

Historical Radiological Assessment and Survey Plan

Final Status Survey

Naval Air Station, Barbers Point, Hawaii



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Section 1 HISTORICAL RADIOLOGICAL ASSESSMENT

1.1. GLOSSARY OF TERMS ACRONYMS AND ABBREVIATIONS

10CFR30	Title 10, Code of Federal Regulations, Part 30
AEC	Atomic Energy Commission
AP	Activation Products
ANL	Argonne National Laboratory
BRAC	Base Realignment and Closure Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCGL	Derived Concentration Guideline Level
DOE	Department of Energy
DSWA	Defense Special Weapons Agency
EBS	Environmental Baseline Survey
EFDPA	Engineering Field Division, Pacific
EPA	Environmental Protection Agency
FIDLER	Field Instrument for Detection of Low Energy Radiation
H&N	Holmes and Narver, Inc
HRA	Historical Radiological Assessment
keV	kilo electron volts (a thousand electron volts)
LTBT	Limited Test Band Treaty
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MED	Manhattan Engineering District
MeV	million electron volts
MFP	Mixed Fission Products
NaI	Sodium Iodide
NAS	Naval Air Station (NAS Barbers Point)
NAVSEADET RASO	Naval Sea Systems Command Detachment, Radiological Affairs Support Office
PRG	Preliminary Remediation Goal
PTF	Pacific Test Facility
PTP	Pacific Test Program
RAGS	Risk Assessment Guidance for Superfund
RASO	Naval Sea Systems Command Detachment, Radiological Affairs Support Office
SARA	Superfund Amendments and Reauthorization Act

1.2. EXECUTIVE SUMMARY

The Environmental Baseline Survey for Naval Air Station (NAS) Barbers Point indicated eight areas with potential radiological concern based on past operations. The Atomic Energy Commission (AEC) used six of the areas under a lease agreement with the Navy. The other two areas were Navy controlled facilities.

All eight areas are considered non-impacted, having no reasonable potential for residual contamination. However, based on the Department of Energy's (DOE) recommendation to conduct confirmatory surveys of five to ten percent of the AEC facilities, NAVSEADET RASO reclassified several facilities within Site 95 (Lots 1, 2, and 3) as potentially impacted, class 3 areas. Using MARSSIM guidance, NAVSEADET RASO will validate by final status surveys that these areas are releasable for unrestricted use.

1.3. PURPOSE OF THE HISTORICAL ASSESSMENT

This Historical Radiological Assessment (HRA) has been prepared by Naval Sea Systems Command Detachment Radiological Affairs Support Office (NAVSEADET RASO) for Pacific Division Naval Facilities Engineering Command (EFDPA) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The purpose of the HRA is to identify potential, likely, or known sources of radioactive material and radioactive contamination based on existing or derived information; identify sites that need further action as opposed to those posing no threat to human health; and, provide initial classification of the site as impacted or non-impacted.

1.4. PROPERTY IDENTIFICATION

Naval Air Station (NAS) Barbers Point is a 3,709-acre facility located on the southern coast of Oahu, approximately 13 miles west of Pearl Harbor. Figure 1 is a site map of the island of Oahu showing the location of NAS Barbers Point.

1.4.1. Navy Facilities

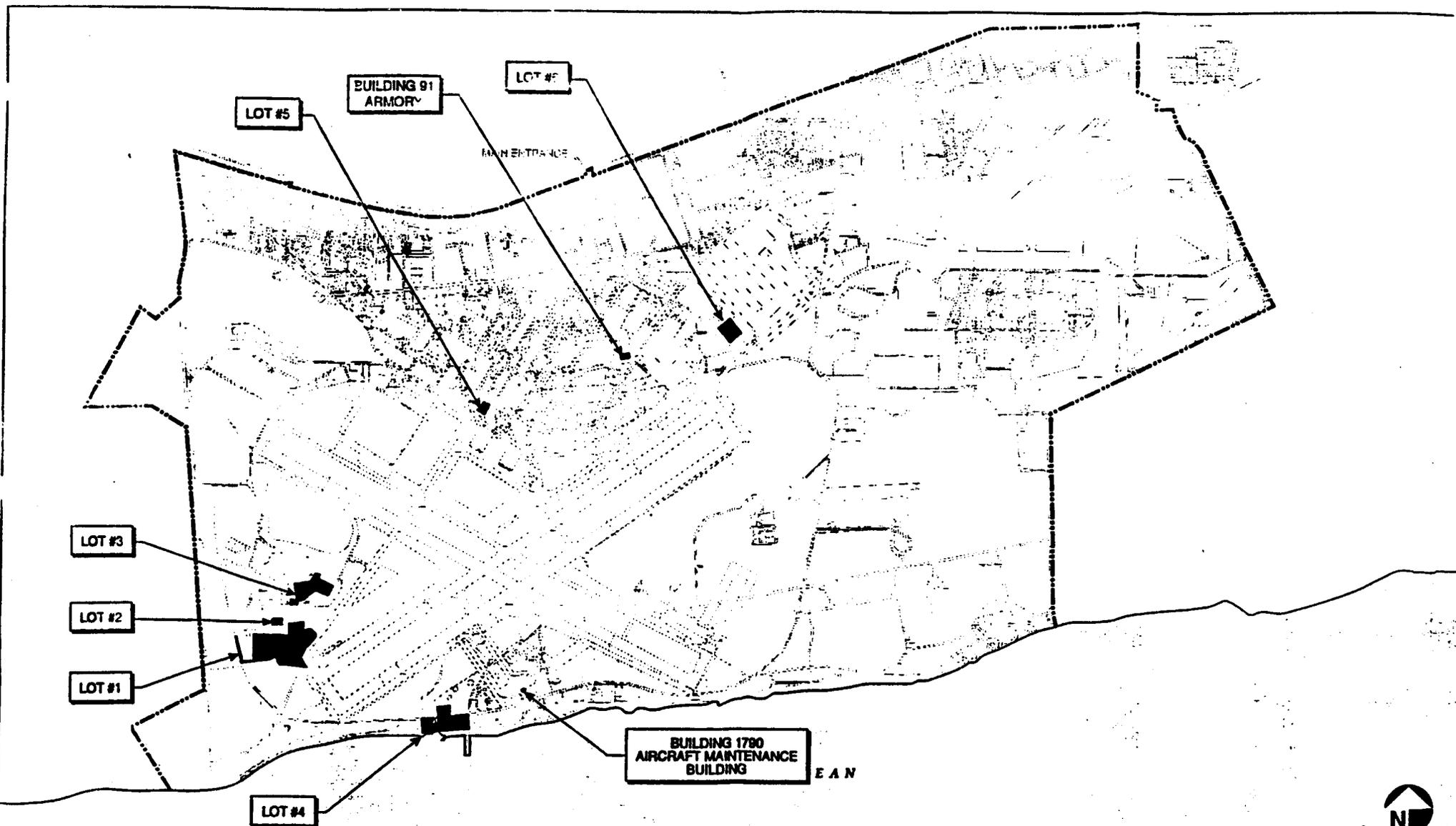
The Environmental Baseline Survey (EBS) identified two locations at NAS Barbers Point controlled by the Navy with some potential for residual radioactive contamination. Building 91 was reported to contain radiation detection instruments with

radioactive check sources. Building 1790 was reported to contain radioactive waste waiting disposal.

1.4.2. AEC Facilities

The Atomic Energy Commission (AEC) leased six areas of property from the Navy at NAS Barbers Point. They are identified in the Environmental Baseline Survey (EBS) and on Figure 2 as Lots 1 through 6. The primary area or compound used by the AEC consisted of Lots 1, 2, and 3. This compound is collectively referred to as Site 95 in AEC records and is located in the southwest corner of the base adjacent to Taxiway 3. The site occupies approximately 25 acres and historically contained about 25 buildings and a loading/maintenance area at the southwest end of the Taxiway.

Lot 4 is located on the beach at the west edge of the Coast Guard Reservation. Lot 5 is a two-story concrete building next to Building 1, NAS Headquarters. This building was designed to serve as an emergency operation center (EOC). Lot 6 is Building 168, a jet fuel storage tank.



SOURCE: PACNAVFACENGCOM 1892c; Ogden, 1983a



Potential Radioactive Material Sites



FIGURE

2

1.5. HISTORICAL ASSESSMENT METHODOLOGY

1.5.1. Navy Areas/Facilities

1.5.1.1. Documents Reviewed

In addition to information contained in the EBS for NAS Barbers Point, NAVSEADET RASO reviewed all records that would have authorized NAS Barbers Point to possess or handle radioactive materials (e.g., an NRC License, Naval Radioactive Material Permit or DOE/DOD facility records), including any notifications of releases of radioactive substances.

1.5.1.2. Property Inspections

Several base departments (Fire, Safety, etc.) routinely inspect all Naval base facilities. The only inspection of facilities specifically for radioactive material occurred during the Environmental Baseline Survey.

1.5.2. AEC Areas/Facilities

1.5.2.1. Approach and Rationale

The AEC utilized six sites on NAS Barbers Point from 1946 to 1977. In 1977 control of the sites reverted back to the Navy. To evaluate the historical use of the sites (specifically Site 95), RASO separated use of the Site's facilities into three time periods: 1946 to 1963; 1963 to 1977; and 1977 to the early 1990s, that correspond to the primary function(s) of the site.

1.5.2.2. Documents Reviewed

Document reviews for this assessment includes reviews by NAS Barbers Point, Defense Special Weapons Agency (DSWA), Department of Energy (DOE), and RASO. Most of the records pertaining to the sites are classified and are not available for inclusion in unclassified documents. RASO has not been able to review each document, but has relied on summaries provided by the other agencies. An unclassified list of documents reviewed is presented in Section 4.

1.5.2.3. Property Inspections

The AEC sites have been inspected several times. Holmes and Narver, Inc. (H&N) conducted a detailed inspection of Site 95 in 1987 to determine requirements for reutilizing the facility for nuclear weapons testing support. NAS Barbers Point and Naval Facilities Engineering Command Pacific Division

(EFDPAC) have conducted inspections in conjunction with the BRAC process. These inspections did not specifically address radiological conditions.

1.5.2.4. Personal Interviews

Personal interviews were very difficult for this facility. The time period of most interest, 1946 to 1963, occurred so long ago that finding persons with firsthand knowledge is extremely difficult. DOE did interview two individuals but they lacked specific knowledge of the time period in question.

1.6. HISTORY AND USAGE

1.6.1. Navy Areas/Facilities

As a Naval Air Station, the mission of Barbers Point was to provide housing, maintenance, and logistics support to the attached Air Wings.

1.6.1.1. History

1.6.1.1.1. Building 91

Building 91 contained radiation detection instruments that supported disaster preparedness. Some of the survey instruments contained exempt quantities of byproduct material, as defined by 10CFR30, that are used to response check the instrument (i.e., a radiation check source). Although not specifically identified, other buildings at NAS Barbers Point also housed survey instruments that were used to support the command's x-ray radiography program.

1.6.1.1.2. Building 1790

The items stored at Building 1790 for disposal were non-licensed materials containing exempt quantities of radioactive material (aircraft counterweights, electron tubes, and an infrared detector). Although it is not required, the Navy typically disposes of all items containing radioactive material, regardless of the quantity, as low-level radioactive waste.

1.6.2. AEC Areas/Facilities

1.6.2.1. History

1.6.2.1.1. Years 1946 to 1963

In 1946 the Navy provided space on NAS Barbers Point to the Manhattan Engineering District (MED) to support the first atomic bomb tests in the Pacific (Operation CROSSROADS). As the weapons test program grew, the facilities became more permanent, providing laboratory and office space for the major laboratories (Sandia, Los Alamos, and Livermore), as well as storage and assembly areas for test devices. The primary purpose of Site 95 was to support the Air-Drop Test Program and Navy-specific weapons tests. Site 95 supported both material going to the Pacific Test Facility (PTF) and test samples and material returned from the PTF. This period has the highest potential for radiological contamination at the Site. Very few unclassified documents from this time period exist. Records of specific operations, procedures, isotopes, or activities are not available for review.

1.6.2.1.2. Years 1963 to 1977

When atmospheric testing of nuclear weapons was prohibited by the Limited Test Ban Treaty (LTBT) of 1963 the support functions of the facility ended. The laboratories were closed and all material on hand was transferred to other activities. The Barbers Point AEC Site then became part of Safeguard C Program. The purpose of Safeguard C Program was to "maintain the capability to resume testing in the prohibited environments." Although some of the buildings were used for non-radioactive test programs, no radioactive material was utilized under Safeguard C.

1.6.2.1.3. Years 1977 to Early 1990s

Under the terms of the Lease Agreement, the AEC transferred the property back to the Navy in 1977. From 1977 to the early 1990s the Navy utilized some of the buildings at Site 95 for storage of special weapons.

1.6.2.2. Future Land Usage

NAS Barbers Point was scheduled for closure under BRAC III in 1993. Since that time the facility has had limited usage by the Navy. Site 95 is scheduled for transfer to the private sector for commercial use not later than July 1999. The

remaining sites are scheduled for transfer not later than December 1999.

1.6.2.3. Adjacent Land Usage

Site 95 is located at the end of the runway, adjacent to Taxiway No. 3. There are no wetlands or other sensitive areas adjacent to the facility. Lot 4 is an archeologically sensitive area.

1.7. FINDINGS

1.7.1. Potential Radiological Contaminants

Potential contaminants at the facility include weapons grade plutonium (Pu-239) and enriched uranium (U-235), tritium (H-3) and mixed-fission products (MFP) and activation products (AP) from the weapons tests and plutonium and uranium from the storage of Navy weapons. MFP or AP with a half-life of 3 years or less will have undergone more than 10 half-lives and are no longer present.

1.7.2. Potential Contaminated Areas

1.7.2.1. Impacted Areas - Known and Potential

1.7.2.1.1. Site 95, Building 286

Building 286 (Payload Storage) was built in 1958 and was used during the PTF operations. Specific records indicating actual usage are not available. This building was designated as impacted because of the potential for weapons/components storage in route to PTF and storage of material from the PTF.

1.7.2.1.2. Site 95, Buildings 11003 through 11014

These buildings were assigned to the laboratories supporting the PTF program. Livermore Laboratory occupied 11003 and 11004, Los Alamos Laboratory occupied 11006 through 11008, and Sandia Laboratory occupied 11010 through 11014. These buildings contained the laboratories for analysis of samples returned from the PTF.

1.7.2.2. Site 95, B-52 Loading and Maintenance Area

This is an irregularly shaped area of approximately 4.3 acres located at the southwest end of Taxiway #3. This area

would have been used for off-loading of material from aircraft from the PTF.

1.7.2.3. Site 95, Buildings 1711, 1712 and 1715 through 1718

These magazines were built in 1965 and were not associated with the Pacific Test Program. The Navy reportedly used them to store special weapons.

1.7.2.4. Site 95, Building 1682

This building was built in 1965 and was subsequently used by the Navy for maintenance of special weapons.

1.7.3. Non-Impacted Areas

1.7.3.1. Lot 4

Lot 4 is located on the southern side of the base, just west of the U. S. Coast Guard Reservation. It is an approximately rectangular area located primarily between Coral Sea Road and the beach. The AEC lease indicates AEC had control of this area. The area contains two World War II era concrete gun emplacements but shows no indication of buildings or other structures. Records do not indicate actual use of the area by the AEC. This area is considered non-impacted.

1.7.3.2. Lot 5

Lot 5 (Building 2) was designed as an emergency operations center. The building is a two-story concrete structure designed to be "hurricane proof" and "blast-resistant". The building contained office space and conference areas. Radioactive material would not have been permitted in this area. Therefore, this building is considered non-impacted.

1.7.3.3. Lot 6

Lot 6 (Building 168) is a jet fuel storage tank. This facility never used radioactive material. It is classed as non-impacted.

1.7.3.4. Building 91

Building 91 (Armory) was listed in the EBS as having "hand-held Geiger counters" in storage. Each counter was said to have a "small radioactive cell stored inside the sealed casing." Radiation detection instruments typically have a

"check source" attached. This source is a very small activity source (typically less than 5 uCi) used to indicate whether or not the instrument is functional. When the detectors were transferred, the sources were transferred. This building is classed as non-impacted.

1.7.3.5. Building 1790

Building 1790 was listed in the EBS as storage of waste material awaiting pickup. Records of disposal of radioactive material from the Low-Level Radioactive Waste Disposal Program, managed by RASO, indicate waste disposal shipments from Barbers Point in 1992 and 1994. Both shipments contained non-licensed, except quantities of radioactive materials. This facility is classed as non-impacted.

Section 2 SURVEY PLAN

2.1. CLASSIFICATION OF SITES

The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (Reference 1) establishes three classification levels for facilities. Class 1 sites are those that have a potential for contamination or have known contamination. Class 2 areas are areas that have a potential for contamination or known contamination, but are not expected to exceed the Derived Concentration Guideline Level (DCGL) for the isotopes of concern. Class 3 areas are impacted areas that are not expected to contain any contamination or are expected to contain contamination at a fraction of the DCGL. Using MARSSIM guidance all impacted areas have been classified as follows:

2.1.1. Building 286

Building 286, Payload Storage, was built in 1958 and was used during the PTF operations. Specific records of actual usage are not available. The Department of Energy (DOE) reported there was no indication of contamination in the building. Building 286 has been classified as CLASS 3 due to the potential use and storage of radioactive material.

2.1.2. Buildings 11003 through 11014

These buildings were assigned to the laboratories supporting the PTF program. Livermore Laboratory occupied 11003 and 11004, Los Alamos Laboratory occupied 11006 through 11008, and Sandia Laboratory occupied 11010 through 11014. These buildings contained the laboratories for analysis of samples returned from the PTF. The buildings would be classified as CLASS 2 for the laboratory and material handling areas and CLASS 3 for the remainder of the building. However, EFDPAC has reported the buildings no longer exist. The date of removal is unknown. The land area occupied by the buildings is classified as CLASS 3.

2.1.3. B-52 Loading and Maintenance Area

This is an irregularly shaped area of approximately 4.3 acres located at the southwest end of Taxiway #3. This area would have been used for off-loading of material from the PTF as well as loading of test devices enroute to the PTF. Operational procedures at the PTF required all aircraft to be surveyed and decontaminated as needed before leaving the PTF. DOE has reported there is no indication of contamination on this area.

This area has been classified as Class 3.

2.1.4. Buildings 1711, 1712 and 1715 through 1718

These magazines were built in 1965 and were not associated with the PTF operations. The Navy used 1711 and 1712 for storage of special weapons. Records specific to 1715 through 1718 are not available but they may also have been used for special weapons storage. These magazines have been classified as Class 3.

2.1.5. Building 1682

Building 1682, Assembly Building was built in 1965 to support Safeguard C program. The Navy subsequently used the building for special weapons maintenance. This building has been classified as Class 3.

2.2. GROUPING/SEPARATING AREAS INTO SURVEY UNITS

MARSSIM guidance for CLASS 3 areas specifies a random survey. The efficiency and accuracy of the instrumentation used determine the number of fixed survey points. Scanning surveys are specified as "the professional judgement of the surveyor." Survey locations for fixed-point measurements will be determined by using a random number generator to specify x-y coordinates within the survey unit.

2.2.1. Buildings

Magazines will be considered as a single survey unit. Each room of multi-room buildings will be considered a survey unit. Scan surveys will cover at least 10% of the survey unit. Actual areas of the scan surveys will be determined on-site on a case-by-case basis by the surveyor.

2.2.2. Land Areas

2.2.2.1. Buildings 11003 through 11014

Due to the size of this area, it will be considered as one survey unit. This area will be surveyed at thirty fixed-point locations and a random scan survey covering at least 10% of the survey unit.

2.2.2.2. B-52 Loading and Maintenance Area

Due to the size of this area, it will be considered as three survey units. This area will be surveyed at thirty fixed-

point locations, ten per survey unit, and a random scan survey covering at least 10% of the survey unit.

2.2.3. Drain Lines and Pipes

All drain lines that can be located will be surveyed on the outside of the pipe at all accessible locations for indications of internal contamination. When possible, each drain line will be opened and a small diameter sodium-iodide (NaI) detector will be inserted into all drain lines larger than 1-1/2 inch diameter to survey the interior of the pipe.

2.3. RADIONUCLIDES OF CONCERN

Radionuclides associated with nuclear weapons, and activation products and mixed-fission products, are the radionuclides of concern for the final status survey. Tritium and isotopes of uranium and plutonium are associated with nuclear weapons. Tritium is not a concern based on the specific history of the site. During the Pacific test period, tritium would have been present for only short periods of time, it would have been in sealed containers inside previously assembled devices, or it would have been in sealed containers for inclusion in test devices at the Pacific Test Facility. Nuclear weapons in storage do not have a potential for tritium leakage. No known maintenance operations involving tritium were conducted at the site. The production of mixed fission products (MFP) and activation products (AP) is dependent on several factors and cannot be accurately predicted. However, most MFP and AP have a very short half-life and, therefore, would not be present today. The only significant radionuclides with a half-life long enough to still remain are cobalt-60 (Co-60), cesium-137 (Cs-137) and strontium/yttrium-90 (Sr/Y-90). Of these, Co-60 will have undergone approximately seven half-lives (approximately 0.78% of the original activity) and will be present in only trace amounts. Table 1 lists the radionuclides of concern and any significant progeny that will be evaluated during the final status survey. For the purpose of this report, significant progeny are defined as any progeny products of a constituent of concern that reaches an activity equal to or greater than 0.1% of the initial parent activity within a 50 year period.

TABLE 1. Radionuclides and Significant Progeny of Concern

Radionuclides Of Concern	Significant Progeny Radionuclides
Cs-137	
Sr/Y-90	
Pu-239	
Pu-241	Am-241
U-235	Th-231
U-238	Th-234, Pa-234m, Pa-234

2.4. RELEASE CRITERIA - BUILDING SURFACES AND PAVED AREAS

Current Environmental Protection Agency (EPA) guidance applies to environmental radionuclide concentrations and not building surfaces. In the absence of EPA surface contamination guidelines, values found in Federal Register, Vol 63 No. 222, page 64132 will be used for interior and exterior building surfaces, roadways, and other paved surfaces. Radionuclides identified at the site that are not listed in the Federal Register will be evaluated using the NRC screening computer code (DandD, version 1). The following Derived Concentration Guideline Levels (DCGL) will apply:

TABLE 2. Radionuclide DCGLs

Radionuclides Of concern	DCGL (dpm/100-cm ²)
Cs-137	2.8x10 ⁴
Sr/y-90	8.7x10 ³
Pu-239	200
Pu-241	200
U-235	935
U-238	935

2.5. RELEASE CRITERIA - ENVIRONMENTAL MEDIA USING THE EPA METHOD

The EPA methodology for determining Preliminary Remediation Guides (PRGs) is delineated in the EPA document Risk Assessment Guidance for Superfund (RAGS) Part B "Development of Risk-Based Preliminary Remediation Goals." This methodology uses pathway analyses and Radionuclide Carcinogenicity Slope Factors found in the Health Effect Assessment Summary Tables (HEAST), and site

specific parameters (when available) to develop the PRGs. EPA PRGs are based on the EPA's requirement of limiting the lifetime cancer risk to between 1×10^{-6} and 1×10^{-4} . The EPA reports that a 5×10^{-4} lifetime cancer risk is equivalent to an annual dose of approximately 25 millirem (mrem). EPA's PRGs are derived analogously to MARSSIM's DCGLs. PRGs were calculated for each radionuclide of concern in soil using the EPA methodology described in Reference 3.

2.6. RELEASE CRITERIA - ENVIRONMENTAL MEDIA USING THE NRC/DOE METHOD

The Department of Energy (DOE) contracted Argonne National Laboratory (ANL) to develop the radionuclide pathway analysis software RESRAD (RESidual RADIOactivity), that is designed to develop site-specific guidelines based on a yearly dose limit. This method is acceptable to the NRC for use in developing release limits based on their dose based remediation goal of 25 mrem per year.

PRGs were calculated, using RESRAD, for the significant radionuclides in soil. RESRAD does not calculate separate drinking water PRGs. Alternatively, RESRAD assumes that drinking water becomes contaminated by the existence of radionuclide contamination in soil and considers the dose contribution from drinking water when developing the soil PRGs. Hence, the PRG calculated for soil is sufficient to control radiation dose from the drinking water pathway. The set of radionuclides available for use in RESRAD is limited, and does not include all significant radionuclides. However, in many cases, the dose from short-lived progeny has been accounted for in the development of its parent's PRG.

All RESRAD analyses were performed using the "resident farmer scenario" (Scenario (C), Reference 4, page 5). Three different analyses were performed using different sets of input parameters: 1) RESRAD default; 2) NRC default; and 3) combination of NRC default and site specific parameters.

2.7. SELECTION OF PRGs

Table 3 contains the soil PRGs, for 1×10^{-6} and 1×10^{-4} lifetime cancer risk, calculated using the EPA method as described in Section 2.5 above and the soil PRG for a 25 mrem per year annual dose calculated using the NRC/DOE method described in section 2.7 above. Soil PRGs will also be used, as needed, for other solid material that is contaminated throughout its volume.

All survey scan speeds and fixed count times will be adjusted to detect 2.5 pCi/g U-235 and/or 10 pCi/g Sr/Y-90. These values represent one-half the PRG (DCGL) of the most restrictive radionuclide. These values will ensure no residual contamination above an acceptable level remains at the site.

