

ENCLOSURE 2-5

**HISTORICAL RADIOLOGICAL ASSESSMENT (HRA) BY
CABRERA SERVICES – FEBRUARY 4, 2004
(30.35 (g)(1) & (3)(ii) and (iv))**

**Historical Radiological Assessment
for
U.S. Army Soldier Systems Center,
Natick, MA**

USA Project 2003-051

Prepared for:

U.S. Army Field Support Command
1 Rock Island Arsenal
Building 350, 5th Floor
Rock Island, IL 61299-6000

Prepared by:



CABRERA SERVICES

RADIOLOGICAL • ENVIRONMENTAL • HEALTH • RESTORATION

809 Main Street
East Hartford, Connecticut 06108

February 04, 2004

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Glossary of Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AEC	Atomic Energy Commission
ARIEM	Army Research Institute for Environmental Medicine
ARSO	Alternate Radiation Safety Officer
ATSDR	Agency for Toxic Substances and Disease Registry
CABRERA	Cabrera Services Inc.
DOE	U. S. Department of Energy
DPM	Disintegrations per minute
EPA	U. S. Environmental Protection Agency
FSC	U.S. Army Field Support Command
HRA	Historical Radiological Assessment
MDA	Minimum Detectable Activity
MDC	Metropolitan District Commission
NPL	National Priority List
NRC	Nuclear Regulatory Commission
RSO	Radiation Safety Officer
RSS	Radiological Safety Survey
SBCCOM	U.S. Army Soldier and Biological Chemical Command
SSC	U.S. Army Soldier Systems Center
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The U.S. Army Field Support Command (FSC), formerly known as the U.S. Army Joint Munitions Command, has contracted Cabrera Services, Inc. (CABRERA) to develop and provide a Historical Radiological Assessment (HRA) for the Research Building (also known as Building 3) and the Health Clinic Building (also known as Building 30) located at the U.S. Army Soldier and Biological Chemical Command (SBCCOM) Soldier Systems Center (SSC) in Natick, Massachusetts. The SSC is also commonly known as the Natick Army Laboratory. This HRA has been performed under FSC project number USA 2003-051, contract number DAAA09-02-D-0024, and as described in CABRERA proposal number 03-029 Mod 1, dated July 16, 2003.

This HRA provides information to be used in support of the radiological release of installation laboratories from the SSC's Nuclear Regulatory License in support of license termination or transfer of ownership. As per the project proposal, the subject areas discussed within this HRA encompass current and former installation laboratories located inside the Research Building and Health Clinic Building (as per proposal 03-029). In addition, a report of results for the radiological survey performed at the Development Building (also known as Building 4) by the Radiological Survey Division of the Sierra Army Depot is also provided as an Appendix A for additional information.

The purpose of this HRA is to provide, through a selective review of locally available documents and personal accounts, information relating to the possession, use, and disposition of radioactive material within the Research Building and Health Clinic Building to assist in the release of these facilities for unrestricted use and ultimate license termination or transference.

The review of various radiological records was coordinated by Paul G. Angelis, the facility Radiation Safety Officer (RSO). Records consisted of various required regulatory files such as license correspondence, receipts and inventories, radiation safety surveys, waste disposal records, and included interviews with the RSO and Alternate RSO. Various documents demonstrate the long history of radioactive material use and control.

The SSC is the Army's one-stop soldier-support organization. They are responsible for researching, developing, fielding, and managing food, clothing, shelters, airdrop systems, and soldier support items. The SSC is mainly a research and development facility. The facility has a long history of radioactive material use. Early Atomic Energy Commission (AEC) licensing records indicate radioactive material use as early as 1955. Radioactive material work involved primarily radioisotopes commonly used for biological research and related sealed sources that support materials research such as detection, calibration, and irradiation. The radioactive materials and use have dramatically reduced over the last 10 years. The reduction in program scope has been archived by numerous license amendments documenting the reduction in the number, type and quantities of radioactive material.

Over the past 5 to 10 years the number of authorized use locations within the facility have also been reduced. Current levels of activity only consist of a small number of bioscience laboratories with Army Research Institute for Environmental Medicine (ARIEM) located in Building 42. Present day use is limited to Building 42 where microcurie level experiments using Iodine-125.

2.0 PURPOSE OF THE HISTORICAL RADIOLOGICAL ASSESSMENT

The HRA is an investigation conducted to collect existing information describing a radiological history from the start of radiological activities to the present time. The necessity for detailed information and amount of effort required to conduct an HRA depend on the type of radiological materials, associated historical events, regulatory framework, and availability of documented information. The HRA is essentially a review that ensures that existing and pertinent information sources are incorporated into the overall investigation. In some cases, where sealed sources or small amounts of radionuclides are described by the HRA, the facility may qualify for a simplified decommissioning procedure.

The HRA can aid in:

- A. Identifying potential, likely, or known sources of radioactive material and radioactive contamination based on existing or derived information.
- B. Identifying radiological conditions that need further action as opposed to those posing no known threat to human health.
- C. Providing an assessment for the likelihood of contaminant migration.
- D. Providing information useful to scoping and characterization surveys.
- E. Providing initial classification of the radiological use areas as impacted or non-impacted.

The HRA is typically a preliminary investigation of the facilities radiological history and is a radiological reconnaissance. The reconnaissance however is not a scoping survey. The HRA may be followed by a more thorough evaluation based on information collected during the HRA.

This HRA provides, through a selective review of locally available documents and personal accounts, information relating to the possession, use, and disposition of radioactive material within the Research and Health Clinic Buildings to assist in the release of these facilities for unrestricted use and ultimate license termination or transference. The HRA scope is limited to the Research Building and Health Clinic Building only.

Various State and Federal regulatory agencies license the possession, use, and disposition of radioactive material. Responsible parties, through the process of licensure, are required to provide the necessary evidence to document and support the license termination process. Areas, facilities, radiological material, structures, instruments and articles are all characterized and their disposition determined such that radiation exposure, real, calculated, or derived, is reduced to acceptable levels.

In supporting a license termination process various records of licensing, operational practices, radiological conditions, use and storage areas, inventories and dispositions may be reviewed. The uses of employee knowledge of the operational practices are also important to obtain. When assembled and reviewed as a whole the resulting history profile of a licensed facility can provide strong evidence in determining if the buildings in question are impacted or non-impacted areas. The HRA can assist in the level and degree of additional efforts that may or may not be necessary to support license termination and the release of the facility for unrestricted use.

3.0 PROPERTY IDENTIFICATION

3.1 Physical Characteristics and Environmental Setting

3.1.1 Name and Location

The facility is currently under the control of the U.S. Army. The presently held Nuclear Regulatory Commission License, No. 20-00315-02 more specifically lists the licensee as:

Department of the Army

U.S. Army Soldier and Biological Chemical Command

Soldier System Center

Kansas Street

Natick, Massachusetts 01760

The base has a number of small and medium sized buildings housing various offices and research laboratories and facilities. The SSC is bordered by the Massachusetts town of Natick to the north, west, and east. The site is approximately 76 acres in size and is shaped like the state of Texas with the southern tip protruding into the surrounding Lake Cochituate. The SSC is about 16 miles west-southwest of Boston. (See Figure 11.1)

3.1.2 Topography

Natick is dominated by low elevation terrain, which is generally less than 200 feet above mean sea level. Elevations range from roughly 135 feet along the Charles River and Lake Cochituate to 410 feet at Pegan Hill, the highest point in Natick. From Pegan Hill, a series of four hills with elevations of 300 feet or greater run along the eastern side of the town up to Route 9.

Water bodies and wetland areas cover approximately 13.5 percent of the town's total area. A nearly continuous chain of lakes and wetlands extends through the town, from north to south. The water bodies comprising this chain include Lake Cochituate, Fisk Pond, Dug Pond, and the Indian Brook drainage. This chain continues through the southern portion of Natick along the Charles River corridor. The low-lying Sunkaway area and Nonesuch Pond dominate the northeastern corner of Natick.

Natick is covered by a variety of glacial soils. The soils are generally mixed glacial drift on the drumlin hills; (i.e., Pleasant Hill, Broad Hill, Carver Hill, and Tom Hill); sandy to rocky soils on the outwash areas; (i.e., the gravel pit on Oak Street, Little County Road, and the SSC area); and peats and organic mucks in the wetland areas (i.e., the Sunkaway, Davis Brook, and Indian Brook drainage). Covering almost one-half of Natick are well-drained, permeable, and usually stone free Hinckley soils, which have good agricultural potential and can produce large volumes of water from deep wells, but can also easily absorb sewage effluent. Their coarse substratum provides little filtering action and the water in wells can be polluted if located near a source of contamination.

3.1.3 Stratigraphy

Surficial deposits cover most of the underlying bedrock in Natick, although bedrock outcrops are common. The largest area of rock outcrops occurs in the region between Indian Brook, Dug Pond, Everett Hill, and Davis Brook. Stratified deposits of well compacted glacial till are the dominant geologic feature in both the Charles River and Sudbury River watersheds. This till is largely the result of two deglaciation lakes (Lake Charles and Lake Sudbury) that left these deposits as the glacier receded.

A large preglacial valley is carved into the bedrock between the Sunkaway, Morses Pond, Coolidge Hill, Indian Brook, and the Charles River. The till deposits in this area are generally less than 20 feet thick and are comprised of gravel and sands with some clay combined in a poorly sorted mixture. Several of the town's water supply wells are located in this large, water-bearing region. Approximately 40,000 people obtain drinking water from wells within 5 miles of the facility.

4.0 HISTORICAL RADIOLOGICAL ASSESSMENT METHODOLOGY

4.1 Approach and Rational

The SSC has been reducing the amounts and types of radioactive material over the past 5 to 10 years. Present day uses are primarily in one building and areas of historic use have been surveyed for the presence of residual radioactive material and all radioactive material work discontinued. The release of presently listed locations of use and storage such as the Research Building and the Health Clinic, can be supported by a review of historical records and information including that from former or present employees. The Research Building and Health Clinic Building were long thought to be free of any radioactive contamination by SSC radiation safety professionals. Site professionals, other government agencies as well as private contractors have conducted numerous radiological surveys and assessments over the many years of utilizing radioactive material at the SSC. More recently such surveys and assessments have been performed to confirm the absence of radioactive contamination so that areas of use, mostly laboratories, could be renovated and reused for other purposes. This HRA presents existing and pertinent information incorporated into the overall site evaluation and may aid in a simplified decommissioning and license termination process.

4.2 HRA Subject Areas

The SSC (See Figure 11.2.) has a number of buildings that have been, and are still, used for radioactive material work. The scope of this HRA is specifically the Research Building (Building 3) and the Health Clinic Building (Building 30). The careful review of radioactive material usage and storage within these two buildings will be used to support further actions such as license termination, transfer, and/or release of these buildings for unrestricted use.

These buildings were identified by both the records review and employee interviews as buildings in which radioactive material had been used and stored. Those same resources identified specific laboratories within the Research Building and Health Clinic Building in which radioactive material may have been or was utilized.

For the Health Clinic Building, the following locations were identified and included in this HRA: (See Figure 11.3)

First Floor Laboratory Number - 100, 101, 103, 105, 108, 111, 119, 119A, 120, and 120A

The Health Clinic Building was the location of the Safety Office where all the radiological support operations were also located. In addition to the routine radiological characterization and quantification of samples, the area laboratories were used for small-scale animal uptake studies. Room 108 also was used for incineration of animal carcasses and scintillation fluid containing radioactive material. The incinerator was used for the disposal of scintillation fluid and animal carcasses created in the research activities that were conducted at the facility. The process was authorized by the Nuclear Regulatory Commission and conducted in accordance with the applicable air release standards of that time. This technology and disposal practice was commonplace from the 1940's through the early 1980's. The incinerator was removed in the early 1990's.

For the Research Building, the following locations were identified and included in this HRA:
(See Figure 11.4 through 11.9)

First Floor (East & West) Laboratory Number –	114, 131, 132, 133, 136, 138, 140
Second Floor (East & West) Laboratory Number –	214
Third Floor (East & West) Laboratory Number –	305, 307, 308, 308A, 309, 311, 319, and 319A

The Research Building was used for small-scale bench work with radioactive tracers. Most experiments were in microcurie quantities of non-volatile, short half-life, radiopharmaceuticals. Laboratories were equipped with laboratory benches, fume hoods, sinks, and associated storage cabinets and shelving.

4.3 Documents Reviewed

4.3.1 Existing Radiation Data

(A) Licensing

Historic and current license documents and supporting materials were reviewed. These documents specify the quantity, type and physical forms of radioactive material authorized for possession and use at the site, operations and locations of use. This however does not mean that all of these materials, quantities, or operations were ever possessed and/or performed. Documents reviewed are summarized in Appendix 10.1 and include the entire history of the sites AEC and NRC authorization history. These license documents also included many supporting materials that were part of the governance and control policies and practices in place during that period. The licenses also provide the conditions under which authorization was granted. The license conditions as well as the supporting programmatic records all aid in determining the level and sophistication of the controls and accountability placed on radiological material and processes.

(B) Inventories

Conditions of licensure include requirements for certain radiological inventories to be performed at predetermined frequencies, such as semi-annually. Appendix 10.2 provides a summary of these records. Although not complete, it represents a level of control placed on radiological material through its possession on the licensees' facility. Receipt and disposal records are a subset of this category of control. Many of these records were also reviewed and are summarized in Appendix 10.3 and 10.4.

(C) Operations

The majority of the HRA involved the review of operational records and related information sources. A summary of these records is found in Appendix 10.5. A large number of radiological safety surveys (RSS) exist. The RSS included both information on ambient radiation and removable contamination levels identified over the lifetime of the various areas authorized for radioactive material possession, storage and use. The records also provide other useful information such as maps and/or sketches of laboratory areas, radionuclides in use at the time of the surveys, and radiological analysis of the wipe samples taken during the RSS. In some cases where unusual conditions were identified, the records also contained notes and/or correspondence relating to the condition. Figures 11.1 through 11.9 provide the detailed areas of authorized use in the Research and Health Clinic Buildings. These figures are supported by the voluminous RSS documents reviewed.

(D) Other Reports or Records of Relevance

Issues or conditions over the sites history have introduced into the records review several additional reports that provide some supporting relevance. Radiological assessment performed by the Sierra Army Depot of Building 4 (included as Appendix A) and radiological laboratory closure surveys conducted for ARIEM are two that directly involve radiological materials. Surveys and reports by the EPA and/or contracted agencies also provide some information concerning radiological testing as well as site characteristics, and environmental conditions. The site has a history of non-radiological contamination and has been listed on the EPA's National Priority List (NPL) as a contaminated site. Some agency reports include radiological analysis of various environmental media at select off site locations.

4.4 Site Reconnaissance

The reconnaissance or site visit is used to gather additional and sufficient information to support any decision regarding further action. The site visit offers an opportunity to record information concerning any hazardous site conditions. Since the site is presently occupied and heavily used it was unlikely any such conditions would be found. As part of this HRA members of the HRA team visited the SSC on three different occasions. One of the team members also had previous experience at and knowledge of the SSC through previous government employment and through the contracted conduct of other radiological assessments on the SSC that aided in the conduct of this task. Building floor plans and layouts were reviewed and site walkthroughs were conducted. Attention was paid to those locations that were identified as previously being authorized for use of radioactive material. Team members were accompanied by the ARSO or the RSO to gain first hand knowledge of the use areas historical and current conditions. Team members did not identify any physical hazards, structural issues, or hazardous site conditions that would impede any future work if needed.

4.5 Personal Interviews

Interviews with current and former employees were conducted onsite where employees performed their tasks so as to stimulate memories and gathering facility information and to collect first-hand information about the facility. The interviews also were used to verify or clarify the information gathered from existing records. Interviews with site safety professionals, such as that with Paul Angelis, the facility RSO, were generally informal and included general topics, past radiological assessment efforts, radioactive waste disposal practices, handling and storage procedures, operational records, and incidents.

The one interview that was conducted under more formal conditions was that of John F. Sieckarski, Health Physicist and Alternate Radiation Safety Officer. A condensed record of the more relevant information of this interview can be found in Section 11. John has over 37 years of first-hand knowledge about the site, the uses and locations of radioactive material use, waste disposal practices, and was responsible for the conduct of many of the radiation safety and regulatory compliance tasks. Much of the material reviewed for this report was under John's custody up until his retirement on 1 October 2002.

5.0 HISTORY AND CURRENT USAGE

5.1 History

The SSC is a 76 acre facility located in Natick, Massachusetts. The SSC occupies a peninsula on the eastern shore of Lake Cochituate state park and recreational area and is bordered on the north and west by a residential area. The Army purchased the site in 1949 from the Metropolitan District Commission (MDC). At the time of purchase the property was primarily used as a forested recreational area, but it also included a gravel pit in a section of the site now known as the Building T-25 Area. The Army built the SSC in 1954 and has since used the area for industrial, laboratory, and storage activities for research and development in the areas of food science, aeromechanical, clothing, material, and equipment engineering. During its operation, the Army used a variety of substances including radioactive material and the volatile organic compounds (VOCs) tetrachloroethene, trichloroethene, carbon disulfide, benzene, chloroform, and acetone; "standard laboratory chemicals;" mineral spirits/turpentine; paints; inks; lubricants; gasoline; tetraethyl lead, a gasoline additive; pesticides; and metal dusts. Radioactive materials were used for food irradiation, tracer studies and clothing absorption tests, respectively.

The SSC also operated a medical waste incinerator. The incinerator was used to destroy about 1500 pounds of pathological wastes in CY 2000. Since 1973 the facility has operated a Jarvis model 150 pathological waste incinerator in Building 42. This was replaced with a similar unit in 1990 in the same building. The unit is permitted to burn up to 876,000 pounds per year of pathological waste. Another research animal waste incinerator began operation in 1973 in Building 30 and was retired in 1992. That unit also burned scintillation solvent waste that was contaminated with radioactive materials from various radiological procedures and tests. An incinerator of unknown type was operated in the T25 area and made use of a 60-foot brick smokestack. This was probably the Building 13 classified documents incinerator.

The facility has a long history of radioactive material use. Early Atomic Energy Commission (AEC) licensing records indicate radioactive material use as early as 1955. Radioactive material work involved primarily radioisotopes commonly used for biological research and related sealed sources that support materials research such as detection, calibration, and irradiation.

5.2 Current Usage

The facility is a U.S. Army facility that is mainly a research and development facility. The radioactive material and uses have dramatically reduced over the last 10 years. The reduction in program scope has been archived by numerous license amendments documenting the reduction in the number, type and quantities of radioactive material. Over the past 5 to 10 years the number of authorized use locations within the facility have also been reduced. Current levels of activity only consist of a small number of bioscience laboratories with ARIEM located in Building 42. Present day use is limited to Building 42 where microcurie level experiments using I-125 are conducted. Some radiation safety programmatic support activities are still housed in the Health Clinic and Building 89 is still used for radioactive waste storage.

5.3 Adjacent Land Use

The SSC is located on Kansas Street in Natick, Middlesex County, Massachusetts. The SSC occupies a peninsula on the eastern shore of Lake Cochituate and is bordered to the north by a residential zone. The SSC is located on 76 acres that was purchased by the Army in 1949 from the Metropolitan District Commission. The property was primarily used as a forested recreational area.

6.0 FINDINGS

Records indicate little evidence of any wide spread contamination or any existing contamination within the Research and Health Clinic Buildings. In addition, very few radionuclides that were used had half-lives over one year, allowing for contamination that did exist to decay to negligible activity levels within a few years. The institution has strong local controls that foster and reinforce good radiological safety and hygiene practices. Direct control and constant surveillance and vigilance over the uses of radioactive material have resulted in limited and controlled contamination within these two buildings.

6.1 Potential Contaminants

From the review of records of licensing, inventory, operations, and radiological safety for the Research and Health Clinic Buildings, only a few specific nuclides of concern could be identified. Many of the RSS records indicated by notations made by the surveyor what nuclides were in use in the areas surveyed. The following is a summary of which nuclides were potentially present as identified through the RSS records:

<u>Potential Nuclides Identified</u>	<u>Research Bldg (3)</u>	<u>Health Clinic (30)</u>
H-3	Yes	Yes
C-14	Yes	Yes
Rb-86	Yes	No
I-131	Yes	No
Sr-90	Yes (sealed sources only)	No

Although these radioactive materials were potentially used in these buildings it was also evident by the records that any significant contamination identified through routine operational RSS was decontaminated at that time. The operational radiation safety practice was not to leave known areas of contamination. Common good laboratory practices were used to remove and dispose of contamination as it was generated or discovered. With the use of radioactive material phasing out in the 1970's the only radionuclides that had half-lives long enough to still be present at significant levels today are tritium (H-3) and Carbon-14 (C-14).

The uses of unsealed liquid radioactive materials resulted in few documented contamination events. Radioactive material was allowed as a normal course of practice to be disposed of through the laboratory sink drains. Information obtained from site professionals indicated that sink drains were connected to a municipal sanitary sewer system. All of the laboratory plumbing traps were replaced after radioactive material work had ceased due to issues of mercury contamination (non-radioactive) and mitigation efforts on and off the facility. Although these piping systems provide little opportunity for any radioactive material to reach the soils or groundwater in the area several environmental sampling efforts conducted by third party agencies have evaluated radioactivity at specific locations.

Radionuclides Detected in Lake Sediments at SSC Outfall

Cesium-137 (Cs-137) (probably from atmospheric atomic weapons testing)

Potassium-40 (K-40) at up to 12 pCi/g (background levels)

Beryllium-7 (Be-7) at up to 0.22 pCi/g (above minimum detectable activity (MDA) of 0.06 pCi/g)

Lead-214 (Pb-214) at up to 0.29 pCi/g (part of Uranium-238 decay series)

Radionuclides Detected in Lake Cochituate Surface Water

The gross beta radiation level was 3.75 picoCuries per Liter

(MDA standard of 3.0 picoCuries per liter. Based on 4 samples with uncertainty of 1.2 picoCuries per liter. A blank sample taken at the same time showed only 0.2 picoCuries per liter)

The gross alpha radiation level was below the MDA of 1.0 picoCuries per liter.

It is evident from these results that the radiological materials that were used in the Research or Health Clinic Buildings and that still could be present today likely did not contaminate offsite run-off and surface waters.

Radioactive materials identified could also have been released through laboratory fume hoods for those materials with long enough half-lives to be of interest. Of the three potential nuclides noted, any air/gas releases through fume hoods are thought to be trivial. Survey records did identify radiological assessments of fume hood components and air filtration media analyzed for radioactivity prior to a removal/renovation project. All records and analytical results of the hood and filtration media were negative for the presence of radioactivity.

During the periods of active radiological use in the Research and Health Clinic Buildings (1965 through the mid 1970's) only about 50 individual swipe records ever indicated removable radioactivity above 100 disintegrations per minute (DPM) on smear samples that were swiped over an areas of 100 square centimeters. Of the 40 positive samples only 8 were above 1000 DPM and only 1 was above 10,000 DPM. The records identified specific reference to the one result that was over 10,000 DPM found inside a fume hood on the working surface. Internal RSO memoranda noted the contamination during the conduct of a routine monthly survey on October 15, 1965. The memo also documents the decontamination and subsequent follow-up survey results. In addition, the records review identified several internal memoranda that supported the termination of radioactive material work in select laboratories.

Evidence of the positive survey swipe results were identified in some of the survey reports in the following laboratories: 214, 132, 131-133, and 128 in the Research Building. Most of the positive results were found in laboratory 214 from the operating period of 10/1965 through 11/1972. No positive RSS records were identified for the Health Clinic Building. Considering the number of swipes taken during each survey and the frequency of surveys performed in these areas this is considered insignificant. Due to the operational practices of cleaning and removing any contamination at the time it was detected all subsequent surveys at the locations demonstrating positive results were found to be negative for the presence of radioactivity. In addition, the majority of items found to have evidence of radioactivity by smear analysis were not fixed structural items. The majority of the items were benches, refrigerators, fume hoods, waste cans, and cabinets.

6.2 Related Environmental Concerns

Two sources of hazardous substances have been identified onsite. The Building T-25 Area was identified as potentially contaminated around 1989, when personnel at the facility noticed sheen on the runoff water generated during rainstorms. In 1989, construction work was halted in the Gymnasium Area when construction workers noticed a benzene-like odor in soil from a boring that was drilled for construction of a gymnasium

In 1989, the Army conducted soil gas surveys in the Building T-25 and Gymnasium Areas and detected several VOCs. Soil, ground water, and surface water samples contained elevated concentrations of 1,2-dichloroethene, benzene, carbon disulfide, bis (2-ethylhexyl) phthalate, chlorobenzene, ethylbenzene, xylenes, Freon 113, naphthalene, 1,2,4-trichlorobenzene, arsenic, barium, copper, chromium, lead, zinc, calcium, and sodium.

Other potential sources of chlorinated organic compounds have been identified near SSC. Petroleum, organic compounds, and chlorinated solvents have been released into soil and ground water at a property previously occupied by a Laundromat, approximately 3,600 feet southeast of the laboratory well field across Lake Cochituate. An "old Laundromat" is also reported to exist approximately 2,670 feet east-southeast of the Springvale well field. Certain establishments located on Routes 9, 27, and 30, and some automotive garages in the area may also be sources of VOC contamination in the ground water near the Evergreen and Springvale municipal well fields.

7.0 CONCLUSIONS

The HRA is intended to provide existing information describing the radiological history from the commencement of SSC Research Building (Building 3) and Health Clinic Building (Building 30) radiological activities to the present time. The HRA scope is limited to the specific laboratories and other areas in these two buildings that are presented herein. These areas have been identified by SSC current and former personnel as the areas in which the use of radiological materials took place. The information included in this HRA describes the type of radiological materials, associated historical events, regulatory framework, and former and existing employee knowledge as related to these specific areas. The HRA essentially reviewed existing and pertinent information sources and incorporated them into an overall investigation. In this case, where no sealed sources of radionuclides are involved and the buildings have been determined through this review to have a low probability of containing residual radioactive material, the HRA may qualify the subject areas for a simplified decommissioning procedure. The Development Building (Building 4) may also potentially qualify for a simplified decommissioning procedure supported by the final report of the radiological survey of this building performed by the Sierra Army Depot (Radiological Survey Division) and provided as Appendix A.

The results of this HRA, encompassing subject areas in the Research Building (3) and the Health Clinic Building (30) concluded the following:

- A. No known sources of radioactive material and radioactive contamination based on existing or derived information were identified in the subject areas.
- B. No radiological conditions were identified to require further action, as opposed to those posing a known threat to human health in the subject areas.
- C. The likelihood of contaminant migration is not evident in the subject areas.
- D. Information herein could be useful to limit the need for future scoping and/or characterization surveys in the subject areas.
- E. The subject areas may be classified as having a very low probability of being impacted by radiological contaminants.

The uses of employee knowledge of the operational practices were instrumental in obtaining a complete historic profile of this licensed facility. The HRA can assist in the level and degree of additional efforts that may or may not be necessary to support license termination and the releasing of the facility for unrestricted use.

