the EHE Rating. Repeat this process to determine the CHE Rating (Table 20) and HHE Rating (Table 24).

The EHE Site Scores are calculated in Tables 1 through 9. The EHE Rating is calculated in Table 10. The CHE Site Scores are calculated in Tables 11 through 19. The CHE Rating is calculated in Table 20. The HHE Site Scores are calculated in Tables 21 through 23. The HHE Rating is calculated in Table 24. The Site Priority, based on the three hazard evaluations (EHE, CHE, and HHE), is calculated in Table 25. The value determined in Table 25 is used to determine the priority of the site. The module ratings and the site priority should also be included on the first page of this document.

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Sensitive	• All UXO that are considered likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive [HE] grenades, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions). • All hand grenades containing energetic filler. • Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30	–
High explosive (used or damaged)	• All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." • All DMM containing a high-explosive filler that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	25	–
Pyrotechnic (used or damaged)	• All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). • All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	20	–
High explosive (unused)	• All DMM containing a high-explosive filler that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	15	–
Propellant	• All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor). • All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor) that are: – Damaged by burning or detonation – Deteriorated to the point of instability.	15	–
Bulk secondary high explosives, pyrotechnics, or propellant	• All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor), that are deteriorated. • Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10	–

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Pyrotechnic (not used or damaged)	• All DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	10	–
Practice	• All UXO that are practice munitions that are not associated with a sensitive fuze. • All DMM that are practice munitions that are not associated with a sensitive fuze and that have not: – Been damaged by burning or detonation – Deteriorated to the point of instability.	5	–
Riot control	• All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3	–
Small arms	• All used munitions or DMM that are categorized as small arms ammunition. [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.]	2	2
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Munitions Type Score (Maximum 30 points)		2	

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Munitions Type Score?

Small arms ammunition use is the only assumed activity conducted at the Former Pistol Range (1935-1940 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Former range	• The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10	–
Former munitions treatment (i.e., OB/OD) unit	• The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8	–
Former practice munitions range	• The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6	–
Former maneuver area	• The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5	–
Former burial pit or other disposal area	• The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment.	5	–
Former industrial operating facilities	• The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility.	4	–
Former firing points	• The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range.	4	–
Former missile or air defense artillery emplacements	• The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range.	2	–
Former storage or transfer points	• The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2	–
Former small arms range	• The MRS is a former military range where only small arms ammunition was used. [There must be evidence that no other type of munitions (e.g., grenades) were used or are present to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Source of Hazard Score (Maximum 10)		1	

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Source of Hazard Score?
Small arms ammunition use is the only assumed activity conducted at the Former Pistol Range (1935-1940 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are UXO or DMM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence (e.g., munitions debris, such as fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that UXO or DMM may be present at the MRS.	5	–

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Subsurface, physical constraint	• There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2	–
Small arms (regardless of location)	• The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability. [There must be evidence that no other types of munitions (e.g., grenades) were used or are present at the MRS to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Information on the Location of Munitions Score (Maximum 25)		1	

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the munition (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the munition (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Information on the Location of Munitions Score?

Small arms ammunition use is the only assumed activity conducted at the Former Pistol Range (1935-1940 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 4 Classifications Within the EHE Module *Ease of Access* Data Element (These definitions only apply for the purpose of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	8
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
EHE Ease of Access Score (Maximum 10)		8	

Notes:

- *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast-moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.

What evidence do you have regarding the EHE Ease of Access Score?

Fort Monmouth is enclosed by a security fence and excluding the gate/security at the main access areas at Fort Monmouth, there are no additional barriers preventing access to the Former Pistol Range (1935-1940 Pistol Range).

Table 5 Classifications Within the EHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	3
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department must control access to the MRS 24 hours per day, every day of the calendar year.	0	–
EHE Status of Property Score (Maximum 5)		3	

What evidence do you have regarding the EHE Status of Property Score?
The DOD currently owns the area of the Former Pistol Range (1935-1940 Pistol Range); however, BRAC is underway and this area may eventually be transferred (realistically within the next 3 years).

Table 6 Classifications Within the EHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	5
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
EHE Population Density Score (Maximum 5)		5	

Notes:

- If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.

What evidence do you have regarding the EHE Population Density Score?
Monmouth County has 1,303.8 persons per square mile according to the 2000 U.S. Census Bureau data.

Table 7 Classifications Within the EHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	5
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
EHE Population Near Hazard Score (Maximum 5)		5	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the EHE Population Near Hazard Score?
There are more then 26 inhabited buildings/structures that are located within a 2 mile radius of Fort Monmouth and the Former Pistol Range (1935-1940 Pistol Range).

Table 8 Classifications Within the EHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	5
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	4
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
EHE Types of Activities/Structures Score (Maximum 5)		5	
Notes: • The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.			

What evidence do you have regarding the EHE Types of Activities/Structures Score?
There are several areas within a 2 mile radius of Fort Monmouth and the Former Pistol Range (1935-1940 Pistol Range) that are zoned as the following:

- Wetlands
- Research, Development, and Testing
- Operations
- Reserved Land/Buffer and Recreation
- Troop/Family Housing
- Supply/Storage
- Administrative
- Medical/Dental

There is also a Child Care Center and a Community Facility Building Center located within a 2 radius of Fort Monmouth and the Former Pistol Range (1935-1940 Pistol Range).

Table 9 Classifications Within the EHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	0
EHE Ecological and/or Cultural Resources Score (Maximum 5)		0	

Notes:

- *Ecological resources* means that (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, traditional, spiritual, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of religious significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the EHE Ecological and/or Cultural Resources Score?

There are no federally listed or proposed threatened or endangered flora or fauna at Fort Monmouth or the Former Pistol Range (1935-1940 Pistol Range). There are no wetlands at the Former Pistol Range (1935-1940 Pistol Range). The Main Post does have a historic district (in a residential area); however, this area is no located within the boundaries of the Former Pistol Range (1935-1940 Pistol Range).

Table 10 Determining the EHE Rating from the EHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
Explosive Hazard	Munitions Type	1	2
	Source of Hazard	2	1
Accessibility	Location of Munitions	3	1
	Ease of Access	4	8
	Status of Property	5	3
Receptors	Population Density	6	5
	Population Near Hazard	7	5
	Types of Activities/Structures	8	4
	Ecological and/or Cultural Resources	9	0
EHE Module Score (Sum of Data Element Site Scores from Tables 1-9)			29
The EHE Rating is determined by selecting the appropriate EHE Module Score range using the sum of the nine data element site scores: EHE Module Score — EHE Rating 92 to 100 — EHE Rating A (Highest) 82 to 91 — EHE Rating B 71 to 81 — EHE Rating C 60 to 70 — EHE Rating D 48 to 59 — EHE Rating E 38 to 47 — EHE Rating F 0 to 37 — EHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected Explosive Hazard			
EHE Rating			G

Table 11 Classifications Within the CHE Module *CWM Configuration* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CWM, explosive configuration, either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: • Explosively configured CWM that are UXO (i.e., CWM/UXO). • Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged.	30	–
CWM mixed with UXO	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25	–
CWM, explosive configuration that are DMM (undamaged)	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20	–
CWM, not-explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: • Nonexplosively configured CWM/DMM. • Bulk CWM/DMM (e.g., ton container).	15	–
CAIS K941 and CAIS K942	• The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12	–
CAIS (chemical agent identification sets)	• Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0
CHE CWM Configuration Score (Maximum 30)		0	

Notes:
- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term *CAIS/DMM* means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.

What evidence do you have regarding the CHE CWM Configuration Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Live-fire involving CWM	• The MRS is a range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface. • The MRS is a former military range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface commingled with conventional munitions that are UXO.	10	–
Damaged CWM/DMM surface or subsurface	• There are damaged CWM/DMM on the surface or in the subsurface at the MRS.	10	–
Undamaged CWM/DMM surface	• There are undamaged CWM/DMM on the surface at the MRS.	10	–
CAIS/DMM surface	• There are CAIS/DMM on the surface.	10	–
Undamaged CWM/DMM, subsurface	• There are undamaged CWM/DMM in the subsurface at the MRS.	5	–
CAIS/DMM subsurface	• There are CAIS/DMM in the subsurface at the MRS.	5	–
Former CA or CWM Production Facilities	• The MRS is a facility that formerly engaged in production of CA or CWM, and CWM/DMM is suspected of being present on the surface or in the subsurface.	3	–
Former Research, Development, Testing, and Evaluation (RDT&E) facility using CWM	• The MRS is at a facility that formerly was involved in non-live-fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface.	3	–
Former Training Facility using CWM or CAIS	• The MRS is a location that formerly was involved in training activities involving CWM and/or CAIS (e.g., training in recognition of CWA, decontamination training), and CWM/DMM or CAIS/DMM are suspected of being present on the surface or in the subsurface.	2	–
Former Storage or Transfer points of CWM	• The MRS is a former storage facility or transfer point (e.g., intermodal transfer) for CWM.	1	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CHE Sources of CWM Score (Maximum 10)		0	

Notes:

- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term CAIS/DMM means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Sources of CWM Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are CWM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence, other than the documented presence of CWM, indicating that CWM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that CWM may be present at the MRS.	5	–
Subsurface, physical constraint	• There is physical or historical evidence indicating that CWM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the CWM.	2	–
Evidence of no CWM	• Following investigation of the MRS, there is physical evidence that there is no CWM present or there is historical evidence indicating that no CWM are present.	0	0
CHE Information on the Location of CWM Score (Maximum 25)		0	

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Information on the Location of CWM Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 14 Classifications Within the CHE Module *Ease of Access* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	–
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
CHE Ease of Access Score (Maximum 10)		N/A	
Notes: • *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.			

What evidence do you have regarding the CHE Ease of Access Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 15 Classifications Within the CHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	–
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department controls access to the property 24 hours per day, every day of the calendar year.	0	–
CHE Status of Property Score (Maximum 5)		N/A	

What evidence do you have regarding the CHE Status of Property Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 16 Classifications Within the CHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	–
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
CHE Population Density Score (Maximum 5)		N/A	

Notes:

- If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.

What evidence do you have regarding the CHE Population Density Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 17 Classifications Within the CHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	–
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
CHE Population Near Hazard Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Population Near Hazard Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 18 Classifications Within the CHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	–
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	–
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary, or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
CHE Types of Activities/Structures Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Types of Activities/Structures Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 19 Classifications Within the CHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	–
CHE Ecological and/or Cultural Resources Score (Maximum 5)		N/A	

Notes:

- *Ecological resources* means that: (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, spiritual, traditional, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of spiritual significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the CHE Ecological and/or Cultural Resources Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Pistol Range (1935-1940 Pistol Range).

Table 20 Determining the CHE Rating from the CHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
CWM Hazard	CWM Configuration	11	0
	Sources of CWM	12	0
Accessibility	Information on the Location of CWM	13	0
	Ease of Access	14	N/A
	Status of Property	15	N/A
Receptors	Population Density	16	N/A
	Population Near Hazard	17	N/A
	Types of Activities/Sturctures	18	N/A
	Ecological and/or Cultural Resources	19	N/A
CHE Module Score (Sum of Data Element Site Scores from Tables 11-19)			N/A
The CHE Rating is determined by selecting the appropriate CHE Module Score range using the sum of the nine data element site scores: CHE Module Score — CHE Rating 92 to 100 — CHE Rating A (Highest) 82 to 91 — CHE Rating B 71 to 81 — CHE Rating C 60 to 70 — CHE Rating D 48 to 59 — CHE Rating E 38 to 47 — CHE Rating F 0 to 37 — CHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected CWM Hazard			
CHE Rating			No Known or Suspected CWM Hazard

Table 21 Health Hazard Evaluation (HHE) Module Factor Levels (These definitions only apply for the purposes of the MRSPP)					
Contaminant Hazard Factor		**Receptor Factor**		**Migration Pathway Factor**	
Significant	**High (H)**	**Identified**	**High (H)**	**Evident**	**High (H)**
Moderate	**Middle (M)**	**Potential**	**Middle (M)**	**Potential**	**Middle (M)**
Minimal	**Low (L)**	**Limited**	**Low (L)**	**Confined**	**Low (L)**
Site HHE Factor Levels					
N/A		N/A		N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 22 HHE Three-letter Combination Levels (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	HHH	HHM	HHL
	Potential	HHM	HMM	HML
	Limited	HHL	HML	HLL
Moderate	**Identified**	HHM	HMM	HML
	Potential	HMM	MMM	MML
	Limited	HML	MML	MLL
Minimal	**Identified**	HHL	HML	HLL
	Potential	HML	MML	MLL
	Limited	HLL	MLL	LLL
Site HHE Three-letter Combination Level		N/A		

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 23 HHE Module Ratings (These definitions only apply for the purposes of the MRSPP)	
Combination	**Rating**
HHH	A
HHM	B
HHL	C
HMM	
HML	D
MMM	
HLL	E
MML	
MLL	F
LLL	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 24 HHE Module Rating (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	A	B	C
	Potential	B	C	D
	Limited	C	D	E
Moderate	**Identified**	B	C	D
	Potential	C	D	E
	Limited	D	E	F
Minimal	**Identified**	C	D	E
	Potential	D	E	F
	Limited	E	F	G
HHE Module Rating			N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

TABLE 25 MRS Priority Based on Highest Hazard Evaluation Module Rating (These definitions only apply for the purposes of the MRSPP)					
		CHE Module Rating	Priority		
EHE Module Rating	Priority	Hazard Evaluation A (Highest)	1	HHE Module Rating	Priority
Hazard Evaluation A (Highest)	2	Hazard Evaluation B	2	Hazard Evaluation A (Highest)	2
Hazard Evaluation B	3	Hazard Evaluation C	3	Hazard Evaluation B	3
Hazard Evaluation C	4	Hazard Evaluation D	4	Hazard Evaluation C	4
Hazard Evaluation D	5	Hazard Evaluation E	5	Hazard Evaluation D	5
Hazard Evaluation E	6	Hazard Evaluation F	6	Hazard Evaluation E	6
Hazard Evaluation F	7	Hazard Evaluation G (Lowest)	7	Hazard Evaluation F	7
Hazard Evaluation G (Lowest)	8			Hazard Evaluation G (Lowest)	8
Evaluation Pending		Evaluation Pending		No Longer Required	
No Longer Required		No Longer Required		Evaluation Pending	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	
Hazard Evaluation Module Rating					
G		No Known or Suspected CWM Hazard		Evaluation Pending	
MRS Priority			8		

Munitions Response Site Prioritization Protocol, Final Rule, October 2005

(Final Version, 05 October 2005)

Installation Name:	Fort Monmouth	**EHE Module Rating/Priority:**	G (29)
Site Name:	Former Outdoor Firing Range (1940-1955 Pistol Range)	**CHE Module Rating/Priority**:	No Known or Suspected CWM Hazard
Completed By:	Ms. Afton Hess Malcolm Pirnie, Inc.	**HHE Module Rating/Priority:**	Evaluation Pending
Date Completed:	16 January 2006	**Overall Site Rating/Priority:**	8

Background

The Munitions Response Site Prioritization Protocol (MRSPP) reflects the statement in 10 U.S.C. § 2710(b)(2) that the priority assigned should be based on the overall conditions at each location, taking into consideration various factors relating to safety and environmental hazard potential. As required under 10 U.S.C. § 2710(b)(1), the priority assigned to each munitions response site (MRS) will be included with the inventory information made publicly available. The requirement for an inventory of munitions response sites known or suspected of containing unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC) is found at 10 U.S.C. § 2710(a). The assigned priority will be updated annually to reflect new information that becomes available.

The Department of Defense first published the MRSPP in the Federal Register as a proposed rule on 22 August 2003. The rule was finalized on 05 October 2005 under the authority of Section 311(b) of the National Defense Authorization Act, codified at Section 10 U.S.C. § 2710(b). The following tables reflect the changes incorporated in the final rule, many of which pertained to clarification of terms and definitions based on new statutory definitions promulgated in the National Defense Authorization Act for 2004 and codified at 10 U.S.C. § 101. The following tables also include the revised module that evaluates potential health hazards associated with MC. This module now has seven potential outcomes (i.e., A through G) rather than the three potential outcomes described in the proposed rule (i.e., high, medium, and low).

Description

The MRSPP evaluates the following potential explosive safety and environmental hazards:

- Explosive hazards posed by UXO and DMM;
- Hazards associated with the effects of chemical warfare materiel (CWM); and
- The chronic health and environmental hazards posed by MC or other chemical contaminants.

The DoD recognizes the different hazards inherent to each class of materials. To address these differences, the MRSPP has three hazard evaluation modules, each of which is specific to each type of hazard:

- Explosive hazards are evaluated using the Explosives Hazard Evaluation (EHE) module;
- CWM-related hazards are evaluated using the Chemical Warfare Materiel Hazard Evaluation (CHE) module; and
- Health and environmental hazards posed by MC and other chemical contaminants are evaluated using the Health Hazard Evaluation (HHE) module.

DoD recognizes that sufficient data to apply all three of the hazard evaluation modules may not be immediately available for some munitions response sites. In such cases where data are available for only one or two of the modules, the priority will be assigned based on the modules for which sufficient data are available. This initial priority may change when additional data are collected and all three modules are evaluated. Modules for which there are insufficient data will be assigned a status of "evaluation pending."

Upon completion of all necessary munitions responses at a munitions response site, the status "prioritization no longer required" will be assigned. The sequencing of munitions response sites for environmental restoration activities will be based primarily on the priority assigned using this Protocol, but may also reflect other relevant information, such as stakeholder concerns, economic issues, and program management considerations.

Instructions

Enter the appropriate score for each "Classification" in the "Site Score" column. Enter the highest Site Score in the last row of each table. Transfer the scores from Table 1 through 9 to Table 10. Follow the matrix presented in Table 10 to determine the EHE Rating. Repeat this process to determine the CHE Rating (Table 20) and HHE Rating (Table 24).

The EHE Site Scores are calculated in Tables 1 through 9. The EHE Rating is calculated in Table 10. The CHE Site Scores are calculated in Tables 11 through 19. The CHE Rating is calculated in Table 20. The HHE Site Scores are calculated in Tables 21 through 23. The HHE Rating is calculated in Table 24. The Site Priority, based on the three hazard evaluations (EHE, CHE, and HHE), is calculated in Table 25. The value determined in Table 25 is used to determine the priority of the site. The module ratings and the site priority should also be included on the first page of this document.

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Sensitive	• All UXO that are considered likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive [HE] grenades, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions). • All hand grenades containing energetic filler. • Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30	–
High explosive (used or damaged)	• All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." • All DMM containing a high-explosive filler that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	25	–
Pyrotechnic (used or damaged)	• All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). • All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	20	–
High explosive (unused)	• All DMM containing a high-explosive filler that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	15	–
Propellant	• All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor). • All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor) that are: – Damaged by burning or detonation – Deteriorated to the point of instability.	15	–
Bulk secondary high explosives, pyrotechnics, or propellant	• All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor), that are deteriorated. • Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10	–

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Pyrotechnic (not used or damaged)	• All DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	10	–
Practice	• All UXO that are practice munitions that are not associated with a sensitive fuze. • All DMM that are practice munitions that are not associated with a sensitive fuze and that have not: – Been damaged by burning or detonation – Deteriorated to the point of instability.	5	–
Riot control	• All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3	–
Small arms	• All used munitions or DMM that are categorized as small arms ammunition. [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.]	2	2
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Munitions Type Score (Maximum 30 points)		2	

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Munitions Type Score?

Small arms ammunition use is the only assumed activity conducted at the Former Outdoor Firing Range (1940-1955 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Former range	• The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10	–
Former munitions treatment (i.e., OB/OD) unit	• The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8	–
Former practice munitions range	• The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6	–
Former maneuver area	• The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5	–
Former burial pit or other disposal area	• The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment.	5	–
Former industrial operating facilities	• The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility.	4	–
Former firing points	• The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range.	4	–
Former missile or air defense artillery emplacements	• The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range.	2	–
Former storage or transfer points	• The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2	–
Former small arms range	• The MRS is a former military range where only small arms ammunition was used. [There must be evidence that no other type of munitions (e.g., grenades) were used or are present to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Source of Hazard Score (Maximum 10)		1	

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Source of Hazard Score?
Small arms ammunition use is the only assumed activity conducted at the Former Outdoor Firing Range (1940-1955 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are UXO or DMM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence (e.g., munitions debris, such as fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that UXO or DMM may be present at the MRS.	5	–

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Subsurface, physical constraint	• There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2	–
Small arms (regardless of location)	• The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability. [There must be evidence that no other types of munitions (e.g., grenades) were used or are present at the MRS to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Information on the Location of Munitions Score (Maximum 25)		1	

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the munition (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the munition (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Information on the Location of Munitions Score?

Small arms ammunition use is the only assumed activity conducted at the Former Outdoor Firing Range (1940-1955 Pistol Range). Known/suspected munitions include: .22, caliber, .30 caliber, and .45 caliber.

Table 4 Classifications Within the EHE Module *Ease of Access* Data Element (These definitions only apply for the purpose of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	8
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
EHE Ease of Access Score (Maximum 10)		8	

Notes:

- *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast-moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.

What evidence do you have regarding the EHE Ease of Access Score?

Fort Monmouth is enclosed by a security fence and excluding the gate/security at the main access areas at Fort Monmouth, there are no additional barriers preventing access to the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 5 Classifications Within the EHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	3
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department must control access to the MRS 24 hours per day, every day of the calendar year.	0	–
EHE Status of Property Score (Maximum 5)		3	

What evidence do you have regarding the EHE Status of Property Score?
The DOD currently owns the area of the Former Outdoor Firing Range (1940-1955 Pistol Range); however, BRAC is underway and this area may eventually be transferred (realistically within the next 3 years).

Table 6 Classifications Within the EHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	5
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
EHE Population Density Score (Maximum 5)		5	

Notes:

- If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.

What evidence do you have regarding the EHE Population Density Score?
Monmouth County has 1,303.8 persons per square mile according to the 2000 U.S. Census Bureau data.

Table 7 Classifications Within the EHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	5
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
EHE Population Near Hazard Score (Maximum 5)		5	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the EHE Population Near Hazard Score?
There are more then 26 inhabited buildings/structures that are located within a 2 mile radius of Fort Monmouth and the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 8 Classifications Within the EHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	5
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	4
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
EHE Types of Activities/Structures Score (Maximum 5)		5	
Notes: • The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.			

What evidence do you have regarding the EHE Types of Activities/Structures Score?
There are several areas within a 2 mile radius of Fort Monmouth and the Former Outdoor Firing Range (1940-1955 Pistol Range) that are zoned as the following:

- Wetlands
- Research, Development, and Testing
- Operations
- Reserved Land/Buffer and Recreation
- Troop/Family Housing
- Supply/Storage
- Administrative
- Medical/Dental

There is also a Child Care Center and a Community Facility Building Center located within a 2 radius of Fort Monmouth and the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 9 Classifications Within the EHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	0
EHE Ecological and/or Cultural Resources Score (Maximum 5)		0	

Notes:

- *Ecological resources* means that (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, traditional, spiritual, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of religious significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the EHE Ecological and/or Cultural Resources Score?

There are no federally listed or proposed threatened or endangered flora or fauna at Fort Monmouth or the Former Outdoor Firing Range (1940-1955 Pistol Range). There are no wetlands at the Former Outdoor Firing Range (1940-1955 Pistol Range). The Main Post does have a historic district (in a residential area); however, this area is no located within the boundaries of the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 10 Determining the EHE Rating from the EHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
Explosive Hazard	Munitions Type	1	2
	Source of Hazard	2	1
Accessibility	Location of Munitions	3	1
	Ease of Access	4	8
	Status of Property	5	3
Receptors	Population Density	6	5
	Population Near Hazard	7	5
	Types of Activities/Structures	8	4
	Ecological and/or Cultural Resources	9	0
EHE Module Score (Sum of Data Element Site Scores from Tables 1-9)			29
The EHE Rating is determined by selecting the appropriate EHE Module Score range using the sum of the nine data element site scores: EHE Module Score — EHE Rating 92 to 100 — EHE Rating A (Highest) 82 to 91 — EHE Rating B 71 to 81 — EHE Rating C 60 to 70 — EHE Rating D 48 to 59 — EHE Rating E 38 to 47 — EHE Rating F 0 to 37 — EHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected Explosive Hazard			
EHE Rating			G

Table 11 Classifications Within the CHE Module *CWM Configuration* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CWM, explosive configuration, either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: • Explosively configured CWM that are UXO (i.e., CWM/UXO). • Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged.	30	–
CWM mixed with UXO	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25	–
CWM, explosive configuration that are DMM (undamaged)	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20	–
CWM, not-explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: • Nonexplosively configured CWM/DMM. • Bulk CWM/DMM (e.g., ton container).	15	–
CAIS K941 and CAIS K942	• The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12	–
CAIS (chemical agent identification sets)	• Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0
CHE CWM Configuration Score (Maximum 30)		0	

Notes:
- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term *CAIS/DMM* means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.

What evidence do you have regarding the CHE CWM Configuration Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Live-fire involving CWM	• The MRS is a range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface. • The MRS is a former military range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface commingled with conventional munitions that are UXO.	10	–
Damaged CWM/DMM surface or subsurface	• There are damaged CWM/DMM on the surface or in the subsurface at the MRS.	10	–
Undamaged CWM/DMM surface	• There are undamaged CWM/DMM on the surface at the MRS.	10	–
CAIS/DMM surface	• There are CAIS/DMM on the surface.	10	–
Undamaged CWM/DMM, subsurface	• There are undamaged CWM/DMM in the subsurface at the MRS.	5	–
CAIS/DMM subsurface	• There are CAIS/DMM in the subsurface at the MRS.	5	–
Former CA or CWM Production Facilities	• The MRS is a facility that formerly engaged in production of CA or CWM, and CWM/DMM is suspected of being present on the surface or in the subsurface.	3	–
Former Research, Development, Testing, and Evaluation (RDT&E) facility using CWM	• The MRS is at a facility that formerly was involved in non-live-fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface.	3	–
Former Training Facility using CWM or CAIS	• The MRS is a location that formerly was involved in training activities involving CWM and/or CAIS (e.g., training in recognition of CWA, decontamination training), and CWM/DMM or CAIS/DMM are suspected of being present on the surface or in the subsurface.	2	–
Former Storage or Transfer points of CWM	• The MRS is a former storage facility or transfer point (e.g., intermodal transfer) for CWM.	1	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CHE Sources of CWM Score (Maximum 10)		0	

Notes:

- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term CAIS/DMM means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Sources of CWM Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are CWM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence, other than the documented presence of CWM, indicating that CWM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that CWM may be present at the MRS.	5	–
Subsurface, physical constraint	• There is physical or historical evidence indicating that CWM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the CWM.	2	–
Evidence of no CWM	• Following investigation of the MRS, there is physical evidence that there is no CWM present or there is historical evidence indicating that no CWM are present.	0	0
CHE Information on the Location of CWM Score (Maximum 25)		0	

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Information on the Location of CWM Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 14 Classifications Within the CHE Module *Ease of Access* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	–
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
CHE Ease of Access Score (Maximum 10)		N/A	
Notes: • *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.			