TABLE 3 - Preliminary Remediation Goals (PRGs) for Soil

Radionuclide	RESRAD Value (pCi/g)	EPA's Soil Preliminary Remediation Goals (PRGs)		
		1E-6 Lifetime Cancer Risk (pCi/g)	1E-4 Lifetime Cancer Risk (pCi/g)	Selected PRGs (pCi/g)
Cs-137		25	2500	
Sr/Y-90		19	1900	
Pu-239	31	2.4	240	31
Pu-241	14*	150	15,000	14*
Am-241	0.46	1.9	190	0.46
U-235	5.3*	0.16*	16*	5.3*
Th-231	NA	19	1900	NA
U-238	19*	18	1800	19*
Th-234	NA	9.2	920	NA
Pa-234m	NA	1.0	100	NA
Pa-234	NA	6.4E-3	0.64	NA

* An asterisk indicates the value accounts for all short-lived (significant) radionuclide daughters.

NA In the "RESRAD value" column indicates that a guideline is not specified by RESRAD because the nuclide contribution is accounted for in the parent's guideline. NA in the "Selected PRGs" column indicates a PRG need not be chosen because the nuclide contribution is accounted for in the parents PRG.

2.8. PRGs FOR MULTIPLE RADIONUCLIDES

The single radionuclide PRGs calculated in Sections 4.0 and 5.0 are directly applicable only if that single nuclide is present. This is an unlikely occurrence, so a method to adjust single nuclide PRGs for the presence of other radionuclides is needed. The presence of other radionuclides has the effect of reducing the PRG for each individual radionuclide. In order to account for this situation, the sum of the fractions method will be used to ensure that the total risk from all radionuclides does not exceed the risk from a single radionuclide at its PRG.

This rule is shown below and will be applied to results obtained from the final status survey when more than one nuclide is present in concentrations greater than background.

$$\frac{C_1}{PRG_1} + \frac{C_2}{PRG_2} + \frac{C_3}{PRG_3} \dots \frac{C_n}{PRG_n} \leq 1.0$$

Where:

- C_n Concentration of the radionuclide (1, 2, ...n) in soil or water (pCi/g or pCi/l)
- PRG_n PRG value for the radionuclide (1, 2, ...n) in soil or water (pCi/g or pCi/l)

2.9. INSTRUMENTATION

2.9.1. Detectors

2.9.1.1. FIDLER

The FIDLER (Field Instrument for Detection of Low Energy Radiation) is a 5-inch diameter NaI detector specifically designed to detect very low energy (≤ 100 keV) photon energy. FIDLER detectors will be calibrated to detect photon energies from 10 to 100 keV. The FIDLER will be used at each fixed-point survey location and as part of the USRADS detector array. The FIDLER is capable of detecting 2.5 pCi/g U-235 for both scanning and fixed-point surveys.

2.9.1.2. SPA-3

The Eberline SPA-3 is a 2x2 inch NaI detector designed to detect intermediate and high-energy photons. SPA-3 detectors will be calibrated to detect photon energies from 100 keV to 2 MeV. The SPA-3 will be used at each fixed-point survey location in conjunction with the FIDLER. The SPA-3 will also be used for scanning surveys of drain lines. The SPA-3 is capable of detecting 10 pCi/g Sr/Y-90 in both scanning and fixed-point surveys.

2.9.1.3. DT-304/SHP-360

These detectors are 2-inch diameter Geiger-Mueller (GM) pancake detectors. The DT-304 is shielded with a 2-1/2 pound tungsten shield; the SHP-360 is a shielded version of the same detector. These are general contamination detectors and can detect beta/gamma energies above 10 keV. These detectors will be used for the scanning surveys in buildings. These detectors are capable of detecting 2.5 pCi/g U-235 and 10 pCi/g Sr/Y-90.

2.9.2. Survey Meter

The Eberline E-600 survey meter will be utilized for all measurements with all detectors. The E-600 is a multi-function meter capable of operating any detector. All calibration data for each detector is stored in a "Smart-Pac" attached to the detector. When the detector is attached to the E-600, the Smart-Pac transfers the specific calibration parameters to the E-600.

2.9.3. Gamma Spectroscopy System

Gamma spectroscopy will utilize a Canberra "Inspector" system and "Genie-2000" software and a 3x3 NaI detector. The system will be used only to identify isotopes, and not to attempt to quantify the contamination.

Section 3 FINAL STATUS SURVEY

3.1. SUMMARY OF FINAL STATUS SURVEY

The final status survey was conducted in accordance with Section 2. Survey results in all survey units were below the DCGL for Cs-137 and Pu-239. All survey units may be released for unrestricted use.

3.2. FINAL STATUS SURVEY PROCEDURE

3.2.1. Background

Building 278 was used as the reference area for all buildings and paved areas. Ten background counts were taken each morning prior to performing surveys. These background counts were used to calculate the number of survey points required in each survey unit.

3.2.2. Building 286

Building 286 consists of twenty-five storage cubicles as shown in Figure 3. Each cubicle is 9 x 19 feet, with a roll-up door at the entrance. Each cubicle was designated as a separate survey unit. Nine survey points in each survey unit were randomly selected.

3.2.3. Buildings 11003 through 11014

These buildings housed the laboratories for analysis of samples returned from the PTF. The buildings have been removed and the land area is currently used as a vehicle impound lot by the NAS Security Department as shown in Figure 4. Twenty survey points were randomly selected in the impound lot. A reference area outside the fenced area was selected for background counts.

3.2.4. B-52 Loading and Maintenance Area

Due to the size of this area it was divided into three survey units as shown in Figure 5. Each survey unit had ten randomly selected survey points.

3.2.5. Buildings 1711, 1712 and 1715 through 1718

Each magazine was designated as a separate survey unit. Each survey unit had nine randomly selected survey points.

3.2.6. Building 1682

Building 1682 had five rooms that could have been used for special weapons maintenance, as shown in Figure 6. Each room was designated a separate survey unit. Each survey unit had nine randomly selected survey points.

3.2.7. Scan Surveys

Scan surveys of all survey units were performed using an E-600 and HP-360 pancake G-M detector. The alarm function on the E-600 was set at twice the average background level. The alarm did not sound in any survey unit. Scan survey readings were not recorded.

Figure 3 - Building 286

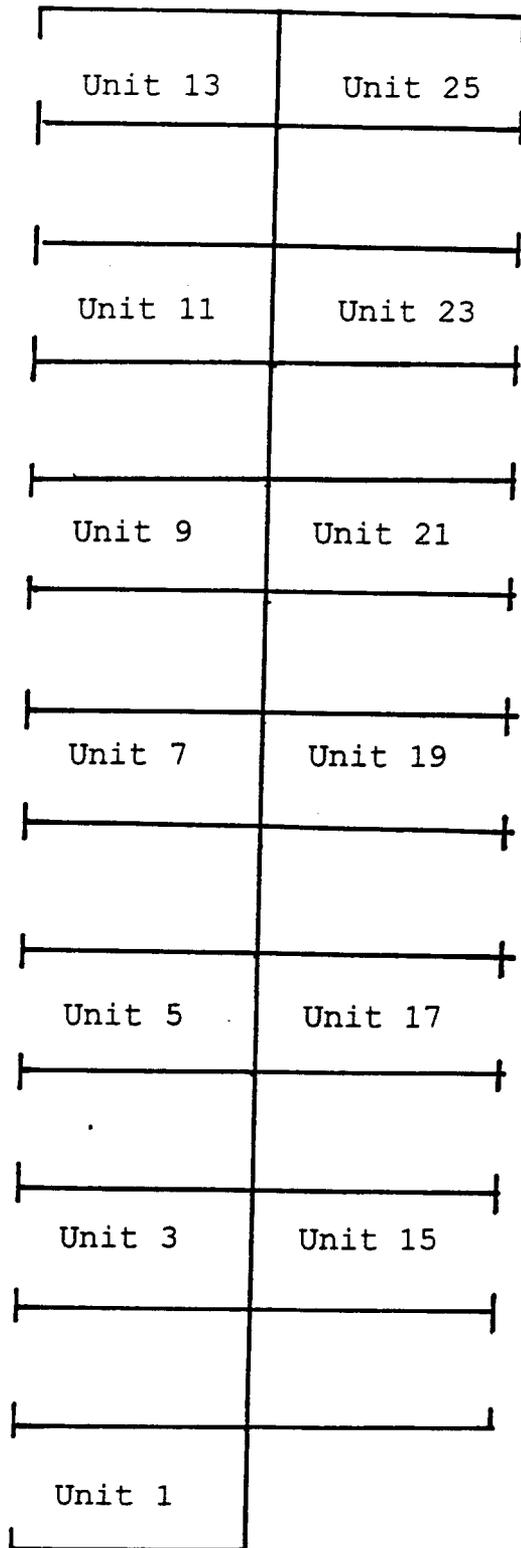


Figure 4 - Impound Lot (Buildings 11003 through 11014)

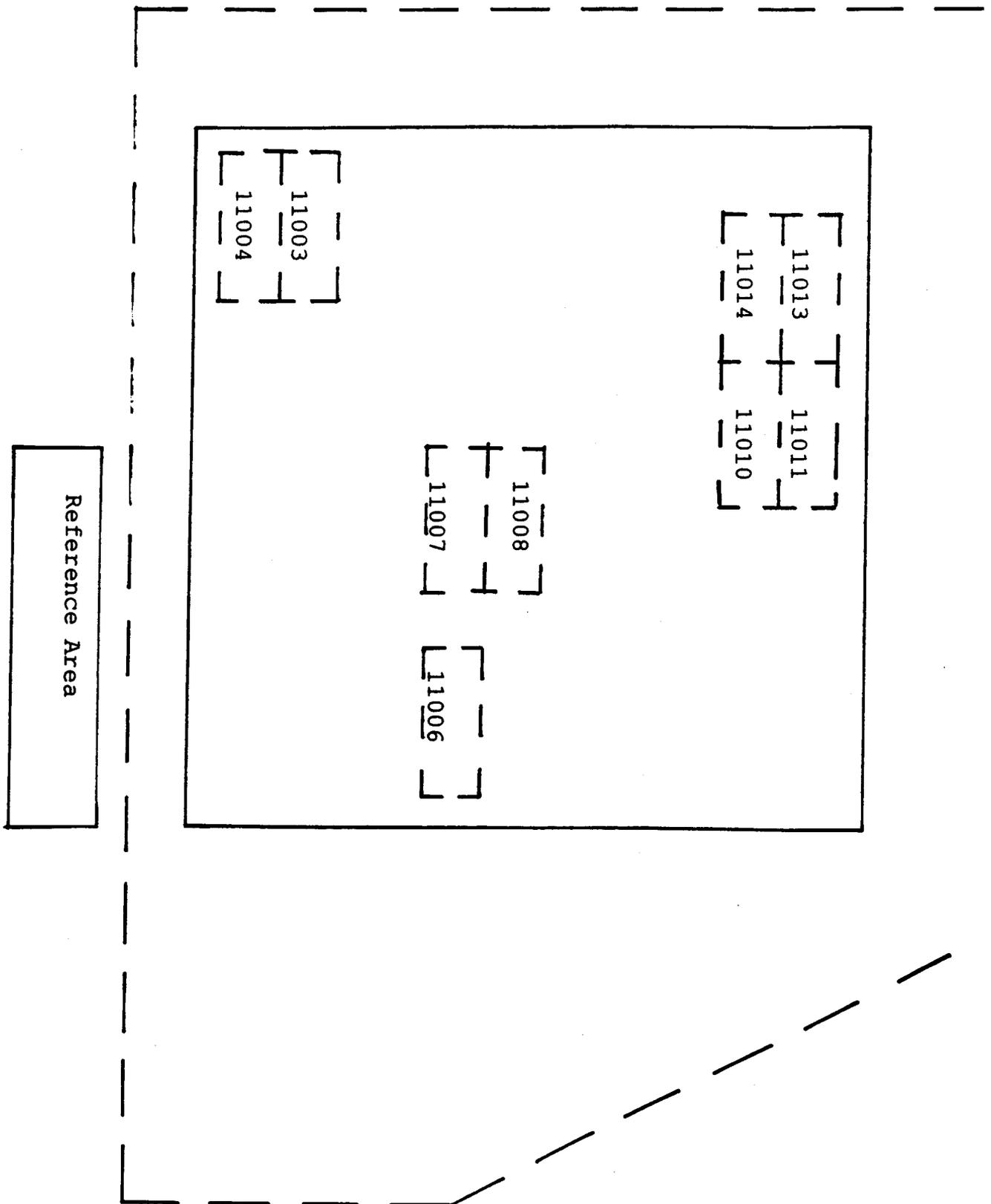


Figure 5 - B-52 Loading and Maintenance Area

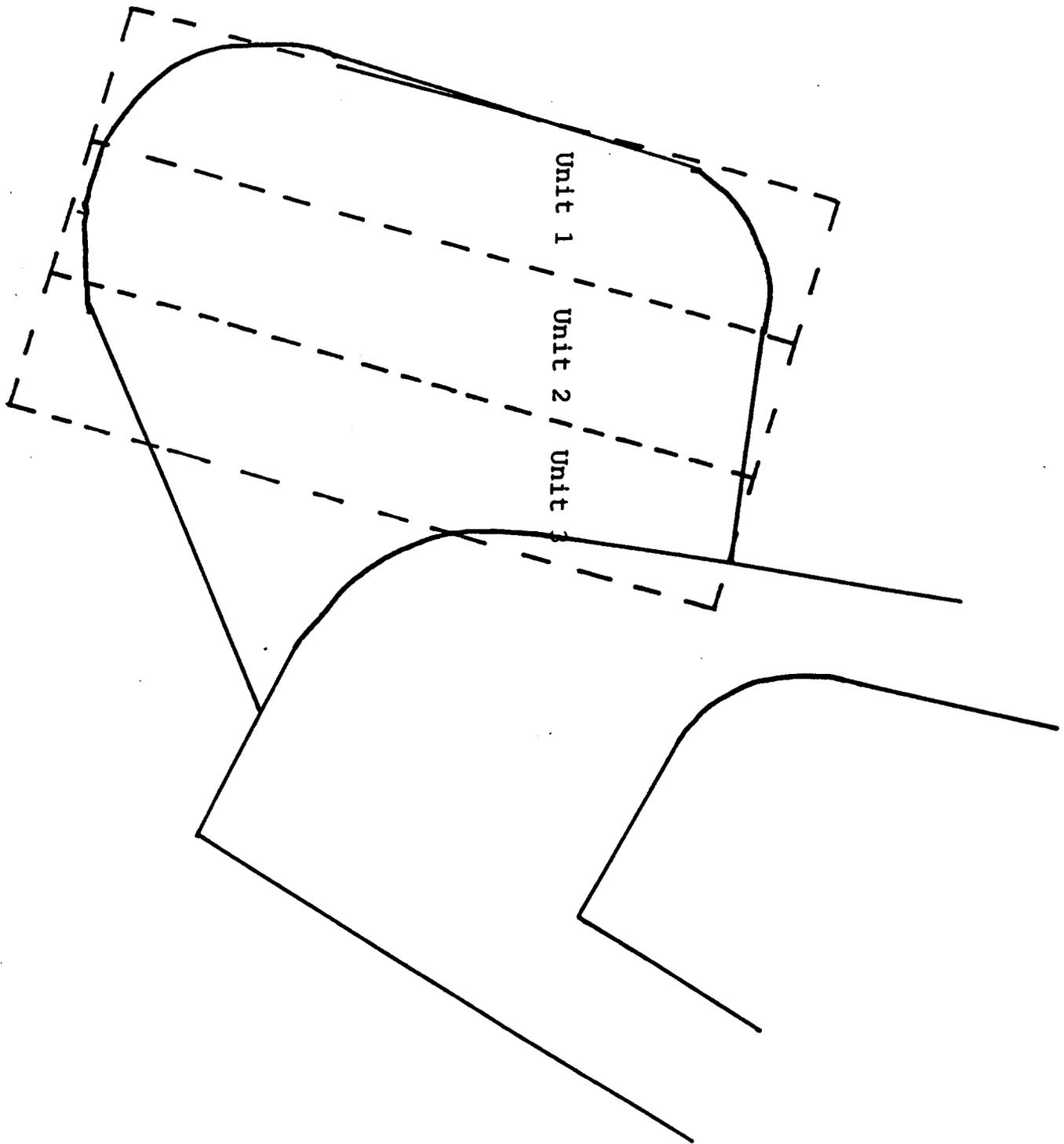
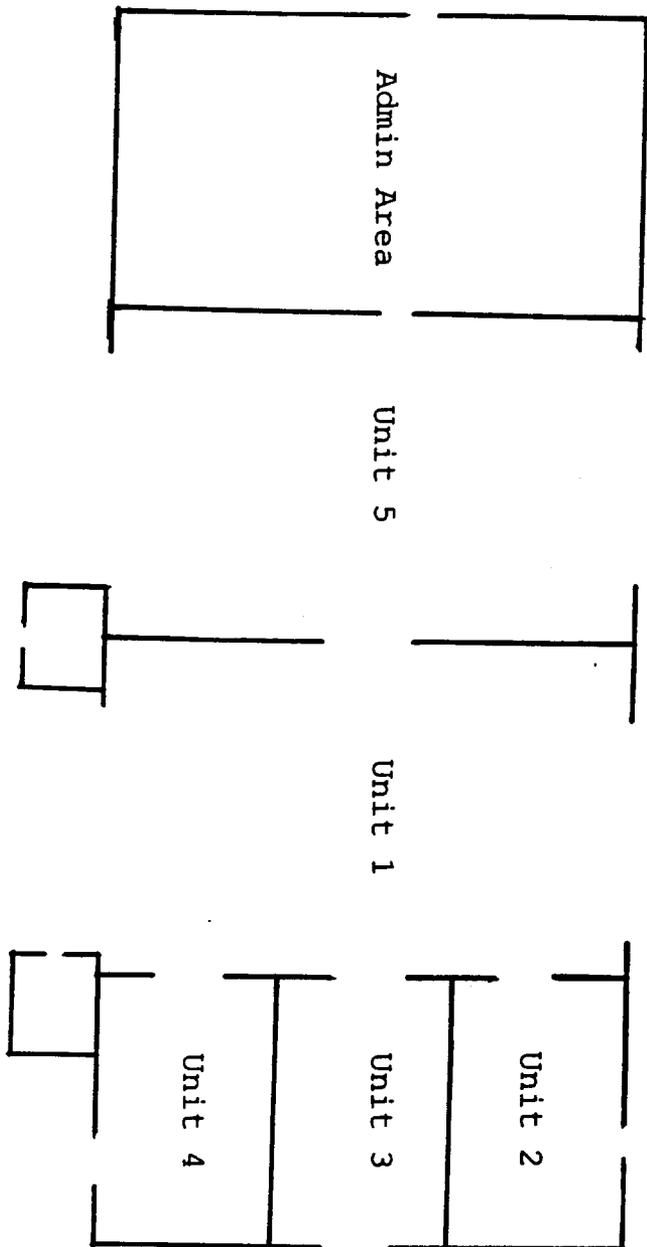


Figure 6 - Building 1682



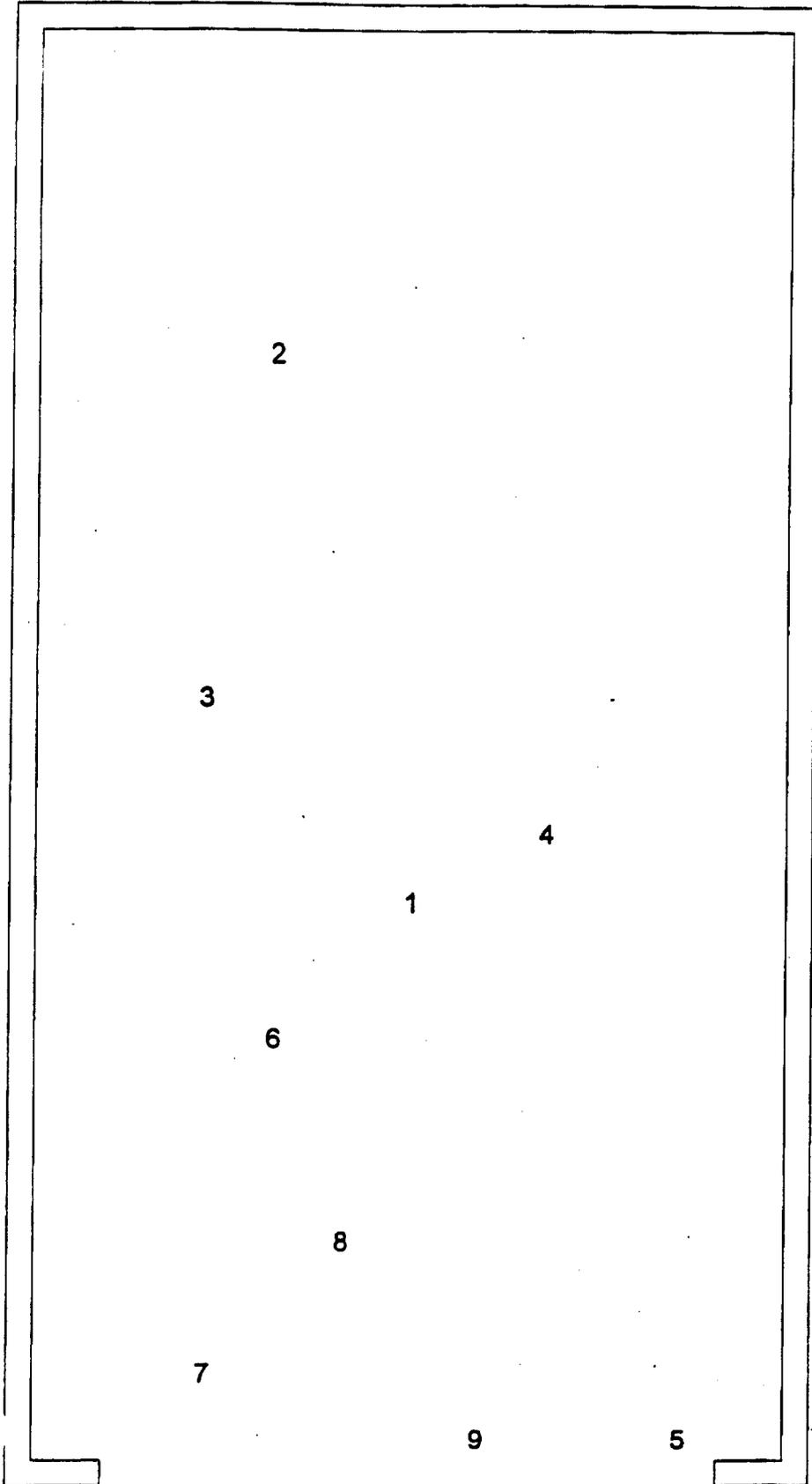
3.3. Results of Individual Survey Units

3.3.1. Building 286, Cube 1

Unit Designation:
Building 286 Unit 1

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	5.	8.	4640.
2	3.	16.	4560.
3	2.	11.	4810.
4	7.	9.	4710.
5	9.	0.	5070.
6	3.	6.	4780.
7	2.	1.	5080.
8	4.	3.	4800.
9	6.	0.	4520.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm
Area Factor:
DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α:

Type II - β:

Z1 - β:

P_r:

N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
65	1	5.00	8.00	4.64E+03	S	44	44	3	0
66	2	3.00	16.00	4.56E+03	S	23	23	2	0
67	3	2.00	11.00	4.81E+03	S	87	87	7	0
68	4	7.00	9.00	4.71E+03	S	62	62	4	0
69	5	9.00	0.00	5.07E+03	S	153	153	8	0
70	6	3.00	6.00	4.78E+03	S	79	79	5	0
71	7	2.00	1.00	5.08E+03	S	156	156	9	0
72	8	4.00	3.00	4.80E+03	S	85	85	6	0
73	9	6.00	0.00	4.52E+03	S	13	13	1	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4774 c
 Mean Sample Count Rate: 4774 cpm
 SD Sample Count Rate: 199 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:
 DCGL_(w): dpm 100cm⁻² cpm
 Area Factor:
 DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹
 Detector Area: cm²
 Probe Height: cm
 Probe Field of View: cm²
 MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s
 Bkgd. Sigma: cpm
 DCGL_w: cpm
 LBGR = ½DCGL_w: cpm
 Delta = DCGL_w - LBGR: cpm
 Delta/Sigma:
 Type I - α: Z1 - α
 Type II - β: Z1 - β
 P_r:
 N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
65	1	5.00	8.00	1.00E+03	S	3	3	5	0
66	2	3.00	16.00	9.31E+02	S	-19	-19	1	0
67	3	2.00	11.00	1.04E+03	S	16	16	8	0
68	4	7.00	9.00	9.99E+02	S	3	3	4	0
69	5	9.00	0.00	1.02E+03	S	9	9	7	0
70	6	3.00	6.00	9.53E+02	S	-12	-12	3	0
71	7	2.00	1.00	1.06E+03	S	22	22	9	0
72	8	4.00	3.00	1.01E+03	S	6	6	6	0
73	9	6.00	0.00	9.45E+02	S	-15	-15	2	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 995 c
 Mean Sample Count Rate: 995 cpm
 SD Sample Count Rate: 44 cpm

Results of Final Status Survey

Test Statistic (W_r): 145
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 9
 Critical Value_{m,n}: 120

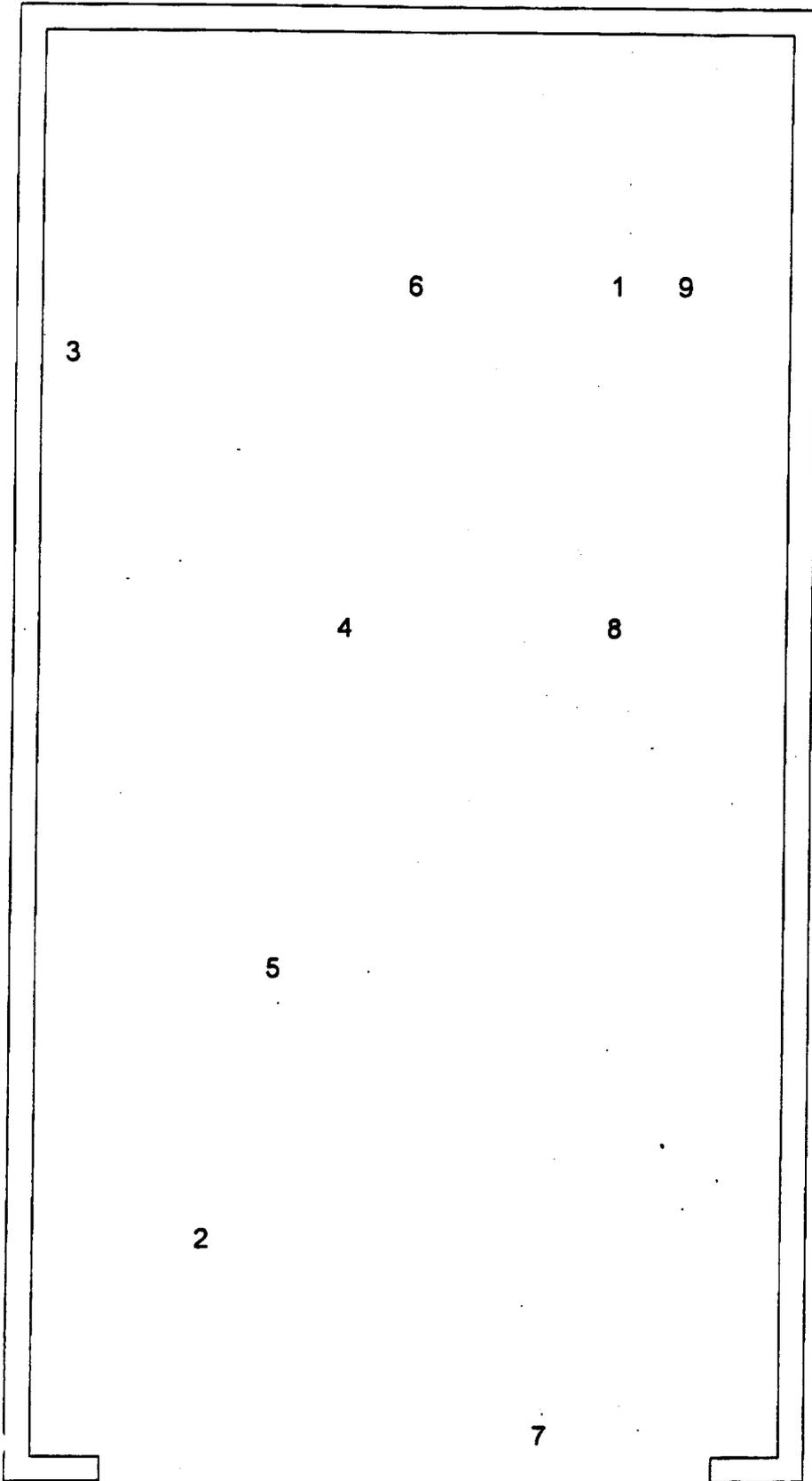
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.2. Building 286, Cube 2

Unit Designation:
Building 286 Unit 2

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	17.	4960.
2	2.	3.	4490.
3	0.	16.	4980.
4	4.	12.	4700.
5	3.	7.	4580.
6	5.	17.	4690.
7	7.	0.	4320.
8	8.	12.	4740.
9	9.	17.	4890.