8.0 REFERENCES

- (SADRSD 1996) *Radiological Protocol for U.S. Army Soldier System Command, Radiological Survey Division, Sierra Army Depot, June 1996.*
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- (USEPA 1994) *National Priority Site Listing, Natick Laboratory Army Research, Development and Engineering Center, Federal Register Notice, May 1994.*
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- (BCDC 2003) *Boston Chemical Data Corporation, Radiation Testing in Lake Cochituate, Published USATSDR Radiological Data, 2003*

9.0 APPENDICES

10.1 Regulatory License Documents Reviewed

Date	Agency	Authorization	License No.	Isotopes / Information
3/10/1955	AEC	Radioisotope Procurement	32200	C-14
4/11/1955	AEC	Radioisotope Procurement	32882	S-35
12/23/1955	AEC	Radioisotope Procurement	37635	H-3
2/9/1956	AEC	Radioisotope Procurement	38153	Sr/Y-90
4/20/1965	AEC	Byproduct Material	20-315-1	Mixed Fission Products
3/8/1957	AEC	Byproduct Material	20-315-1, Amendment No. 1	H-3, S-35, Sr/Y-90
3/18/1957	AEC	Byproduct Material	20-315-1, Amendment No. 2	I-131
5/23/1957	AEC	Byproduct Material	20-315-1, Amendment No. 3	TI-204
8/12/1957	AEC	Byproduct Material	20-315-1, Amendment No. 4	S-35
12/10/1957	AEC	Byproduct Material	20-315-1, Amendment No. 5	P-32
4/23/1968	AEC	Byproduct Material	20-315-2D60	Mixed fission products, H-3, S-35, Sr/Y-90, I-131, TI-204, P-32
8/8/1958	AEC	Byproduct Material	20-315-2, Amendment No. 1	Ba/Cs-137
11/18/1958	AEC	Byproduct Material	20-315-2, Amendment No. 2	Co-60 (sealed source)
7/16/1959	AEC	Byproduct Material	20-315-2, Amendment No. 3	Sr-90 (sealed source)
9/29/1959	AEC	Byproduct Material	20-315-2, Amendment No. 4	Sr-90 (3 sealed sources)
11/5/1959	AEC	Byproduct Material	20-315-2, Amendment No. 5	C-14
4/4/1960	AEC	Byproduct Material	20-315-2, Amendment No. 6	Mixed fission products, H-3, S-35, Sr-90 & Co-60 (sealed)

				I-131, TI-204, P-32, Cs-137, C-14
6/15/1960	AEC	Byproduct Material	20-315-2, Amendment No. 7	Sr-90 (12 sealed sources)
11/3/1960	AEC	Byproduct Material	20-315-2, Amendment No. 8	H-3 (GC foils)
9/25/1961	AEC	Byproduct Material	20-315-2, Amendment No. 9	H-3 (water)
12/20/1961	AEC	Byproduct Material	20-315-2, Amendment No. 10	Sr-90 (8 sealed sources)
9/13/1962	AEC	Byproduct Material	20-315-2, Amendment No. 11	Combine all past amendments
1/24/1964	AEC	Byproduct Material	20-315-2, Amendment No. 12	H-3 (2 foils)
6/24/1964	AEC	Byproduct Material	20-315-2, Amendment No. 13	H-3 (sealed & unsealed luminous paint)
12/9/1964	AEC	Byproduct Material	20-315-2, Amendment No. 14	Any atomic # 3-83, Mixed fission products, H-3, C-14, P-32, S-35, Co-60, Sr-90, I-131, Cs-137, Kr-85, Xe-133
7/20/1965	AEC	Byproduct Material	20-315-2, Amendment No. 15	H-3 (foil), Sr-90 (8 sealed sources), Sr-90 (2 sealed sources)
11/29/1966	AEC	Byproduct Material	20-00315-02, Amendment No. 16	Change expiration date to 3/31/67
3/1/1967	AEC	Byproduct Material	20-00315-02, Amendment No. 17	License renewal (add CI-36)
3/20/1967	AEC	Byproduct Material	20-00315-02, Amendment No. 18	Amend use to include GC
10/4/1968	AEC	Byproduct Material	20-00315-02, Amendment No. 19	H-3 (add foil for GC)
2/27/1969	AEC	Byproduct Material	20-00315-02, Amendment No. 20	Change expiration date to 3/31/1974, add leak test requirements
11/18/1969	AEC	Byproduct Material	20-00315-02, Amendemnt No. 21	Increase H-3, add Kr-85 & Xe-135, add 10 CFR Section 30.4
7/10/1972	AEC	Byproduct Material	20-00315-02, Amendment No. 22	Add Ni-63 (foils for GC)
3/29/1974	AEC	Byproduct Material	20-00315-02, Amendment No. 23	License renewal (Atomic No. 3-83), H-3, C-14

				reference Title 10, Chapter 1, Parts 19 & 20
7/11/1978	NRC	Byproduct Material	20-00315-02, Amendment No. 24	License renewal and change regulatory agency to NRC
5/4/1983	NRC	Byproduct Material	20-00315-02, Amendment No. 25	License renewal, expiration date 10/31/1989
8/8/1989	NRC	Byproduct Material	20-00315-02, Amendment No. 26	License renewal, expiration date 11/30/1995
1/21/1993	NRC	Byproduct Material	20-00315-02, Amendment No. 27	Administrative changes/updates
9/12/1995	NRC	Byproduct Material	20-00315-02, Amendment No. 28	Administrative changes/updates
10/17/1995	SSC	Renewal Application	20-00315-02	Reduce possession limits and renew license
6/4/1996	SSC	Amendment Letter	20-00315-02	Reduce H-3 and C-14, Increase P-32 & Ca-45, Update program to comply w/ 10 CFR 20
8/23/1995	SSC	Amendment Letter	20-00315-02	Add decay storage – replace T. Martin as RSO w/ P. Angelis
9/13/1995	NRC	Byproduct Material	20-00315-02, Amendment No. 29	Add decay storage – replace T. Martin as RSO w/ P. Angelis
7/5/1996	NRC	Byproduct Material	20-00315-02, Amendment No. 30	Amend per latter dated 6/4/1996
10/8/1997	SSC	Amendment Letter	20-00315-02	Add Na-22 and Rb-86
10/21/1997	NRC	Byproduct Material	20-00315-02, Amendment No. 31	Add Rb-86 and update conditions 12, 13, 15, and 16
10/20/2000	SSC	Renewal Application	20-00315-02	Reduce H-3, C-14, P-32, Ni-63. Eliminate S-35, Ca-45, Cr-51, and Rb-86, Update RS Program
12/1/2000	NRC	Byproduct Material	20-00315-02	Letter requesting additional information about renewal
12/20/2000	SSC	Response Letter	20-00315-02	Letter providing additional information requested
1/12/2001	NRC	Byproduct Material	20-00315-02, Amendment No. 32	License renewal. Expiration date 1/31/2011

10.2 Summary of Inventory Records Reviewed

Date	Period	Type	Location	Isotopes
6/30/1998	Semi-annual	Inventory	Room 245	H-3, C-14, I-125,
12/31/1998	Semi-annual	Inventory	Room 245	H-3, C-14, I-125,
1/4/1999	Semi-annual	Inventory	ARIEM	I-125
7/1/1999	Semi-annual	Inventory	ARIEM	I-125
12/31/1999	Semi-annual	Inventory	Room 245	H-3, C-14, I-125,
1/1/2000	Semi-annual	Inventory	ARIEM	H-3, C-14, I-125,
6/29/2000	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
7/1/2000	Semi-annual	Inventory	ARIEM	I-125
7/1/2000	Semi-annual	Inventory	Room 245	H-3, C-14, I-125,
12/24/2000	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
1/1/2001	Semi-annual	Inventory	ARIEM	I-125
1/1/2001	Semi-annual	Inventory	Room 218	H-3, C-14, I-125,
1/9/2001	Semi-annual	Inventory	ARIEM	I-125
6/1/2001	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
6/29/2001	Semi-annual	Inventory	ARIEM	I-125
6/30/2001	Semi-annual	Inventory	Room 218	H-3, C-14, I-125,
7/2/2001	Semi-annual	Inventory	ARIEM	I-125
12/1/2001	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
12/11/2001	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
12/31/2001	Semi-annual	Inventory	Room 219	H-3, C-14, I-125,
1/4/2002	Semi-annual	Inventory	ARIEM	I-125
1/7/2002	Semi-annual	Inventory	ARIEM	I-125
5/10/2002	Semi-annual	Inventory	ARIEM	I-125
6/18/2002	Semi-annual	Inventory	ARIEM	I-125
6/29/2002	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
12/31/2002	Semi-annual	Inventory	Room 219	H-3, C-14, I-125,
1/1/2003	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
3/6/2003	Reconciliation	Inventory	ARIEM	Memo from RPO to ARIEM
3/10/2003	Suspension	Inventory	ARIEM	Memo from RPO to ARIEM
6/14/2003	Suspension	Inventory	ARIEM	Memo from ARIEM to RPO
6/30/2003	Semi-annual	Inventory	Room 218/247	H-3, C-14, I-125,
7/11/2003	Semi-annual	Inventory	RPO - Room 101	Misc. Sealed & Check Sources
6/31/2002	Semi-annual	Inventory	Room 219	H-3, C-14, I-125,

10.3 Summary Receipt and Disposal Records Reviewed

Radionuclide	Half-Life	Record of Receipt	Record of Disposal	Source Type
AM-241	>> 100 Years	Y	Y	
Am-Be	>> 100 Years	N	Y	Moisture gauge
BA-133	< 10 Years	N	Y	Check Source
BI-210	<<< 1 Year	N	Y	Check Source
C-14	>>> 100 Years	Y	Y	
CA-45	< 1 Year	Y	Y	
CD-109	> 1 Year	Y	Y	
CF-252	<< 10 Years	N	Y	Check Source
CO-57	< 1 Year	Y	Y	
CO-60	<< 10 Years	Y	Y	
CS-137	<< 100 Years	Y	Y	
H-3	<< 100 Years	Y	Y	
I-125	<< 1 Year	Y	Y	
I-129	>>> 100 Years	N	Y	Check Source
I-131	<<< 1 Year	Y	Y	
KR-85	10 Years	Y	Y	
NA-22	<< 10 Years	Y	Y	

NI-63	< 10 Years	N	Y	Check Source
P-32	<<< 1 Year	Y	Y	
PO-210	<< 1 Year	N	Y	
RA-226	>>> 100 Years	Y	Y	
Ra-Be	>>> 100 Years	N	Y	Moisture gauge
RB-86	<< 1 Year	Y	Y	
Re-186	<<< 1 Year	N	Y	
Rh-106	<<< 1 Year	Y	Y	Check Source
S-35	<<< 1 Year	Y	Y	
SN-117M	<<< 1 Year	N	Y	
SR-90	<< 10 Years	Y	Y	
TH-232	>>> 100 Years	N	Y	
TL-204	<< 10 Years	N	Y	Check Source
U-238	>>> 100 Years	N	Y	
U-natural	>>> 100 Years	N	Y	
Y-90	<<< 1 Year	N	Y	
ZN-65	< 1 Year	Y	Y	

10.4 Summary of Selected Receipts / Disposal Records

<u>Radioactive Material</u>	<u>Date of Receipt</u>	<u>Date of Disposal</u>	<u>Half-Life</u>
AG-110M	Nov-70		< 1 Year
FE-55	Nov-71		< 3 Years
HG-203	Mar-74	Jul-78	<< 1 Year
CE-139	Jul-78		<<< 1 Year
SN-113	Jul-78		<<< 1 Year
Y-88	Jul-78		<< 1 Year
SR-85	Jul-78		<< 1 Year
CL-36	Sep-79		3E5 Years
CR-51	Aug-97	Sep-97	<<< 1 Year

10.5 Summary of Records Reviewed

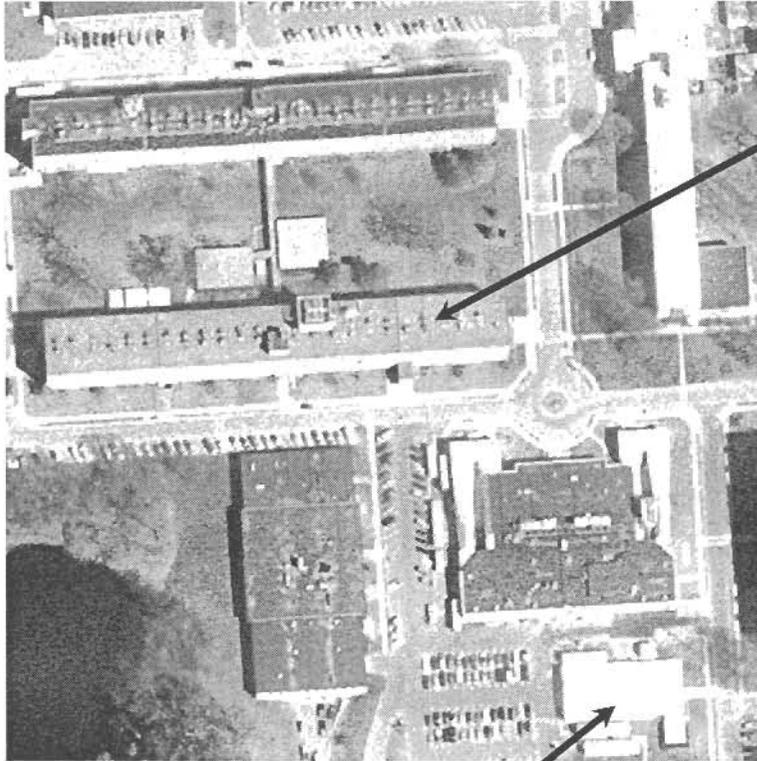
Date	Source	Building	Location	Type	Description	Isotopes	Comments
4/1/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 239	Survey Report	ARIEM	C-14, I-131	Includes wipe test results from 1968 & 1969
5/18/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 128	Survey Report	ARIEM	C-14	Includes wipe results from 1965 and 1966
5/18/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 131-133	Survey Report	ARIEM	C-14	Includes wipe results from 1965 through 1968
5/21/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 319	Survey Report	PRL	C-14	Includes monthly wipe test results from 1968-1978
6/2/1965	Natick EH&S	Building 30,	Lab 105	Survey Report	Nutrition Branch	H-3	
6/2/1965	Natick EH&S	Building 30,	Lab 3	Survey Report	Nutrition Branch	H-3	
6/16/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 210	Survey Report	PRD	Sr-90	Includes monthly wipe test results from 1965-1967
8/4/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 307 & 309	Survey Report	PRD		Includes monthly wipe test results from 1965-1975
8/10/1965	Natick EH&S	Building 30	Lab 6	Survey Report	Nutrition Branch	C-14	
8/10/1965	Natick EH&S	Building 30	Lab 119	Survey Report	Nutrition Branch	C-14	
8/10/1965	Natick EH&S	Building 30	Lab 119	Survey Report	Nutrition Branch	C-14	
8/13/1965	Natick EH&S	Building 3 X (R 3-D)	Lab 214	Survey Report	PRL	H-3, C-14, Sr-90	Include monthly wipe test results from 1965-1972
8/15/1965	Natick EH&S	Building 30	Lab 6	Survey Report	Nutrition Branch	C-14	
10/12/1965	Natick EH&S	Building X /4 (R 3-D)	Lab 316	Survey Report	None	H-3	
10/12/1965	Natick EH&S	Building X /4 (R 3-D)	Lab 316	Survey Report	None	H-3	
10/19/1965	RPO	Building 3 X (R 3-D)	Lab 210	Memo	Contamination ID	H-3	RPO documentation of hood contamination and decon.
11/18/1965	Natick EH&S	Building 30,	Lab 100	Survey Report	Nutrition Branch	H-3	

11/18/1965	Natick EH&S	Building 30,	Lab 13	Survey Report	Nutrition Branch	H-3	
7/13/1966	Natick EH&S	Building 3A (R 30)	Lab 132	Survey Report	ARIEM	C-14	Includes wipe results from 1966 through 1968
9/30/1966	Natick EH&S	Building 3A (R 30)	Lab 120	Survey Report	ARIEM	I-131	
10/20/1966	Natick EH&S	Building 30,	Lab 103	Survey Report	Nutrition Branch	H-3	
10/27/1966	Natick EH&S	Building 30,	Unidentified	Survey Report	Dosimetry Food Div.	H-3	
2/9/1967	Natick EH&S	Building 3A (R 30)	Lab 121	Survey Report	ARIEM	I-131	
4/1/1967	Natick EH&S	Building 3A (R 30)	Lab 305	Survey Report	PRD	C-14	Includes monthly wipe test results from 1967 & 1968
4/1/1967	Natick EH&S	Building 3A (R 30)	Lab 140	Survey Report	ARIEM	C-14	Includes wipe results from 1967 & 1968
5/17/1967	Natick EH&S	Building 30,	Lab 6	Survey Report	Nutrition Branch	C-14	
10/11/1967	Natick EH&S	Building 3A (R 30)	Lab 110	Survey Report	ARIEM	I-131	
10/13/1967	Natick EH&S	Building 3A (R 30)	Lab 137	Survey Report	ARIEM	Rb-86, I-131	
4/7/1968	Natick EH&S	Building 3A (R 30)	Lab 311	Survey Report	PRD MicroBiology	C-14	Includes monthly wipe test results from 1967-1968
2/18/1969	RPO	Building 3A (R 30)	122, 239, 253	Memo	ARIEM	All	Closeout memo from RPO to ARIEM CO
5/15/1969	Natick EH&S	Building 3A (R 30)	Lab 326	Survey Report	PRL	C-14	Includes monthly wipe test results from 1969-1976
2/1/1970	Natick EH&S	Building 3A (R 30)	Lab 305	Survey Report	PRL	C-14	Includes monthly wipe test results from 1970-1975
3/13/1970	Natick EH&S	Building 3A (R 30)	Lab 136	Survey Report	Food Lab – Microbiology	C-14	Includes monthly wipe results from 1970-1978
3/13/1970	Natick EH&S	Building 3A (R 30)	Lab 136	Survey Report	Food Lab – Microbiology	C-14	Includes monthly wipe results from 1970-1978
6/18/1971	Natick EH&S	Building 3A (R 30)	Lab 115A	Survey Report	Micro Bio Div	C-14	
6/22/1971	Natick EH&S	Building 3A (R 30)	Lab 336	Survey Report	PRL	C-14	Includes wipe test results from 1971 & 1972
6/28/1972	Natick EH&S	Building 3A (R 30)	Lab 113A	Survey Report	Micro Bio Div	C-14	

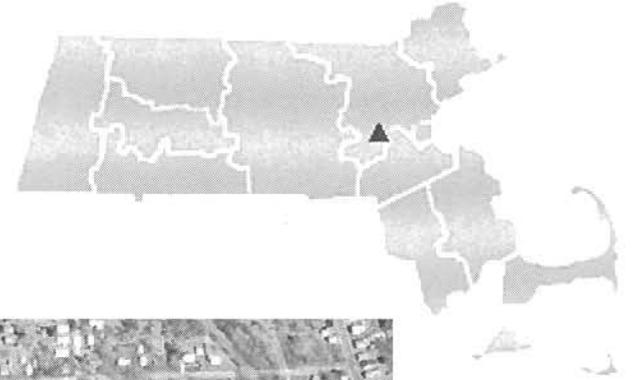
11/12/1972	Natick EH&S	Building 3/4 (R & D)	Lab 112	Survey Report	Food lab	C-14	
11/21/1972	Natick EH&S	Building 30	Lab 120	Survey Report	SEL Food Lab	C-14	
11/16/1973	Natick EH&S	Building 3/4 (R & D)	Lab 114	Survey Report	Food Lab – Microbiology	C-14	Includes wipe test results from 12/12/73 & 1/11/74
4/19/1974	Food Lab RPO	Building 3/4 (R & D)	Lab 307 & 309	Memo	Food Lab	C-14	Memo stating all radioactive use has been terminated
10/23/1974	Natick EH&S	Building 30,	Lab 105	Survey Report	Nutrition Branch	H-3, C-14	
3/13/1975	Natick EH&S	Building 3/4 (R & D)	Lab 322	Survey Report	Food Science Lab	C-14	
8/27/1975	Natick EH&S	Building 3/4 (R & D)	Lab 214	Survey Report	FEL	C-14	Includes wipe test results from 1975 to 1978
3/21/1984	Natick EH&S	Building 3/4 (R & D)	Lab 317	Survey Report	SATD	P-32	
3/21/1984	Natick EH&S	Building 3/4 (R & D)	Lab 320	Survey Report	SATD	C-14, H-3, P-32	
11/25/1987	Natick EH&S	Building 30,	Lab 108	Survey Report	Safety Office	All	
10/30/1991	Natick EH&S	Building 3/4 (R & D)	Lab 310	Survey Report	Bio-Tech	H-3, C-14	
10/30/1991	Natick EH&S	Building 3/4 (R & D)	Lab 312	Survey Report	SSD	H-3, C-14, S-35	
12/14/1993	Natick EH&S	Waste Storage	Waste Storage	Survey Report	Waste Storage	All	
5/31/1996	Siera Army Depot	Building 4	All	Memo	Report Summary Memo	All	Describes report content and positive findings
6/18/1996	Siera Army Depot	Building 4	All	Finial Report	Close-out Survey Protocol	H-3, C-14, Ca-45	
5/16/2002	SBCCOM	Building 3/4 (R & D)	All	Memo	Info. On Lab Conversions	Misc.	
Undated	Natick EH&S	Building 3/4 (R & D)	Lab 342 A&B	Survey Report	Unlabelled.	I-125	
Undated	Natick EH&S	Building 30,	Lab 101 & 103	Survey Report	Safety Office	All	

10.0 FIGURES

11.1 Location and Arial Views



Building 3



Building 30

Figure 11.2

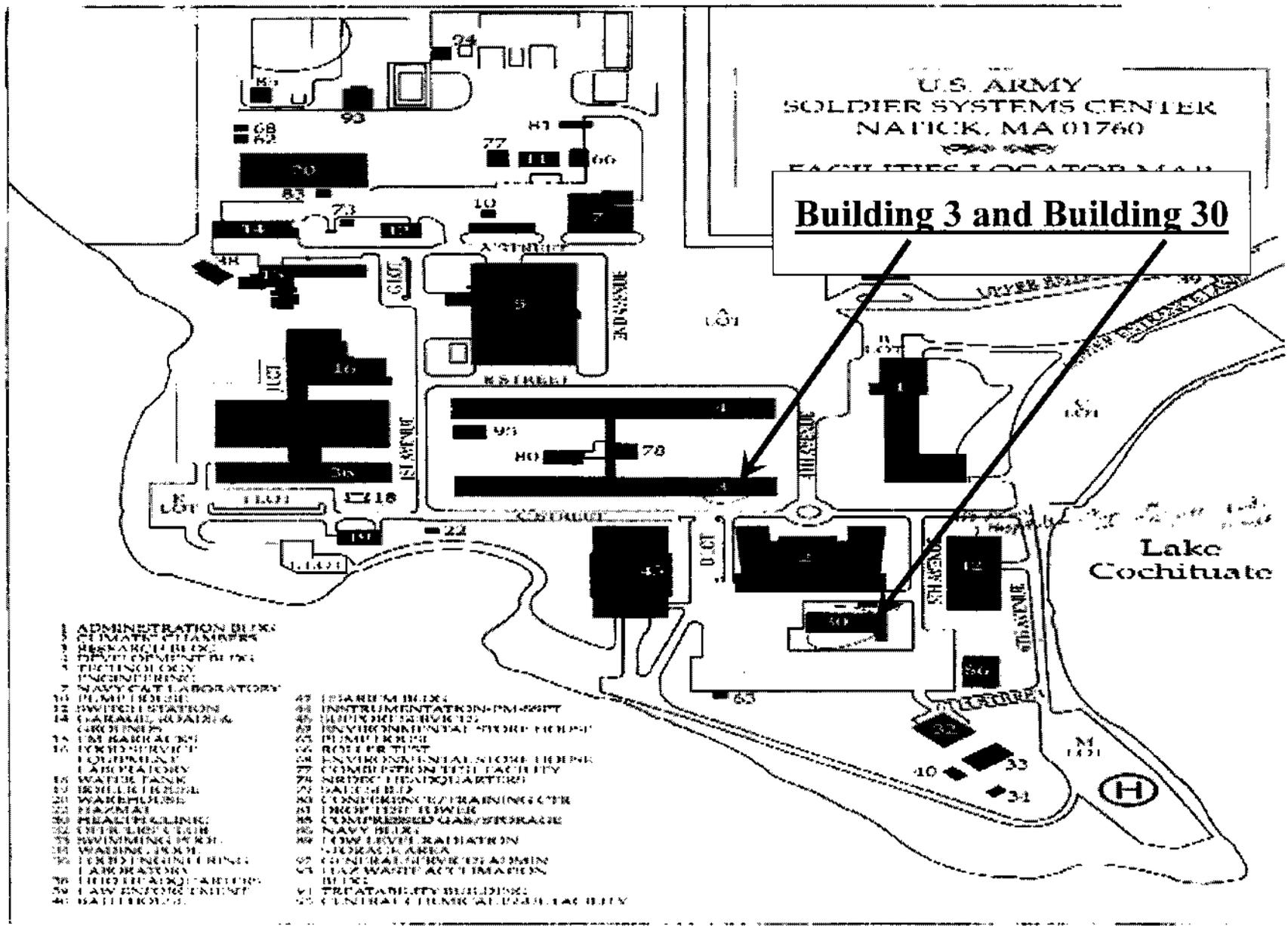
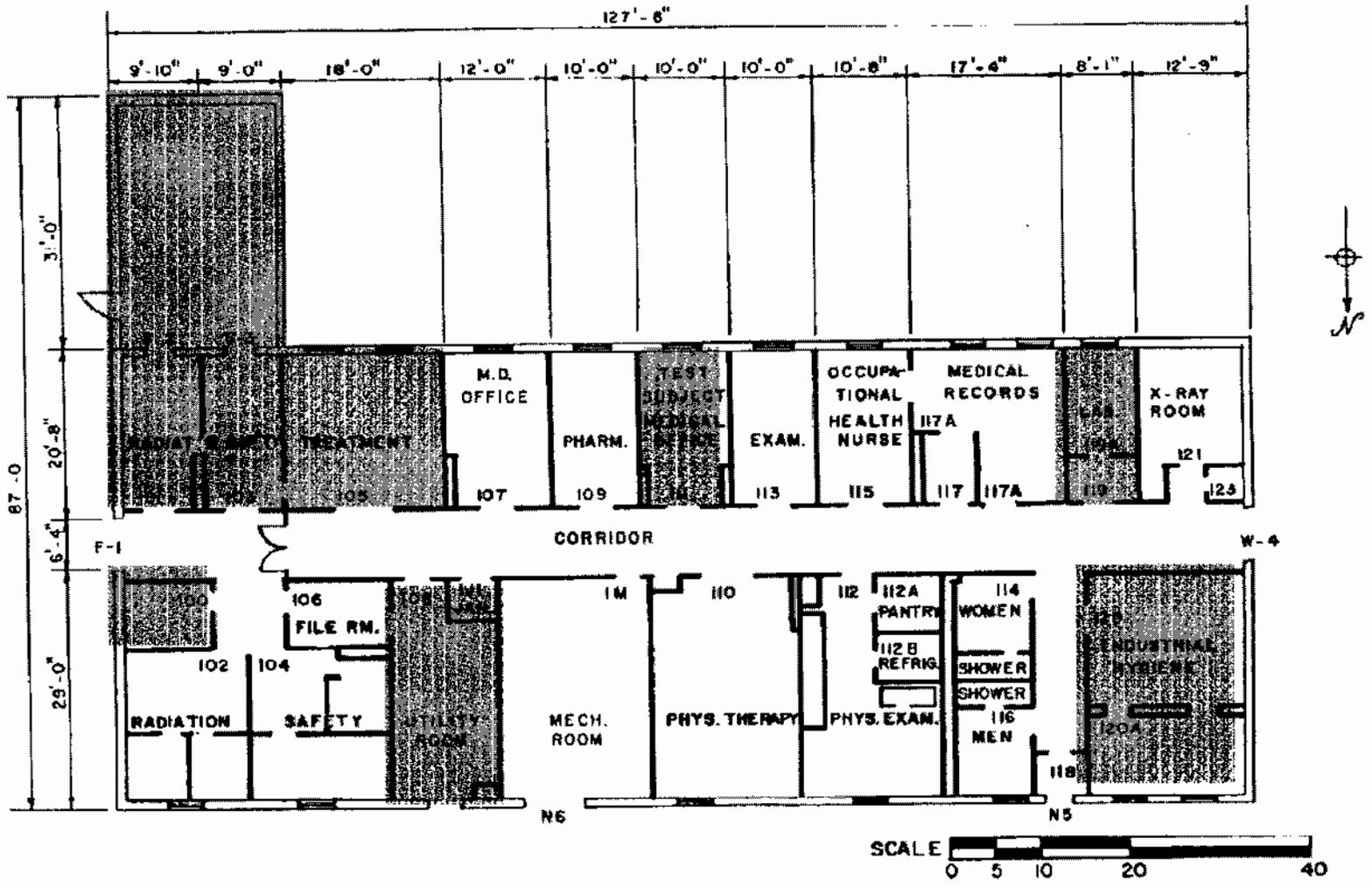


