ENVIRONMENTAL BASELINE SURVEY

ENHANCED USE LEASE PROJECT
BUILDINGS 40 & 18
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, DISTRICT OF COLUMBIA

Directorate of Public Works

US Army Garrison
Walter Reed Army Medical Center
Washington, District of Columbia

Engineering Plans & Services
6900 Georgia Ave. NW, Bldg 1, Rm C002
Walter Reed Army Medical Center
Washington, District of Columbia

ENCL 5 to ROA

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Walter Reed Army Medical Center
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Department of the Army
Director of Public Works
US Army Garrison
6825 16th Street, NW
Walter Reed Army Medical Center, DC

Certification:

INSPECTOR: ignature Authenticated by Appro
Approved by: Bobby Roberts,
Wednesday, 07 July, 2004 at 16:34
DATE: 07 July, 2004

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MEDCOM Real Property Program Manager

CONCURRENCE: Signature Authenticated by ApproveIt,
Approved by: flippocw,
on:Tuesday, 20 July, 2004 at 15:45:11
DATE: 20 July 2004

Charles Flippo
Chief, Garrison Environmental Office

EXECUTIVE SUMMARY

This Environmental Baseline Survey has been prepared to document the physical conditions of building 40 and building 18 at Walter Reed Army Medical Center (WRAMC), located in the northern portion of Washington, District of Columbia. This document has been prepared for an Enhanced Use Lease (EUL) project for these buildings. Information was gathered from documents, personnel interviews, and on-site surveys on issues such as water quality, wastewater treatment, hazardous materials, asbestos, lead, PCBs, mercury, IRP sites, air quality, and others. **These properties were found to be ECP category 6 for building 40, ECP category 1 for building 18, and are suitable for outgranting.** Based on the information and recommendations contained in this EBS, there appear to be no known environmental liabilities associated with the proposed lease of the property.

This report is divided into three sections. Section one pertains to the WRAMC installation as a whole and includes purpose and scope, survey methodology, overall environmental setting, and past and current operations for the installation. Section two pertains specifically to buildings 40 and 18. This consists of findings for the proposed property involved in the Enhanced Use Lease project and its adjacent properties and resultant conclusions on its environmental condition. The third and final section contains appendices, which includes a list of documents reviewed, Aerial photos of the properties, floor plans of building 40, and an acronym list.

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Section I. Overview

1.0 Introduction and Property Definition

This Environmental Baseline Survey has been prepared to document the physical conditions of buildings 40 and 18, parking and land associated with these buildings, at WRAMC Army post near the northern corner of Washington, District of Columbia. The report is divided into three sections. The first section pertains to the WRAMC installation as a whole and includes purpose and scope, survey methodology, overall environmental setting, and past and current operations for the installation. Section two pertains to the proposed property for an Enhanced Use Lease project. The final section contains appendices, which include maps, an acronym list, a reference list, and photographs of the properties addressed.

WRAMC is a major medical care, research, and teaching center of international importance, under the command jurisdiction of the US Army Medical Command (MEDCOM). WRAMC is the Army's largest health care facility and one of the largest in DOD. More than a million patients a year visit the hospital at WRAMC's Main Section and its satellite clinics. There are a large number of tenant organizations at WRAMC, defined below, that depend on the installation services provided by the WRAMC Garrison.

WRAMC has two sub-Posts, the Forest Glen Annex and the Glen Haven Annex. These sub-Posts are under the command of WRAMC and are an integral part of the WRAMC mission:

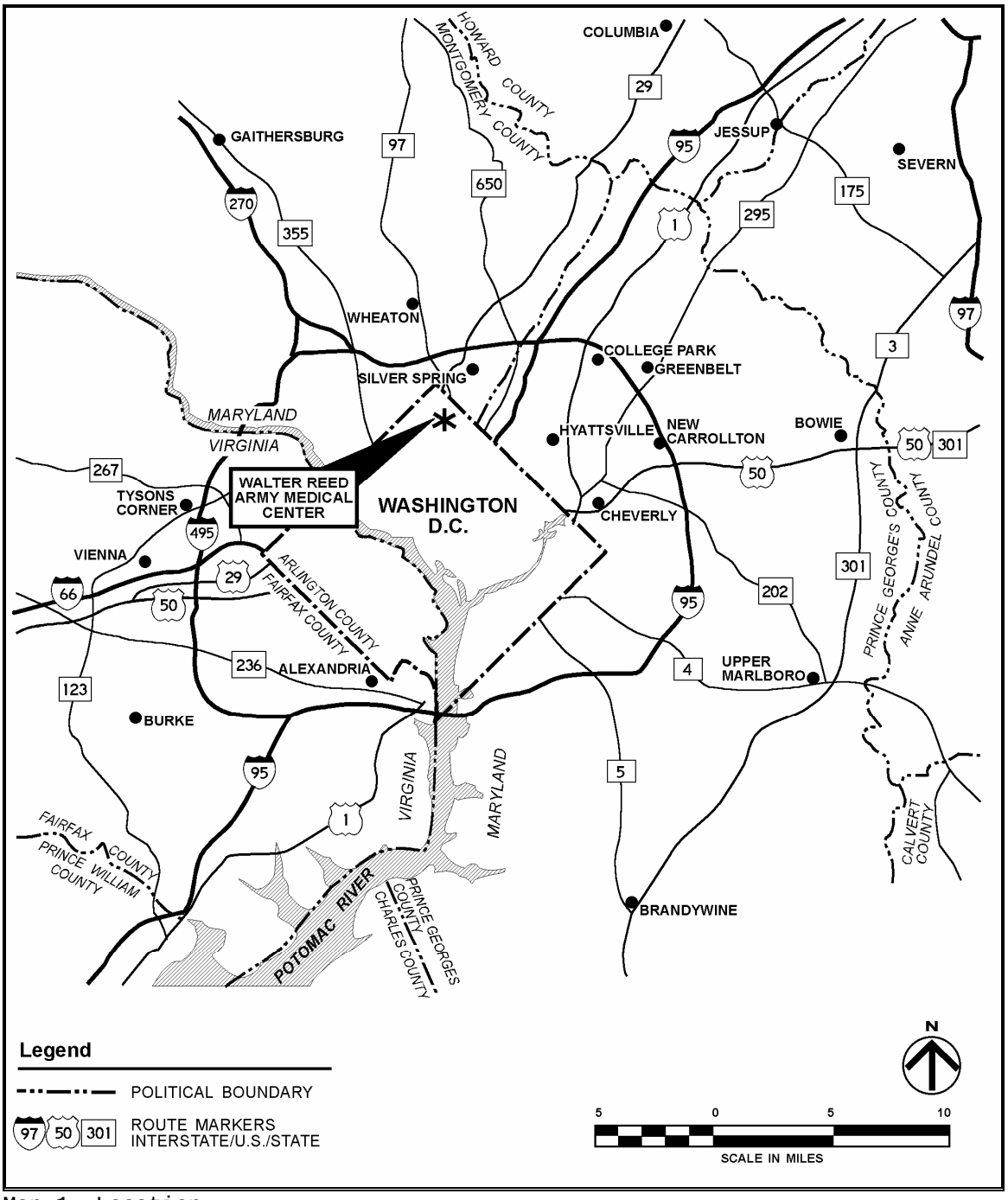
The Forest Glen Annex is located just Northwest of the Washington DC metro area in Montgomery County, Maryland. The Walter Reed Army Institute of Research (WRAIR) is the major mission at the Forest Glen Annex. WRAIR vacated building 40 at main post to move to the new facility at the Forest Glen Annex. The main WRAMC shipping warehouse is also located there with ancillary installation services such as the Post Exchange and Commissary. The Forest Glen Annex has 164 acres and 65 buildings.

The Glen Haven Annex is basically a housing annex located approximately four miles north of WRAMC in Maryland. There are 21 acres and 30 buildings at the Glen Haven Annex.

WRAMC's mission is to:

- Provide quality, comprehensive health care that is cost-competitive and accessible.
- Serve as a national resource for specialty care and medical issues unique in DOD and other federal agencies.
- Maintain individual and collective readiness in support of the DOD health care system.

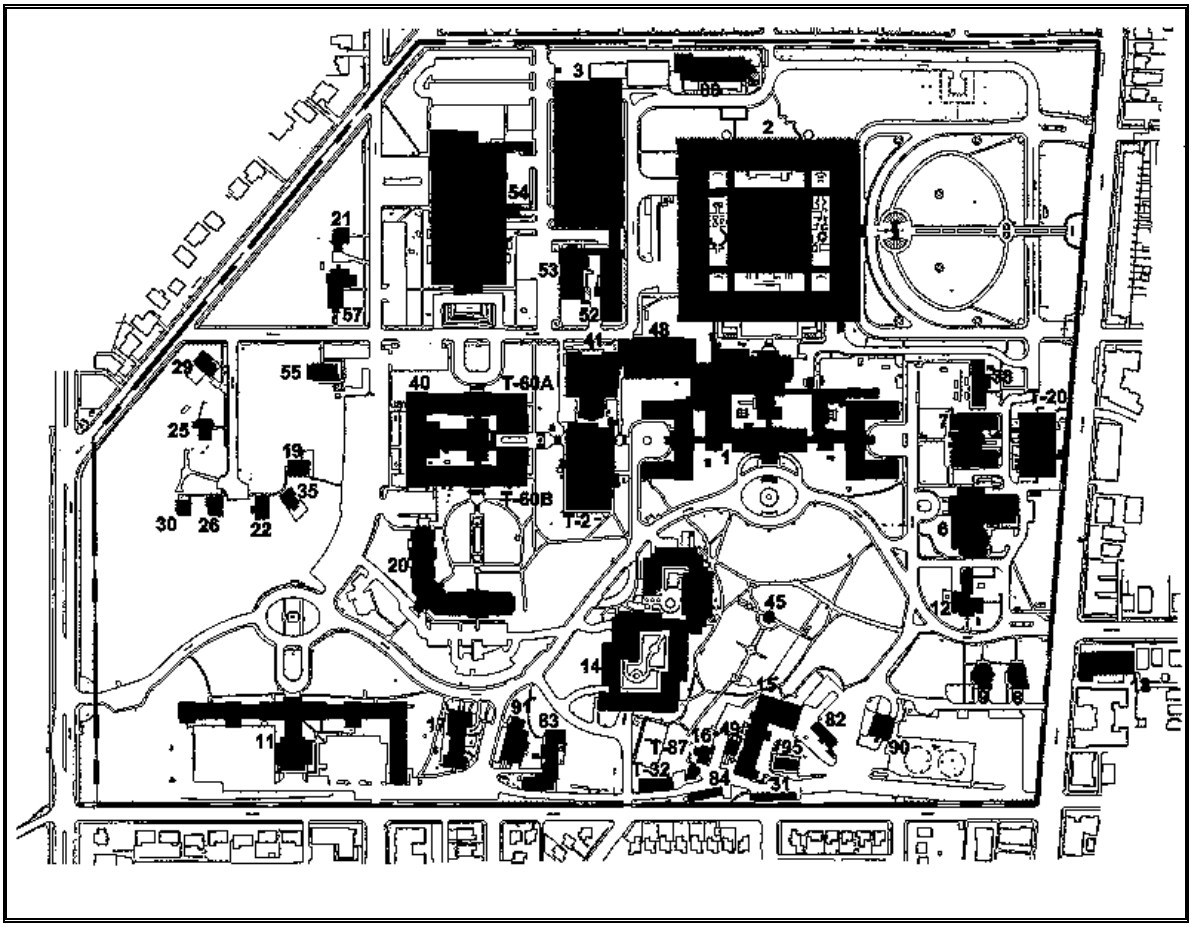
- Provide research, education and training in support of the DOD health care system.



Map 1, Location

WRAMC is the home of the North Atlantic Regional Medical Command (NARMC), one of MEDCOM's five US regional commands. NARMC includes 21 states and the District of Columbia and provides leadership, planning, and support for the 50 Army hospitals and clinics in the region.

WRAMC also hosts 17 tenant organizations. The largest tenant is the Walter Reed Army Institute of Research (WRAIR), located at the Forest Glen Annex, which is the largest military medical research laboratory in DoD. Building 40 on main post used to belong to the WRAIR organization. Another major tenant at WRAMC is the Armed Forces Institute of Pathology (AFIP), a tri-service organization that teaches pathology to hundreds of military and civilian physicians each year, is located on main post.