Survey Unit: Bldg. 286 Cube 2

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05 Z1 - alpha: 1.645

Type II - beta: 0.05 Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
74	1	8.00	17.00	4.96E+03	S	125	125	8	0
75	2	2.00	3.00	4.49E+03	S	6	6	2	0
76	3	0.00	16.00	4.98E+03	S	130	130	9	0
77	4	4.00	12.00	4.70E+03	S	59	59	5	0
78	5	3.00	7.00	4.58E+03	S	29	29	3	0
79	6	5.00	17.00	4.69E+03	S	57	57	4	0
80	7	7.00	0.00	4.32E+03	S	-38	-38	1	0
81	8	8.00	12.00	4.74E+03	S	69	69	6	0
82	9	9.00	17.00	4.89E+03	S	107	107	7	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4706 c
 Mean Sample Count Rate: 4706 cpm
 SD Sample Count Rate: 220 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:
 DCGL_(w): dpm 100cm⁻² cpm
 Area Factor:
 DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹
 Detector Area: cm²
 Probe Height: cm
 Probe Field of View: cm²
 MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s
 Bkgd. Sigma: cpm
 DCGL_w: cpm
 LBGR = ½DCGL_w: cpm
 Delta = DCGL_w - LBGR: cpm
 Delta/Sigma:
 Type I - α: Z1 - α
 Type II - β: Z1 - β
 P_r:
 N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
74	1	8.00	17.00	9.87E+02	S	-1	-1	6	0
75	2	2.00	3.00	9.28E+02	S	-20	-20	2	0
76	3	0.00	16.00	1.10E+03	S	35	35	9	0
77	4	4.00	12.00	9.35E+02	S	-18	-18	3	0
78	5	3.00	7.00	9.93E+02	S	1	1	8	0
79	6	5.00	17.00	9.72E+02	S	-6	-6	4	0
80	7	7.00	0.00	9.09E+02	S	-26	-26	1	0
81	8	8.00	12.00	9.74E+02	S	-5	-5	5	0
82	9	9.00	17.00	9.88E+02	S	-1	-1	7	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 976 c
 Mean Sample Count Rate: 976 cpm
 SD Sample Count Rate: 55 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.3. Building 286, Cube 3

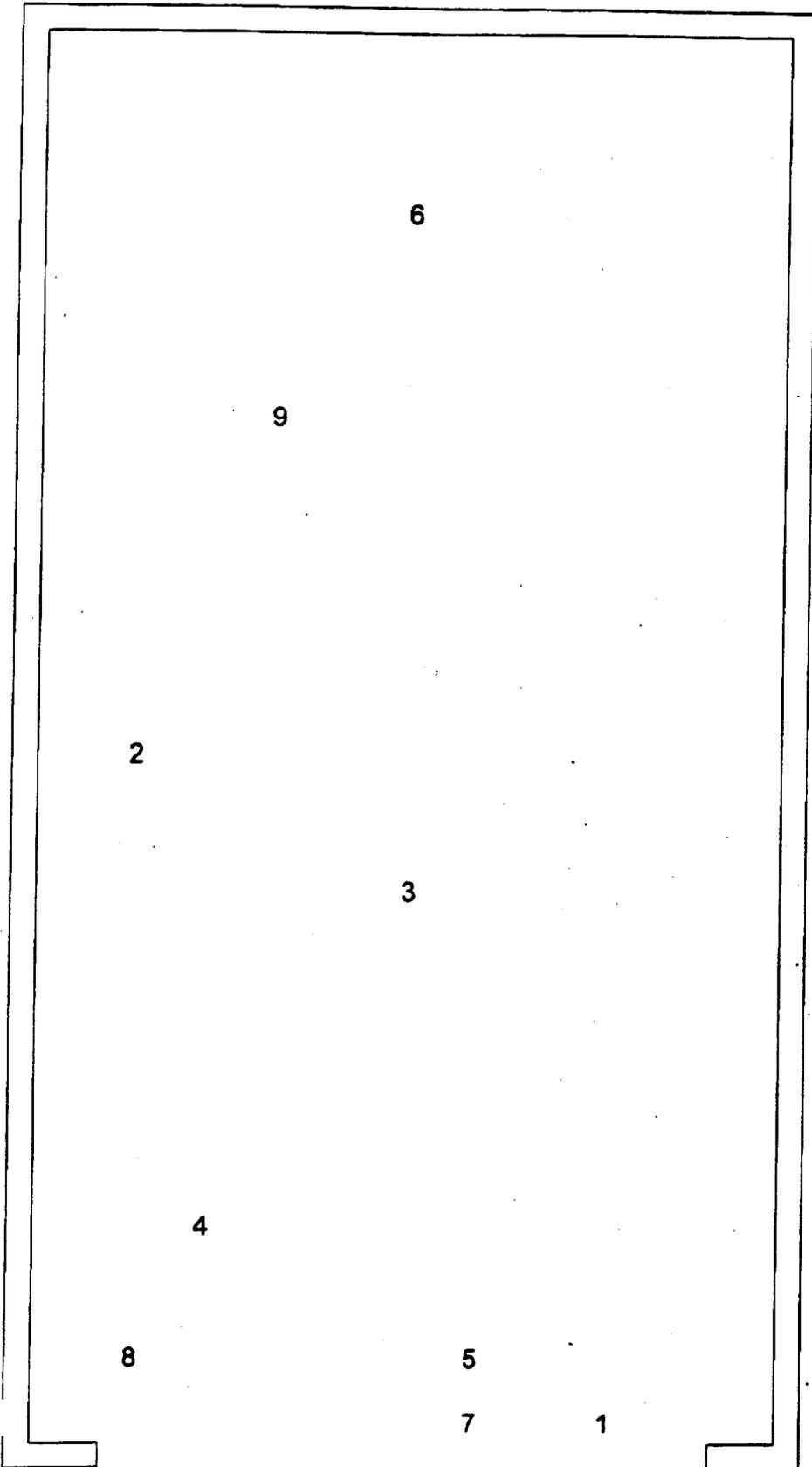
Unit Designation:

Unit Dimensions (ft):

Building 286 Unit 3

9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	0.	4230.
2	1.	10.	4850.
3	5.	8.	4770.
4	2.	3.	4330.
5	6.	1.	4220.
6	5.	18.	4850.
7	6.	0.	4160.
8	1.	1.	4480.
9	3.	15.	4850.



Survey Unit: Bldg. 286 Cube 3

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

Pr: 1

N: 9

Statistics

Test: WRS

H0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
83	1	8.00	0.00	4.23E+03	S	-61	-61	3	0
84	2	1.00	10.00	4.85E+03	S	97	97	8	0
85	3	5.00	8.00	4.77E+03	S	77	77	6	0
86	4	2.00	3.00	4.33E+03	S	-35	-35	4	0
87	5	6.00	1.00	4.22E+03	S	-63	-63	2	0
88	6	5.00	18.00	4.85E+03	S	97	97	8	0
89	7	6.00	0.00	4.16E+03	S	-78	-78	1	0
90	8	1.00	1.00	4.48E+03	S	3	3	5	0
91	9	3.00	15.00	4.85E+03	S	97	97	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4527 c
 Mean Sample Count Rate: 4527 cpm
 SD Sample Count Rate: 302 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 3

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey:

Fixed

Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 589 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGL_w: 6.3E+02 cpm
LBGR = 1/2 DCGL_w: 3.1E+02 cpm
Delta = DCGL_w - LBGR: 3.1E+02 cpm
Delta/Sigma: 2
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
83	1	8.00	0.00	9.42E+02	S	-16	-16	3	0
84	2	1.00	10.00	9.54E+02	S	-12	-12	5	0
85	3	5.00	8.00	9.97E+02	S	2	2	6	0
86	4	2.00	3.00	1.00E+03	S	3	3	8	0
87	5	6.00	1.00	9.43E+02	S	-15	-15	4	0
88	6	5.00	18.00	1.02E+03	S	9	9	9	0
89	7	6.00	0.00	8.83E+02	S	-34	-34	1	0
90	8	1.00	1.00	9.34E+02	S	-18	-18	2	0
91	9	3.00	15.00	9.98E+02	S	2	2	7	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 963 c
 Mean Sample Count Rate: 963 cpm
 SD Sample Count Rate: 44 cpm

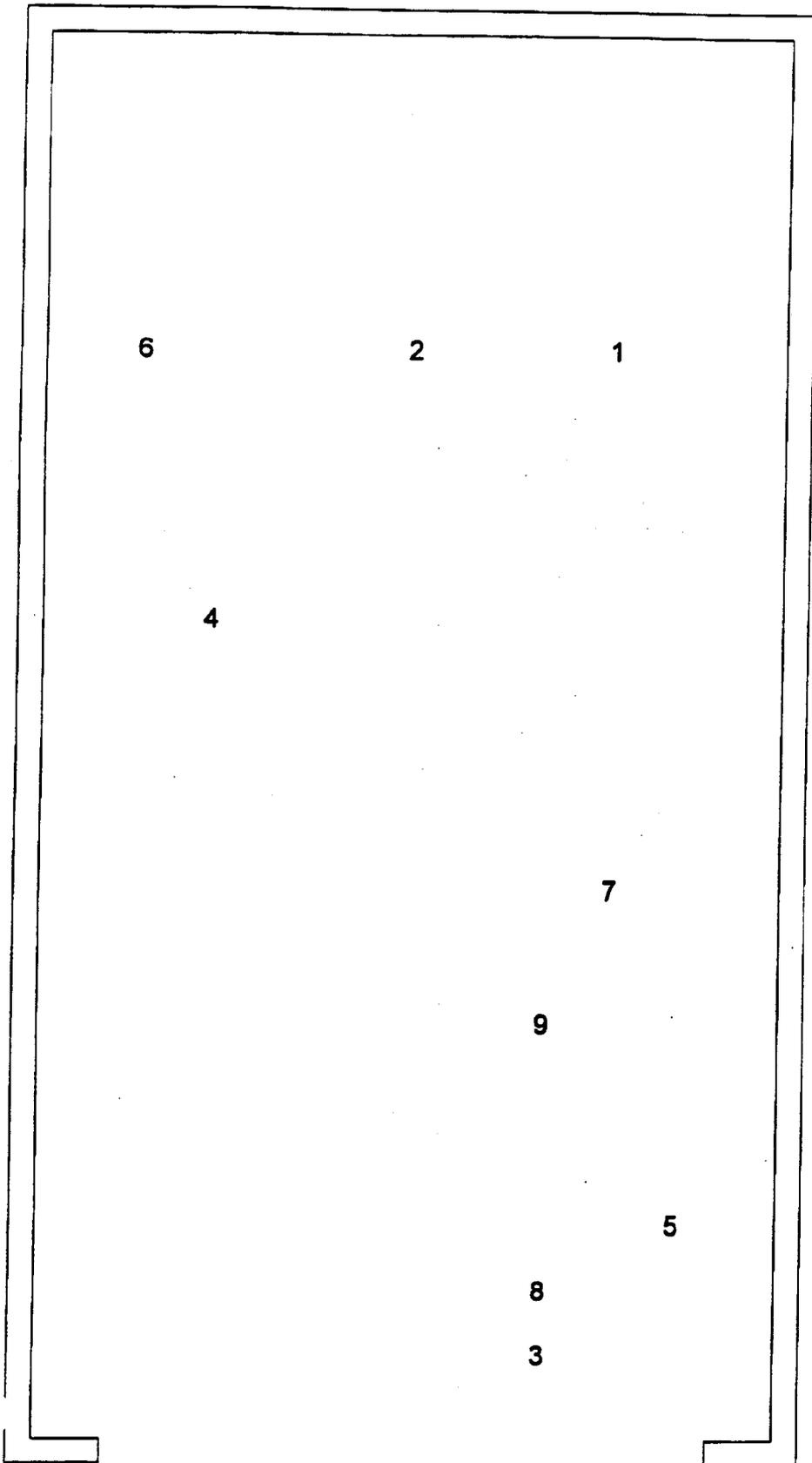
Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.4. Building 286, Cube 4
 Unit Designation: Unit Dimensions (ft):
 Building 286 Unit 4 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	16.	4830.
2	5.	16.	4720.
3	7.	1.	4300.
4	2.	12.	4670.
5	9.	3.	4690.
6	1.	16.	4840.
7	8.	8.	4650.
8	7.	2.	4360.
9	7.	6.	4620.



Survey Unit: Bldg. 286 Cube 4

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emo): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 4

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
56	1	10.0	13.0	4.05E+03	S	-106	-106	4.5	0
57	2	12.0	5.0	3.81E+03	S	-168	-168	1	0
58	3	19.0	13.0	4.06E+03	S	-104	-104	6	0
59	4	1.0	11.0	4.16E+03	S	-78	-78	9	0
60	5	5.0	12.0	4.01E+03	S	-117	-117	2	0
61	6	8.0	16.0	4.02E+03	S	-114	-114	3	0
62	7	16.0	19.0	4.09E+03	S	-96	-96	7	0
63	8	25.0	19.0	4.15E+03	S	-81	-81	8	0
64	9	23.0	8.0	4.05E+03	S	-106	-106	4.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4044 c
 Mean Sample Count Rate: 4044 cpm
 SD Sample Count Rate: 102 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time:	<input type="text" value="60"/>	s
Bkgd. Sigma:	<input type="text" value="126"/>	cpm
DCGL _w :	<input type="text" value="2.0E+02"/>	cpm
LBGR = ½DCGL _w :	<input type="text" value="1.0E+02"/>	cpm
Delta = DCGL _w - LBGR:	<input type="text" value="1.0E+02"/>	cpm
Delta/Sigma:	<input type="text" value="1"/>	
Type I - α:	<input type="text" value="0.05"/>	Z1 - α <input type="text" value="1.645"/>
Type II - β:	<input type="text" value="0.05"/>	Z1 - β <input type="text" value="1.645"/>
P _r	<input type="text" value="1"/>	
N	<input type="text" value="9"/>	

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 4

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
92	1	8.00	16.00	1.01E+03	S	6	6	7.5	0
93	2	5.00	16.00	1.01E+03	S	6	6	7.5	0
94	3	7.00	1.00	8.97E+02	S	-30	-30	1	0
95	4	2.00	12.00	9.84E+02	S	-2	-2	5	0
96	5	9.00	3.00	9.72E+02	S	-6	-6	4	0
97	6	1.00	16.00	1.02E+03	S	9	9	9	0
98	7	8.00	8.00	9.58E+02	S	-11	-11	3	0
99	8	7.00	2.00	9.22E+02	S	-22	-22	2	0
100	9	7.00	6.00	9.90E+02	S	0	0	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 974 c
 Mean Sample Count Rate: 974 cpm
 SD Sample Count Rate: 42 cpm

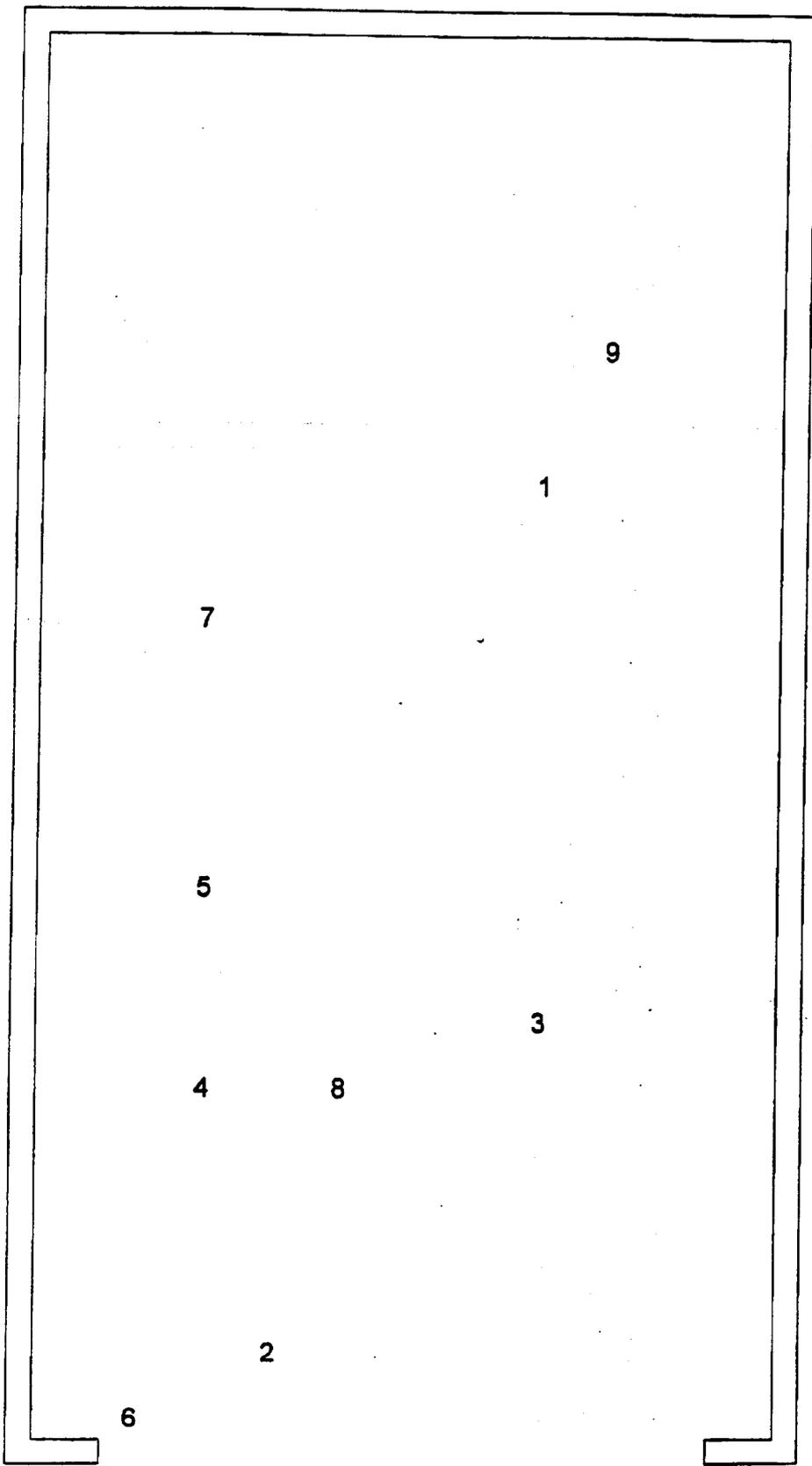
Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.5. Building 286, Cube 5
 Unit Designation: Building 286 Unit 5
 Unit Dimensions (ft): 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	7.	14.	4920.
2	3.	1.	4210.
3	7.	6.	4640.
4	2.	5.	4540.
5	2.	8.	4650.
6	1.	0.	4190.
7	2.	12.	4680.
8	4.	5.	4490.
9	8.	16.	4860.



Survey Unit: Bldg. 286 Cube 5

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^-2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

Pf: 1

N: 9

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 5

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
101	1	7.00	14.00	4.92E+03	S	115	115	9	0
102	2	3.00	1.00	4.21E+03	S	-66	-66	2	0
103	3	7.00	6.00	4.64E+03	S	44	44	5	0
104	4	2.00	5.00	4.54E+03	S	18	18	4	0
105	5	2.00	8.00	4.65E+03	S	46	46	6	0
106	6	1.00	0.00	4.19E+03	S	-71	-71	1	0
107	7	2.00	12.00	4.68E+03	S	54	54	7	0
108	8	4.00	5.00	4.49E+03	S	6	6	3	0
109	9	8.00	16.00	4.86E+03	S	100	100	8	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4576 c
 Mean Sample Count Rate: 4576 cpm
 SD Sample Count Rate: 253 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 5

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^2, 6.3E+02 cpm

Area Factor: n/a

DCGL(emo): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 589 cpm Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 2.0E+02 cpm

LBGR = 1/2 DCGL_w: 1.0E+02 cpm

Delta = DCGL_w - LBGR: 1.0E+02 cpm

Delta/Sigma: 1

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 5

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
101	1	7.00	14.00	9.76E+02	S	-5	-5	6	0
102	2	3.00	1.00	9.13E+02	S	-25	-25	4	0
103	3	7.00	6.00	9.61E+02	S	-10	-10	5	0
104	4	2.00	5.00	8.97E+02	S	-30	-30	3	0
105	5	2.00	8.00	1.01E+03	S	6	6	9	0
106	6	1.00	0.00	8.76E+02	S	-37	-37	2	0
107	7	2.00	12.00	1.00E+03	S	3	3	8	0
108	8	4.00	5.00	8.65E+02	S	-40	-40	1	0
109	9	8.00	16.00	9.97E+02	S	2	2	7	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 944 c
 Mean Sample Count Rate: 944 cpm
 SD Sample Count Rate: 57 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.6. Building 286, Cube 6

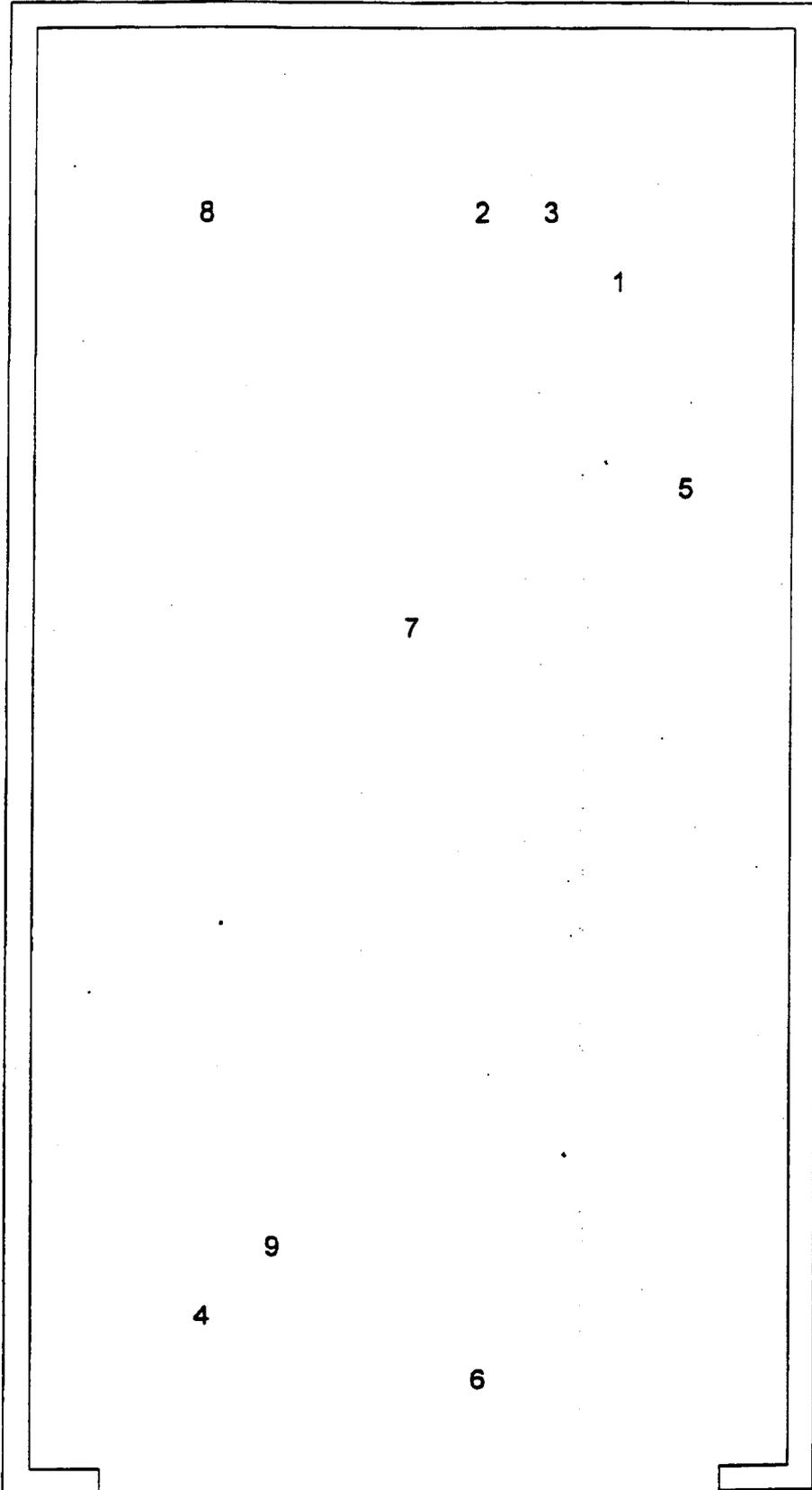
Unit Designation:

