MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM

NR Eligible: yes X
no

Property Name: Medical Laboratory Buildings E3220-22-24-26 Inventory Number: Ha-2201

Address: East of Ricketts Point Road Historic district: ___ yes X no

City: Edgewood Zip Code: 21010 County: Harford

USGS Quadrangle(s): Edgewood

Property Owner: U.S. Army Garrison APG Tax Account ID Number: N/A

Tax Map Parcel Number(s): N/A Tax Map Number: N/A

Project: Agency:

Agency Prepared By: R. Christopher Goodwin & Associates, Inc

Preparer's Name: Roger Ciuffo Date Prepared: 4/20/2010

Documentation is presented in:

Preparer's Eligibility Recommendation: ___ Eligibility recommended X Eligibility not recommended

Criteria: ___ A ___ B ___ C ___ D Considerations: ___ A ___ B ___ C ___ D ___ E ___ F ___ G

Complete if the property is a contributing or non-contributing resource to a NR district/property:

Name of the District/Property:

Inventory Number: Eligible: ___ yes Listed: ___ yes

Site visit by MHT Staff ___ yes X no Name: Date:

Description of Property and Justification: *(Please attach map and photo)*

Buildings E3220, E3222, E3224 and E3326 were constructed in 1943-1944 as biomedical laboratory buildings located in the Edgewood Area of Aberdeen Proving Ground (APG) in Harford County, Maryland. This complex of four buildings is located on the eastern side of Ricketts Point Road. All buildings are constructed of concrete block. The buildings contain similar window configurations and simply styled entry doors.

The original objectives of the Medical Laboratories at the Edgewood Arsenal were to conduct research and development activities in order to maximize offensive and defensive effectiveness of the U.S. Army in chemical warfare actions. This involved research in the fields of physiological, biochemical, toxicological, pharmacological, neurological, and pathological medicine. The medical laboratories also researched and developed methods to treat chemical casualties, to detect toxic chemicals, to study mechanisms of action of insecticides and rodenticides, and to conduct physiological and toxicological research on the health hazards of military chemicals (Hylander 1955).

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended Y **Eligibility not recommended** ___

Criteria: X A ___ B X C ___ D **Considerations:** ___ A ___ B ___ C ___ D ___ E ___ F ___ G

MHT Comments: Weapon testing was integral to APG mission; complex of buildings reflects process

Reviewer, Office of Preservation Services 7/10/2010 **Date**

Reviewer, National Register Program 7/6/10 **Date**

20100295D

General Description

Buildings E3220, E3222, E3224 and E3326 were constructed in various sizes and configurations. Construction started on these buildings on 9 June 1943 with initial occupancy beginning the week of 24 January 1944. The new laboratories comprised four cement-block buildings occupying a site approximately 250 yards wide by 200 yards deep. The original uses of the buildings were as follows. Building E3220 contained the main offices and laboratories; Building E3222 housed the animals used for research; Building E3224 was designed to house the gas chambers; and, Building E3226 was designed as the special projects building (Cochrane 1947:83). All buildings were supplied with gas, compressed air, vacuum, steam, hot and cold water and electricity. Supplementing the main group of buildings were a steam power plant and a wood-frame warehouse. South of the complex were a six-acre fenced corral for research animals and a narrow fenced lane leading eastward from the corral to a 67-acre fenced goat pasture (Cochrane 1947:84).

Building E3220, formerly Building 355, was constructed between June 1943 and January 1944 as the main office and laboratory of the U.S. Army Medical Laboratories of the Army Chemical Corps. Van Rensselaer P. Saxe of Baltimore, Maryland, was the consulting engineer identified on the drawings (APG, DPW drawings files). The building originally housed the Biochemistry Division, Clinical Research Division, Physiology Division, and Toxicology Division. The largest building in the complex, Building E3220 is a two-story, U-shaped building with overall dimensions of 206'1" x 56'11" with two wings, each measuring 72'8" x 56'11", and a basement. The building contains 50,750 square feet on three floors. Constructed of 13" concrete blocks, the building features glass center entry doors that are topped with a large ninety-one pane glass block window directly above the door. One-over-one-light, double-hung sash windows in groupings of three are visible on all elevations of the building. Large ninety-one pane, glass block windows are also visible on the rear of the building, one centered on the west façade, and one on each end of the north and south façades. Sited on the northwest corner of the north elevation is an off-set entry door that is accessed by concrete steps and is protected by a shed-roofed portico that is supported by wood posts. Metal vent pipes are visible jutting from the roofline.