Map 2, Walter Reed Army Medical Center

2.0 Purpose, Scope and Limitations

2.1 Purpose and Scope of the EBS

This Environmental Baseline Survey (EBS) documents the physical condition of properties and facilities located at WRAMC, Washington, District of Columbia. The EBS documents the nature, magnitude, and extent of any environmental contamination of property or interests in real property considered for outgrant in accordance with AR 200-1 and DA PAM 200-1. This specific EBS consists of certain administrative, laboratory, clinical, and apartment properties located at WRAMC. Although primarily a management tool, the EBS also assists the Army in meeting its obligations under the Comprehensive Environmental Response,

Compensation, and Liability Act (CERCLA) as amended by the Community Environmental Response Facilitation Act (CERFA).

Environmental factors addressed in the EBS include water supply and contamination, hazardous material and wastes, petroleum products, air quality, water quality, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, radioactivity and radionuclides, lead-based paint, UXO, and unaccounted for stressed vegetation or soil. This EBS also addresses natural resource issues, such as endangered species, as well as historical and archeological sites. Properties adjacent to the subject property were also examined to determine if they appeared to pose any threat to the environmental condition of the subject properties.

Guidance documents used to perform the EBS were DoD's *Standard Practice for Conducting Environmental Baseline Surveys* (ASTM Designation: D 6008-96) and the Department of the Army's EBS Recommended Model Outline (SFIM-AEC-EQN [200-1]). Survey methodology included conducting visual surveys, review of aerial photographs, review of applicable documentation in a number of offices, and personnel interviews.

2.2 Background

WRAMC is in the process of considering an Enhanced Use Lease of Building 40 and 18 at the WRAMC Main Post. These two buildings are currently empty and would benefit from the improvements that would result from an Enhanced Use Lease. This EBS will be used to meet DoD and Army requirements for proposed outgrant or transfer of certain properties at WRAMC. These properties will be leased or outsourced.

2.3 Limitations of the EBS

A comprehensive or programmatic report for WRAMC identifying current quantities of LBP does not exist. There is a base wide ACM survey[1], but it is limited in scope and has missed several obvious sources of ACM. The base wide ACM survey is currently being updated by contract and will be much more comprehensive once completed. Several surveys have been conducted over the years to assess the environmental status of a number of properties; however, not every property was surveyed nor every survey comprehensive. Due to the age of WRAMC, many of the buildings contain lead-based paint (LBP) and asbestos containing materials (ACM). Current records indicate limited installation-wide remediation or abatement projects but several surveys have been conducted to identify hazardous materials in place. Some site-specific abatement projects have occurred on an as-needed basis. Unfortunately, documentation of renovations or abatement activities are not always maintained on file or annotated on drawings. Thus, the current status of LBP or ACM contained within a facility may be less than that identified in building records and this report. Nonetheless, sufficient information was available to meet the objective of an EBS, which is to facilitate a property interest outgrant decision.

[1] EA Engineering, Science and Technology, Inc.*; "Asbestos Management Database for Walter Reed Army Medical Center, Washington D.C. and Forest Glen Annex, Forest Glen Park, MD. Volumes I-III",* 1998.

3.0 Survey Methodology

3.1 Approach and Rationale

According to Army guidance, this EBS was broken down into four steps: data gathering, data analysis, determination of environmental condition of property, and preparation of the EBS report. Steps one and two included records search and review, adjacent facilities records search and review, aerial photography analysis, interviews, and visual inspections of the subject properties and adjacent properties. This document was formatted according to guidelines provided by the Department of the Army.

3.2 Visual Survey

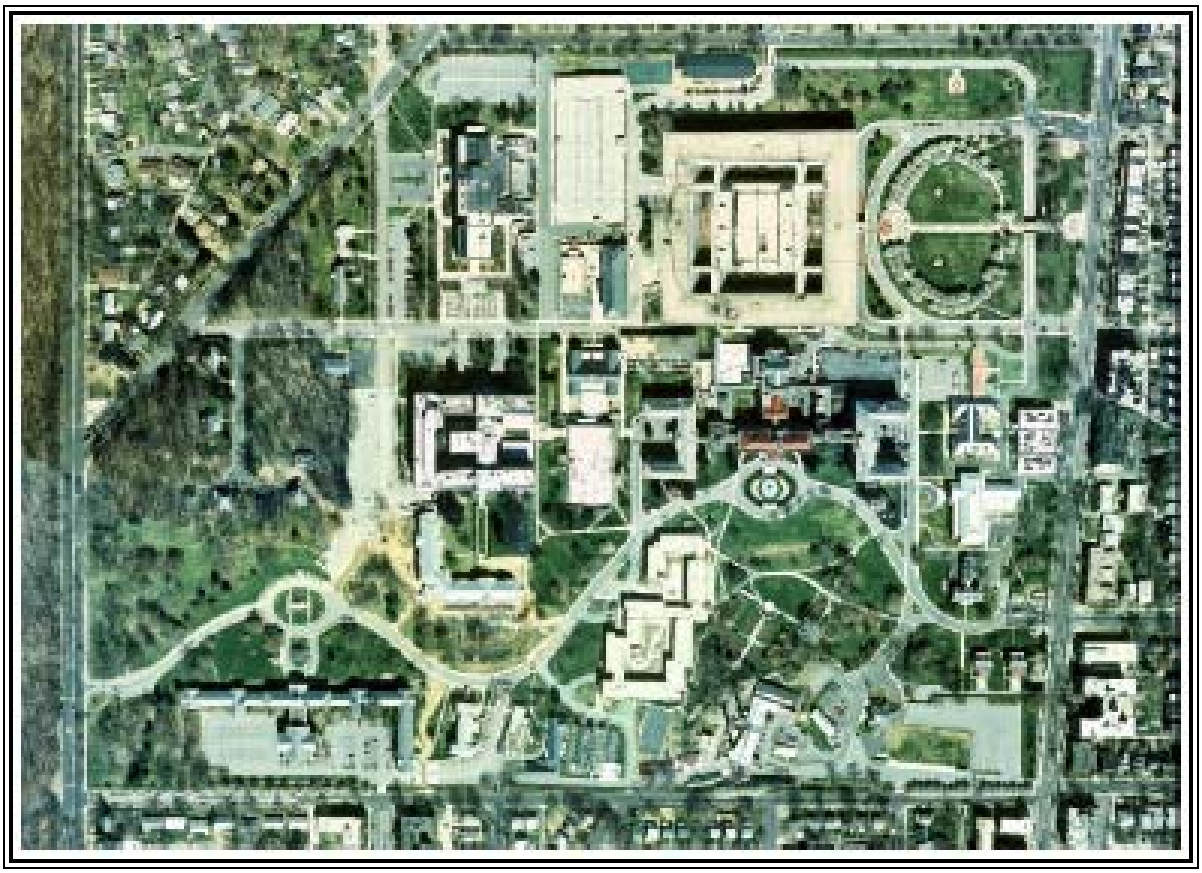
Visual surveys were conducted for the subject and adjacent properties on 23 Jan 2002. Walk-through site inspections of each property were conducted and the surrounding areas were surveyed for possible sources of contamination.

3.3 Aerial Photography, Maps and Plans

Aerial photographs, maps and plans were reviewed in the WRAMC Directorate of Public Works Business Center plans room in the basement of Building 1. They were examined to note removals or additions to buildings, changes to the vegetative conditions, any ground scars at the subject properties and adjacent properties. Maps reviewed include:

- December 04, 1918, plan, “General Layout Plan.”
- August, 1927, plan, “Sewer Plan.”
- November, 1927, plan, “Historical Record Map.”
- April, 1945, plan, “Fire Alarm Plan.”
- December, 1946, plan, “Electric Tunnel Lighting.”
- August 04, 1950, aerial photograph.
- 1998, aerial photograph.

All of these maps, plans, and aerial photographs are available in the plans room, located in the Public Works Business Center, Engineering and Design Section map room, WRAMC. These plans are not available for removal as they are originals.



Aerial Photo of Walter Reed Army Medical Center

3.4 Program and Document Review

Documents that were reviewed pertaining to the environmental condition of the subject properties included program management plans, memorandums, sample surveys, project reports, and previously conducted EBSs. Some specific documents that were of assistance were the WRAIR Building 40 Chemical Decommissioning Hazardous Waste Study Number 37-MA-6209-01, the Environmental Assessment of Building 40 Renovation, the WRAMC Integrated Natural Resources Management Plan, the WRAMC Environmental Management Handbook, and the WRAMC Master Plan. A comprehensive list of referenced documents is located as an appendix to this report.

3.5 Personnel Interviews

Interviews were conducted with key personnel such as the Lead Hazard Program Manager, Asbestos Hazard Manager, Installation Hazardous Waste Manager, Chief of the Garrison Environmental Office, Environmental Engineer, Environmental Protection Specialist, Real Property Officer, Installation Master Planner, the WRAMC Radiation Control Officer, the last building manager for Building 40, and WRAIR Facilities Branch Management.

3.6 Title Search

A title search was not conducted for this EBS. The U.S. Army holds fee simple title to all properties involved in this EBS. A file search was completed at the Baltimore District, U.S. Army Corps of Engineers to verify the level of Legislative Jurisdiction held at the subject properties. The U.S. Army has exclusive legislative jurisdiction over building 40. The U.S. Army has proprietary legislative jurisdiction over building 18.

3.7 Environmental Condition of Property (ECP) Classification System

Properties are classified according to environmental condition based on the following categorization:

Category 1 – Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

Category 2 – Areas where only release or disposal of petroleum products has occurred.

Category 3 – Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

Category 4 – Areas where release, disposal and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environmental have been taken.

Category 5 – Areas where release, disposal and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

Category 6 – Areas where release, disposal and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.

Category 7 – Areas that are not evaluated or require additional evaluation.

These categories were taken from the Defense Technical Information Center homepage as directed in DA PAM 200-1 and AR 200-1.

4.0 Environmental Setting

4.1 Location

WRAMC consists of three geographically separate areas. The Main Section, near the northern border of the District of Columbia, covering 113 acres of land, contains the hospital and major research and teaching facilities. The Forest Glen Annex in Montgomery County provides service, support, and research facilities. The Glen Haven Section, in Montgomery County about 4 miles north of the Main Section, provides family housing for enlisted military personnel assigned to WRAMC.

4.2 Climate

WRAMC is geographically located on the transition zone between northern and southern climates of the country. Atmospheric conditions are influenced by the Blue Ridge Mountains to the west and the Chesapeake Bay to the east. The prevailing wind is from the northwest during the winter months, and from the southeast in the summer. The maximum wind speed was recorded to be 80 miles per hour (mph) from the southeast. Average wind speed is 9.1 mph.

The normal daily mean temperature is 55°F for this area, with recorded extremes of -7°F in the winter and 105°F in the summer. Normal annual precipitation is 40.8 inches and average annual snowfall is 20.4 inches for this area (National Climatic Data Center, 1998).

4.3 Geology

WRAMC is located over the Piedmont Plateau, which composed of hard crystalline igneous and metamorphic rock of the Precambrian and Paleozoic age, roughly 600 million years old. The metamorphic rock structure takes the form of complex folds and thrust faults that have been subsequently intruded by igneous rock, pegmatite, and veins of quartz. Bedrock in the eastern portion of the Piedmont consist of schist, gneiss, gabbroic, and other highly metamorphosed sedimentary and igneous rocks of probable volcanic origin.[2] These bedrocks provide an excellent foundation support and exist in an area of low seismic activity.

The main section of WRAMC is located along the eastern edge of the Piedmont Plateau physiographic province of the Appalachian Highlands. The Piedmont's topography is characterized by gently rolling hills and level uplands strongly dissected by streams that have steep valley walls.[3] The grading and building that have occurred at the main section over the years have extensively altered minor variations in the original topography. The site has an overall drop-off to the south, with two low areas that drain the site to the southeast, into Rock Creek. The slopes on Main Post gentle enough to allow f7ull development of the site. Today there are a few steep slopes on Main Post left from grading for building sites, roads and parking lots.

4.4 Soils

There are eight types of soil on WRAMC according to the Soil Surveys for the District of Columbia. These eight soil classifications are: Chillum-Urban Complex; Glenegl Variant; Manor Loam; Manor-Urban Land Complex; Urban Land-Chillum Complex; Urban Land-Manor Complex; Udorthents; and Urban Land. The predominant soil classifications at WRAMC are Manor-Urban Land Complex, Urban Land-Chillum Complex, and Urban Land-Manor Complex. The land surface is gently sloping, with the soils being well-drained, silty, micaceous, and containing a small amount of silty alluvium. The soil ranges from 10 to 50 deep over metamorphic bedrock. The soils have been widely disturbed from construction, site grading and landscaping activities. The soil permeability is from 0.6 to 2.0 inches per hour. There are no hydric or inclusive hydric soils in this area.