Figure 11.3

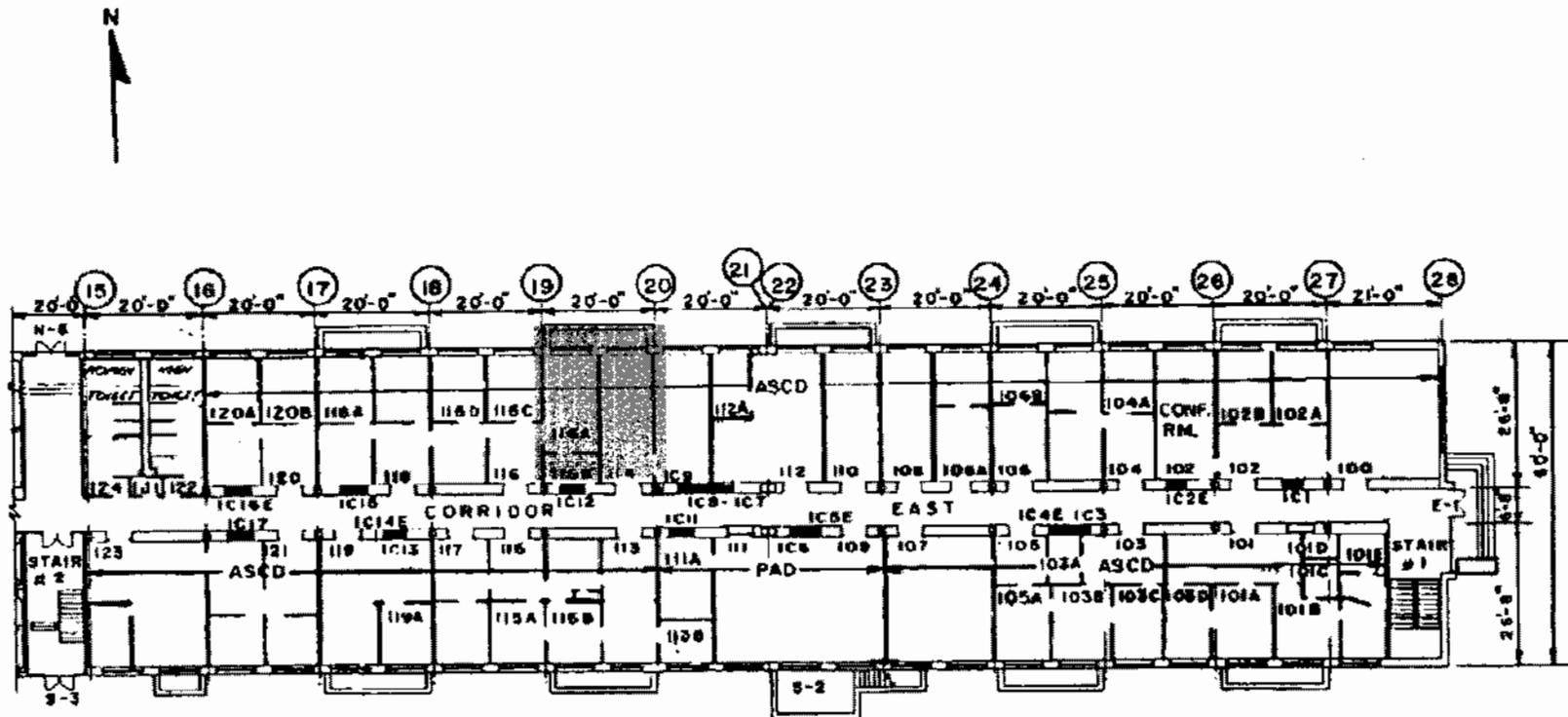


FLOOR PLAN
HEALTH CLINIC
BLDG. NO. 30

REV JAN. 89

Figure 11.4

(Shaded areas denote potentially effected areas)



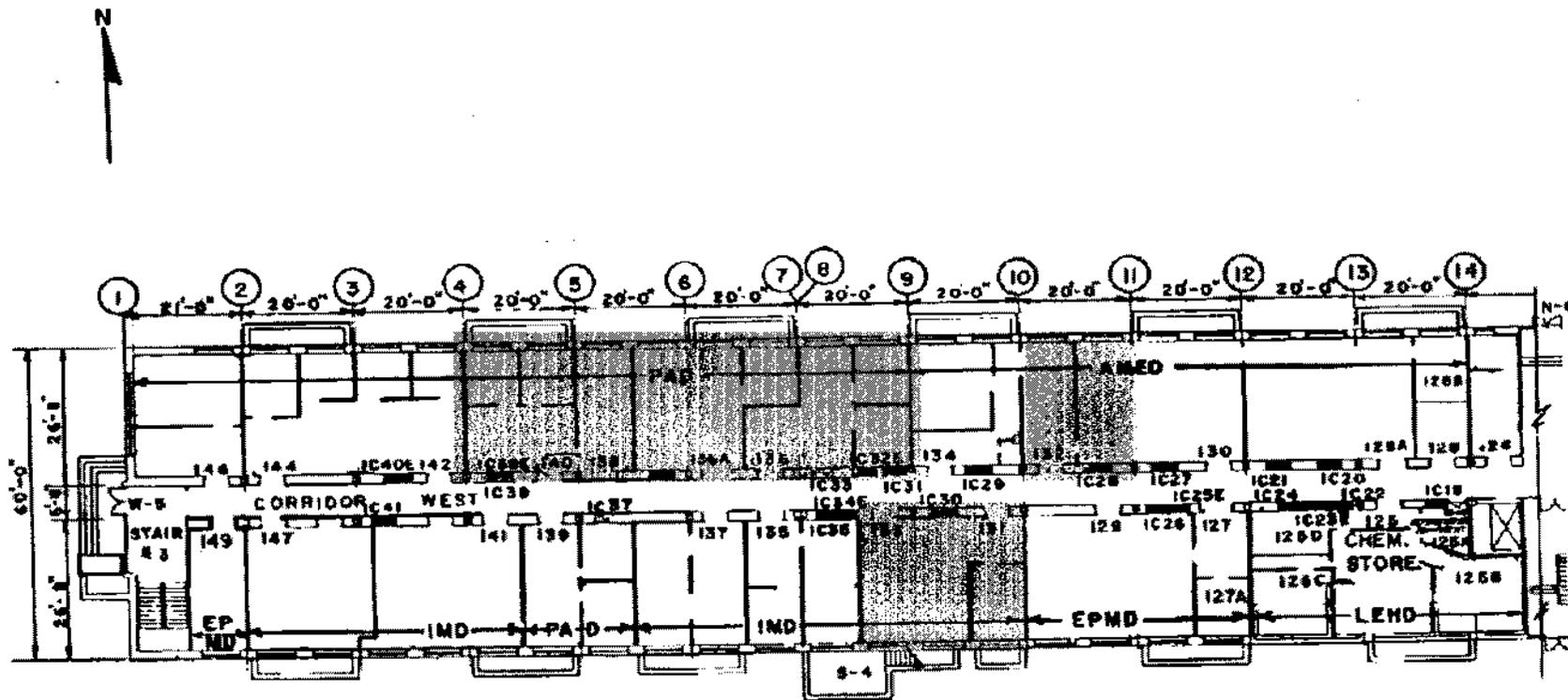
RESEARCH BLDG. NO. 3
FIRST FLOOR - EAST

REV JAN. 89

SCALE 0 5 10 20 40 FT

Figure 11.5

(Shaded areas denote potentially effected areas)



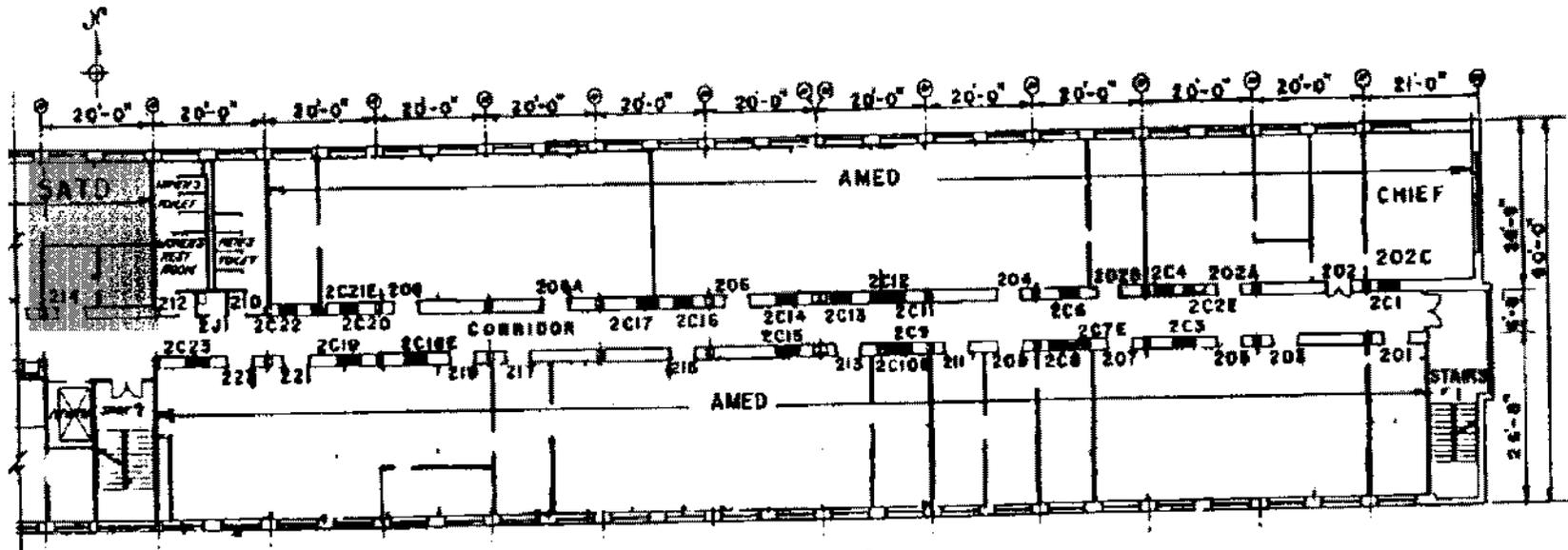
RESEARCH BLDG. NO. 3
FIRST FLOOR - WEST

REV JAN. 89



Figure 11.6

(Shaded areas denote potentially effected areas)



RESEARCH BLDG. NO. 3
SECOND FLOOR - EAST

REV JAN. 89

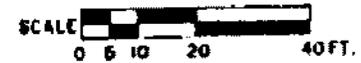
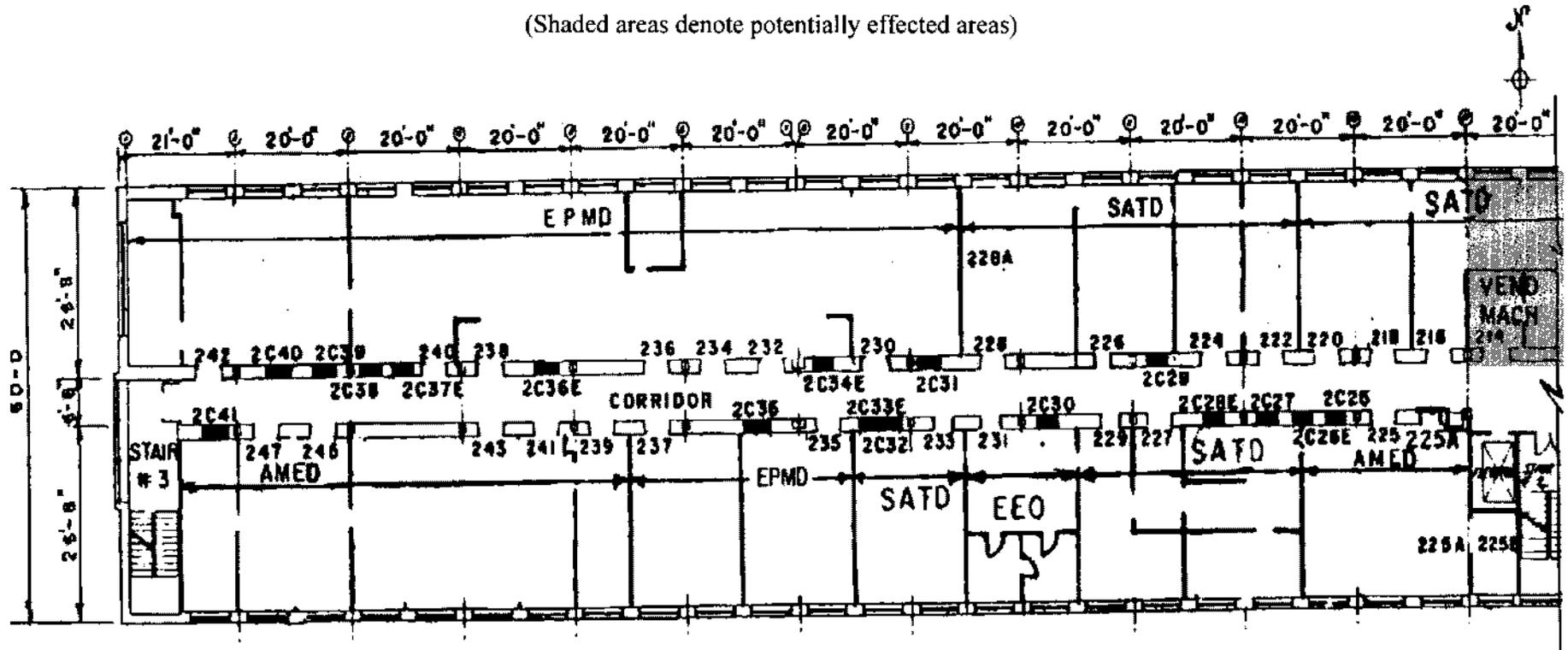


Figure 11.7

(Shaded areas denote potentially effected areas)



RESEARCH BLDG. NO. 3
SECOND FLOOR - WEST

REV JAN. 89

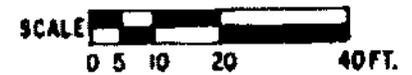
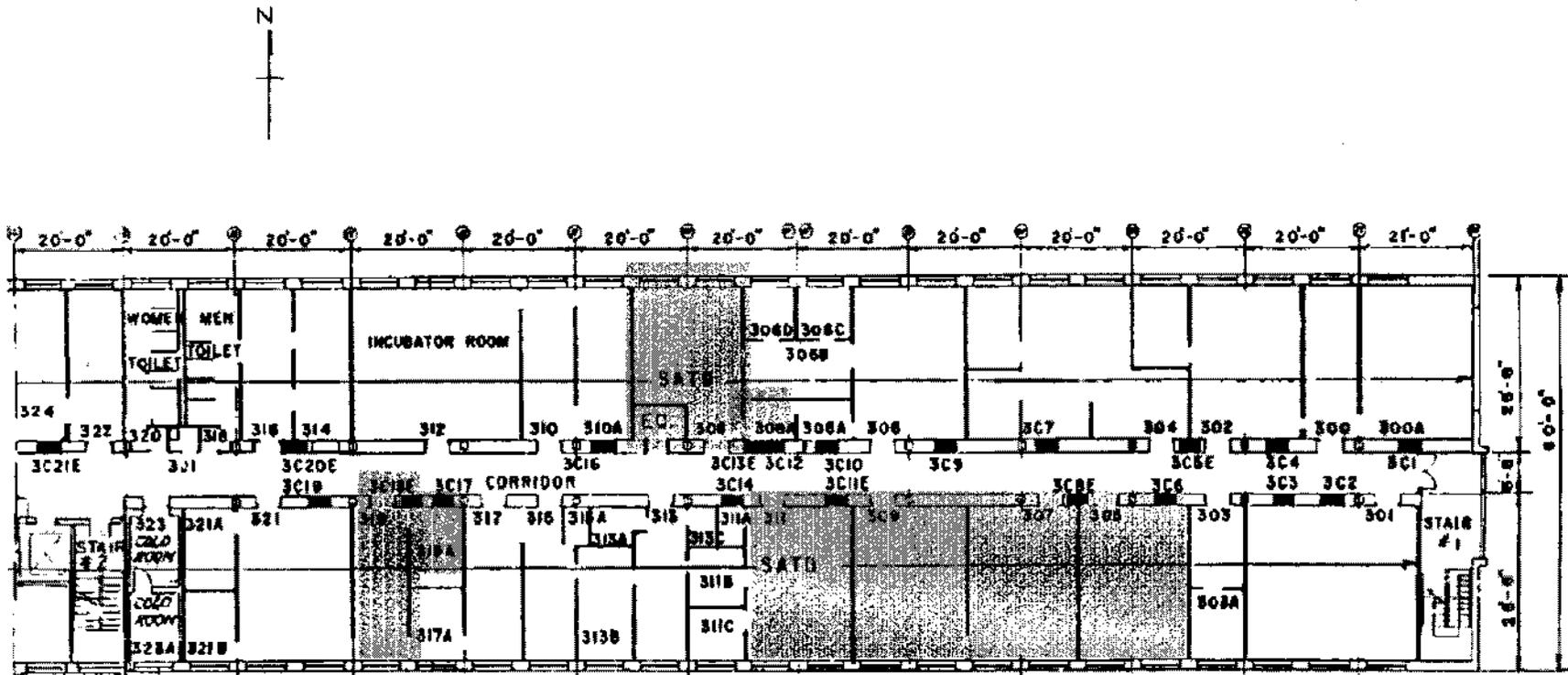
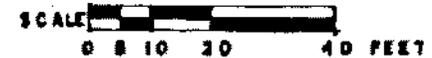


Figure 11.8

(Shaded areas denote potentially effected areas)



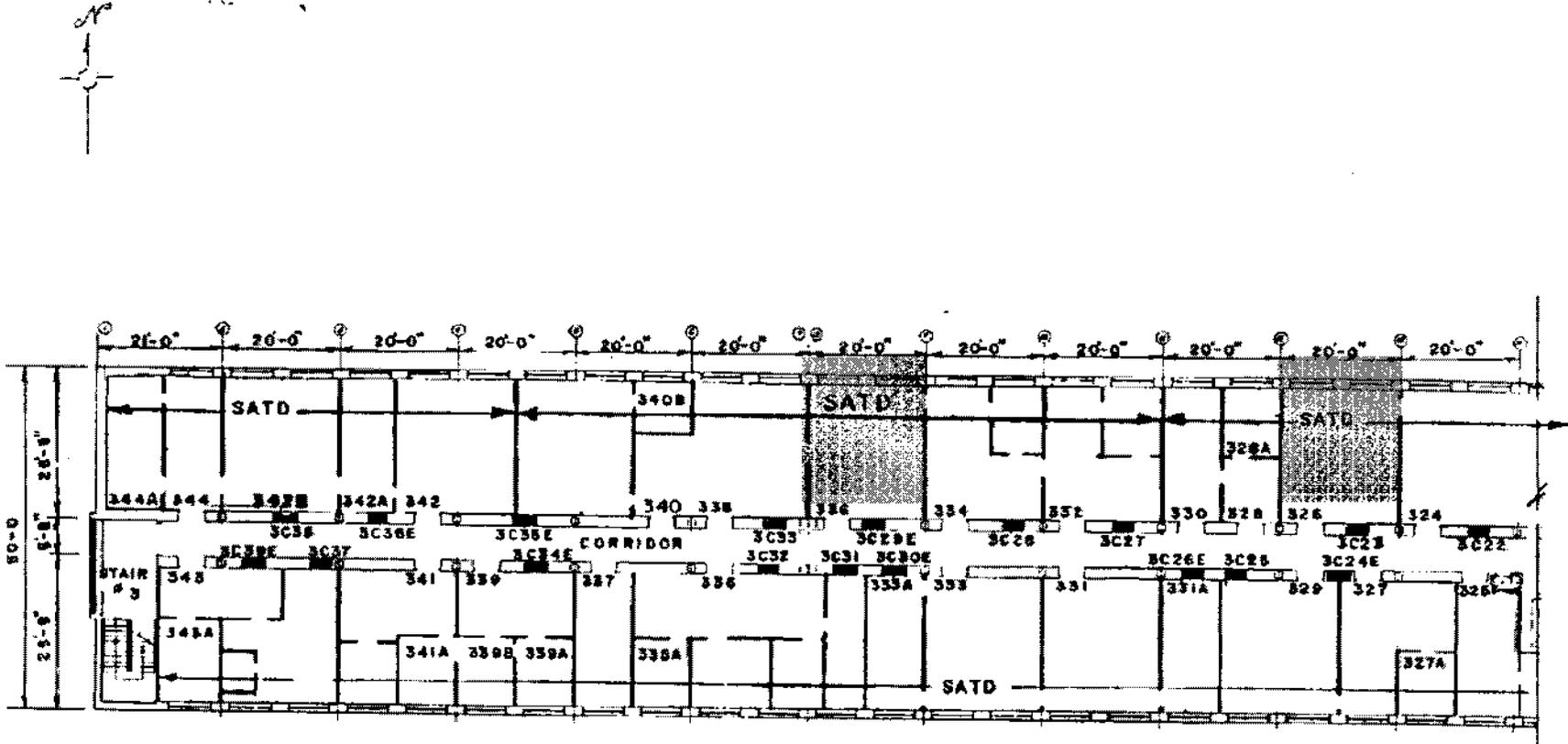
REV JAN. 89



RESEARCH BUILDING NO. 3
THIRD FLOOR - EAST

Figure 11.9

(Shaded areas denote potentially effected areas)



RESEARCH BLDG. NO. 3
THIRD FLOOR - WEST

REV. JAN. 69
SCALE 0 5 10 20 40 FT

11.0 INTERVIEWS

Summary of Interview with John Sieckarski

- Date:** December 10, 2003
- Interviewer:** William A. Lorenzen, Cabrera Services, Inc.
- Interviewee:** John F. Sieckarski, Health Physicist - Alternate Radiation Safety Officer
- Years at facility:** 37 Years (retired in 2002)
- Early program structure:** Under the AEC and then the NRC. Program always had a Radiation Safety Committee and a designated Radiation Safety Officer. Tom Martin was the RSO when John first came on board. Tom died ~ 1993. Paul Angelis took over then as RSO. Some form of a manual always documented the program. Authorization issued for individual use through the RSC and oversight provided by the RSO. Various Army Commands, AEC and NRC routinely conducted unannounced and announced inspections.
- Locations of use/and uses:** Mostly in Building 16 where the Megacurie sources of Cobalt 60 were held and other large sources Cs-137 for example (Bldg 16 was called then Radiation Lab). Building 16 closed in 1982. Accelerator dismantled and other sources returned.
- Other smaller amounts used in research labs in Buildings 3, 4, 30, 42, and 89 later (middle 90's). Building 3 is also referred to as the Research Building and Building 30 also referred to as the Health Clinic Building.
- Incinerator was in Building 30 (room 108). Closed down in 90's. Scintillation fluid and dogs mostly were burned. Rest of Building 30 was for animal research (micro and millicuries levels used)
- Sources vs. other:** Sources were mostly the Co-60 and some other smaller instrument calibration sealed sources. Research labs used liquids mostly. Most were short-lived except for some tritium and carbon-14.
- Types of controls uses:** RSC authorized all uses. The RSO, for which John worked, conducted all the compliance functions required by license and/or authorization.
- Various investigators were required to apply to the RSC for privileges to purchase, possess, and use any radioactive material.
- The program was documented and supported by a strong regulatory structure and there was always an internal Radiation Safety Manual in effect.
- Authorized users were required to maintain careful records of receipt, use, and inventories. Areas of use were audited by the RSO on a monthly basis (typically). Some areas may have been weekly.
- Inventories of all sealed sources were conducted by the RSO semi-annually.

Waste was also the responsibility of the RSO. Most waste records are estimates of the activities offered for disposal.

Incident/release/lost item: None that John can remember. No large fires, spills or major radiological incidents were identified.

Inventory systems: Most of the inventories were kept on paper by the investigators. Some of this information would be transferred to the RSO upon request. In most cases a physical inventory was performed by either the responsible investigator or the RSO (in the case of sealed sources)

Waste management: Most waste was disposed of by one of four methods. Decay-in-storage, ship to commercial disposal site, incinerate (scintillation fluid) on site, or transfer to another licensed facility.

In the earlier days much of the scintillation and animal wastes were burned in Building 30. I did it said John. There was also disposal to commercial disposal sites.

The large Co-60 sources were transferred to the University of Massachusetts at Lowell when Building 16 was closed down.

Local storage of wastes first began in a small shed outside Building 16 (no longer existing) and later waste was moved to Building 30, where the incinerator was located, and subsequently into Building 89 adjacent to Building 30.

Incinerator was removed from Building 30 (in room 108) and closeout surveys were performed by John.

Disposition records: Some exist within Building 30. Not sure if one could account for each source in and out over the years when looking at these records. Most waste disposal was done using estimated activities.

Potential contamination: After all his years and numerous surveys John cannot think of anywhere in Buildings 3 or 30 that might be contaminated such that there would be any reason not to release that area for unrestricted use.

Other locations of interest: None come to mind.

Final comments: John has the most extensive knowledge of radioactive material use locations and types. John also had direct interaction with all the various authorized users as well as actual first hand knowledge of the locations of use. John did many of the required compliance surveys and/or tasks for many years. If John did not do the tasks he was working in the same office with the people who were. His recollection of the history of the facility is outstanding and should weigh heavily on the conclusions of any site assessment and/or review.

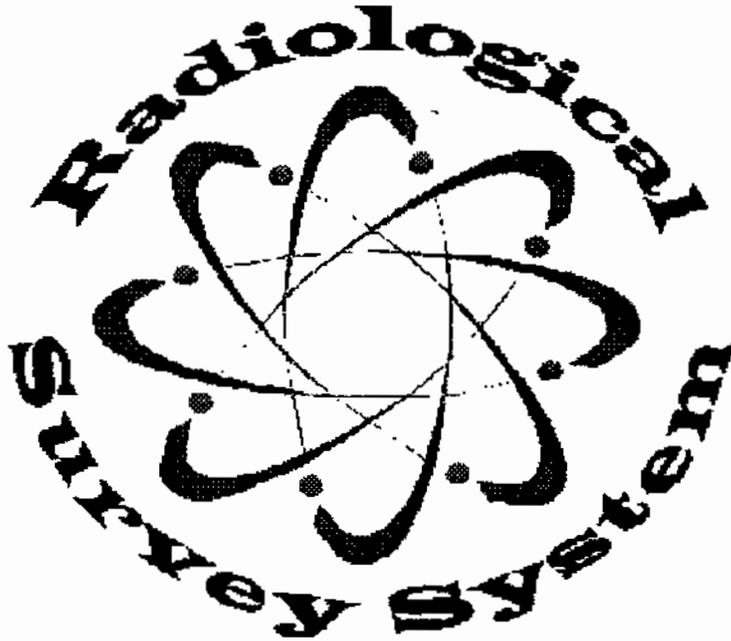
Appendix A:

Sierra Army Depot Radiological Survey and Assessment Report for
the Development Building (Building 4)

RADIOLOGICAL PROTOCOL

Radiological Survey Division
Sierra Army Depot
Herlong, California 96109-5111

Protocol
For
U.S. Army Soldier System Command
Natick, Massachusetts
Final Report # 01-04-96



Signature :

Michael Chastain
Division Chief
Radiological Survey Division

18 June 96
Date

encl 1

RADIOLOGICAL STUDY PROTOCOL
U.S. Army Soldier System Command
Natick, Massachusetts

SUBJECT:

Radiological Survey and Laboratory Analysis of U. S. Army Soldier Systems Command conducted at Natick, Massachusetts. Survey and Laboratory Analysis to be conducted by SIAD Radiological Survey Team.

ADDRESS:

U.S. Army Soldier Systems Command
Kansas Street
Natick, MA. 01766

AREAS FOR SURVEY AND CONTAMINANTS OF INTEREST:

Bldg. #4	Room 310 -✓	Affected - C ¹⁴ (uCi)
	Room 312 -✓	Affected - C ¹⁴ (mCi), C ¹⁴ (uCi)
	Room 314 -✓	Affected - H ³ (mCi), C ¹⁴ (uCi)
	Room 316 -✓	Affected - C ¹⁴ (uCi)
	Room 320 ✓	Affected - H ³ (mCi), C ¹⁴ (uCi), Ca ⁴⁵ (mCi)
	Room 317 -✓	Affected - H ³ (mCi), C ¹⁴ (uCi)
	Room 115b-✓	Affected - H ³ (uCi)]

Unaffected rooms = 308, 318, 320, 322, 317a.

REQUIREMENTS:

Survey will be conducted in such a manner as to insure that all applicable requirements of NUREG/CR-5849, U.S. Code of Federal Regulations (CFR), applicable Army Regulations (AR), regulatory guides from other agencies [e.g., Nuclear Regulatory Commission (NRC) and Environmental Protection Agency (EPA)], standards set forth by other agencies such as International Commission on Radiological Protection (ICRP) and other applicable requirements are met.

EQUIPMENT:

Beckman LS 6000IC Scintillation Counter
Ultima Gold Liquid Scintillation Cocktail
Protran Nitrocellulose Membranes
25 ml. glass vials

TYPE OF SURVEY OPERATIONS;

Survey to consist of liquid scintillation swipes only, with area of concern H³, C¹⁴ and CA⁴⁵. Area to be gridded in one meter units in affected area, to include floors and two each one meter high grids on the wall. Table, sinks, drains, hooded and vented work stations and various other work and equipment stations etc. will be swiped and identified on specific drawings generated for each room.