What evidence do you have regarding the CHE Ease of Access Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 15 Classifications Within the CHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	–
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department controls access to the property 24 hours per day, every day of the calendar year.	0	–
CHE Status of Property Score (Maximum 5)		N/A	

What evidence do you have regarding the CHE Status of Property Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 16 Classifications Within the CHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	–
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
CHE Population Density Score (Maximum 5)		N/A	

Notes:

- If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.

What evidence do you have regarding the CHE Population Density Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 17 Classifications Within the CHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	–
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
CHE Population Near Hazard Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Population Near Hazard Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 18 Classifications Within the CHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	–
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	–
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary, or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
CHE Types of Activities/Structures Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Types of Activities/Structures Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 19 Classifications Within the CHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	–
CHE Ecological and/or Cultural Resources Score (Maximum 5)		N/A	

Notes:

- *Ecological resources* means that: (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, spiritual, traditional, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of spiritual significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the CHE Ecological and/or Cultural Resources Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Outdoor Firing Range (1940-1955 Pistol Range).

Table 20 Determining the CHE Rating from the CHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
CWM Hazard	CWM Configuration	11	0
	Sources of CWM	12	0
Accessibility	Information on the Location of CWM	13	0
	Ease of Access	14	N/A
	Status of Property	15	N/A
Receptors	Population Density	16	N/A
	Population Near Hazard	17	N/A
	Types of Activities/Sturctures	18	N/A
	Ecological and/or Cultural Resources	19	N/A
CHE Module Score (Sum of Data Element Site Scores from Tables 11-19)			N/A
The CHE Rating is determined by selecting the appropriate CHE Module Score range using the sum of the nine data element site scores: CHE Module Score — CHE Rating 92 to 100 — CHE Rating A (Highest) 82 to 91 — CHE Rating B 71 to 81 — CHE Rating C 60 to 70 — CHE Rating D 48 to 59 — CHE Rating E 38 to 47 — CHE Rating F 0 to 37 — CHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected CWM Hazard			
CHE Rating			No Known or Suspected CWM Hazard

Table 21 Health Hazard Evaluation (HHE) Module Factor Levels (These definitions only apply for the purposes of the MRSPP)					
Contaminant Hazard Factor		**Receptor Factor**		**Migration Pathway Factor**	
Significant	**High (H)**	**Identified**	**High (H)**	**Evident**	**High (H)**
Moderate	**Middle (M)**	**Potential**	**Middle (M)**	**Potential**	**Middle (M)**
Minimal	**Low (L)**	**Limited**	**Low (L)**	**Confined**	**Low (L)**
Site HHE Factor Levels					
N/A		N/A		N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 22 HHE Three-letter Combination Levels (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	HHH	HHM	HHL
	Potential	HHM	HMM	HML
	Limited	HHL	HML	HLL
Moderate	**Identified**	HHM	HMM	HML
	Potential	HMM	MMM	MML
	Limited	HML	MML	MLL
Minimal	**Identified**	HHL	HML	HLL
	Potential	HML	MML	MLL
	Limited	HLL	MLL	LLL
Site HHE Three-letter Combination Level		N/A		

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 23 HHE Module Ratings (These definitions only apply for the purposes of the MRSPP)	
Combination	**Rating**
HHH	A
HHM	B
HHL	C
HMM	
HML	D
MMM	
HLL	E
MML	
MLL	F
LLL	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 24 HHE Module Rating (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	A	B	C
	Potential	B	C	D
	Limited	C	D	E
Moderate	**Identified**	B	C	D
	Potential	C	D	E
	Limited	D	E	F
Minimal	**Identified**	C	D	E
	Potential	D	E	F
	Limited	E	F	G
HHE Module Rating			N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

TABLE 25 MRS Priority Based on Highest Hazard Evaluation Module Rating (These definitions only apply for the purposes of the MRSPP)					
		CHE Module Rating	Priority		
EHE Module Rating	Priority	Hazard Evaluation A (Highest)	1	HHE Module Rating	Priority
Hazard Evaluation A (Highest)	2	Hazard Evaluation B	2	Hazard Evaluation A (Highest)	2
Hazard Evaluation B	3	Hazard Evaluation C	3	Hazard Evaluation B	3
Hazard Evaluation C	4	Hazard Evaluation D	4	Hazard Evaluation C	4
Hazard Evaluation D	5	Hazard Evaluation E	5	Hazard Evaluation D	5
Hazard Evaluation E	6	Hazard Evaluation F	6	Hazard Evaluation E	6
Hazard Evaluation F	7	Hazard Evaluation G (Lowest)	7	Hazard Evaluation F	7
Hazard Evaluation G (Lowest)	8			Hazard Evaluation G (Lowest)	8
Evaluation Pending		Evaluation Pending		No Longer Required	
No Longer Required		No Longer Required		Evaluation Pending	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	
Hazard Evaluation Module Rating					
G		No Known or Suspected CWM Hazard		Evaluation Pending	
MRS Priority			8		

Munitions Response Site Prioritization Protocol, Final Rule, October 2005

(Final Version, 05 October 2005)

Installation Name:	Fort Monmouth	**EHE Module Rating/Priority:**	G (29)
Site Name:	Former Skeet Range	**CHE Module Rating/Priority**:	No Known or Suspected CWM Hazard
Completed By:	Ms. Afton Hess Malcolm Pirnie, Inc.	**HHE Module Rating/Priority:**	Evaluation Pending
Date Completed:	16 January 2006	**Overall Site Rating/Priority:**	8

Background

The Munitions Response Site Prioritization Protocol (MRSPP) reflects the statement in 10 U.S.C. § 2710(b)(2) that the priority assigned should be based on the overall conditions at each location, taking into consideration various factors relating to safety and environmental hazard potential. As required under 10 U.S.C. § 2710(b)(1), the priority assigned to each munitions response site (MRS) will be included with the inventory information made publicly available. The requirement for an inventory of munitions response sites known or suspected of containing unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC) is found at 10 U.S.C. § 2710(a). The assigned priority will be updated annually to reflect new information that becomes available.

The Department of Defense first published the MRSPP in the Federal Register as a proposed rule on 22 August 2003. The rule was finalized on 05 October 2005 under the authority of Section 311(b) of the National Defense Authorization Act, codified at Section 10 U.S.C. § 2710(b). The following tables reflect the changes incorporated in the final rule, many of which pertained to clarification of terms and definitions based on new statutory definitions promulgated in the National Defense Authorization Act for 2004 and codified at 10 U.S.C. § 101. The following tables also include the revised module that evaluates potential health hazards associated with MC. This module now has seven potential outcomes (i.e., A through G) rather than the three potential outcomes described in the proposed rule (i.e., high, medium, and low).

Description

The MRSPP evaluates the following potential explosive safety and environmental hazards:

- Explosive hazards posed by UXO and DMM;
- Hazards associated with the effects of chemical warfare materiel (CWM); and
- The chronic health and environmental hazards posed by MC or other chemical contaminants.

The DoD recognizes the different hazards inherent to each class of materials. To address these differences, the MRSPP has three hazard evaluation modules, each of which is specific to each type of hazard:

- Explosive hazards are evaluated using the Explosives Hazard Evaluation (EHE) module;
- CWM-related hazards are evaluated using the Chemical Warfare Materiel Hazard Evaluation (CHE) module; and
- Health and environmental hazards posed by MC and other chemical contaminants are evaluated using the Health Hazard Evaluation (HHE) module.

DoD recognizes that sufficient data to apply all three of the hazard evaluation modules may not be immediately available for some munitions response sites. In such cases where data are available for only one or two of the modules, the priority will be assigned based on the modules for which sufficient data are available. This initial priority may change when additional data are collected and all three modules are evaluated. Modules for which there are insufficient data will be assigned a status of "evaluation pending."

Upon completion of all necessary munitions responses at a munitions response site, the status "prioritization no longer required" will be assigned. The sequencing of munitions response sites for environmental restoration activities will be based primarily on the priority assigned using this Protocol, but may also reflect other relevant information, such as stakeholder concerns, economic issues, and program management considerations.

Instructions

Enter the appropriate score for each "Classification" in the "Site Score" column. Enter the highest Site Score in the last row of each table. Transfer the scores from Table 1 through 9 to Table 10. Follow the matrix presented in Table 10 to determine the EHE Rating. Repeat this process to determine the CHE Rating (Table 20) and HHE Rating (Table 24).

The EHE Site Scores are calculated in Tables 1 through 9. The EHE Rating is calculated in Table 10. The CHE Site Scores are calculated in Tables 11 through 19. The CHE Rating is calculated in Table 20. The HHE Site Scores are calculated in Tables 21 through 23. The HHE Rating is calculated in Table 24. The Site Priority, based on the three hazard evaluations (EHE, CHE, and HHE), is calculated in Table 25. The value determined in Table 25 is used to determine the priority of the site. The module ratings and the site priority should also be included on the first page of this document.

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Sensitive	• All UXO that are considered likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive [HE] grenades, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions). • All hand grenades containing energetic filler. • Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30	–
High explosive (used or damaged)	• All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." • All DMM containing a high-explosive filler that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	25	–
Pyrotechnic (used or damaged)	• All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). • All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have: – Been damaged by burning or detonation – Deteriorated to the point of instability.	20	–
High explosive (unused)	• All DMM containing a high-explosive filler that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	15	–
Propellant	• All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor). • All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor) that are: – Damaged by burning or detonation – Deteriorated to the point of instability.	15	–
Bulk secondary high explosives, pyrotechnics, or propellant	• All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (e.g., rocket motor), that are deteriorated. • Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10	–

Table 1 Classifications Within the EHE Module *Munitions Type* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Pyrotechnic (not used or damaged)	• All DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that: – Have not been damaged by burning or detonation – Are not deteriorated to the point of instability.	10	–
Practice	• All UXO that are practice munitions that are not associated with a sensitive fuze. • All DMM that are practice munitions that are not associated with a sensitive fuze and that have not: – Been damaged by burning or detonation – Deteriorated to the point of instability.	5	–
Riot control	• All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3	–
Small arms	• All used munitions or DMM that are categorized as small arms ammunition. [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.]	2	2
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Munitions Type Score (Maximum 30 points)		2	

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Munitions Type Score?

Small arms ammunition use is the only assumed activity conducted at the Former Skeet Range.

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Former range	• The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10	–
Former munitions treatment (i.e., OB/OD) unit	• The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8	–
Former practice munitions range	• The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6	–
Former maneuver area	• The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5	–
Former burial pit or other disposal area	• The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment.	5	–
Former industrial operating facilities	• The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility.	4	–
Former firing points	• The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range.	4	–
Former missile or air defense artillery emplacements	• The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range.	2	–
Former storage or transfer points	• The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2	–
Former small arms range	• The MRS is a former military range where only small arms ammunition was used. [There must be evidence that no other type of munitions (e.g., grenades) were used or are present to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Source of Hazard Score (Maximum 10)		1	

Table 2 Classifications Within the EHE Module *Source of Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Former* (as in "former military range") means the MRS is a location that was (1) closed by a formal decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorus, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Source of Hazard Score?
Small arms ammunition use is the only assumed activity conducted at the Former Skeet Range.

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are UXO or DMM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence (e.g., munitions debris, such as fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that UXO or DMM may be present at the MRS.	5	–

Table 3 Classifications Within the EHE Module *Information on the Location of Munitions* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Subsurface, physical constraint	• There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2	–
Small arms (regardless of location)	• The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability. [There must be evidence that no other types of munitions (e.g., grenades) were used or are present at the MRS to place an MRS into this category.]	1	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	–
EHE Information on the Location of Munitions Score (Maximum 25)		1	

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g. fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the munition (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the munition (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

What evidence do you have regarding the EHE Information on the Location of Munitions Score?

Small arms ammunition use is the only assumed activity conducted at the Former Skeet Range.

Table 4 Classifications Within the EHE Module *Ease of Access* Data Element (These definitions only apply for the purpose of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	8
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
EHE Ease of Access Score (Maximum 10)		8	

Notes:

- *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast-moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.

What evidence do you have regarding the EHE Ease of Access Score?

Fort Monmouth is enclosed by a security fence and excluding the gate/security at the main access areas at Fort Monmouth, there are no additional barriers preventing access to the Former Skeet Range.

Table 5 Classifications Within the EHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	3
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department must control access to the MRS 24 hours per day, every day of the calendar year.	0	–
EHE Status of Property Score (Maximum 5)		3	

What evidence do you have regarding the EHE Status of Property Score?
The DOD currently owns the area of the Former Skeet Range; however, BRAC is underway and this area may eventually be transferred (realistically within the next 3 years).

Table 6 Classifications Within the EHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	5
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
EHE Population Density Score (Maximum 5)		5	

Notes:

- If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.

What evidence do you have regarding the EHE Population Density Score?
Monmouth County has 1,303.8 persons per square mile according to the 2000 U.S. Census Bureau data.

Table 7 Classifications Within the EHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	5
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
EHE Population Near Hazard Score (Maximum 5)		5	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the EHE Population Near Hazard Score?
There are more then 26 inhabited buildings/structures that are located within a 2 mile radius of Fort Monmouth and the Former Skeet Range.

Table 8 Classifications Within the EHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	5
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	4
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
EHE Types of Activities/Structures Score (Maximum 5)		5	
Notes: • The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.			

What evidence do you have regarding the EHE Types of Activities/Structures Score?
There are several areas within a 2 mile radius of Fort Monmouth and the Former Skeet Range that are zoned as the following:

- Wetlands
- Research, Development, and Testing
- Operations
- Reserved Land/Buffer and Recreation
- Troop/Family Housing
- Supply/Storage
- Administrative
- Medical/Dental

There is also a Child Care Center and a Community Facility Building Center located within a 2 radius of Fort Monmouth and the Former Skeet Range.

Table 9 Classifications Within the EHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	0
EHE Ecological and/or Cultural Resources Score (Maximum 5)		0	

Notes:

- *Ecological resources* means that (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, traditional, spiritual, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of religious significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the EHE Ecological and/or Cultural Resources Score?

There are no federally listed or proposed threatened or endangered flora or fauna at Fort Monmouth or the Former Skeet Range. There are no wetlands at the Former Skeet Range. The Main Post does have a historic district (in a residential area); however, this area is no located within the boundaries of the Former Skeet Range.

Table 10 Determining the EHE Rating from the EHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
Explosive Hazard	Munitions Type	1	2
	Source of Hazard	2	1
Accessibility	Location of Munitions	3	1
	Ease of Access	4	8
	Status of Property	5	3
Receptors	Population Density	6	5
	Population Near Hazard	7	5
	Types of Activities/Structures	8	4
	Ecological and/or Cultural Resources	9	0
EHE Module Score (Sum of Data Element Site Scores from Tables 1-9)			29
The EHE Rating is determined by selecting the appropriate EHE Module Score range using the sum of the nine data element site scores: EHE Module Score — EHE Rating 92 to 100 — EHE Rating A (Highest) 82 to 91 — EHE Rating B 71 to 81 — EHE Rating C 60 to 70 — EHE Rating D 48 to 59 — EHE Rating E 38 to 47 — EHE Rating F 0 to 37 — EHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected Explosive Hazard			
EHE Rating			G

Table 11 Classifications Within the CHE Module *CWM Configuration* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CWM, explosive configuration, either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: • Explosively configured CWM that are UXO (i.e., CWM/UXO). • Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged.	30	–
CWM mixed with UXO	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25	–
CWM, explosive configuration that are DMM (undamaged)	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20	–
CWM, not-explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: • Nonexplosively configured CWM/DMM. • Bulk CWM/DMM (e.g., ton container).	15	–
CAIS K941 and CAIS K942	• The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12	–
CAIS (chemical agent identification sets)	• Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0
CHE CWM Configuration Score (Maximum 30)		0	

Notes:
- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term *CAIS/DMM* means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.

What evidence do you have regarding the CHE CWM Configuration Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Live-fire involving CWM	• The MRS is a range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface. • The MRS is a former military range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface commingled with conventional munitions that are UXO.	10	–
Damaged CWM/DMM surface or subsurface	• There are damaged CWM/DMM on the surface or in the subsurface at the MRS.	10	–
Undamaged CWM/DMM surface	• There are undamaged CWM/DMM on the surface at the MRS.	10	–
CAIS/DMM surface	• There are CAIS/DMM on the surface.	10	–
Undamaged CWM/DMM, subsurface	• There are undamaged CWM/DMM in the subsurface at the MRS.	5	–
CAIS/DMM subsurface	• There are CAIS/DMM in the subsurface at the MRS.	5	–
Former CA or CWM Production Facilities	• The MRS is a facility that formerly engaged in production of CA or CWM, and CWM/DMM is suspected of being present on the surface or in the subsurface.	3	–
Former Research, Development, Testing, and Evaluation (RDT&E) facility using CWM	• The MRS is at a facility that formerly was involved in non-live-fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface.	3	–
Former Training Facility using CWM or CAIS	• The MRS is a location that formerly was involved in training activities involving CWM and/or CAIS (e.g., training in recognition of CWA, decontamination training), and CWM/DMM or CAIS/DMM are suspected of being present on the surface or in the subsurface.	2	–
Former Storage or Transfer points of CWM	• The MRS is a former storage facility or transfer point (e.g., intermodal transfer) for CWM.	1	–
Evidence of no CWM	• Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0

Table 12 Classifications Within the CHE Module *Sources of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
CHE Sources of CWM Score (Maximum 10)		0	

Notes:

- The term *CWM /UXO* means CWM that are UXO.
- The notation *CWM/DMM* means CWM that are DMM, to include CAIS K941, toxic gas set M-1; and K942, toxic gas set M-2/E11.
- The term CAIS/DMM means CAIS, other than CAIS K941 and K942.
- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Sources of CWM Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Confirmed surface	• Physical evidence indicates that there are CWM on the surface of the MRS. • Historical evidence (e.g., a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS.	25	–
Confirmed subsurface, active	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose CWM.	20	–
Confirmed subsurface, stable	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause CWM to be exposed.	15	–
Suspected (physical evidence)	• There is physical evidence, other than the documented presence of CWM, indicating that CWM may be present at the MRS.	10	–
Suspected (historical evidence)	• There is historical evidence indicating that CWM may be present at the MRS.	5	–
Subsurface, physical constraint	• There is physical or historical evidence indicating that CWM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the CWM.	2	–
Evidence of no CWM	• Following investigation of the MRS, there is physical evidence that there is no CWM present or there is historical evidence indicating that no CWM are present.	0	0
CHE Information on the Location of CWM Score (Maximum 25)		0	

Table 13 Classifications Within the CHE Module *Information on the Location of CWM* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**

Notes:

- *Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- *Physical evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- *In the subsurface* means the CWM (i.e., a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
- *On the surface* means the CWM (i.e., a DMM or UXO) is (1) entirely or partially exposed above the ground surface (i.e., above the soil layer), or (2) entirely or partially exposed above the surface of a water body (e.g., as a result of tidal activity).

What evidence do you have regarding the CHE Information on the Location of CWM Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 14 Classifications Within the CHE Module *Ease of Access* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
No barrier	• There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10	–
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	–
Barrier to MRS access is complete, but not monitored	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	–
Barrier to MRS access is complete and monitored	• There is a barrier preventing access to all parts of the MRS, and there is active continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	–
CHE Ease of Access Score (Maximum 10)		N/A	
Notes: • *Barrier* means a natural obstacle or obstacles (e.g., difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (e.g., fencing), or a combination of natural and man-made obstacles.			

What evidence do you have regarding the CHE Ease of Access Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 15 Classifications Within the CHE Module *Status of Property* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the Department. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	–
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department, and the Department plans to transfer that land or water body to control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	–
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the Department. With respect to property that is leased or otherwise possessed, the Department controls access to the property 24 hours per day, every day of the calendar year.	0	–
CHE Status of Property Score (Maximum 5)		N/A	

What evidence do you have regarding the CHE Status of Property Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 16 Classifications Within the CHE Module *Population Density* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Definition**	**Score**	**Site Score**
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5	–
100 to 500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3	–
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1	–
CHE Population Density Score (Maximum 5)		N/A	
Notes: • If an MRS is in more than one county, the Component will use the largest population value among those counties. If the MRS is within or borders a city or town, the population density for that city or town, instead of the county population density, is used.			

What evidence do you have regarding the CHE Population Density Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 17 Classifications Within the CHE Module *Population Near Hazard* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	–
16 to 25	• There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	–
11 to 15	• There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	–
6 to 10	• There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	–
1 to 5	• There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	–
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	–
CHE Population Near Hazard Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than military munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Population Near Hazard Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 18 Classifications Within the CHE Module *Types of Activities/Structures* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Residential, educational, commercial, or subsistence	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	–
Parks and recreational areas	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	–
Agricultural, forestry	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	–
Industrial or warehousing	• Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary, or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	–
No known or recurring activities	• There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	–
CHE Types of Activities/Structures Score (Maximum 5)		N/A	

Notes:

- The term *inhabited structures* means permanent or temporary structures, other than Department-related structures, that are routinely occupied by one or more persons for any portion of a day.

What evidence do you have regarding the CHE Types of Activities/Structures Score?
There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 19 Classifications Within the CHE Module *Ecological and/or Cultural Resources* Data Element (These definitions only apply for the purposes of the MRSPP)			
Classification	**Description**	**Score**	**Site Score**
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS.	5	–
Ecological resources present	• There are ecological resources present on the MRS.	3	–
Cultural resources present	• There are cultural resources present on the MRS.	3	–
No ecological or cultural resources present	• There are no ecological resources or cultural resources present on the MRS.	0	–
CHE Ecological and/or Cultural Resources Score (Maximum 5)		N/A	

Notes:

- *Ecological resources* means that: (1) a threatened or endangered species (designated under the Endangered Species Act [ESA]) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.
- *Cultural resources* means there are recognized cultural, spiritual, traditional, religious, or historical features (e.g., structures, artifacts, symbolism) on the MRS. Requirements for determining if a particular feature is a cultural resource are found in *the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007,* and *the American Indian Religious Freedom Act*. As examples: American Indians or Alaska Natives deem an MRS to be of spiritual significance; there are areas used by American Indians or Alaska Natives for subsistence activities (e.g., hunting, fishing).

What evidence do you have regarding the CHE Ecological and/or Cultural Resources Score?

There is no known or suspected use or storage of CWM at Fort Monmouth; therefore, CWM is not anticipated at the Former Skeet Range.

Table 20 Determining the CHE Rating from the CHE Module Score (These definitions only apply for the purposes of the MRSPP)			
Factor	**Data Element**	**Table**	**Site Score**
CWM Hazard	CWM Configuration	11	0
	Sources of CWM	12	0
Accessibility	Information on the Location of CWM	13	0
	Ease of Access	14	N/A
	Status of Property	15	N/A
Receptors	Population Density	16	N/A
	Population Near Hazard	17	N/A
	Types of Activities/Sturctures	18	N/A
	Ecological and/or Cultural Resources	19	N/A
CHE Module Score (Sum of Data Element Site Scores from Tables 11-19)			N/A
The CHE Rating is determined by selecting the appropriate CHE Module Score range using the sum of the nine data element site scores: CHE Module Score — CHE Rating 92 to 100 — CHE Rating A (Highest) 82 to 91 — CHE Rating B 71 to 81 — CHE Rating C 60 to 70 — CHE Rating D 48 to 59 — CHE Rating E 38 to 47 — CHE Rating F 0 to 37 — CHE Rating G (Lowest) Alternative Module Ratings Evaluation Pending No Longer Required No Known or Suspected CWM Hazard			
CHE Rating			No Known or Suspected CWM Hazard

Table 21 Health Hazard Evaluation (HHE) Module Factor Levels (These definitions only apply for the purposes of the MRSPP)					
Contaminant Hazard Factor		**Receptor Factor**		**Migration Pathway Factor**	
Significant	**High (H)**	**Identified**	**High (H)**	**Evident**	**High (H)**
Moderate	**Middle (M)**	**Potential**	**Middle (M)**	**Potential**	**Middle (M)**
Minimal	**Low (L)**	**Limited**	**Low (L)**	**Confined**	**Low (L)**
Site HHE Factor Levels					
N/A		N/A		N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 22 HHE Three-letter Combination Levels (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	HHH	HHM	HHL
	Potential	HHM	HMM	HML
	Limited	HHL	HML	HLL
Moderate	**Identified**	HHM	HMM	HML
	Potential	HMM	MMM	MML
	Limited	HML	MML	MLL
Minimal	**Identified**	HHL	HML	HLL
	Potential	HML	MML	MLL
	Limited	HLL	MLL	LLL
Site HHE Three-letter Combination Level		N/A		

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 23 HHE Module Ratings (These definitions only apply for the purposes of the MRSPP)	
Combination	**Rating**
HHH	A
HHM	B
HHL	C
HMM	
HML	D
MMM	
HLL	E
MML	
MLL	F
LLL	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

Table 24 HHE Module Rating (These definitions only apply for the purposes of the MRSPP)				
Contaminant Hazard Factor	**Receptor Factor**	**Migration Pathway Factor**		
		Evident	**Potential**	**Confined**
Significant	**Identified**	A	B	C
	Potential	B	C	D
	Limited	C	D	E
Moderate	**Identified**	B	C	D
	Potential	C	D	E
	Limited	D	E	F
Minimal	**Identified**	C	D	E
	Potential	D	E	F
	Limited	E	F	G
HHE Module Rating			N/A	

There were no risk assessment activities conducted during this HRR; therefore, no HHE scores will be determined.