[2] Maryland Geologic Survey, 1981
[3] U.S. Department of Agriculture, 1976

4.5 Hydrology

No groundwater supplies are used at the Main Section. Public groundwater supplies provide less than 3 percent of the water currently consumed in this region, and for economic reasons, it is likely to remain a minor supplement. The amount of water that can be stored underground depends on the porosity of the underlying rocks, which, in the situation at Main Section, involves hard crystalline rocks of low porosity. From available data, the water table is estimated to exist within the bedrock and near bedrock surface. The source of groundwater recharge is precipitation, and the groundwater gradient at Main Section roughly parallels local surface topography. Building foundations and drainage systems alter some of the local gradients. The depth of the seasonal high water table is from 5 to 6 feet. The average yield of area wells developed in crystalline rock is 10 to 20 gallons per minute from bedrock aquifers 40 to 140 feet below the surface.

There are no streams on the Main Section; however, Rock Creek is located a short distance to the west of WRAMC Main Post. The District of Columbia groups waters of the District into Beneficial Use Classes. Rock Creek is classified as a Class B and C stream by the District of Columbia. Class B waters are protected for secondary contact recreation and aesthetic enjoyment. Class C waters are protected for aquatic life, waterfowl, shore birds, and water-oriented wildlife.

Rock Creek is also designated as an anti-degradation segment. Under this designation, the following requirements apply: (1) new point source discharges are prohibited; (2) non-point discharges shall be controlled to the extent feasible, with best management practices and regulatory programs; (3) construction projects shall be considered on a case-by-case basis to ensure that there will be no long-term adverse water quality effects; and (4) short-term water quality effects on anti-degradation segments, resulting from construction projects, shall be subject to intergovernmental coordination and public participation requirements. The entire installation is outside the 100-year flood plain of Rock Creek.

The storm water drainage system for the Main Section consists of catch basins, curb inlets, yard drains, manholes, sand filters, and 10- to 36-inch-diameter pipelines that discharge to the District of Columbia's Luzon Avenue storm drainage tunnel. The tunnel, which enters the Main Section at Georgia Avenue and Dahlia Street, runs southwest under the Rose Garden and discharges into Rock Creek Park across 16th Street. The system is in fair condition, is adequate for drainage of the Main Section at this time, and meets state and local quantity and quality requirements.

4.6 Ecology

Vegetation types found at Main Section are characteristic of urban environments. Generally, the developed areas of Main Section are covered in lawn grasses and landscape plantings. Some species of mature trees are also found in the developed areas, especially along fences, parking lots, and landscaped areas near buildings

WRAMC occurs within the Piedmont section of the Oak-Chestnut forest region. Dominant tree species within this area historically included black oak *(Quercus velutina),* white oak *(Q. alba),* hickory *(Carya spp.),* and tulip poplar *(Liriodendron tulipfera).* American beech is also typically found on ravine slopes in this area. Vegetative surveys conducted in 1997 and 1998 by Woolpert LLP indicate that wooded areas at Main Section are still dominated by these species. Woodland species occurring in these areas are representative of second growth forests in the area, and have a good density of large oak and tulip poplar trees. Understory species in these areas are predominantly invasive foreign species, including wineberry *(Rubus phoenicolasius),* multiflora rose *(Rosa multiflora),* winged euonymous *(Euonymous alatus),* garlic mustard *(Alliaria petiolata),* English ivy *(Hederahelix),* and Japanese honeysuckle *(Lonicerajaponica).*

The natural habitat at Main Section is too small to provide habitat for animals other than those typical of an urban environment. The primary wildlife inhabitants are tree-nesting birds and squirrels. Birds observed at Main Section include house sparrows *(Passer domesticus),* bluejays *(Cyanocitta cristata),* American crows *(Corvus brachyrhynchos),* European starling *(Sturnus vulgaris),* northern cardinals *(Cardinalis cardinalis),* gray catbirds *(Dumatel/a carolinensis),* mockingbirds *(Mimus polyglottos),* mourning doves *(Zenaida macroura),* and rock doves *(Columba livia).* Small mammals likely to use the urban habitat at Main Section include eastern gray squirrels *(Sciurus carolinensis),* raccoons *(Procyon lotor),* white-footed mice *(Peromyscus leucopus),* rats *(Neotoma spp.),* and maybe opossum *(Didelphis virginiana).* No reptiles or amphibians have been observed at Main Section.

A survey conducted by Woolpert LLP under the direction of the U.S. Army Corps of Engineers in 1997 and 1998 identified no rare, threatened, or endangered plant or species at Main Section. According to the U.S. Fish and Wildlife Service, except for an occasional transient species no federally listed threatened or endangered species are "known to exist at Main Section. Although a few threatened or endangered species are known to exist in Montgomery County and Rock Creek Park, habitat at Main Section is not suitable for those species.

5.0 Past and Current Operations

5.1 History of Land Use

WRAMC was named after an Army doctor, Major Walter Reed, who is best remembered for his contributions against typhoid and yellow fever. Congress passed the original authorization for Walter Reed Army General Hospital in 1905. The 80-bed Walter Reed Army General hospital was completed in 1909. It saw rapid expansion with temporary buildings during 1914 to 1918 in support of World War I. In 1923 the temporary hospital buildings were replaced with permanent structures and in 1924 the initial portion of building 40 was constructed as the Army’s Graduate School of Medicine. Building 40 was added on to several times over the years and eventually was converted for use by the Walter Reed Army Institute of Research.

World War II put additional demands on WRAMC. In 1942 the National Park Seminary was purchased and it became the Forest Glen Annex of WRAMC to help with some of the patient load. In 1947 the US Army Medical Biomechanical Research Laboratory and the US Army Audiology and Speech Correction Center were transferred from WRAMC Main to Forest Glen. The Glen Haven Annex to WRAMC was purchased from the

National Housing Authority in 1947, to add additional family housing units. Today, the Glen Haven Annex provides an additional 211 family housing units in support of the medical mission at WRAMC.

In 1955 building 54 was constructed at WRAMC Main Post for the Armed Forces Institute of Pathology.

In 1972 the groundbreaking ceremonies were held for the new Walter Reed Hospital building and it was dedicated in 1977.

In the early 1970s, the community center at the Forest Glen Annex was completed. The new community center included a Commissary, PX, and automotive maintenance shop. The post motor pool, the Directorate of Public Works maintenance shops, and post laundry also moved from Main Post to the Forest Glen Annex in the early 1970s.

In 1999 the Walter Reed Institute of Research was moved from building 40 at Main Post to a new facility at the Forest Glen Annex.

5.2 Water Supply and Distribution System Operations

5.2.1 Supply and Distribution

The water supply for Main Section is obtained from the District of Columbia Water and Sewer Authority. The Washington Aqueduct Division of the Baltimore District, U.S. Army Corps of Engineers supplies the District of Columbia with water. Water is obtained from the Potomac River above the Great Falls area and is treated at the Dalecarlia Reservoir. Water is supplied to Main Post via eight metered, 8-inch mains. Water is distributed through out Main Post by a system of 6-inch and 8-inch cast iron pipes. The system is in good condition and it is not being used to its full capacity.

5.2.2 Lead and Copper in Drinking Water

Walter Reed Army Medical Center has conducted voluntary water sampling to determine whether water in WRAMC’s distribution pipes meet regulatory limits for lead and copper. No sampling data are available for Building 40. However, the Hospital (Building 2) has been extensively sampled with results showing that there are isolated pipes and drinking fountains within the building that have recurring lead levels above an action level. Samples collected between 1992 and 1999 showed isolated exceedances of lead action levels at 1 of 12 locations sampled. Sample results are attached to this report as an Appendix. Similar isolated cases have been found in other. Although no data exist to confirm the current situation within Building 40, the Garrison Environmental Office assumes that similar conditions to those that cause isolated exceedances in other WRAMC buildings exist also within Building 40 (Personal Communication, Chuck Flippo).

5.3 Wastewater Treatment and Collection Systems Operations

There are separate storm and sanitary sewer systems on main post. As discussed in section 4.5 of this document, storm water is collected into the drainage systems and discharges into the District of Columbia's Luzon Avenue storm

drainage tunnel, which in turn discharges into Rock Creek Park across 16th Street.

The Washington Sanitary Sewer Commission collects and treats wastewater from Main Post.

There is one oil/water separator on Main Post, located at building 82, the installation auto craft building, between buildings 15 and 90. A second oil/water separator is on the Forest Glen Annex, between buildings 602 and 605.

WRAMC received a Notice of Violation in August 2001 from WASA for oil and grease above permit limits due to releases from a grease trap serving the food grill in Building 1. This is one of several grease traps located at WRAMC Main Post and Forest Glen Annex. Main Post Buildings 1, 54, and the Mologne House (hotel) each have one grease trap, while two are located at the Hospital (Building 2). At Forest Glen Annex, the Commissary has two traps while Buildings 503 and 178 (Warehouse) have one each. The traps in Buildings 54 and 178 are no longer used. There were no grease traps in Building 40.

5.4 Hazardous Materials and Waste Use and Handling

Storage and disposal of hazardous wastes on WRAMC are addressed in the Hazardous Waste Management plan (1995). The WRAMC Director of Safety, Health, and Environment and the Chairman of the Environmental Overwatch Committee are responsible for overseeing the hazardous waste program at WRAMC. To comply with Federal and District of Columbia regulations, hazardous generating activities on Main Post may accumulate hazardous wastes for no more than thirty days at which time these wastes must be moved to a hazardous waste accumulation area at WRAMC. Wastes are stored for no more than a total accumulation period of ninety days at the accumulation area. The accumulation area for Main Post is located behind building 54.

Hazardous Wastes generated at the Forest Glen Annex are subject to different accumulation rules than those generated at Main Post, because the Code of Maryland Regulations allows “satellite accumulation.” (COMAR 26.13.05.E.(3)) The majority of satellite accumulation areas are located in Building 503, though there are other such accumulation areas in nearby laboratory buildings and shops. There are two less-then-90-day storage areas on the Forest Glen Annex, one at building 503 and a second at building 515. The building 515 bunker is used only occasionally for waste collections too large for the primary bunker at building 503. There are no hazardous waste generators at the Glen Haven Annex, and likewise, the Glen Haven Annex does not have a temporary accumulation point.

All hazardous wastes turned in to the temporary accumulation points must be accompanied by a DD Form 1348-1. Only licensed hazardous waste transporters, in possession of completed Uniform Hazardous Waste Manifests, are allowed to transport hazardous wastes off-post.

The WRAMC Spill Contingency Plan (2001) covers the responsibilities, duties, procedures, and resources used to contain and clean up accidental spills of petroleum, oils, lubricants, hazardous materials and hazardous wastes. The Spill Contingency Plan is maintained by the WRAMC GEO and coordinated at the organizational level.

5.4.1 Asbestos and Lead-Based Paint

WRAMC manages asbestos and LBP in place when possible, and removes or encapsulates it when it becomes an environmental hazard. Due to the age of the installation, however, these materials are present in most buildings on post. Buildings constructed prior to 1978 are assumed to have LBP and those built prior to 1988 are suspected to have asbestos containing materials (ACM).

WRAMC has a base wide asbestos survey[4] and results of that survey can be found in the WRAMC Garrison Environmental Office.

5.4.2 Polychlorinated Biphenyls (PCB) and Mercury

A small number of surveys have assessed polychlorinated biphenyl (PCB) content in fluorescent light ballasts in buildings on post. Walter Reed Army Medical Center's practice is to manage these items in place and not remove unless they fail or leak. Buildings that were constructed prior to the 1978 ban on PCBs may have fluorescent light fixtures that have PCB contaminated ballasts. If ballast is not marked non-PCB then it is assumed the ballast has greater than 50 ppm PCBs but less than 500 ppm PCBs. These ballasts are designated as "PCB contaminated;" items that contain greater than 500 ppm PCBs are designated "PCB ballasts" or "PCB transformers."

Mercury or mercury vapor is present on post in the form of mercury thermometers, switches, blood pressure gauges, and in fluorescent light bulbs. In addition, mercury is contained in many of the chemicals used in laboratories and other operations throughout WRAMC, including those laboratories within building 40 when WRAIR occupied the building.

Wastewater discharges at WRAMC are monitored for mercury levels. There have been levels exceeding the permit limits at Main Post that are being addressed through a Consent Agreement between WRAMC and the District of Columbia Water and Sewage Authority (copies available from the WRAMC Garrison Environmental Office).

5.4.3 Installation Restoration Program

WRAMC updates its Installation Restoration Program (IRP) Installation Action Plan annually. The current fiscal year 2004 WRAMC IRP identifies the six sites that were evaluated as IRP sites. Of the six sites, four are listed as response completed and two are listed as Interim Remedial Action Phase.