Unaffected areas will not be gridded but random swipes to be taken at a minimum of one swipe per 50 meter². Affected areas will have one LS swipe per grid except in areas designated to be of greater concern such as drains, sinks or areas specified by U.S. Army Soldier System Command. There will be nine (9) swipes per grid in grids adjacent to these specified areas. See example below.

1	2	3
4	5	6
7	8	9

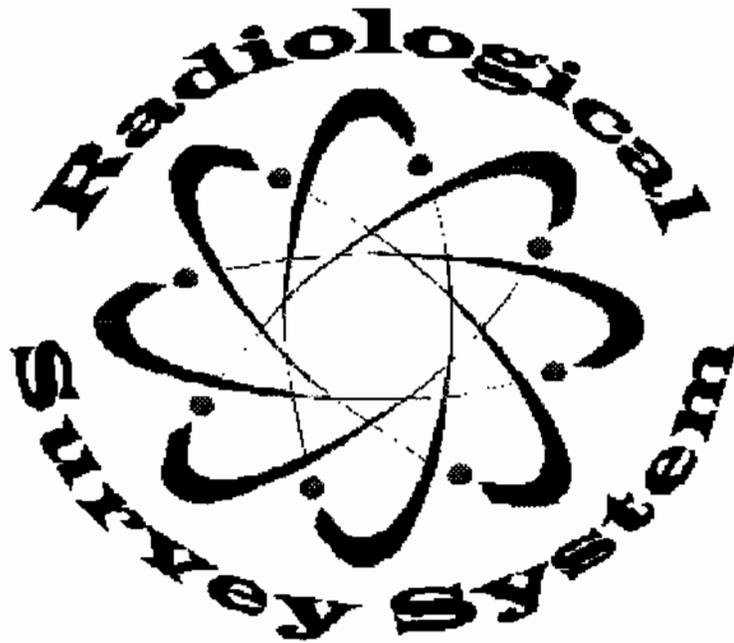
LS swipes (nitrocellulose membrane) will be moistened with distilled water prior to swiping of a specified 4" X 4" (100 cm²) area. Swipe will be immediately placed in a glass vial containing 12 ml. of Ultima Gold liquid scintillation cocktail. Vials will be marked so that traceability of swipe to specific room and grid can be maintained. Samples will be packaged for shipment to SIAD Radiological Survey Division for analysis. If analysis shows that any samples exceed allowable release limits of NRC Regulatory Guide 1.86 U.S. Army Soldier Systems Command will be notified. Corrective action will be taken and the area reswiped. Approximately 5% of sample will be sent to Test, Measurement and Diagnostic Equipment Support Group (TMDE) Laboratory at Redstone Arsenal, Alabama, for Quality Control Verification.

SIAD will generate a final report which will include the following data: Run date, net DPM, ± 2 sigma error rate, MDA, location, sample run time and background in CPM. Data will be for H³ and C¹⁴. SIAD will also generate drawings for each room surveyed to include effected and unaffected area.

RADIOLOGICAL DRAWINGS

Radiological Survey Division
Sierra Army Depot
Herlong, California 96109-5111

Location Drawings
For
U.S. Army Soldier System Commad
Natick, Massachusetts
Final Report # 01-04-96



Signature :

Michael Chastain
Division Chief
Radiological Survey Division

18 June 1996
Date

encl 2

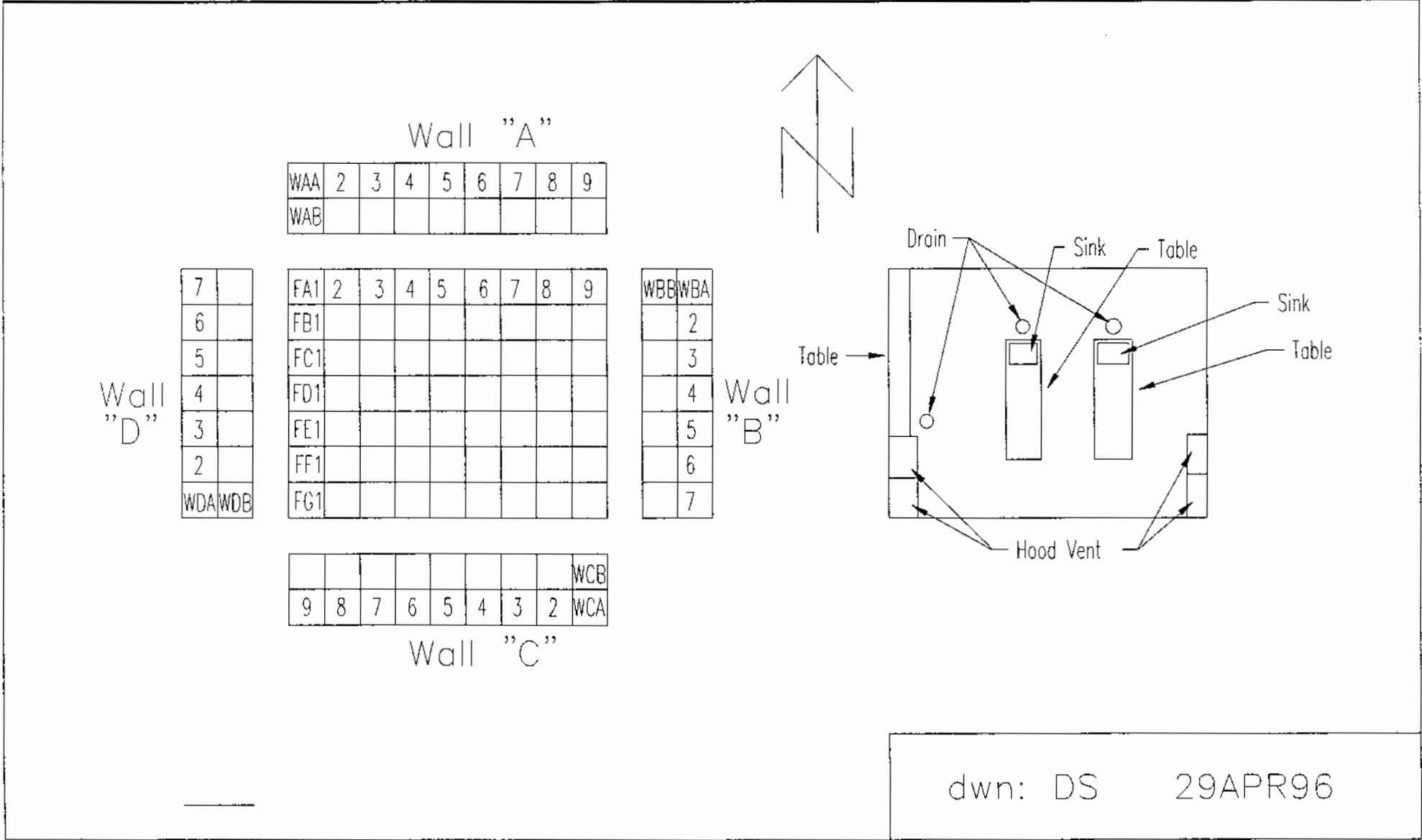
Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 310 dwg # 310_grd

- Grid View Grid Type:
- Interior 1 meter square w/2 rows of 1 meter grids on walls
- Exterior; if free standing structure 2 meter square w/1 row of 2 meter grids on walls



dwn: DS 29APR96

Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 312 dwg #

312_grd

Grid View

Grid Type:



Interior



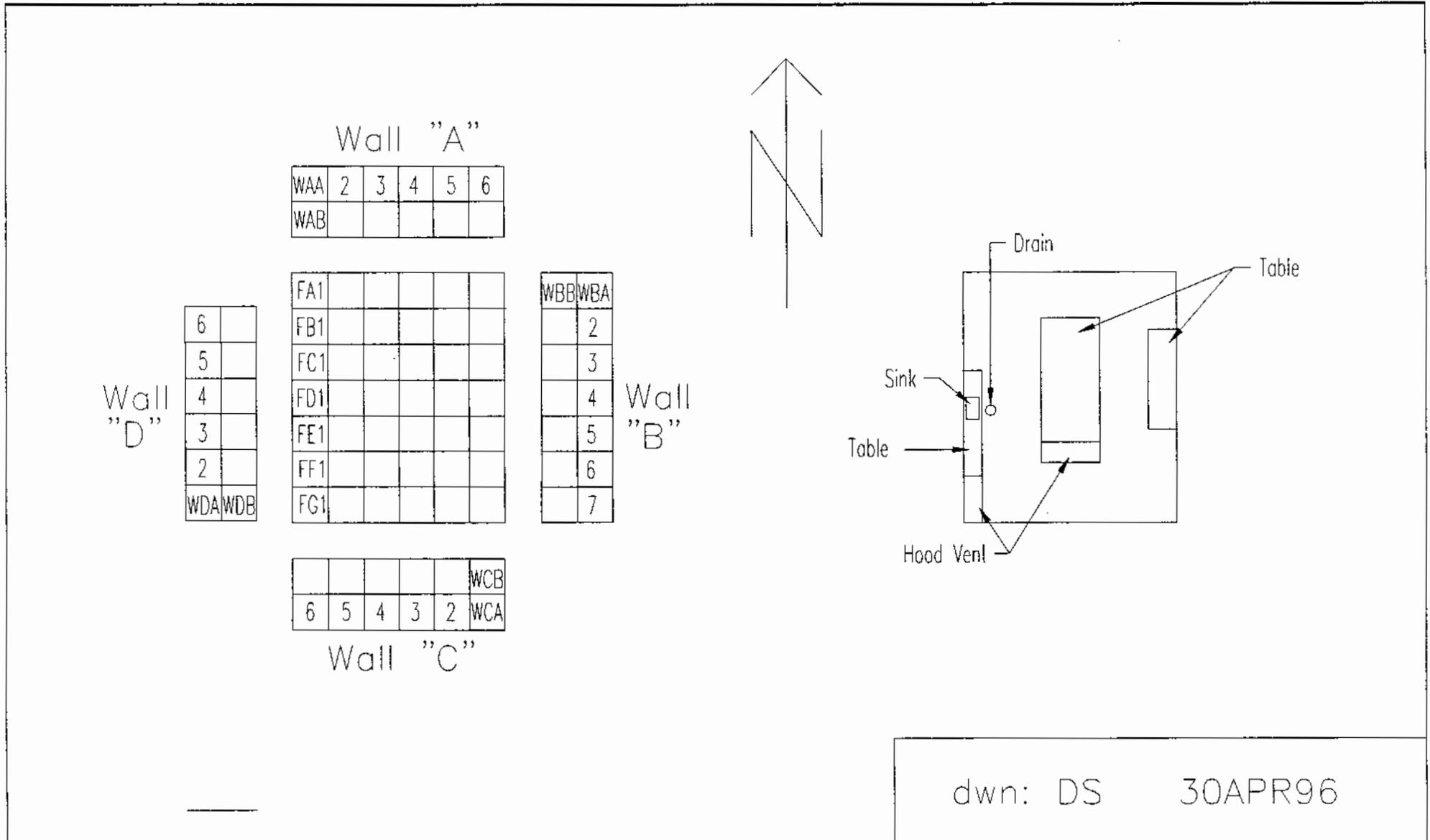
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



dwn: DS

30APR96

Radiation Survey No.

Natick Labs, MA

Location: Natick

Bldg/Area: 4

Room: 314

dwg #

314_grd

Grid View

Grid Type:



Interior



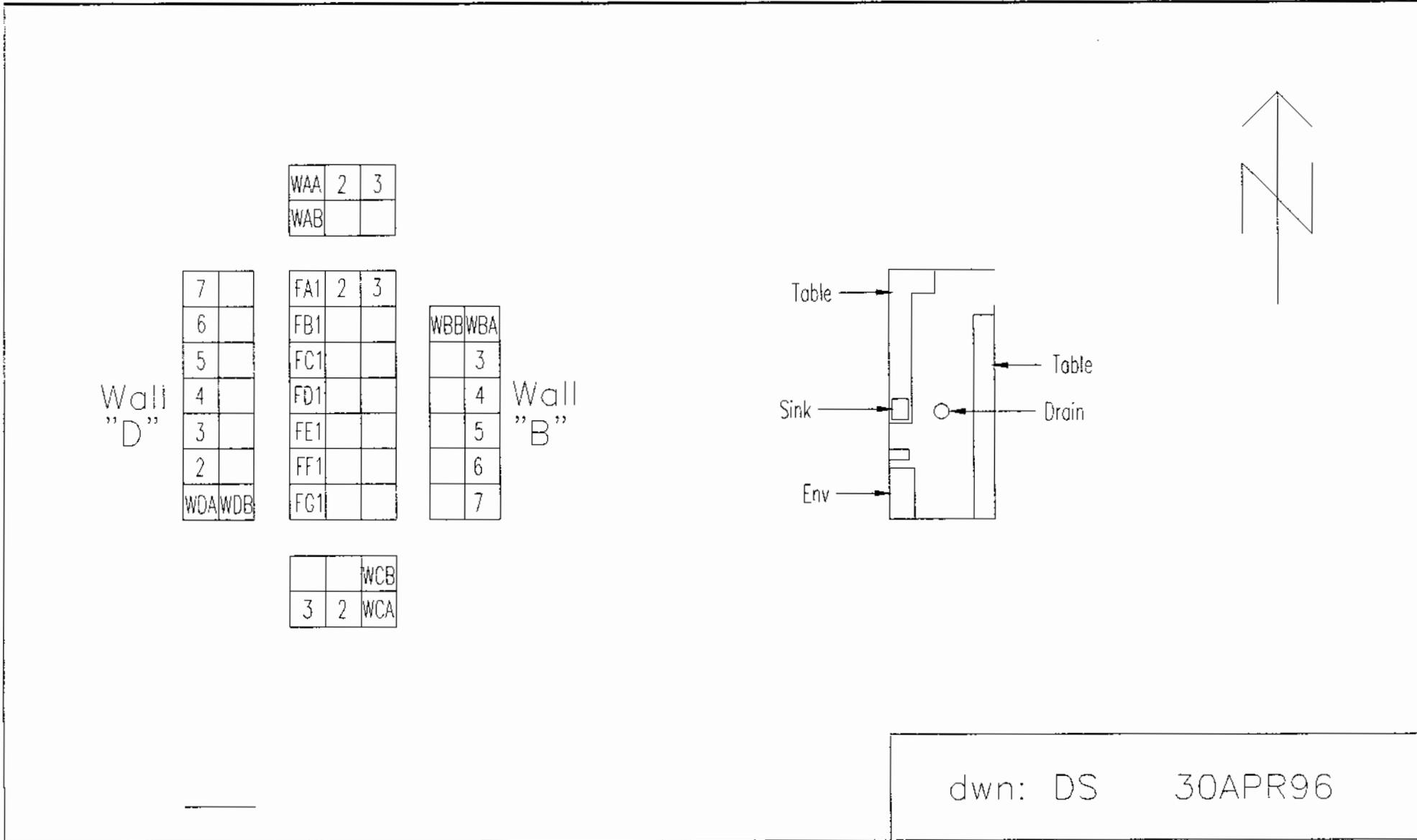
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



dwn: DS 30APR96

Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 316 dwg #

316_grd

Grid View

Grid Type:



Interior



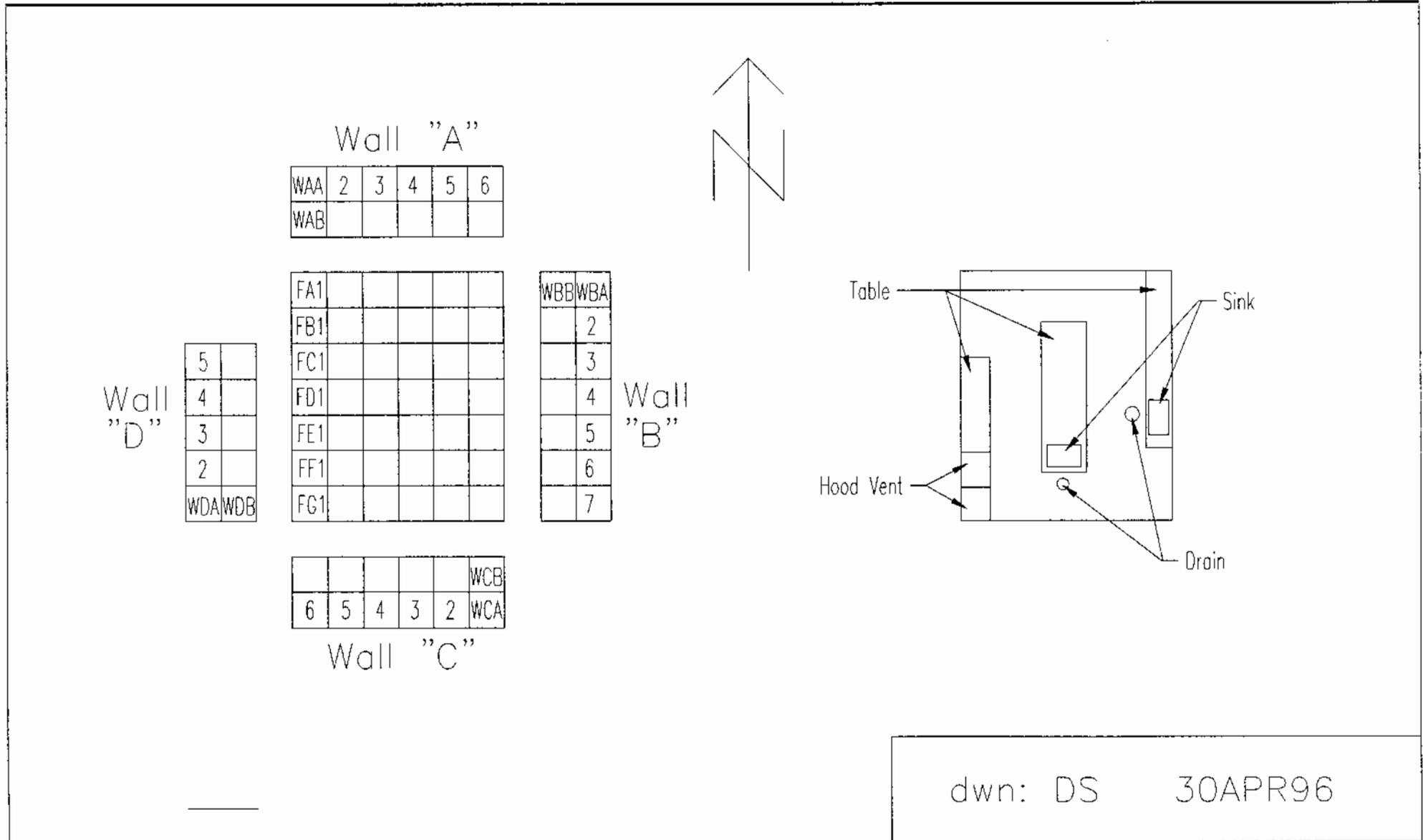
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 320 dwg # 320_grd

Grid View

Grid Type:



Interior



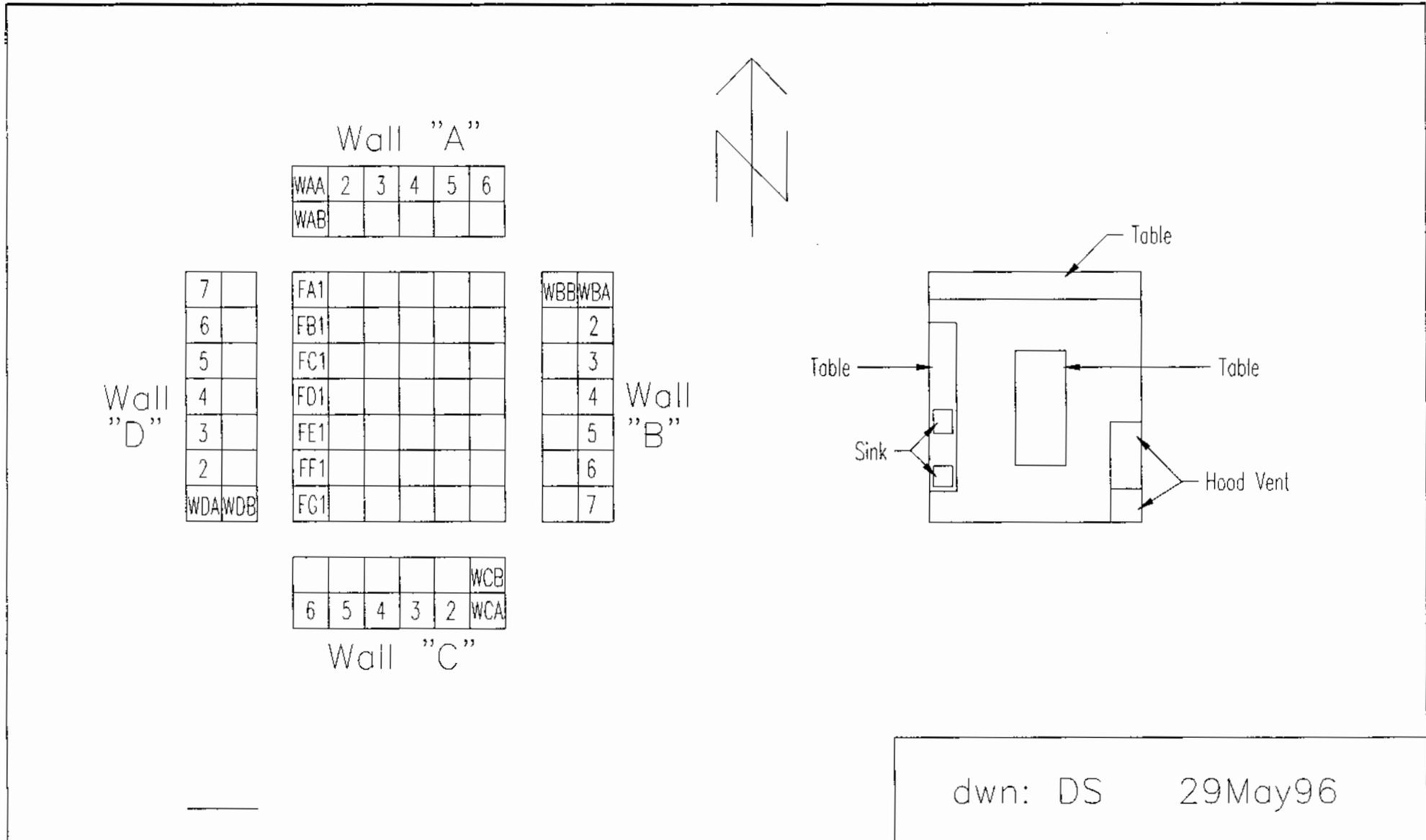
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



dwn: DS 29May96

Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 317 dwg # 317_grd

Grid View

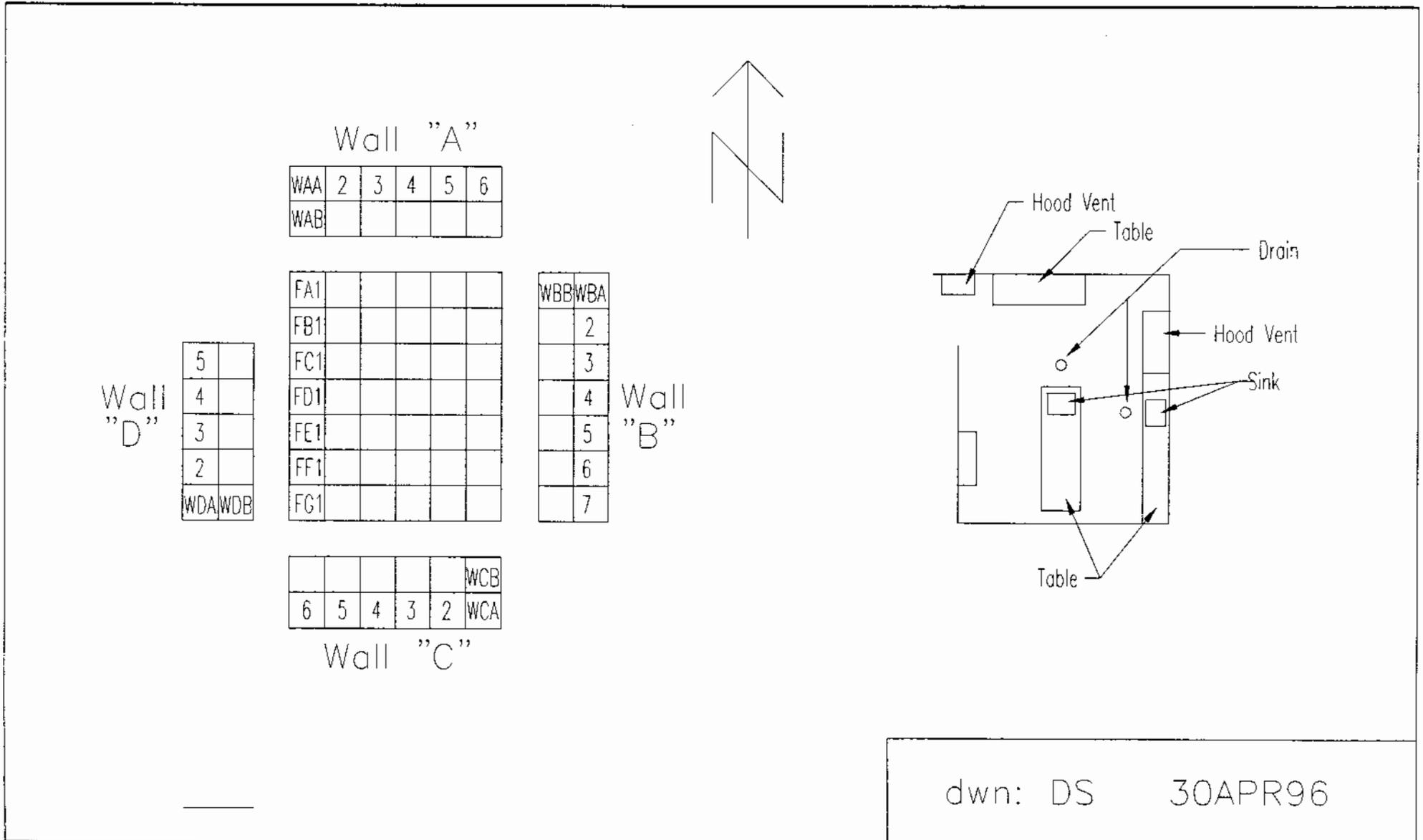
Grid Type:

Interior

1 meter square w/2 rows of 1 meter grids on walls

Exterior; if free standing structure

2 meter square w/1 row of 2 meter grids on walls



Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 115B dwg #

115B_grd

Grid View

Grid Type:



Interior



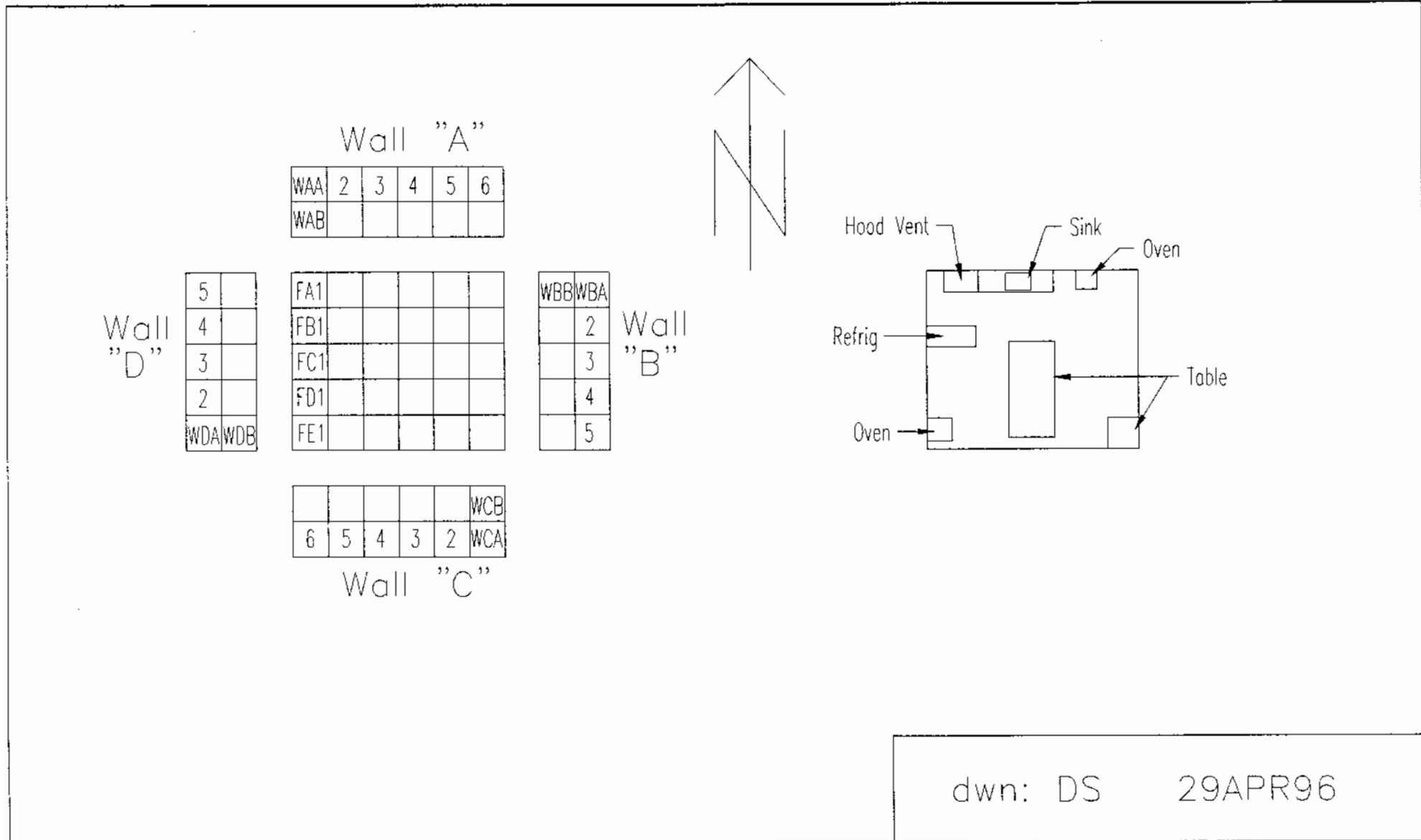
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



dwn: DS

29APR96

Radiation Survey No.