Building E3222, formerly Building 356, was constructed as the animal building to support the Medical Laboratory. Van Rensselaer P. Saxe of Baltimore, Maryland, was the consulting engineer identified on the drawings (APG, DPW drawings files). The one-story, I-shaped building comprises three rectangular shaped buildings measuring approximately 204' x 31' that are joined by a center hyphen. Overall, the building contains 36,626 square feet on one floor. Constructed of 12" concrete blocks and topped with multiple asphalt shingled side-gabled roofs, the building features various window configurations that include eight-pane fixed windows, forty-eight pane glass block windows, and forty-pane glass block windows that are topped with a five-pane transom; some windows have been enclosed. Entry into the building consists of metal, fire proof doors. Metal vent pipes are visible jutting from the roofline. In 1952, the building was expanded with the construction of an east wing. This wing was used as a rodent breeding and experimental area.

Building E3224, formerly Building 358, originally was constructed to contain six gassing chambers for a cost of $188,000. By 1944, the building was reassigned as a toxicology laboratory (Cochrane 1947:83; EAI Corporation: Building E3224). The rectangular shaped building is one-story in height with a basement. Van Rensselaer P. Saxe of Baltimore, Maryland, was the consulting engineer identified on the drawings (APG, DPW drawings files). The overall dimensions of the building are 39'1" x 146'1" x 11'; the building contains approximately 5,981 square feet. The building rests on a concrete foundation and is constructed using 12" concrete blocks. The paired, center entry door is topped by a four-pane transom and is protected by a flat roofed portico. The entry door is flanked by large recessed windows that have been painted. The south elevation contains an off-set entry door that is protected by a flat-roofed portico. Fixed fifteen-pane windows with centered awning windows are visible on the remaining elevations. Sited on the east elevation is an off-set, one-story, shed roofed addition that is accessible by concrete steps that lead to the off-set entry door on the south elevation. An off-set, exterior brick chimney is visible on the east elevation.

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: A B C D **Considerations:** A B C D E F G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

The east elevation also contains two separate off-set metal entry doors that are protected by shed roofed porticos. Metal vent pipes are visible jutting from the roofline. In 1958, an animal holding area was added to the building and used to house dogs for experimental studies. This addition measures 8' x 31'4". In 1962, a new section was added to provide additional office space and to extend the animal holding area.

Building E3226, formerly Building 357, was originally designed as the special projects building. Van Rensselaer P. Saxe of Baltimore, Maryland, was the consulting engineer identified on the drawings (APG, DPW drawings files). The original plans were modified during construction to build a special wing to house the "glass man gassing chamber." The chamber was a 30-sided polygon, which was circular shaped, measuring 37' in diameter and 13 ½' in height. "The Medical Division felt that future developments in chemical warfare research were dependent almost completely on the ability to expose volunteer subjects to chemical agents under precisely controlled conditions" (Cochrane 1947:83). Construction of the chamber addition was completed in 1945, but due to a number of technical difficulties, the chamber never became operational (EAI Corporation: Building E3226).

In 1951, plans were made to modify Building E3226. The modifications were extensive and comprised a new series of chambers along with the mechanical equipment and laboratories required to support the operations. The "glass man gassing chamber" was completely removed and the interior space was reconfigured to contain a climatic testing chamber. The new climatic chamber could maintain temperature ranges from -70oF to 100o F along with being able to produce variable humidity conditions that were important to medical research (Hylander 1955). A one-story addition was constructed along the east side of the chamber that contained supporting laboratories. The building was renovated in 1967 and again in 1985 (EAI Corporation: Building E3226). Doors, entryways, and windows were subsequently altered on the building.