TABLE 25 MRS Priority Based on Highest Hazard Evaluation Module Rating (These definitions only apply for the purposes of the MRSPP)					
		CHE Module Rating	Priority		
EHE Module Rating	Priority	Hazard Evaluation A (Highest)	1	HHE Module Rating	Priority
Hazard Evaluation A (Highest)	2	Hazard Evaluation B	2	Hazard Evaluation A (Highest)	2
Hazard Evaluation B	3	Hazard Evaluation C	3	Hazard Evaluation B	3
Hazard Evaluation C	4	Hazard Evaluation D	4	Hazard Evaluation C	4
Hazard Evaluation D	5	Hazard Evaluation E	5	Hazard Evaluation D	5
Hazard Evaluation E	6	Hazard Evaluation F	6	Hazard Evaluation E	6
Hazard Evaluation F	7	Hazard Evaluation G (Lowest)	7	Hazard Evaluation F	7
Hazard Evaluation G (Lowest)	8			Hazard Evaluation G (Lowest)	8
Evaluation Pending		Evaluation Pending		No Longer Required	
No Longer Required		No Longer Required		Evaluation Pending	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	
Hazard Evaluation Module Rating					
G		No Known or Suspected CWM Hazard		Evaluation Pending	
MRS Priority			8		

Appendix B: Archive Records Searched/Data Sources

ARCHIVE RESOURCES AND DATA SOURCES

The archival data and additional data sources reviewed for this HRR to date are presented by RG and source below, where applicable. Items followed by an asterisk (*) are items that provided useful information and are provided in Appendix C. (Note: Only archival documents and relevant maps obtained during the site visit will be provided in Appendix C).

National Archives and Records Administration at College Park, Maryland

RG 18, Army Air Forces

Box 1052

1. Correspondence, Subject: Landing Field Fort Monmouth. To: The Adjutant General (Through Chief of Air Corps). August 12, 1940.

RG 51, Bureau of Budget

Box 119

1. Map. Post Plan, Cantonment Camp and Replacement Center Fort Monmouth, NJ. December 31, 1941.*
2. Map. Cantonment Camp and Replacement Center Fort Monmouth, NJ. Plot Plan Showing Utilities Group and Units, C&D - Replacement Center. November 20, 1940.*

RG 57, United States Geological Service

Box Unknown

1. Map. United States Department of the Interior Geological Survey. Long Brand Quadrangle – New Jersey, Monmouth Co. 1981 (original 1954 and photorevised in 1981).*

RG 77, Chief of Engineers

Box 160

1. Aerial. Fort Monmouth near Long Branch, NJ. 1927-1928

Box 221

1. Photo. Signal Corps Laboratory Fort Monmouth, NJ. 1935
2. Report. Completion Report of a Street Lighting System and Primary Duct Feed Line at Fort Monmouth, NJ. July 1933.
3. Report. Description of Completed Work. May 1934.

Box 273

1. Correspondence. Project Directives. November 1944.

Box Unknown

1. Aerial. War Department Corps of Engineers – U.S. Army, Special Military Map, New Jersey Fort Monmouth and Vicinity – Grid Zone “A”. 1936.
2. Aerial. War Department Corps of Engineers – U.S. Army, Special Military Map, New Jersey Fort Monmouth and Vicinity – Grid Zone “A”. 1939.

3. Map. The Signal School – U.S. Army, Special Military Map, New Jersey Camp Alfred Vail and Vicinity – 889.977. 1924.

RG 92, Quartermaster General

Box 123

1. Report. War Department General Staff Research and Development Division Control. War Department Installations and Facilities Used for Research and Development (By Technical Service). July 1, 1947.

Box 359

1. Map. Fort Monmouth, New Jersey Post Plan. May 1935.*

Box 1398

1. Correspondence, Subject: Index Sheet Synopsis. To: The Adjutant General of the Army. January 11, 1923.*

Box 1399

1. Map. Fort Monmouth, NJ. Undated.

Box 1405

1. Map. Proposed Post Hospital at Fort Monmouth, NJ (Second Floor Plan). April 1927.
2. Map. Topographic Map Showing Area to be Occupied by the Proposed School, Laboratory, Hospital, Chapel, Administration Fire and Guard House (Fort Monmouth, NJ). May 17, 1927.

Box 1406

1. Map. Fort Monmouth, NJ Proposed Layout of Sludge Drying Bed. May 1, 1931.

Box 1407

1. Map. Topographic Map. June 30, 1927.*

Box 2238

1. Map. Camp Alfred Vail, New Jersey. Undated.*

RG 111, Signal Corps

Box 13

1. Aerial. Aerial view of 1200 area and Myer Hall Fort Monmouth, New Jersey. 1956.

Box 14

1. Report. Fort Monmouth Vertical Statement of Analysis. April 2, 1957.*

Box 16

1. Report. Education and Training POR and Arms Qualification. September 18, 1963.*

Box 297

1. Report. Signal Corps Center and Fort Monmouth Program Document, Program NR 10A, Administrative Services, FY 1956. 1956.*

Box 378

1. Photograph. Alterations to Indoor Firing Range Building, Camp Charles Wood Area. July 3, 1956.*

Box 414

1. Aerial. Aerial View Looking N.E. 600 ft. alt. of 900 area and Aerial View Looking North from 800 ft. alt. Bldgs. 1206, 1207, 1208, 1209, 1210 Administration and Signal School Area, Fort Monmouth, N.J. September 12, 1966.

Box 881

1. Correspondence, Subject: Training Inspection, Officer Candidate School, Fort Monmouth, New Jersey. November 26, 1942.*
2. Correspondence, Subject: Training Inspection of the Signal Replacement Training Center, Fort Monmouth, New Jersey. March 8, 1943.*
3. Correspondence, Subject: Report on Temporary Duty at Eastern Signal Corps Unit Training Center. February 18, 1944.*
4. Correspondence, Subject: Inspection of the Eastern Signal Corps Unit Training Center, Fort Monmouth, New Jersey. November 27, 1945.*

Box 997

1. Correspondence, Subject: Increase of Signal Corps School and Officers Candidate School, Fort Monmouth, N.J. December 18, 1941.*

Box 998

1. Correspondence, To: Commanding Officer, Signal Corps Replacement Training Center, Post. July 14, 1942.*
2. Correspondence, Subject: Inspection of Signal Corps Replacement Training Center, Fort Monmouth, New Jersey. October 5, 1942.*
3. Correspondence, To: Commanding General, Eastern Signal Corps Training Center, Fort Monmouth, New Jersey. March 16, 1943.*
4. Correspondence, Subject: Overseas Processing Centers for Absentees. July 8, 1943.*

Box 999

1. Correspondence, Subject: Training Equipment for Eastern Signal Corps Training Center, Fort Monmouth, New Jersey. March 18, 1944.*
2. Correspondence, To: Military Training Br. December 20, 1945.*

Box 1073

1. Correspondence. The Commandant, The Signal Corps School, Fort Monmouth Red Bank New Jersey. March 3, 1942.*
2. Correspondence, For: Commanding General, Services of Supply, Attention: Operations Branch. April 14, 1942.*
3. Correspondence, Subject: Inspection of Signal Corps Replacement Training Center, Fort Monmouth, New Jersey. July 3, 1942.*

4. Correspondence. Commandant General, Signal Corps Replacement Training Center, Fort Monmouth, Red Back, New Jersey. August 20, 1942.
5. Correspondence. Commandant General, Signal Corps Replacement Training Center. August 27, 1942.*
6. Correspondence, Subject: Revised Estimate of Ammunition Requirements. November 17, 1942.*
7. Report. Necessity for Increase in SCRTC Fort Monmouth in Order to Operate Efficiently the New Jersey State Encampment at Sea Girt. January 1942.

Box 1074

1. Correspondence, Subject: Gas Chamber Exercise. June 26, 1943.*
2. Correspondence. Personnel and Training Services Military Training Brach Operations. November 10, 1943.*

Box 1703

1. Map. Cantonment Camp and Replacement Center Fort Monmouth, N.J. Proposed Layout of Signal Corps Replacement Training Center, Eatontown Area. January 13, 1941.*

Box 1871

1. Correspondence. War Department OCSigO, Washington, June 12, 1942. To: Signal Property Officer, signal Corps Replacement Training Center, Fort Monmouth, New Jersey. June 4, 1942.*

Box 2007

1. Correspondence, Subject: Change Order "D" to Contract No. W 1649-qm-118. June 20, 1940.
2. Correspondence. War Department OCSigO, Washington, October 29, 1940. To: The Commandant, The Signal Corps School, Fort Monmouth, Red Bank, New Jersey. October 23, 1940.
3. Correspondence. Motor Repair Shops for Fort Monmouth, N.J. December 3, 1940.
4. Correspondence. WD, OCSigO Washington, December 6, 1940 – The Assistant Chief of Staff, G-4. December 3, 1940.
5. Correspondence, Subject: Buildings and Grounds. January 2, 1941.*
6. Correspondence, Subject: Construction of Expansion Unit, Cantonment Hospital. February 25, 1941.
7. Report. Proceedings of Board of Officers convened at Fort Monmouth, N.J., pursuant to the following orders: Headquarters Fort Monmouth, Red Bank, New Jersey. March 31, 1941.
8. Correspondence. Laboratory Building Program. May 12, 1941.
9. Correspondence, Subject: Additional Buildings Required, Post Utilities, Fort Monmouth, New Jersey. July 15, 1942.
10. Correspondence, Subject: Progress Report Giblon Farm Area. July 21, 1942.

11. Correspondence, Subject: Additional Construction SCGDL, Fort Monmouth, N.J. September 4, 1942.
12. Correspondence. Telephone Conversation. September 23, 1942.

Box 2008

1. Report. Report of a Board of Officers Convened for the Purpose of Preparing Estimates of the Cost of Expanding Facilities at Fort Monmouth, New Jersey. August 13, 1940.*

Box 2015

1. Correspondence. WD, OQMG, Washington, August 18, 1938. To the AG. August 1938.*
2. Map. Antenna Shelter for SCR-258. February 4, 1941.

RG 112, Surgeon General (New Jersey)

Unknown Box

1. Map. Hospital First Floor Plan. December 13, 1917.

RG 156, Chief of Ordnance

Box 6

1. Correspondence, Subject: Report of Inspection of Fort Monmouth. February 7, 1936.*
2. Correspondence, Subject: Annual Inspection of Fort Monmouth, NJ (FY1938). June 23, 1938.*

Box I-336

1. Correspondence, Subject: Fuze, Bomb, Nose, VT, T51E1 Arming Vanes. January 6, 1945.
2. Correspondence. U.S. Department of Commerce National Bureau of Standards Washington. June 16, 1945.
3. Correspondence. Chief Ordnance Development Division National Bureau of Standards, RE: VT Bomb Fuzes. July 10, 1945.
4. Correspondence, Subject: Chaff Dispensing Mortar Shells. July 18, 1945.
5. Correspondence, Subject: Requisition OED-44-AN-451. July 24, 1945.
6. Correspondence, Subject: Arming Vane Lock for M165 VT Bomb Fuze. July 26, 1945.

Box 1133

1. Correspondence, To: Chief of Ordnance U.S.A, Washington, D.C. September 11, 1925.*

Box 1137

1. Correspondence, Subject: Inspection of Small Arms Material on Hand at Fort Monmouth, NJ. January 19, 1926.*

RG 159, Office of Inspector General

Box 186

1. Correspondence, Subject: Special Inspection of Activities of the Constructing Quartermaster, Fort Monmouth, New Jersey. August 18, 1941.
2. Correspondence. Memorandum for the Quartermaster General. September 8, 1941.
3. Correspondence. Memorandum to The Inspector General through the Quartermaster General. September 24, 1941.*

RG 168, National Guard Bureau

Box 598

1. Report. Report of the Adjutant General of New Jersey 1930. 1930.

RG 291, Federal Property Resources Service

Box 31

1. Map. New Jersey State Highway Department. General Property Parcel Map, Route 35 Freeway Section 1. April 1961.
2. Report. Validation Estimate of Coast Guard Station, Ocean Avenue at Seacrest Road, Monmouth Beach, Monmouth County, New Jersey. August 11, 1965.
3. Report. Appraisal of Fort Monmouth, Evans Area (Portion), Fort Monmouth, New Jersey (cover letter). March 6, 1967.

Box 184

1. Report. Headquarters, 317 Signal Construction Battalion, 641 Washington Street, New York 14, N.Y. Master Training Schedule, Active Duty Tour – Tour – Fort Monmouth, N.J. – 6 August – 20 August 1950. 1950.*
2. Report. Fort Monmouth Training Area, Middletown Township, Monmouth County, New Jersey. Report on Application by The Township of Middletown, County of Monmouth, State of New Jersey for Transfer of Surplus Federal Property for Park and Recreation Area Use. October 1961.*

RG 337, Headquarters Army Ground Forces

Box 17

1. Report. Headquarters Fort Monmouth, New Jersey, Program of Instruction for Signal Corps 1949 ROTC Summer Camp, 20 June 1949 to 31 July 1949. April 4, 1949.*
2. Correspondence. Headquarters 317th Signal Heavy Construction Battalion, 641 Washington Street, New York 14, N.Y. Maps: Sketch of Battalion Mission – Training Schedule. August 1, 1950.*
3. Report. Headquarters 997th Signal Service CO (RI) (ARMY) & 998th Signal Service CO (RI) (CORPS), Kearny Navy Yard,

Kearny, New Jersey. Summer Training Schedule, Activity Duty Tour – Fort Monmouth, N.J. – 14 August – 28 August 1949. August 1949.*

Box 125

1. Correspondence. Visit to ROTC Camp at Fort Monmouth, New Jersey. July 28, 1947.*

RG 338, U.S. Army Commands

Box 2

1. Correspondence, Subject: Report of Availability, Leasing of Government-Owned Property to the Fort Monmouth Federal Credit Union. January 24, 1974.*
2. Correspondence, Subject: Proposed Use of the Coles Area Antenna Tower by the Middletown Police Department. May 8, 1974.
3. Map. Post Layout and Reservation Map, Fort Monmouth. December 31, 1972.*

RG 357, Army Ground Forces

Box 17

1. Correspondence. Headquarters 317th Signal Heavy Construction Battalion, 641 Washington Street, New York 14, N.Y. Master Training Schedule, Active Duty Tour – Tour Fort Monmouth, N.J. – 6 August – 20 August 1950. August 20, 1950.*

RG 394, U.S. Army Continental Commands

Box 1

1. Correspondence. Headquarters Fort Monmouth Ocean Port, N.J. General Order #11, this headquarters, June 22, 1926, is rescinded and the following substituted therefore. May 20, 1927.*
2. Correspondence. Headquarters Fort Monmouth Ocean Port, N.J. General Orders No. 25 (Fire Order), dated July 24, 1933, this headquarters is changed as follows. May 8, 1934.
3. Correspondence. Headquarters Fort Monmouth Ocean Port, N.J. General Order #21. June 19, 1934.*
4. Report. Regulations The Signal Corps School Fort Monmouth, N.J. September 10, 1938.*

RG 407, Adjutant General

Box 850

1. Report. Department of the Army Washington 25, D.C., February 1956. Headquarters, The Signal School. February 1956.*

RG 429, Executive Office of the President, Property Review Board

Box 36

1. Report. EO Survey Report Fort Monmouth, New Jersey, 18 June 1984. June 18, 1984.*

RG 429, Federal Property Council, Central Real Estate Property Services

Box 42

1. Map. Post Layout and Reservation Map, Charles Wood Area, Fort Monmouth, N.J. June 21, 1960.*
2. Map. Post Layout and Reservation Map, Fort Monmouth. April 24, 1961.*
3. Map. Fort Monmouth – Evans Area, Post Layout and Reservation Map. March 1, 1967.
4. Map. Fort Monmouth – Oakhurst Station, General Site Map. January 10, 1968.
5. Map. Fort Monmouth – Deal Test Area, General Site Map. January 10, 1968.
6. Map. Fort Monmouth – Red Hills Site, General Site Map. January 10, 1968.
7. Map. Post Layout and Reservation Map, Coles Area, Fort Monmouth, N.J. March 7, 1968.

RG 544, Army Material Command

Box 2

1. Report. Concept of Study for the Establishment of The Harry Diamond Development Center – An AMC Electronic Development Center. May 27, 1975.*

Box 3

1. Report. U.S. Army Electronics Command Fort Monmouth, New Jersey. Analytical report. July 1974.* *This document is a For Official Use Only Document (FOUO) and will NOT be included in Appendix C.*

Box 6

1. Map. Post Layout and Reservation Map – Charles Wood Area, Fort Monmouth, N.J. June 21, 1960.*
2. Map. Fort Monmouth – Evans Area, Post Layout and Reservation Map. March 1, 1967.
3. Report. Harry Diamond Development Center Draft Environmental Impact Statement (Preliminary). October 1975.*
4. Report. Department of the Army US Army Electronics Command, Installation Environmental Impact Assessment Fort Monmouth, New Jersey. December 24, 1975.*

RG Unknown

Box Unknown

1. Aerial. War Department, Corps of Engineers, U.S. Army. Fort Monmouth No. 1. 1943.

2. Aerial. War Department, Corps of Engineers, U.S. Army. Fort Monmouth No. 2. 1943.
3. Aerial. War Department, Corps of Engineers, U.S. Army. Fort Monmouth No. 3. 1943.
4. Aerial. War Department, Corps of Engineers, U.S. Army. Fort Monmouth No. 4. 1943.
5. Aerial. Aerial View of Greely Field Parade Ground Before Beautification Program and Hospital Area (500). October 23, 1957.
6. Correspondence, Subject: Hospital. March 19, 1928.
7. Correspondence. WD, SOS, OCSigO, Washington, October 28, 1942. To: Chief of Engineers. September 4, 1942.
8. Correspondence. Disposal No. 2PRD-324 Fort Monmouth Training Area, Installation No. 3603 Fort Monmouth, Middletown Township County of Monmouth, New Jersey D-NJ-470. December 7, 1960.*
9. Map. Topographic Map. June 30, 1927.*
10. Map. Station Hospital Fort Monmouth, N.J. Undated.
11. Photograph. Signal Corps Laboratory, Fort Monmouth, N.J. Undated.
12. Correspondence. Department of the Army, Submitted by Office, Chief of Engineers, Real Estate Disposal Project No. 160, 28 April 1960. April 28, 1960.*
13. Report. Phase I Common Subjects, Annex II, 24 Hours. Undated.

Directorate of Public Works, Environmental Natural Resources Division, Fort Monmouth, New Jersey

Reports:

1. U.S. Army Electronic Command Fort Monmouth, New Jersey: Analysis of Existing Facilities. December 16, 1968.*
2. Installation Environmental Impact Assessment (EIA), Fort Monmouth, New Jersey. March 1, 1976.*
3. Installation Assessment of Fort Monmouth Report No. 171. U.S. Army Toxic and Hazardous Materials Agency. May 1980.*
4. Final Analytical/Environmental Assessment Report on Plans for Future Development, Fort Monmouth, New Jersey. May 1987.*
5. Update of the Initial Installation Assessment of Fort Monmouth and Subinstallations: Charles Wood Area and Evans Area. U.S. Army Toxic and Hazardous Materials Agency. June 1988.*
6. Final Investigation of Suspected Hazardous Waste Site Fort Monmouth, New Jersey. Weston. December 1993.*
7. Final Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas. Weston. December 1995.*
8. Final Integrated Natural Resources Management Plan Fort Monmouth, New Jersey. U.S. Army Corps of Engineers, Mobile District. December 1999.*

9. Integrated Cultural Resources Management Plan, Fort Monmouth, New Jersey. October 2003.*
10. Final Remedial Investigation Report M-18 Landfill Site. Versar. October 1, 2003.*
11. Final Remedial Investigation Report and Sediment Quality Evaluation M-18 Landfill Site. Versar. February 23, 2004.*
12. Final Remedial Investigation Report for Near Surface Soils M-18 Landfill Site. Versar. March 17, 2004.*
13. Fort Monmouth Installation Action Plan. 2004.*
14. Classification Exception Area Information for Various Sites, M-12 Landfill Site, M-18 Landfill Site, Site 80/166, Site 108, Site 283, Site 812, Site 1122 and Site 2567, Fort Monmouth, New Jersey. Versar. July 12, 2004.*
15. A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey. July 2005.*
16. FY2006, Fort Monmouth New Jersey Installation Action Plan. Printed August 2005.*
17. Final Remedial Action Report Site CW-4. Versar. September 9, 2005.*

Maps:

1. Construction Division. Office of the Constructing Quartermaster. For Monmouth, N.J. Topographic Map with Post Utilities. February 1, 1935.*
2. Office of the Post Engineer. Fort Monmouth. Post Plan Fort Monmouth, N.J. December 3, 1941.*
3. Office of the Post Engineer, Fort Monmouth, N.J. Post Layout & Reservation Map Camp Charles Wood. June 30, 1944.*
4. Office of the Post Engineer, Fort Monmouth. Water Distribution System. June 30, 1944.*
5. Fort Monmouth, N.J. Map A-1 June 1950. June 1950.*
6. Fort Monmouth Additional Facilities (FY1952) Part 1. Site Location Plan. Fort Monmouth, New Jersey. March 13, 1952.*
7. Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth. April 19, 1962.*
8. Office of the Facilities Engineer Fort Monmouth. Post Layout & Reservation Map Fort Monmouth. December 13, 1972.*
9. Office of the Facilities Engineer Fort Monmouth, New Jersey. Demolition & Removal of Buildings. Site Plan. Main Post Area. Fort Monmouth New Jersey. June 4, 1980.*
10. Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan. November 1, 1985.*
11. Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan. November 1, 1985.*
12. Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Map. November 1, 1985.*
13. Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Plan. November 1, 1985.*

AEC Technical Information Center (TIC), Aberdeen Proving Ground, Maryland

Reports:

1. Installation Assessment Relook Program, Working Document, Fort Monmouth Complex Long Branch, New Jersey. The Bionetics Corporation. September 1985.*
2. Soil Survey of Monmouth County, New Jersey. U.S. Department of Agriculture, Soil and Conservation Service. April 1989.*
3. Final Environmental Impact Statement, Ft. Huachuca, Ft. Devens, Ft. Monmouth Base Realignment. May 1990.*
4. Aerial Photographic Site Analysis, Evans Area, Charles Wood Area, Fort Monmouth, New Jersey. December 1993.*
5. Final Enhanced Preliminary Assessment Report, A Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. The Earth Technology Corporation. January 1994.*
6. Version 2 Base Realignment and Closure (BRAC) Cleanup Plan, A Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. Earth Tech. March 1995.*
7. Collection Summary for Fort Monmouth, New Jersey. U.S. Army Corps of Engineers, St. Louis District. December 1995.*
8. Threatened and Endangered Species Survey Report for the Evans Area, Fort Monmouth, New Jersey. Earth Tech. January 1996.*
9. Final Site Inspection Report for a Portion of the Charles Wood Area and the Entire Evans Area, Fort Monmouth, New Jersey. Earth Tech. April 1996.*

Army Environmental Center (AEC), Aberdeen Proving Ground, Maryland

Reports:

1. U.S. Army Active/Inactive Range Inventory Fort Monmouth, New Jersey. July 25, 2002.*
2. Final After Action Report Environmental Planning Workshop, Ft. Monmouth, NJ. June 30, 2005.*
3. BRAC 2005 Army Recommendation, Fort Monmouth, NJ. 2005.
4. U.S. Army BRAC 2005 DRAFT – Environmental Condition Property Report, Fort Monmouth, New Jersey. August 26, 2005.*

Environmental Data Resources, Inc.

Reports:

1. EDR Data Map Study Area Fort Monmouth, Fort Monmouth New Jersey 07703. Environmental Data Resources, Inc. September 29, 2005.

Malcolm Pirnie, Inc., Baltimore, Maryland

Reports:

1. Final U.S. Army Closed, Transferring and Transferred Range/Site Inventory for Fort Monmouth, New Jersey. Malcolm Pirnie, Inc. September 19, 2003.*
2. Characterization and Remediation of Soils at Closed Small Arms Firing Ranges. ITRC Guidance. January 2003.*

Appendix C: Relevant Archival Documents

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM002	30-Jun-44	Office of the Post Engineer. Fort Monmouth. Water Distribution System.	Installation	X			Comm Training 1, Commo Training 2, Commo Training 3, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, and Prep School Training Area.
FTMM003	13-Mar-52	Fort Monmouth Additional Facilities (FY1952) Part 1. Site Location Plan. Fort Monmouth, New Jersey.	Installation	X			Comm Training 1, Commo Training 2, Commo Training 3, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM004	21-Jun-60	Office of the Facilities Engineer Fort Monmouth, N.J. Post Layout & Reservation Map. Charles Wood Area. Fort Monmouth, N.J.	National Archives	X			Area 1, Area 2, Bivouac, Fire Training Center, Helipad 2, and Former Indoor Small Arms Range.
FTMM005	19-Apr-62	Office of the Post Engineer Fort Monmouth. Road Jurisdiction Map Fort Monmouth.	Installation	X			Comm Training 1, Commo Training 2, Commo Training 3, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Training Area (Former M-18 Landfill).
FTMM006	13-Dec-72	Office of the Facilities Engineer Fort Monmouth. Post Layout & Reservation Map Fort Monmouth.	Installation	X			Comm Training 1, Commo Training 2, Commo Training 3, EOD Area, Greely Parade Field, Helipad 1, K-9 Training Area, and Meddac Training Area.