Natick Labs, MA

Location: Natick Bldg/Area: 4

Room: 322 dwg #

322_grd

Grid View

Grid Type:



Interior



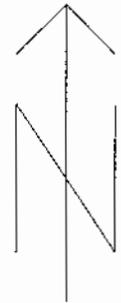
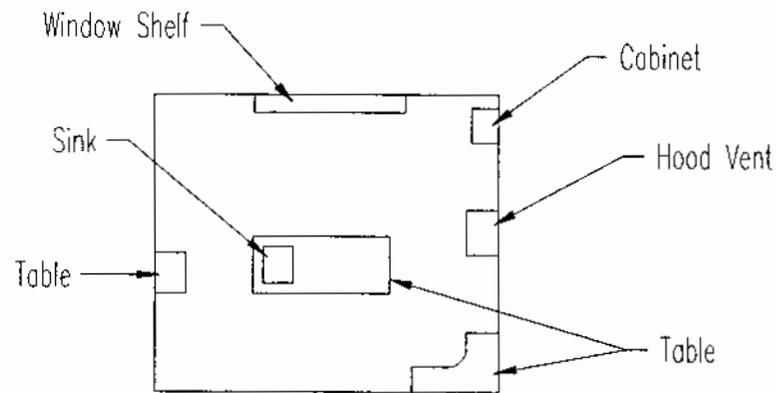
1 meter square w/2 rows of 1 meter grids on walls



Exterior; if free standing structure



2 meter square w/1 row of 2 meter grids on walls



dwn: DS

29APR96

Radiation Survey No.

Natick Labs, MA

Location: Natick

Bldg/Area: 4

Room: Various

dwg #

Rooms_grd

Grid View

Grid Type:



Interior



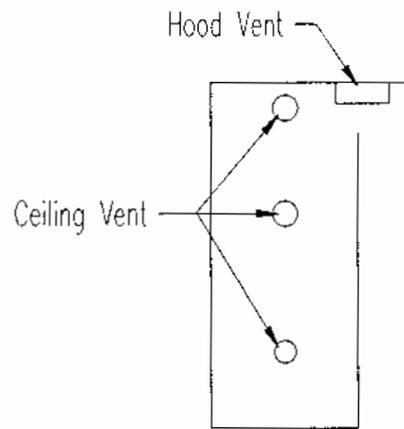
1 meter square w/2 rows of 1 meter grids on walls



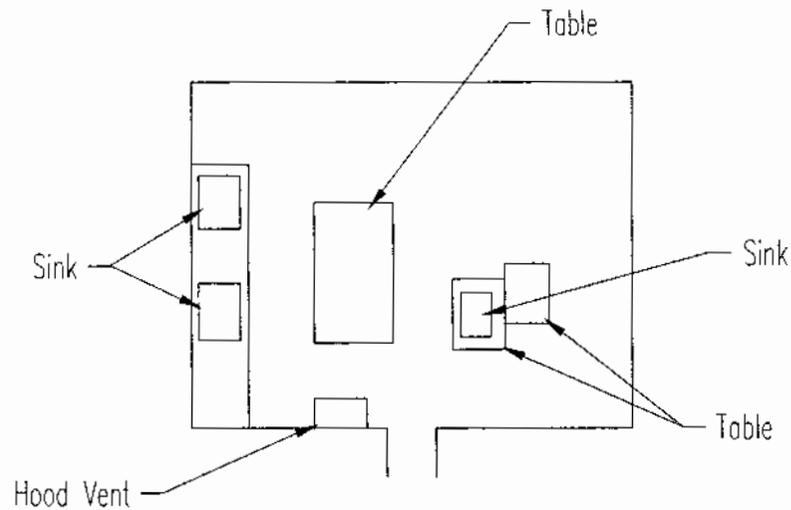
Exterior; if free standing structure



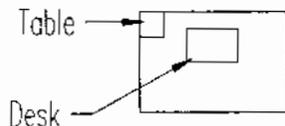
2 meter square w/1 row of 2 meter grids on walls



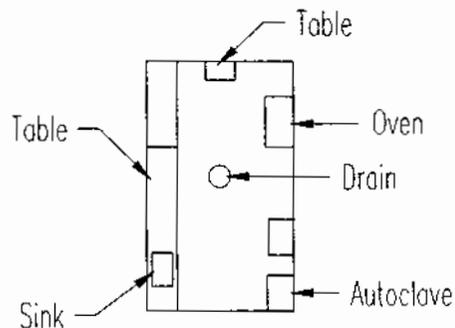
Room 317B



Room 308



Room 320A



Room 318

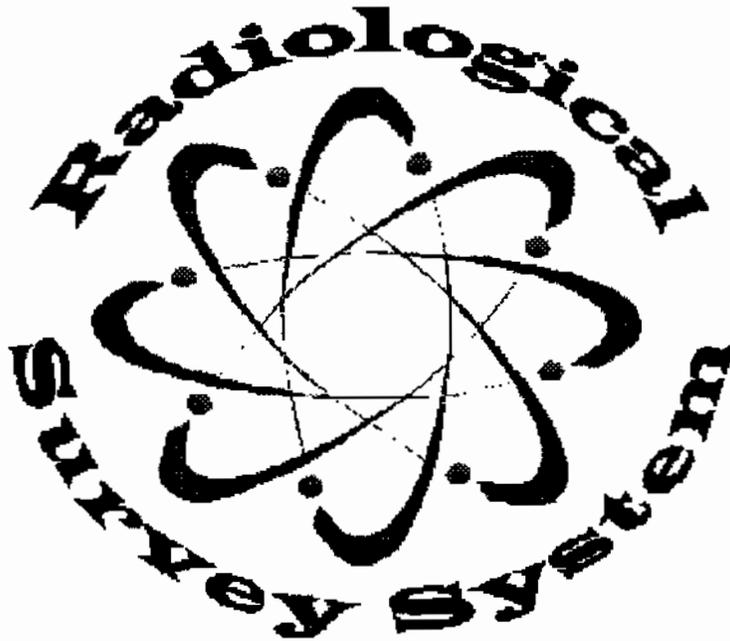
dwn: DS

01MAY96

RADIOISOTOPE ANALYSIS REPORT

Radiological Survey Division
Sierra Army Depot
Herlong, California 96109-5111

Analytical Results
For
U.S. Army Soldier System Command
Natick, Massachusetts
Final Report # 01-04-96



Signature :

Michael Chastain
Division Chief
Radiological Survey Division

Date

encl 3

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 308

Background	H-3			C-14			Wipe No.
	30.4000			49.6700			
	5.00			5.00			
	05/04/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RTABLE1	-9.78	20.34	36.7099	-5.57	9.35	16.7048	1
RSHELF1	-13.17	19.71	35.9515	2.10	9.58	16.5142	2
RSINK1	-0.54	18.38	32.3399	1.43	9.48	16.3860	3
RSINK2	12.05	21.26	36.1790	-2.26	9.42	16.5664	4
RSINK3	-15.82	19.89	36.5423	-2.04	9.46	16.6171	5
RSINK4	-1.56	26.59	46.8689	-4.45	9.35	16.6044	6
RDOOR1	1.21	20.70	36.2555	0.79	9.49	16.4534	7
RVENT1	-12.34	21.49	38.9864	-8.16	9.17	16.5971	8
RVENT2	-13.25	25.88	46.7958	-3.60	9.46	16.7323	9
RVENT3	0.00	22.40	39.3570	-5.55	9.31	16.6244	10
RVENT4	1.34	22.92	40.1331	-0.51	9.52	16.5917	11
RVENT5	-13.42	24.72	44.7718	-4.49	9.44	16.7711	12
RVENT6	-9.78	19.11	34.5548	0.79	9.50	16.4694	13
REXHAUST	-16.67	24.93	45.4841	-3.24	9.73	17.1690	14
RVENT7	-18.57	20.81	38.4373	-3.34	9.36	16.5321	15
RVENT8	-7.61	19.58	35.1517	-2.46	9.34	16.4391	16
RDRAIN1	-3.91	22.04	39.1134	0.36	9.56	16.6026	17
RDRAIN2	-24.62	21.95	41.0664	0.36	9.54	16.5682	18
RDRAIN3	-11.46	17.99	32.7635	-3.54	9.30	16.4569	19
RDRAIN4	-2.86	19.36	34.2884	3.18	9.61	16.4748	20
RSHELF2	1.21	20.67	36.2008	-2.89	9.32	16.4320	21
RDOOR2	1.67	19.08	33.3550	-0.08	9.43	16.4037	22
RSINK5	0.00	20.95	36.8112	-0.51	9.44	16.4534	23
RSINK6	13.36	21.49	36.4536	-4.86	9.27	16.5088	24
RFLOOR1	-178.81	102.62	198.8048	-10.72	12.77	23.0482	25
RFLOOR2	-4.69	26.48	46.9789	-4.28	9.48	16.8194	26
FTABLE2	-11.96	20.82	37.7842	-4.22	9.35	16.5917	27
BLANK	-8.40	15.47	28.0294	-2.42	9.20	16.1991	28
RFLOOR3	-20.00	26.19	48.0312	-3.64	9.56	16.9092	29

Radioisotope Analysis Report

U.S. ARMY SOLDIER SYSTEM COMMAND

NATICK, MASS

Building 4, Room 308

Background	H-3			C-14			Wipe No.
	30.4000			49.6700			
	5.00			5.00			
	05/04/96			05/08/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RFLOOR4	-11.56	21.28	38.5483	0.36	9.63	16.7213	30
RFLOOR5	-23.71	18.38	34.7147	-6.17	9.23	16.5303	31

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.	
	29.6500			45.6300				
	5.00			5.00				
	04/26/96			05/10/96				
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ				
Run date	Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
Units								
	BLANK	10.39	16.70	28.3321	4.45	9.14	15.5752	32
	BLANK	-4.40	15.80	28.2176	0.61	8.97	15.5752	33
	FA001	6.66	29.37	50.9686	-0.26	9.31	16.2392	34
	FA002	15.90	28.05	47.7485	4.81	9.44	16.0675	35
	FA003	-12.62	34.03	61.0993	2.38	10.21	17.5966	36
	FA004	-11.22	25.94	46.7329	7.12	9.68	16.3027	37
	FA005	-6.13	24.71	44.0605	6.37	9.53	16.1083	38
	FA006	-2053.19	1314.11	2524.5723	-17.87	36.30	64.6976	39
	FA007	-55.86	89.87	163.6619	-0.91	11.99	20.9617	40
	FA008	13.50	59.56	103.3579	6.14	10.62	18.0204	41
	FA009	-9.21	27.10	48.5693	0.19	9.35	16.2754	42
	FB001	-14.61	24.77	45.0303	6.64	9.61	16.2266	43
	FB002	-10.51	22.65	40.8873	2.84	9.37	16.1065	44
	FB003	-1.72	25.65	45.2536	4.18	9.47	16.1654	45
	FB004	-3.44	27.09	47.9608	-0.92	9.26	16.2031	46
	FB005	15.66	25.18	42.7277	4.18	9.47	16.1690	47
	FB006	-18.69	21.24	39.2507	-0.25	9.20	16.0410	48
	FB007	2.74	24.82	43.3522	-3.78	9.06	16.0852	49
	FB008	1.18	22.77	39.9108	1.29	9.28	16.0604	50
	FB009	7.37	23.55	40.6631	3.27	9.36	16.0481	51
	FC001	-5.60	25.76	45.8481	6.10	9.45	15.9795	52
	FC002	-19.34	23.74	43.7035	6.32	9.46	15.9795	53
	FC003	4.55	23.03	40.0320	1.07	9.27	16.0728	54
	FC004	-0.20	27.51	48.3713	-0.26	9.27	16.1798	55
	FC005	15.84	25.47	43.2101	-1.35	9.12	16.0058	56
	FC006	-11.84	27.35	49.2753	2.84	9.37	16.0959	57
	FC007	-6.25	22.44	40.0726	12.40	9.69	15.9133	58
	FC008	4.50	22.75	39.5516	7.41	9.50	15.9708	59
	FC009	-8.17	24.04	43.0846	5.70	9.49	16.0835	60

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			45.6300			
	5.00			5.00			
	04/26/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FD001	-0.79	21.37	37.6443	0.63	9.21	16.0041	61
FD002	-3.69	23.53	41.7358	14.00	9.80	15.9935	62
FD003	-9.36	23.31	41.9275	1.07	9.29	16.1030	63
FD004	0.57	25.73	45.1675	6.12	9.48	16.0357	64
FD005	5.42	21.21	36.7466	-2.44	9.04	15.9429	65
FD006	-2.20	22.76	40.2356	3.47	9.33	15.9743	66
FD007	4.09	20.66	35.9125	7.38	9.46	15.9098	67
FD008	16.63	27.98	47.5571	-1.13	9.15	16.0393	68
FD008	-3.37	21.45	38.0426	1.50	9.22	15.9498	69
FD008	4.48	22.66	39.3810	3.46	9.30	15.9272	70
FD008	-18.69	20.47	37.9089	4.13	9.37	15.9900	71
FD008	-8.23	26.61	47.6143	7.89	9.57	16.0604	72
FD008	12.25	23.98	40.9437	7.87	9.54	16.0041	73
FD008	-5.25	24.13	42.9442	-0.47	9.15	15.9865	74
FD008	-13.51	27.29	49.3368	1.30	9.33	16.1511	75
FD008	2.20	27.18	47.5571	6.80	9.53	16.0728	76
FD009	-10.13	25.21	45.3400	7.08	9.63	16.2158	77
BLANK	-4.45	15.99	28.5503	2.53	9.06	15.5785	78
FE001	-16.43	44.33	79.5808	7.64	10.38	17.4932	79
FE002	-11.26	24.27	43.8003	-3.11	9.06	16.0287	80
FE003	6.44	28.42	49.3163	12.16	9.82	16.1726	81
FE004	2.66	32.82	57.4322	0.86	9.43	16.3667	82
FE005	14.26	21.96	37.1959	6.92	9.41	15.8579	83
FE006	15.39	27.17	46.2412	-1.58	9.17	16.1030	84
FE007	-0.16	20.99	36.9067	12.39	9.68	15.8977	85
FE008	8.93	20.94	35.9234	-0.47	9.09	15.8804	86
FE008	17.43	21.44	35.9778	3.66	9.27	15.8579	87
FE008	-1.93	19.90	35.1779	8.44	9.47	15.8407	88
FE008	6.28	22.08	38.1895	3.46	9.30	15.9272	89

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			45.6300			
	5.00			5.00			
	04/26/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FE008	-1.52	22.79	40.2084	-2.67	9.08	16.0393	90
FE008	-1.76	26.26	46.3315	3.28	9.38	16.0906	91
FE008	-1.69	25.18	44.4400	1.51	9.33	16.1315	92
FE008	5.44	27.50	47.8062	1.76	9.48	16.3851	93
FE008	-1.55	23.13	40.8170	3.68	9.32	15.9446	94
FE009	-6.60	26.62	47.4620	2.20	9.46	16.3118	95
FF001	-16.48	24.04	43.9463	6.99	9.50	16.0093	96
FF002	0.51	23.13	40.6074	6.75	9.47	15.9690	97
FF002	-0.19	25.62	45.0474	5.86	9.40	15.9116	98
FF002	7.83	25.02	43.2101	1.06	9.18	15.9081	99
FF002	9.36	25.32	43.5751	7.47	9.58	16.1012	100
FF002	9.34	27.37	47.1789	5.04	9.47	16.0941	101
FF002	-31.17	23.06	43.7679	1.72	9.23	15.9376	102
BLANK	-1.57	16.16	28.5709	4.88	9.16	15.5752	103
FF002	-0.88	23.78	41.8979	5.89	9.46	16.0146	104
FF002	-2.48	25.61	45.2709	5.47	9.46	16.0428	105
FF002	1.28	24.70	43.2889	-2.89	9.08	16.0463	106
FF003	8.78	20.59	35.3350	9.34	9.54	15.8977	107
FF004	16.89	21.48	36.1092	1.28	9.19	15.9133	108
FF005	-4.59	21.09	37.5371	6.72	9.43	15.8960	109
FF006	-0.17	22.43	39.4464	-0.25	9.12	15.9168	110
FF007	-8.80	21.90	39.3810	8.29	9.55	15.9813	111
FF008	5.85	20.56	35.5680	3.00	9.20	15.7978	112
FF008	-0.74	20.06	35.3455	5.38	9.30	15.7842	113
FF008	8.80	20.64	35.4088	1.05	9.13	15.8253	114
FF008	1.14	22.04	38.6246	6.70	9.39	15.8407	115
FF008	0.44	19.98	35.0739	6.25	9.36	15.8081	116
FF008	-7.57	18.84	33.8917	5.82	9.34	15.8184	117
FF008	8.92	20.90	35.8582	8.19	9.42	15.7791	118

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			45.6300			
	5.00			5.00			
	04/26/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FF008	-1.35	20.17	35.5894	-0.03	9.12	15.8873	119
FF008	-11.62	20.82	37.7762	10.15	9.53	15.8098	120
FF009	13.22	25.87	44.1753	11.72	9.64	15.8821	121
FG001	-22.10	24.21	44.8262	0.85	9.24	16.0322	122
FG002	-0.15	20.48	36.0215	5.01	9.40	15.9865	123
FG002	5.34	20.88	36.1753	5.60	9.32	15.7910	124
FG002	2.82	20.21	35.2510	1.92	9.17	15.8184	125
FG002	10.20	23.92	41.0429	6.97	9.47	15.9603	126
FG002	15.07	25.35	43.0846	1.06	9.19	15.9342	127
FG002	-2.04	21.03	37.1726	8.88	9.50	15.8493	128
FG002	1.22	23.67	41.4877	-2.22	9.06	15.9551	129
FG002	-0.82	22.18	39.0698	9.98	9.56	15.8752	130
FG002	6.71	23.61	40.8310	-2.21	9.03	15.9081	131
FG003	-3.31	26.13	46.2592	3.71	9.39	16.0658	132
FG004	-4.78	21.99	39.1342	7.61	9.49	15.9376	133
FG005	-1.13	30.56	53.8362	-0.25	9.20	16.0410	134
FG006	1.77	21.83	38.1895	2.08	9.93	17.1296	135
FG007	-32.79	52.76	96.0768	1.51	10.88	18.8322	136
FG008	-12.47	22.35	40.5519	1.94	9.26	15.9708	137
FG008	8.50	21.35	36.6898	1.93	9.22	15.9168	138
FG008	12.38	21.85	37.1842	4.31	9.29	15.8476	139
FG008	-7.00	25.15	44.9110	-0.03	9.15	15.9446	140
FG008	4.20	24.89	43.3363	0.62	9.18	15.9376	141
FG008	1.81	22.31	39.0441	1.28	9.23	15.9743	142
FG008	-2.08	21.53	38.0548	1.71	9.22	15.9237	143
FG008	6.79	23.90	41.3432	5.43	9.39	15.9272	144
FG008	-5.20	20.96	37.3716	9.75	9.54	15.8562	145
FG009	3.12	22.35	38.9799	1.28	9.23	15.9743	146
WAA01	5.68	19.99	34.5832	4.51	9.27	15.7893	147

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			45.6300			
	5.00			5.00			
	04/26/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date	Units						
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WAA02	10.98	20.39	34.7554	1.48	9.11	15.7569	148
WAA03	8.50	21.34	36.6785	5.16	9.30	15.7893	149
WAA04	-2.87	18.27	32.4105	4.28	9.23	15.7399	150
WAA05	5.62	19.79	34.2241	2.99	9.18	15.7569	151
WAA06	3.68	18.61	32.3487	6.43	9.31	15.7094	152
WAA07	1.48	18.28	31.9825	6.43	9.31	15.7094	153
WAA08	14.41	19.68	33.1902	3.63	9.20	15.7365	154
WAA09	2.76	19.79	34.5128	3.01	9.22	15.8287	155
WAB01	16.28	18.77	31.4068	7.06	9.31	15.6739	156
WAB02	0.40	18.23	31.9997	1.26	9.09	15.7331	157
WAB03	5.73	18.30	31.6076	-1.11	8.95	15.6841	158
WAB04	6.42	18.79	32.4017	8.15	9.38	15.6992	159
WAB05	-7.78	19.36	34.8268	4.09	9.26	15.8184	160
WAB06	-0.15	20.40	35.8799	-1.12	9.04	15.8424	161
WAB07	-4.93	19.90	35.4829	3.66	9.26	15.8511	162
WAB08	2.55	18.29	31.8965	10.09	9.46	15.7026	163
WAB09	0.95	18.36	32.1732	5.78	9.28	15.7060	164
WBA01	8.50	18.70	32.0256	0.40	9.03	15.6959	165
WBA02	-1.83	18.90	33.4145	2.77	9.16	15.7399	166
WBA03	-1.41	21.09	37.2076	-0.47	9.04	15.7944	167
WBA04	8.96	19.71	33.7663	9.46	9.45	15.7331	168
WBA05	8.00	18.75	32.1732	-0.68	8.99	15.7263	169
WBA06	-5.55	19.94	35.6107	3.44	9.24	15.8321	170
WBA07	-4.98	20.08	35.8041	10.15	9.52	15.8013	171
WBB01	-1.25	18.70	33.0055	4.28	9.23	15.7365	172
WBB02	-7.13	20.99	37.6205	2.36	9.20	15.8459	173
WBB03	23.59	19.92	32.7414	6.01	9.30	15.7297	174
WBB04	-6.72	18.14	32.5617	7.51	9.36	15.7145	175

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NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			46.5300			
	5.00			5.00			
	04/26/96			05/11/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WBB05	17.80	19.33	32.2432	7.61	9.45	15.8595	176
WBB06	7.99	20.06	34.4727	7.21	9.47	15.9282	177
WBB07	-2.85	18.13	32.1558	6.75	9.41	15.8647	178
WCA01	0.95	18.33	32.1297	4.60	9.31	15.8578	179
WVA02	-3.33	17.79	31.6160	5.03	9.34	15.8664	180
WCA03	10.49	19.47	33.1902	9.14	9.53	15.8989	181
WCA04	12.31	18.95	32.0949	2.23	9.22	15.8852	182
WCA05	16.05	19.74	33.1253	5.04	9.34	15.8783	183
WCA06	-4.10	18.85	33.5562	4.40	9.33	15.9109	184
WCA07	-3.41	21.73	38.5494	-1.66	9.12	16.0095	185
WCA08	-4.08	18.77	33.4145	3.97	9.31	15.9109	186
WCA09	8.96	19.70	33.7471	4.40	9.34	15.9264	187
WCB01	-12.73	18.57	33.9402	3.10	9.26	15.8921	188
WCB02	-12.14	19.52	35.5574	3.76	9.32	15.9385	189
WCB03	4.87	19.07	33.0423	4.61	9.33	15.8852	190
WCB04	3.69	18.64	32.4017	2.66	9.24	15.8783	191
WCB05	10.88	20.19	34.4127	-0.79	9.11	15.9213	192
WCB06	-0.15	20.29	35.6750	-0.79	9.16	16.0095	193
WCB07	-6.32	18.60	33.3394	0.51	9.18	15.9454	194
WCB08	11.43	19.23	32.6783	7.42	9.47	15.9144	195
WCB09	4.77	18.69	32.3751	1.80	9.19	15.8647	196
WDA01	2.07	18.71	32.6783	8.92	9.51	15.8783	197
WDA02	-10.13	18.14	32.9231	7.41	9.46	15.8938	198
WDA03	4.89	19.12	33.1253	4.18	9.32	15.9058	199
WDA04	16.70	20.53	34.4626	1.37	9.19	15.9041	200
WDA05	4.19	18.48	32.0689	5.89	9.37	15.8527	201
WDA06	-0.67	17.95	31.6160	2.44	9.20	15.8374	202
WDA07	-0.13	18.21	32.0170	6.97	9.42	15.8595	203
WDB01	-7.74	17.89	32.2344	2.66	9.23	15.8630	204

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NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.	
	29.6500			46.5300				
	5.00			5.00				
	04/26/96			05/11/96				
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ				
Run date	Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
Units								
	WDB02	-0.68	18.41	32.4282	7.82	9.45	15.8476	205
	WDB03	-0.66	17.91	31.5488	3.73	9.26	15.8374	206
	WDB04	4.66	18.24	31.6076	-1.43	9.04	15.8561	207
	WDB05	-1.34	20.05	35.3877	4.63	9.37	15.9609	208
	WDB06	2.56	18.32	31.9480	5.68	9.37	15.8715	209
	WDB07	13.81	19.60	33.1068	2.67	9.25	15.9041	210
	FB004	6.91	20.22	34.8677	3.33	9.32	15.9783	211
	FB004	-4.98	20.08	35.7933	0.08	9.19	15.9939	212
	FB004	-3.88	20.72	36.8150	1.38	9.27	16.0322	213
	FB004	7.97	21.54	37.0797	-5.36	8.95	16.0165	214
	FB004	4.54	20.05	34.7860	-3.40	9.04	16.0130	215
	FB004	4.52	19.92	34.5630	5.74	9.46	16.0270	216
	FB004	-3.78	20.21	35.9016	9.89	9.66	16.0584	217
	FB004	-2.73	21.51	38.0915	6.42	9.53	16.0970	218
	FB004	4.05	20.49	35.6107	5.72	9.43	15.9835	219
	FB005	-17.37	22.20	40.8029	12.89	9.91	16.2641	220
	FB005	-2.65	20.88	36.9641	4.24	9.47	16.1535	221
	FB005	4.19	21.19	36.8379	7.28	9.55	16.0672	222
	FB005	4.88	24.65	42.8512	2.71	9.39	16.1482	223
	FB005	-3.65	19.50	34.6438	4.43	9.40	16.0200	224
	FB005	11.81	20.85	35.4829	-1.23	9.15	16.0339	225
	FB005	-7.20	25.84	46.1513	7.38	9.69	16.3055	226
	FB005	14.05	20.75	35.1050	4.22	9.41	16.0514	227
	FB005	-3.30	21.00	37.2543	-4.95	9.01	16.0812	228
	FB006	4.49	22.72	39.4858	6.21	9.54	16.1288	229
	FB006	12.76	22.52	38.3376	2.92	9.36	16.0812	230
	FB006	-0.73	19.63	34.5832	5.08	9.43	16.0252	231
	FB006	5.09	22.43	38.9288	4.25	9.49	16.1873	232
	FB006	-9.08	19.57	35.3245	2.47	9.33	16.0549	233