In its current configuration, Building E3226 is a square-shaped, two-story building with one-story wings. The building rests on a concrete foundation and is constructed using 12" concrete blocks. The dimensions of the building are 53'10" x 53'10" on the main portion; the east wing measures 39' x 132', while the west wing measures 39' x 134'. The building's square footage approximates 18,830. The façade contains center entry doors on the wings that are accessed by concrete steps and are protected by shed roofed porticos supported with metal posts. The two-story, center portion of the building features glass block windows on all elevations. Window configurations vary to include glass block; six-over-six-light, double-hung sash; and, combination fixed and awning type windows that are protected by protruding, V-shaped cages. Concrete block chimneys are visible jutting from the roofline.

Historic Context

Edgewood Arsenal is located on Gunpowder Neck in Harford County, Maryland, and was founded in 1917 as the first chemical warfare production facility in the United States. The Arsenal was established in response to the appearance of toxic gas weapons on the European battlefields. Because commercial chemical companies were reluctant to invest in such weapons, the U.S. government decided to build its own industrial production plant. Edgewood Arsenal remained the only chemical warfare installation in the U.S. until World War II, when three other chemical warfare production plants were established. Edgewood Arsenal continued as the headquarters of the expanded chemical warfare program and the center for specialized and experimental tasks (Cannan et al. 1995).

World War I (1917 1918)

With the appearance of chemical weapons, such as mustard gas, phosgene, and chloropicrin in Europe during World War I, the United States sought to develop chemical production capabilities. Chemical agents employed as weapons during World War I had no commercial value, and commercial chemical companies were reluctant to develop production facilities with no post war use. The dangerous nature of the agents used in chemical weapons also deterred commercial manufacturers. Consequently, the War

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

Department decided to construct its own chemical production plant at Edgewood Arsenal. The government selected the Edgewood site in December 1917. Construction of the facility continued during 1918 (Crowell 1921:492 493).

Edgewood Arsenal was originally named the U.S. Filling Plant, Gunpowder Reservation. The central core of the installation was designed as an integrated production line to accommodate the multi-step process of chemical weapons manufacturing. The installation included an area to receive shipments of and produce raw materials, an area to produce chemicals, an area to pack chemicals into shells, and an area to load, store, and ship chemical ordnance.

Inter War Period (1919 1939)

After World War I, Edgewood Arsenal remained a permanent installation, but at a much reduced level of activity. The National Defense Act of 1920 established the Chemical Warfare Service as a separate entity, distinct from the Ordnance Department. However, a general abhorrence for chemical warfare as practiced during World War I limited the role of this new service. In 1924, the Chemical Warfare Service was confined to studying defensive measures and equipment, and preparing a modest deterrent or retaliatory capability; the United States would not develop chemicals as an offensive measure (Brophy 1959a:21 23).

Within this framework, Edgewood Arsenal served as the center of Chemical Warfare Service activity. Workers at Edgewood tested methods for dispersing chemical agents from aircraft or from chemical mortars. They also developed improved gas masks and means of impregnating clothing for protection against toxic gases. Stocks of chemical agents that remained from World War I were stored at Edgewood, but the production facilities were mothballed and, in some cases, dismantled. The Chemical Warfare School, which trained both Army and Navy personnel, also operated at Edgewood (Brophy 1959a:28 31).

From the early years of the establishment of Chemical Warfare Service, there was need for research about toxic gases and treatment of personnel exposed to gases. This function originally was assigned to the Medical Division of the Army, but, in 1922, the medical research responsibility for chemical agents was assigned to Edgewood Arsenal. Named the Medical Research Division, its mission was "to study the toxicological action of chemical warfare agents, develop the best possible methods for treating gassed casualties and disseminate this information among the officers of the Medical Corps who in time of war would care for gassed troops" (Cochrane 1947:2). Research was focused on the pathological aspects of chemical gasses to ascertain why a compound was toxic and at what amounts, the effects of the toxicity on the human body, and how those effects were manifested. Understanding those effects resulted in the development of measures to counter or protect against the effects of the toxicity and to treat casualties (Cochrane 1947:3-6). During the inter-war years, medical research was conducted in small buildings dispersed throughout the industrial area of Edgewood Arsenal.

As the possibility of war increased between 1939 and 1941, facilities at Edgewood were placed on standby status. Old production plants were repaired and manufacturing equipment was updated. Experimental chemical plants were constructed.