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM007	4-Jun-80	Office of the Facilities Engineer Fort Monmouth, New Jersey. Demolition & Removal of Buildings. Site Plan. Main Post Area. Fort Monmouth New Jersey.	Installation	X			Cowan Park
FTMM008	1-Nov-85	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X			Commo Training 1, Commo Training 2, Commo Training 3, Cowan Park, EOD Area, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range),and Former Training Area (Former M-18 Landfill).
FTMM009	1-Nov-85	Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. General Site Plan.	Installation	X			Area 1, Area 2, Bivouac, Fire Training Center, and Helipad 2.
FTMM010	1-Nov-85	Fort Monmouth Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Map.	Installation	X			Comm Training 1, Commo Training 2, Commo Training 3, Cowan Park, EOD Area, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, Prep School Training Area, Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM011	1-Nov-85	Fort Monmouth – Charles Wood Area Red Bank, New Jersey. Master Plan. Future Development Plans. Reservation Plan.	Installation	X			Area 1, Area 2, Bivouac, Fire Training Center, and Helipad 2.
FTMM012	26-Aug-05	U.S. Army BRAC 2005 DRAFT-Environmental Condition of Property Report Fort Monmouth, New Jersey.	USAEC	X			Area 1, Area 2, Bivouac, Commo Training 1, Commo Training 2, Commo Training 3, Cowan Park, EOD Area, Fire Training Center, Greely Parade Field, Helipad 1, K-9 Training Area, Meddac Training Area, Prep School Training Area, Former Pistol Range (1935-1940 Pistol Range), and Former Outdoor Firing Range (1940-1955 Pistol Range).
FTMM013	11-Sep-25	Correspondence. The Itinerary for the Small Arms Inspector.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM014	19-Jan-26	Correspondence. Inspection of Small Arms Material On Hand At Fort Monmouth.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), Former Magazine Area, and Former Skeet Range.
FTMM015	1-Feb-35	Construction Division. Office of the Constructing Quartermaster. Fort Monmouth, N.J. Topographic Map with Post Utilities.	Installation	X	X	X	Former Pistol Range (1935-1940 Pistol Range) and Former Outdoor Firing Range (1940-1955 Pistol Range).

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM016	Aug-38	Correspondence. Construction of Signal Corps Photographic Laboratory at Fort Monmouth, N.J.	National Archives	X		X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM017	3-Dec-41	Office of the Post Engineer. Fort Monmouth. Post Plan Fort Monmouth, N.J.	Installation	X		X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), Former Magazine Area, and Former Skeet Range.
FTMM018	18-Dec-41	Increase of Signal Corps School and Officers Candidate School.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM019	3-Mar-42	Correspondence. Subject: Rifles.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM020	4-Jun-42	Correspondence. Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM021	27-Aug-42	Correspondence. Subject: .30 Caliber Rifles.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM022	17-Nov-42	Revised Estimate of Ammunitions Requirements.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM023	18-Mar-44	Training Equipment for Easter Signal Corps Unit Training Center, Fort Monmouth, New Jersey.	National Archives			X	Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM024	Jun-50	Fort Monmouth, N.J. Map a-1 June 1950.	Installation	X		X	Former Outdoor Firing Range (1940-1955 Pistol Range) and Former Skeet Range.
FTMM025	Dec-93	Final Investigation of Suspected Hazardous Waste Site Fort Monmouth, New Jersey.	Installation	X	X		Former Outdoor Firing Range (1940-1955 Pistol Range)
FTMM026	Dec-95	Final Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas.	Installation	X	X		Former Pistol Range (1935-1940 Pistol Range)
FTMM027	Sep-03	Final U.S. Army Closed, Transferring and Transferred Range/Site Inventory for Fort Monmouth, NJ.	Malcolm Pirnie	X	X	X	Former Outdoor Firing Range (1940-1955 Pistol Range)
FTMM028	Jul-04	Fort Monmouth 2004 Installation Action.	Installation	X	X	X	Former Outdoor Firing Range (1940-1955 Pistol Range) and Former Training Area (Former M-18 Landfill).
FTMM029	23-Jun-38	Annual Inspection of Fort Monmouth, N.J., FY1938.	National Archives			X	Former Magazine Area
FTMM030	7-Feb-36	Report of Inspection at Fort Monmouth.	National Archives			X	Former Magazine Area

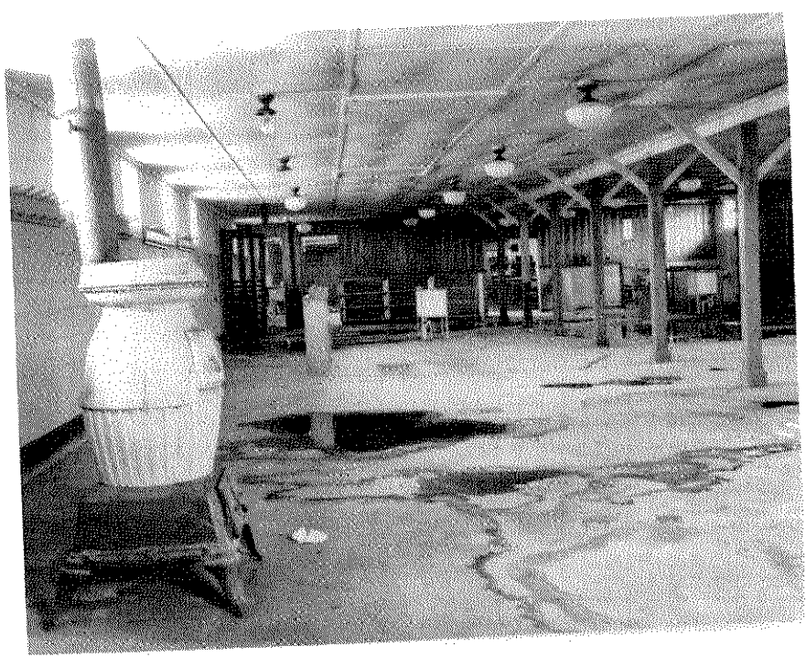
Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM031	3-Jul-56	Alterations to Indoor Firing Range Building.	National Archives	X			Former Indoor Small Arms Range
FTMM032	May-87	Analytical Environmental Assessment Report on Plans for Future Development	Installation	X	X	X	Former Magazine Area
FTMM033	Jan-03	Characterization and Remediation of Soils at Closed Small Arms Firing Ranges.	ITRC Guidance			X	Former Skeet Range, Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM034	Oct-03	Final Remedial Investigation Report M-18 Landfill Site	Installation	X	X	X	Former Training Area (Former M-18 Landfill)
FTMM035	Aug-05	FY2006 Fort Monmouth New Jersey Installation Action Plan	Installation	X	X	X	Former Indoor Small Arms Range and Former Training Area (Former M-18 Landfill).
FTMM036	Dec-68	U.S. Army Electronic Command Fort Monmouth, New Jersey: Analysis of Existing Facilities.	Installation	X	X		Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM037	1-Mar-76	Installation Environmental Impact Statement Fort Monmouth, New Jersey.	Installation	X	X		Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM038	May-80	Installation Assessment Report No. 171.	Installation / TIC	X	X		Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.

Appendix C
Section 4, 5, and 6 References

Document Number	Date	Title	Source	Information Type			Applicable Site
				General	Environmental	Munitions	
FTMM039	1981	Fort Monmouth United States Geological Service Quad Map (1954 edited 1981).	National Archives		X		Former Pistol Range (1935-1940 Pistol Range)
FTMM040	Sep-85	Installation Assessment Relook Program.	TIC	X	X		Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.
FTMM041	May-90	Final Environmental Impact Statement for Fort Huachuca, Fort Devens, and Fort Monmouth.	TIC	X	X		Former Pistol Range (1935-1940 Pistol Range) and Former Outdoor Firing Range (1940-1955 Pistol Range).
FTMM042	Dec-99	Final Integrated Natural Resources Management Plan Fort Monmouth, New Jersey.	Installation	X	X		Former Pistol Range (1935-1940 Pistol Range) and Former Outdoor Firing Range (1940-1955 Pistol Range).
FTMM043	Current	http://www.monmouth.army.mil/C4ISR/	Website	X			Former Pistol Range (1935-1940 Pistol Range), Former Outdoor Firing Range (1940-1955 Pistol Range), and Former Skeet Range.

Note: Only references that are not readily available (*i.e.*, archival data) are provided, all other references are available through the noted source. However, maps obtained during the site visit are provided (only relevant maps are provided).

Camp Wood 1958



RG111-SC
Sig. Corps
Box 378

[illegible] FORT MONMOUTH, N.
Alterations to Indoor Firing range Building
1-2537, Charles Wood Area.
8 July 1949

Photo by C Robinson
USASPubA

[illegible]
UNCLASSIFIED by OCSigO, 15 May 1961
Copy neg 18

747

[illegible]2747 FORT MONMOUTH, N.J.
Alterations to Indoor Firing Range, Building
1-2537, Camp Charles Wood
28 January 1950

Photo by C Robinson
USASPubA

48-043-427/SIG-58
UNCLASSIFIED by OCSigO, 15 May 1961
Copy neg 19

1936

OFFICE OF THE CHIEF OF ORDNANCE
RECORD OF ORIGINAL COMMUNICATION

CLASSIFIER'S NAME Burbank BRIEFER'S NAME Hunter

FROM: 2nd C.A. Inspector

ADDRESS:

DATE OF LETTER: Feb. 7/36

TO: C.G., 2nd C.A.

SUBJECT:

EXTRACT OR FULL COPY CHECK WHICH

STAMP HERE FILE NO. AND DATE OF RECEIPT.

O. O. WAR DEPT. 333.3/4279 MAY 8 1936

Report of Inspection of Ft. Monmouth

Par. 46 - Storage of Explosives. It is reported by the Post Ordnance Officer that the magazine does not comply with the requirements of par. 81 (2) T.R.1370-A. He further recommends the erection of a separate and suitable building for the storage of pyrotechnics.

Recommendations - none.

1st Ind.
Ft. Monmouth to 2nd C.A. with remarks
2nd Ind.
2nd C.A. Apr.3/36 to Inspector General concurring

Ft. Monmouth

ALL INCLOSURES MUST BE VERIFIED AND INDICATED BRIEFLY ON ORIGINAL AND RECORD COPY, AND INDORSEMENTS, IF ANY, CHECKED UP

O. O. Form 5489—Ed. Apr., 1927—25,000

3—9229 U. S. GOVERNMENT PRINTING OFFICE

RG 156, Ch of Ord
E.41, Inspections
Box 6

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1938 Monmouth

OFFICE OF THE CHIEF OF ORDNANCE
RECORD OF ORIGINAL COMMUNICATION

3 23

CLASSIFIER'S NAME ..... BRIEFER'S NAME .....

FROM: Hdqrs. 2nd C.Area.

ADDRESS:

DATE OF LETTER: June 23,1938

TO: CG/2nd C.Area. THRU CO/Ft. Monmouth, N.J.

SUBJECT: Annual inspection of Fort Monmouth, N.J., FY 1938

INDEX IT

O.O. WAR DEPT. 333.1 JUL 26 1938 Ft. Monmouth

EXTRACT OR FULL COPY CHECK WHICH

(IGO) 333.1 Ft. Monmouth, N.J. FY 1938.

STAMP HERE FILE NO. AND DATE OF RECEIPT.

I DATES OF PRESENT AND LAST INSPECTIONS AND BY WHOM MADE.

1. This inspection was made by Major Everett L. Upson, 18th Infantry Acting Assistant Corps Area Inspector, Second Corps Area, during the periods June 6 to 11, inclusive, and June 14 to 15, 1938, inclusive.

The last annual inspection was made by Lt. Col. Frank B. Jordan, IGD, assisted by Mr. Harry Rutman, June 30th to July 1st; July 3rd to 10th, and July 12th to 17th, 1937, dates inclusive.

***

VI ACTIVITIES AND INSTALLATIONS OF VARIOUS ARMS AND SERVICES

Ordnance Department

31. Ordnance Department activities are efficiently handled.

32. A magazine for the storage of ammunition is needed; ammunition is now stored in a wooden building.

***

51. Buildings - A suitable magazine for the storage of ammunition is needed.

******

FM (SCH) 333.1 1st Ind.
Hdqrs. The Signal Corps School, Fort Monmouth, Oceanport, New Jersey. July 8,1938. To: The CG/2nd C.Area, Gov. Island, N.Y.

****

(IGO)
333.1 - Fort Monmouth, (FY 1938) 2nd Ind.
Hdqrs. 2nd C.Area, Gov. Isl., NY. July 22,1938. To: Inspector Gen.Wash.DC

****

Exec. Officer.
7-26-38
10:22

633 - Ft. Monmouth

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O. O. Form 5489

3—9229 U. S. GOVERNMENT PRINTING OFFICE

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E. 41, Inspections
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Ft. Monmouth March 18, 1944

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By NN NARA Date 9-29-0

SPSMT 352 Ft. Mon.

SPSMT-2
18 March 1944

MEMORANDUM for Commanding General, Army Service Forces.
Attention: Director, Military Training Division.

Subject: Training Equipment for Eastern Signal Corps Unit Training Center, Fort Monmouth, New Jersey.

413.44

1. It is recommended that the equipment on attached list be furnished Eastern Signal Corps Unit Training Center as a special issue on immediate priority pending publication of the table of allowances for unit training centers.

2. Each item of equipment is authorized on the proposed table of allowances for unit training centers in the amount requested on attached list.

3. Subject equipment is urgently needed for the proper training of Signal Corps men undergoing basic and specialist training in accordance with MTP 11-101, 25 September 1943. This equipment is primarily used during the basic training period.

4. During the months of March and April approximately 2400 men are expected to start basic training and no reduction in the intake rate of men is expected for some time.

For the Chief Signal Officer:

Jerry V. Matejka,
Brigadier General, U. S. Army,
Chief, Personnel and Training Service.

F. T. Gillespie,
Colonel, Signal Corps,
Chief, Military Training Branch.

1 Incl. -
Incl. 1 - List - Tng. Equip. for ESCUTC (in dup)

OUT 28 MAR 1944 MILITARY TRAINING

FILE DATE 3-18-44

COMPARED IN BY

Cpt. Signal Corps.
Ft. Monmouth.

RG 111, Signal Corps
E. 1023A, Uncl. Central Dec. File 1941-57
Box 999

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TRAINING EQUIPMENT FOR EASTERN SIGNAL CORPS
UNIT TRAINING CENTER FT MONMOUTH NEW JERSEY

Engineer

Item	Unit
Compass M2	100 each
Post, metal, intermediate, screw type	50 each
Post, metal intermediate, drive type	100 each
Post, anchor, metal	500 each
Wire, barbed (100 lb coils)	10 coils

These items of equipment are needed for proper instruction in map reading, scouting and patrolling courses.

Quartermaster

Item	Unit
Axe, Intrenching, M-1910, with Handle	500 each
Carrier, Axe, Intrenching, M-1910	500 each
Pickmattock, Intrenching, M-1910, with Handle	500 each
Shovel, Intrenching, M-1943	500 each

These items of equipment are needed for proper instruction in field fortifications.

Ordnance

Item	Unit
Launcher, grenade M1	150 each
Gun, machine, Browning, Cal. .30, M1917A1	50 each
Pistol, automatic, Cal .45 M1911A1	20 each
Rack, arm rifle M1	130 each
Rifle, U. S., Cal. 30, M1	90 each

These items are needed for familiarization and overhead fire. The rifle racks are needed for the proper protection of the 2600 rifles on hand.

Ft. Monmouth Nov. 17, 1942

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By MN NARA Date 9-29-05

HEADQUARTERS SIGNAL CORPS REPLACEMENT TRAINING CENTER
Fort Monmouth, Red Bank, N.J.

November 17, 1942.

Subject: Revised estimate of ammunition requirements.

Thru: Commanding Officer, Fort Monmouth, Red Bank, New Jersey.

To: The Chief Signal Officer, Washington, D. C.

1. Due to increase in the number of trainees received weekly at this Replacement Training Center it is requested that action be taken toward corresponding increase of necessary ammunition credits in accordance with allowances contained in WD Circular No. 254. This Replacement Training Center now receives approximately 750 trainees weekly and in addition about fifty officers fire on the range monthly.

2. Requirements for the last month of the 2nd Qr FY-43 and for the 3rd Qr FY-43 are estimated as follows:

Cal.	Basis	Dec.	Jan.	Feb.	Mar.	Total
.30	110 per O & trainee	335,500	335,500	335,500	335,500	1,342,000
.22	70 per - & trainee	213,500	213,500	213,500	213,500	854,000
Signal Ground	30 Per Co(1Co per wk)	120	120	120	120	480
Capsul, CN	1 per 10 trainees	300	300	300	300	1,200
Pot, Smoke	1 per 50 trainees	60	60	60	60	240
Pot, Tear gas	1 per 100 trainees	30	30	30	30	120
Set, Gas, idnet	½ per 100 trainees	8	7	8	7	30
Squibb, electric	1 per pot, smoke	60	60	60	60	240

3. No machine guns being available and the number of submachine guns insufficient to institute training, requirements for these weapons are not considered.

For the Commandng General:

G. R. KENT,
Lt. Col., Signal Corps,
Supply Officer.

RG 111, Signal Corps
E-1023A, Uncl. Central Dec. files 1941-57
Box 1073

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Ft. Monmouth aug. 27, 1942

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By NN NARA Date 9-29-05

IN REPLY REFER TO
SPSMT 353 RTC Ft. Mon.

WAR DEPARTMENT
HEADQUARTERS, SERVICES OF SUPPLY
OFFICE OF THE CHIEF SIGNAL OFFICER
WASHINGTON, D. C.

SPSMT-5

August 27, 1942

Subject: .30 Caliber Rifles.

To: Commanding General,
Signal Corps Replacement Training Center.

THRU: The Commandant,
Eastern Signal Corps School,
Fort Monmouth, Red Bank, New Jersey.

Information is requested on the number of .30 caliber rifles on hand at the Signal Corps Replacement Training Center, Fort Monmouth, Red Bank, New Jersey.

By order of the Chief Signal Officer:

AUG 27 9 14 PM '42
OFFICE OF THE CHIEF SIGNAL OFFICER

RECEIVED
AUG 29 1942
Fort Monmouth, N.J.

Jay D. B. Lattin
Jay D. B. Lattin,
Colonel, Signal Corps.

RG 111, Signal Corps
E. 1023 A, Uncl. Central Dec. File 1941-57
Box 1073

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Ft. Monmouth Aug. 27, 1942

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By NN NARA Date 9-29-05

~~Ft. Monmouth~~

SCRTC 474 Rifles 1st Ind. GRK/bls

Hq Sig C Repl Tng Gen, Fort Monmouth, Red Bank, N. J., August 31, 1942.
Thru: Commanding General, Fort Monmouth, Red Bank, N. J. To: Chief Signal Officer, SPSMT-5, Washington, D. C.

1158 rifles, M-1917, are on hand at this Replacement Training Center.

For the Commanding General:

G. R. Kent
G. R. KENT,
Lt Col, Sig C,
Supply Officer.

HQ. 471 2nd Ind. JSW/ma

HEADQUARTERS Fort Monmouth, Red Bank, New Jersey, September 1, 1942.
TO: The Chief Signal Officer, (SPSMT) Washington, D. C.

J. S. W.

353 Ft Mon

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SEP 2 9 13 AM '42
OFFICE OF THE CHIEF SIGNAL OFFICER

FILE
SIG. Opns DATE 9-7-42

RG 111, Signal Corps
E. 1023A, Uncl. Central Dec. Files 1941-57
Box 1073

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H. Monmouth June 1942

472.5(Gen)
(6-4-42)

1st Ind.

SPSAI-5

War Department, OCSigO, Washington, June 12, 1942 - To: Signal Property Officer, Signal Corps Replacement Training Center, Fort Monmouth, New Jersey

1. Information received from Chief of Ordnance indicates that guns requested in basic communication are limited standard and no more are being procured.

By order of the Chief Signal Officer:

J. W. Piner,
Major, Signal Corps

GJM

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JUN 12 4 20 PM '42
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CHIEF SIGNAL OFFICER

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SIG DATE

RG111, Signal Corps
E. 1023A, Incl. Central Dec. Files 1941-57
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HEADQUARTERS SIGNAL CORPS REPLACEMENT TRAINING CENTER
Fort Monmouth, Red Bank, New Jersey

4 June 1942

Subject: Procurement of Machine Guns, Browning, Cal .22, M-1.

To: Chief Signal Officer, Washington, D. C.

1. Request authorization for procurement of 2 each guns, machine, Browning, cal .22, M-1 with spare parts and accessories.

2. This request is based on the following considerations:

(a) Training of Provisional Security Company in machine gun preliminary marksmanship and practice firing could be initiated long before the receipt of the 4 cal .50 machine guns authorized in T/A.

(b) If cal .50 machine guns are on hand it would be more economical to use the cal .22 guns for instructional purposes and just as effective.

(c) The anti-aircraft target range at Camp Edison, Sea Girt, is equipped for the firing of .22 cal weapons.

EDGAR L. CLEWELL,
Colonel, Signal Corps
Commanding

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ROUTING AND WORK SHEET

(Par 40.62 O. R.)

Subject Procurement of Machine Guns, Browning, Cal. 22, M-1 472.5 (Gen)

NUMBER EACH ACTION	TO—	MEMORANDUM	NAME, DIVISION OR BRANCH, AND DATE
1	Allows. Div. and Mil. Tng.	For recommendations. Incl - Ltr fr HQSCRTC Ft Mon dtd 6-4-42 (in dup).	D. W. Cayce S & I SPSAI-5-E 6-6-42
2.	Mil. Tng. Div.	1. Informal information obtained from the Office of the Chief of Ordnance indicates that Gun, machine, cal. .22, U. S., M-1, with organizational spare parts and accessories, is limited standard, and no more are being procured. All stock is in hands of troops. 2. In view of the above information, it is not recommended that the equipment requested in attached letter be procured. 1 Incl. n/c	WILLIAM W. STURDY Major, Signal Corps Alws. Div. Misc. KK 6/9/42
3	Stor. & Is. Div.	Attention is invited to Action 2 above. 1 Incl: n/c	Colonel Lattin Mil.Tng.Div. 6-11-42 SPSMT-2

16—8590-2 O U. S. GOVERNMENT PRINTING OFFICE

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472.5 Machine Guns

1-29

SPSMT-2 25 5 February 1945

D-400.346 Leg C

1-29

MEMORANDUM for Commanding General, Army Service Forces,
Attention: Director, Military Training Division.

Subject: Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.

1. It is recommended that the equipment listed below be furnished Eastern Signal Corps School, Fort Monmouth, New Jersey, as a special issue pending revision of Table of Allowances 11-2:

a. 4 each Mount, Truck M32 for Browning Machine Gun, Cal. .50 HB,

b. 2 each Quadrants Gunners, M1 (Mils) complete with Case, Carrying SNL F-140.

2. Item a is required in conducting applicatory training of Officer Candidate students and the weapons phase of their training.

3. Item b is required in checking the accuracy of the SCR-584 in gunlaying operations after SSN 952 students have performed repair and maintenance operations on the set. Subject item is now available at Frankford Arsenal in accordance with conversation between Captain Moore, Office of The Chief of Ordnance and representative of the Office of the Chief Signal Officer, SPSMT-2.

For the Chief Signal Officer:

George S. Hoban,
Capt., Signal Corps,
SPSMT, Ext. 4677.

Jerry V. Matejka,
Brigadier General, U. S. Army,
Chief, Personnel and Training Service.

J. R. Spangler,
Major, Signal Corps,
Executive Officer, Military Training Branch.

FILE
SIG. DATE 2-5-45

MIL. TNG. BR.
Concurrence
SPSMT-1
SPSMT-2
SPSMT-3
SPSMT-4
SPSMT-5 LCM
SPSMP
SPSTP

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WAR DEPARTMENT

ARMY SERVICE FORCES

OFFICE OF THE CHIEF SIGNAL OFFICER

WASHINGTON 25

SPSMT-2

29 January 1945

MEMORANDUM for Commanding General, Army Service Forces.
Attention: Director, Military Training Division.

Subject: Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.

1. It is recommended that the equipment listed below be furnished Eastern Signal Corps School, Fort Monmouth, New Jersey, as a special issue pending revision of Table of Allowances 11-2:

a. 4 each Browning Machine Gun, Cal. .50 HB, M32
b. 2 each Quadrents Gunners, M1 (Mills) complete with Case, Carrying SNL F-140.

2. Item a is required in conducting applicatory training of Officer Candidate students and the weapons phase of their training.

3. Item b is required in checking the accuracy of the SCR-584 in gunlaying operations after SSN 952 students have performed repair and maintenance operations on the set. Subject item is now available at Frankford Arsenal in accordance with conversation between Captain Moore, Office of The Chief of Ordnance and representative of the Office of the Chief Signal Officer, SPSMT-2.

For the Chief Signal Officer:

Jerry V. Matejka,
Brigadier General, U. S. Army,
Chief, Personnel and Training Service.

Brooke Sawyer
Lt. Colonel, Signal Corps,
Assistant Chief, Military Training Branch.

(6) SPTR 472.3 (29 Jan 45)

REPRODUCED AT THE NATIONAL ARCHIVES

Subject: Equipment for Eastern Signal Corps School, Fort Monmouth, New Jersey.

SPTRO 472.5 (29 Jan 45) 1st Memo Ind.

HEADQUARTERS, ARMY SERVICE FORCES, Washington 25, D. C.
3 FEB 1945

To: Chief Signal Officer, The Pentagon, Washington 25, D. C.

The basic communication is returned without action in accordance with telephone conversation between Captain Hoban (Office of the Chief Signal Officer) and Major Spears (School Division, Army Service Forces).

By Command of Lieutenant General STYER:

Harley A. Smith

HARLEY A. SMITH,
Captain, A. G. D.,
Asst. to Director School Division,
Office Director Military Training, A.S.F.

Ft. Monmouth March 3, 1942

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Authority NND907524
By NN NARA Date 9.29.05

OCSigO
OCSigO 355 RTG - Ft.Mon. O-4-T

(X) 474-Rifles

W.A.ROOKS, MAJOR, SIGNAL CORPS.
MARCH 3, 1942.