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U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	29.6500			46.5300			
	5.00			5.00			
	04/26/96			05/11/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FB006	7.49	20.25	34.8473	1.82	9.30	16.0549	234

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Building 4, Room 310

Background	H-3			C-14			Wipe No.
	28.2600			46.5300			
	5.00			5.00			
	04/27/96			05/11/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FB006	0.47	22.24	39.0862	5.75	9.48	16.0637	235
FB006	-4.47	19.93	35.5405	8.15	9.58	16.0602	236
FB006	4.04	20.09	34.9514	5.09	9.45	16.0567	237
FB007	10.99	25.26	43.3366	4.24	9.46	16.1429	238
FB007	5.74	22.08	38.2735	-0.36	9.22	16.0900	239
FB007	-1.46	20.78	36.7106	-4.28	9.02	16.0532	240
FB007	-3.43	21.10	37.4818	7.26	9.53	16.0339	241
FB007	8.05	21.34	36.7339	5.74	9.47	16.0444	242
FB007	-3.91	20.24	36.0152	6.60	9.49	16.0182	243
FB007	-2.42	24.07	42.6043	0.74	9.34	16.2158	244
FB007	-3.89	23.93	42.5106	7.79	9.66	16.2229	245
BLANK	0.82	16.03	28.1273	3.70	9.19	15.7241	246
FB007	10.81	23.31	39.9342	5.13	9.53	16.1890	247
BLANK	-3.54	15.79	28.1546	1.14	9.08	15.7258	248
RVENT1	15.60	22.58	38.1727	-0.80	9.24	16.1500	249
RVENT2	11.98	21.80	37.1576	-2.55	9.13	16.1005	250
RVENT3	9.73	23.96	41.1821	16.18	10.04	16.2444	251
RVENT4	-2.69	20.49	36.3311	12.09	9.77	16.0777	252
RVENT5	4.74	33.47	58.4226	3.92	10.32	17.6712	253
RVENT6	10.63	21.59	36.9210	3.57	9.39	16.0672	254
RVENT7	12.69	36.47	62.8898	2.03	10.38	17.9250	255
RVENT8	13.19	22.81	38.8115	4.02	9.45	16.1482	256
RSINK1	14.32	20.72	35.0253	5.30	9.44	16.0200	257
RSINK2	16.33	21.08	35.4536	6.61	9.51	16.0444	258
RVENT9	4.10	20.40	35.4753	2.69	9.33	16.0322	259
RVENT10	4.21	24.56	42.7929	2.49	9.37	16.1270	260
RVENT11	0.42	19.89	34.9514	1.60	9.29	16.0479	261
RVENT12	3.61	21.06	36.6874	4.87	9.43	16.0514	262
RREF1	-4.15	18.49	32.9738	7.44	9.49	15.9506	263

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 NATICK, MASS
 Building 4, Room 310

Background	H-3			C-14			Wipe No.
	28.2600			46.5300			
	5.00			5.00			
	04/27/96			05/11/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RREF2	18.07	19.23	32.0444	6.56	9.43	15.9213	264
RFREEA	2.54	17.95	31.3344	3.53	9.28	15.8921	265
RBUV1	10.62	19.31	32.9176	11.55	9.66	15.9350	266
RTABLE1	8.23	20.26	34.8255	10.73	9.67	16.0113	267
RSINK3	-3.40	20.94	37.2053	2.26	9.34	16.0917	268
RVENT13	0.39	18.49	32.4934	8.73	9.54	15.9402	269

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 312

Background	H-3			C-14			Wipe No.
	28.2600			46.5300			
	5.00			5.00			
	04/27/96			05/11/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	-14.37	30.09	54.4454	8.65	9.92	16.6015	270
FA002	-25.76	30.73	56.7918	3.00	9.64	16.5567	271
FA003	7.58	23.77	41.0654	8.01	9.67	16.2176	272
FA004	7.95	21.10	36.3197	-2.98	9.10	16.0953	273
FA005	-2.88	21.92	38.8766	1.61	9.35	16.1642	274
FA006	5.93	25.71	44.6377	6.50	9.66	16.3200	275
FB001	1.27	24.75	43.4340	5.62	9.62	16.3164	276
FB002	5.93	22.80	39.5258	2.71	9.38	16.1305	277
FB003	-1.80	25.68	45.3712	5.62	9.62	16.3146	278
FB004	-5.39	24.03	42.8403	5.62	9.63	16.3327	279
FB005	8.13	21.55	37.0981	7.95	9.60	16.0953	280
FB006	-2.71	26.89	47.6062	-2.78	9.15	16.1624	281
FC001	3.20	22.63	39.4989	-1.02	9.19	16.0847	282
FC002	-0.19	20.39	35.9037	10.93	9.66	15.9835	283
FC002	11.45	20.83	35.4970	2.04	9.31	16.0497	284
FC002	-10.93	19.03	34.6382	2.47	9.32	16.0374	285
FC002	4.80	20.82	36.1499	4.21	9.38	16.0061	286
FC002	1.05	20.43	35.8482	7.48	9.54	16.0392	287
FC002	20.94	21.07	34.9936	9.24	9.63	16.0584	288
FC002	6.10	21.08	36.4682	12.09	9.77	16.0847	289
FC002	2.81	19.89	34.7108	3.13	9.36	16.0514	290
FC002	4.97	21.57	37.4455	7.50	9.56	16.0707	291
FC003	5.65	21.74	37.6767	-3.21	9.12	16.1358	292
FC004	9.27	22.82	39.2184	0.74	9.32	16.1695	293
FC005	4.64	23.08	40.1415	-1.02	9.24	16.1748	294
FC006	-9.94	22.31	40.2949	7.75	9.61	16.1411	295
FD001	-3.14	23.84	42.2781	2.07	9.43	16.2677	296
FD002	16.87	21.03	35.3133	3.79	9.39	16.0654	297
FD002	13.65	21.50	36.4682	3.35	9.38	16.0742	298

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Building 4, Room 312

Background	H-3			C-14			Wipe No.
	28.2600			46.5300			
	5.00			5.00			
	04/27/96			05/11/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FD002	4.60	19.95	34.6382	0.29	9.21	16.0252	299
FD002	8.95	19.31	33.0678	4.19	9.35	15.9609	300
FD002	1.58	19.39	33.9587	3.77	9.36	16.0026	301
FD002	11.11	20.21	34.4530	4.21	9.38	16.0026	302
FD002	9.86	21.26	36.4109	9.90	9.66	16.0672	303
FD002	11.63	20.12	34.2394	5.51	9.44	16.0148	304
FD002	5.92	20.44	35.3671	1.82	9.29	16.0357	305
FD003	6.05	23.25	40.2949	-6.06	8.98	16.1341	306
BLANK	8.98	16.33	27.8370	-0.78	9.00	15.7325	307
FD004	-0.89	22.43	39.5663	4.67	9.46	16.1111	308
FD005	-12.44	22.95	41.6854	2.49	9.38	16.1341	309
FD006	7.96	21.12	36.3653	6.40	9.51	16.0619	310
FE001	0.45	21.21	37.2770	5.75	9.49	16.0742	311
FE002	-0.19	20.95	36.8858	6.63	9.53	16.0759	312
FE002	9.47	20.43	34.9936	-0.58	9.17	16.0165	313
FE002	20.20	22.82	38.1476	5.75	9.48	16.0637	314
FE002	3.76	21.96	38.2609	5.74	9.47	16.0462	315
FE002	3.29	19.19	33.4397	8.77	9.57	15.9956	316
FE002	8.51	20.96	36.0152	6.19	9.51	16.0847	317
FE002	2.13	19.13	33.4493	2.90	9.31	15.9904	318
FE002	11.93	19.68	33.4300	0.08	9.19	16.0078	319
FE002	-8.17	19.76	35.6170	5.31	9.45	16.0427	320
FE003	-4.55	23.55	41.9114	0.52	9.32	16.1855	321
FE004	-0.19	20.87	36.7455	4.88	9.46	16.0882	322
FE005	12.66	20.87	35.4536	-0.58	9.17	16.0217	323
FE006	9.37	23.07	39.6475	4.23	9.44	16.1058	324
FF001	-6.32	22.00	39.3782	7.53	9.61	16.1518	325
FF002	22.64	20.56	33.9288	-1.01	9.14	15.9974	326
FF002	7.00	20.12	34.6900	4.21	9.40	16.0374	327

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 312

Background	H-3			C-14			Wipe No.
	28.2600			46.5300			
	5.00			5.00			
	04/27/96			05/11/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FF002	-1.93	19.20	33.9885	1.16	9.23	15.9852	328
FF002	13.85	19.26	32.5025	5.92	9.42	15.9454	329
FF002	10.19	20.69	35.3779	5.52	9.45	16.0322	330
FF002	-3.10	19.10	33.9288	8.34	9.57	16.0165	331
FF002	-4.22	18.81	33.5364	8.11	9.54	15.9835	332
FF002	-1.38	19.74	34.8778	4.20	9.37	15.9991	333
FF002	3.56	20.78	36.2063	4.00	9.39	16.0462	334
FF003	7.65	20.28	34.9093	4.86	9.42	16.0182	335
FF003	6.88	19.78	34.1085	2.03	9.26	15.9748	336
FF003	9.63	20.76	35.5514	2.69	9.33	16.0304	337
FF003	-5.51	21.53	38.4639	2.70	9.36	16.0830	338

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U.S. ARMY SOLDIER SYSTEM COMMAND
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Building 4, Room 312

Background	H-3			C-14			Wipe No.
	27.4300			46.5300			
	5.00			5.00			
	04/29/96			05/11/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FF003	-0.09	20.44	35.9991	-1.01	9.17	16.0444	339
FF003	8.41	21.74	37.4250	5.54	9.48	16.0830	340
FF003	17.30	21.17	35.5183	2.25	9.29	15.9956	341
FF003	13.08	23.28	39.6577	2.92	9.36	16.0794	342
FF003	7.16	20.02	34.5209	2.25	9.28	15.9835	343
FF004	21.47	20.67	34.2315	5.50	9.42	15.9696	344
FF004	8.68	20.84	35.8075	2.47	9.32	16.0322	345
FF004	1.78	20.41	35.7515	6.82	9.50	16.0148	346
BLANK	12.67	16.65	28.0229	-1.42	8.96	15.7190	347
FF004	10.87	21.58	36.8936	-4.05	8.99	15.9800	348
FF004	17.58	21.50	36.0787	0.51	9.21	15.9974	349
FF004	4.24	20.34	35.3863	3.77	9.36	16.0061	350
FF004	14.26	21.09	35.6845	8.10	9.53	15.9765	351
FF004	7.10	19.87	34.2520	2.46	9.28	15.9731	352
FF004	15.85	21.63	36.4699	3.56	9.35	16.0113	353
FF005	6.79	20.72	35.7963	0.95	9.23	16.0043	354
FF006	19.71	23.32	39.0616	0.08	9.24	16.0847	355
FG001	3.48	23.51	41.0385	1.83	9.35	16.1376	356
FG002	4.58	21.98	38.2386	0.95	9.27	16.0619	357
FG002	7.39	22.55	38.9551	5.32	9.47	16.0847	358
FG002	3.31	22.37	39.0483	10.81	9.74	16.1252	359
FG002	19.35	22.16	37.0610	4.64	9.40	16.0130	360
FG002	31.56	22.76	36.9294	4.64	9.40	16.0008	361
FG002	-1.40	21.08	37.2664	2.68	9.31	15.9956	362
FG002	3.70	20.75	36.1585	6.61	9.50	16.0357	363
FG002	26.87	21.42	35.0286	3.98	9.35	15.9731	364
FG002	2.98	20.12	35.1146	6.59	9.48	15.9991	365
FG003	15.11	23.32	39.5207	4.87	9.44	16.0584	366
FG004	-10.91	24.36	44.0591	4.25	9.48	16.1801	367

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U.S. ARMY SOLDIER SYSTEM COMMAND

NATICK, MASS

Building 4, Room 312

Background	H-3			C-14			Wipe No.
	27.4300			46.5300			
	5.00			5.00			
	04/29/96			05/11/96			
Run time							
Run date							
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FG005	9.73	21.83	37.4495	-1.23	9.17	16.0654	368
FG006	10.12	22.71	38.9551	4.21	9.39	16.0252	369
WAA01	17.36	20.54	34.4066	5.92	9.42	15.9385	370
WAA02	4.43	21.26	36.9891	6.38	9.48	16.0078	371
WAA03	14.21	22.95	38.9684	3.57	9.39	16.0759	372
WAA04	1.31	22.99	40.3577	2.93	9.41	16.1535	373
WAA05	3.73	20.94	36.4816	10.94	9.67	15.9974	374
WAA06	20.96	20.72	34.3756	3.99	9.37	16.0095	375
WAB01	-8.80	19.67	35.5625	6.79	9.46	15.9506	376
WAB02	4.67	19.59	34.0176	-4.54	9.09	16.1926	377
WAB03	24.10	24.50	40.7025	-4.83	8.80	15.7073	378
WAB04	-13.59	20.04	36.7277	0.72	9.17	15.9109	379
WAB05	6.80	28.52	49.5164	2.24	9.24	15.9144	380
WAB06	12.18	21.68	36.9294	2.02	9.25	15.9454	381
WBA01	10.35	19.43	33.1497	-3.39	9.00	15.9402	382
WBA02	4.14	19.88	34.5731	11.73	9.64	15.8955	383
WBA03	7.65	21.40	36.8936	0.29	9.20	16.0061	384
WBA04	3.08	20.81	36.3193	1.81	9.23	15.9282	385
WBA05	14.89	20.31	34.2520	-3.17	9.00	15.9299	386
WBA06	9.35	20.99	35.9991	-3.60	8.98	15.9350	387
WBA07	6.01	20.15	34.8683	6.36	9.44	15.9454	388
WBB01	-23.04	26.15	48.5080	4.62	9.36	15.9368	389
BLANK	7.18	16.12	27.6501	1.17	9.30	16.1094	390
WBB02	21.42	20.10	33.2268	1.16	9.26	16.0304	391

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 312

Background	H-3			C-14			Wipe No.
	27.4300			48.3000			
	5.00			5.00			
	04/29/96			05/13/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WBB03	-0.09	19.28	33.9570	0.99	9.56	16.5593	392
WBB04	17.15	20.28	33.9772	-4.88	9.13	16.2683	393
WBB05	12.41	20.04	34.0176	-1.40	9.24	16.1980	394
WBB06	8.16	19.59	33.6670	-1.62	9.24	16.2085	395
WBB07	6.04	22.51	39.0083	3.79	9.50	16.2471	396
WCA01	7.11	19.90	34.3137	4.23	9.54	16.2736	397
WCA02	19.08	20.55	34.2520	5.53	9.58	16.2506	398
WCA03	12.75	21.60	36.7277	-1.19	9.28	16.2471	399
WCA04	3.17	21.40	37.3516	-4.46	9.18	16.3214	400
WCA05	119.63	28.29	38.8889	3.79	9.49	16.2313	401
WCA06	9.33	20.95	35.9313	-4.01	9.16	16.2506	402
WCB01	3.79	21.23	36.9891	-2.06	9.24	16.2383	403
WCB02	12.29	19.84	33.6869	-4.00	9.13	16.2120	404
WCB03	15.56	19.71	33.1305	4.02	9.53	16.2824	405
WCB04	10.69	21.22	36.2733	0.11	9.43	16.4035	406
WCB05	4.39	24.60	42.8696	-0.33	9.37	16.3409	407
WCB06	1.28	22.58	39.6303	-3.39	9.26	16.3784	408
WDA01	2.76	18.62	32.4995	4.00	9.49	16.2172	409
WDA02	3.03	20.45	35.6957	-1.63	9.26	16.2471	410
WDA03	25.39	21.15	34.6885	-1.41	9.30	16.2930	411
WDA04	2.84	19.21	33.5288	-2.49	9.22	16.2330	412
WDA05	7.94	19.07	32.7696	-3.79	9.15	16.2190	413
WDA06	15.88	19.43	32.6014	5.08	9.53	16.2032	414
WDB01	2.68	22.75	39.7819	-1.20	9.37	16.4017	415
WDB02	-13.59	24.92	45.3164	-0.55	9.42	16.4467	416
WDB03	9.04	20.29	34.8047	6.40	9.63	16.2753	417
WDB04	15.58	19.05	31.9724	3.35	9.45	16.1840	418
WDB05	14.76	19.39	32.6480	8.10	9.65	16.1875	419
WDB06	10.02	19.89	34.0075	2.27	9.43	16.2313	420

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 312

Background	H-3			C-14			Wipe No.
	27.4300			48.3000			
	5.00			5.00			
	04/29/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RHOVENT1	15.71	27.97	47.6389	2.98	9.63	16.5392	421
RHOVENT2	9.36	21.00	36.0218	4.03	9.55	16.3178	422
RHOVENT3	3.07	20.74	36.2043	4.23	9.54	16.2718	423
RHOVENT4	-1.44	21.72	38.3926	4.03	9.57	16.3409	424
RDRAIN1	10.06	19.96	34.1192	4.13	9.79	16.7237	425
RHOVENT5	11.86	21.11	35.9539	4.44	9.53	16.2524	426
RHOVENT6	4.18	20.04	34.8577	0.55	9.45	16.3999	427
RHOVENT7	4.58	19.21	33.3625	-2.49	9.20	16.2050	428
RHOVENT8	-3.06	19.12	33.9974	3.13	9.45	16.1980	429
RTABLE1	-8.93	25.47	45.7883	4.04	9.57	16.3534	430
RTABLE2	3.89	21.81	37.9971	-8.65	9.04	16.4251	431
RTABLE3	-5.78	22.69	40.5581	-5.57	9.15	16.3641	432
RTABLE4	-0.71	19.89	35.0931	0.97	9.35	16.2067	433
RVENT1	32.87	21.67	34.8896	4.24	9.55	16.2877	434

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 314

Background	H-3			C-14			Wipe No.
	28.2600			48.3000			
	5.00			5.00			
	04/27/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	6.52	22.53	38.9942	3.63	9.62	16.4720	435
FA002	6.91	19.85	34.2293	4.66	9.55	16.2594	436
FA003	-9.69	21.77	39.3115	1.64	9.49	16.3820	437
FB001	-2.97	22.57	40.0307	-4.50	9.25	16.4449	438
FB002	2.26	20.30	35.4862	-1.85	9.27	16.2789	439
FB003	-4.35	19.36	34.5248	3.80	9.51	16.2612	440
BLANK	7.04	16.18	27.7637	-3.09	9.05	15.9941	441
FC001	3.91	19.44	33.8200	0.97	9.37	16.2330	442
FC002	9.31	22.92	39.3916	2.09	9.57	16.4955	443
FC003	3.58	20.92	36.4453	3.80	9.52	16.2824	444
FD001	15.36	31.18	53.3190	4.62	9.92	16.9142	445
FD002	9.01	20.72	35.5514	2.93	9.49	16.2859	446
FD002	6.27	24.12	41.8056	-1.64	9.36	16.4197	447
FD002	13.62	19.71	33.3148	4.87	9.54	16.2313	448
FD002	8.92	19.22	32.9270	9.39	9.71	16.1857	449
FD002	16.37	19.72	33.0678	6.60	9.61	16.2190	450
FD002	4.36	18.92	32.8524	1.40	9.37	16.1927	451
FD002	13.01	20.49	34.7524	7.49	9.67	16.2665	452
FD002	2.15	19.25	33.6532	4.66	9.53	16.2348	453
FD002	-0.21	23.31	41.0364	-2.97	9.34	16.4919	454
FD003	9.14	21.01	36.0487	1.85	9.44	16.2912	455
FE001	5.67	21.81	37.7995	9.03	9.76	16.3072	456
FE002	18.43	22.21	37.2411	6.20	9.64	16.2983	457
FE002	-5.50	19.18	34.3204	2.71	9.45	16.2365	458
FE002	-3.97	20.55	36.5717	5.55	9.62	16.3267	459
FE002	16.70	22.37	37.6889	-0.54	9.35	16.3090	460
FE002	15.28	19.73	33.1908	6.60	9.61	16.2225	461
FE002	7.25	19.22	33.0961	11.15	9.81	16.2278	462
FE002	14.30	20.70	34.9936	2.06	9.43	16.2612	463

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 314

Background	H-3			C-14			Wipe No.
	28.2600			48.3000			
	5.00			5.00			
	04/27/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FE002	2.04	18.27	31.9385	2.27	9.42	16.2190	464
FE002	21.35	19.87	32.8430	2.71	9.45	16.2330	465
FE003	-9.34	20.96	37.8612	4.69	9.60	16.3552	466
FF001	-0.78	19.77	34.8673	3.15	9.50	16.2930	467
FF002	0.39	18.54	32.5847	2.27	9.40	16.1840	468
FF003	8.73	20.07	34.4325	4.65	9.53	16.2260	469
FG001	15.95	20.59	34.6382	5.32	9.58	16.2718	470
FG002	7.14	18.94	32.6030	-0.32	9.30	16.2137	471
FG003	-3.94	17.57	31.3344	-1.19	9.24	16.1752	472
WAA01	17.86	17.97	29.8427	7.62	9.59	16.1023	473
BLANK	15.38	16.37	27.2739	0.32	9.20	15.9941	474
WAA02	2.74	19.35	33.7708	6.17	9.60	16.2436	475
WAA03	6.45	20.24	34.9620	-2.06	9.25	16.2683	476
WAB01	-1.25	17.82	31.4961	7.21	9.58	16.1300	477
WAB02	6.49	18.64	32.1421	-2.48	9.19	16.1840	478
WAB03	14.71	18.99	31.9473	7.22	9.60	16.1509	479
WBA01	14.92	18.60	31.2332	5.71	9.54	16.1613	480
WBA02	20.90	18.98	31.3175	6.79	9.58	16.1543	481
WBA03	14.13	18.92	31.8858	2.91	9.41	16.1543	482
WBA04	15.19	18.31	30.6958	6.35	9.56	16.1491	483
WBA05	-2.82	17.37	30.8674	5.49	9.52	16.1456	484
WBA06	8.85	17.97	30.7284	5.27	9.50	16.1300	485
WBB01	14.85	18.51	31.0825	5.28	9.51	16.1456	486
WBB02	13.38	18.62	31.4193	4.86	9.51	16.1805	487
WBB03	12.68	19.98	33.8793	4.65	9.53	16.2242	488
WBB04	7.49	18.45	31.7115	5.30	9.55	16.2172	489
WBB05	11.85	18.68	31.6768	1.83	9.36	16.1578	490
WBB06	17.66	18.80	31.3175	-5.28	9.04	16.1526	491
WCA01	10.22	19.61	33.4783	0.11	9.33	16.2330	492

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 314

Background	H-3			C-14			Wipe No.
	28.2600			48.3000			
	5.00			5.00			
	04/27/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WCA02	17.20	18.85	31.4534	-1.18	9.22	16.1456	493
WCA03	-6.16	17.60	31.6077	-1.62	9.21	16.1578	494
WCB01	11.29	19.53	33.2289	3.56	9.46	16.1875	495
WCB02	7.88	19.40	33.3435	9.42	9.74	16.2383	496
WCB03	9.77	18.75	32.0091	-6.35	8.99	16.1439	497
WDA01	16.60	18.76	31.3514	2.48	9.39	16.1578	498
WDA02	2.02	18.08	31.6077	3.13	9.42	16.1596	499
WDA03	6.83	18.11	31.1828	2.91	9.40	16.1387	500
WDA04	13.97	18.71	31.5304	-0.97	9.24	16.1648	501
WDA05	4.20	18.20	31.5991	4.84	9.49	16.1387	502
WDA06	15.72	18.33	30.6877	-2.26	9.17	16.1317	503
WDA07	12.58	18.20	30.7691	1.83	9.36	16.1561	504
WDB01	11.13	18.35	31.1744	6.78	9.57	16.1335	505
WDB02	7.00	18.56	31.9473	-2.26	9.19	16.1718	506
WDB03	5.77	18.10	31.2669	4.20	9.47	16.1561	507
WD04	5.34	18.46	31.9385	2.69	9.40	16.1578	508
WDB05	5.74	18.00	31.0908	6.78	9.57	16.1422	509
WDB06	-2.34	17.76	31.4961	-0.97	9.24	16.1648	510
WDB07	2.06	18.51	32.3574	1.19	9.34	16.1700	511
RVENT1	-0.18	19.57	34.4530	10.07	9.77	16.2348	512
RSHELF	10.00	19.18	32.7503	4.01	9.52	16.2541	513
RDOOR	3.70	18.42	32.0356	1.40	9.35	16.1700	514
RENVUNIT	9.03	20.76	35.6170	3.15	9.51	16.3036	515
RICE	-11.28	23.63	42.7614	21.83	10.28	16.2859	516
RDRAIN	6.33	19.86	34.3001	11.36	9.82	16.2242	517
RTABLE	-0.24	26.46	46.5925	1.00	9.61	16.6494	518
RVENT2	7.34	21.11	36.3995	2.71	9.46	16.2559	519

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.
	28.2600			46.9700			
	5.00			5.00			
	04/27/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	10.05	19.29	32.9270	2.63	9.33	16.0335	520
FA002	3.72	18.49	32.1510	5.87	9.45	16.0022	521
FA003	8.84	20.32	34.8673	12.60	9.76	16.0335	522
BLANK	2.24	15.84	27.6511	-0.61	9.04	15.7888	523
FA004	5.53	19.10	33.0490	-0.62	9.18	16.0317	524
FA005	1.59	19.45	34.0584	4.37	9.41	16.0439	525
FA006	-1.34	19.14	33.8200	4.15	9.40	16.0404	526
FB001	6.44	20.19	34.8778	11.79	9.77	16.1120	527
FB002	-0.82	20.79	36.6758	7.43	9.57	16.0928	528
FB003	-4.18	18.60	33.1719	0.68	9.24	16.0300	529
FB004	-6.05	19.00	34.0684	1.55	9.30	16.0735	530
FB005	4.79	20.79	36.1049	-5.18	8.98	16.0578	531
FB006	7.02	20.19	34.8150	2.21	9.33	16.0823	532
FC001	9.61	20.73	35.5079	4.59	9.43	16.0648	533
FC002	20.03	20.16	33.4783	3.06	9.33	16.0022	534
FC003	10.88	19.80	33.7413	9.33	9.60	15.9953	535
FC004	16.65	20.75	34.8464	3.72	9.39	16.0578	536
FC005	-2.43	18.44	32.7041	5.01	9.42	16.0126	537
FC006	-1.50	21.38	37.7749	6.56	9.54	16.1050	538
FD001	2.90	20.47	35.7267	3.08	9.37	16.0805	539
FD002	9.10	19.63	33.6239	8.26	9.56	16.0092	540
FD003	7.24	25.01	43.2719	7.71	9.66	16.2323	541
FD004	3.18	22.48	39.2317	9.39	9.66	16.0963	542
FD005	12.09	21.99	37.4818	-4.97	9.01	16.0945	543
FD005	8.04	21.32	36.6990	4.80	9.42	16.0352	544
FD005	-3.85	29.25	51.8644	2.25	9.54	16.4287	545
FD005	4.83	20.94	36.3653	8.95	9.63	16.0823	546
FD005	10.60	22.85	39.1390	5.51	9.55	16.2074	547
FD005	-5.92	23.16	41.3731	5.94	9.56	16.1861	548

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.
	28.2600			46.9700			
	5.00			5.00			
	04/27/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FD005	1.01	19.55	34.3001	-1.92	9.12	16.0317	549
FD005	3.71	21.65	37.7257	9.39	9.66	16.0928	550
FD005	-9.58	20.07	36.3197	4.82	9.46	16.0980	551
FD006	8.03	19.78	33.9885	5.46	9.46	16.0543	552
FE001	19.54	22.08	36.8975	5.24	9.45	16.0474	553