World War II (1940 1945)

During World War II, Edgewood fulfilled more chemical functions than it had during World War I. President Roosevelt declared that the United States would not use chemical weapons offensively, but would retaliate defensively with chemical weapons. This deterrent capability had its desired effect; the Axis powers never resorted to the use of toxic gases on military targets (Grandine et al. 1982; Smart 1994).

Edgewood Arsenal, however, was prepared, although the nature of the industrial mission at the installation changed. Edgewood Arsenal no longer functioned as an integrated chemical production line. The bulk of chemical warfare production was shifted to

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

other installations, including Huntsville/Redstone Arsenal (1941), Alabama; Rocky Mountain Arsenal (1942), Colorado; and Pine Bluff Arsenal (1943), Arkansas. Edgewood Arsenal became the center for specialized and experimental tasks, such as the establishment of pilot plants to test new chemicals and new production processes.

At Edgewood Arsenal, the shift in mission away from serving as the primary industrial production plant resulted in the construction of a smaller number of self-contained production plants. Production lines were either housed in one building or in a series of separate buildings, each containing a different step in the production process. Instead of the entire installation functioning as an integrated industrial plant, each manufacturing process functioned independently. Older production facilities were dismantled or demolished while new plants were constructed wherever space was available.

Additional laboratory and office space was required to consolidate research activities expanded during the war. The area east of the airfield along Ricketts Point Road was selected as the location of the new research and testing buildings. This location had enough space to build new up-to-date laboratories and support buildings to accommodate all staff in a few buildings.

Originally all development work undertaken in the chemical warfare field was under the control of the Technical Division, including all medical and biological phases (U.S. Army Service Forces 1946:3). By spring 1943, the medical and biological phases were removed from the Technical Division and a new Medical Division and Special Projects Division were organized (U.S. Army Service Forces 1946: 3). New laboratories (Buildings E3220, E3222, E3224, and E3226) to house the newly formed Medical Division were constructed during 1943 and occupied in January 1944 (Cochrane 1947:83-84). The buildings are utilitarian in appearance, constructed of concrete block and featuring horizontal bands of wood-frame windows. These plain, simple buildings reflect the funding constraints for construction during a time of war. The only ornamentation was confined to the main entrance to the largest building, Building E3220, which served as the main offices and laboratories. The main entry contained a recessed two story element incorporating a first story access door surmounted by a tall glass-block transom. Support buildings were located to the rear of this principal building and included a smaller general laboratory (Building E3222), a toxicological laboratory (Building E3224), and a biological research laboratory (E3226).

Between June 1940 and June 1945, the number of buildings at Edgewood Arsenal increased from 498 to 1,269, comprising 669 permanent buildings, 259 cantonment type buildings (i.e., temporary), and 342 buildings described as "miscellaneous temporary types" ("History of Edgewood Arsenal" ca. 1945:606). All areas of the installation received new construction, including specialized chemical manufacturing buildings, new research laboratories, administrative buildings, a temporary cantonment, and storage buildings, both for ammunition and general supplies.

Cold War (1946-1989)

The Cold War era generally is defined as the period, beginning in 1946, following Soviet activities to retain territory liberated from Nazi Germany during World War II and extending to the fall of the Berlin Wall in 1989. This period was marked by a tense, hostile relationship between the Warsaw Pact countries led by the U.S.S.R. and the North Atlantic Treaty Organization (NATO) Allies led by the U.S.A. The primary role of the U.S. Army during this time was to support U.S. policies of peace through strength by maintaining ground force readiness as an alternative to strategic nuclear weapons for deterring communist expansion (USAEC 1997).

The Cold War era was marked by major organizational changes in the armed forces and accompanied by competition for limited military appropriations among the services. Under the 1947 National Security Act, the Army assumed responsibility for conducting land warfare, providing troops for occupation duty in Central Europe, and providing air defense units within the continental U.S. In 1962, the Army's technical services were disbanded, and the Army Materiel Command (AMC) was

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

established, including the Chemical Corps and the Ordnance Department. This new command consolidated logistical functions to ensure integrated materiel management, including new product development, management of materiel stockpiles, testing, and technical and maintenance support (USAEC 1997). The Ordnance Department and the Chemical Corps activities at APG were transferred to AMC.