THE COMMANDANT

THE SIGNAL CORPS SCHOOL

FORT MONMOUTH RED BANK NEW JERSEY

REFERENCE YOUR TWX MARCH SECOND SUBJECT RIFLES STOP MATTER TAKEN UP WITH WD GENERAL STAFF SECTION G-4 STOP G - 4 WD ADVISES THAT IMPRACTICAL TO RETAIN MORE THAN FOUR HUNDRED RIFLES U S CAL .30 - M1903 AT REPLACEMENT TRAINING CENTER FORT MONMOUTH BECAUSE OF CRITICAL RIFLE SITUATION STOP RECOMMEND THAT MATTER OF WEAPONS FOR LOCAL PROTECTION BE IMMEDIATELY TAKEN UP WITH CORPS AREA COMMANDER WHO MAY BE ABLE TO FURNISH SOME MACHINE GUNS AND SHOT GUNS STOP CSO O-4-T

GLMSTRAD

Guns by Corps

FILE
SIG. Mail & Rec. DATE 3/5/42

RG 111, Signal Corps
E. 1023A, uncl. Central Dec. Files 1941-57
Box 1073

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By NN NARA Date 9-29-05

SIGNAL CORPS
UNITED STATES ARMY
War Department Message Center
Room 3441, Munitions Building
Washington, D. C.

RWS SCRECSFORT MON[illegible]TH MARCH 2 2[illegible]P

EATONTOWN 550

SUBJECT RIFLES

CHIEF SIGNAL OFFICER

WASHINGTON DC

1. THIS REPLACEMENT CENTER RECEIVED SHIPPING ORDER PMP 1377 PAREN REF. G-4 W. D. PAREN FROM HEADQUARTERS, 3RD CORPS AREA, FEBRUARY 27, DIRECTING SHIPMENT 1200 RIFLES, U. S. CAL. .30 - M1903, WITH SPARE PARTS, TO FORT JACKSON 400 TO CAMP CROWDER, LEAVES BALANCE OF 400 RIFLES AT THIS CENTER. THE MINIMUM REQUIREMENT FOR PROPER PROTECTION AND TRAINING IS 675. SHIPMENT OF 1600 RIFLES LEAVES SHORTAGE OF 275.

2. THIS SITUATION BROUGHT TO ATTENTION OF 2ND CORPS ORDNANCE OFFICER BY ORDNANCE OFFICER FORT MONMOUTH IN ATTEMPT TO HOLD 275 RIFLES FROM SHIPMENT. HE WAS INFORMED THAT G-4 W. D. UNDER IMPRESSION 400 RIFLES FOR THIS CENTER AMPLE IN VIEW OF FACT THAT CAMP CROWDER ONLY NEEDED [illegible]. AS MATTER OF FACT, THE 400 ASSIGNED TO CAMP CROWDER WAS RESULT OF CONFERENCE HELD HERE DURING JANUARY WHEN AGREEMENT WAS MADE TO RELEASE 400 RIFLES. FIGURE 400 WAS BASED ENTIRELY ON NUMBER WE COULD RELEASE WITHOUT SERIOUS DETRIMENT TO TRAINING AND PROTECTION AND NOT ON NUMBER REQUIRED BY CAMP CROWDER.

3.

SITUATION WILL BECOME MORE ACUTE WHEN BASIC SCHOOL OF THIS CENTER IS TRANSFERRED TO SEA GIRT, AS IT WILL THEN BE NECESSARY TO TAKE 400 RIFLES WITH THEM, LEAVING NO ARMS FOR LOCAL SECURITY. REQUEST STEPS BE TAKEN TO PERMIT RETENTION OF 675 RIFLES AS MINIMUM REQUIREMENT.

EDGAR L. CLEWELL

COLONEL, SIGNAL CORPS,

COMMANDING

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Ft. Monmouth Dec. 18, 1941

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By NN NARA Date 9-29-05

-5

Sig0 352 (Ft. Monmouth)
(12-18-41)

December 18, 1941.

MEMORANDUM TO: Assistant Chief of Staff, G-3. (Training Division)

SUBJECT: Increase of Signal Corps School and Officers Candidate School, Ft. Monmouth, N. J.
and officers Division

I DISCUSSION:

1. Proposal: To provide an increase in the capacity in the Enlisted Division of the Signal Corps School from 1,975 to 3,724, an increase in the Officers Candidate School from 500 to 2,000, and an increase in the Officers Division of the Signal Corps School from 420 to 800, all at Ft. Monmouth, N. J., by leasing the New Jersey State Encampment at Sea Girt and by constructing temporary housing on this encampment and on other available plots at Ft. Monmouth.

2. Estimated Requirements in the Enlisted Division of the Signal Corps School: It is estimated that the following requirements for training of enlisted men at the Signal Corps School must be met:

Purpose	Total Strength	To be trained at Sig. C. S.	Required capacity per 4-months' course
For Sig. Service with Air Corps	56,000	15,000	5,000
For existing Ground Units	43,000	1,500	500
For new Div. Sig. Companies	10,000	1,950	650
For additional S.C. units for ground forces	3,500	700	260
TOTAL	112,500	19,150	6,410

It is impracticable to increase existing facilities to meet the requirement of 6,410 immediately. It is proposed, however, to increase the output of the existing Signal Corps School by employing double shifts of students and by introducing additional courses to meet the requirement for the maintenance of airborne radio equipment, airborne detector equipment and the maintenance of aircraft warning equipment. An estimate prepared by the Assistant Commandant, Signal Corps School, indicates that it is practicable to expand the Signal Corps School within the next

NARA, DATE 12-1-76

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three months from the present capacity of 1,975 to a capacity of 3,724. The critical need is for additional bed space. While it is practicable to resort to double shifts in the training facilities of the school, it is not considered practicable or advisable to resort to double bunking.

3. Additional Bed Space Required: The following tabulation indicates the additional beds required:

Enlisted Division

For students assigned from tactical units and for students transferred to Signal Corps School to complete courses after 15 weeks in the Replacement Training Center	3,317*	
For cryptographic students	126	
For additional overhead	275	
For additional instructors	245	
For overhead in the additional instructor company	40	
For increase in post overhead	105	
For replacement of bed space in barracks building which must be converted to additional school building required by the Enlisted Division	500	4,608

*Note: See attached Inclosure 1 for tabulation carefully prepared on the basis of the average number of beds required per 13 weeks.

Officers Candidate School

Additional officer candidates	1,500	
Additional company overhead for officer candidates	175	
Additional instructors in Officers Candidate School	50	
For replacement of bed space in barracks building to be converted to additional school building required by Officers Candidate School	378	2,103

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Officers Divisions		
For additional officer students		
For additional instructors	380	
For replacement of bed space in barracks building to be converted into additional school building required by Officers Division	40	
	378	798
TOTAL		7,509

There are already available at Ft. Monmouth 2,000 beds for students; 1,000 in the 15th Signal Service Regiment, and 1,000 diverted from the Signal Corps Replacement Training Center by authority of the Adjutant General. It is proposed that the necessary additional housing be provided at this time by hasty war-time construction. The Quartermaster General has now issued plans for a winterized tent which does not use canvas. It is suggested that this type of construction be considered or that one-story buildings 20' x 120', heated with stoves, and with no sheathing, be considered. Either of these types of construction can be erected quickly, is cheaper than the standard temporary barracks with all conveniences, and has the additional advantage that it may be abandoned more readily when need for same passes.

4. Available Areas for this Construction: A survey of Ft. Monmouth and environment indicates that the best locations for these additional buildings are as follows: (See attached Inclosure 2 - Photostat map of Ft. Monmouth)

Area	Capacity	Estimated Cost
A	500	$ 20,000
D	1,000	100,000
M	1,500	150,000
N. J. State Encampment, Sea Girt	2,500	225,000

5. Areas A, D, and M: Areas A, D, and M are already owned or are in process of being acquired by the government.

6. New Jersey State Encampment at Sea Girt: Recommendations have already been submitted to the General Staff to lease the target range facilities at Sea Girt for use of the S.C.R.T.C., Ft. Monmouth, at a rental of $1.00 per year and at a cost of $30 per day for pay of range guards, etc. Information obtained from Major General Steven H. Barlow, CMQ of the State of New Jersey, indicates that the entire facilities of Sea Girt can be obtained on lease of $1.00 per year plus $125.00 per day for power, water, and gas. The encampment now has 22 mess halls capable of feeding 1,700 men at one time, latrines, a small

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laundry, a small post exchange, a large headquarters building, three stables readily converted into school buildings, a motor shop, a fire-proof warehouse 64' x 200', and concrete tent floors on which may be constructed the major portion of the temporary buildings. This facility will accommodate 2,500 trainees of the S.C.R.T.C, and because of its extensive drill grounds, target range, and railroad sidings, is ideally equipped to permit the reception of selectees assigned to the S.C.R.T.C., Ft. Monmouth, and to the conduct of the three weeks of basic military instruction. Upon conclusion of the three weeks basic training at Sea Girt, the selectees would be transferred to the main R.T.C. at Ft. Monmouth by motor transportation to continue their specialist training.

II ACTION RECOMMENDED: The Chief Signal Officer recommends that:

1. He be authorized to increase the capacity of the Signal Corps School as follows:

Enlisted Division - 1975 to 3724

Officers Candidate School - 500 to 2,000

Officers Division - 420 to 800

2. He be authorized to increase in appropriate grades and ratings the 15th Signal Service Regiment as follows:

245 enlisted men - Instructors, Enlisted Division

420 men to provide additional overhead for administration and supply of the additional students

225 instructors and overhead in the Officers Candidate School

3. That the Commandant, Signal Corps School, be authorized funds in the amount of $200,000 ($70,000 has already been allotted by instruction of G-4 for temporary housing at Ft. Monmouth) to complete the construction of temporary housing in areas A, D, and N, at Ft. Monmouth, N. J.

4. That the Quartermaster General be directed to execute the necessary lease on the New Jersey State Encampment at Sea Girt for the duration of the emergency and that he be authorized to spend the sum of $225,000 to erect temporary construction.

For the Chief Signal Officer:

O. K. Sadtler,
Colonel, Signal Corps.

3 Incls.
Tabulation of beds required
Map of Ft. Monmouth
Map of State of N. J.

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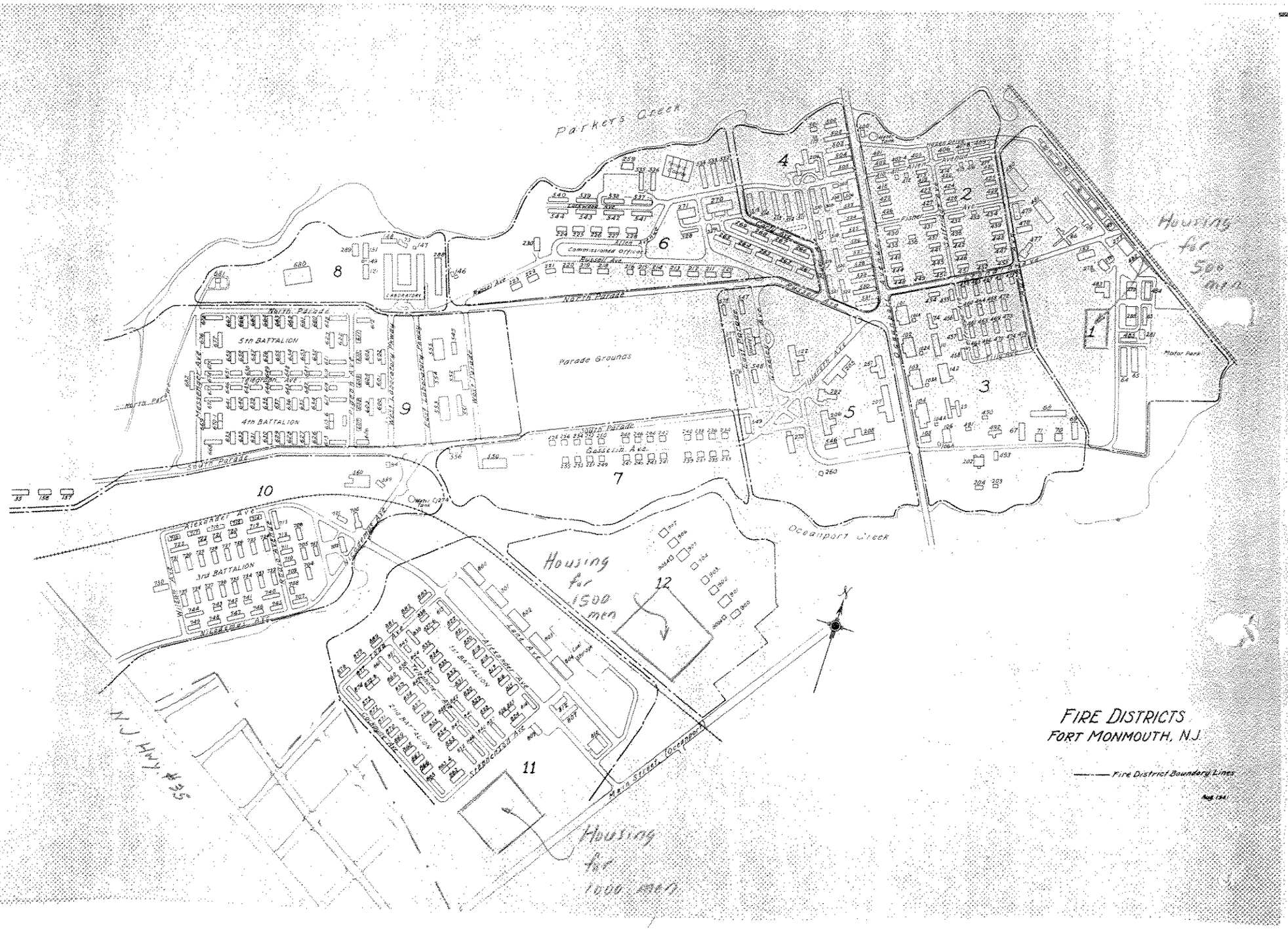
By NW NARA Date 9-29-05



FIRE DISTRICTS
FORT MONMOUTH, N.J.

——— Fire District Boundary Lines

Aug 1941

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By NN NARA Date 9-29-05

ROUTING AND WORK SHEET

(Par. 40.62 O. R.)

Subject Ammunition - Officer Candidate Department, Fort Monmouth.

NUMBER EACH ACTION	TO—	MEMORANDUM	NAME, DIVISION OR BRANCH, AND DATE
3.	Tng. Div. THRU Ex. O.	1. The allowance of Cartridge, Ball, Caliber .30 requested for the Officer Candidate School, Fort Monmouth, New Jersey, has not yet been approved. The above request is not within the allowance as stated in paragraph 3, Action 1. At the present time there is no allowance of .30 caliber ammunition for Signal Corps Officer Candidates. 2. Information was received from Major Stone, Ordnance Dept., that the supply of Cartridge, Ball, Caliber .30, is over-obligated, and that there is no way to get the desired ammunition from the Ordnance Department. Major Stone suggested that the Signal Corps School should attempt to borrow a small amount of ammunition from some other Post or other allowance to Fort Monmouth, to familiarize the Security Detachment with the rifle until ammunition can be obtained for use in the normal marksmanship course.	WWS. WILLIAM W. STURDY Major, Signal Corps Alws. Div. Misc. 4/4/42
4	Mil. Tng. Division	Noted. Suggest that a memorandum be written to Chief of Ordnance Department on this matter.	[illegible] Asst. ExO. 4/6/42.
5.	THRU: C. Opr. Br. TO: Asst. ExO.	Request made in Action 4 above has been complied with.	Major W. A. Rooks Mil. Tng. Div. 4-14-42 SPSMT-5

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ROUTING AND WORK SHEET

(Par. 40.62 O. R.)

Subject Ammunition - Officer Candidate Department, Fort Monmouth

NUMBER EACH ACTION	TO—	MEMORANDUM	NAME, DIVISION OR BRANCH, AND DATE
1	THRU: C, Opr.Br. TO: Alws. Div.	1. The Signal Corps School, Officers Candidate Department, Fort Monmouth, New Jersey, has been assigned the duty of furnishing local security of a two-mile area around the School. The guard will be detailed from the incoming class of the Officers Candidate Department. 2. In order that they may be allowed to fire the normal marksmanship course before assuming the guard duty, the Signal Corps School, Officers Candidate Department, Fort Monmouth, has endeavored to obtain 15,000 rounds of ammunition, cal. .30, through normal channels with no apparent results. 3. Since this amount of ammunition is within the allowance and urgently needed to meet the needs of paragraph 2 above, it is requested that immediate steps be taken to furnish this ammunition to The Commandant, The Signal Corps School, and that the Military Training Division be advised as to action taken. nso	Lt. Col. Lattin Mil. Tng. Div. 3-28-42 SPSMT-5
2	Alws Div. ~~THRU: Com. C. Br.~~	Attention is invited to Action 1.	C. W. Hopps Capt. Sig. C. Opr. Br. 3/31/42

June - August 1938

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Monmouth

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By NN NARA Date 9-29-09

QM 635 C-P (Ft.Monmouth) 8th Ind.
WD,OQMG, Washington, August 18, 1938. To The A.G.

1. It is recommended that the item: "Photographic Laboratory - $330,000" be approved for inclusion for Fort Monmouth in the current revision of the War Department Construction program. Modification of building to fit site can be made without increase in original estimate.

2. The location for the building, as indicated in yellow on the blue print map of the post, submitted by the Post Commandant in connection with the 5th Indorsement, appears satisfactory and is tentatively concurred in by this office.

For the Quartermaster General:

A OWEN SEAMAN
Brigadier General, Q.M.C.
Assistant.

AG 600.12
(6-28-38)Misc.D. 9th Ind.
W.D.,AGO, Aug. 25, 1938. To the C.S.O.

Approved as recommended in 8th indorsement. Due to urgent need for construction requirements at other posts, the inclusion of the item: "Photographic Laboratory", for Fort Monmouth, in the revised W.D. Construction Program, will be of low priority.

By order of the Sec. of War:

2 incls. n/c

(Sgd)B.Y. Read,
Adjutant General.

RG 111, Signal Corps
E. 1023-A, Uncl. Central Dec Files
1941-45, Box 2015

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th)
August 18, 1938. 8th Ind. To The A.G.

FM(SCH)600.1

5th Ind.

DO/aam

HEADQUARTERS The Signal Corps School, Fort Monmouth, Oceanport, New Jersey, August 4, 1938. TO: The Chief Signal Officer, Washington, D. C.

1. There is submitted herewith post map on which is shown in yellow pencil the suggested location of the proposed photographic laboratory.

2. This site was selected with the following points in view:

a. It is near the Signal Corps Laboratories and might be readily included in a restricted area around these laboratories should it ever become necessary.

b. Drainage conditions are satisfactory in this locality. Further the site lends itself very well to a treatment of the building similar to Russel Hall and the post theatre where the basement was kept above the existing grade and the finished grading was terraced around the building. This is extremely desirable due to soil water level conditions at this post.

c. The location is one of the best for minimum dust conditions.

d. The site is not near a highway or railroad.

3. It is proposed to abandon the existing gravel road crossing the site. Access to the proposed building may be had by the extension of Russel Avenue as shown in the plan.

4. It is also proposed to move the present pistol range. Plans are

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By NN NARA Date 9-29-05

RETURN TO PHOTOGRAPHIC DIVISION

(5th Indorsement continued:)

being made to include the construction of a new range, located in a more satisfactory place, in current W.P. A. Projects.

2 Incls.

Incl 1-no change.
Incl 2-Map of Fort Monmouth in dup.

DAWSON OLMSTEAD,
Colonel, Signal Corps,
Commandant.

OCSigO 652-Lab.,Constr.
of New.(8-27-38)
WD,OCSigO, Washington. August 8, 1938.

6th Ind.

7 rtns

To: Adjutant General.

1. Reference is made to 5th indorsement containing information desired in paragraph 2 of 2nd indorsement.

For the Chief Signal Officer.

2 incls:
(#1-Sketch in quad.)
(#2-Map of Ft.Monmouth in dupe)

Clyde L. Eastman,
Colonel, Signal Corps,
Executive.

AG 600.12
(6/28/38) misc.

7th Ind.

War Dept. OCO, Aug 9, 1938 to the Q.M.G.
In connection with 2nd Ind. hereon.
By order Sec of War
(sgd) By Read
Adj. Gen

FILE
SIG. Lmr DATE 8/8/38

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By NN NARA Date 9-29-09

h)
August 18, 1938. 8th Ind.
To The A.G.
mended that the item, "Ma

OCSigO 652-Lab., Constr. of
New.(6-27-38) 4th Ind.

7

WD,OCSigO, Washington, August 1, 1938. To: C.O., Fort Monmouth, N. J.

1. For compliance with 3d indorsement.

2. It is desired that the following considerations be kept in mind in selecting the site for the photographic laboratory:

a. Location selected should be one where the minimum amount of dust can be expected in the air which will be drawn into the building.

b. The laboratory should be located in an area where a minimum of outside noise can be expected. This will require the building to be located well away from any railroad or highway.

For the Chief Signal Officer.

Clyde L. Eastman,
Colonel, Signal Corps,
Executive.

1 incl: n/c.

RETURN TO PHOTOGRAPHIC DIVISION

FILE
SIG. Lem DATE 8/1/38

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Authority NND907524
By NN NARA Date 9-29-0

8th Ind.
August 18, 1938. To The A.G.

Recommended that the item: "Photographic Laboratory - [illegible] for inclusion for Post M[illegible]

AG 600.12 (6-28-38)Misc. 1st Ind.

WD,AGO, June 30, 1938 - To The Quartermaster General.

For remark and recommendation.

By order of the Sec. of War:

(Sgd) B. Y. Read
Adjutant General.

QM 635 C-P(Ft. Monmouth) 2nd Ind.

WD,OQMG, Washington, July 26, 1938. To The Adjutant General.

1. This office concurs in the request of the Chief Sig. O. for approval of a project for the construction of a Photographic Laboratory at Fort Monmouth. The character of building required is shown on the initial sketch (Plan No. 704-111) inclosed herewith. The cost of this building is estimated by this office at $330,000.

2. It is requested that the post submit a post map, showing the proposed location for this building. The final design of the building will be considerably affected by its location and orientation, and the present initial sketch may require some modification on this account.

For the Q.M.G.

C. D. Hartman,
Colonel, Q.M.C.,
Assistant.

1 Inc.
1 Print (4 sheets)

AG 600.12(6-28-38)Misc. 3d Ind.
W.D.,AGO, July 28, 1938 - To The Chief Signal Officer.

For the information desired in par. 2, 2nd Indorsement hereon.

By order of the Secretary of War:

(sgd) K. B. Bush.
Adjutant General

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Authority NND907524
By NN NARA Date 9-29-09

AO 652-Lab.,Constr.
New.(6-27-38)

rts:lmn

June 28, 1938.

Construction of Signal Corps Photographic
Laboratory at Fort Monmouth, N. J.

Adjutant General.

1. It is recommended that necessary steps be taken to provide for the inclusion in the building program for Fort Monmouth, N. J., of one motion picture laboratory building to be constructed when funds can be made available.

2. The present Signal Corps motion picture laboratory is located at Fort Humphreys, D. C. This building was constructed in 1919 at a cost of about $90,000, and although an excellent building at the time it was built, the development of motion picture technique and the advent of sound since that time make the building obsolescent. At the present time best results cannot be obtained in processing motion picture film at that laboratory on account of the lack of air conditioning. Commercial concerns have demonstrated that the best work can only be done if rooms where motion picture negative film is handled are air conditioned to keep out dust particles and to provide uniform temperature and humidity, to changes in which this film is very susceptible. Advances in motion picture technique and the installation of modern equipment have brought about a crowded condition in the present laboratory, and a normal increase in production will necessitate the organization of some departments of the laboratory on a two or three shift basis. In order to improve the quality of the film being released as well as to provide for future requirements, it is felt that a new laboratory building or the expansion of the present facilities is a necessity.

3. It is realized that results desired may be achieved in part by additional construction at the present location of the laboratory. This is considered undesirable for the following reasons:

a. Additional construction to modernize and expand the facilities of the present laboratory will, on account of the obsolescent character of the present building, be necessarily makeshift in character. It is considered doubtful that suitable air conditioning equipment could be installed in the present building, and it is believed that any attempt to make such installation would be excessively expensive and that the results would not be satisfactory.

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By NL NARA Date 9-29-05

RETURN TO PHOTOGRAPHIC DIVISION

ust 18, 1938. To The A.G.

ded that the item: "Photographic Laboratory - for inclusion for Fort Monmouth in the current Department Construction program. Modification of can be made without increase in original estimate. ...ted in yellow on the

b. The amount of work required in connection with the preparation and distribution of training films is steadily increasing. Additional personnel will soon be required and regulations limiting military personnel in the District make the addition of such personnel undesirable at Fort Humphreys.

4. Training film production is not of such a nature as to require the location of the laboratory in the District. It can as well be located elsewhere. In order to provide for the maximum flexibility in the use of personnel and to facilitate administrative control it is recommended that this laboratory be constructed at Fort Monmouth, New Jersey, where the Signal Corps Laboratories and other Signal Corps facilities are already established.

5. Still picture demands on the Signal Corps by the War Department will continue to require the operation of a photographic laboratory and studio in the District. It is expected that the present laboratory building will adequately meet all such demands for years to come.

6. First indorsement from the Quartermaster General to the Chief Signal Officer dated November 7, 1936, estimated the cost of a suitable motion picture laboratory building, in accordance with blueprints submitted at that time, to total $350,000. It is believed that this is a fair estimate of the cost of a building such as that required.

For the Chief Signal Officer.

Clyde L. Eastman,
Colonel, Signal Corps,
Executive.

R.T.S.