The four Response Completed sites at WRAMC include:

- Hazardous materials storage area south of the southwest corner of building 40. Discontinued in March of 2000.
- Underground waste oil storage at Forest Glen Annex, removed in February of 1992.

[4] EA Engineering, Science and Technology, Inc.*; "Asbestos Management Database for Walter Reed Army Medical Center, Washington D.C. and Forest Glen Annex, Forest Glen Park, MD. Volumes I-III",* 1998.

- Infectious waste storage facility on the west side of building 2 (loading dock), discontinued in October of 1992 (area still in use but original facility replaced by new storage facilities).

- Leaking, abandoned underground heating oil pipelines, oil and contaminated oil removed in 1997 at Glen Haven Annex.

The two Interim Remedial Action Phase (IRAP) sites at WRAMC are:

- The building 500 underground heating oil tank removal site at the Forest Glen Annex is an IRAP site. The tank and contaminated soil within the tank bed have been removed and the site is under remediation.

- A leaking PCB transformer site near the Rumbaugh Garage is an IRAP site. The transformer and contaminated soil were removed in 1992. There are six ground water monitoring wells still active around the site.

5.5 Petroleum Products Use and Handling

5.5.1 Petroleum Storage

A 2002 inventory of storage tanks gives a listing of above (AST) and underground (UST) storage tanks on WRAMC.

Main Post:

Tank Location	Capacity	UST/AST
Building # 1-W	280 gal diesel	AST
Building #15	280 gal diesel	AST
Building #16A	500 gal diesel	AST
Building #16B	500 gal gasoline	AST
Building #90	280 gal diesel	AST
Tank #27 Building #4	3,000 gal diesel	UST
Tank #28 Building #2	20,000 gal diesel	UST
Tank #29 Building 54E	2,500 gal diesel	UST
Tank #30 Building 54W	6,000 gal diesel	UST
Building #54C	2,000 gal diesel	AST
Tank #14 Building #90	400,000 gal diesel	UST
Tank #15 Building #90	400,000 gal diesel	UST
Tank #31 Building #T2	1,000 gal diesel	UST
Tank #32 Building #41	3,000 gal diesel	UST

Table 1, WRAMC Main Post Tank Inventory

Forest Glen Annex:

Tank Location	Capacity	UST/AST
Building #120	275 gal diesel	AST
Building #503A	20,000 gal diesel	AST
Building #503B	30,000 gal diesel	AST

Building #508	500 gal diesel	AST
Building #510	280 gal diesel	AST
Building #511	2,000 gal diesel	AST
Building #609	500 gal diesel	AST
Tank #22 Building #605	10,000 gal diesel	UST
Tank #23 Building #605	10,000 gal gasoline	UST
Tank #24 Building #164	10,000 gal gasoline	UST
Tank #25 Building #164	10,000 gal gasoline	UST
Tank #26 Building #164	10,000 gal diesel	UST
Tank #27 Building #606	40,000 gal diesel	UST
Tank #28 Building #511A	20,000 gal diesel	UST
Tank #29 Building # 511B	20,000 gal diesel	UST
Tank #30 Building #178	1,000 gal diesel	UST

Table 2, WRAMC Forest Glen Annex Tank Inventory

5.6 Air Quality

The Clean Air Act Amendment of 1990 requires that a Federal agency will not "engage in, support in any way, or provide financial assistance for, license or permit, or approve, any activity which does not conform" to an applicable State Implementation Plan (SIP). All activities at WRAMC facilities are thereby subject to compliance with Washington, D.C.'s SIP.

Air quality in the District of Columbia is monitored by the Department of Health, Environmental Health Administration, Bureau of Environmental Quality, Air Quality Division. Five of the six air quality monitoring stations in Washington, D.C., are located in the northwest quadrant of the city, the same quadrant the Main Section is situated.

In Washington, D.C., air quality monitoring is performed routinely for those pollutants specifically regulated by the state and the Federal Clean Air Act. The criteria pollutants include sulfur dioxide, nitrogen dioxide, lead, carbon monoxide, ozone, total suspended particulate, and particulate matter 10 microns or smaller in diameter. Acceptable levels of these pollutants are established by the National Ambient Air Quality Standards (NAAQS), published by the U.S. Environmental Protection Agency.

Ozone and carbon monoxide levels exceed the NAAQS criteria several times a year and Washington, D.C., is classified as a non-attainment area for these compounds. Ozone is formed in the atmosphere when nitrogen oxides (mostly from automobiles) and volatile organic compounds (from paints, inks, solvents, and gasoline) react in the presence of sunlight to produce what is known as "photochemical smog." Depending on weather conditions, ozone concentrations vary considerably from year to year. Carbon monoxide levels have decreased by 25 percent from 1980 to 1991. Efforts to reduce air quality problems including mandated automobile pollution control equipment have been effective in improving air quality of the area.

Ambient air quality on the installation does not differ significantly from the overall air quality discussed above. Since no large industrial function or flight training occurs there, the primary on-post air quality is influenced by vehicular engine exhaust, the central heating plant (a dual-fired system of oil and gas), and individual heating systems (gas furnaces or electric heat). The off-post air

quality is influenced primarily by vehicular engine exhausts. A comprehensive list of sources of air emissions at WRAMC is available in annual air emission certification statements available from the WRAMC Garrison Environmental Office.

5.6.1 Radon

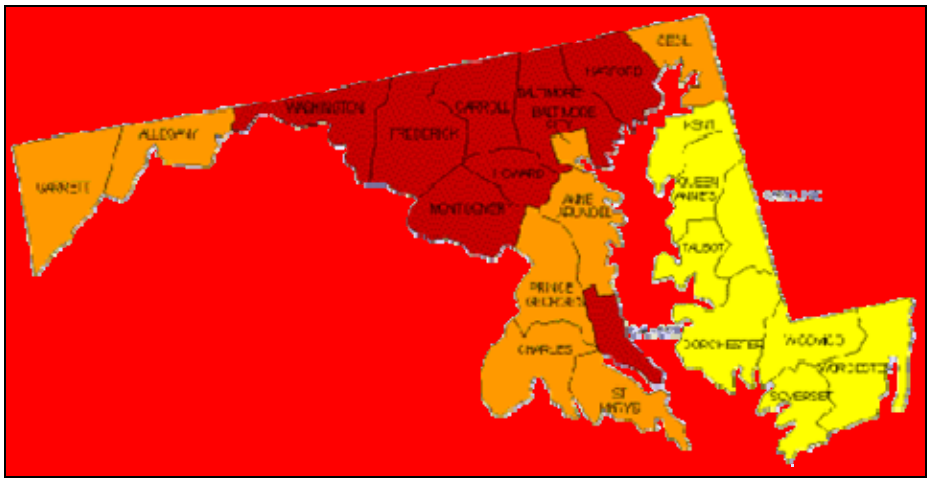
The Environmental Protection Agency (EPA) Radon Map was developed using five factors to determine radon potential: indoor radon measurements; geology; aerial radioactivity; soil permeability; and, foundation type. Radon potential assessment is based on geologic provinces. Radon Index Matrix is the quantitative assessment of radon potential. Geologic Provinces were adapted to county boundaries for the Map of Radon Zones.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels[5]. EPA's Map of Radon Zones assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L (pico curies per liter) (red zones)
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L (orange zones)
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L (yellow zones)

According to the EPA Radon Map for Maryland, the Forest Glen Annex and the Glen Haven Annex are in zone 1, having a predicted average indoor radon screening level greater than 4 pCi/L. WRAMC is inside the District of Columbia, which is not covered in the EPA's Radon Map. In discussions with Mr. Keith Keemer, the Radon Coordinator for the Environmental Health Administration of the District of Columbia, the District of Columbia is in zone 3, having a predicted average indoor radon screening level less than 2 pCi/L. Mr. Keemer also said the northern reaches of the District of Columbia are the highest in the district, coming closer to the levels found in a zone 2 designation.

[5] EPA, 2003



Map 3, Radon Zones for the State of Maryland, from EPA (Zone 1 = red, Zone 2 = Orange, & Zone 3 = Yellow)[6]

5.6.2 Title V Permitting

WRAMC has a Title V permit for the main post. The Air Quality Operating Permit # 004 was issued for the WRAMC Main Post by the Air Quality Division of the Environmental Quality Office of the District of Columbia Health Administration. The permit was issued on July 28, 2000 and is good for five years. It covers the four main boilers on WRAMC and the emergency generators on Main Post. The permit is up-dated periodically to account for additional emergency generators.

6.0 Property Included in the EBS

The properties included in this EBS are buildings 40 and 18 at the Main Post of WRAMC and approximately 4.221 acres of land surrounding building 40, as described in the Report of Availability.

[6] EPA, 2003

SECTION II. EBS

ENVIRONMENTAL BASELINE SURVEY

EUL Project, Buildings 40 & 18

Walter Reed Army Medical Center, DC

December 2003

Section II Summary

This report presents the results of the survey performed by the Directorate of Public Works Operations Division of the Assistant Chief of Staff for Installations, Environment, and Facility Management (ACSIE&FM) at the US Army Medical Command for the US Army Garrison, Walter Reed Army Medical Center to report the environmental condition of the proposed properties for an Enhanced Use Lease (EUL) project. The WRAMC, Directorate of Public Works (DPW) requested An Environmental Baseline Survey (EBS) to support the Report of Availability (ROA) that reports buildings 40 and 18 as available for an EUL project. WRAMC staff will forward the ROA, and supporting environmental documentation, to the North-East Region Office, Installation Management Agency, and then on to the Assistant Chief of Staff for Installation Management, at the Department of the Army, for approval.

The ACSIE&FM office performed a survey of the subject properties, record search, and site interviews during the week of 10 Jan 2002. The survey included a visual inspection of the subject properties. There were subsequent phone interviews and e-mail requests for information between June of 2002 and March of 2004.

Information was gathered from documents, personnel interviews, and on-site surveys on issues such as water quality, wastewater treatment, hazardous materials, asbestos, lead, PCBs, mercury, IRP sites, air quality, and others. **These properties were found to be ECP category 6 for building 40, ECP category 1 for building 18, and are suitable for outgranting.** Based on the information and recommendations contained in this EBS, there appear to be no known environmental liabilities associated with the proposed lease of the property. The findings and recommendations of the investigation are summarized in the following findings table.

Environmental Item	Findings
Hazardous Substance Release or Disposal	**Building 40:** Records show hazardous materials were released and areas have been restored in the building decommissioning. **Building 18:** There is no evidence/records of hazardous substances released.
Petroleum Release or Disposal	**Building 40:** The decommissioning project for building 40 removed the oil stains in the old machining area of building 40. There is no further evidence/records of petroleum products being released or disposed. **Building 18:** There is no evidence/records of petroleum products being released or disposed.
Hazardous and Petroleum Wastes	**Building 40:** No hazardous wastes are currently stored in the building. **Building 18:** There is no evidence/records of hazardous wastes ever having been stored in this building.
Asbestos	**Building 40:** Survey records show asbestos is present in the building. **Building 18:** Asbestos is assumed to be present in the building.
Oil Water Separators	There is no evidence/records of oil water separators being located on the proposed sites.
Pesticides	There is no evidence/records of pesticides being stored on the proposed sites, though pesticides were likely used within Building 40 while WRAIR was operating there.
Medical or Biohazardous Waste	**Building 40:** No medical or biohazardous wastes are currently stored in the building. **Building 18:** There is no evidence/records of medical or biohazardous wastes ever having been stored or used in this building.
Ordnance	There is no evidence/records of ordnance being located on the proposed sites.
Radioactive Waste	**Building 40:** No radioactive wastes are currently stored in the building. **Building 18:** There is no evidence/records of radioactive materials or wastes ever having been stored or used in this building.
Solid Waste	There is no evidence/records of solid waste being located on the proposed sites.
Ground Water	There is no evidence/records of ground water contamination on the proposed sites.
Wastewater Treatment, Collection and Discharge	**Building 40:** No wastewater containing chemical wastes were discharged under a permit from the Water and Sewer Authority while WRAIR was operating; there is currently no discharge from the building. **Building 18:** There is no evidence that any wastewater other that sanitary wastewater has been discharged from this building.
Drinking Water Quality	There is no evidence/records of drinking water contamination on the proposed sites.
Polychlorinated Biphenyl's (PCB's)	**Building 40:** The cleanup of the PCB oil on the old machine shop floor of building 40 has been completed; use restrictions apply for room B003. There is PCB contamination in a transformer vault and soil outside building 40. **Building 18:** There is no evidence/records of PCB contamination on the proposed site.
Radon	There is no evidence/records of radon concentrations above the EPA's action level on the proposed sites.
Lead-Based Paint	Based on the age of both structures, it is assumed lead based paint is present in both structures.
Above Ground/Underground Storage Tanks	There is no evidence/records of either above ground or underground storage tanks on the proposed sites.
Adjacent Properties	There are no specific findings.
Historical Assessment	**Building 40:** is a National Register-eligible resource and is a contributing building to the WRAMC historic District. **Building 18:** is not a contributing building to the character of the WRAMC historic district.