The Cold War era was also marked by significant changes in U.S. Army operations. Instead of relying on a small standing army and mobilizing troops as needed, Army personnel were now ready to enter combat on short notice. This meant that a large, trained standing army was maintained in constant readiness. Troops were stationed for the first time in friendly foreign nations under an allied command structure. Within the U.S., the Army maintained an active force prepared to deploy quickly into combat zones. During the Cold War, Army personnel were involved in conflicts in Korea and Vietnam, as well as in smaller actions, such as in the Caribbean (USAEC 1997).

The Thematic Study and Guidelines: Identification and Evaluation of U.S. Army Cold War Era Military-Industrial Historic Properties (USAEC 1997) identified the following significant themes for Army military-industrial history during the Cold War: basic research (laboratories); materiel development and testing (research, development, engineering centers and proving grounds); wholesale logistical operations; air defense, ballistic missile defense and army missiles; command and control, communications, computers, and intelligence; Army school system; operational forces; Army medical activities; and, miscellaneous themes including nuclear power, Army aviation, and activities associated with other services or Department of Defense agencies.

During the Cold War era, Edgewood Arsenal functioned primarily as a center for chemical warfare research. This emphasis continued the trend established during World War II, when the historical chemical production mission of the installation was transferred to other chemical munitions arsenals. Immediately following the end of World War II, the Chemical Warfare Service (CWS) was demobilized, but a vigorous defense of the role of chemical warfare ensured its permanent existence. In 1946, the Army re-designated CWS as the Chemical Corps, and Edgewood Arsenal was renamed the Army Chemical Center. In 1951, Edgewood Arsenal (Army Chemical Center) became the Research & Engineering Center for the Chemical Corps. In 1962, the Chemical Corps was abolished and the laboratories and production facilities were placed under the Chemical – Biological – Radiological Agency (CBR Agency). In 1983, the name changed to Chemical, Research and Development Center (CRDC) and, in 1986, the name was changed once again to the Chemical Research, Development and Engineering Center (CRDEC). 1992 brought about another change as the Edgewood Research, Development and Engineering Center (ERDEC) was placed under the U.S. Army Chemical and Biological Defense Command (CBDCOM). In 1998, CBDCOM became absorbed by the Soldier and Biological Chemical Command (SBCCOM) (Smart 1997). In 2002, the U.S. Army Research, Development and Engineering Command (RDECOM) (Provisional) was created with RDECOM becoming permanent in 2004. In 2005, the ERDEC combined with the Natick RDEC to become the Edgewood Chemical Biological Center (ECBC). In 1971, Aberdeen Proving Ground and Edgewood Arsenal were joined administratively.

Although the role of chemical warfare was a hotly debated topic throughout the Cold War era, Edgewood Arsenal served as the national center for materiel development and testing (chemical warfare) and medical activities. Minor missions included wholesale logistical operations and activities undertaken by other departments and non-Army agencies that were located on the property.

Medical Research

Medical research was conducted at Edgewood Arsenal from the end of World War II throughout the Cold War era. Initially, work was carried out by the Chemical Corps Medical Laboratories, which was reorganized in 1951. The Medical Laboratories and the Toxicological Research Laboratory were combined under a single administrative unit. The new administrative structure had five divisions: Biochemistry, Physiology, Biophysics, Toxicology, and Clinical Research (Hylander 1953:3).

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

The overall mission of the Medical Laboratories was "the entire field of medical aspects of chemical warfare. As a result, the research is aimed at seeking constantly greater effectiveness in treating casualties resulting from such warfare" (Hylander 1953:2). Research conducted at Medical Laboratories included basic physiological, biochemical, and toxicological research related to chemical warfare. The kinds of activities investigated by the laboratories included "detection of chemical poisons in food and water, methods of purifying such contaminated materials, development of field kits and equipment for the detection of such poisons, and equipment and methods for prevention and treatment of chemical casualties," practical prophylactic and curative measures for potential chemical exposures, decontamination methods, and wound ballistics and protective body armor (Hylander 1953:2: Brophy and Ross 1953). During the early 1950s, approximately 500 persons were employed at the Medical Laboratories. This large workforce represented a wide number of fields, including toxicologists, biochemists, chemists, pharmacologists, physiologists, neurologists, entomologists, and pathologists (Hylander 1955:1). Buildings E3220, E3222, E3224, and E3226 were among the 20 buildings which housed medical research activities at Edgewood Area during the Cold War. Research facilities included gas chambers, air conditioned test rooms, 149 separate laboratories, and precision scientific instruments of all types (Brophy and Ross 1953).