Unit Dimensions (ft):

Building 286 Unit 6

9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	17.	4870.
2	6.	18.	4870.
3	7.	18.	4950.
4	2.	2.	4270.
5	9.	14.	4800.
6	6.	1.	4170.
7	5.	12.	4790.
8	2.	18.	4910.
9	3.	3.	4440.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α:

Type II - β:

Z1 - β:

P_r:

N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 6

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
110	1	8.00	17.00	4.87E+03	S	102	102	6.5	0
111	2	6.00	18.00	4.87E+03	S	102	102	6.5	0
112	3	7.00	18.00	4.95E+03	S	123	123	9	0
113	4	2.00	2.00	4.27E+03	S	-50	-50	2	0
114	5	9.00	14.00	4.80E+03	S	85	85	5	0
115	6	6.00	1.00	4.17E+03	S	-76	-76	1	0
116	7	5.00	12.00	4.79E+03	S	82	82	4	0
117	8	2.00	18.00	4.91E+03	S	113	113	8	0
118	9	3.00	3.00	4.44E+03	S	-7	-7	3	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4674 c
 Mean Sample Count Rate: 4674 cpm
 SD Sample Count Rate: 298 cpm

Results of Final Status Survey

Test Statistic (W_r): 145
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 9
 Critical Value_{m,n}: 120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 6

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^-2 6.3E+02 cpm

Area Factor: n/a

DCGL(emo): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 589 cpm Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 2

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_o - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 6

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
110	1	8.00	17.00	9.65E+02	S	-8	-8	3	0
111	2	6.00	18.00	9.72E+02	S	-6	-6	5	0
112	3	7.00	18.00	1.08E+03	S	28	28	9	0
113	4	2.00	2.00	8.64E+02	S	-40	-40	2	0
114	5	9.00	14.00	1.04E+03	S	16	16	8	0
115	6	6.00	1.00	8.62E+02	S	-41	-41	1	0
116	7	5.00	12.00	9.66E+02	S	-8	-8	4	0
117	8	2.00	18.00	1.03E+03	S	12	12	7	0
118	9	3.00	3.00	9.74E+02	S	-5	-5	6	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 973 c
 Mean Sample Count Rate: 973 cpm
 SD Sample Count Rate: 74 cpm

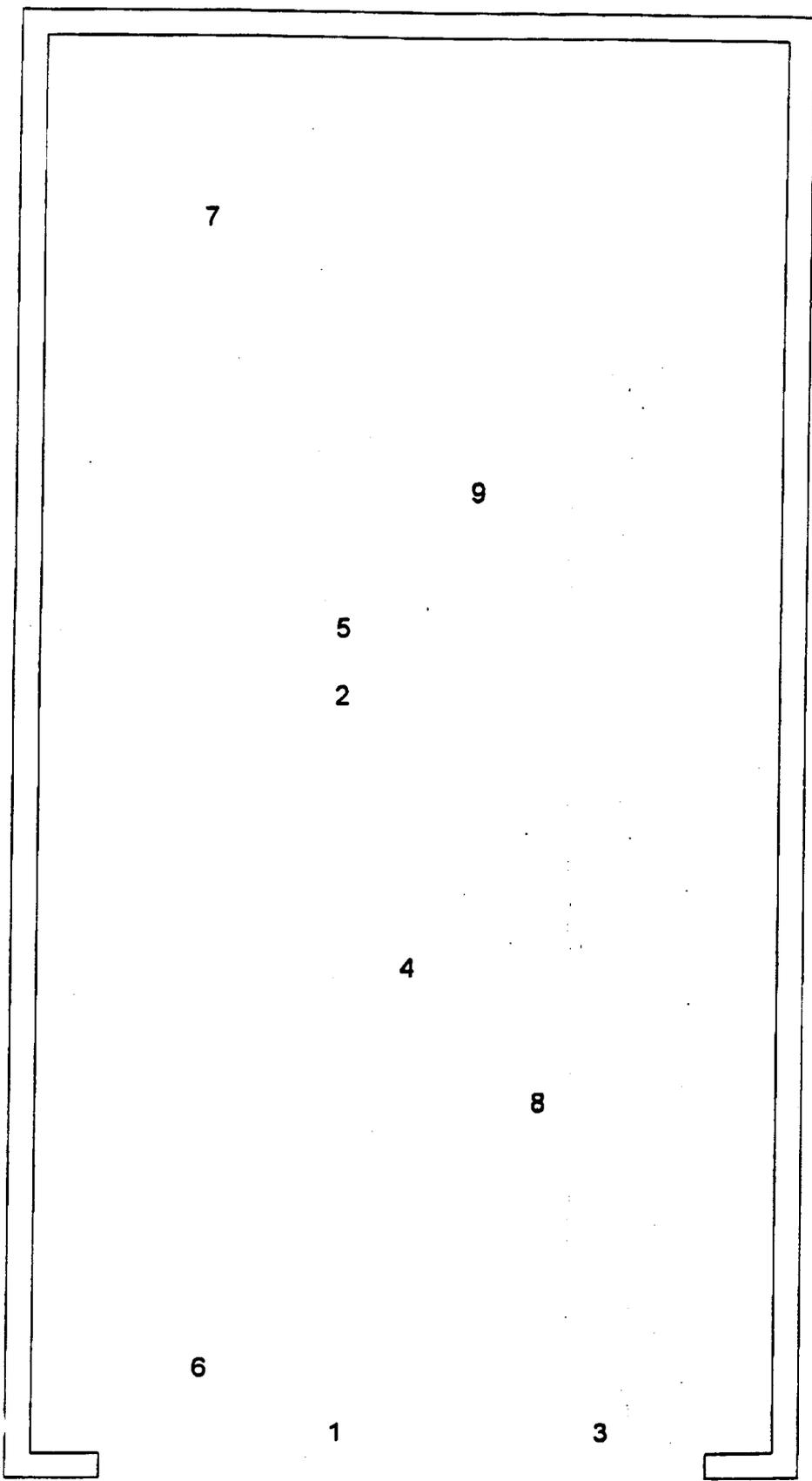
Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.7. Building 286, Cube 7
 Unit Designation: Building 286 Unit 7
 Unit Dimensions (ft): 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	4.	0.	4210.
2	4.	11.	4720.
3	8.	0.	4290.
4	5.	7.	4610.
5	4.	12.	4660.
6	2.	1.	4210.
7	2.	18.	4880.
8	7.	5.	4490.
9	6.	14.	4780.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = ½DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α

Type II - β:

Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.

The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 7

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
11	1	4.00	0.00	4.21E+03	S	-72	-72	1.5	0
12	2	4.00	11.00	4.72E+03	S	58	58	7	0
13	3	8.00	0.00	4.29E+03	S	-52	-52	3	0
14	4	5.00	7.00	4.61E+03	S	30	30	5	0
15	5	4.00	12.00	4.66E+03	S	43	43	6	0
16	6	2.00	1.00	4.21E+03	S	-72	-72	1.5	0
17	7	2.00	18.00	4.88E+03	S	99	99	9	0
18	8	7.00	5.00	4.49E+03	S	-1	-1	4	0
19	9	6.00	14.00	4.78E+03	S	73	73	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4539 c
 Mean Sample Count Rate: 4539 cpm
 SD Sample Count Rate: 252 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α

Type II - β:

Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 7

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
11	1	4.00	0.00	8.82E+02	S	-40	-40	1	0
12	2	4.00	11.00	9.59E+02	S	-15	-15	7	0
13	3	8.00	0.00	9.18E+02	S	-28	-28	2	0
14	4	5.00	7.00	9.46E+02	S	-19	-19	5	0
15	5	4.00	12.00	1.03E+03	S	8	8	8.5	0
16	6	2.00	1.00	9.54E+02	S	-17	-17	6	0
17	7	2.00	18.00	9.37E+02	S	-22	-22	3	0
18	8	7.00	5.00	9.44E+02	S	-20	-20	4	0
19	9	6.00	14.00	1.03E+03	S	8	8	8.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 956 c
 Mean Sample Count Rate: 956 cpm
 SD Sample Count Rate: 48 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

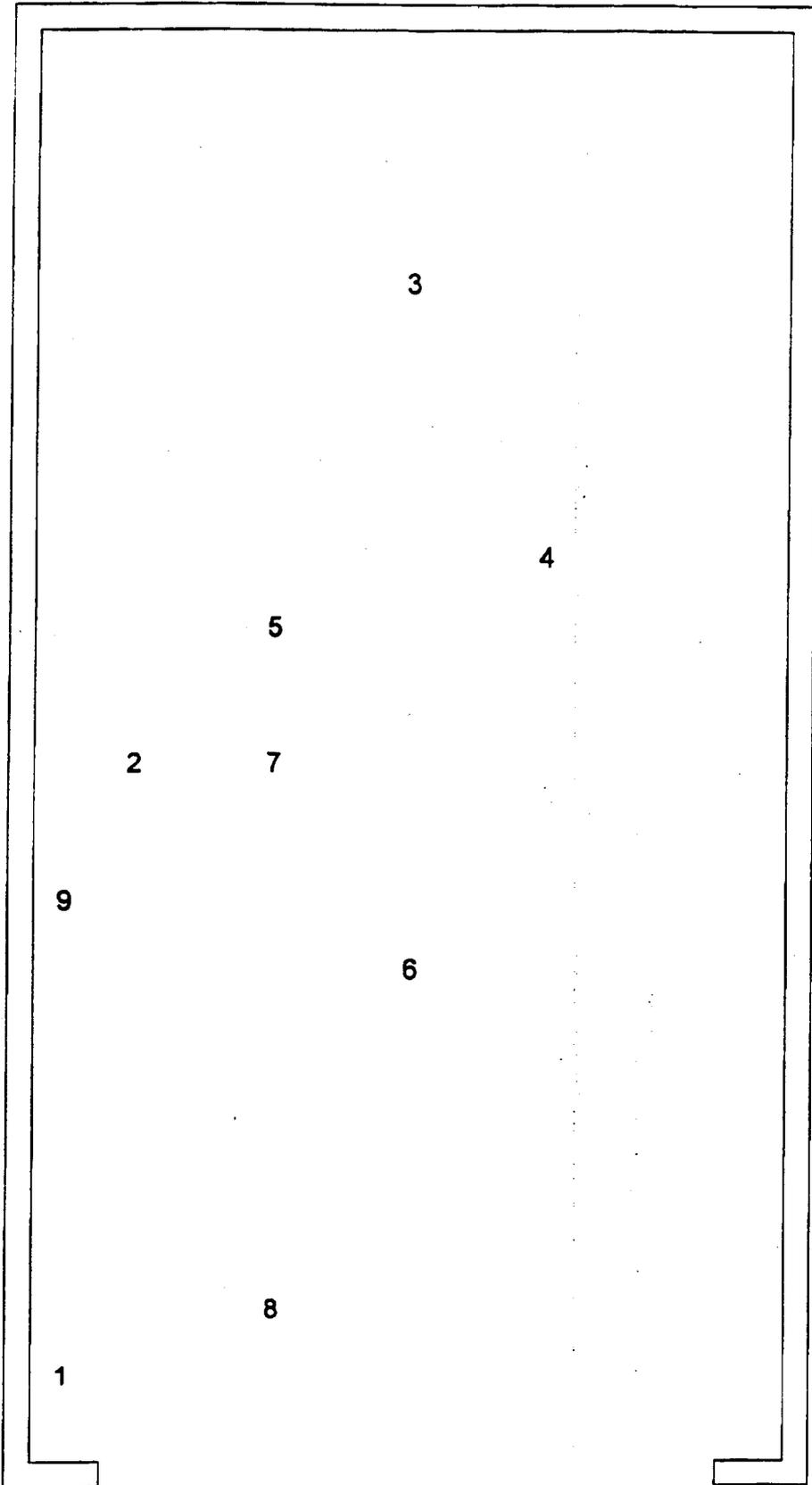
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.8. Building 286, Cube 8

Unit Designation:
Building 286 Unit 8

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	0.	1.	4510.
2	1.	10.	4680.
3	5.	17.	4910.
4	7.	13.	4860.
5	3.	12.	4730.
6	5.	7.	4620.
7	3.	10.	4570.
8	3.	2.	4160.
9	0.	8.	4750.



Survey Unit: Bldg. 286 Cube 8

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Cs-137
DCGL(w): 2.8E+04 dpm 100cm^2 1.1E+05 cpm
Area Factor: n/a
DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1
Detector Area: 20 cm^2
Probe Height: 10 cm
Probe Field of View: 7854 cm^2
MDC: 1600 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 343 cpm
DCGLw: 1.1E+05 cpm
LBGR = 1/2 DCGLw: 5.5E+04 cpm
Delta = DCGLw - LBGR: 5.5E+04 cpm
Delta/Sigma: 160
Type I - alpha: 0.05
Type II - beta: 0.05
Pr: 1
N: 9

Z1 - alpha: 1.645
Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 8

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
20	1	0.00	1.00	4.51E+03	S	4	4	2	0
21	2	1.00	10.00	4.68E+03	S	48	48	5	0
22	3	5.00	17.00	4.91E+03	S	106	106	9	0
23	4	7.00	13.00	4.86E+03	S	93	93	8	0
24	5	3.00	12.00	4.73E+03	S	60	60	6	0
25	6	5.00	7.00	4.62E+03	S	32	32	4	0
26	7	3.00	10.00	4.57E+03	S	20	20	3	0
27	8	3.00	2.00	4.16E+03	S	-85	-85	1	0
28	9	0.00	8.00	4.75E+03	S	65	65	7	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4643 c
 Mean Sample Count Rate: 4643 cpm
 SD Sample Count Rate: 222 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α: Z1 - α

Type II - β: Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 8

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
20	1	0.00	1.00	8.84E+02	S	-39	-39	1	0
21	2	1.00	10.00	1.05E+03	S	14	14	8.5	0
22	3	5.00	17.00	1.05E+03	S	14	14	8.5	0
23	4	7.00	13.00	8.90E+02	S	-37	-37	2	0
24	5	3.00	12.00	1.03E+03	S	8	8	6.5	0
25	6	5.00	7.00	1.02E+03	S	4	4	5	0
26	7	3.00	10.00	1.01E+03	S	1	1	3.5	0
27	8	3.00	2.00	1.03E+03	S	8	8	6.5	0
28	9	0.00	8.00	1.01E+03	S	1	1	3.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 997 c
 Mean Sample Count Rate: 997 cpm
 SD Sample Count Rate: 64 cpm

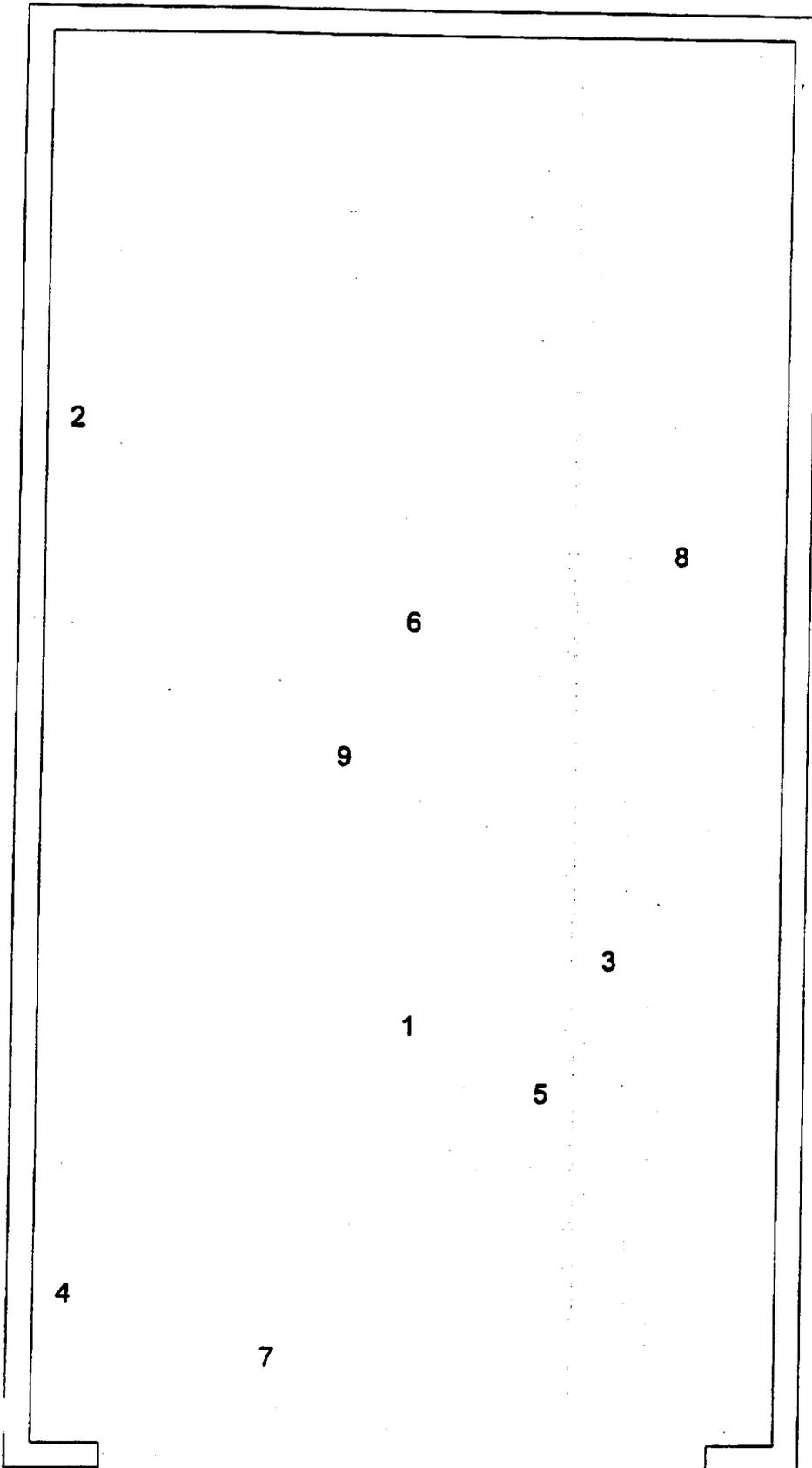
Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.9. Building 286, Cube 9
 Unit Designation: Unit Dimensions (ft):
 Building 286 Unit 9 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	5.	6.	4720.
2	0.	15.	4990.
3	8.	7.	4550.
4	0.	2.	4580.
5	7.	5.	4720.
6	5.	12.	4720.
7	3.	1.	4170.
8	9.	13.	4900.
9	4.	10.	4750.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm
Area Factor:
DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹
Detector Area: cm²
Probe Height: cm
Probe Field of View: cm²
MDC cpm

Is MDC 50% of DCGL

Number of Measurements

Counting Time: s
Bkgd. Sigma: cpm
DCGL_w: cpm
LBGR = 1/2 DCGL_w: cpm
Delta = DCGL_w - LBGR: cpm
Delta/Sigma:
Type I - α:
Type II - β:
P_r:
N:

Z1 - α
Z1 - β

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 9

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
29	1	5.00	6.00	4.72E+03	S	58	58	5	0
30	2	0.00	15.00	4.99E+03	S	127	127	9	0
31	3	8.00	7.00	4.55E+03	S	15	15	2	0
32	4	0.00	2.00	4.58E+03	S	22	22	3	0
33	5	7.00	5.00	4.72E+03	S	58	58	5	0
34	6	5.00	12.00	4.72E+03	S	58	58	5	0
35	7	3.00	1.00	4.17E+03	S	-82	-82	1	0
36	8	9.00	13.00	4.90E+03	S	104	104	8	0
37	9	4.00	10.00	4.75E+03	S	65	65	7	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4678 c
 Mean Sample Count Rate: 4678 cpm
 SD Sample Count Rate: 235 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α :

Z1 - α

Type II - β :

Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 9

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
29	1	5.00	6.00	1.04E+03	S	11	11	7	0
30	2	0.00	15.00	1.05E+03	S	14	14	8	0
31	3	8.00	7.00	9.75E+02	S	-10	-10	2	0
32	4	0.00	2.00	9.82E+02	S	-8	-8	4	0
33	5	7.00	5.00	9.76E+02	S	-10	-10	3	0
34	6	5.00	12.00	1.01E+03	S	1	1	5	0
35	7	3.00	1.00	9.36E+02	S	-22	-22	1	0
36	8	9.00	13.00	1.02E+03	S	4	4	6	0
37	9	4.00	10.00	1.06E+03	S	17	17	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1005 c
 Mean Sample Count Rate: 1005 cpm
 SD Sample Count Rate: 41 cpm

Results of Final Status Survey

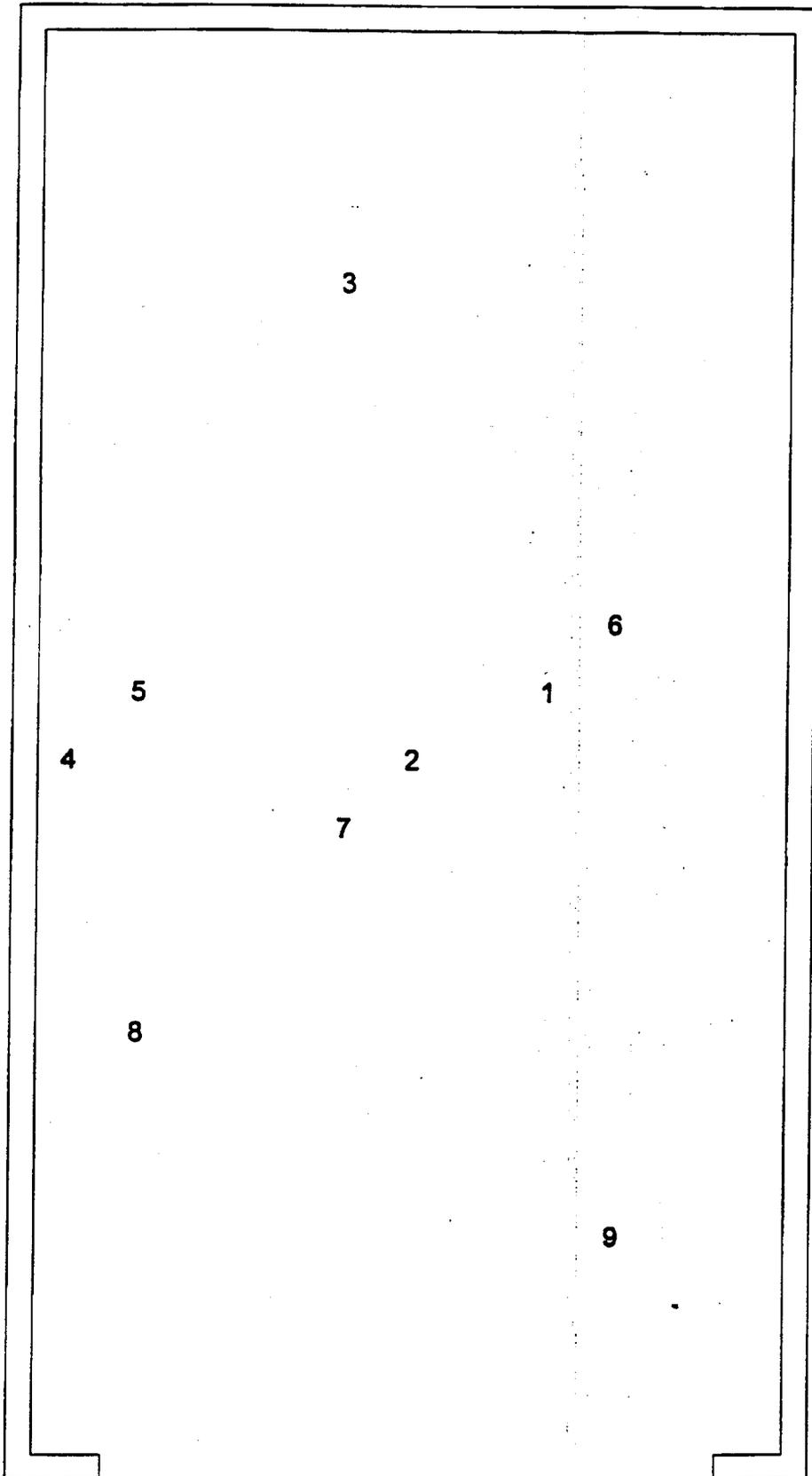
Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.10. Building 286, Cube 10

Unit Designation: Building 286 Unit 10
Unit Dimensions (ft): 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	7.	11.	4700.
2	5.	10.	4630.
3	4.	17.	4790.
4	0.	10.	4840.
5	1.	11.	4890.
6	8.	12.	5030.
7	4.	9.	4620.
8	1.	6.	4600.
9	8.	3.	4670.