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.	
	27.4300			46.9700				
	5.00			5.00				
	04/29/96			05/09/96				
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ				
Run date	Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
Units								
	FE002	13.34	22.60	38.4314	4.19	9.48	16.1896	554
	FE002	-0.74	20.98	37.0250	6.82	9.60	16.1914	555
	FE002	18.04	18.87	31.4016	7.17	9.51	16.0074	556
	FE002	2.23	18.95	33.1401	6.32	9.49	16.0404	557
	FE002	9.05	19.06	32.6387	1.77	9.29	16.0335	558
	FE002	7.59	18.24	31.3414	1.11	9.24	15.9988	559
	FE002	7.08	18.29	31.4794	5.87	9.44	15.9798	560
	FE002	20.16	19.94	33.0730	3.73	9.39	16.0683	561
	FE002	5.46	18.30	31.6625	5.65	9.43	15.9746	562
	FE003	-0.09	18.70	32.9396	9.37	9.64	16.0700	563
	FE004	-0.08	17.97	31.6537	-4.50	8.97	15.9763	564
	FE005	15.73	18.61	31.1790	1.54	9.24	15.9763	565
	FE005	14.68	18.59	31.2471	0.68	9.20	15.9729	566
	BLANK	6.86	15.39	26.4049	6.01	9.33	15.7837	567
	FE005	-0.09	18.93	33.3528	7.20	9.54	16.0578	568
	FE005	12.76	19.70	33.3820	5.23	9.42	16.0057	569
	FE005	18.90	19.76	32.8827	2.85	9.32	16.0092	570
	FE005	11.81	20.00	34.0075	-3.00	9.05	16.0022	571
	FE005	11.54	18.63	31.6275	7.16	9.50	15.9850	572
	FE005	3.38	18.95	33.0252	4.80	9.41	16.0213	573
	FE005	7.03	19.68	33.9268	8.27	9.58	16.0422	574
	FE006	-5.10	39.55	70.1862	4.95	9.71	16.5186	575
	FF001	3.50	29.70	51.9461	-1.07	9.29	16.2680	576
	FF002	7.48	20.92	36.0787	0.25	9.27	16.1208	577
	FF002	26.69	20.01	32.5643	5.44	9.44	16.0144	578
	FF002	3.77	18.10	31.4794	4.57	9.39	15.9901	579
	FF002	7.05	19.72	33.9974	4.15	9.38	16.0144	580
	FF002	7.47	19.32	33.2461	8.24	9.54	15.9781	581
	FF002	9.49	18.84	32.1975	5.00	9.40	15.9850	582

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.
	27.4300			46.9700			
	5.00			5.00			
	04/29/96			05/09/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FF002	16.48	18.87	31.5663	9.11	9.58	15.9798	583
FF002	14.42	18.94	31.8832	10.19	9.63	15.9867	584
FF002	9.05	19.06	32.6387	3.93	9.36	16.0005	585
FF003	10.18	19.11	32.6014	3.93	9.39	16.0369	586
FF004	-4.45	19.95	35.6068	-0.84	9.26	16.1949	587
FF005	16.35	25.25	42.7894	2.44	9.41	16.2003	588
FF006	5.90	21.99	38.1238	-0.19	9.31	16.2198	589
FG001	15.17	20.70	34.9003	1.12	9.29	16.0963	590
FG002	-4.67	18.34	32.7884	5.45	9.44	16.0230	591
FG002	20.64	19.36	32.0172	6.73	9.48	15.9832	592
FG002	15.69	19.19	32.2066	-1.48	9.11	15.9798	593
FG002	-3.42	17.85	31.7857	-3.21	9.05	16.0109	594
FG002	8.08	19.40	33.3333	2.41	9.30	16.0005	595
FG002	-1.79	18.36	32.5180	10.19	9.63	15.9798	596
FG002	4.72	19.80	34.3756	2.42	9.31	16.0283	597
FG002	-2.40	18.61	33.0157	4.57	9.39	15.9988	598
FG002	-0.10	21.69	38.2002	3.08	9.39	16.1156	599
FG003	17.52	20.07	33.5583	7.17	9.50	15.9901	600
FG003	13.51	19.97	33.7964	1.98	9.30	16.0317	601
FG003	1.07	18.85	33.0921	7.60	9.52	15.9953	602
FG003	8.87	18.68	31.9903	7.16	9.49	15.9729	603

Radioisotope Analysis Report
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Building 4, Room 316

Background	H-3			C-14			Wipe No.
	27.4300			45.6300			
	5.00			5.00			
	04/29/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FG003	13.99	18.38	30.9427	1.26	9.09	15.7314	604
FG003	11.66	19.75	33.5879	1.70	9.14	15.7961	605
FG003	5.01	18.66	32.3432	8.39	9.42	15.7586	606
FG003	-0.65	18.19	32.1071	5.37	9.29	15.7586	607
FG003	-4.03	18.07	32.2429	11.61	9.54	15.7263	608
FG004	6.41	19.54	33.7565	4.72	9.26	15.7688	609
FG004	4.89	18.23	31.5925	9.24	9.44	15.7229	610
FG004	2.29	19.43	33.9772	1.91	9.13	15.7603	611
FG004	10.48	18.66	31.7857	6.01	9.30	15.7365	612
FG004	1.59	18.21	31.9010	6.00	9.29	15.7145	613
FG004	5.64	18.93	32.7603	5.57	9.27	15.7128	614
FG004	14.21	18.67	31.4275	-0.46	8.99	15.7043	615
FG004	13.80	21.31	36.1129	-2.42	8.96	15.8115	616
FG004	1.19	20.93	36.7277	7.79	9.45	15.8476	617
FG005	-5.08	22.75	40.6013	7.62	9.49	15.9411	618
FG006	19.23	19.02	31.5489	5.14	9.26	15.7263	619
WAA01	22.93	20.47	33.7465	4.07	9.22	15.7450	620
WAA02	1.01	17.84	31.3156	7.93	9.36	15.6908	621
WAA03	12.00	17.75	30.0324	12.85	9.56	15.6588	622
WAA04	11.19	19.92	33.9268	2.56	9.17	15.7654	623
WAA05	7.50	19.39	33.3722	12.49	9.59	15.7484	624
WAA06	13.45	19.09	32.2429	8.39	9.41	15.7467	625
WAB01	-4.28	16.79	30.0087	6.83	9.28	15.6336	626
WAB02	8.24	18.50	31.7328	5.35	9.26	15.7060	627
WAB03	5.25	17.60	30.4564	0.18	9.02	15.7009	628
WAB04	0.99	17.47	30.6606	3.83	9.16	15.6588	629
WAB05	9.77	18.34	31.2985	4.71	9.23	15.7111	630
WAB06	12.75	19.68	33.3528	5.58	9.28	15.7365	631
WBA01	7.50	18.01	30.9427	7.06	9.32	15.6874	632

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.
	27.4300			45.6300			
	5.00			5.00			
	04/29/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WBA02	11.50	18.57	31.5315	3.84	9.18	15.6959	633
WBA03	2.05	17.40	30.4240	12.44	9.56	15.6891	634
WBA04	6.94	17.94	30.8759	6.85	9.31	15.6908	635
WBA05	3.21	18.01	31.3844	4.70	9.22	15.6959	636
WBA06	7.98	19.18	32.9491	7.53	9.39	15.7671	637
WBA07	3.55	19.93	34.7306	4.08	9.24	15.7791	638
WBB01	-0.08	18.18	32.0172	2.77	9.15	15.7263	639
WBB05	28.94	20.12	32.5365	2.78	9.17	15.7586	640
WBB03	9.67	19.19	32.8073	5.58	9.29	15.7518	641
WBB04	21.41	20.09	33.2171	4.93	9.26	15.7518	642
WBB05	10.86	18.40	31.2899	7.72	9.36	15.7111	643
WBB06	7.07	18.28	31.4621	10.10	9.48	15.7212	644
WBB07	15.76	18.64	31.2215	7.93	9.36	15.6925	645
WCA01	15.76	19.28	32.3524	5.58	9.29	15.7450	646
WCA02	14.90	18.87	31.7152	2.55	9.12	15.6841	647
WCA03	6.42	19.60	33.8464	6.66	9.34	15.7433	648
BLANK	3.38	16.22	28.2095	9.58	9.37	15.5852	649
WCA04	20.50	19.74	32.6947	4.93	9.25	15.7229	650
WCA05	11.48	21.55	36.7749	7.61	9.49	15.9289	651
WCA06	5.81	19.49	33.7266	7.96	9.40	15.7552	652
WCB01	-6.69	17.48	31.4968	-1.75	8.93	15.7043	653
WCB02	23.49	22.04	36.4351	3.43	9.22	15.7996	654
WCB03	1.71	19.61	34.3653	1.48	9.11	15.7569	655
WCB04	1.61	18.48	32.3799	2.77	9.15	15.7297	656
WCB05	11.21	21.04	35.9087	3.22	9.23	15.8270	657
WCB06	17.33	19.84	33.1882	1.48	9.10	15.7331	658
WDA01	9.20	20.66	35.4302	3.43	9.22	15.7961	659
WDA02	7.29	22.23	38.3926	2.36	9.21	15.8528	660
WDA03	18.32	19.16	31.8832	8.15	9.38	15.6976	661

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 316

Background	H-3			C-14			Wipe No.
	27.4300			45.6300			
	5.00			5.00			
	04/29/96			05/10/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WDA04	17.92	18.74	31.1875	11.38	9.53	15.7128	662
WDA05	3.80	18.23	31.7152	13.10	9.59	15.7026	663
WDA06	4.81	17.92	31.0604	7.50	9.34	15.6908	664
WDA07	6.95	19.44	33.5190	6.01	9.31	15.7518	665
WDB01	41.29	20.70	32.3982	9.91	9.49	15.7620	666
WDB02	11.63	19.69	33.4797	10.33	9.50	15.7433	667
WDB03	21.85	19.99	33.0061	4.93	9.26	15.7433	668
WDB04	16.50	18.90	31.6012	6.43	9.30	15.7026	669
WDB05	19.33	18.61	30.8176	5.99	9.27	15.6824	670
WDB06	12.10	18.68	31.6625	6.00	9.30	15.7263	671
WDB07	26.14	19.60	31.8921	4.28	9.22	15.7212	672
RSINK	19.01	20.47	34.1293	4.09	9.27	15.8253	673
RDOOR	22.55	20.13	33.1786	0.18	9.06	15.7688	674
RTABLE1	4.31	24.18	42.1272	1.72	9.27	16.0164	675
RTABLE2	17.70	19.65	32.8073	5.59	9.30	15.7671	676
RTABLE3	1.93	22.05	38.6392	0.62	9.14	15.8821	677
RVENT	30.98	20.43	32.8922	3.63	9.19	15.7297	678
RCABIN	10.74	20.15	34.3860	7.98	9.42	15.7893	679
RREF	21.03	20.25	33.5387	4.32	9.31	15.8838	680
RHOVENT1	9.11	23.55	40.5293	5.22	9.39	15.9516	681
RHOVENT2	8.71	29.21	50.5452	-1.57	9.11	16.0041	682
RDRAIN1	26.59	26.30	43.6220	14.02	9.82	16.0199	683
RDRAIN2	12.40	34.68	59.7977	11.22	9.74	16.1012	684
RDRAIN3	16.55	21.74	36.5984	0.83	9.11	15.8081	685

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	28.8300			49.6700			
	5.00			5.00			
	05/07/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	10.44	20.05	34.2234	-0.73	9.46	16.5088	686
FA002	14.43	19.39	32.6669	2.31	9.56	16.4480	687
FA003	15.86	23.03	38.9352	0.80	9.63	16.6919	688
FA004	8.37	19.24	33.0076	2.73	9.56	16.4285	689
FA005	0.48	18.79	32.9983	2.95	9.58	16.4338	690
BLANK	-0.07	15.72	27.6650	-6.04	9.03	16.1801	691
FA006	-0.68	19.68	34.6898	1.01	9.53	16.5016	692
FB001	15.94	19.29	32.3510	0.14	9.43	16.4001	693
FB001	11.64	19.23	32.6669	0.57	9.44	16.3789	694
FB001	15.63	19.56	32.8502	2.95	9.57	16.4178	695
FB001	20.15	20.95	34.8550	2.09	9.54	16.4338	696
FB001	18.13	19.97	33.3271	6.41	9.72	16.4303	697
FB001	-1.20	18.48	32.6214	-0.51	9.41	16.4125	698
FB001	-1.31	20.12	35.5321	2.75	9.63	16.5357	699
FB001	20.14	20.36	33.8278	-2.89	9.34	16.4712	700
FB001	7.12	18.83	32.4137	7.91	9.77	16.3966	701
FB002	17.56	19.93	33.3176	0.36	9.46	16.4338	702
FB003	5.56	19.09	33.0263	1.22	9.50	16.4320	703
FB004	-5.40	19.34	34.5771	-2.68	9.38	16.5178	704
FB005	10.93	18.94	32.2263	-2.66	9.30	16.3860	705
FB005	14.51	19.51	32.8686	-1.16	9.38	16.4125	706
FB005	12.06	19.04	32.2974	-2.66	9.30	16.3895	707
FB005	8.54	19.62	33.6528	1.22	9.52	16.4641	708
FB005	18.97	20.28	33.7985	1.00	9.45	16.3560	709
FB005	-6.39	18.71	33.5660	2.73	9.55	16.4037	710
FB005	10.41	20.01	34.1535	0.14	9.48	16.4873	711
FB005	22.36	20.91	34.5873	3.61	9.62	16.4676	712
FB005	5.87	20.17	34.8966	1.88	9.56	16.4855	713
FB006	12.48	19.71	33.4318	-0.08	9.44	16.4249	714

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NATICK, MASS
Building 4, Room 317

Background Run time Run date Units	H-3			C-14			Wipe No.
	28.8300			49.6700			
	5.00			5.00			
	05/07/96			05/08/96			
	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FC001	-1.26	19.38	34.2234	5.34	9.69	16.4498	715
FC002	15.67	20.31	34.1634	-7.43	9.12	16.4463	716
FC003	0.53	20.93	36.7592	0.36	9.55	16.5772	717
FC003	5.22	19.94	34.5567	0.36	9.49	16.4730	718
FC003	18.57	20.44	34.1236	-1.16	9.40	16.4445	719
FC003	8.10	19.93	34.2434	4.47	9.64	16.4374	720
FC003	6.95	19.92	34.3338	-4.19	9.27	16.4569	721
FC003	13.38	22.12	37.5732	8.61	9.86	16.5106	722
FC003	9.63	20.76	35.5536	-3.98	9.30	16.4873	723
FC003	-3.51	22.51	39.9448	-2.48	9.44	16.6062	724
FC003	9.06	22.29	38.2984	5.19	9.81	16.6809	725
FC004	23.94	20.84	34.3136	-0.72	9.42	16.4374	726
FC004	2.33	20.25	35.3817	2.53	9.59	16.4873	727
FC004	17.46	22.63	38.0742	-0.08	9.52	16.5646	728
FC004	14.14	21.39	36.2247	6.88	9.79	16.5106	729
FC004	6.04	20.77	35.9246	1.23	9.56	16.5285	730
FC004	3.46	19.90	34.6487	-3.11	9.33	16.4641	731
FC004	-8.63	21.33	38.4115	-2.48	9.44	16.6135	732
FC004	-9.09	19.43	35.1164	-2.89	9.33	16.4587	733

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
 NATICK, MASS
 Building 4, Room 317

Background	H-3			C-14			Wipe No.
	28.8300			46.9700			
	5.00			5.00			
	05/07/96			05/09/96			
Run time							
Run date							
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FC004	-6.56	21.13	37.8404	0.91	9.34	16.2003	734

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	30.9000			46.9700			
	5.00			5.00			
	05/01/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FC005	3.52	22.23	38.7007	11.99	9.76	16.0805	735
FC005	-1.53	20.97	36.9744	3.07	9.36	16.0666	736
FC005	9.29	21.16	36.2653	5.45	9.45	16.0404	737
FC005	-2.22	21.77	38.4548	6.14	9.54	16.1384	738
FC005	1.44	19.99	34.9660	9.34	9.61	16.0196	739
FC005	1.61	22.26	38.9373	7.24	9.60	16.1631	740
FC005	0.93	21.40	37.4898	3.29	9.38	16.0753	741
FC005	4.54	21.10	36.6164	1.99	9.30	16.0474	742
FC005	3.81	20.38	35.4266	-5.83	8.95	16.0509	743
FC006	31.89	28.19	46.4914	19.66	10.22	16.3110	744
FD001	-4.99	19.96	35.5515	-2.78	9.07	16.0109	745
FD002	-3.97	20.81	36.9405	0.03	9.27	16.1384	746
FD003	-16.80	22.67	41.4869	3.31	9.42	16.1402	747
FD004	-15.12	21.31	38.9373	1.34	9.34	16.1596	748
FD005	-11.79	19.14	34.7850	0.68	9.23	16.0196	749
FD005	2.57	19.82	34.5566	0.68	9.23	16.0248	750
FD005	-7.91	19.75	35.4681	1.98	9.29	16.0248	751
FD005	-5.41	21.61	38.4792	6.57	9.54	16.1103	752
FD005	-6.91	22.29	39.8345	-0.19	9.26	16.1331	753
FD005	-12.94	21.02	38.1999	-1.71	9.18	16.1191	754
FD005	-10.50	20.07	36.2979	-1.92	9.13	16.0491	755
FD005	-0.29	19.69	34.6159	5.65	9.44	15.9919	756
FD005	-16.25	20.20	37.1104	-3.24	9.11	16.1243	757
FD006	-13.13	20.29	36.9405	1.78	9.34	16.1314	758
FE001	-19.63	21.81	40.2719	-4.14	9.14	16.2501	759
FE002	-14.19	19.15	35.0470	-1.92	9.13	16.0509	760
FE003	-12.52	19.35	35.2306	-0.62	9.21	16.0893	761
FE004	-2.60	19.72	34.8954	-2.36	9.12	16.0683	762
FE005	-14.88	17.79	32.7427	1.97	9.25	15.9574	763

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	30.9000			46.9700			
	5.00			5.00			
	05/01/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FE005	3.10	19.59	34.0989	10.86	9.67	16.0126	764
FE005	-4.42	20.04	35.6247	8.92	9.60	16.0283	765
FE005	-18.06	19.37	35.8251	-0.18	9.19	16.0248	766
FE005	-11.90	19.33	35.1386	0.68	9.24	16.0300	767
FE005	-17.44	19.37	35.7721	-1.49	9.15	16.0561	768
FE005	-0.31	21.38	37.5830	-3.23	9.09	16.0928	769
FE005	-12.16	19.75	35.8995	-0.62	9.19	16.0474	770
FE005	-11.22	19.18	34.8051	-0.84	9.19	16.0700	771
FE006	-16.24	21.02	38.5405	1.34	9.33	16.1331	772
FF001	-9.83	24.53	44.0543	-6.11	9.04	16.2251	773
FF002	-18.77	19.46	36.0599	-0.62	9.17	16.0230	774
FF003	-9.69	20.99	37.8297	-0.19	9.27	16.1613	775
FF004	-14.70	20.71	37.8415	0.47	9.29	16.1384	776
FF005	-12.11	21.87	39.6128	-5.03	9.12	16.2805	777
FF006	-6.52	21.04	37.5946	-1.70	9.14	16.0561	778
FG001	-19.72	22.71	41.8600	-1.74	9.34	16.4087	779
FG002	-7.88	21.27	38.1397	-2.37	9.15	16.1279	780
FG003	-25.16	19.95	37.5946	-3.69	9.14	16.2145	781
FG004	4.40	20.47	35.5202	3.52	9.41	16.1138	782
FG005	-15.30	22.55	41.1343	-4.17	9.20	16.3579	783
FG006	9.62	20.62	35.2820	-3.88	9.05	16.0613	784
WAA01	-1.35	18.52	32.6544	-1.69	9.08	15.9471	785
WAA02	-9.60	17.33	31.3841	-2.77	9.02	15.9264	786
WAA03	-15.22	17.53	32.3143	-1.69	9.09	15.9574	787
WA004	3.07	19.38	33.7283	0.25	9.21	16.0109	788
WAA05	-2.94	18.26	32.3662	-1.70	9.11	15.9901	789
WAA06	7.76	18.86	32.3662	1.11	9.22	15.9694	790
WAB01	-3.61	18.93	33.6065	1.54	9.25	15.9815	791
WAB02	-11.57	17.89	32.5665	-2.99	9.04	15.9798	792

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	30.9000			46.9700			
	5.00			5.00			
	05/01/96			05/09/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WAB03	3.63	19.46	33.8226	-6.68	8.89	16.0144	793
WAB04	-6.98	17.42	31.2868	-0.18	9.13	15.9213	794
WAB05	-7.21	18.00	32.3230	-5.80	8.92	15.9884	795
WAB06	-18.83	17.72	33.0197	5.87	9.45	16.0057	796
WBA01	7.61	19.85	34.1182	-0.62	9.17	16.0230	797
WBA02	-16.10	21.72	39.7560	0.03	9.27	16.1472	798
WBA03	-14.56	19.65	35.9635	0.47	9.26	16.0910	799
WBA04	-5.14	18.37	32.7605	2.19	9.26	15.9522	800
WBA05	0.27	18.79	32.9657	3.70	9.34	15.9677	801
WBA06	-1.45	19.83	34.9761	4.14	9.38	16.0040	802
WBA07	3.65	19.56	33.9936	-5.82	8.94	16.0404	803
WBB01	-5.03	17.98	32.0660	-4.50	8.96	15.9694	804
WBB02	-4.85	19.40	34.5566	5.44	9.44	16.0126	805

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	29.5000			46.9700			
	5.00			5.00			
	05/04/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WBB03	-6.67	19.13	34.3096	-1.48	9.14	16.0283	806
WBB04	-6.68	17.60	31.6239	-2.77	9.03	15.9505	807
WBB05	-1.85	17.64	31.1988	2.19	9.28	15.9832	808
WBB06	-9.01	16.82	30.4837	-2.99	9.02	15.9471	809
WBB07	8.09	18.03	30.8894	2.62	9.29	15.9677	810
WCA01	-7.96	20.97	37.6729	0.69	9.39	16.2930	811
WCA02	-9.81	18.30	33.1656	-2.14	9.14	16.0770	812
WCA03	3.34	17.46	30.3664	5.63	9.40	15.9264	813
WCA04	3.00	22.58	39.3904	-2.84	9.27	16.3724	814
WCA05	13.11	19.51	33.0176	8.06	9.57	16.0439	815
WCA06	3.86	17.53	30.4366	-1.47	9.07	15.9042	816
WCB01	-0.25	17.05	29.9970	0.89	9.18	15.9162	817
WCB02	-1.46	19.59	34.5903	-0.19	9.26	16.1331	818
BLANK	3.55	16.14	28.0294	4.74	9.30	15.8175	819
WCB03	-7.71	16.30	29.4448	2.61	9.24	15.8871	820
WCB04	-4.83	16.83	30.0808	-5.14	8.92	15.9471	821
WCB05	5.80	17.30	29.8307	3.26	9.29	15.9282	822
WCB06	2.75	17.00	29.6068	0.68	9.16	15.8939	823
WDA01	-6.97	16.99	30.5782	-2.77	9.04	15.9591	824
WDA02	3.54	18.55	32.2529	0.90	9.23	16.0022	825
WDA03	7.65	18.19	31.2235	4.34	9.35	15.9488	826
WDA04	6.32	17.38	29.9287	-1.26	9.10	15.9436	827
WDA05	-1.49	19.98	35.2706	-0.84	9.22	16.1138	828
WDB01	-4.95	17.26	30.8491	6.95	9.49	15.9953	829
WDB02	15.08	18.66	31.3226	1.98	9.26	15.9729	830
WDB03	6.63	18.23	31.3891	-3.00	9.05	16.0005	831
WDB04	2.50	18.85	32.8892	-2.13	9.10	16.0178	832
WDB05	10.77	18.29	31.1004	1.11	9.21	15.9591	833
RDRAIN1	15.54	19.89	33.4373	9.16	9.63	16.0666	834

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317

Background	H-3			C-14			Wipe No.
	29.5000			46.9700			
	5.00			5.00			
	05/04/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RDRAIN2	1.81	17.52	30.6177	2.19	9.27	15.9660	835
RDRAIN3	2.42	18.24	31.8279	1.54	9.25	15.9815	836
RTABLE1	-3.09	18.72	33.2308	1.34	9.30	16.0963	837
RTABLE2	3.84	20.10	34.9581	-2.58	9.14	16.1120	838
RTABLE3	-12.79	20.26	36.9323	-0.40	9.24	16.1156	839
RTABLE4	-2.01	19.25	34.0530	6.10	9.48	16.0300	840
RTABLE5	-7.91	19.28	34.6917	1.78	9.35	16.1349	841
RCABNET	-7.76	18.90	34.0138	0.25	9.22	16.0335	842
RVENT	16.46	20.37	34.1907	6.96	9.51	16.0213	843
RFUNNEL	7.54	20.72	35.6853	5.69	9.50	16.0980	844
RFILTER	13.32	20.67	35.0305	2.64	9.34	16.0543	845
RSHELF	-0.31	20.60	36.2425	5.24	9.46	16.0596	846
RTABLE6	0.32	21.26	37.3519	9.39	9.65	16.0893	847
RHOVENT1	2.13	20.57	35.9454	-3.02	9.12	16.1208	848
RHOVENT2	21.26	23.21	38.7203	10.94	9.75	16.1331	849
RHOVENT3	7.93	21.79	37.5295	2.87	9.39	16.1243	850
RHOVENT4	16.50	24.56	41.5472	3.53	9.44	16.1631	851
RHOVNET5	12.91	21.92	37.2578	4.18	9.46	16.1402	852
RHOVENT6	-1.19	26.67	47.0088	4.68	9.61	16.3706	853

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 317B

Background	H-3			C-14			Wipe No.
	30.9000			46.9700			
	5.00			5.00			
	05/01/96			05/09/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RHOOD1	-6.63	23.69	42.2546	5.73	9.56	16.1949	854
RHOOD2	2.16	21.40	37.3740	0.03	9.28	16.1649	855
RHOOD3	-3.44	21.34	37.8179	6.58	9.56	16.1349	856
RHOOD4	-5.41	21.63	38.5160	3.51	9.38	16.0631	857
RHOOD5	13.47	21.36	36.2218	2.85	9.34	16.0335	858
RHOOD6	6.01	22.13	38.2845	7.87	9.60	16.1015	859
RHOOD7	-0.33	22.43	39.4321	-1.27	9.18	16.0893	860
RHOOD8	-4.46	20.25	36.0063	6.32	9.49	16.0387	861
RHOOD9	5.13	23.86	41.4017	7.05	9.63	16.2287	862
RCVENT1	-17.72	23.90	43.7517	-1.72	9.21	16.1808	863
RCVEN2	11.33	25.80	44.2153	3.75	9.47	16.1949	864
RCAB1	-1.03	23.71	41.7445	5.91	9.50	16.0910	865
RCAB2	-19.81	26.74	48.9354	-5.66	9.04	16.2020	866
RVENT1	0.33	22.59	39.6388	2.21	9.35	16.1015	867
RVENT2	13.15	26.62	45.4781	3.98	9.50	16.2287	868
RFLOOR1	14.48	22.96	38.9373	2.86	9.38	16.1103	869
RFLOOR2	0.36	24.81	43.5314	7.25	9.61	16.1772	870
RFLOOR3	5.10	23.71	41.1483	1.12	9.33	16.1578	871
RVENT3	-0.28	19.59	34.4386	1.76	9.27	16.0022	872
RVENT4	7.04	21.47	37.0310	10.66	9.68	16.0456	873
RVENT5	4.77	22.20	38.5160	3.51	9.40	16.0893	874
RHOVENT	-5.39	19.24	34.3214	11.47	9.67	15.9591	875
RWALL1	2.52	24.91	43.5001	1.56	9.34	16.1490	876
RWALL2	15.53	21.84	36.8618	3.94	9.39	16.0404	877

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 318

Background	H-3			C-14			Wipe No.
	30.4000			49.6700			
	5.00			5.00			
	05/04/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RSINK1	-9.10	20.22	36.4315	1.01	9.53	16.5070	878
RSINK2	1.26	21.63	37.8795	1.01	9.55	16.5375	879
RTABLE	13.26	23.39	39.8000	0.58	9.54	16.5591	880
BLANK	0.95	16.23	28.4141	-5.20	9.10	16.2250	881
RDOOR1	2.25	19.38	33.8248	3.82	9.63	16.4552	882
RDOOR2	-5.03	18.80	33.5226	-7.01	9.15	16.4605	883
ROVEN1	-9.04	23.24	41.7373	-6.43	9.28	16.6462	884
ROVEN2	-10.80	21.10	38.1564	-6.62	9.23	16.5754	885
RSINK3	-26.18	30.45	56.1375	-2.72	9.51	16.7582	886
RVENT1	-6.60	20.12	36.0054	0.36	9.52	16.5393	887
RVENT2	-24.70	31.05	57.0442	-2.75	9.60	16.9148	888
BLANK	-4.71	15.81	28.2537	-6.69	9.03	16.2216	889
RDRAIN	-14.60	19.12	35.0593	-5.52	9.27	16.5483	890
RFLOOW	-13.51	23.53	42.7020	7.38	9.89	16.6572	891