In 1979, the former Chemical Corps Medical Laboratories were divided among several organizations. The Chemical Corps Research Division was assigned to the Office of the Surgeon General and became the Army Medical Research Institute of Chemical Defense. This laboratory continued research into methods to prevent and treat chemical and biological attacks and worked to develop protective measures, including protective clothing, breathing apparatus, and methods of decontamination (USAEC 1997). The U.S. Army Environmental Hygiene Agency continued work into preventive medicine and occupational and environmental health disciplines; this agency is now named the Center for Health Promotion and Preventive Maintenance. The medical activities during the Cold War era generally occupied buildings constructed during World War II until the construction of Building E3081 in 1979 (Smart 1994).

Evaluation

Buildings E3220, E3222, E3224, and E3326 were constructed as medical laboratories during the final years of World War II and served as laboratories and offices during most of the Cold War. Although these buildings are research laboratories, no evidence links the buildings to important programs, accomplishments, or contributions in the medical aspects of chemical warfare research (Criterion A) or to important individuals (Criterion B). The buildings were constructed of concrete block with minimal architectural ornamentation. The exteriors and interiors of these buildings have been continually altered on the exterior and the interior in response to up-dated requirements for laboratory space. The accumulated alterations have resulted in compromised integrity of design and materials both of the individual buildings and as a group. Buildings E3220, E3222, E3224, and E3326 do not possess the qualities of significance or integrity to illustrate a type, period, or method of construction applying National Register Criterion C.

References

Aberdeen Proving Ground
Var.□Drawings On file at Directorate of Public Works, Aberdeen Proving Ground, Maryland.
Var.□Real property records and memoranda. On file at Directorate of Public Works, Aberdeen Proving Ground, Maryland.

Brophy, Leo P.
1959a□The Chemical Warfare Service: Organizing for War. Government Printing Office, Washington , D.C.

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

Brophy, Leo P., and Paul E. Ross
1953□"A Short History of Edgewood Arsenal" contained in Harford County Directory.

Cannan, Deborah, Kathryn M. Kuranda, Leo P. Hirrel, Katherine E. Grandine, William T. Dod
1995□National Historic Context for Department of Defense Installations, 1790-1940. Legacy Demonstration Project #75. Prepared by R. Christopher Goodwin & Associates, Inc., for Corps of Engineers, Baltimore District, Baltimore, Maryland.

Cochrane, Rexmond C.
1947□History of Research and development of the Chemical Warfare Service in World War II, volume 30. Historical Branch, Chemical Corps School, Edgewood Arsenal, Maryland.

Crowell, Benedict
1921□The Armies of Industry. Yale University Press, New Haven.

EAI Corporation
1989-1996□Record Search and Assessment for Edgewood Arsenal Buildings. A multi-volume series of reports prepared for U.S. Army Chemical Research, Development and Engineering Center, Aberdeen Proving Ground, Maryland.

Goodwin & Associates, Inc., R. Christopher
2008□Aberdeen Proving Ground Integrated Cultural Resources Management Plan. Prepared for Weston Solutions, Inc.

Grandine, Katherine, Irene Jackson Henry, and William R. Henry Jr.
1982□DARCOM Historic Building Inventory: Aberdeen Proving Ground, Maryland. Prepared by the National Park Service Historic American Buildings Survey.

"History of Edgewood Arsenal: 1939-1945"
1945ca.2 Vols. Transcript on file at U.S. Army Solider and Biological command, Historical Research and Response Team Building E5027, Edgewood Area.

Hylander, Clarence J.
1955□The Medical Laboratories of the Army Chemical Corps and Their Research Activities, MLSR No.59, Chemical Corps, Medical Laboratories, Army Chemical Center, Maryland.