FILE
SIG. ... DATE 6/27/30

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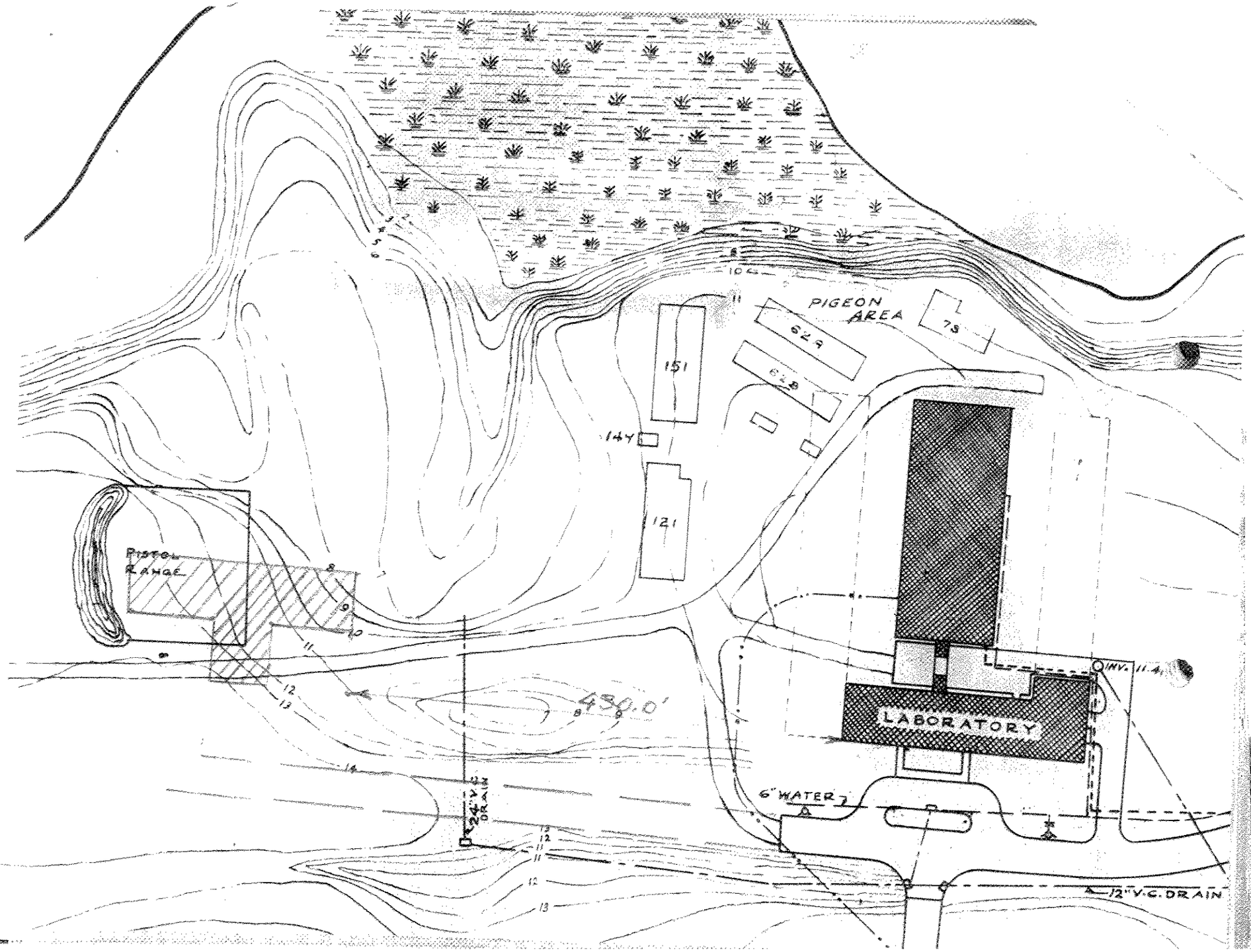
Authority NND907524
By NN NARA Date 9-29-09

ROUTING AND WORK SHEET

To be used under provisions of Par. 41.6 b, Office Regulations, 1934)

Number each Action	From	To	Memorandum 052-Construction of Lab. Bldg.	Initials and date
1	Photo Div.	C.S.O.	Subject: Signal Corps Photographic Laboratory. 1. Within the next few years it can be expected that the facilities of the Signal Corps Photographic Laboratory at Fort Humphreys, D.C., will be inadequate to meet the requirements placed upon it for new training film production and maintenance of film then in service. New construction will be required. Such construction can consist of an addition to the present building, already obsolescent, or the construction there or elsewhere of an adequate up-to-date motion picture laboratory building. If another building is built the present laboratory will be adequate for all still picture needs of the War Department for a long time to come. 2. It is believed that any addition to the present installation would of necessity be makeshift in character. Due to the fact that such construction at Fort Humphreys will probably interfere with the building program of that post, it can be expected that such an addition would not be desired by the authorities there. The Laboratory is not under the control of the Commanding General, Fort Humphreys, and it is believed that he would not favorably consider the expansion of outside activities, such as the Signal Corps Photographic Laboratory is. There is no vital final reason why the Signal Corps Photographic Laboratory should be located in the District. At the present time much of the film being processed there is photographed elsewhere and the work could be done just as well at some location outside the District. It would seem desirable to have the Laboratory so located as to benefit the Signal Corps and where it will be an integral part of the local establishment for purposes of administration. Fort Monmouth appears to be the natural location. If located there it is believed that the Laboratory would function efficiently and satisfactorily. The difficulty of securing authorization for additional military personnel for the Laboratory when located in the District, as at present, needs no comment. This problem would not exist if the Laboratory was located elsewhere as at Fort Monmouth.	Sheet No. 1



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Authority NND907524
By NW NARA Date 9-29-05

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Monmouth Jan. 19, 1926

ALL COMMUNICATIONS SHOULD BE ACCOMPANIED BY CARBON COPY AND ADDRESSED TO

TO INSURE PROMPT ATTENTION IN REPLYING REFER TO

_____ No. _____

ATTENTION OF

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

January 19, 1926.

Subject: Inspection of Small Arms Materiel on Hand at Ft.Monmouth, N.J.

To: The Chief Signal Officer.

1. In accordance with paragraph 5-b(1), A.R. 45-30, small arms materiel on hand at Fort Monmouth, N.J.,was inspected by a representative of this office on December 30, 1925. Equipment was found to be in good condition with the exception of the items noted to be otherwise in the attached report.

2. In accordance with paragraph 5-b(2), A.R. 45-30, it is recommended that this report be forwarded to the Commanding Officer, Fort Monmouth, N.J., with instructions to take the necessary action to correct defects reported.

For the Chief of Ordnance.

J. W. Joyes,
Brig.Gen.,Ord.Dept.,
Assistant.

1 Incl-in dupl.

RG 156, Chief of Ordnance
E. 36A, Rec. File 1915-31
Box 1137

333.1-Ft. Monmouth, NJ. 1st Ind.
(1-19-26)

Sws;ctm

War Department, O.C.S.O., January 28, 1926. To: C. O., Fort Monmouth, N.J.

1. It is requested that the necessary steps be taken to correct the defects reported in the foregoing communication and that this office be advised when such action has been taken.

By order of the Acting Chief Signal Officer:

A. G. GUTENSOHN,
Major, Signal Corps

dupl. encl. w/d

2nd Ind. EM:BRD

HQ., Ft. Monmouth, New Jersey, March 6th, 1926. To: The Chief Signal Officer of the Army, Washington, D. C.

All defects have been corrected.

J. B. Allison,
Colonel, Signal Corps,
Commanding.

1 Incl.

1926 MAR 10 PM 10 3
RECEIVED
CHIEF SIGNAL OFFICER

333.1-Ft.Monmouth, NJ.
(1-19-26)

3d Ind.

sws/ctm

War Department, O.C.S.O., March 11, 1926. To: Chief of Ordnance:

1. Attention is invited to the preceding indorsement.

By order of the Chief Signal Officer:

Encls. no change

ALVIN C. VORIS,
Lieut-Colonel, Signal Corps

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Signal Corps,
"B" Company.

Fort Monmouth, N. J.

Pistol, Cal..45, M.1911

December 30, 1925.

Serial No.	Condition	Corrective Action to be Taken.
539376	Firing pin stop broken.	Stop to be replaced.
540108	Sear Spring weak.	Spring to be replaced.
487960	Sear spring weak.	Spring to be replaced.

One hundred (100) pistols in good condition.

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Signal Corps,
"A" Company

Fort Monmouth, N.J.

Pistol, Cal..45, M.1911

December 30, 1925.

Serial No.	Condition	Corrective Action to be Taken.
187912	Pitted bore.	Serviceable.
221859	Stop slot on slide worn.	Slide to be replaced.
543342	Pitted bore.	Unserviceable.
540875	Pitted bore.	Unserviceable.
543117	Pitted bore.	Unserviceable.
542481	Pitted bore.	Unserviceable.
193464	Pitted bore.	Unserviceable.
540190	Pitted bore.	Unserviceable.
541158	Sear spring weak.	Spring to be replaced.
	Pitted bore.	Serviceable.
507540	Old pits in bore.	Serviceable
367200	Pitted and rusty bore.	Unserviceable.

One hundred thirty-seven (137) pistols in good condition.

Unserviceable pistols to be replaced.

REPORT OF INSPECTION OF ORDNANCE MATERIEL.

Signal Corps
15th Service Company.

Fort Monmouth, N.J.

Pistol, Cal..45, M.1911

December 30, 1925.

Serial No.	Condition	Corrective Action to be Taken.
481901	Good	
462882	Good	
467959	Good	
461895	Good	
539560	Good	
253427	Good	
466823	Pitted bore	Serviceable
539237	Good	
463351	Good	
220155	Good	

Five (5) out but reported as in good condition.

COPY

REPORT OF INSPECTION OF ORDNANCE MATERIEL.

1st Signal Company — Fort Monmouth, N.J.

Pistol, Cal..45, Model 1911. — December 30, 1925.

Serial No.	Condition	Corrective Action to be taken.
504661	Weak sear spring.	Sear spring to be replaced.
226869	Pitted bore.	Serviceable.
378630	Weak sear spring.	Sear spring to be replaced.
436127	Rusty bore.	To be cleaned.
202436	Rusty bore.	To be cleaned.
409690	Magazine catch missing.	Catch to be replaced.
499613	Magazine catch missing.	Catch to be replaced.
	Firing pin missing.	Pin to be replaced.
	Slide works stiffly.	To be corrected.
541691	Left stock screw missing.	Screw to be replaced.
541436	Magazine catch screw missing.	Screw to be replaced.
	Front sight missing.	Sight to be replaced.
	Slide stop missing.	Stop to be replaced.
4782	Barrel rusty outside.	To be cleaned.
271352	Sear spring missing.	Spring to be replaced.
412013	Left stock broken.	Left stock to be replaced.
407548	Rusty bore.	To be cleaned.
179825	Sear missing.	Sear to be replaced.
239760	Sear broken.	Sear to be replaced.

One hundred thirty-nine (139) pistols in good condition.

Supply Officer has been reporting 2 - Very Pistols, Mark IV, 25 m/m, whereas the ones presented for inspection are Mark III.

0 0 3 3 1 / 171 F. Monmouth Ord

REPORT OF INSPECTION OF ORDNANCE MATERIEL.

Ordnance Storehouse.

Fort Monmouth, N.J.

Pistol, Cal..45, M.1911.

December 30, 1925.

Serial No.	Condition.	Corrective Action to be Taken.
540384	Badly pitted bore.	Unserviceable.
458158	Pitted.	Serviceable.
467650	Left stock missing. Badly pitted.	Unserviceable.
321784	Pitted bore.	Serviceable.
541752	Pitted bore.	Serviceable.
176124	Badly pitted bore.	Unserviceable.
243592	Badly pitted bore.	Unserviceable.
392101	Right stock missing.	Right stock to be replaced.
290855	Hammer broken.	Hammer to be replaced.
434176	Badly pitted bore.	Unserviceable.
311853	Broken sear spring.	Sear spring to be replaced.
196199	Broken sear spring.	Sear spring to be replaced.
293480	Broken sear spring.	Sear spring to be replaced.
458158	Pitted bore.	Serviceable.
507854	Recoil spring missing.	Recoil spring to be replaced.
540384	Badly pitted bore.	Unserviceable.
277146	Hammer broken.	Hammer to be r eplaced.

Five hundred sixty-nine (569) pistols in good condition.

Unserviceable pistols to be replaced.

REPORT OF INSPECTION OF ORDNANCE MATERIEL.

Ordnance Storehouse.

Fort Monmouth, N.J.

Remington Shot Guns, 12 gage

December 30, 1925.

Serial No.	Condition	Corrective Action to be taken.
Eight (8) Shot guns in good condition.		

REPRODUCED AT THE NATIONAL ARCHIVES

Monmouth / Camp Vail Sept. 1925

00 333.1/1637 Misc
COO 333.1/455-1

1st Ind. ALT/McG

Hdqrs. 2nd Corps Area, O.C.A.O.O., Governors Isld., N.Y.H., Sept. 11, 1925. - To Chief of Ordnance, U.S.A., Washington, D.C.

1. The itinerary of the Small Arms Inspector for inspections of small arms, etc., in the hands of organizations in the States of New Jersey and Delaware, included a visit at Camp Alfred Vail, May 11, 1925, for the purpose of inspecting the small arms at that place.

2. Upon receipt of notification by the Commanding Officer, Camp Alfred Vail, of the date for this inspection, this office was informed that the organization was at camp.

3. As soon as the services of the Small Arms Inspector are again available in this Corps Area, an inspection of the small arms at Camp Alfred Vail will be made.

4. An inspection of the explosive material at Fort Monmouth, N.J., (Camp Alfred Vail) was made by the Ammunition Foreman, Aug. 25th to 28th, 1925.

5. A copy of the report of inspection of the tank and tractor material at Camp Alfred Vail, N.J., is enclosed.

T. L. Ames
T. L. AMES,
Colonel, Ord. Dept.,
Ordnance Officer.

1 encl.

RG 156, Chief of Ordnance
E. 36A, Dec. File 1915-31
Box 1133

REPRODUCED AT THE NATIONAL ARCHIVES

CAMP ALFRED VAIL, N.J.

Ordnance Office, 2nd Corps Area,
Governors Island, N.Y.H.

November 17, 1924.

Report of Inspection made by Mr. Wm. H. Carpenter, Armament Foreman, representing the Corps Area Ordnance Officer, of the artillery material in the hands of Camp Alfred Vail, N.J.

Inspection made November 13, 1924.

T. L. AMES,
Colonel, Ord. Dept.,
Ordnance Officer.

ORDNANCE OFFICE, WAR DEPT.
SEP 15 1925
Route Card No.
333 / 1/1/39

REPORT OF INSPECTION OF ORDNANCE MATERIEL

1st Signal Company
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal..45, Model 1911.
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective Action to be taken.
504661	Weak sear spring.	Sear spring to be replaced.
226869	Pitted bore.	Serviceable.
378630	Weak sear spring.	Sear spring to be replaced.
436127	Rusty bore.	To be cleaned.
202436	Rusty bore.	To be cleaned.
409690	Magazine catch missing.	Catch to be replaced.
499613	Magazine catch missing.	Catch to be replaced.
	Fixing pin missing.	Pin to be replaced.
	Slide works stiffly.	To be corrected.
541691	Left stock screw missing.	Screw to be replaced.
541436	Magazine catch screw missing.	Screw to be replaced.
	Front sight missing.	Sight to be replaced.
	Slide stop missing.	Stop to be replaced.
4782	Barrel rusty outside.	To be cleaned.
271352	Sear spring missing.	Spring to be replaced.
412013	Left stock broken.	Left stock to be replaced.
407548	Rusty bore.	To be cleaned.
179825	Sear missing.	Sear to be replaced.
239760	Sear broken.	Sear to be replaced.

One hundred thirty-nine (139) pistols in good condition.

Supply Officer has been reporting 2 - Very Pistols, Mark IV, 25 m/m, whereas the ones presented for inspection are Mark III.

REPRODUCED AT THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Headquarters Co., Signal Corps
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal. .45, M.1911
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective Action to be Taken
Fifteen (15)	Good	

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Signal Corps
15th Service Company
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal. .45, M.1911
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective Action to be Taken
481901	Good	
482882	Good	
467959	Good	
461895	Good	
539560	Good	
253427	Good	
466825	Pitted bore	Serviceable
539237	Good	
443351	Good	
220155	Good	

Five (5) out but reported as in good condition.

COURTESY OF THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Signal Corps, "A" Company
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal..45, M.1911
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective Action to be Taken.
187912	Pitted bore.	Serviceable.
221859	Step slot on slide worn.	Slide to be replaced.
543242	Pitted bore.	Unserviceable.
540275	Pitted bore.	Unserviceable.
543117	Pitted bore.	Unserviceable.
542481	Pitted bore.	Unserviceable.
193464	Pitted bore.	Unserviceable.
540190	Pitted bore.	Unserviceable.
541159	Sear spring weak. Pitted bore.	Spring to be replaced. Serviceable.
507540	Old pits in bore.	Serviceable.
357200	Pitted and rusty bore.	Unserviceable.

One hundred thirty-seven (137) pistols in good condition.

Unserviceable pistols to be replaced.

COPY AT THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Signal Corps.
"B" Company.
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal..45, M.1911
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective action to be taken
539576	Firing pin stop broken.	Stop to be replaced.
540108	Sear spring weak.	Spring to be replaced.
487960	Sear spring weak.	Spring to be replaced.

One hundred (100) pistols in good condition.

DUCED AT THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Ordnance Storehouse
(Organization)

Fort Monmouth, N.J.
(Station)

Pistol, cal..45, M.1911
(Name of Arm)

December 30, 1925.
(Date)

Serial No.	Condition	Corrective Action to be Taken.
540384	Badly pitted bore.	Unserviceable.
458158	Pitted.	Serviceable.
467650	Left stock missing.	Unserviceable.
	Badly pitted.	
321784	Pitted bore.	Serviceable.
541752	Pitted bore.	Serviceable.
175124	Badly pitted bore.	Unserviceable.
243592	Badly pitted bore.	Unserviceable.
392101	Right stock missing.	Right stock to be replaced.
290855	Hammer broken.	Hammer to be replaced.
434174	Badly pitted bore.	Unserviceable.
311853	Broken sear spring.	Sear spring to be replaced.
196199	Broken sear spring.	Sear spring to be replaced.
293480	Broken sear spring.	Sear spring to be replaced.
458158	Pitted bore.	Serviceable.
507854	Recoil spring missing.	Recoil spring to be replaced.
540384	Badly pitted bore.	Unserviceable.
277146	Hammer broken.	Hammer to be replaced.

Five hundred sixty-nine (569) pistols in good condition.

Unserviceable pistols to be replaced.

DUCED AT THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL

Ordnance Storehouse (Organization)

Fort Monmouth, N.J. (Station)

Remington Shot Guns, 12 gage (Name of Arm)

December 30,1925. (Date)

Serial No.	Condition	Corrective Actions to be taken
Eight (8) Shot guns in good condition.		

REPRODUCED AT THE NATIONAL ARCHIVES

REPORT OF INSPECTION OF ORDNANCE MATERIEL.
FORT MONMOUTH, OCEANPORT, N.J.

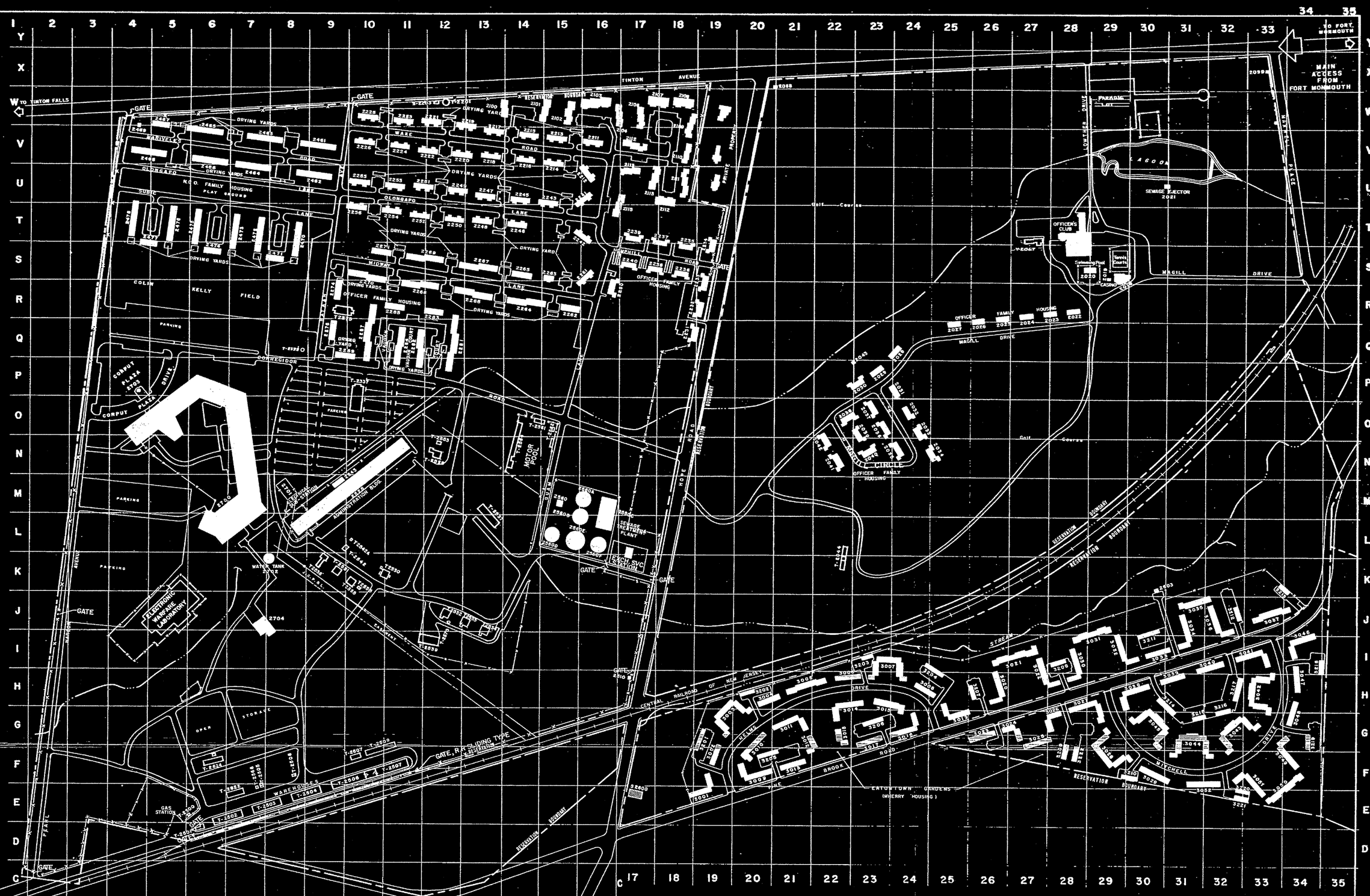
Inspection made by Mr. Wm. H. Carpenter, Armament Foreman, representing the Corps Area Ordnance Officer.

Commanding Officer, Fort Monmouth, N.J., is requested to return one copy to Corps Area Ordnance Officer when corrections have been made, with notation to that effect bearing his signature.

T. L. AMES,
Colonel, Ord. Dept.,
Corps Area Ordnance Officer.

1 copy C. of O.
1 copy C.A.O.O.
2 copies C.O., Ft. Monmouth, N.J.
1 copy Inspector

June 1960



LEGEND

- BUILDING, PERMANENT
- BUILDING, SEMIPERMANENT
- BUILDING, TEMPORARY
- ROAD, SURFACED
- FENCE
- RAILROAD

200 0 200 400 600
SCALE IN FEET

NOTE:-
THIS PLAN SUPERSEDES ALL PREVIOUS ISSUES BEARING THE SAME PLAN NUMBER.

REVISION

REMARKS	DATE	BY
REMOVED LOWTHER AREA	3/3/62	A.S.A
ADDED 2704 C.T. CHAMBER	3/3/62	A.S.A
BUILDING TYPE CHANGED	6/6/63	A.S.A
REMOVED BUILDING NO. S-2480	9/10/64	A.S.A
GENERAL REVISIONS	11/8/73	RCW
GENERAL REVISION	10/10/75	TAB

OFFICE OF THE FACILITIES ENGINEER
FORT MONMOUTH, N. J.

POST LAYOUT & RESERVATION MAP
CHARLES WOOD AREA
FORT MONMOUTH, N.J.