Table 2, Environmental Findings

1.0 Purpose

The purpose of this EBS is to provide information on the potential existence of hazardous substances on the properties to be made available for an Enhanced Use Lease project. This EBS documents the environmental condition of these two properties before the outgranting to a developer through an Enhanced Use Lease (EUL) project.

2.0 Findings for Property

2.1 History and Current Use

Building 40

The south wing of building 40 was constructed in 1924 to house the U.S. Army Medical Department Professional Service School and general administrative offices. Since 1924, the building has undergone several additions, the first being the North and Central Wings added in 1932. In 1960 the West Wing was constructed which joined the other three wings into one building. Originally built as the Army Medical Department Professional Service School, the facility became known in 1947 as the U.S. Army Medical Department Research and Graduate School. In 1950 it became the Walter Reed Army Institute of Research and remained such until May of 2000, when the WRAIR function moved to new facilities at the Forest Glen Annex of WRAMC. The building is currently empty.

Building 18

Early photos of the building 18 site show residential homes on the site. These were removed when a developer built building 18 in 1969. Records show that the U.S. Army leased the building from the developer on 21 May, 1974. Building 18, also know as the Walter Reed Inn, has 54 guest rooms and is located at 6825 Georgia Avenue, Northwest. The Army purchased the building from the developer on 24 May, 1989. It is a four story, brick building. Building 18 has been used to house visiting officers and military personnel since the Army first started leasing the facility in 1974.

2.2 Environmental Setting

Building 40

The building 40 site on Main Post is bounded on the west by 14th Street and a small family housing area, on the north by Dahlia Street and the AFIP building (339,079 gross square feet), on the south by the Walter Reed Inn (building 20, 35,600 gross square feet) and a decorative fountain area, and on the east by building T-2 (26,390 gross square feet) and building 41 (53,020 gross square feet). This site is a fully developed site, with limited green space and a few mature hardwood trees scattered around it.

Building 18

The building 18 site is not located on WRAMC Main Post proper. It is located outside the gates of Main Post, across Georgia Avenue. The property is bounded on the west by Georgia Avenue and WRAMC Main Post, on the north by Butternut Street and commercial apartments, on the east by an alley way and private residences, and on the south by an office and apartment building. The site is fully developed with little or no green space left between buildings.

2.3 Hazardous Substance Release or Disposal

There is evidence/records of hazardous substances released in building 40, but these areas have been fully restored during the decommissioning project for building 40 and no further action is required.

Mercury spills are known to have occurred within Building 40, though spill reports from prior to the year 2001 have been archived and are not readily available (personal communication, Chuck Flippo). The Chemical Decommissioning study of the building found mercury residue in one location within the building (Room 3034). Subsequent re-inspection of this room resulted in a finding that no additional action was necessary (General Physics, 2002). Available data, which is attached as an appendix to this report, for building 40 show mercury above permit limits in wastewater discharged while WRAIR occupied the building.

There is no evidence/records of hazardous substances released in or around building 18.

2.4 Petroleum Release or Disposal

The decommissioning project for building 40 removed the oil stains in the old machining area of building 40. There is no further evidence/records of petroleum products being released or disposed in or around building 40. There is no evidence/records of petroleum products being released or disposed in or around building 18.

2.5 Hazardous and Petroleum Wastes

There is no evidence/records of hazardous waste and petroleum waste product being stored on the proposed sites.

2.6 Asbestos

Asbestos has been documented in building 40 and is suspected to exist in building 18. There is a comprehensive asbestos report[7] documenting the asbestos in building 40 available in the WRAMC Garrison Environmental Office. Building 18 was constructed in 1969 during a period when asbestos bearing materials were popular construction materials for heat resistive applications. While there is no comprehensive asbestos report for building 18, it is assumed that asbestos bearing materials were used in the building construction. Recommend suspect

[7] General Physics Corporation, *"Asbestos Reinspection and Condition Assessment Report for Building 40, Walter Reed Army Medical Center, Washington, DC,"* January 15, 2002.

asbestos materials in both buildings 40 and 18 be removed prior to any renovations or demolition.

2.7 Oil Water Separators

There is no evidence/records of oil water separators being located on the proposed sites.

2.8 Pesticides

There is no evidence/records of pesticides being stored on the proposed sites.

2.9 Medical or Bio-hazardous Waste

There is no evidence/records of medical or bio-hazardous waste being located on the proposed sites. Building 40 bio-hazardous waste was stored in an area south of the southwest loading dock prior to collection during the years the WRAIR lab operated there. This area was cleaned as part of the building 40 decommissioning.

2.10 Ordnance

There is no evidence/records of ordnance being located on the proposed sites.

2.11 Radioactive Waste

The small nuclear reactor that was located in the lower basement of building 40 was closed and decommissioned in accordance with the Nuclear Regulatory Commission (NRC) rules and it is released for unrestricted use. A decommissioning report has been prepared by the U.S. Army Center for Health Promotion and Preventive Medicine, and approved by the NRC, which is on file at the WRAMC Radiological office. While there were radiological materials used in many of the rooms in building 40, there is no current evidence of radioactive "waste" at building 40 after the projects were completed to decommission this building. There is no evidence/records of radioactive materials or waste being located in building 18.

2.12 Solid Waste

There is no evidence/records of solid waste being located on the proposed sites.

2.13 Ground Water

There is no evidence/records of ground water contamination on the proposed sites.

2.14 Wastewater Treatment, Collection and Discharge

No wastewater containing chemical wastes were discharged under a permit from the Water and Sewer Authority while WRAIR was operating in building 40 and there is currently no discharge from the building.

There is no evidence that any wastewater other that sanitary wastewater has been discharged from building 18.

2.15 Drinking Water Quality

There is no evidence/records of drinking water contamination on the proposed sites.

2.16 Polychlorinated Biphenyl's (PCB's)

There is a PCB plan[8] for building 40 available in the WRAMC Garrison Environmental Office. The cleanup of the PCB oil on the old machine shop floor in the basement of building 40 has been completed. Room B003 was cleaned up but there is a little bit of PCB contamination left in one corner of the room. Since the contamination is less than 25 parts per million, EPA said that WRAIR did not have to do any further clean up as long as the room is used for "low occupancy" activities (i.e., unprotected workers in the room less than 335 hours/year) and WRAIR (now WRAMC) notes this restriction on use of the room in the deed or comparable document. The Report of Availability will need to include this restriction for inclusion in the lease documents. There is no evidence/records of PCB contamination in or around building 18.

PCBs were found in storm water that had collected in a transformer vault that serves Building 40 and is located just off the northwest corner of the building. The storm water, which contained 220 parts per million of Arochlor 1260, was removed from the vault and disposed of. WRAMC tested the oil within the current transformer and determined the oil does not contain PCBs. Therefore, WRAMC believes the PCBs in the storm water resulted from an old PCB transformer that was removed in the 1990s. WRAMC has investigated soil surrounding the vault and found contamination (between 10 and 200 parts per million PCBs) within a maximum of about twenty feet from the vault, and within two feet of the surface; the bulk of the contamination is within one foot of the surface (personal communication, Chuck Flippo). Analytical results are available from the Garrison Environmental Office. The Report of Availability will need to include a use restriction for this vault and surrounding soil.

2.17 Radon

According to the EPA's categorization of radon zones, Washington, DC is qualified as a radon zone three, meaning that it has a predicted average indoor radon screening level less than 2 pCi/L. The EPA's action level for radon is 4 pCi/L. There is no evidence/records of radon concentrations above the EPA's action level on the proposed sites.

2.18 Lead-Based Paint

Though there is no evidence or records of LBP stored or disposed on the proposed sites, previous surveys from adjacent buildings and/or facilities indicated the painted surfaces do contain some level of lead in them. Based on the age of both structures, it is assumed lead based paint is present in both structures.

[8] General Physics Corporation, *"Revised PCB Site Cleanup Plan for WRAIR Building 40 Facility, WRAMC, Washington, DC 20307,"* 04 January, 2002

Recommend suspect paint be tested and lead based paint in both buildings 40 and 18 be removed or encapsulated prior to any renovations or demolition.

2.19 Above and Underground Storage Tanks

There is no evidence/records of either above ground or underground storage tanks on the proposed sites.

3.0 Findings for Adjacent Properties

There are no findings regarding adjacent properties. These buildings and areas do not have the potential to be a hazard to future development of buildings 18 and 40. The adjacent properties (buildings, structures, and facilities) may contain, or have contained materials that are currently deemed hazardous material. The site investigation of adjacent properties found no evidence that any of these materials have migrated to the properties being outgranted due to natural deterioration and uncontrollable climate conditions that can carry contaminates to adjacent properties.

4.0 Historical Assessment

Building 40 is a National Register-eligible resource and is a contributing building to the WRAMC historic District. Building 18 is not eligable to qualify as a historic building and is not a contributing building to the character of the WRAMC historic district.

The Historic Preservation Office, Office of Planning, District of Columbia, has concurred with the Army finding that this EUL project has “no adverse effect” on the historical significance of building 40 in a letter to the WRAMC Directorate of Public Works, subject: “RE: Section 106 Review of Enhanced Use Lease of Buildings 40, 18, T-2 and T-20,” dated January 31, 2003. This same letter concurred with the finding that building 18 is not a contributing building to the WRAMC historic district.

5.0 Site Investigations

5.1 Building 40

Building 40 is a four-story brick building, with a full basement and a lower reactor area. It was built in stages, with the original, southern wing, built in 1924 with major additions in 1932 and again in 1960. Building 40 was found to be totally vacant during the site inspection, with only bare floors and walls left behind. There were no containers or storage boxes found anywhere during the site inspection. The only furniture left behind was the built-in laboratory benches, and no stored materials or storage containers were noted in the workbenches. The walk-through site inspection with the former building manager lasted several hours and encompassed all floors and areas. There were a few locked rooms, but windows into these areas allowed visual inspection. The building manager reported that the clean-up crews had been very thorough in removing everything from the building.

Some floor tiles were of the right size and typical of asbestos floor tiles of that era. Floor tiles in the old machine shop had been removed, where there were oil stains, during the building decommissioning to remove PCB oil residue in the concrete floor.

The old reactor area was completely bare and evidence of missing concrete on several floor surfaces were the only indications of the decontamination and decommissioning. The old reactor area had standing water in several of the low areas, no more than an inch deep.

The basement has a large number of steam lines with insulation that may contain asbestos. The old x-ray areas still had the lead shielding in place on the walls and doors.

Many of the wall surfaces on every floor had peeling paint, assumed to contain lead based paint. Ceiling tiles were stained in many areas from water leaks. There were large numbers of small holes in some of the wall surfaces in many different areas. The building manager believed these holes were left from asbestos testing.

There are two temporary buildings in the courtyard on the eastern side of building 40, buildings T060A and T060B. These two temporary buildings were not inspected as part of this site inspection. The contents of these two temporary buildings are unknown and they are not included as part of this Environmental Baseline Survey.

5.2 Building 18

Building 18 was found to be a typical apartment style soldier housing with key access to common corridors. It is a 28,162 gross square foot building constructed from block and brick. There are several heating, ventilation, and air conditioning (HVAC) units that support the common areas. Each of the 54 guest rooms has its separate HVAC unit with independent controls. There is one gas-operated boiler that supplies the building with hot water. Most of the rooms were locked during the inspection, as they were occupied living quarters. The area appeared to be maintained and in average condition. The only spill noted was an approximately one-foot diameter oil stain in the parking lot, obviously caused by a motor oil leak from an oil pan of a resident’s vehicle. There were small quantities of cleaning fluids, such as window and floor cleaners of less than one gallon, stored in the cleaning closets. Due to the age of the building, early coats of wall and trim paint may be lead based.

Of special note for this enhanced use lease is the fact that the U.S. Army has only proprietary legislative jurisdiction over building 18. The District of Columbia is the approval authority for demolition and construction at this site. Local building permits may be required by the District of Columbia for any alterations at this property. This may add several layers of approvals for any changes in this property use.