Smart, Jeffery K.
1994□U.S. Army Chemical Research, Development and Engineering Center: Historical Highlights. U.S. Army Chemical Research and Biological Defense Command, Aberdeen Proving Ground.

U.S. Army Service Forces, Office of the Chief, Chemical Warfare Services
1946□Report of Activities of the Technical Division during World War II, Washington, D.C.

U.S. Department of the Interior, National Register of Historic Places, National Park Service
1991b□Bulletin 15: How to Apply the National Register Criteria for Evaluation. National Park Service, Washington, D.C.

U.S. Army Environmental Center
1997□Thematic Study and Guidelines: Identification and Evaluation of U.S. Army Cold War Era Military-Industrial Historic

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

_____ _____
Reviewer, Office of Preservation Services **Date**

_____ _____
Reviewer, National Register Program **Date**

Properties. Draft, AEC, Aberdeen Proving Ground, Maryland.

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ **Eligibility not recommended** _____

Criteria: ___A ___B ___C ___D **Considerations:** ___A ___B ___C ___D ___E ___F ___G

MHT Comments:

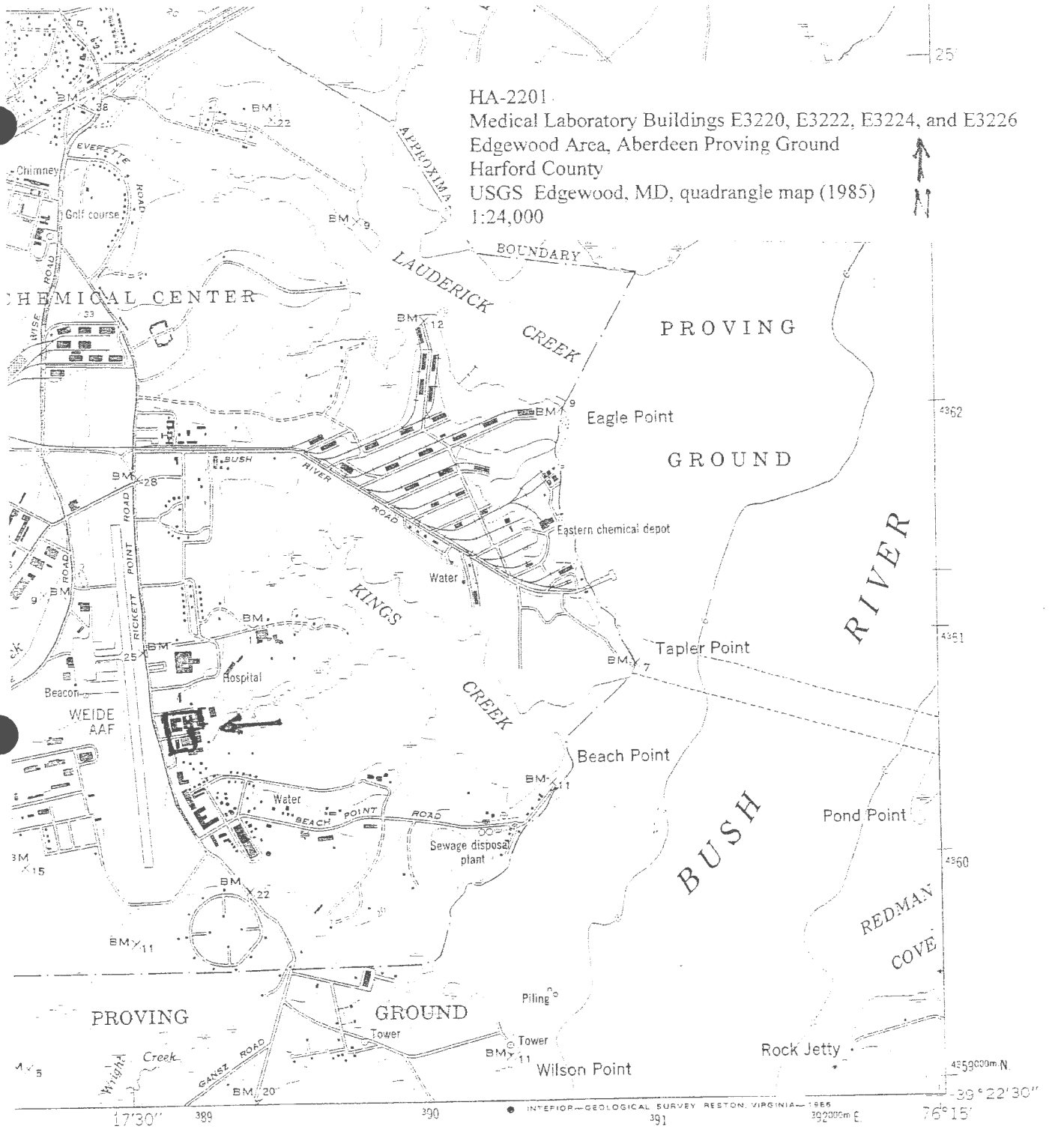
_____ _____

Reviewer, Office of Preservation Services **Date**

_____ _____

Reviewer, National Register Program **Date**

HA-2201
Medical Laboratory Buildings E3220, E3222, E3224, and E3226
Edgewood Area, Aberdeen Proving Ground
Harford County
USGS Edgewood, MD, quadrangle map (1985)
1:24,000



EDGEWOOD, MD.
NE/4 GUNPOWDER 15' QUADRANGLE
39076-D3-TF 024

1949
PHOTOREVISED 1985
DMA 5762 IV NE-SERIES V855

Maryland Historical Trust
Maryland Inventory of Historic Properties Form

Inventory No. HA-2201

Medical Laboratory Buildings E3220, E3222, E3224, and E3226
Edgewood Area, Aberdeen Proving Ground, Maryland

Continuation Sheet
Number Photo Log Page 1

For Official Use Only
Distribution Restriction Statement
Distribution Authorized to US Government Agencies and Their Contractors Only, Contains Technical or Operational Information. This Determination was made on 12 April 2010, 10112-A-1.