SCALE: 1" = 200'
DATE - 21 JUNE 1960
PREPARED UNDER DIRECTION OF: A.L. GAMEL
DRAWN BY: A.S.A.
CHECKED BY: P.T.M.
SUBMITTED BY:
FACILITIES ENGINEER
PLAN NO. 516

Attached to March 1976 RG 544 Army Material Command
"Installation Environmental Impact Assessment" E.9 (UD-WW) Acc. 81-0221
Harry Diamond Lab 1974-76
Box #6

1981

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

LONG BRANCH QUADRANGLE
NEW JERSEY—MONMOUTH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped by the Defense Mapping Agency
Edited and published by the Geological Survey

Control by USGS, USCE, and New Jersey Geodetic Survey

Culture and drainage in part compiled from aerial photographs taken 1941. Topography by planetable surveys 1944. Culture revised by the Geological Survey 1954

Hydrography compiled from NOS chart 824 (1953)
This information is not intended for navigational purposes

Polyconic projection. 10,000-foot grid ticks based on New Jersey coordinate system. 1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue. 1927 North American Datum. To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 35 meters west as shown by dashed corner ticks

Red tint indicates area in which only landmark buildings are shown

There may be private inholdings within the boundaries of the National or State reservations shown on this map

MN GN
12° 213 MILS
0°36' 11 MILS
UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1976 and other sources
This information not field checked. Map edited 1981
Purple tint indicates extension of urban areas

SCALE 1:24000

1 MILE
7000 FEET
1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS 4.4 FEET ALONG THE OCEAN
3 FEET AT RED BANK, AND 1.7 FEET IN SHREWSBURY RIVER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

NEW JERSEY
QUADRANGLE LOCATION

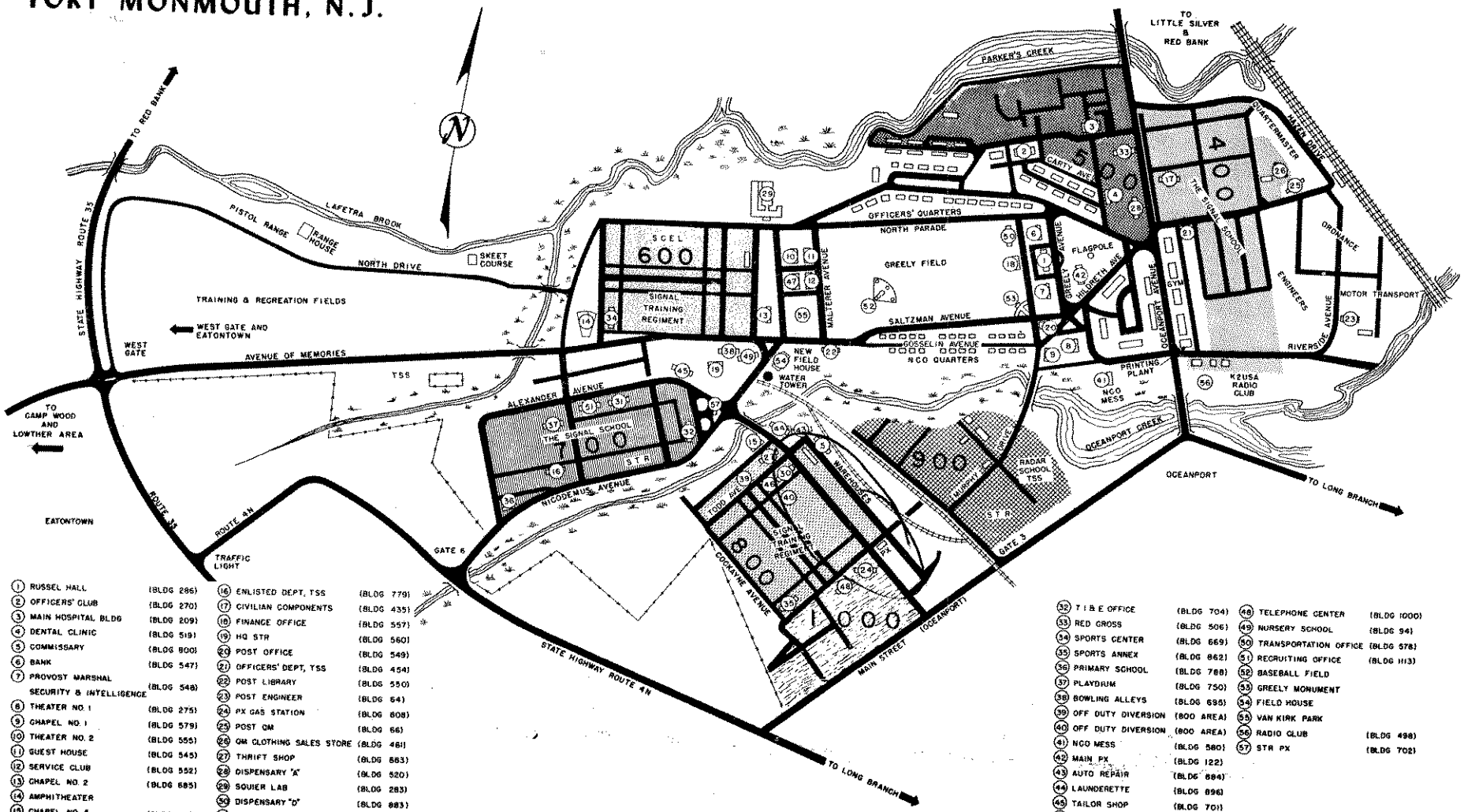
ROAD CLASSIFICATION
Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
U. S. Route
State Route

LONG BRANCH, N. J.
N4015—W7358/7.5x9.5
1954
PHOTOREVISED 1981
DMA 6154 I SE—SERIES V822

Fort Monmouth

RG 57, USGS
7.5 minute quad
Long Branch, N.J.

FORT MONMOUTH, N.J.



1. RUSSEL HALL (BLDG 286)
2. OFFICERS' CLUB (BLDG 270)
3. MAIN HOSPITAL BLDG (BLDG 209)
4. DENTAL CLINIC (BLDG 519)
5. COMMISSARY (BLDG 800)
6. BANK (BLDG 547)
7. PROVOST MARSHAL SECURITY & INTELLIGENCE (BLDG 548)
8. THEATER NO. 1 (BLDG 275)
9. CHAPEL NO. 1 (BLDG 579)
10. THEATER NO. 2 (BLDG 555)
11. GUEST HOUSE (BLDG 545)
12. SERVICE CLUB (BLDG 552)
13. CHAPEL NO. 2 (BLDG 685)
14. AMPHITHEATER
15. CHAPEL NO. 4 (BLDG 811)
16. ENLISTED DEPT, TSS (BLDG 779)
17. CIVILIAN COMPONENTS (BLDG 435)
18. FINANCE OFFICE (BLDG 557)
19. HQ STR (BLDG 560)
20. POST OFFICE (BLDG 549)
21. OFFICERS' DEPT, TSS (BLDG 454)
22. POST LIBRARY (BLDG 550)
23. POST ENGINEER (BLDG 64)
24. PX GAS STATION (BLDG 808)
25. POST QM (BLDG 66)
26. QM CLOTHING SALES STORE (BLDG 481)
27. THRIFT SHOP (BLDG 563)
28. DISPENSARY "A" (BLDG 520)
29. SQUIER LAB (BLDG 283)
30. DISPENSARY "D" (BLDG 883)
31. ENLISTED PERSONNEL BR (BLDG 113)
32. T I & E OFFICE (BLDG 704)
33. RED CROSS (BLDG 506)
34. SPORTS CENTER (BLDG 669)
35. SPORTS ANNEX (BLDG 862)
36. PRIMARY SCHOOL (BLDG 788)
37. PLAYDRUM (BLDG 750)
38. BOWLING ALLEYS (BLDG 695)
39. OFF DUTY DIVERSION (800 AREA)
40. OFF DUTY DIVERSION (800 AREA)
41. NCO MESS (BLDG 580)
42. MAIN PX (BLDG 122)
43. AUTO REPAIR (BLDG 884)
44. LAUNDERETTE (BLDG 896)
45. TAILOR SHOP (BLDG 701)
46. TAILOR SHOP (BLDG 839)
47. TELEPHONE CENTER (BLDG 554)
48. TELEPHONE CENTER (BLDG 1000)
49. NURSERY SCHOOL (BLDG 94)
50. TRANSPORTATION OFFICE (BLDG 578)
51. RECRUITING OFFICE (BLDG 113)
52. BASEBALL FIELD
53. GREELY MONUMENT
54. FIELD HOUSE
55. VAN KIRK PARK
56. RADIO CLUB (BLDG 498)
57. STR PX (BLDG 702)

MAP A – 1 June 1950

Appendix D: Interview Records

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	Tuesday October 18, 2005
Interview Made By:	Ms. Shelly Kolb and Ms. Ose Carr
Person Interviewed:	Captain Shawn L. Kadlec, Commander of the 754th Ordnance Company Sergeant Jeffery McLean, EOD Team Leader Mr. Mark Simeroth, EOD – U.S. Army Bomb Squad

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have your worked at Fort Monmouth?

- Kadlec: Commander of the 754th Ordnance Company, employed at Fort Monmouth since 1997.
- McLean: EOD Team Leader, employed at Fort Monmouth since 1997.
- Simeroth: EOD – U.S. Army Bomb Squad, employed at Fort Monmouth since 1997.

Captain Kadlec, can you please tell us more about the 754th Ordnance Company at Fort Monmouth?

- The 754th Ordnance Company has been assigned to FTMM since 1964 and was previously located at Building 676 through the 1980s when it was relocated to Building 289.
- The activities that occur in Building 298 include training troops in the identification of various MEC utilizing completely inert props.
- Currently the EOD Area is occupied by warehouses and a new EOD building is being constructed in the near vicinity.

Each of the interviews was shown the Phase 2 and Phase 3 maps as well as the maps provided during the In-Brief (1941 map of Main Post and 1944 map of Charles Wood Area). The interviewees were asked to provide any information on any of the ranges identified during the CTT and during the preliminary data collection efforts for this HRR.

- The interviewees indicated that there is no Bivouac Range (shown as range 19 on the A/I Ranges Map).
- The interviewees indicated that the magazines (shown on the 1941 map) stored Class A explosives until 1998.
- The interviewees stated that due to lack of open areas at Fort Monmouth, there are no disposals of live MEC on Post.

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	Wednesday October 19, 2005
Interview Made By:	Ms. Jessica Forester, Ms. Ose Carr, and Ms. Afton Hess
Person Interviewed:	Mr. Thad Hammer – Director of Logistics

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have your worked at Fort Monmouth?

- Director of Logistics, employed at Fort Monmouth since 1974.

Mr. Hammer was shown the Phase 2, Phase 3 maps, the maps provided during the In-Brief (1941 map of Main Post and 1944 map of Charles Wood Area), and the list of potential munitions acceptable at Fort Monmouth (ARID/DODIC codes). Mr. Hammer was asked to provide any information on any of the ranges identified during the CTT and during the preliminary data collection efforts for this HRR.

- Mr. Hammer stated that currently there are no training activities (munitions related) conducted at Fort Monmouth.
- Mr. Hammer indicated that the Wayside Training Area (sub-installation to Fort Monmouth) includes small arms training (*i.e.*, pistol firing).
- Mr. Hammer indicated that the Evans Area (previously a sub-installation to Fort Monmouth, but has since been closed via BRAC) has an Indoor Firing Range (small arms).
- When shown the list of possible munitions obtained from ARID, Mr. Hammer stated that none of the munitions on the list were fired/used on Main Post.

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	Monday October 17, 2005 and Wednesday October 19, 2005
Interview Made By:	Ms. Shelly Kolb, Ms. Jessica Forester, Ms. Ose Carr, and Ms. Afton Hess
Person Interviewed:	Mr. Doug Guenther – Restoration Manager

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have your worked at Fort Monmouth?

- Restoration Manager, employed at Fort Monmouth since 2002.

Mr. Guenther was shown the Phase 2 and Phase 3 maps as well as the maps provided during the In-Brief (1941 map of Main Post and 1944 map of Charles Wood Area). Mr. Guenther was asked to provide any information on any of the ranges identified during the CTT and during the preliminary data collection efforts for this HRR.

- Mr. Guenther provided background information on the closed Indoor Small Arms Range and the cleanup/remedial action that occurred:
  - One story building (Bldg. 2537) at Charles Wood Area.
  - Sampling was conducted and confirmed the presence of lead in the soil.
  - Clean up work commenced in 1997 and a remedial action report is currently being prepared to recommend NFA.

- Mr. Guenther also provided access to applicable environmental documents (see list provided in Appendix B).

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	Monday October 17, 2005
Interview Made By:	Ms. Shelly Kolb, Ms. Jessica Forester, Ms. Ose Carr, Ms. Afton Hess, and Mr. Greg Firely
Person Interviewed:	Mr. Joe Fallon – Team Leader, Environmental Branch Mr. Robert Melacaglia – Installation Master Planner

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have your worked at Fort Monmouth?

- Mr. Fallon: Teal Leader of the Environmental Branch, employed at Fort Monmouth since 1988.
- Mr. Melacaglia: Installation Master Planner, employed at Fort Monmouth since 1986.

The interviewees were shown the Phase 2 and Phase 3 maps as well as the maps provided during the In-Brief (1941 map of Main Post and 1944 map of Charles Wood Area). The interviewees were asked to provide any information on any of the ranges identified during the CTT and during the preliminary data collection efforts for this HRR.

- The interviewees indicated that Cowan Park (located on Main Post) is used for ceremonial activities (*i.e.*, cannon ball firing; however, not live ammunition, just noise is used).
- The interviewees indicated that there are digital historical maps/drawings located on the Fort Monmouth server which the site visit team can review and obtain copies of desired maps/drawings (see list provided in Appendix B).
- The interviewees also indicated that there are hard copies of historical maps/drawings that the site visit team can review and desired maps/drawings can be scanned (see list provided in Appendix B).

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	Monday October 17, 2005 and Wednesday October 19, 2005
Interview Made By:	Ms. Shelly Kolb, Ms. Jessica Forester, Ms. Ose Carr, and Ms. Afton Hess
Person Interviewed:	Mr. Dinkerrai Desai, Environmental Coordinator

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have your worked at Fort Monmouth?

- Environmental Coordinator, employed at Fort Monmouth since 1981.

Can you please provide contact information for various installation personnel who would be able to provide information regarding the ranges identified at Fort Monmouth during the Phase 2 and Phase 3.

- Mr. Desai was able to provide various installation personnel contact information. Upon receipt of this contact information, the data collection team was able to set up interviews with knowledgeable installation personnel.

Mr. Desai was shown the Phase 2 and Phase 3 maps as well as the maps provided during the In-Brief (1941 map of Main Post and 1944 map of Charles Wood Area). Mr. Desai was asked to provide any information on any of the ranges identified during the CTT and during the preliminary data collection efforts for this HRR.

- Mr. Desai Stated that currently there are no training activities (munitions related activities) conducted at Fort Monmouth.
- Mr. Desai also stated that to the best of his knowledge none of the munitions listed as possible munitions (obtained from ARID) were ever fired/used at Fort Monmouth.

Interview Record

Version 1

Project:	BRAC PBC Historical Records Review
Site:	Fort Monmouth, New Jersey
Contract No.:	DACW41-02-D-0003
Delivery Order:	DA02
Date:	11 January 2006
Interview Made By:	Ms. Shelly Kolb
Person Interviewed:	Mr. Steven Rauch – Command Historian for the U.S. Army Signal Center

Discussion:

The questions/responses of the interview are summarized below:

What is your title/job description and how long have you been in your position?

- Command Historian for the U.S. Army Signal Center, employed for 3 years.

What did you do prior to this?

- Officer Active U.S. Army

We are conducting a Historical Records Review of munitions related activities on Fort Monmouth. In particular we were interested in any munitions training records. In 1974 the U.S. Army Signal School was moved from Fort Monmouth to Fort Gordon. While conduction onsite research at Fort Monmouth, we were told all of the records were sent to Fort Gordon and that you are the person to contact regarding these records. Can you confirm this?

- Yes, the records are here however they have not been indexed so I'm not sure exactly what we have. I have hired an archivist and we are working on organizing and indexing the records.

What type of records do you have?

- We have the Signal School training records.

Do you have munitions training records such as small arms training or pistol/rifle qualifying records?

- No, we have Program of Instruction (POI) training records. This would include classroom type training.

Would the students have done small arms training or pistol/rifle qualifying type training while in school?

- No, it's really unlikely. They would have done that either in basic training or once they completed Signal School and were sent to a unit and were issued a weapon. To verify I will have my archivist look at the labels on the boxes to see if we have this type of information. It's highly unlikely but if we find something I will contact you.

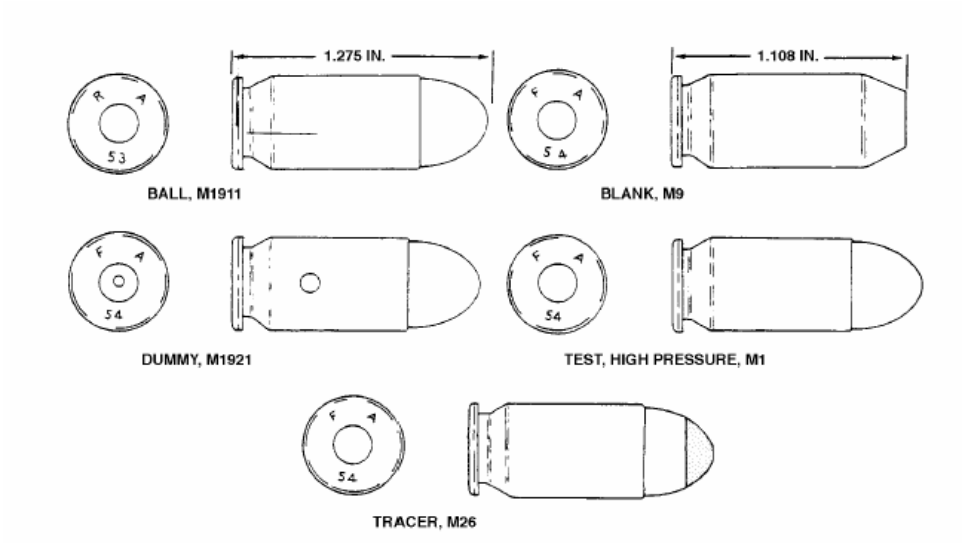
That would be very helpful, thank you. Can you please contact me if you even if you don't find anything?

- Sure I'll send you an email to close the loop.

Log No._____

Appendix E: Munitions Technical Data Sheets

<u>Munitions Technical Data Sheet</u>
.45 Caliber Small Arms



Nomenclature:	.45 Caliber Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	A086
Filler:	Double Base Powder*
Filler weight:	.311 gram
Item weight:	17.63 grams
Projectile Weight:	5.64 grams
Diameter:	.45 caliber
Length:	1.256 inches

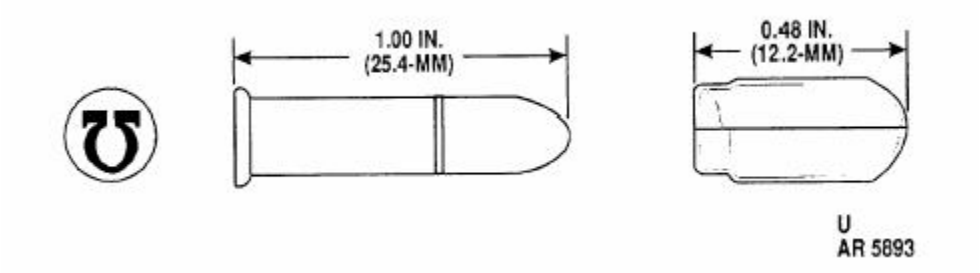
Usage: This cartridge is designed and procured for use in semiautomatic pistols for target practice and Navy Competitive Match Programs.

Description: The gilding metal jacketed bullet has a lead-antimony slug. It is 0.68 inch (1.72 centimeters) long and weighs approximately 234 grains The cartridge is 1.256 inches (3.19 centimeters) long, contains a lead-styphnate primer and approximately 4.8 grains (.311 gram) of propellant composition.

* Double base propellants contain nitrocellulose and a liquid organic nitrate, such as nitroglycerine. As with single base, stabilizers and additives may be present. Double base propellants are used in cannon, small arms, mortars, rockets, and jet propulsion units.

Reference: TM 43-0001-27

<u>Munitions Technical Data Sheet</u>
.22 Caliber Small Arms



Nomenclature:	.22 Caliber Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	A086
Filler:	Single or Double Base Powder
Filler weight:	2.5 gr
Item weight:	416 gr
Projectile Weight:	40.5 gr
Diameter:	.22 Caliber
Length:	1 in. (25.4 mm)

Usage: Subcaliber Rifle M2A1; Caliber .22 Rifle; Remington Models 40X and M513T; Steven's Model 416-2; Winchester Models 52 and 75; Machine Gun Trainers M3 and M4; pistols for gallery practice and training purposes. The cartridge is intended for use against small game for survival purposes.

Description: BALL Cartridge. The cartridge is identified by a plain bullet tip.

Reference: TM 43-0001-27

<u>Munitions Technical Data Sheet</u>
9 Millimeter, Small Arms

Nomenclature:	9 millimeter Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	
Filler:	Double Base Powder*
Filler weight:	.388 gram
Item weight:	11.79 grams
Projectile Weight:	5.64 grams
Diameter:	9 millimeter
Length:	1.169 inches

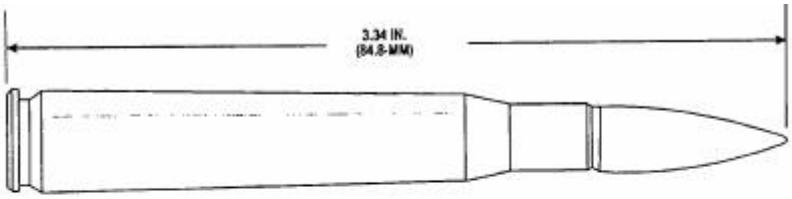
Usage: This cartridge is for firing in revolvers, pistols, and sub-machine guns chambered for the 9mm cartridge.

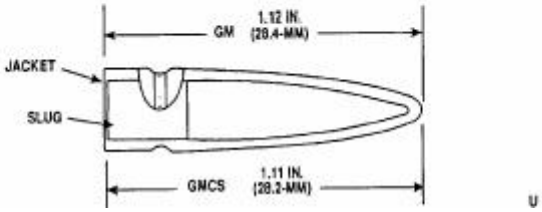
Description: The cartridge is 1.169 inches (2.96 centimeters) long, weighs approximately 182 grains (11.79 grams) and contains approximately 6 grains (.388 gram) of propellant composition.

* Double base propellants contain nitrocellulose and a liquid organic nitrate, such as nitroglycerine. As with single base, stabilizers and additives may be present. Double base propellants are used in cannon, small arms, mortars, rockets, and jet propulsion units.

Reference: TM 43-0001-27

<u>Munitions Technical Data Sheet</u>
.30 Caliber Small Arms





Nomenclature:	.30 Caliber Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	A212
Filler:	Single or Double Base Powder
Filler weight:	± Various
Item weight:	416 gr
Diameter:	.30 Caliber
Length:	3.34 in. (84.8mm)

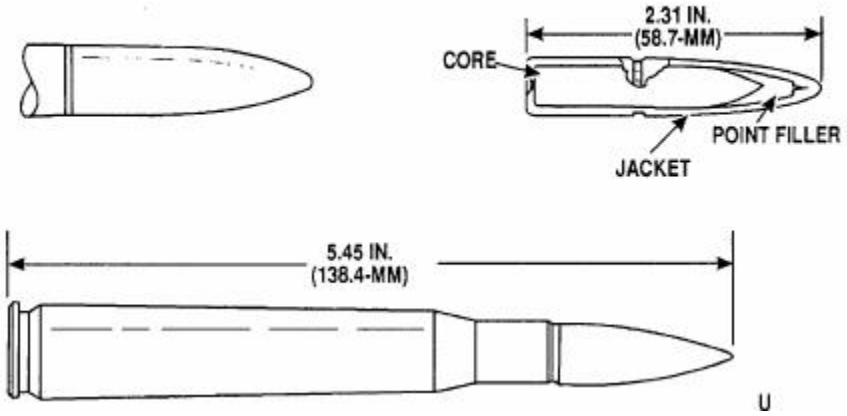
Usage: Machine Guns, Caliber .30, M37, M1919A4 and M1919A6; and Rifle, Caliber .30, M1. The cartridge is intended for use against personnel or unarmored targets.

Description: BALL Cartridge. The cartridge is identified by a plain bullet tip.

Reference: TM 43-0001-27

<u>Munitions Technical Data Sheet</u>
.50 Caliber Small Arms

CARTRIDGE, CALIBER .50, BALL, M2



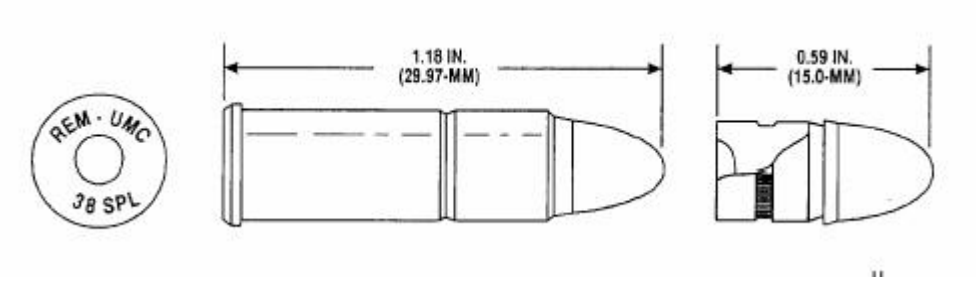
Nomenclature:	.50 Caliber Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	A552
Filler:	Single or Double Base Powder
Filler weight:	± Various
Item weight:	1813 gr
Diameter:	.50 Caliber
Length:	5.45 in. (138.4 mm)

Usage: Machine Guns, Caliber .50, M2 and M85. The cartridge is intended for use against personnel or unarmored targets.

Description: BALL Cartridge. The cartridge is identified by a plain bullet tip.

Reference: TM 43-0001-27

<u>Munitions Technical Data Sheet</u>
.38 Caliber Small Arms



Nomenclature:	.38 Caliber Small Arms Ammunition
Ordnance Family:	Small Arms
DODIC:	A408
Filler:	Single or Double Base Powder
Filler weight:	4.8 gr
Item weight:	196 gr
Projectile Weight:	60.5 gr
Diameter:	.38 Caliber
Length:	1.18 in. (29.97mm)

Usage: Caliber .38 weapons. The cartridge is for CONUS-guard or security use in caliber .38 weapons.

Description: BALL Cartridge. The cartridge is identified by a plain bullet tip.

Reference: TM 43-0001-27

SMALL-ARMS AMMUNITION

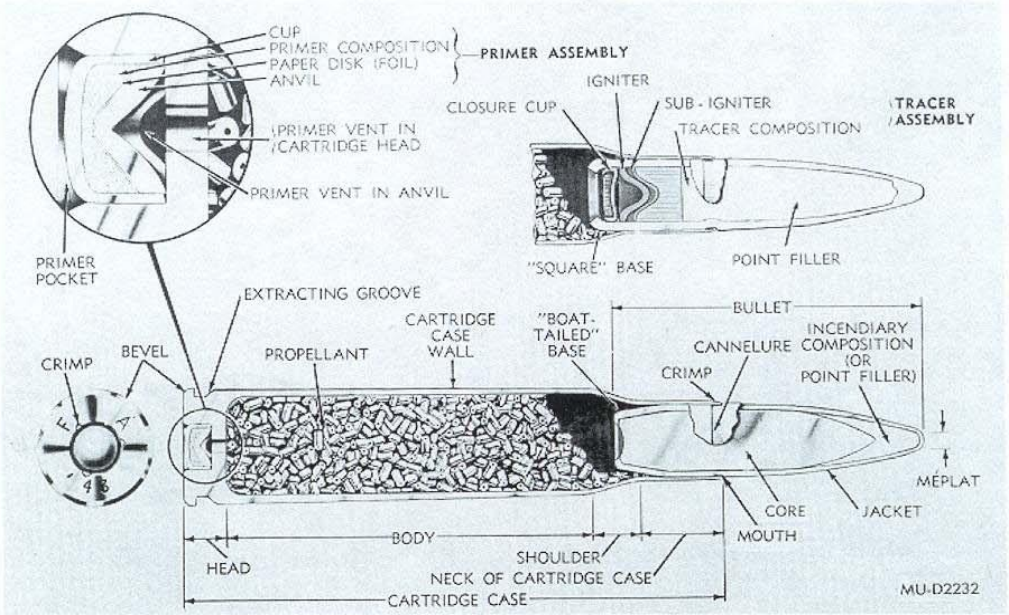


Figure 1. Typical cartridge (sectional)

General. Small-arms ammunition, as used herein, describes a cartridge or families of cartridges intended for use in various types of hand-held or mounted weapons through 30 millimeter. Within a caliber designation, these weapons may include one or more of the following: rifles (except recoilless), carbines, pistols, revolvers, machineguns and shotguns. For purposes of this publication, small-arms ammunition may be grouped as cartridges intended primarily for combat or training purposes (API, HEI, tracer or ball); for training purposes only (blank or dummy); or for special purposes (rifle grenade or spotter-tracer). Refer to TM 9-1306-200 for more detailed information on small-arms ammunition.