Survey Unit: Bldg. 286 Cube 10

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1600 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - alpha: 0.05 Z1 - alpha: 1.645

Type II - beta: 0.05 Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 10

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
38	1	7.00	11.00	4.70E+03	S	53	53	5	0
39	2	5.00	10.00	4.63E+03	S	35	35	3	0
40	3	4.00	17.00	4.79E+03	S	76	76	6	0
41	4	0.00	10.00	4.84E+03	S	88	88	7	0
42	5	1.00	11.00	4.89E+03	S	101	101	8	0
43	6	8.00	12.00	5.03E+03	S	137	137	9	0
44	7	4.00	9.00	4.62E+03	S	32	32	2	0
45	8	1.00	6.00	4.60E+03	S	27	27	1	0
46	9	8.00	3.00	4.67E+03	S	45	45	4	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4752 c
 Mean Sample Count Rate: 4752 cpm
 SD Sample Count Rate: 146 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 10

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 258 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 55 cpm
DCGL_w: 6.3E+02 cpm
LBGR = 1/2 DCGL_w: 3.1E+02 cpm
Delta = DCGL_w - LBGR: 3.1E+02 cpm
Delta/Sigma: 6
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.

The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: **Bldg. 286 Cube 10**

Site: **NAS, Barbers Point**

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
38	1	7.00	11.00	1.07E+03	S	20	20	7	0
39	2	5.00	10.00	1.08E+03	S	23	23	8.5	0
40	3	4.00	17.00	1.05E+03	S	14	14	5	0
41	4	0.00	10.00	1.06E+03	S	17	17	6	0
42	5	1.00	11.00	1.08E+03	S	23	23	8.5	0
43	6	8.00	12.00	1.04E+03	S	11	11	4	0
44	7	4.00	9.00	1.00E+03	S	-2	-2	2	0
45	8	1.00	6.00	1.02E+03	S	4	4	3	0
46	9	8.00	3.00	8.98E+02	S	-35	-35	1	0
							Sum	190	145

Bkgd Counting Time: **60** s
 Mean Bkgd Counts: **1006** c
 Mean Bkgd Count Rate: **1006** cpm
 SD Bkgd Count Rate: **55** cpm

Sample Counting Time: **60** s
 Mean Sample Counts: **1033** c
 Mean Sample Count Rate: **1033** cpm
 SD Sample Count Rate: **57** cpm

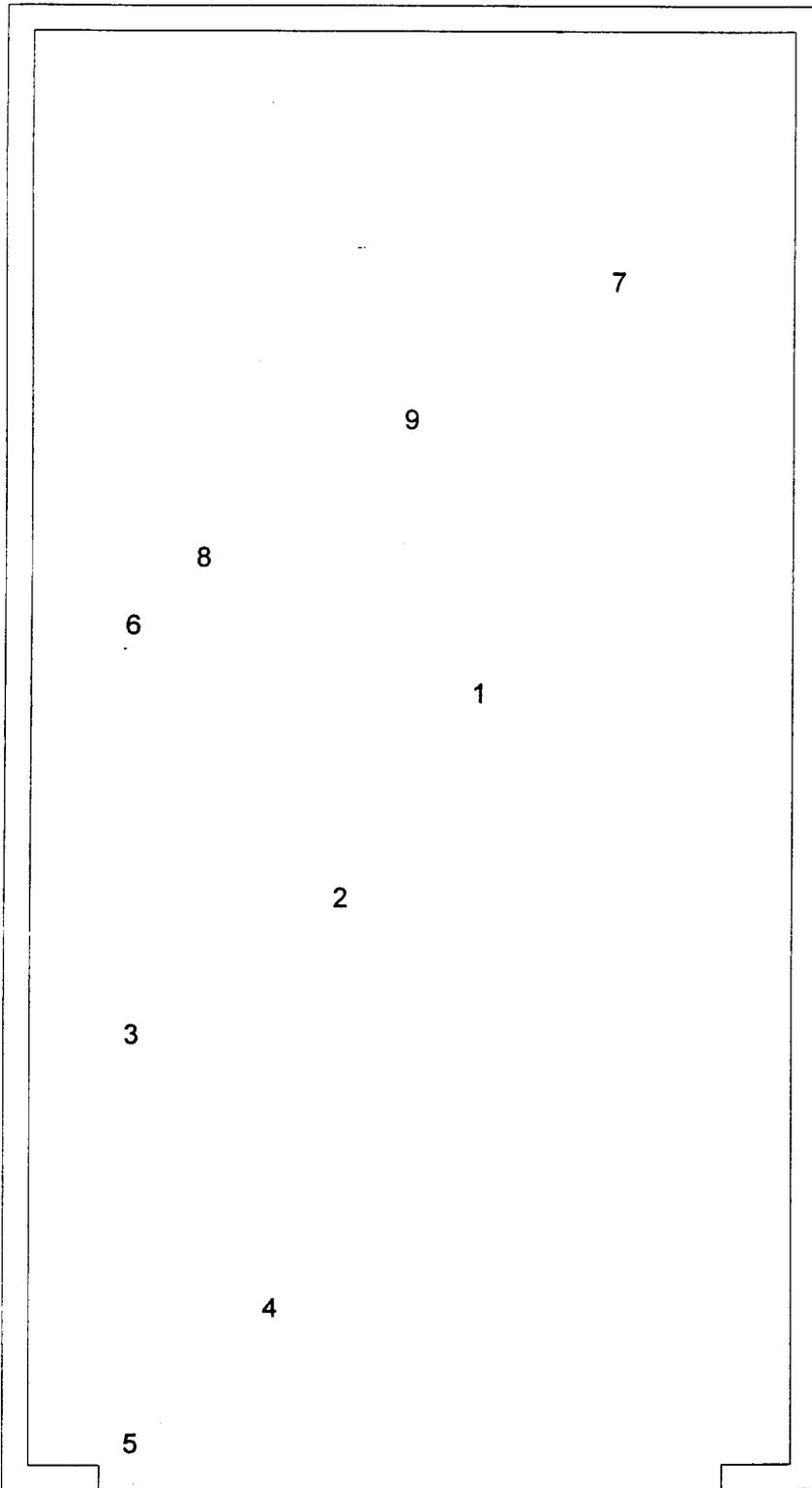
Results of Final Status Survey

Test Statistic (W_r): **145**
 Number of reference area samples (m): **10**
 Number of survey unit samples (n): **9**
 Critical Value_{m,n}: **120**

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.11. Building 286, Cube 11
Unit Designation: Unit Dimensions (ft):
Building 286 Unit 11 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	6.	11.	4690.
2	4.	8.	4710.
3	1.	6.	4530.
4	3.	2.	4290.
5	1.	0.	4260.
6	1.	12.	4840.
7	8.	17.	4930.
8	2.	13.	4840.
9	5.	15.	4760.



Survey Unit: Bldg. 286 Cube 11

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1600 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - alpha: 0.05 Z1 - alpha: 1.645

Type II - beta: 0.05 Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 11

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
47	1	6.00	11.00	4.69E+03	S	50	50	4	0
48	2	4.00	8.00	4.71E+03	S	55	55	5	0
49	3	1.00	6.00	4.53E+03	S	9	9	3	0
50	4	3.00	2.00	4.29E+03	S	-52	-52	2	0
51	5	1.00	0.00	4.26E+03	S	-59	-59	1	0
52	6	1.00	12.00	4.84E+03	S	88	88	7.5	0
53	7	8.00	17.00	4.93E+03	S	111	111	9	0
54	8	2.00	13.00	4.84E+03	S	88	88	7.5	0
55	9	5.00	15.00	4.76E+03	S	68	68	6	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4650 c
 Mean Sample Count Rate: 4650 cpm
 SD Sample Count Rate: 241 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 11

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 258 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 55 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 6

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 11

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
47	1	6.00	11.00	1.01E+03	S	1	1	5.5	0
48	2	4.00	8.00	1.00E+03	S	-2	-2	4	0
49	3	1.00	6.00	1.04E+03	S	11	11	7.5	0
50	4	3.00	2.00	9.22E+02	S	-27	-27	2	0
51	5	1.00	0.00	8.67E+02	S	-44	-44	1	0
52	6	1.00	12.00	9.79E+02	S	-9	-9	3	0
53	7	8.00	17.00	1.07E+03	S	20	20	9	0
54	8	2.00	13.00	1.04E+03	S	11	11	7.5	0
55	9	5.00	15.00	1.01E+03	S	1	1	5.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 993 c
 Mean Sample Count Rate: 993 cpm
 SD Sample Count Rate: 63 cpm

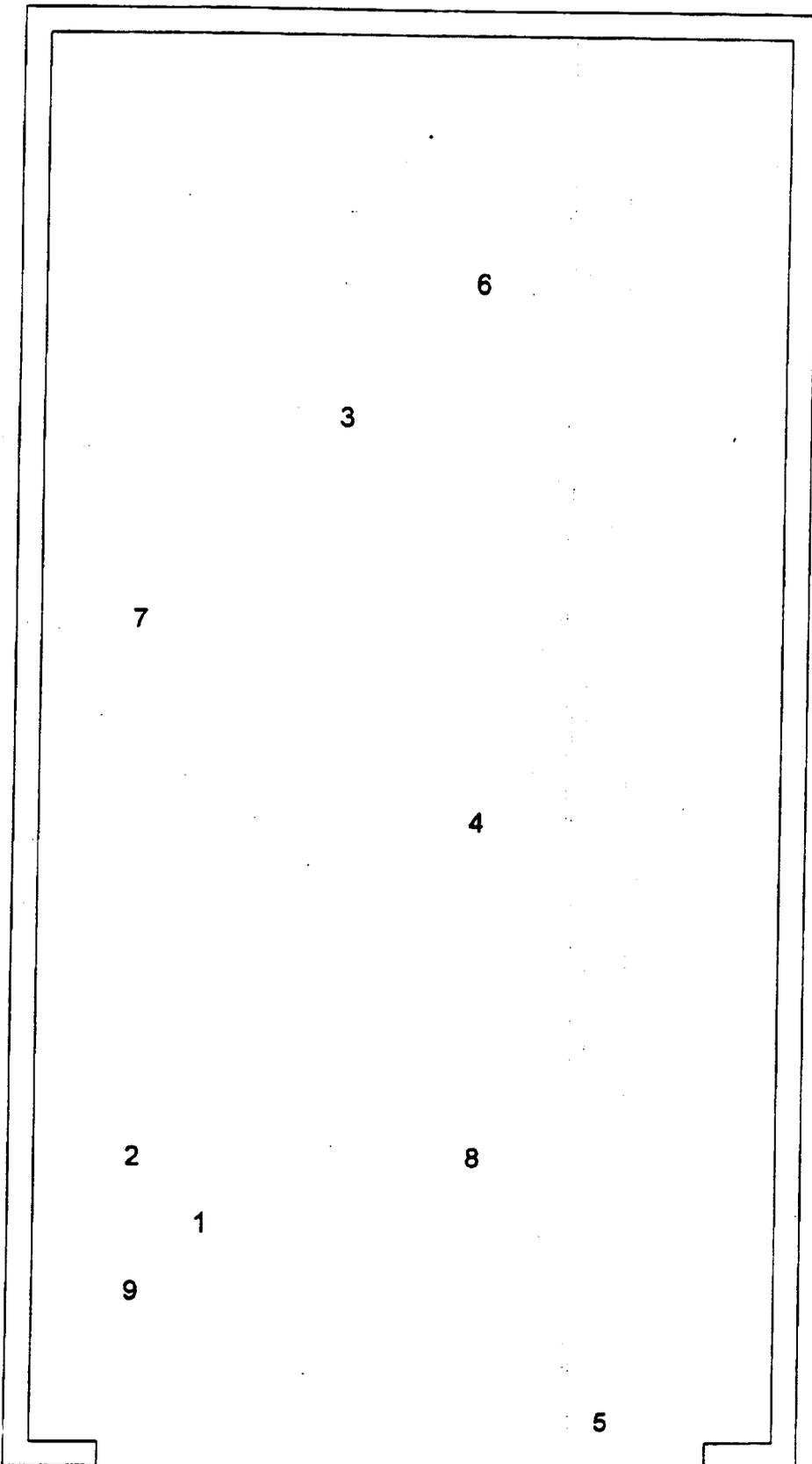
Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.12. Building 286, Cube 12
 Unit Designation: Unit Dimensions (ft):
 Building 286 Unit 12 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	2.	3.	4570.
2	1.	4.	4660.
3	4.	15.	4950.
4	6.	9.	4650.
5	8.	0.	4520.
6	6.	17.	4750.
7	1.	12.	4920.
8	6.	4.	4530.
9	1.	2.	4590.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm

Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α:

Type II - β:

Z1 - β:

P_r:

N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 12

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
56	1	2.00	3.00	4.57E+03	S	20	20	3	0
57	2	1.00	4.00	4.66E+03	S	43	43	6	0
58	3	4.00	15.00	4.95E+03	S	116	116	9	0
59	4	6.00	9.00	4.65E+03	S	40	40	5	0
60	5	8.00	0.00	4.52E+03	S	7	7	1	0
61	6	6.00	17.00	4.75E+03	S	65	65	7	0
62	7	1.00	12.00	4.92E+03	S	109	109	8	0
63	8	6.00	4.00	4.53E+03	S	9	9	2	0
64	9	1.00	2.00	4.59E+03	S	25	25	4	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4682 c
 Mean Sample Count Rate: 4682 cpm
 SD Sample Count Rate: 160 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 12

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed
Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 258 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 55 cpm
DCGL_w: 6.3E+02 cpm
LBGR = 1/2 DCGL_w: 3.1E+02 cpm
Delta = DCGL_w - LBGR: 3.1E+02 cpm
Delta/Sigma: 6
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 12

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
56	1	2.00	3.00	9.85E+02	S	-7	-7	3	0
57	2	1.00	4.00	1.01E+03	S	1	1	4	0
58	3	4.00	15.00	1.05E+03	S	14	14	7.5	0
59	4	6.00	9.00	1.05E+03	S	14	14	7.5	0
60	5	8.00	0.00	8.62E+02	S	-46	-46	1	0
61	6	6.00	17.00	1.13E+03	S	39	39	9	0
62	7	1.00	12.00	1.02E+03	S	4	4	5	0
63	8	6.00	4.00	1.04E+03	S	11	11	6	0
64	9	1.00	2.00	9.42E+02	S	-20	-20	2	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1010 c
 Mean Sample Count Rate: 1010 cpm
 SD Sample Count Rate: 76 cpm

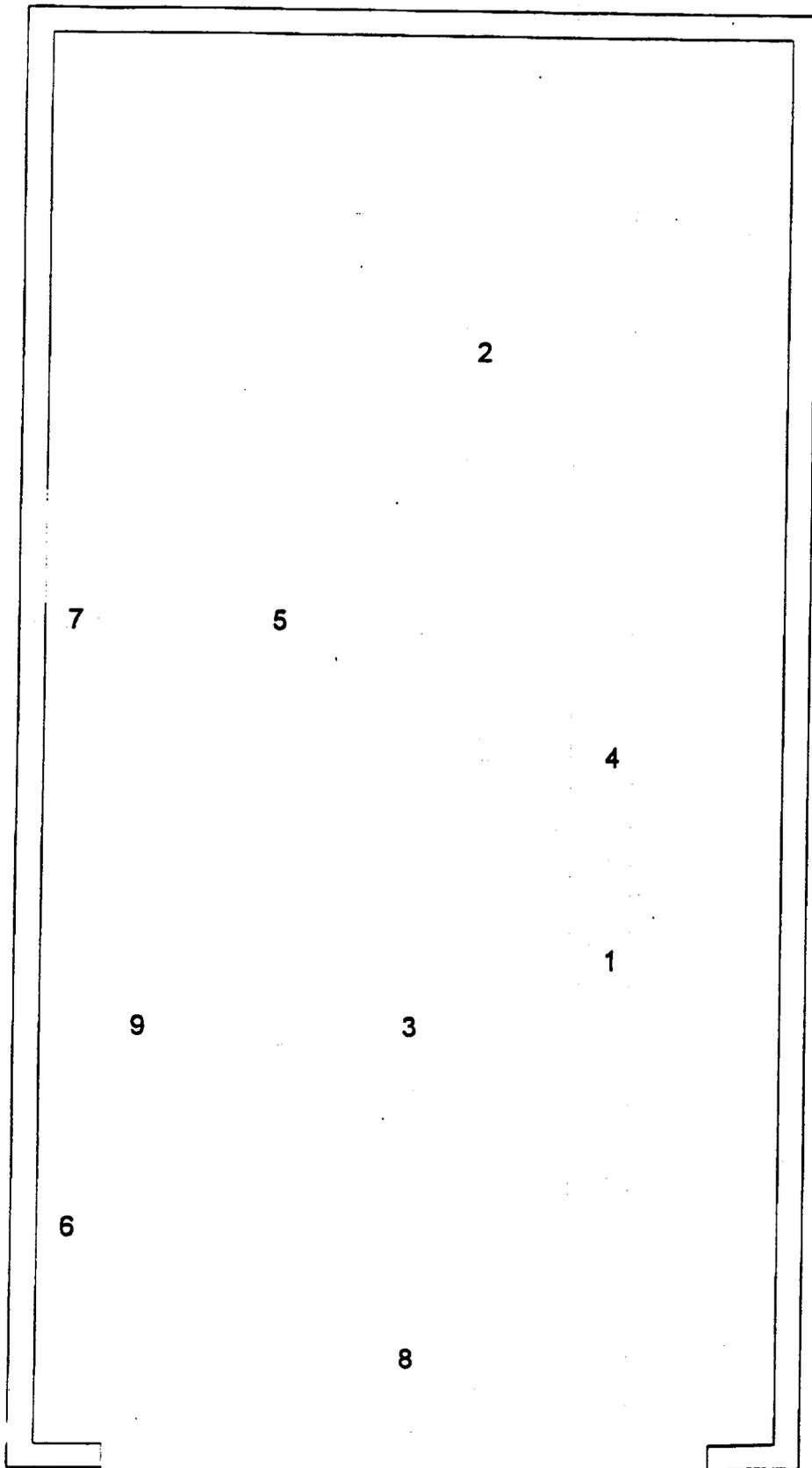
Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.13. Building 286, Cube 13
 Unit Designation: Unit Dimensions (ft):
 Building 286 Unit 13 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	7.	4780.
2	6.	16.	4660.
3	5.	6.	4760.
4	8.	10.	4850.
5	3.	12.	4720.
6	0.	3.	4540.
7	0.	12.	4820.
8	5.	1.	4310.
9	1.	6.	4680.



Survey Unit: Bldg. 286 Cube 13

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1600 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - alpha: 0.05

Type II - beta: 0.05

Pr: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 13

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
65	1	8.00	7.00	4.78E+03	S	73	73	7	0
66	2	6.00	16.00	4.66E+03	S	43	43	3	0
67	3	5.00	6.00	4.76E+03	S	68	68	6	0
68	4	8.00	10.00	4.85E+03	S	91	91	9	0
69	5	3.00	12.00	4.72E+03	S	58	58	5	0
70	6	0.00	3.00	4.54E+03	S	12	12	2	0
71	7	0.00	12.00	4.82E+03	S	83	83	8	0
72	8	5.00	1.00	4.31E+03	S	-47	-47	1	0
73	9	1.00	6.00	4.68E+03	S	48	48	4	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4680 c
 Mean Sample Count Rate: 4680 cpm
 SD Sample Count Rate: 167 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 13

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^2, 6.3E+02 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 258 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 55 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 6

Type I - alpha: 0.05

Type II - beta: 0.05

P_r: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: **Bldg. 286 Cube 13**

Site: **NAS, Barbers Point**

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
65	1	8.00	7.00	1.01E+03	S	1	1	6	0
66	2	6.00	16.00	1.01E+03	S	1	1	6	0
67	3	5.00	6.00	1.04E+03	S	11	11	9	0
68	4	8.00	10.00	1.02E+03	S	4	4	8	0
69	5	3.00	12.00	1.01E+03	S	1	1	6	0
70	6	0.00	3.00	9.83E+02	S	-7	-7	2.5	0
71	7	0.00	12.00	9.91E+02	S	-5	-5	4	0
72	8	5.00	1.00	9.48E+02	S	-19	-19	1	0
73	9	1.00	6.00	9.83E+02	S	-7	-7	2.5	0
							Sum	190	145

Bkgd Counting Time: **60** s
 Mean Bkgd Counts: **1006** c
 Mean Bkgd Count Rate: **1006** cpm
 SD Bkgd Count Rate: **55** cpm

Sample Counting Time: **60** s
 Mean Sample Counts: **999** c
 Mean Sample Count Rate: **999** cpm
 SD Sample Count Rate: **27** cpm

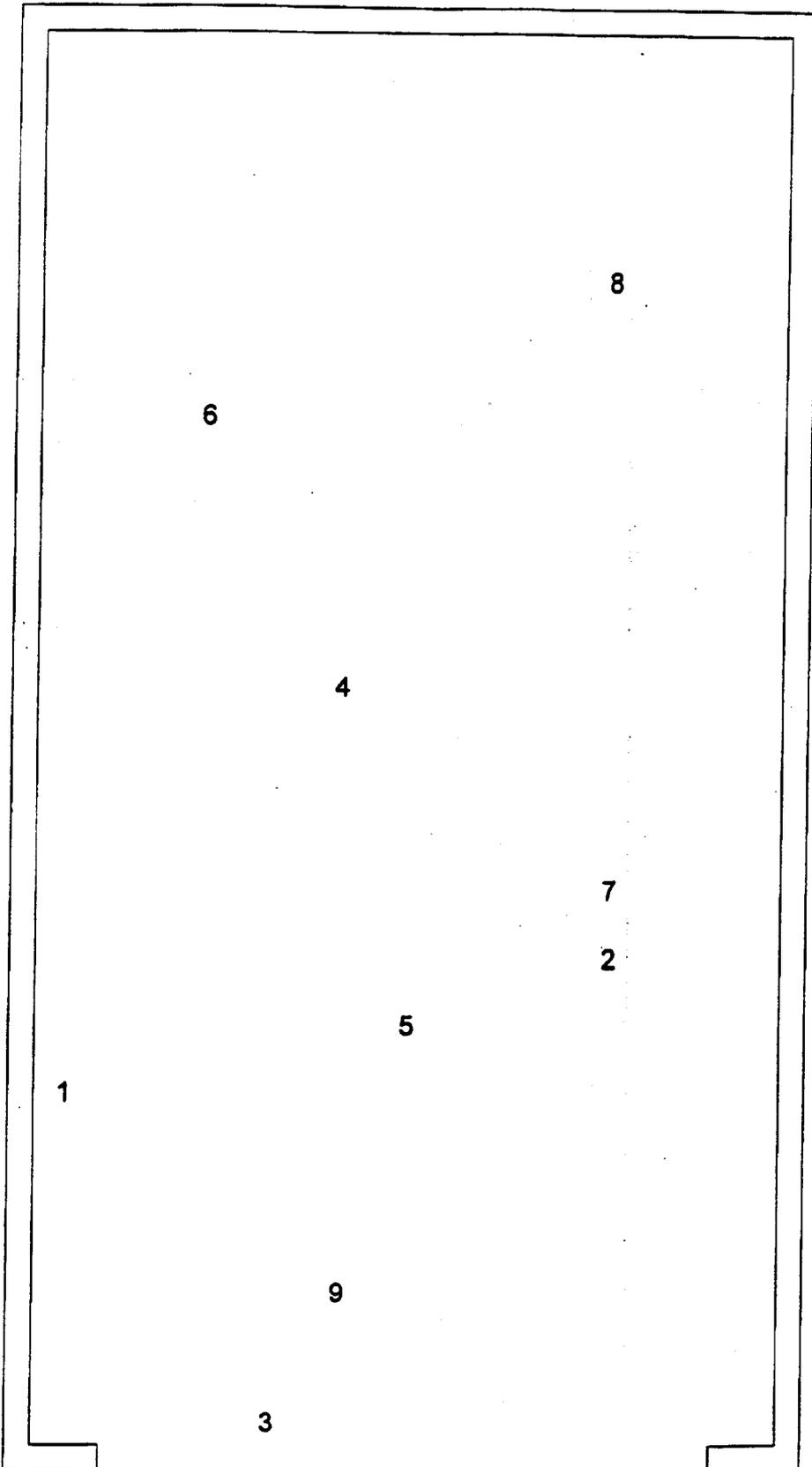
Results of Final Status Survey

Test Statistic (W_r): **145**
 Number of reference area samples (m): **10**
 Number of survey unit samples (n): **9**
 Critical Value_{m,n}: **120**

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.14. Building 286, Cube 14
 Unit Designation: Unit Dimensions (ft):
 Building 286 Unit 14 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	0.	5.	4710.
2	8.	7.	4540.
3	3.	0.	3890.
4	4.	11.	4570.
5	5.	6.	4360.
6	2.	15.	4630.
7	8.	8.	4680.
8	8.	17.	4860.
9	4.	2.	4060.