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320A

Background	H-3			C-14			Wipe No.
	29.5000			45.6300			
	5.00			5.00			
	05/02/96			05/10/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RVENT1	4.56	20.73	35.9891	-1.77	9.02	15.8631	892
RSHELF1	0.35	23.84	41.8854	4.78	9.37	15.9533	893
RVENT2	-6.63	19.04	34.1414	-2.86	8.96	15.8493	894
RFLOOR	41.91	23.81	37.8657	7.03	9.56	16.1065	895
FDOOR1	-9.95	18.57	33.6560	3.43	9.21	15.7808	896
RTABLE	3.19	19.68	34.2798	-0.03	9.13	15.9046	897
ROUTLET	0.27	18.21	31.9827	-4.13	8.84	15.7280	898
RDOOR2	2.32	17.52	30.5624	1.04	9.06	15.7009	899
RSHELF2	6.83	17.43	29.9590	2.33	9.11	15.6824	900
RDESK	-6.89	19.77	35.4502	-1.33	9.03	15.8321	901

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	30.9000			48.3000			
	5.00			5.00			
	05/01/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	1.93	26.77	46.8333	2.33	9.65	16.6088	902
FA002	0.35	23.85	41.8600	6.24	9.70	16.4089	903
FA003	-12.82	21.93	39.7952	-0.55	9.40	16.4071	904
FA004	12.55	28.59	48.9948	0.33	9.58	16.6439	905
FA005	-7.44	24.00	42.8835	2.53	9.57	16.4648	906
FA006	12.88	24.69	42.1222	-3.43	9.37	16.5831	907
FB001	18.97	25.70	43.3132	0.55	9.45	16.3963	908
FB002	-21.19	31.24	56.9761	-4.96	9.27	16.5174	909
FB003	11.44	23.16	39.5610	-0.55	9.39	16.3820	910
FB004	5.55	25.80	44.7714	-1.87	9.42	16.5337	911
FB005	-9.49	23.69	42.5517	-3.18	9.30	16.4269	912
FB006	0.34	23.46	41.1763	3.17	9.54	16.3659	913
FC001	4.17	26.32	45.8225	0.99	9.50	16.4629	914
FC002	9.70	22.10	37.8770	2.29	9.49	16.3481	915
FC003	-14.01	22.76	41.3593	2.73	9.52	16.3534	916
FC004	2.88	22.25	38.7876	1.42	9.50	16.4233	917
FC005	-8.03	25.91	46.2958	0.33	9.50	16.5010	918
FC006	-4.94	25.89	45.9617	-4.10	9.35	16.5978	919
FD001	16.06	23.46	39.6518	4.08	9.67	16.5155	920
FD002	4.58	24.54	42.6567	3.83	9.61	16.4233	921
FD003	106.86	34.09	50.3190	25.47	10.57	16.5301	922
FD004	-11.42	23.21	41.8889	-3.18	9.29	16.4251	923
FD005	-10.29	23.86	42.9291	4.50	9.66	16.4629	924
FD009	15.93	34.13	58.4060	5.20	9.76	16.5868	925
FE001	-0.33	22.89	40.2318	9.05	9.79	16.3570	926
FE002	13.87	24.07	40.9395	8.84	9.79	16.3713	927
FE002	-2.23	21.83	38.5528	1.63	9.45	16.3303	928
FE002	-8.75	20.31	36.5280	12.23	9.86	16.2313	929
FE002	19.75	24.14	40.5011	5.76	9.61	16.2895	930

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	30.9000			48.3000			
	5.00			5.00			
	05/01/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FE002	3.79	23.95	41.6869	7.32	9.74	16.3874	931
FE002	29.52	24.45	40.1384	8.61	9.77	16.3409	932
FE002	11.64	24.95	42.6868	2.51	9.50	16.3445	933
FE002	9.75	22.21	38.0677	-0.54	9.34	16.2895	934
FE002	3.42	21.58	37.5713	0.33	9.36	16.2577	935
FE003	20.48	24.25	40.6371	4.24	9.55	16.2948	936
BLANK	2.79	17.64	30.6994	-1.82	9.12	16.0163	937
FE004	1.75	24.28	42.4622	4.46	9.56	16.2948	938
FE005	3.85	24.32	42.3433	4.48	9.61	16.3856	939
FE005	-7.95	23.36	41.8166	-1.20	9.37	16.3999	940
FE005	12.61	22.98	39.1388	6.64	9.66	16.3125	941
FE005	1.05	24.16	42.3285	1.64	9.49	16.3820	942
FE005	25.98	35.20	59.3221	1.46	9.74	16.8326	943
FE005	4.41	23.61	41.0367	1.64	9.49	16.3928	944
FE005	-6.01	24.02	42.7774	3.82	9.57	16.3659	945
FE005	6.28	25.81	44.7218	-2.95	9.29	16.3928	946
FE005	0.97	22.40	39.2531	0.33	9.39	16.3107	947
FE006	-14.34	20.21	36.9180	2.72	9.49	16.3054	948
FF001	29.19	39.54	66.6394	13.11	10.22	16.8043	949
FF002	9.27	22.55	38.7007	6.41	9.64	16.2948	950
FF002	4.02	21.51	37.3856	0.98	9.39	16.2683	951
FF002	17.81	22.50	37.8061	0.76	9.39	16.2842	952
FF002	6.34	21.16	36.5390	1.62	9.40	16.2401	953
FF002	-7.12	22.97	41.0506	2.72	9.51	16.3374	954
FF002	1.72	23.84	41.7013	0.33	9.43	16.3910	955
FF002	2.16	21.37	37.3279	7.06	9.67	16.2859	956
FF002	5.32	24.72	42.8987	4.71	9.64	16.4089	957
FF002	-4.74	21.51	38.2361	1.63	9.46	16.3356	958
FF003	1.16	26.66	46.7067	-2.74	9.33	16.4611	959

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	30.9000			48.3000			
	5.00			5.00			
	05/01/96			05/13/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date	Units						
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FF004	11.69	35.66	61.4925	8.21	10.05	16.8723	960
FF005	-8.22	22.19	39.7821	2.73	9.53	16.3820	961
FF005	7.69	25.67	44.3286	6.05	9.74	16.4810	962
FF005	-6.48	20.89	37.3279	4.04	9.57	16.3534	963
FF005	-0.97	22.12	38.9498	3.59	9.53	16.3178	964
FF005	-10.06	20.43	36.8842	4.91	9.61	16.3481	965
FF005	-4.51	23.65	41.9761	4.49	9.64	16.4341	966
FF005	2.99	23.08	40.2452	2.51	9.50	16.3445	967
FF005	5.24	21.54	37.3279	-1.20	9.32	16.3125	968
FF005	5.93	21.84	37.7824	5.10	9.58	16.2859	969
FF006	-1.66	22.76	40.1384	-1.86	9.33	16.3856	970
FG001	10.99	26.72	45.8572	4.72	9.67	16.4629	971
BLANK	8.57	17.34	29.6248	2.67	9.30	15.9856	972
FG002	5.06	23.52	40.8152	7.31	9.72	16.3570	973

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.	
	30.9000			49.6700				
	5.00			5.00				
	05/01/96			05/08/96				
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ				
Run date	Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
Units	FG003	-9.62	25.97	46.5630	4.36	9.88	16.8642	974
	FG004	-2.63	25.76	45.4952	6.34	9.94	16.8064	975
	FG005	23.97	23.92	39.7299	1.89	9.63	16.6007	976
	FG005	-0.31	21.58	37.9364	-3.99	9.33	16.5303	977
	FG005	9.94	25.91	44.5407	-7.14	9.32	16.7674	978
	FG005	-2.36	32.40	57.1375	-2.53	9.61	16.9130	979
	FG005	1.05	24.08	42.1810	-0.29	9.53	16.5989	980
	FG005	11.14	27.08	46.4736	4.37	9.91	16.9036	981
	FG005	124.27	39.65	58.5189	37.94	11.80	17.8338	982
	FG005	11.44	27.82	47.7574	-2.07	9.59	16.8343	983
	FG005	3.51	27.07	47.1986	5.42	9.83	16.6992	984
	FG006	13.22	26.76	45.7186	4.33	9.82	16.7600	985

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	29.5000			49.6700			
	5.00			5.00			
	05/02/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WAA01	8.78	20.89	35.8474	0.79	9.49	16.4463	986
WAA02	16.00	21.22	35.7284	3.38	9.57	16.3983	987
WAA03	11.33	20.20	34.3893	-1.80	9.36	16.4232	988
WAA04	4.37	19.88	34.5097	-0.94	9.39	16.4143	989
WAA05	12.41	20.12	34.1512	-2.67	9.31	16.4019	990
WAA06	-2.29	21.91	38.7457	2.09	9.57	16.4837	991
WAB01	3.02	18.65	32.4830	4.23	9.59	16.3542	992
WAB02	12.20	20.72	35.2286	-2.89	9.33	16.4445	993
WAB03	3.78	19.80	34.4294	4.24	9.60	16.3860	994
WAB04	4.35	19.78	34.3395	7.48	9.75	16.4019	995
WAB05	16.99	20.33	34.0824	3.59	9.57	16.3789	996
WAB06	13.25	18.94	32.0000	-3.30	9.24	16.3314	997
WBA01	7.69	19.60	33.7039	-2.23	9.32	16.3895	998
BLANK	7.21	17.15	29.4302	3.77	9.49	16.2250	999
WBA02	6.99	19.22	33.1007	1.22	9.46	16.3613	1000
WBA03	19.94	20.02	33.2495	4.01	9.58	16.3578	1001
WBA04	-6.04	19.03	34.0726	-3.31	9.27	16.3754	1002
WBA05	13.62	21.13	35.8149	-2.89	9.32	16.4391	1003
WBA06	7.20	21.49	37.0711	0.57	9.48	16.4552	1004
WBA07	4.10	21.47	37.3401	1.01	9.52	16.4766	1005
WBB01	10.36	20.51	35.0305	2.31	9.56	16.4569	1006
WBB02	-2.05	19.63	34.7121	2.52	9.57	16.4569	1007
WBB03	3.79	19.83	34.4795	3.82	9.63	16.4569	1008
WBB04	1.57	21.25	37.1993	0.14	9.50	16.5160	1009
WBB05	23.66	22.00	36.3762	-0.29	9.46	16.4784	1010
WBB06	22.24	22.94	38.1586	3.18	9.62	16.4962	1011
WBB07	-1.94	18.58	32.8618	2.08	9.51	16.3824	1012
WCA01	1.02	22.96	40.2613	4.72	9.74	16.5790	1013
WCA02	9.39	19.68	33.6751	2.29	9.51	16.3701	1014

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	29.5000			49.6700			
	5.00			5.00			
	05/02/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date	Units						
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WCA03	12.42	19.27	32.6623	-0.51	9.39	16.3754	1015
WCA04	23.12	22.60	37.4820	-1.38	9.46	16.5573	1016
WCA05	7.23	18.42	31.6746	7.89	9.74	16.3507	1017
WCA06	2.44	18.41	32.1216	-1.80	9.32	16.3560	1018
WCB01	17.87	18.95	31.5648	-0.94	9.35	16.3454	1019
WCB02	-0.80	17.97	31.6662	6.16	9.66	16.3472	1020
WCB03	16.32	20.19	33.8969	-0.29	9.42	16.4178	1021
WCB04	10.40	19.51	33.2682	7.26	9.74	16.3983	1022
WCB05	5.27	18.98	32.8435	-0.51	9.40	16.3983	1023
WCB06	7.87	18.71	32.1129	5.09	9.62	16.3419	1024
WDA01	18.36	21.98	36.8404	2.52	9.57	16.4480	1025
WDA02	12.00	19.47	33.0453	5.32	9.65	16.3895	1026
WDA03	24.45	20.71	34.0432	-0.29	9.43	16.4320	1027
WDA04	-8.92	23.50	42.2140	-3.82	9.45	16.7397	1028
WDA05	15.99	20.47	34.4193	-0.94	9.39	16.4054	1029
WDA06	1.40	18.87	33.0360	-1.80	9.33	16.3754	1030
WDA07	14.93	20.54	34.6409	3.61	9.63	16.4712	1031
WDB01	8.95	19.95	34.1808	1.87	9.53	16.4391	1032
WDB02	21.02	20.03	33.1749	1.44	9.50	16.4107	1033
BLANK	13.90	17.19	28.8632	0.57	9.35	16.2268	1034
WDB03	20.65	19.68	32.5903	-1.59	9.36	16.4019	1035
WDB04	5.30	19.09	33.0268	4.03	9.61	16.4178	1036
WDB05	5.36	19.28	33.3619	0.79	9.47	16.4054	1037
WDB06	1.89	18.30	31.9914	5.31	9.63	16.3595	1038
WDB07	3.60	18.85	32.7799	1.44	9.49	16.4001	1039
RHOVENT1	-2.04	19.49	34.4695	1.23	9.53	16.4819	1040
RHOVENT2	21.68	22.36	37.1876	10.65	10.02	16.6316	1041
RHOVENT3	34.71	25.51	41.5035	10.70	10.07	16.7121	1042
RHOVENT4	13.35	19.87	33.6273	2.09	9.55	16.4534	1043

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	29.5000			49.6700			
	5.00			5.00			
	05/02/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RHOVENT5	3.25	20.09	34.9994	1.45	9.56	16.5249	1044
RHOVENT6	-16.14	21.24	38.9882	-1.38	9.47	16.5736	1045
RHOVENT7	48.83	24.12	37.7811	7.96	9.84	16.5142	1046
RHOVENT8	42.11	38.22	63.0960	12.13	10.99	18.2055	1047
RHOVENT9	84.25	23.82	34.2699	30.51	10.73	16.4819	1048
RHOVENT10	-0.29	19.55	34.3993	1.44	9.54	16.4891	1049
RSHELF	7.49	20.60	35.4714	3.61	9.63	16.4855	1050
RFRFER	23.67	20.50	33.7520	14.62	10.07	16.4267	1051
RCAB	13.13	20.39	34.5499	5.97	9.69	16.3983	1052
RVENT1	3.16	19.49	33.9553	-2.24	9.34	16.4232	1053
RVEN2	7.01	19.27	33.1749	0.79	9.49	16.4516	1054
RVENT3	19.38	19.45	32.3057	3.81	9.60	16.4125	1055
RDECON	0.34	22.91	40.2476	-4.00	9.36	16.5844	1056
RDOOR1	5.23	18.82	32.5724	3.38	9.59	16.4232	1057
RDOOR2	13.33	20.68	35.0513	3.60	9.60	16.4232	1058
RSINK1	8.09	19.24	33.0268	1.87	9.52	16.4232	1059
RTABLE1	9.32	19.55	33.4468	2.96	9.59	16.4641	1060
RSINK2	15.95	19.73	33.1285	5.12	9.68	16.4587	1061
RTABLE2	128.26	28.36	38.6319	59.76	11.95	16.7176	1062
RGAS	5.20	23.62	41.0146	1.46	9.68	16.7305	1063
RSINK3	1172.52	53.26	32.7255	403.51	20.58	16.4090	1064
RSINK4	52.12	24.59	38.3192	8.09	9.99	16.7767	1065
RDRAIN	6763.37	122.39	33.3056	2904.02	50.10	16.4873	1066
BLANK	-5.47	15.71	28.1695	-4.34	9.13	16.2129	1067

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 322

Background	H-3			C-14			Wipe No.
	29.5000			49.6700			
	5.00			5.00			
	05/02/96			05/08/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RHOOD1	-4.74	20.99	37.3873	-4.45	9.35	16.6171	1068
RHOOD2	-2.16	20.67	36.5559	-0.29	9.43	16.4303	1069
RSINK	-2.02	19.28	34.0922	-3.96	9.25	16.3983	1070
RTABLE1	6.43	20.98	36.2425	0.36	9.53	16.5537	1071
RTABLE2	-8.24	18.65	33.6178	-2.47	9.39	16.5213	1072
RCAB1	-7.60	18.52	33.3337	-6.36	9.18	16.4587	1073
BLANK	2.61	16.15	28.1360	1.21	9.38	16.2216	1074
RWIN1	-7.86	15.57	28.1762	2.70	9.44	16.2198	1075
RFLOVENT	-6.11	19.25	34.4594	-3.12	9.37	16.5411	1076
RDOOR1	1.30	17.58	30.7689	-1.15	9.35	16.3454	1077
RTABLE3	5.14	18.51	32.0260	1.22	9.48	16.4001	1078
BLANK	1.67	16.19	28.2974	-4.34	9.13	16.2216	1079
RFLOOR1	13.52	20.13	34.0530	6.00	9.74	16.4962	1080
RDOOR2	5.16	20.71	35.9018	-0.73	9.48	16.5519	1081
RFLOOR2	1.89	18.28	31.9568	-0.51	9.41	16.4054	1082
RSINK	3.40	20.99	36.5672	-2.70	9.42	16.5953	1083
RWALL	-1.37	18.40	32.4830	-2.02	9.33	16.3930	1084
RCAB2	3.72	19.46	33.8388	-0.51	9.43	16.4391	1085
BLANK	2.61	16.15	28.1400	-3.49	9.17	16.2146	1086
RVENT	2.42	17.98	31.8500	0.36	9.44	16.3860	1087

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 115B

Background	H-3			C-14			Wipe No.
	29.2300			47.9700			
	5.00			5.00			
	05/06/96			05/07/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA001	-6.68	21.66	38.7665	-3.70	9.27	16.4267	1088
FA002	2.40	21.00	36.6905	0.25	9.41	16.3548	1089
FA003	-10.32	18.45	33.5087	1.55	9.37	16.1900	1090
FA004	-3.09	19.94	35.3798	2.64	9.44	16.2304	1091
FA005	5.27	20.25	35.0849	1.34	9.39	16.2393	1092
FA006	-0.09	19.17	33.7100	-2.35	9.20	16.1935	1093
FB001	4.39	19.01	32.9835	1.55	9.35	16.1515	1094
FB001	-15.80	20.13	37.0248	2.00	9.48	16.3458	1095
FB001	-0.08	18.96	33.3569	5.66	9.54	16.1637	1096
FB001	8.13	20.13	34.5804	7.63	9.65	16.2181	1097
FB001	-6.93	18.72	33.6234	0.03	9.31	16.2005	1098
FB001	3.58	20.71	36.0508	-0.40	9.35	16.3066	1099
FB001	-2.48	19.90	35.2422	-1.92	9.24	16.2357	1100
FB001	-6.93	18.71	33.6042	1.77	9.39	16.2005	1101
FB001	7.45	19.85	34.1693	1.33	9.36	16.1918	1102
FB002	-1.20	18.65	32.9190	2.63	9.40	16.1637	1103
FB002	3.45	19.96	34.7538	1.99	9.40	16.2111	1104
FB002	-5.57	20.09	35.8971	1.55	9.40	16.2463	1105
FB002	-6.45	19.00	34.0607	7.63	9.65	16.2146	1106
FB002	2.37	20.76	36.2727	3.96	9.53	16.2853	1107
FB002	6.32	19.87	34.3086	1.33	9.37	16.2076	1108
FB002	4.72	20.42	35.4330	9.36	9.72	16.2146	1109
FB002	1.11	20.26	35.5077	-6.47	9.01	16.2040	1110
FB002	-0.09	19.18	33.7389	0.25	9.31	16.1812	1111
FB003	-0.70	20.45	36.0287	-1.93	9.26	16.2711	1112
FB003	5.95	22.85	39.5868	-4.15	9.26	16.4448	1113
FB003	8.66	20.04	34.3686	-1.92	9.23	16.2164	1114
BLANK	5.82	16.78	28.9203	-0.40	9.15	15.9549	1115
FB003	2.79	19.42	33.8650	0.90	9.34	16.1935	1116

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NATICK, MASS
Building 4, Room 115B

Background	H-3			C-14			Wipe No.
	29.2300			47.9700			
	5.00			5.00			
	05/06/96			05/07/96			
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Run date							
Units							
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FB003	-6.43	20.84	37.3061	-6.96	9.06	16.3244	1117
FB003	-3.57	19.24	34.1892	0.90	9.36	16.2234	1118
FB003	4.12	20.41	35.4756	1.12	9.38	16.2357	1119
FB003	-2.44	19.54	34.6007	-3.44	9.16	16.2164	1120
FB003	-3.54	19.10	33.9430	-5.17	9.06	16.1847	1121
FB004	6.55	20.59	35.5505	-0.62	9.29	16.2269	1122
FB005	1.07	19.41	34.0312	2.85	9.43	16.1865	1123
BLANK	-1.05	16.37	28.8919	0.25	9.18	15.9532	1124
FB006	-4.52	20.93	37.2589	-2.15	9.28	16.3298	1125
FC001	3.56	20.59	35.8534	-0.62	9.33	16.2835	1126
FC002	6.32	19.87	34.3086	-1.05	9.25	16.1795	1127
FC003	-12.58	20.19	36.7936	-1.71	9.29	16.3013	1128
FC004	11.95	19.88	33.7679	-3.86	9.11	16.1655	1129
FC005	1.20	21.77	38.1639	-2.37	9.29	16.3566	1130
FC006	15.02	20.31	34.2388	5.23	9.53	16.1830	1131
FD001	-3.54	22.82	40.4844	-6.37	9.19	16.4956	1132
FD002	-7.66	19.08	34.3386	0.47	9.33	16.1970	1133
FD003	-4.11	19.03	33.8844	0.47	9.32	16.1847	1134
FD004	6.11	19.20	33.1598	0.68	9.30	16.1271	1135
FD005	16.50	20.09	33.7100	7.17	9.61	16.1725	1136
FD006	-8.97	19.31	34.8772	-5.40	9.08	16.2234	1137
FE001	-9.30	20.02	36.1614	-4.32	9.15	16.2622	1138
FE002	-8.78	20.28	36.5540	-3.24	9.21	16.2906	1139
FE003	7.28	19.39	33.3758	2.41	9.39	16.1515	1140
FE004	-0.70	20.36	35.8752	2.42	9.44	16.2446	1141
FE005	3.39	19.59	34.1100	3.28	9.44	16.1742	1142
FE006	-11.63	19.67	35.7880	-1.05	9.28	16.2410	1143
WAA01	0.47	18.50	32.4924	3.48	9.41	16.1028	1144
WAA02	-10.42	17.62	32.0506	6.50	9.53	16.0976	1145

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NATICK, MASS
Building 4, Room 115B

Background	H-3			C-14			Wipe No.	
	29.2300			47.9700				
	5.00			5.00				
	05/06/96			05/07/96				
Run time	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ				
Run date	Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
Units								
	WAA03	10.79	18.82	32.0158	0.25	9.25	16.0906	1146
	WAA04	5.33	18.43	31.8686	5.41	9.47	16.0664	1147
	WAA05	-2.78	17.93	31.8084	4.33	9.42	16.0630	1148
	WAA06	-10.87	17.44	31.7912	2.61	9.35	16.0733	1149
	BLANK	3.90	16.87	29.2795	6.65	9.46	15.9584	1150
	WAB01	-1.71	18.05	31.9204	-1.04	9.20	16.0872	1151
	WAB02	-9.97	17.83	32.3764	-0.40	9.23	16.1011	1152
	WAB03	-7.01	17.46	31.4183	1.32	9.29	16.0733	1153
	WAB04	4.82	18.54	32.1117	-2.55	9.13	16.0941	1154
	WAB05	-6.54	17.67	31.7313	-2.12	9.13	16.0613	1155
	WAB06	-0.08	17.92	31.5191	-5.56	8.98	16.0630	1156
	WBA01	-0.08	18.48	32.5104	0.03	9.25	16.1011	1157
	WBA02	2.14	18.74	32.7452	-3.20	9.11	16.1115	1158
	WBA03	-1.15	17.79	31.3932	1.75	9.30	16.0595	1159
	BLANK	6.88	17.04	29.2795	1.74	9.25	15.9584	1160
	WBA04	-1.16	18.01	31.7912	3.04	9.37	16.0733	1161
	WBA05	-6.39	17.27	31.0132	-1.68	9.13	16.0320	1162
	WBB01	0.47	18.40	32.3142	-4.49	9.04	16.0941	1163
	WBB02	-6.09	17.96	32.1995	-2.77	9.12	16.0993	1164
	WBB03	-1.17	18.22	32.1555	8.00	9.59	16.0872	1165
	WBB04	-4.96	17.87	31.9204	2.83	9.36	16.0803	1166
	WBB05	1.54	18.19	31.8342	-4.70	9.02	16.0682	1167
	WCA01	-1.69	17.84	31.5360	6.69	9.52	16.0544	1168
	WCA02	-8.65	19.97	36.0067	3.08	9.48	16.2587	1169
	WCA03	8.93	19.39	33.2065	-5.79	9.00	16.1236	1170
	WCA04	9.59	20.81	35.6365	1.99	9.41	16.2252	1171
	WCA05	6.12	19.26	33.2628	-3.42	9.11	16.1306	1172
	WCA06	-7.35	19.84	35.6365	-0.83	9.25	16.1742	1173
	WCB01	-3.91	18.10	32.2259	-2.12	9.14	16.0716	1174

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 NATICK, MASS
 Building 4, Room 115B

Background	H-3			C-14			Wipe No.
	29.2300			47.9700			
	5.00			5.00			
	05/06/96			05/07/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
WCB02	-12.52	17.39	31.8600	1.97	9.32	16.0699	1175
WCB03	-3.84	17.77	31.6376	-0.83	9.19	16.0647	1176
WCB04	2.62	18.23	31.7998	-0.40	9.21	16.0630	1177
WCB05	3.20	18.51	32.2259	-2.77	9.11	16.0820	1178
WCB06	-10.87	17.44	31.7826	0.46	9.25	16.0733	1179
WDA01	-8.22	17.70	31.9637	1.11	9.29	16.0785	1180
WDA02	4.25	18.37	31.8772	1.97	9.31	16.0613	1181
WDA03	4.26	18.41	31.9550	-3.63	9.08	16.0855	1182
WDA04	-9.76	17.44	31.6716	6.05	9.50	16.0664	1183
WDA05	1.00	18.08	31.6972	1.11	9.27	16.0544	1184
WDB01	-0.63	18.43	32.4745	-0.18	9.23	16.0872	1185
WDB02	-1.72	18.16	32.1030	-1.47	9.18	16.0889	1186
WDB03	-1.74	18.41	32.5463	0.25	9.26	16.0958	1187
WDB04	-1.19	18.55	32.7361	-2.55	9.14	16.1080	1188
WDB05	-0.61	17.81	31.3765	4.75	9.43	16.0406	1189
RSINK	13.84	23.02	39.1009	1.79	9.50	16.3924	1190
RHOOD1	-1.30	20.15	35.5613	-2.36	9.22	16.2287	1191
RHOOD2	-7.44	18.53	33.3475	0.90	9.31	16.1323	1192
RHOOD3	-4.36	20.19	35.9518	-2.36	9.23	16.2552	1193
RDOOR1	-7.99	18.46	33.2722	-0.62	9.24	16.1376	1194
RPIPE	10.63	21.74	37.1649	1.56	9.42	16.2693	1195
RVISE	-2.36	18.93	33.5182	-1.05	9.23	16.1428	1196
ROVEN1	-5.90	21.28	38.0161	2.66	9.50	16.3315	1197
ROVEN2	16.59	20.89	35.1058	-3.86	9.11	16.1568	1198
RDOOR2	-4.21	19.47	34.6618	-0.40	9.28	16.1795	1199

Radioisotope Analysis Report
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NATICK, MASS
Building 4, Room 310

Background	H-3			C-14			Wipe No.
	28.2600			45.6300			
	5.00			5.00			
	05/31/96			05/31/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
FA006	-2.45	24.32	43.0471	-0.70	9.29	16.2428	A2001
FA007	10.70	19.47	33.1908	-0.68	9.05	15.8184	A2002
FA008	-4.05	24.96	44.3475	-4.29	9.17	16.3228	A2003

Radioisotope Analysis Report
U.S. ARMY SOLDIER SYSTEM COMMAND
NATICK, MASS
Building 4, Room 320

Background	H-3			C-14			Wipe No.
	28.2600			45.6300			
	5.00			5.00			
	05/31/96			05/31/96			
Units	dpm/100cm ² ±2σ			dpm/100cm ² ±2σ			
Sample	H-3DPM	Error rate +/-	MDA	C-14 DPM	Error rate +/-	MDA	
RSINK3	8.85	16.99	29.0067	9.18	9.38	15.6303	A2004
RTABLE	3.50	17.44	30.3266	2.98	9.14	15.6891	A2005