6.0 Conclusions

6.1 Environmental Condition of Property (ECP) Building 40

The proposed property, building 40, is found to be a Category 6 property – areas where release, disposal and/or migration of hazardous substances has occurred, but required actions have not yet been implemented. The category 6 determination is based on the PCB contamination documented in and around the transformer vault located just off the northwest corner of building 40. This transformer vault is inside the land area that will be leased with building 40. Past contamination in building 40 and past potential for contamination eliminated categories 1 through 3. Category 7 does not apply because of the large number of studies and thorough documentation on this building and the transformer vault PCB contamination. Categories 4 and 5 do not apply as documentation shows PCB contamination to exist in the transformer vault northwest of building 40, and there are no actions as yet underway to remediate the PCB contamination. Through the process of elimination, category 6 is the correct determination because of the PCB contamination known to exist in the transformer vault northeast of building 40.

6.2 Environmental Condition of Property (ECP) Building 18

The proposed property, building 18, is found to be a Category 1 property – areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). There were no findings, either in the site inspection or in documents reviewed, which would indicate this property is anything other than category 1.

6.3 Environmental Condition of Property (ECP) Classification System

Properties were classified according to environmental condition based on the following categorization:

Category 1 – Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

Category 2 – Areas where only release or disposal of petroleum products has occurred.

Category 3 – Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

Category 4 – Areas where release, disposal and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environmental have been taken.

Category 5 – Areas where release, disposal and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

Category 6 – Areas where release, disposal and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.

Category 7 – Areas that are not evaluated or require additional evaluation.

These categories were taken from the Defense Technical Information Center homepage as directed in DA PAM 200-1 and AR 200-1.

SECTION III. APPENDICES

1.0 DOCUMENTS REVIEWED:

- EA Engineering, Science and Technology, Inc.; "Asbestos Management Database for Walter Reed Army Medical Center, Washington D.C. and Forest Glen Annex, Forest Glen Park, MD. Volumes I-III", 1998.

- General Physics Corporation, "Asbestos Reinspection and Condition Assessment Report for Building 40, Walter Reed Army Medical Center, Washington, DC," January 15, 2002.

- General Physics Corporation, "Revised PCB Site Cleanup Plan for WRAIR Building 40 Facility, WRAMC, Washington, DC 20307," January 04, 2002

- Army Environmental Hygiene Agency, *"Pest Management Plan, WRAMC DPW,"* 1996.

- Astore Architects and Urban Designers, PC and Harland Bartholomew and Associates, Inc., *"Walter Reed Army Medical Center, Main Section, Landscape Management Plan,"* 1993.

- Astore Architects and Urban Designers, PC, "Walter Reed Army Medical Center Master Plan Narrative Report, Final," 1996.

- Brown, James H. and Dyer, Steve T., "Soil Survey of Montgomery County, Maryland, U.S. Department of Agriculture, Natural Resources Conservation Service," 1995.

- CH2M Hill, "Environmental Baseline Study for the Historic District of the Forest Glen Annex of Walter Reed Army Medical Center," 1996.

- District of Columbia, "WRAMC – Wastewater Discharge Permit No. 045-2," 1995.

- KFS Historic Preservation Group, "WRAMC – Main Section: Section 106 Report," 1994.

- Rogers, Golden, & Halpern, Inc., "Environmental Assessment of Master Plan for Main Section – Walter Reed Army Medical Center," 1994.

- Stottler Stag and Associates, "Concept Storm Water Management Plan, WRAMC," 1994.

- U.S. Army Environmental Hygiene Agency, "Environmental Compliance Assessment System: External Assessment No. 37-26-J1HB-93, WRAMC, DC," 1995.

- US Fish and Wildlife Service, “Potential Threatened and Endangered Species at WRAMC,” 1997 (memorandum).

- Woolpert LLP, “Rare, Threatened, and Endangered Species Survey of Walter Reed Army Medical Center: Montgomery County and the District of Colunbia, Maryland,” 1998.

- WRAMC, “Standing Operating Procedures for Buildings and Grounds Branch,” 1989.

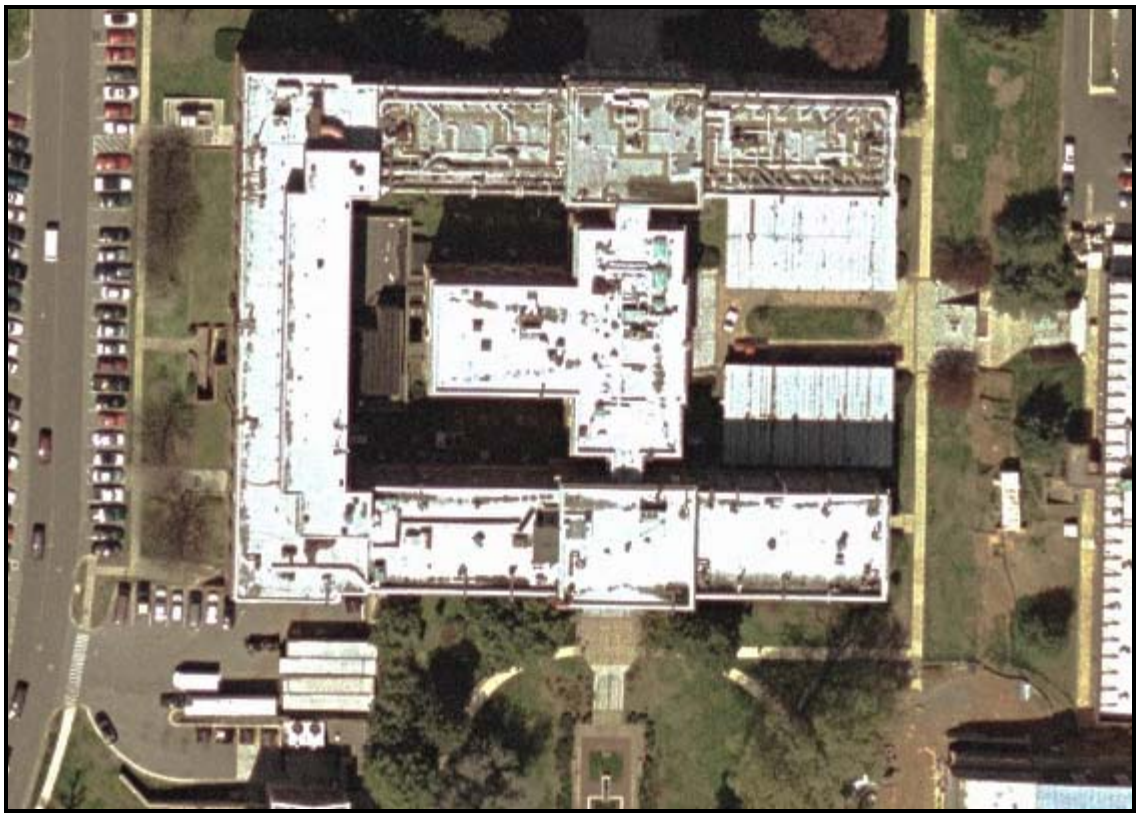
- WRAMC, “Hazardous Waste Management Plan,” 1995.

- WRAMC, “Installation Spill Contingency Plan,” 1995.

- WRAMC-Directorate of Public Works, “SOP K-8, Standard Operating Procedure for Sampling Drinking Water for Heavy Metals (Lead, Copper),” 1995.