Survey Unit: Bldg. 286 Cube 14

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 1600 cpm

Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - α: 0.05

Type II - β: 0.05

P_r: 1

N: 9

Z1 - α: 1.645

Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 14

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks	
1	1	5	10	5.01E+03	R	132	28132	19	19	
2	2	25	57	4.59E+03	R	25	28025	17	17	
3	3	30	5	4.44E+03	R	-13	27987	12	12	
4	4	10	28	4.54E+03	R	12	28012	14	14	
5	5	20	3	3.64E+03	R	-217	27783	10	10	
6	6	45	30	4.43E+03	R	-16	27984	11	11	
7	7	7	20	4.56E+03	R	17	28017	15	15	
8	8	12	43	4.68E+03	R	48	28048	18	18	
9	9	65	10	4.58E+03	R	22	28022	16	16	
10	10	33	15	4.46E+03	R	-8	27992	13	13	
74	1	0.00	5.00	4.71E+03	S	55	55	8	0	
75	2	8.00	7.00	4.54E+03	S	12	12	4	0	
76	3	3.00	0.00	3.89E+03	S	-154	-154	1	0	
77	4	4.00	11.00	4.57E+03	S	20	20	5	0	
78	5	5.00	6.00	4.36E+03	S	-34	-34	3	0	
79	6	2.00	15.00	4.63E+03	S	35	35	6	0	
80	7	8.00	8.00	4.68E+03	S	48	48	7	0	
81	8	8.00	17.00	4.86E+03	S	93	93	9	0	
82	9	4.00	2.00	4.06E+03	S	-110	-110	2	0	
								Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4478 c
 Mean Sample Count Rate: 4478 cpm
 SD Sample Count Rate: 318 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value $W_{m,n}$:	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 14

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 1234

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 258 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 55 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 6

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 14

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
74	1	0.00	5.00	9.89E+02	S	-6	-6	7	0
75	2	8.00	7.00	9.61E+02	S	-14	-14	3	0
76	3	3.00	0.00	9.18E+02	S	-28	-28	2	0
77	4	4.00	11.00	9.88E+02	S	-6	-6	6	0
78	5	5.00	6.00	9.85E+02	S	-7	-7	5	0
79	6	2.00	15.00	9.78E+02	S	-9	-9	4	0
80	7	8.00	8.00	1.02E+03	S	4	4	9	0
81	8	8.00	17.00	9.93E+02	S	-4	-4	8	0
82	9	4.00	2.00	9.16E+02	S	-29	-29	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 972 c
 Mean Sample Count Rate: 972 cpm
 SD Sample Count Rate: 35 cpm

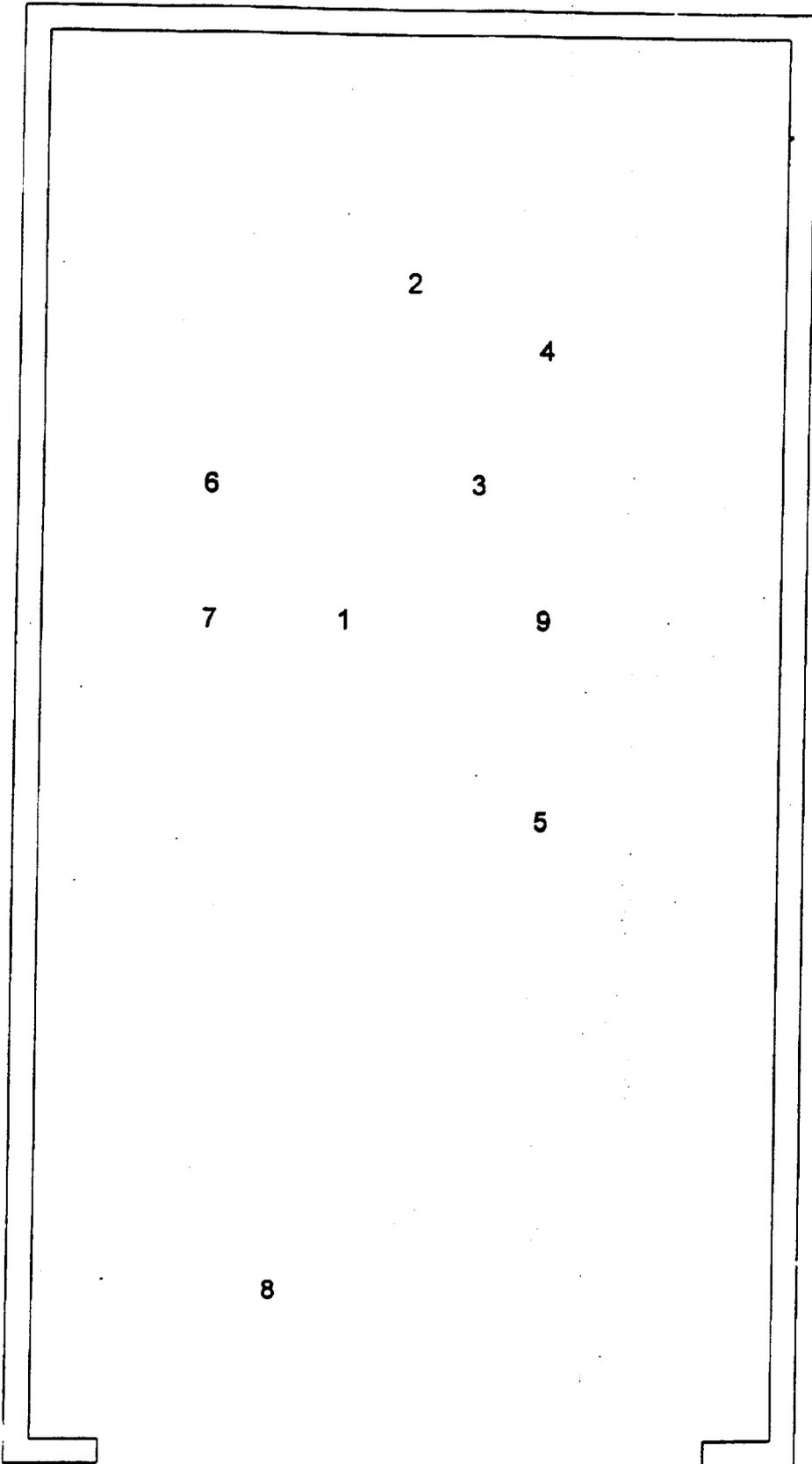
Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.15. Building 286, Cube 15
Unit Designation: Unit Dimensions (ft):
Building 286 Unit 15 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	4.	12.	4730.
2	5.	17.	4770.
3	6.	14.	4800.
4	7.	16.	4670.
5	7.	9.	4650.
6	2.	14.	4460.
7	2.	12.	4760.
8	3.	2.	4060.
9	7.	12.	4810.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α

Type II - β:

Z1 - β

P_r:

N:

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: **Bldg. 286 Cube 15**

Site: **NAS, Barbers Point**

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
83	1	4.00	12.00	4.73E+03	S	60	60	5	0
84	2	5.00	17.00	4.77E+03	S	71	71	7	0
85	3	6.00	14.00	4.80E+03	S	78	78	8	0
86	4	7.00	16.00	4.67E+03	S	45	45	4	0
87	5	7.00	9.00	4.65E+03	S	40	40	3	0
88	6	2.00	14.00	4.46E+03	S	-8	-8	2	0
89	7	2.00	12.00	4.76E+03	S	68	68	6	0
90	8	3.00	2.00	4.06E+03	S	-110	-110	1	0
91	9	7.00	12.00	4.81E+03	S	81	81	9	0
							Sum	190	145

Bkgd Counting Time: **60** s
 Mean Bkgd Counts: **4493** c
 Mean Bkgd Count Rate: **4493** cpm
 SD Bkgd Count Rate: **343** cpm

Sample Counting Time: **60** s
 Mean Sample Counts: **4634** c
 Mean Sample Count Rate: **4634** cpm
 SD Sample Count Rate: **241** cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = ½DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α

Type II - β:

Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 15

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
83	1	4.00	12.00	9.81E+02	S	-8	-8	6	0
84	2	5.00	17.00	1.01E+03	S	1	1	8.5	0
85	3	6.00	14.00	9.37E+02	S	-22	-22	3	0
86	4	7.00	16.00	9.35E+02	S	-23	-23	2	0
87	5	7.00	9.00	9.75E+02	S	-10	-10	5	0
88	6	2.00	14.00	1.01E+03	S	1	1	8.5	0
89	7	2.00	12.00	9.99E+02	S	-2	-2	7	0
90	8	3.00	2.00	8.79E+02	S	-41	-41	1	0
91	9	7.00	12.00	9.59E+02	S	-15	-15	4	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 965 c
 Mean Sample Count Rate: 965 cpm
 SD Sample Count Rate: 43 cpm

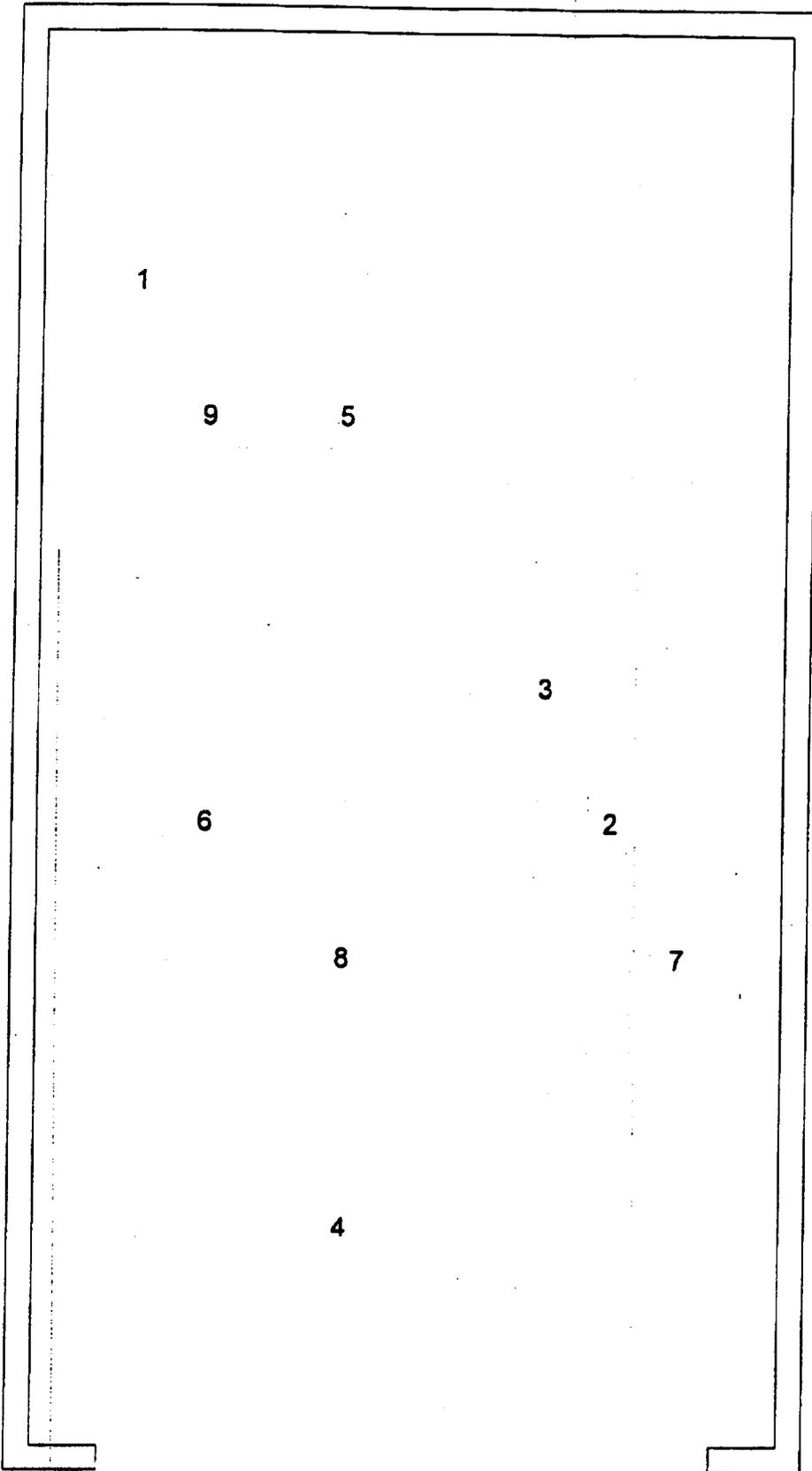
Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.16. Building 286, Cube 16
Unit Designation: Unit Dimensions (ft):
Building 286 Unit 16 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	1.	17.	4870.
2	8.	9.	4570.
3	7.	11.	4700.
4	4.	3.	4140.
5	4.	15.	4630.
6	2.	9.	4610.
7	9.	7.	4630.
8	4.	7.	4520.
9	2.	15.	4760.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm

Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Type II - β:

P_r:

N:

Z1 - α:

Z1 - β:

Statistics

Test:

H₀ - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.

The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 16

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
92	1	1.00	17.00	4.87E+03	S	96	96	9	0
93	2	8.00	9.00	4.57E+03	S	20	20	3	0
94	3	7.00	11.00	4.70E+03	S	53	53	7	0
95	4	4.00	3.00	4.14E+03	S	-90	-90	1	0
96	5	4.00	15.00	4.63E+03	S	35	35	5.5	0
97	6	2.00	9.00	4.61E+03	S	30	30	4	0
98	7	9.00	7.00	4.63E+03	S	35	35	5.5	0
99	8	4.00	7.00	4.52E+03	S	7	7	2	0
100	9	2.00	15.00	4.76E+03	S	68	68	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4603 c
 Mean Sample Count Rate: 4603 cpm
 SD Sample Count Rate: 203 cpm

Results of Final Status Survey

Test Statistic (W_r): 145
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 9
 Critical Value_{m,n}: 120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL:

Number of Measurements

Counting Time:	<input type="text" value="60"/> s
Bkgd. Sigma:	<input type="text" value="55"/> cpm
DCGL _w :	<input type="text" value="2.0E+02"/> cpm
LBGR = ½DCGL _w :	<input type="text" value="1.0E+02"/> cpm
Delta = DCGL _w - LBGR:	<input type="text" value="1.0E+02"/> cpm
Delta/Sigma:	<input type="text" value="2"/>
Type I - α:	<input type="text" value="0.05"/>
Type II - β:	<input type="text" value="0.05"/>
P _r	<input type="text" value="1"/>
N	<input type="text" value="9"/>

Z1 - α:

Z1 - β:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 16

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
92	1	1.00	17.00	1.01E+03	S	1	1	8	0
93	2	8.00	9.00	9.17E+02	S	-28	-28	2	0
94	3	7.00	11.00	9.89E+02	S	-6	-6	7	0
95	4	4.00	3.00	9.70E+02	S	-12	-12	4	0
96	5	4.00	15.00	9.33E+02	S	-23	-23	3	0
97	6	2.00	9.00	9.74E+02	S	-10	-10	5	0
98	7	9.00	7.00	9.88E+02	S	-6	-6	6	0
99	8	4.00	7.00	9.14E+02	S	-29	-29	1	0
100	9	2.00	15.00	1.04E+03	S	11	11	9	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 971 c
 Mean Sample Count Rate: 971 cpm
 SD Sample Count Rate: 43 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

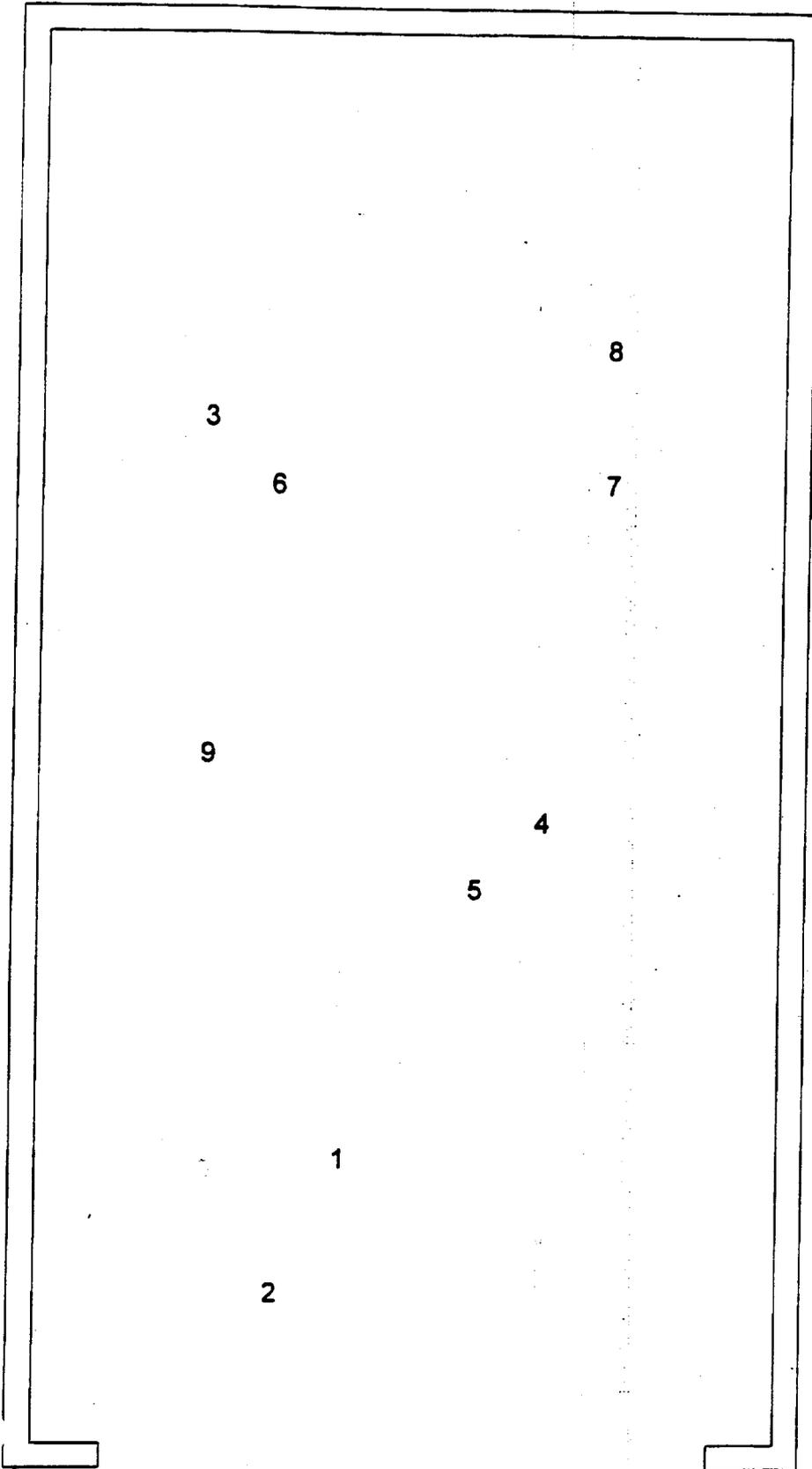
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.17. Building 286, Cube 17

Unit Designation:
Building 286 Unit 17

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	4.	4.	3910.
2	3.	2.	4700.
3	2.	15.	4830.
4	7.	9.	4700.
5	6.	8.	4610.
6	3.	14.	4690.
7	8.	14.	4830.
8	8.	16.	4790.
9	2.	10.	4740.



Survey Unit: Bldg. 286 Cube 17

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^-2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1600 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - alpha: 0.05

Type II - beta: 0.05

P_r: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 17

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
101	1	4.00	4.00	3.91E+03	S	-148	-148	1	0
102	2	3.00	2.00	4.70E+03	S	53	53	4.5	0
103	3	2.00	15.00	4.83E+03	S	86	86	8.5	0
104	4	7.00	9.00	4.70E+03	S	53	53	4.5	0
105	5	6.00	8.00	4.61E+03	S	30	30	2	0
106	6	3.00	14.00	4.69E+03	S	50	50	3	0
107	7	8.00	14.00	4.83E+03	S	86	86	8.5	0
108	8	8.00	16.00	4.79E+03	S	76	76	7	0
109	9	2.00	10.00	4.74E+03	S	63	63	6	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4644 c
 Mean Sample Count Rate: 4644 cpm
 SD Sample Count Rate: 285 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 17

Site: NAS, Barbers Point

Plan

Classification:

DCGL Criterion
 Dose mrem/y TEDE
 Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = ½DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α: Z1 - α

Type II - β: Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 17

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
101	1	4.00	4.00	9.02E+02	S	-33	-33	2	0
102	2	3.00	2.00	8.60E+02	S	-47	-47	1	0
103	3	2.00	15.00	1.03E+03	S	7	7	7	0
104	4	7.00	9.00	9.82E+02	S	-8	-8	5	0
105	5	6.00	8.00	9.62E+02	S	-14	-14	3	0
106	6	3.00	14.00	9.80E+02	S	-8	-8	4	0
107	7	8.00	14.00	1.07E+03	S	20	20	8	0
108	8	8.00	16.00	1.02E+03	S	4	4	6	0
109	9	2.00	10.00	1.09E+03	S	27	27	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 988 c
 Mean Sample Count Rate: 988 cpm
 SD Sample Count Rate: 74 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

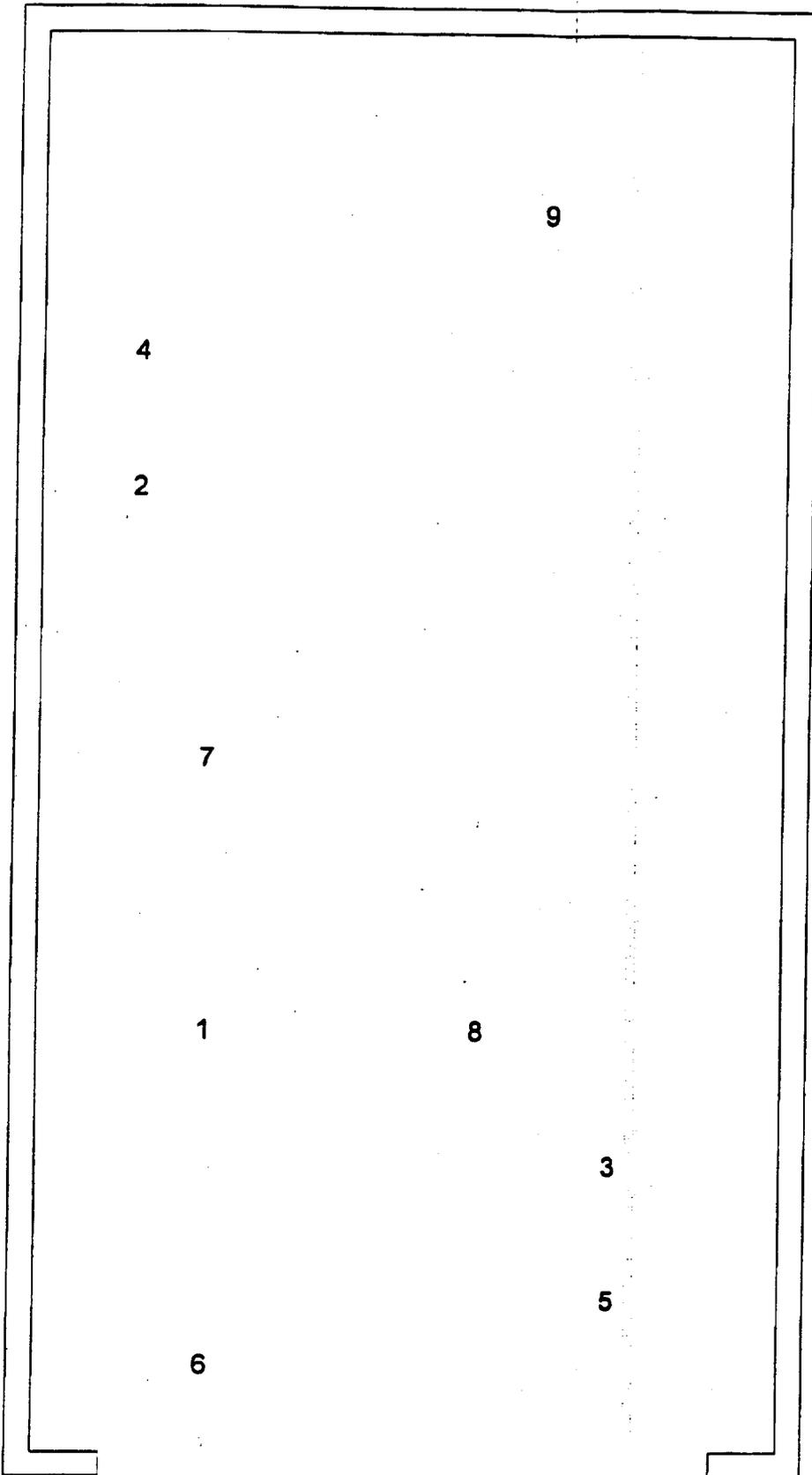
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.18. Building 286, Cube 18

Unit Designation:
Building 286 Unit 18

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	2.	6.	4630.
2	1.	14.	4750.
3	8.	4.	4460.
4	1.	16.	4810.
5	8.	2.	4200.
6	2.	1.	4060.
7	2.	10.	4440.
8	6.	6.	4430.
9	7.	18.	4880.