The photographic images must be returned to

U.S. Army Garrison, Aberdeen Proving Ground
Directorate of Public Works, Environmental Division
IMNE-APG-PWE (Ms. Terri Kaltenbacher)
Building E5771, Magnolia Road
Aberdeen Proving Ground, Maryland 21010-5401

The following information is the same for each photograph:

1. MIHP # HA-2201
2. Medical Laboratory Buildings E3220, E3222, E3224, and E3226
3. Harford County, Maryland
4. APG
5. May 2009
6. APG

Photo #

HA-2201_2009-5-15_01	Building E3220, front elevation looking east
HA-2201_2009-5-15_02	Building E3220, south wing looking north
HA-2201_2009-5-15_03	Building E3220, north wing looking southwest
HA-2201_2009-5-15_04	Building E3220, rear and north wing looking northwest
HA-2201_2009-5-15_05	Building E3220, rear and south wing looking southwest
HA-2201_2009-5-15_06	Building E3222, overall north elevation, looking southeast

Maryland Historical Trust
Maryland Inventory of Historic Properties Form

Inventory No. HA-2201

Medical Laboratory Buildings E3220, E3222, E3224, and E3226
Edgewood Area, Aberdeen Proving Ground, Maryland

Continuation Sheet
Number Photo Log Page 2

HA-2201_2009-5-15_07	Building E3222, north elevation looking south
HA-2201_2009-5-15_08	Building E3222, north elevation looking south
HA-2201_2009-5-15_09	Building E3222, northeast corner looking south
HA-2201_2009-5-15_10	Building E3222, east elevation looking southwest
HA-2201_2009-5-15_11	Building E3222, west elevation looking southeast
HA-2201_2009-5-15_12	Building E3222, southwest corner looking north
HA-2201_2009-5-15_13	Building E3224, south end looking north
HA-2201_2009-5-15_14	Building E3224, west elevation looking east
HA-2201_2009-5-15_15	Building E3224, north end looking south
HA-2201_2009-5-15_16	Building E3224, east elevation looking southwest
HA-2201_2009-5-15_17	Building E3226, north (front) elevation looking south
HA-2201_2009-5-15_18	Building E3226, south (rear) elevation, looking northwest
HA-2201_2009-5-15_19	Building E3226, west elevation looking southeast
HA-2201_2009-5-15_20	Building E3226, east elevation looking southwest