2.0 Aerial Photos of Properties:

2.1 Building 40

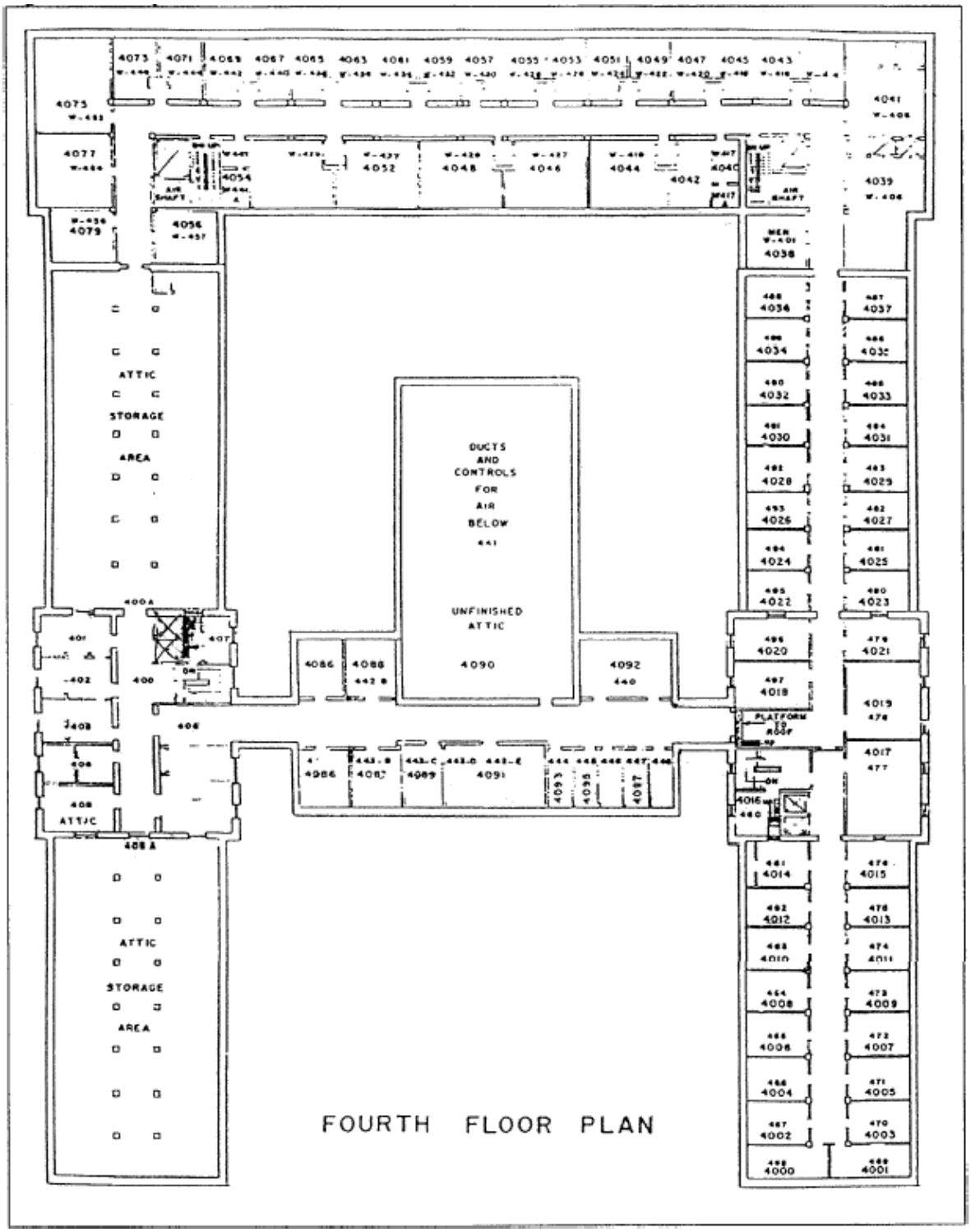


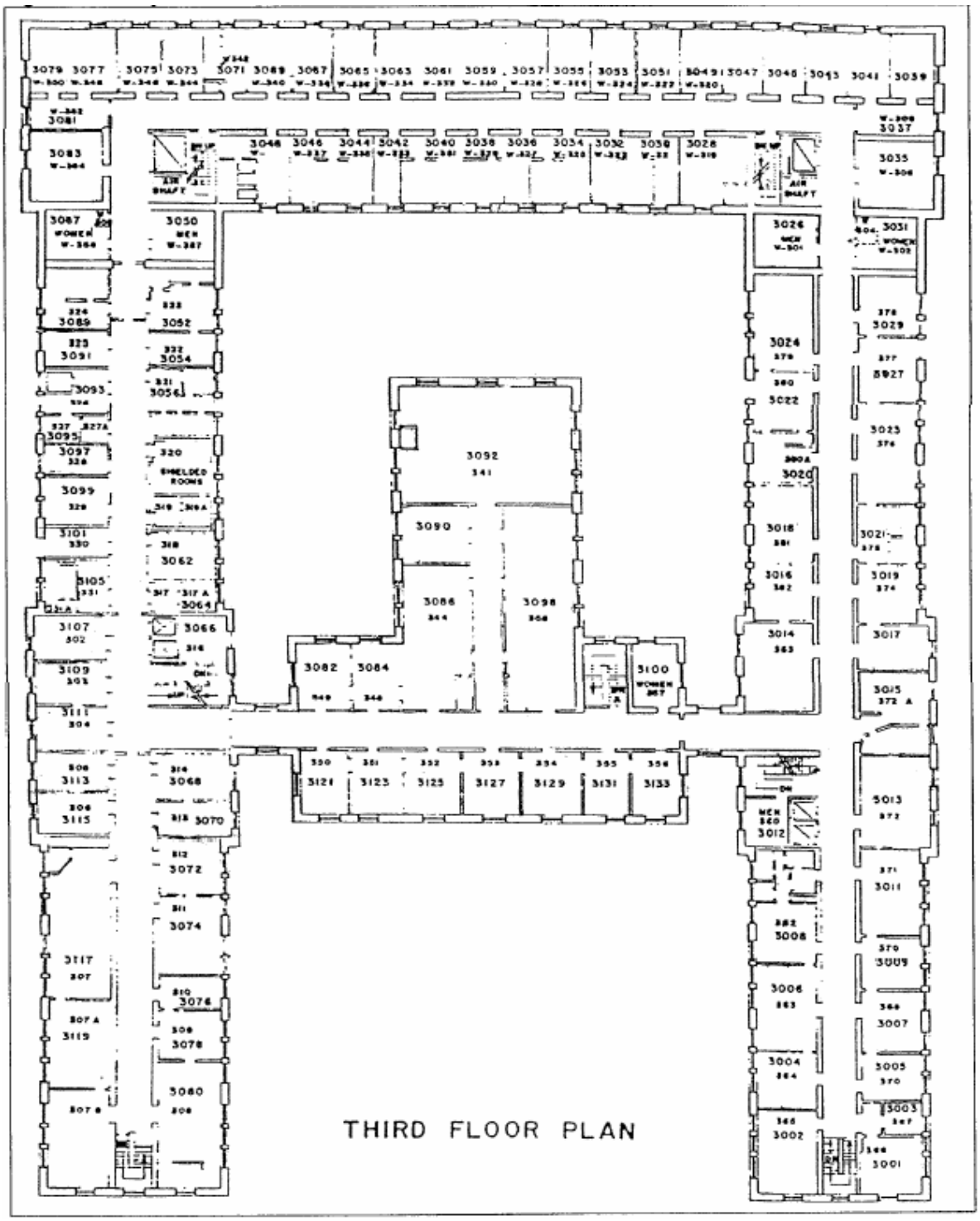
Building 40 Aerial Photo (Source: USGS, 2002)

2.2 Building 18

Building 18 Aerial Photo (Source: USGS, 2002)

3.0 Floor Plans, Building 40:

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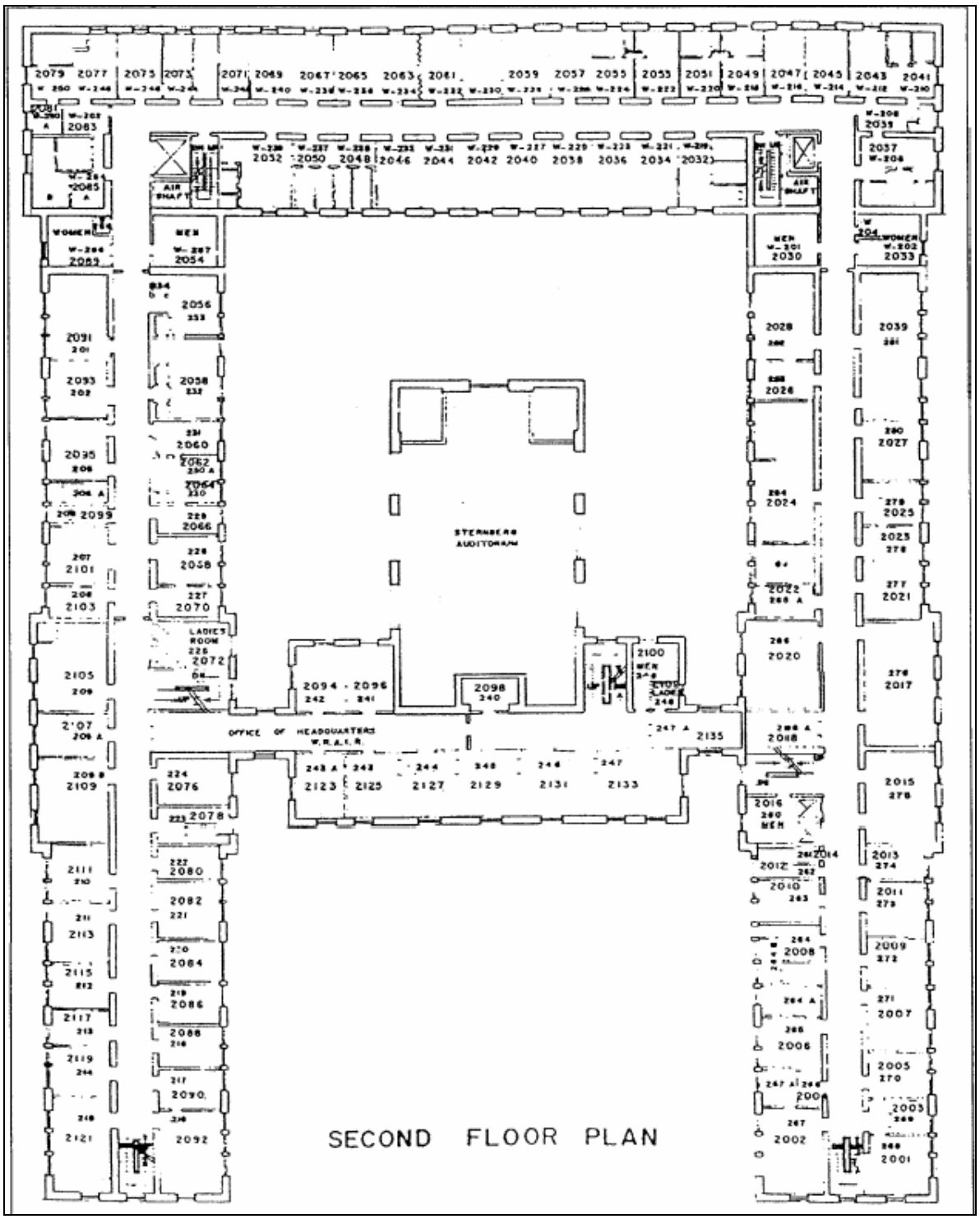
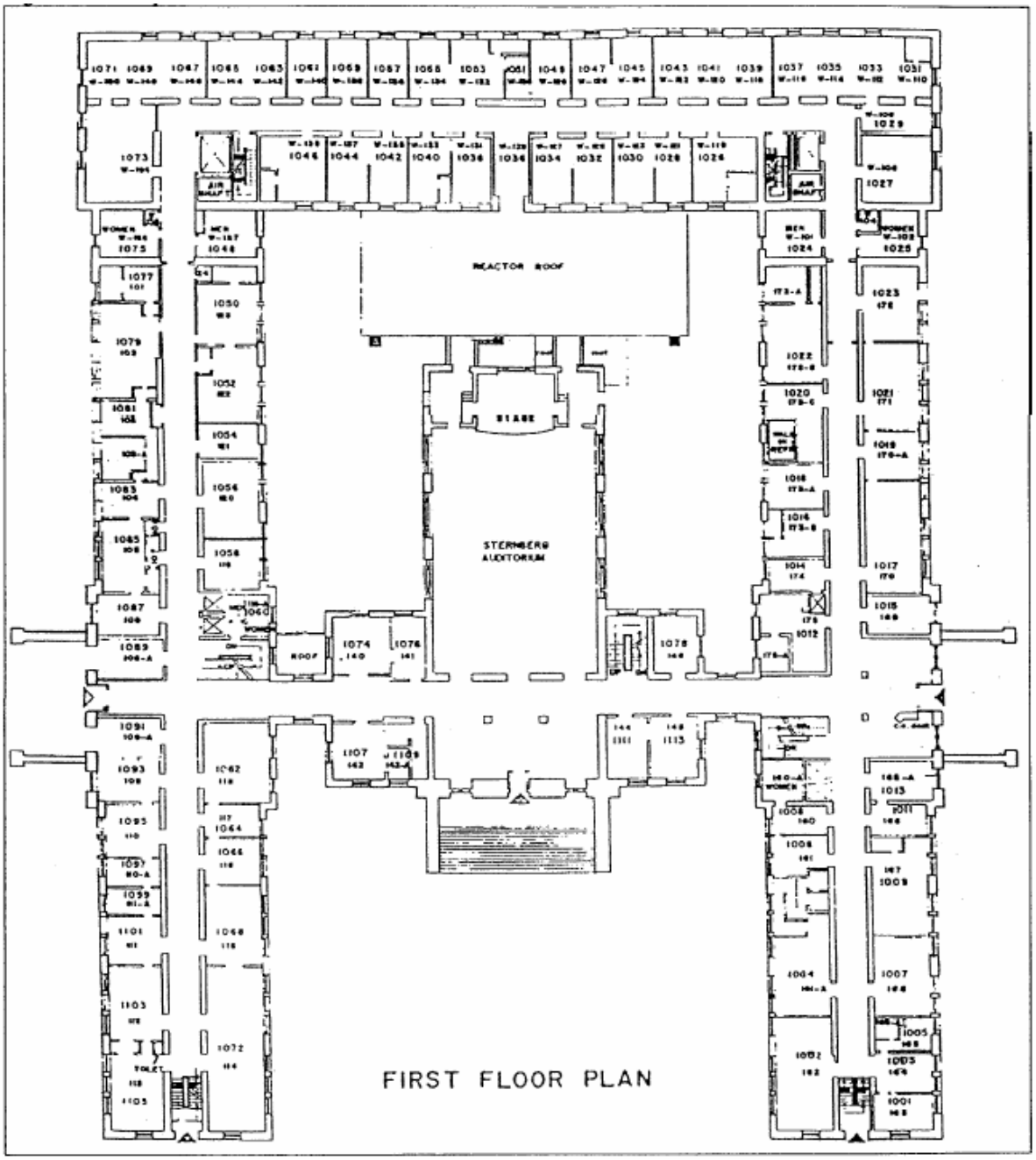
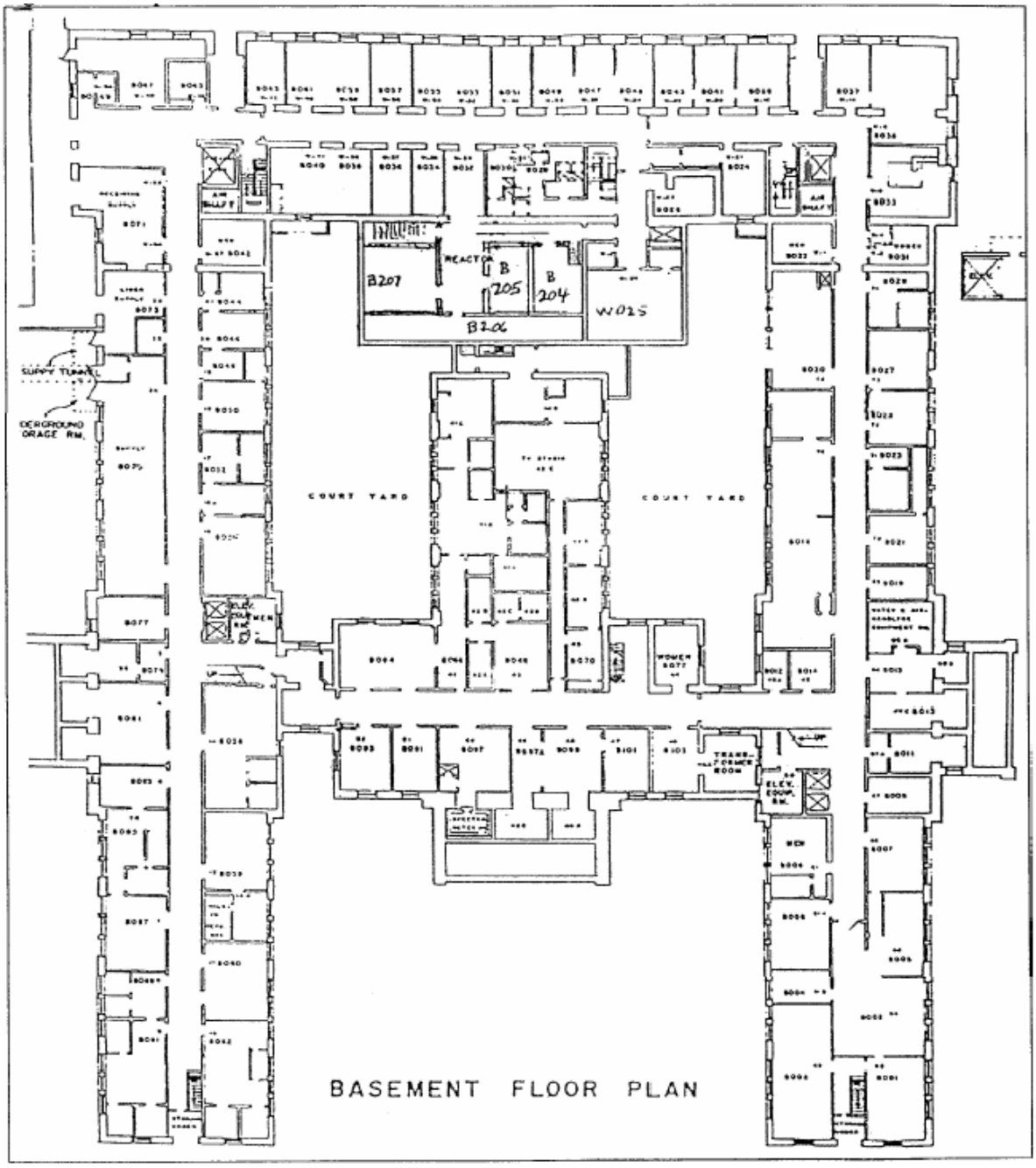
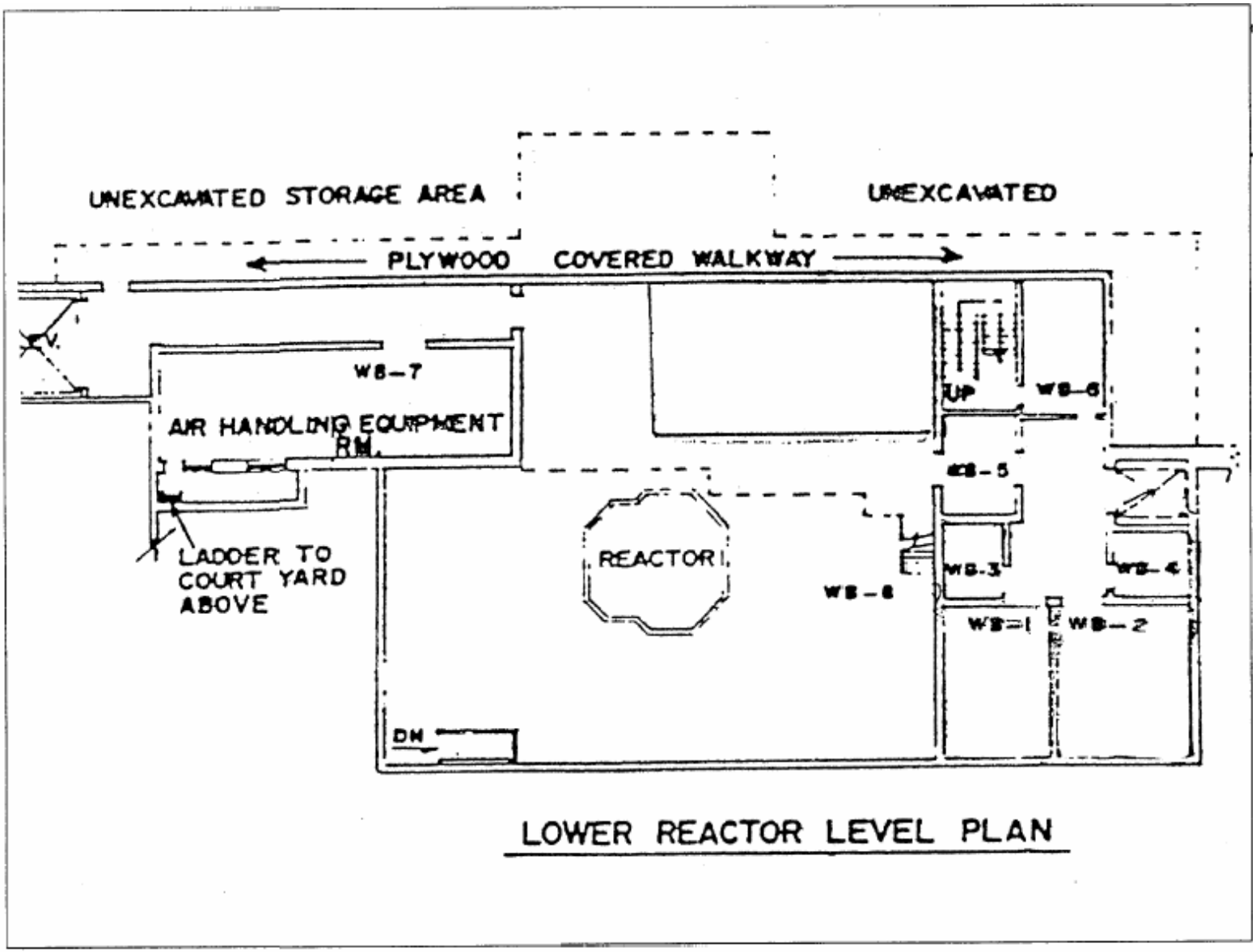