Cartridges. In general, a small-arms cartridge is identified as an assembly of a cartridge case, primer, a quantity of propellant within the cartridge case, and a bullet or projectile. Blank and rifle grenade cartridges are sealed with paper closure disks in lieu of bullets. Dummy cartridges are composed of a cartridge case and a bullet. Some dummy cartridges contain inert granular materials to simulate the weight and balance of live cartridges. A typical cartridge and the terminology of its components are shown in figure 1.

Case. Although steel, aluminum, zinc and plastic materials have been used experimentally, brass, a composition of 70 percent copper and 30 percent zinc, is the most commonly used material for cartridge cases. Steel, as well as brass, is an approved material for caliber .45 cartridge cases. Brass, paper and plastic are used for 12 gage shotshell bodies. Aluminum is used for military-type .410 gage shotshell bodies. Configurations of cartridges and bullets are illustrated in figures 2 through 11.

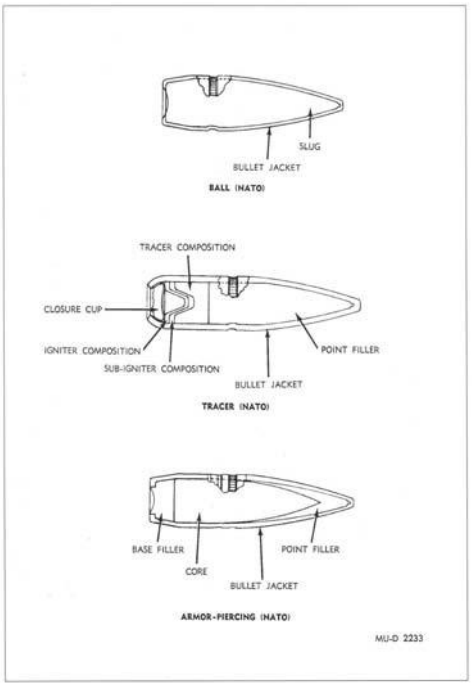


Figure 2. 7.62 mm bullets (sectional)

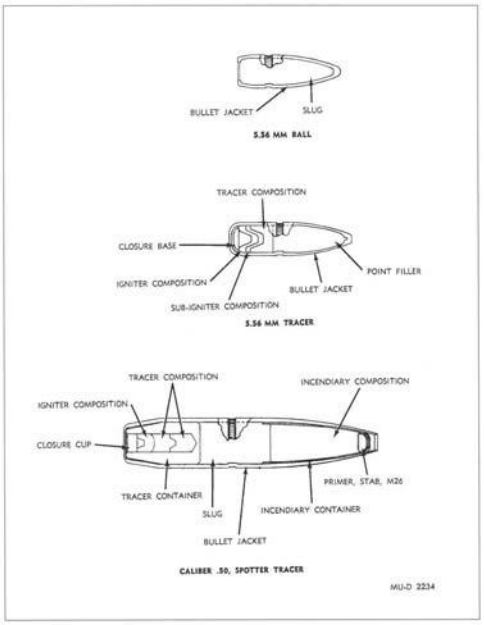


Figure 3. 5.56mm and caliber .50 spotter tracer bullets (sectioned)

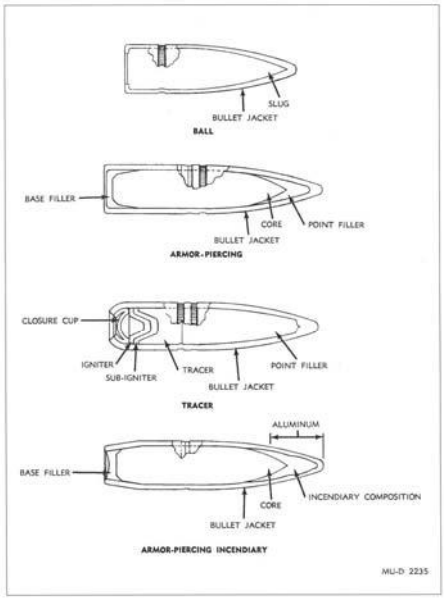


Figure 4. Caliber .30 bullets (sectional)

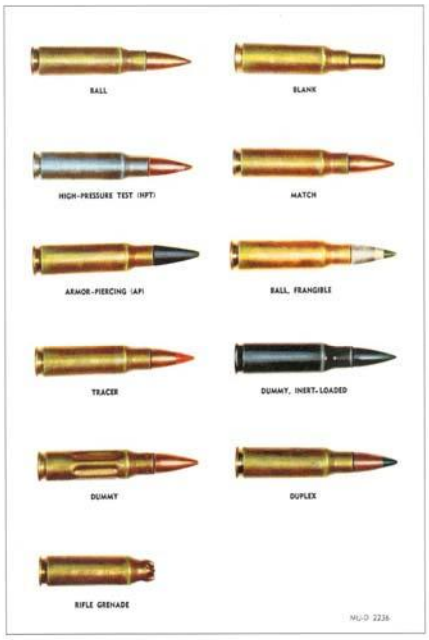


Figure 5. 7.62mm cartridges

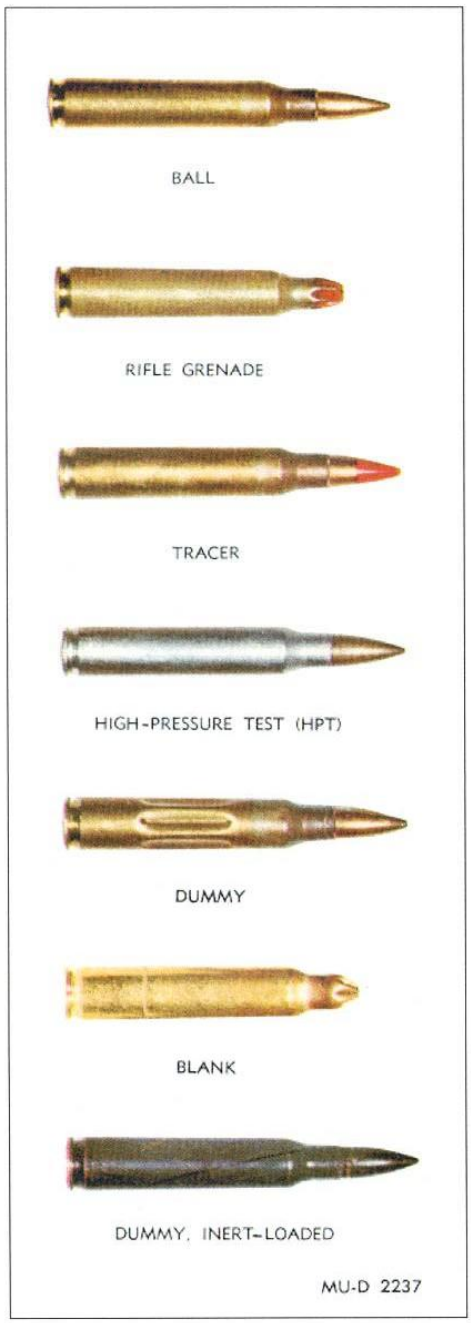


Figure 6. 5.56mm cartridges

Propellant. Cartridges are loaded with varying weights of propellant. This is to impart sufficient velocity (within safe pressures) to the projectile to obtain the required ballistic performance. These propellants are either of the single-base (nitrocellulose) or double-base (nitrocellulose and nitroglycerine) type. The propellant grain configuration may be cylindrical with a single, lengthwise perforation, spheroid (ball) or flake. Most propellants are coated with a deterrent (to assist in controlling the rate of combustion) and with a final coating of graphite (to facilitate flow of propellant and eliminate static electricity in loading cartridges).

Primer. Small-arms cartridges contain either a percussion or electric primer. The percussion primer consists of a brass or gilding metal cup that contains a pellet of sensitive explosive material secured by a paper disk and a brass anvil. The electric primer consists of an electrode button in contact with the priming composition, a primer cup assembly and insulator. A blow from the firing pin of the weapon on the center of the percussion primer cup base compresses the primer composition between the cup and the anvil. This causes the composition to explode. The function of the electric primer is accomplished by a firing pin with electrical potential, which contacts the electrode button. This allows current to flow through the energy-sensitive priming composition to the grounded primer cup and cartridge case, exploding the priming composition. Holes or vents in the anvil or closure cup allow the flame to pass through the primer vent in the cartridge case and ignite the propellant. Rimfire ammunition, such as the caliber .22 cartridge, does not contain a primer assembly. Instead, the primer composition is spun into the rim of the cartridge case and the propellant is in intimate contact with the composition. On firing, the firing pin strikes the rim of the cartridge case, compressing the primer composition and initiating its explosion.

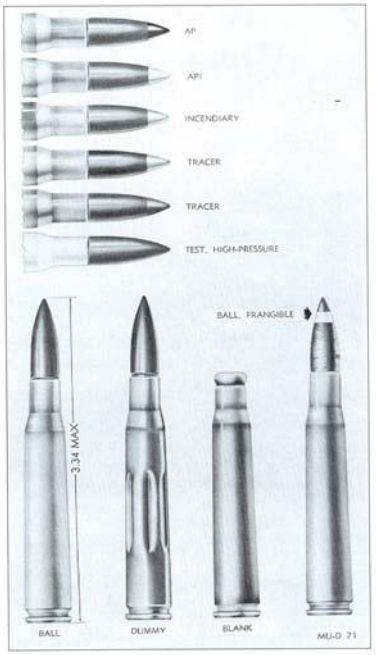


Figure 7. Caliber .30 cartridges

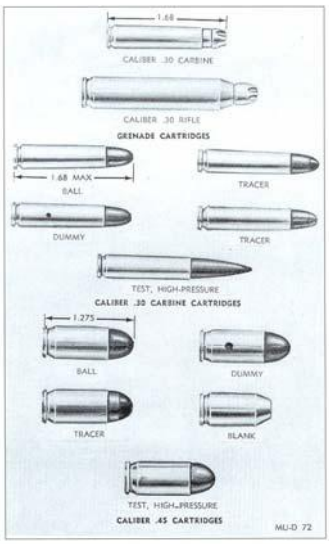


Figure 8. Caliber .30 carbine and caliber .45 cartridges

Bullet. With few exceptions, bullets through caliber .50 are assemblies of a jacket and a lead or steel core. They may contain other components or chemicals which provide the terminal ballistic characteristics of the bullet type. The bullet jacket may be either gliding metal, gliding-metal clad steel, or copper plated steel. Caliber .30 and 7.62mm frangible bullets are molded of powdered lead and a friable plastic which pulverizes into dust upon impact with the target. The pellets used in the shotgun shells are spheres of lead alloys varying from 0.08 inch to 0.33 inch in diameter.

Figure 9. Caliber .50 cartridges

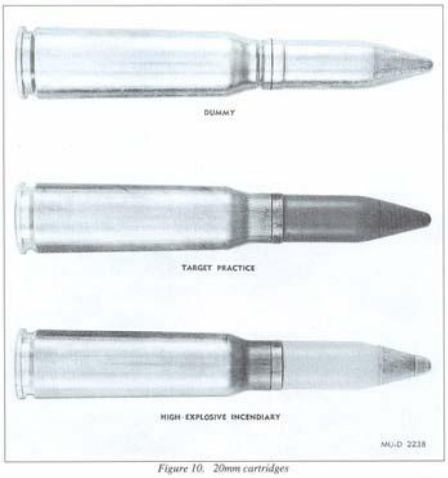


Figure 10. 20mm cartridges

Ball Cartridge. The ball cartridge is intended for use in rifles, carbines, pistols, revolvers and/or machineguns against personnel and unarmored targets. The bullet, as designed for general purpose combat and training requirements, normally consists of a metal jacket and a lead slug. Caliber .50 ball bullet and 7.62-mm, Ball M59 bullet contain soft steel cores.

Tracer Cartridge. By means of a trail of flame and smoke, the tracer cartridge is intended to permit visible observation of the bullet's in-flight path or trajectory and the point of impact. It is used primarily to observe the line of fire. It may also be used to pinpoint enemy targets to ignite flammable materials and for signaling purposes. The tracer element consists of a compressed, flammable, pyrotechnic composition in the base of the bullet. This composition is ignited by the propellant when the cartridge is fired. In flight, the bullet emits a bright flame which is visible to the gunner. Trace burnout occurs at a range between 400 and 1,600 yards, depending upon the caliber of ammunition.

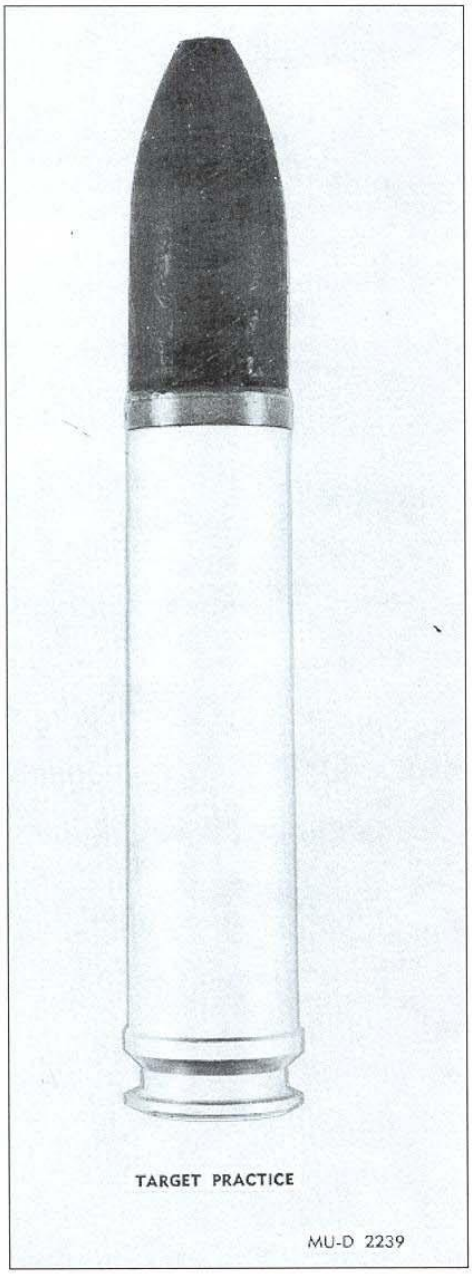


Figure 11. Typical 30mm projectile

Match Cartridge. The match cartridge is used in National and International Match Shooting competitions. The bullet consists of a gliding-metal jacket over a lead slug. The cartridges are identified on the head face with the designation NM (National Match) or Match.

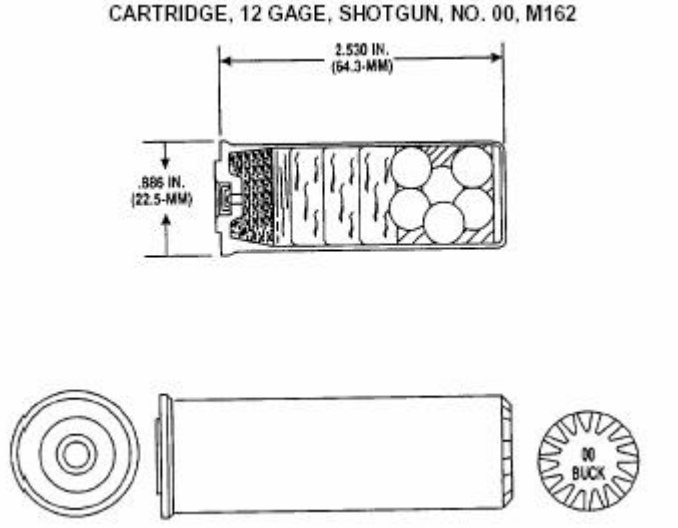
Armor-Piercing Cartridges. The armor-piercing cartridge is intended for use in machine-guns or rifles against personnel and light armored and unarmored targets, concrete shelters, and similar bullet-resisting targets. The bullet consists of a metal jacket and a hardened steel-alloy core. In addition, it may have a base filler and/or a point filler of lead.

Armor-Piercing-Incendiary Cartridge. The armor-piercing-incendiary cartridge is used in rifles or machineguns as a single combination cartridge in lieu of separate armor-piercing and incendiary cartridges. The bullet is similar to the armor-piercing bullet, except that the point filler is incendiary mixture instead of lead. Upon impact with the target, the incendiary mixture burst into flame and ignites flammable material.

Armor-Piercing-Incendiary Tracer Cartridge. The bullet of the armor-piercing-incendiary-tracer cartridge combines the features of the armor-piercing, incendiary, and tracer bullets and may be used to replace those cartridges. The bullet consists of a hard steel core with compressed pyrotechnic mixture in the cavity in the base of the core. The core is covered by a gilding-metal jacket with incendiary mixture between the core point and jacket. This cartridge is for use in caliber .50 weapons only.

Duplex Cartridge. The duplex cartridge contains two special ball type bullets in tandem. The front bullet is positioned partially in the case neck, similarly to a standard ball bullet. The rear bullet, positioned completely within the case, is held in position by a compressed propellant charge. The base of the rear bullet is angled so that in flight, it follows a path slightly dispersed from that of the front bullet.

<u>Munitions Technical Data Sheet</u>
12 Gage Shotgun, NO 00



Nomenclature:	12 Gage Shotgun, NO 00
Ordnance Family:	Small Arms
DODIC:	A011
Filler:	Smokeless Powder
Filler weight:	± Various
Item weight:	0.736 gr
Diameter:	.886 in
Length:	2.53 in. (64.3 mm)

Usage: Military issue shotgun, 2-3/4 inch chamber. The cartridge is intended for guard and combat use.

Description: The cartridge case is all plastic, and is loaded with smokeless powder and No. 00 commercial shot.

Reference: TM 43-0001-27

Material Safety Data Sheet
Clay Targets

REMINGTON ARMS CO., INC.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTIFICATION: "BLUE ROCK" TRAP AND SKEET TARGETS

"BLUE ROCK" IS A REGISTERED TRADEMARK OF REMINGTON ARMS CO., INC.

REVISION DATE: 27-APRIL-94
DATE PRINTED: 20-SEPT.-91

MANUFACTURER / DISTRIBUTOR:
REMINGTON ARMS CO., INC.
P. O. BOX 390
FINDLAY, OHIO 45840

PHONE NUMBERS:
PRODUCT INFORMATION: 1-(419) 422-2664
TRANSPORT EMERGENCY: CHEMTREC: 1-800-424-9300
ENVIRONMENTAL INFORMATION: (501) 676-4111

TRADE NAMES / SYNONYMS: CLAY TARGETS
CLAY PIGEONS

PRODUCT TYPE: P
STATUS INDICATOR: F
NFPA RATINGS: Health: 0 Flammability: 0 Reactivity: 0
NPCA-HMIS RATINGS: Health: 0 Flammability: 0 Reactivity: 0

Personal Protection:

COMPONENTS

MATERIAL	CAS NUMBER	%
AROMATIC PETROLEUM PITCHES	68334-31-6 / 68187-58-6	32
DOLOMITIC LIMESTONE	16389-88-1	67
FLUORESCENT AQUEOUS PAINT, or		1
LATEX PAINT - WHITE		1

POLYNUCLEAR AROMATIC HYDROCARBONS (0.1% OF TOTAL WEIGHT)
** 0.1% OF TOTAL WEIGHT LATEX PAINT

PHYSICAL DATA

WATER SOLUBILITY: LOW
FORM: SOLID, DISKS
COLOR: BLACK WITH FLUORESCENT ORANGE OR WHITE PAINTED TOP.

REMINGTON ARMS COMPANY, INC.

MATERIAL SAFETY DATA SHEET

HAZARDOUS REACTIVITY

INSTABILITY:	STABLE
INCOMPATIBILITY:	NONE REASONABLY FORESEEABLE
DECOMPOSITION:	DECOMPOSITION WILL NOT OCCUR
POLYMERIZATION:	POLYMERIZATION WILL NOT OCCUR

FIRE AND EXPLOSION DATA

NOT A FIRE AND EXPLOSION HAZARD.

FIRE AND EXPLOSION HAZARDS: NONE

EXTINGUISHING MEDIA: USE MEDIA APPROPRIATE FOR SURROUNDING MATERIAL.

SPECIAL FIRE FIGHTING INSTRUCTIONS: KEEP PERSONNEL REMOVED AND UPWIND OF FIRE. WEAR SELF-CONTAINED BREATHING APPARATUS. WEAR FULL PROTECTIVE EQUIPMENT.

HEALTH HAZARD INFORMATION

COMMENT: This toxicity summary refers to targets containing approximately 32% petroleum pitches (CAS 68334-31-6), (68187-58-6) and 67% dolomitic limestone (CAS 16389-88-1).

CARCINOGENICITY LISTING: Petroleum pitch contains polynuclear aromatic hydro- carbons, some of which are classified as carcinogens by IARC, NTP and ACGIH.

Exposure to dust or particulates from shattered or crushed clay pigeons may irritate the skin, eyes or lungs. Ingestion may cause gastrointestinal irritation with nausea, vomiting and diarrhea.

ANIMAL DATA:

Skin absorption ALD for PETROLEUM PITCH: > 5000 mg/kg in rabbits.

PETROLEUM PITCH is a slight irritant.

PETROLEUM PITCH contains polynuclear aromatic hydrocarbons, some of which have caused skin an internal organ cancer in laboratory animals.

REMINGTON ARMS COMPANY, INC.

MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION (Continued)

Mouse skin painting studies using petroleum distillates similar to ingredients in PETROLEUM PITCH caused skin tumors; however, these data should be interpreted cautiously since these studies used repeated exposure of shaved skin which was never washed free of test material. The skin damage resulting from such repeated exposures may play a role in the tumorigenic response.

HUMAN HEALTH EFFECTS:

Handling of the intact painted product is not expected to be hazardous. Exposure to dust or particulates from shattered or crushed product may cause irritation to the skin, eyes, or lungs after prolonged or repeated contact; this material may cause an allergy in some individuals. Due to the presence of petroleum pitch, crushed product may cause gastrointestinal irritation, nausea, vomiting and diarrhea if swallowed. Petroleum pitch on the skin causes an increased sensitivity to sunlight, and may, in combination with sun exposure, cause increased possibility for sunburn.

This material contains polynuclear aromatic hydrocarbons, some of which are classified as carcinogens.

CARCINOGENICITY:

The following components are listed by IARC, NTP, OSHA, or ACGIH as carcinogens. A "P" indicates a Proposed Carcinogen.

MATERIAL	IARC	NTP	OSHA	ACGIH
AROMATIC PETROLEUM PITCHES	x	x		

EXPOSURE LIMITS: "BLUE ROCK" TRAP AND SKEET TARGETS

TLV (ACGIH): NONE ESTABLISHED
PEL (OSHA): PARTICULATES NOT OTHERWISE REGULATED
15 mg/m3 - 8 Hr. TWA - Total Dust
5 mg/m3 - 8 Hr. TWA - Respirable Dust

OTHER APPLICABLE EXPOSURE LIMITS

AROMATIC PETROLEUM PITCHES

TLV (ACGIH): 0.2 mg/m3, A1 - 8 Hr. TWA
PEL (OSHA): 0.2 mg/m3 - 8 Hr. TWA

REMINGTON ARMS COMPANY, INC.

MATERIAL SAFETY DATA SHEETS

HEALTH HAZARD INFORMATION (Continued)

DOLOMITIC LIMESTONE

TLV (ACGIH): 10 mg/m3 - The value is for total dust containing no asbestos and < 1% crystalline silica - 8 Hr. TWA

PEL (OSHA): NONE ESTABLISHED

SAFETY PRECAUTIONS: Avoid breathing dust. Wash thoroughly after handling.

FIRST AID

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician. INHALATION OF DUST FROM THE CRUSHED PRODUCT.

SKIN CONTACT: The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. SKIN CONTACT WITH DUST FROM THE CRUSHED PRODUCT.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at lease 15 minutes. Call a physician. EYE CONTACT WITH DUST FROM THE CRUSHED PRODUCT.

INGESTION: If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician. INGESTION OF DUST FROM THE CRUSHED PRODUCT.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES AND PRECAUTIONS

Avoid dust generation.

PERSONAL PROTECTIVE EQUIPMENT

Wear protective gloves made of canvas or leather to prevent cuts from sharp edges.

DISPOSAL INFORMATION

AQUATIC TOXICITY

CRUSHED CLAY PIGEONS (<5 mm), 96 hour LC50, fathead minnows: > 66.7 g/L).

REMINGTON ARMS CO., INC.

MATERIAL SAFETY DATA SHEET

DISPOSAL INFORMATION (Continued)

SPILL, LEAK, OR RELEASE

NOTE: Review FIRE AND EXPLOSION HAZARDS AND SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Shovel or sweep up.

WASTE DISPOSAL

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Remove nonusable solid material and/or contaminated soil, for disposal in an approved and permitted landfill.

SHIPPING INFORMATION

D.O.T. PROPER SHIPPING NAME: CLAY TARGETS
HAZARD CLASS: NOT REGULATION

TITLE III HAZARD CLASSIFICATIONS

ACUTE:	NO
CHRONIC:	NO
FIRE:	NO
REACTIVITY:	NO
PRESSURE:	NO

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS.

RESPONSIBILITY FOR MSDS: CHARLES S. KNOTT,
REMINGTON ARMS COMPANY, INC.
I-40 AND HIGHWAY 15
LONOKE, ARKANSAS 72086