Survey Unit: Bldg. 286 Cube 18

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 1600 cpm Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - α: 0.05

Type II - β: 0.05

P_r: 1

N: 9

Z1 - α: 1.645

Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 18

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
110	1	2.00	6.00	4.63E+03	S	35	35	6	0
111	2	1.00	14.00	4.75E+03	S	65	65	7	0
112	3	8.00	4.00	4.46E+03	S	-8	-8	5	0
113	4	1.00	16.00	4.81E+03	S	81	81	8	0
114	5	8.00	2.00	4.20E+03	S	-75	-75	2	0
115	6	2.00	1.00	4.06E+03	S	-110	-110	1	0
116	7	2.00	10.00	4.44E+03	S	-13	-13	4	0
117	8	6.00	6.00	4.43E+03	S	-16	-16	3	0
118	9	7.00	18.00	4.88E+03	S	99	99	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4518 c
 Mean Sample Count Rate: 4518 cpm
 SD Sample Count Rate: 276 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:
 DCGL_(w): dpm 100cm⁻² cpm
 Area Factor:
 DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹
 Detector Area: cm²
 Probe Height: cm
 Probe Field of View: cm²
 MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time:	<input type="text" value="60"/> s
Bkgd. Sigma:	<input type="text" value="55"/> cpm
DCGL _w :	<input type="text" value="2.0E+02"/> cpm
LBGR = 1/2 DCGL _w :	<input type="text" value="1.0E+02"/> cpm
Delta = DCGL _w - LBGR:	<input type="text" value="1.0E+02"/> cpm
Delta/Sigma:	<input type="text" value="2"/>
Type I - α:	<input type="text" value="0.05"/> Z1 - α <input type="text" value="1.645"/>
Type II - β:	<input type="text" value="0.05"/> Z1 - β <input type="text" value="1.645"/>
P _r :	<input type="text" value="1"/>
N:	<input type="text" value="9"/>

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 18

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
110	1	2.00	6.00	1.03E+03	S	8	8	8	0
111	2	1.00	14.00	9.93E+02	S	-4	-4	6	0
112	3	8.00	4.00	1.02E+03	S	4	4	7	0
113	4	1.00	16.00	1.05E+03	S	14	14	9	0
114	5	8.00	2.00	9.43E+02	S	-20	-20	2	0
115	6	2.00	1.00	8.87E+02	S	-38	-38	1	0
116	7	2.00	10.00	9.47E+02	S	-19	-19	3	0
117	8	6.00	6.00	9.66E+02	S	-13	-13	4	0
118	9	7.00	18.00	9.71E+02	S	-11	-11	5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 979 c
 Mean Sample Count Rate: 979 cpm
 SD Sample Count Rate: 51 cpm

Results of Final Status Survey

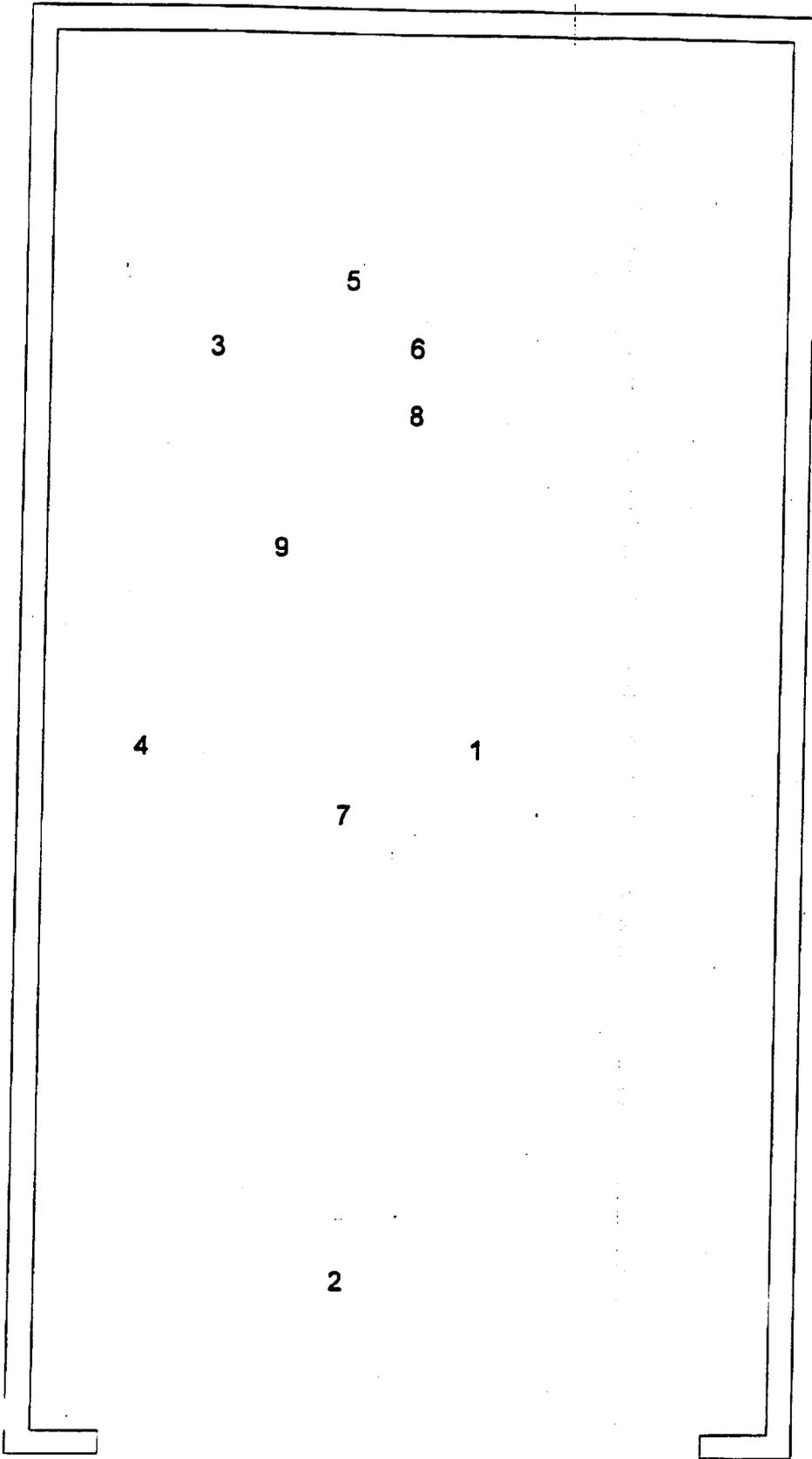
Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 286 Unit 19

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	6.	10.	4660.
2	4.	2.	4650.
3	2.	16.	4980.
4	1.	10.	4660.
5	4.	17.	4740.
6	5.	16.	4760.
7	4.	9.	4560.
8	5.	15.	4710.
9	3.	13.	4790.



Survey Unit: Bldg. 286 Cube 19

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 1600 cpm Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - α: 0.05

Type II - β: 0.05

P_r: 1

N: 9

Z1 - α: 1.645

Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 19

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
119	1	6.00	10.00	4.66E+03	S	43	43	3.5	0
120	2	4.00	2.00	4.65E+03	S	40	40	2	0
121	3	2.00	16.00	4.98E+03	S	124	124	9	0
122	4	1.00	10.00	4.66E+03	S	43	43	3.5	0
123	5	4.00	17.00	4.74E+03	S	63	63	6	0
124	6	5.00	16.00	4.76E+03	S	68	68	7	0
125	7	4.00	9.00	4.56E+03	S	17	17	1	0
126	8	5.00	15.00	4.71E+03	S	55	55	5	0
127	9	3.00	13.00	4.79E+03	S	76	76	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4723 c
 Mean Sample Count Rate: 4723 cpm
 SD Sample Count Rate: 118 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 19

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 258 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 55 cpm

DCGL_w: 2.0E+02 cpm

LBGR = 1/2 DCGL_w: 1.0E+02 cpm

Delta = DCGL_w - LBGR: 1.0E+02 cpm

Delta/Sigma: 2

Type I - α: 0.05

Z1 - α: 1.645

Type II - β: 0.05

Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 19

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
119	1	6.00	10.00	1.06E+03	S	17	17	9	0
120	2	4.00	2.00	9.02E+02	S	-33	-33	1	0
121	3	2.00	16.00	9.81E+02	S	-8	-8	4	0
122	4	1.00	10.00	9.54E+02	S	-17	-17	2	0
123	5	4.00	17.00	9.84E+02	S	-7	-7	5	0
124	6	5.00	16.00	1.01E+03	S	1	1	7	0
125	7	4.00	9.00	9.79E+02	S	-9	-9	3	0
126	8	5.00	15.00	1.05E+03	S	14	14	8	0
127	9	3.00	13.00	9.87E+02	S	-6	-6	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 990 c
 Mean Sample Count Rate: 990 cpm
 SD Sample Count Rate: 48 cpm

Results of Final Status Survey

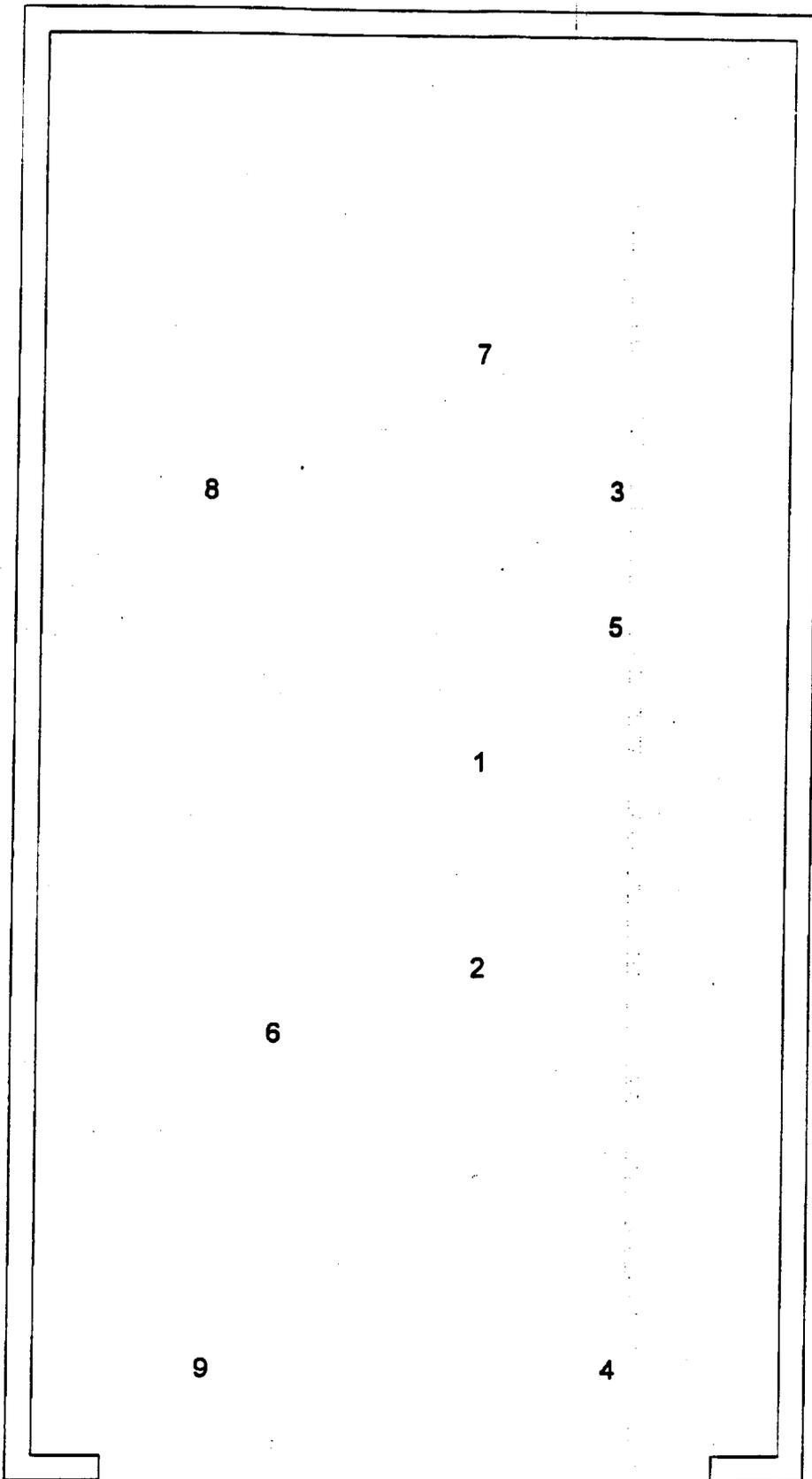
Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 286 Unit 20

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	6.	10.	4520.
2	6.	7.	4560.
3	8.	14.	4760.
4	8.	1.	4030.
5	8.	12.	4700.
6	3.	6.	4420.
7	6.	16.	4940.
8	2.	14.	4790.
9	2.	1.	4060.



Survey Unit: Bldg. 286 Cube 20

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 1600 cpm Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - α: 0.05

Z1 - α: 1.645

Type II - β: 0.05

Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 20

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
128	1	6.00	10.00	4.52E+03	S	7	7	4	0
129	2	6.00	7.00	4.56E+03	S	17	17	5	0
130	3	8.00	14.00	4.76E+03	S	68	68	7	0
131	4	8.00	1.00	4.03E+03	S	-118	-118	1	0
132	5	8.00	12.00	4.70E+03	S	53	53	6	0
133	6	3.00	6.00	4.42E+03	S	-19	-19	3	0
134	7	6.00	16.00	4.94E+03	S	114	114	9	0
135	8	2.00	14.00	4.79E+03	S	76	76	8	0
136	9	2.00	1.00	4.06E+03	S	-110	-110	2	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4531 c
 Mean Sample Count Rate: 4531 cpm
 SD Sample Count Rate: 317 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 20

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 258 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 55 cpm
DCGL_w: 2.0E+02 cpm
LBGR = 1/2 DCGL_w: 1.0E+02 cpm
Delta = DCGL_w - LBGR: 1.0E+02 cpm
Delta/Sigma: 2
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 20

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
128	1	6.00	10.00	9.92E+02	S	-5	-5	5	0
129	2	6.00	7.00	9.69E+02	S	-12	-12	3	0
130	3	8.00	14.00	1.02E+03	S	4	4	8	0
131	4	8.00	1.00	8.89E+02	S	-37	-37	1	0
132	5	8.00	12.00	1.03E+03	S	8	8	9	0
133	6	3.00	6.00	1.00E+03	S	-2	-2	7	0
134	7	6.00	16.00	9.77E+02	S	-9	-9	4	0
135	8	2.00	14.00	9.99E+02	S	-2	-2	6	0
136	9	2.00	1.00	8.96E+02	S	-35	-35	2	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 975 c
 Mean Sample Count Rate: 975 cpm
 SD Sample Count Rate: 50 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

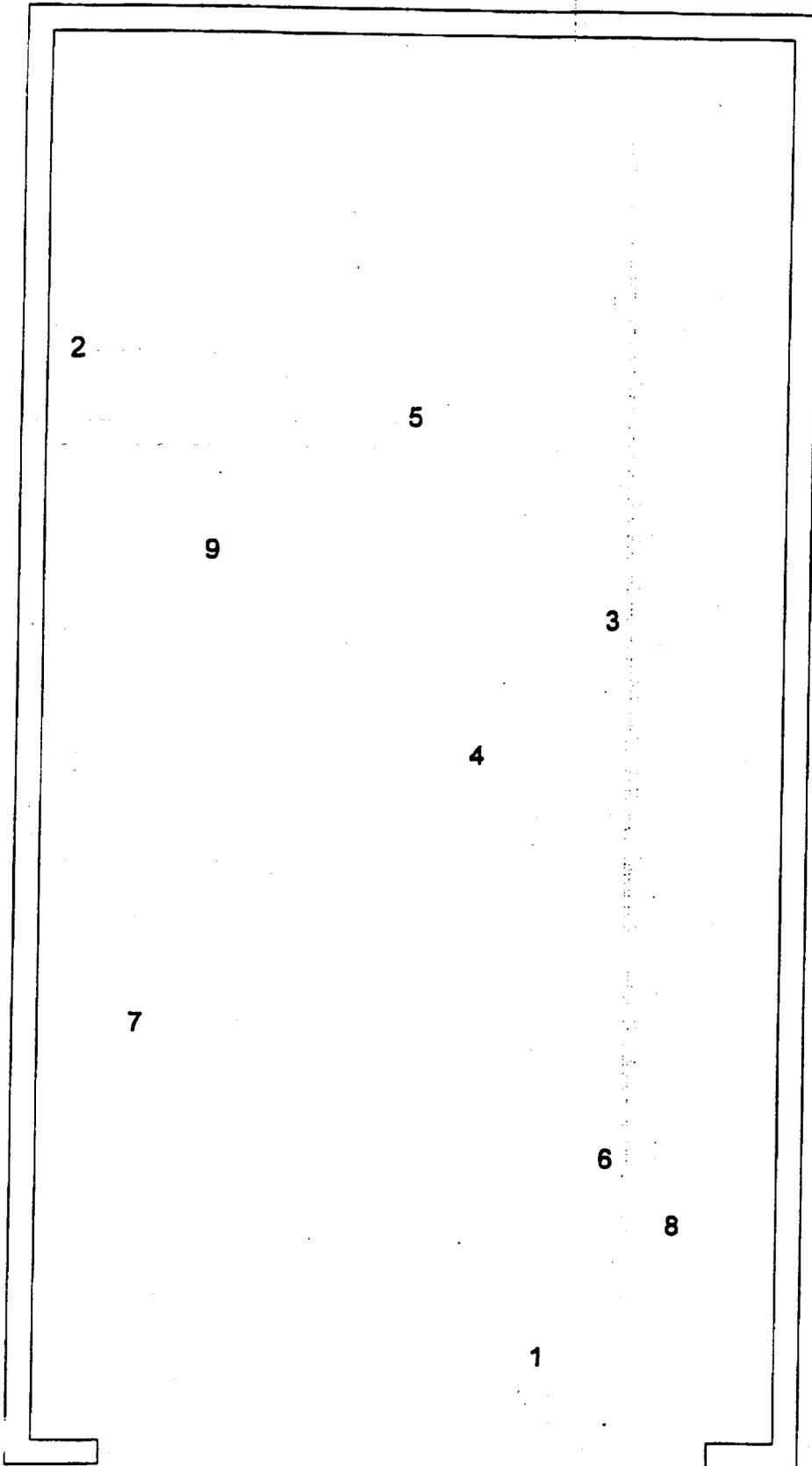
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.21. Building 286, Cube 21

Unit Designation:
Building 286 Unit 21

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	7.	1.	3490.
2	0.	16.	4860.
3	8.	12.	4570.
4	6.	10.	4410.
5	5.	15.	4500.
6	8.	4.	4220.
7	1.	6.	4410.
8	9.	3.	4010.
9	2.	13.	4640.



Survey Unit: Bldg. 286 Cube 21

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1600 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 343 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 160

Type I - alpha: 0.05

Type II - beta: 0.05

P_r: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 21

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.01E+03	R	132	28132	19	19
2	2	25	57	4.59E+03	R	25	28025	17	17
3	3	30	5	4.44E+03	R	-13	27987	12	12
4	4	10	28	4.54E+03	R	12	28012	14	14
5	5	20	3	3.64E+03	R	-217	27783	10	10
6	6	45	30	4.43E+03	R	-16	27984	11	11
7	7	7	20	4.56E+03	R	17	28017	15	15
8	8	12	43	4.68E+03	R	48	28048	18	18
9	9	65	10	4.58E+03	R	22	28022	16	16
10	10	33	15	4.46E+03	R	-8	27992	13	13
137	1	7.00	1.00	3.49E+03	S	-255	-255	1	0
138	2	0.00	16.00	4.86E+03	S	93	93	9	0
139	3	8.00	12.00	4.57E+03	S	20	20	7	0
140	4	6.00	10.00	4.41E+03	S	-21	-21	4.5	0
141	5	5.00	15.00	4.50E+03	S	2	2	6	0
142	6	8.00	4.00	4.22E+03	S	-70	-70	3	0
143	7	1.00	6.00	4.41E+03	S	-21	-21	4.5	0
144	8	9.00	3.00	4.01E+03	S	-123	-123	2	0
145	9	2.00	13.00	4.64E+03	S	37	37	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4493 c
 Mean Bkgd Count Rate: 4493 cpm
 SD Bkgd Count Rate: 343 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4346 c
 Mean Sample Count Rate: 4346 cpm
 SD Sample Count Rate: 402 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time:	<input type="text" value="60"/> s
Bkgd. Sigma:	<input type="text" value="55"/> cpm
DCGL _w :	<input type="text" value="2.0E+02"/> cpm
LBGR = ½DCGL _w :	<input type="text" value="1.0E+02"/> cpm
Delta = DCGL _w - LBGR:	<input type="text" value="1.0E+02"/> cpm
Delta/Sigma:	<input type="text" value="2"/>
Type I - α:	<input type="text" value="0.05"/> Z1 - α <input type="text" value="1.645"/>
Type II - β:	<input type="text" value="0.05"/> Z1 - β <input type="text" value="1.645"/>
P _r	<input type="text" value="1"/>
N	<input type="text" value="9"/>

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 21

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	9.81E+02	R	-8	192	12	12
2	2	25	57	9.85E+02	R	-7	193	13	13
3	3	30	5	1.01E+03	R	1	201	14	14
4	4	10	28	9.69E+02	R	-12	188	11	11
5	5	20	3	1.02E+03	R	4	204	15	15
6	6	45	30	1.04E+03	R	11	211	17	17
7	7	7	20	1.05E+03	R	14	214	18	18
8	8	12	43	8.89E+02	R	-37	163	10	10
9	9	65	10	1.03E+03	R	8	208	16	16
10	10	33	15	1.09E+03	R	27	227	19	19
137	1	7.00	1.00	8.61E+02	S	-46	-46	1	0
138	2	0.00	16.00	9.37E+02	S	-22	-22	2	0
139	3	8.00	12.00	1.02E+03	S	4	4	7.5	0
140	4	6.00	10.00	9.64E+02	S	-13	-13	4	0
141	5	5.00	15.00	9.69E+02	S	-12	-12	5	0
142	6	8.00	4.00	9.82E+02	S	-8	-8	6	0
143	7	1.00	6.00	1.02E+03	S	4	4	7.5	0
144	8	9.00	3.00	9.42E+02	S	-20	-20	3	0
145	9	2.00	13.00	1.03E+03	S	8	8	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 1006 c
 Mean Bkgd Count Rate: 1006 cpm
 SD Bkgd Count Rate: 55 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 969 c
 Mean Sample Count Rate: 969 cpm
 SD Sample Count Rate: 53 cpm

Results of Final Status Survey

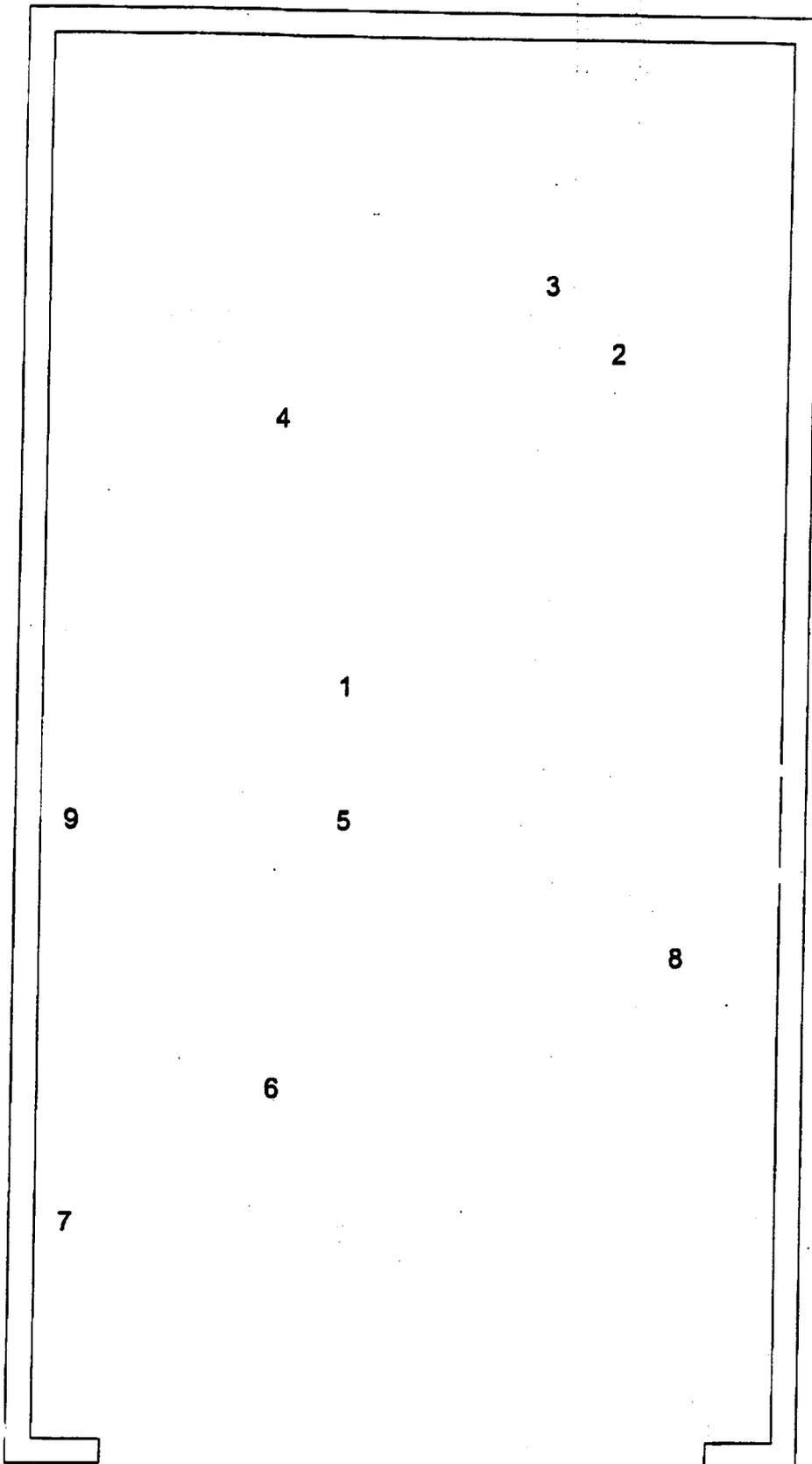
Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 286 Unit 22