STERNBERG AUDITORIUM
OFFICE OF HEADQUARTERS W.R.A.F.B.
SECOND FLOOR PLAN


REACTOR ROOF
STAGE
STERNBERG AUDITORIUM
ROOF
FIRST FLOOR PLAN


B207
REACTOR
B 205
B 204
W015
B206
COURT YARD
COURT YARD
BASEMENT FLOOR PLAN



LOWER REACTOR LEVEL PLAN

4.0 Table of Lead and Copper in Drinking Water

BUILDING	ROOM_NO	DATE	PH	CU	LEA	PH2	CU2	LEA
	Lobby							
		3/11/1999		0.07	0.002			
		1/13/1998		0.078	0.005			
		5/17/1996	7.5	.3808	.0151	7.5	1.122	.1672
		4/27/1992		.524	.0125			.0387
188								
		11/14/1989					.070	<.001
	HALLWAY							
		4/16/1997	7.3	.42	.032	7.3	.396	.0178
		1/30/1996	7.5	.7701	.0017	7.5	.2051	.0088
		2/9/1995	7.4	1.05	.0060	7.3	.250	.0247
189								
	HALL							
		2/9/1995	7.6	.529	.0152	7.5	.639	.0217
208								
	HALL							
		7/6/1994	7.3	3.79	.0018	7.2	2.2	.0043
305								
		12/10/1991		.32	.0085			.013
38								
	115							
		7/20/1998		0.072	0.028			
		9/5/1997	7.1	.0670	.0025	7.0	.0652	.0028
40								
	1033							
		8/29/1995	7.5	.4288	.0077	7.4	.4514	.0068
		2/24/1994	7.5	.223	.0045	7.5	.227	.0053
		2/24/1994			.00386			.00419
		12/7/1993	7.5	.257	.0009	7.4	.265	.0069
		9/8/1993	7.2	.40	.006	7.4	.40	.006
		8/2/1993	7.5	.39	.008	7.5	.39	.021

BUILDING	ROOM_NO	DATE	PH	CU	LEA	PH2	CU2	LEA
		7/15/1992		.90	.0704			.0374
	1087							
		11/2/1994	7.5	.238	<.0017	7.5	.064	<.0017
		4/27/1992		.06	<.005			<.005
	1113							
		11/5/1996	7.6	.4808	.0091	7.5	.1435	.0072
		5/10/1995	7.5	.408	<.0017	7.4	.116	<.0017
		7/15/1992		.43	<.005			<.005
	2011							
		4/27/1992		.366	<.005			<.005
		12/10/1991		1.22	<.005			<.005
	2045							
		12/7/1993	7.4	.256	.0079	7.4	.125	.0069
		8/2/1993	7.5	.42	.009	7.4	.41	.007
	2133							
		7/15/1992		1.08	<.005			<.005
	3109							
		11/2/1994	7.4	.220	.0017	7.4	.061	<.0017
	400							
		7/15/1992		.25	<.005			<.005
	4019							
		7/15/1992		.14	.0164			.0086
	B008							
		3/11/1999		0.087	<0.001			
		7/6/1994	7.5	.119	.0017	7.4	.078	.0017
	B067							
		11/2/1994	7.4	.602	.0058	7.3	.550	.0057
	B079							
		12/10/1991		<.025	<.005			<.005
41								
	046/047							
		5/27/1999		0.182	0.002			
	HALL							

(end)

5.0 Mercury Sampling Data Table

Man-hole	Average Mercury (ug/L)	Median Mercury (ug/L)	Max Mercury (ug/L)	Days Sampled	Days in Com-pliance	Total Flow, gallons	Prod Flow, gallons	Comment
7	1.55	0.2	9.3	16	11			Fire station and Auto Shop Data begins '99
17	3.67	3	9	6	1	12,580	11,001	Bldg 1 - Front East Wing
	0.38	0.28	0.59	5	5			(Gascoyne)
19	3.5	0.75	11.5	8	4			Bldg 1 - Side East Wing
25	2.55	0.5	19.8	12	7	206,936		Sampling Point - Bldg 1 South all and T-2
27	3.4	0.9	45	25	13			Bldg 1 West Wing and T-2, Appears to have outlier (45)
	1.66	0.85	6.6	24	13			Without outlier (45)
28A	4.96	1.85	33	26	8	8,351	6,126	Bldg T-2
	2.17	1.1	6.8	5	1			
29	2.16	1.14	9.9	26	13			Bldg 1 West Wing
	2.8	2	6	5	2			
	2.6	2.5	3.3	5	0			(Gascoyne)
30-1	3.2	3	5	5	0	7,997	3,862	Bldg 1 West Wing - Limb & Brace
	1.41	1.7	1.8	5	1			(Gascoyne)
30-2	3.75	2.5	11	6	1	1,927	1,258	Bldg 1 West Wing - PM Shop
	5.34	4.9	12	5	0			(Gascoyne)
31	<0.2	<0.2	<0.2	5	5			Bldg 1 - Front West Wing
34	2.64	2	9	7	3	7,435	4,369	Bldg 1 - Back Courtyard
	1.35	0.97	2	5	2			(Gascoyne)
36	3.5	3	9	5	1			Bldg 1 - Back Shop Area
	0.62	0.68	1.2	5	4			(Gascoyne)
37	2.17	2.5	4	6	2			Bldg 1 - East Wing South
	7.6	4.8	13	5	0			(Gascoyne)
39	2.93	2	11	7	3		3,120	Bldg 1 - Side East Wing
	0.54	0.34	1	5	4			(Gascoyne)
40	1	<0.2	2.8	3	2	678,551	411,741	Sampling Point - Bldg 2 and 54
41A	0.5	0.5	1.7	9	8			Bldg north of T-20
51A	0.61	0.5	1.5	9	8			Bldg 54 West
56	0.82	0.5	4.2	14	9			Bldg 54 Northwest
66C	0.38	0.5	0.5	10	10			Bldg 2 Northwest
71	0.44	0.5	0.5	7	7			Bldg 54 North
98	0.56	0.5	2	15	12			WASA Influent to MP
98A	0.61	0.5	1.4	10	8			
99	0.55	0.5	2	18	16			Barracks and Mologne at WASA
106	1.46	0.5	11.4	17	11			Bldg 11 and 40 prior to WASA
117	13.92	0.5	166	13	8			Bldg 40 Northwest, Appears to have outlier (166)
	1.25	0.5	4	12	8			Without outlier (166)

(end)

6.0 Acronyms

ACM .....Asbestos Containing Materials.

ACSIE&FM .....Assistant Chief of Staff for Installations, Environment, and Facility Management at the US Army Medical Command.

AFIP .....Armed Forces Institute of Pathology.

AR .....Army Regulation.

AST .....Aboveground Storage Tank.

ASTM .....American Society for Testing and Materials.

CERCLA .....Comprehensive Environmental Response, Compensation, and Liability Act.

CERFA .....Community Environmental Response Facilitation Act.

DA PAM .....Department of Army Pamphlet.

DoD .....Department of Defense.

DPW .....Directorate of Public Works.

EBS .....Environmental Baseline Survey.

ECP .....Environmental Condition of Property.

EPA .....Environmental Protection Agency.

EUL .....Enhanced Use Lease.

HVAC .....Heating, Ventilation, and Air Conditioning.

IRAA .....Indoor Radon Abatement Act of 1988.

IRAP .....Interim Remedial Action Phase.

IRP .....Installation Restoration Program.

LBP .....Lead-Based Paint.

MEDCOM .....U.S. Army Medical Command.

mg/l .....Milligram per Liter.

NAAQS .....National Ambient Air Quality Standards.

NRC .....Nuclear Regulatory Commission.

PCBs .....Polychlorinated Biphenyls.

pCi/L .....Pico Curies per Liter.

Ppm .....Parts per Million.

PWBC .....Public Works Business Center.

ROA .....Report of Availability.

SIP .....State Implementation Plan.

UST .....Underground Storage Tank.

UXO .....Unexploded Ordnance.

WASA .....Water and Sewer Authority.

WRAIR .....Walter Reed Army Institute of Research.

WRAMC .....Walter Reed Army Medical Center.