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	4.	11.	4660.
2	8.	16.	4880.
3	7.	17.	4840.
4	3.	15.	4610.
5	4.	9.	4620.
6	3.	5.	4480.
7	0.	3.	4550.
8	9.	7.	4830.
9	0.	9.	4260.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emo):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm

Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Type II - β:

P_r:

N:

Z1 - α

Z1 - β

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 22

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.64E+03	R	33	28033	17	17
2	2	25	57	4.50E+03	R	-3	27997	12	12
3	3	30	5	4.52E+03	R	2	28002	13.5	13.5
4	4	10	28	4.58E+03	R	17	28017	15	15
5	5	20	3	4.08E+03	R	-110	27890	10	10
6	6	45	30	4.68E+03	R	43	28043	18	18
7	7	7	20	4.69E+03	R	45	28045	19	19
8	8	12	43	4.60E+03	R	22	28022	16	16
9	9	65	10	4.52E+03	R	2	28002	13.5	13.5
10	10	33	15	4.31E+03	R	-51	27949	11	11
11	1	4.00	11.00	4.66E+03	S	38	38	6	0
12	2	8.00	16.00	4.88E+03	S	94	94	9	0
13	3	7.00	17.00	4.84E+03	S	84	84	8	0
14	4	3.00	15.00	4.61E+03	S	25	25	4	0
15	5	4.00	9.00	4.62E+03	S	28	28	5	0
16	6	3.00	5.00	4.48E+03	S	-8	-8	2	0
17	7	0.00	3.00	4.55E+03	S	10	10	3	0
18	8	9.00	7.00	4.83E+03	S	81	81	7	0
19	9	0.00	9.00	4.26E+03	S	-64	-64	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4512 c
 Mean Bkgd Count Rate: 4512 cpm
 SD Bkgd Count Rate: 187 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4637 c
 Mean Sample Count Rate: 4637 cpm
 SD Sample Count Rate: 198 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 22

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 388 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 83 cpm
DCGL_w: 2.0E+02 cpm
LBGR = 1/2 DCGL_w: 1.0E+02 cpm
Delta = DCGL_w - LBGR: 1.0E+02 cpm
Delta/Sigma: 1
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 22

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	1.00E+03	R	2	202	16	16
2	2	25	57	9.79E+02	R	-6	194	13	13
3	3	30	5	1.06E+03	R	21	221	18	18
4	4	10	28	1.01E+03	R	3	203	17	17
5	5	20	3	1.19E+03	R	61	261	19	19
6	6	45	30	9.86E+02	R	-4	196	14	14
7	7	7	20	9.41E+02	R	-18	182	12	12
8	8	12	43	9.11E+02	R	-27	173	11	11
9	9	65	10	9.91E+02	R	-2	198	15	15
10	10	33	15	9.00E+02	R	-31	169	10	10
11	1	4.00	11.00	1.05E+03	S	17	17	4	0
12	2	8.00	16.00	1.04E+03	S	14	14	3	0
13	3	7.00	17.00	1.08E+03	S	26	26	8	0
14	4	3.00	15.00	1.11E+03	S	36	36	9	0
15	5	4.00	9.00	1.06E+03	S	20	20	5.5	0
16	6	3.00	5.00	1.06E+03	S	20	20	5.5	0
17	7	0.00	3.00	1.07E+03	S	23	23	7	0
18	8	9.00	7.00	1.02E+03	S	7	7	2	0
19	9	0.00	9.00	9.56E+02	S	-13	-13	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 997 c
 Mean Bkgd Count Rate: 997 cpm
 SD Bkgd Count Rate: 83 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1050 c
 Mean Sample Count Rate: 1050 cpm
 SD Sample Count Rate: 43 cpm

Results of Final Status Survey

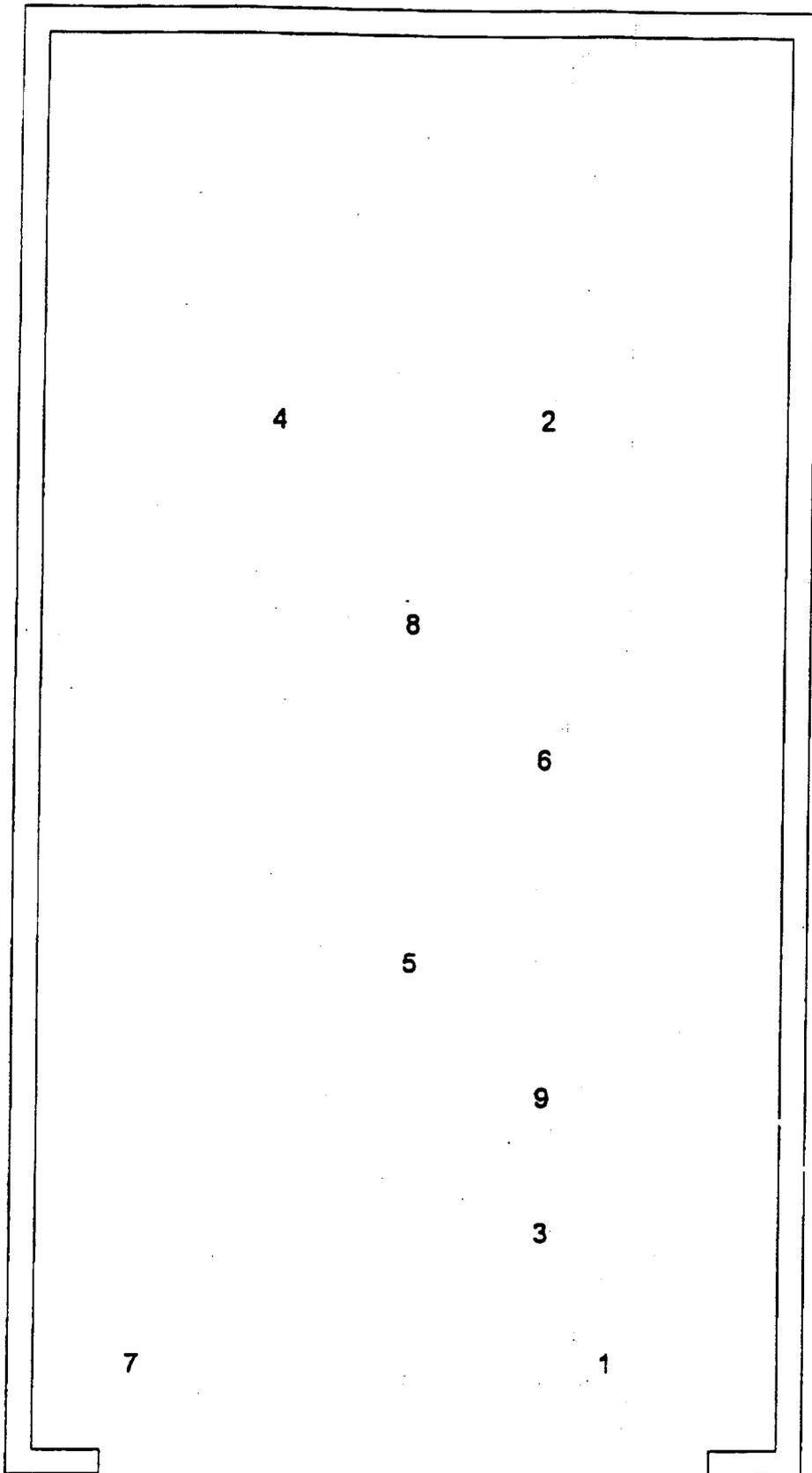
Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 286 Unit 23

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	1.	4450.
2	7.	15.	4820.
3	7.	3.	4590.
4	3.	15.	4530.
5	5.	7.	4660.
6	7.	10.	4830.
7	1.	1.	4440.
8	5.	12.	4660.
9	7.	5.	4610.



Survey Unit: Bldg. 286 Cube 23

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 875 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 187 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 293

Type I - α: 0.05 Z1 - α 1.645

Type II - β: 0.05 Z1 - β 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 23

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.64E+03	R	33	28033	17	17
2	2	25	57	4.50E+03	R	-3	27997	12	12
3	3	30	5	4.52E+03	R	2	28002	13.5	13.5
4	4	10	28	4.58E+03	R	17	28017	15	15
5	5	20	3	4.08E+03	R	-110	27890	10	10
6	6	45	30	4.68E+03	R	43	28043	18	18
7	7	7	20	4.69E+03	R	45	28045	19	19
8	8	12	43	4.60E+03	R	22	28022	16	16
9	9	65	10	4.52E+03	R	2	28002	13.5	13.5
10	10	33	15	4.31E+03	R	-51	27949	11	11
20	1	8.00	1.00	4.45E+03	S	-16	-16	2	0
21	2	7.00	15.00	4.82E+03	S	78	78	8	0
22	3	7.00	3.00	4.59E+03	S	20	20	4	0
23	4	3.00	15.00	4.53E+03	S	5	5	3	0
24	5	5.00	7.00	4.66E+03	S	38	38	6.5	0
25	6	7.00	10.00	4.83E+03	S	81	81	9	0
26	7	1.00	1.00	4.44E+03	S	-18	-18	1	0
27	8	5.00	12.00	4.66E+03	S	38	38	6.5	0
28	9	7.00	5.00	4.61E+03	S	25	25	5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4512 c
 Mean Bkgd Count Rate: 4512 cpm
 SD Bkgd Count Rate: 187 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4621 c
 Mean Sample Count Rate: 4621 cpm
 SD Sample Count Rate: 140 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Site:

Plan

Classification:

DCGL Criterion
 Dose: mrem/y TEDE
 Model: Default Parameters

Radionuclide of Concern:
 DCGL_(w): dpm 100cm⁻² cpm
 Area Factor:
 DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹
 Detector Area: cm²
 Probe Height: cm
 Probe Field of View: cm²
 MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time:	<input type="text" value="60"/> s		
Bkgd. Sigma:	<input type="text" value="83"/> cpm		
DCGL _w :	<input type="text" value="2.0E+02"/> cpm		
LBGR = 1/2 DCGL _w :	<input type="text" value="1.0E+02"/> cpm		
Delta = DCGL _w - LBGR:	<input type="text" value="1.0E+02"/> cpm		
Delta/Sigma:	<input type="text" value="1"/>		
Type I - α:	<input type="text" value="0.05"/>	Z1 - α	<input type="text" value="1.645"/>
Type II - β:	<input type="text" value="0.05"/>	Z1 - β	<input type="text" value="1.645"/>
P _r	<input type="text" value="1"/>		
N	<input type="text" value="9"/>		

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 23

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	1.00E+03	R	2	202	16	16
2	2	25	57	9.79E+02	R	-6	194	13	13
3	3	30	5	1.06E+03	R	21	221	18	18
4	4	10	28	1.01E+03	R	3	203	17	17
5	5	20	3	1.19E+03	R	61	261	19	19
6	6	45	30	9.86E+02	R	-4	196	14	14
7	7	7	20	9.41E+02	R	-18	182	12	12
8	8	12	43	9.11E+02	R	-27	173	11	11
9	9	65	10	9.91E+02	R	-2	198	15	15
10	10	33	15	9.00E+02	R	-31	169	10	10
20	1	8.00	1.00	9.98E+02	S	0	0	2	0
21	2	7.00	15.00	1.00E+03	S	1	1	3	0
22	3	7.00	3.00	9.83E+02	S	-4	-4	1	0
23	4	3.00	15.00	1.09E+03	S	30	30	8	0
24	5	5.00	7.00	1.01E+03	S	4	4	4	0
25	6	7.00	10.00	1.10E+03	S	33	33	9	0
26	7	1.00	1.00	1.02E+03	S	7	7	5.5	0
27	8	5.00	12.00	1.02E+03	S	7	7	5.5	0
28	9	7.00	5.00	1.05E+03	S	17	17	7	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 997 c
 Mean Bkgd Count Rate: 997 cpm
 SD Bkgd Count Rate: 83 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1030 c
 Mean Sample Count Rate: 1030 cpm
 SD Sample Count Rate: 41 cpm

Results of Final Status Survey

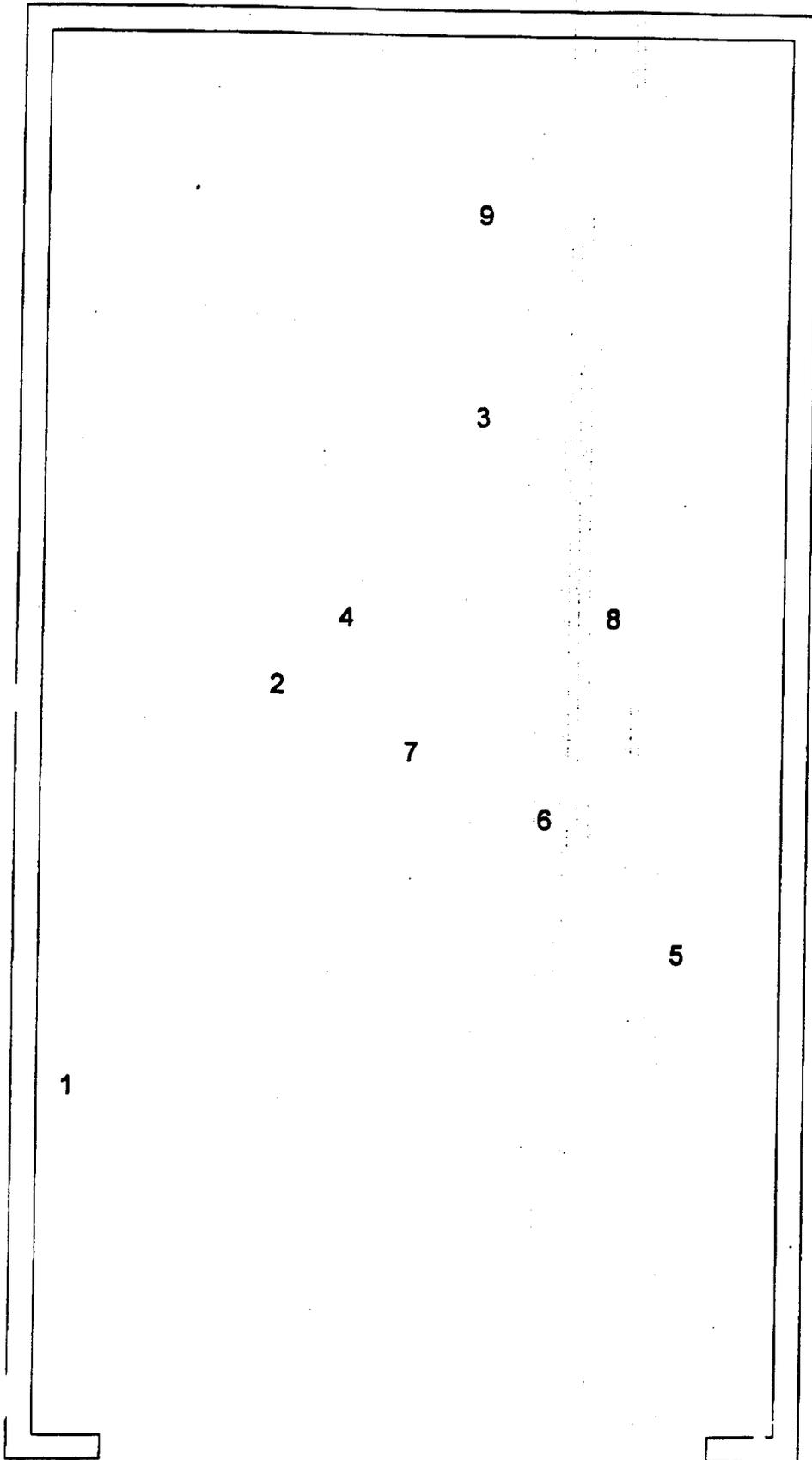
Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
 Building 286 Unit 24

Unit Dimensions (ft):
 9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	0.	5.	4700.
2	3.	11.	4810.
3	6.	15.	4960.
4	4.	12.	4670.
5	9.	7.	4660.
6	7.	9.	4790.
7	5.	10.	4540.
8	8.	12.	4760.
9	6.	18.	4900.



Survey Unit: Bldg. 286 Cube 24

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 875 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 187 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 293

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

Pr: 1

N: 9

Statistics

Test: WRS

H0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 24

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	4.64E+03	R	33	28033	17	17
2	2	25	57	4.50E+03	R	-3	27997	12	12
3	3	30	5	4.52E+03	R	2	28002	13.5	13.5
4	4	10	28	4.58E+03	R	17	28017	15	15
5	5	20	3	4.08E+03	R	-110	27890	10	10
6	6	45	30	4.68E+03	R	43	28043	18	18
7	7	7	20	4.69E+03	R	45	28045	19	19
8	8	12	43	4.60E+03	R	22	28022	16	16
9	9	65	10	4.52E+03	R	2	28002	13.5	13.5
10	10	33	15	4.31E+03	R	-51	27949	11	11
29	1	0.00	5.00	4.70E+03	S	48	48	4	0
30	2	3.00	11.00	4.81E+03	S	76	76	7	0
31	3	6.00	15.00	4.96E+03	S	114	114	9	0
32	4	4.00	12.00	4.67E+03	S	40	40	3	0
33	5	9.00	7.00	4.66E+03	S	38	38	2	0
34	6	7.00	9.00	4.79E+03	S	71	71	6	0
35	7	5.00	10.00	4.54E+03	S	7	7	1	0
36	8	8.00	12.00	4.76E+03	S	63	63	5	0
37	9	6.00	18.00	4.90E+03	S	99	99	8	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4512 c
 Mean Bkgd Count Rate: 4512 cpm
 SD Bkgd Count Rate: 187 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4754 c
 Mean Sample Count Rate: 4754 cpm
 SD Sample Count Rate: 129 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: **Bldg. 286 Cube 24** Site: **NAS, Barbers Point**

Plan

Classification: **Class 3**

DCGL Criterion
 Dose: **25** mrem/y TEDE
 Model: **D&D** Default Parameters

Radionuclide of Concern: **Pu-239**
 DCGL_(w): **2.0E+02** dpm 100cm⁻² **6.3E+02** cpm
 Area Factor: **n/a**
 DCGL_(emc): **n/a**

Instrumentation

Model: **Eberline E-600** Cal. Date: **2-Feb-99** Serial No. **213**

Detector: **FIDLER** Cal. Date: **2-Feb-99** Serial No. **512**

Type Survey: **Fixed**

Detector Efficiency: **2%** cpm dpm⁻¹
 Detector Area: **127** cm²
 Probe Height: **10** cm
 Probe Field of View: **15708** cm²
 MDC: **388** cpm Is MDC 50% of DCGL **No**

Number of Measurements

Counting Time: **60** s
 Bkgd. Sigma: **83** cpm
 DCGL_w: **2.0E+02** cpm
 LBGR = 1/2 DCGL_w: **1.0E+02** cpm
 Delta = DCGL_w - LBGR: **1.0E+02** cpm
 Delta/Sigma: **1**
 Type I - α: **0.05** Z1 - α **1.645**
 Type II - β: **0.05** Z1 - β **1.645**
 P_r: **1**
 N: **9**

Statistics

Test: **WRS**

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 24

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	1.00E+03	R	2	202	16	16
2	2	25	57	9.79E+02	R	-6	194	13	13
3	3	30	5	1.06E+03	R	21	221	18	18
4	4	10	28	1.01E+03	R	3	203	17	17
5	5	20	3	1.19E+03	R	61	261	19	19
6	6	45	30	9.86E+02	R	-4	196	14	14
7	7	7	20	9.41E+02	R	-18	182	12	12
8	8	12	43	9.11E+02	R	-27	173	11	11
9	9	65	10	9.91E+02	R	-2	198	15	15
10	10	33	15	9.00E+02	R	-31	169	10	10
29	1	0.00	5.00	1.08E+03	S	26	26	5	0
30	2	3.00	11.00	1.12E+03	S	39	39	9	0
31	3	6.00	15.00	1.11E+03	S	36	36	8	0
32	4	4.00	12.00	1.05E+03	S	17	17	4	0
33	5	9.00	7.00	9.95E+02	S	-1	-1	1	0
34	6	7.00	9.00	9.98E+02	S	0	0	2	0
35	7	5.00	10.00	1.10E+03	S	33	33	6.5	0
36	8	8.00	12.00	1.01E+03	S	4	4	3	0
37	9	6.00	18.00	1.10E+03	S	33	33	6.5	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 997 c
 Mean Bkgd Count Rate: 997 cpm
 SD Bkgd Count Rate: 83 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1063 c
 Mean Sample Count Rate: 1063 cpm
 SD Sample Count Rate: 50 cpm

Results of Final Status Survey

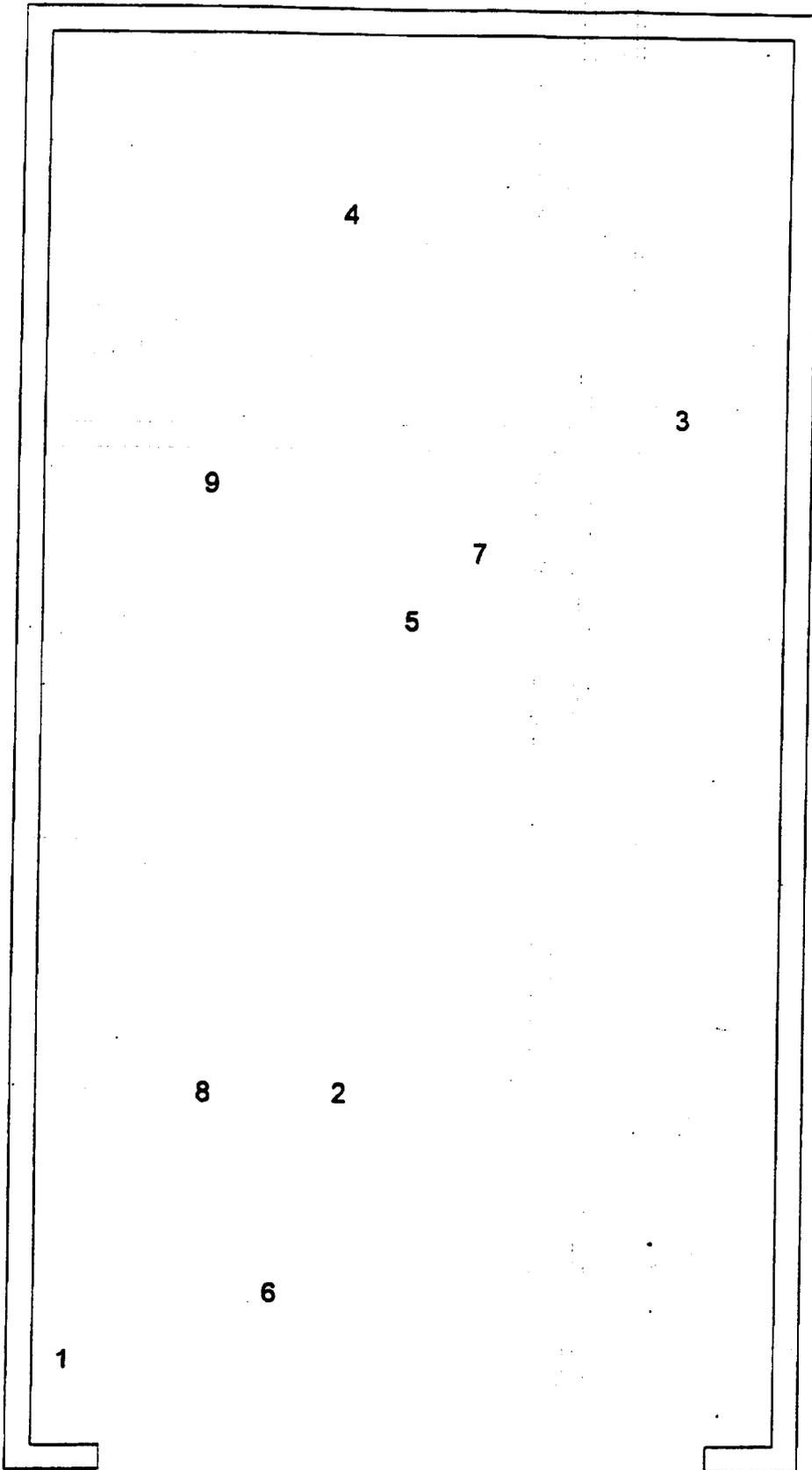
Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 286 Unit 25

Unit Dimensions (ft):
9 x 19

Survey Pt.	X (ft)	Y (ft)	Value
1	0.	1.	4360.
2	4.	5.	4470.
3	9.	15.	4860.
4	4.	18.	4920.
5	5.	12.	4610.
6	3.	2.	4390.
7	6.	13.	4630.
8	2.	5.	4610.
9	2.	14.	4780.



Survey Unit: Bldg. 286 Cube 25

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(eme): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 875 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 187 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 293

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 25

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.64E+03	R	33	28033	17	17
2	2	25	57	4.50E+03	R	-3	27997	12	12
3	3	30	5	4.52E+03	R	2	28002	13.5	13.5
4	4	10	28	4.58E+03	R	17	28017	15	15
5	5	20	3	4.08E+03	R	-110	27890	10	10
6	6	45	30	4.68E+03	R	43	28043	18	18
7	7	7	20	4.69E+03	R	45	28045	19	19
8	8	12	43	4.60E+03	R	22	28022	16	16
9	9	65	10	4.52E+03	R	2	28002	13.5	13.5
10	10	33	15	4.31E+03	R	-51	27949	11	11
38	1	0.00	1.00	4.36E+03	S	-39	-39	1	0
39	2	4.00	5.00	4.47E+03	S	-11	-11	3	0
40	3	9.00	15.00	4.86E+03	S	89	89	8	0
41	4	4.00	18.00	4.92E+03	S	104	104	9	0
42	5	5.00	12.00	4.61E+03	S	25	25	4.5	0
43	6	3.00	2.00	4.39E+03	S	-31	-31	2	0
44	7	6.00	13.00	4.63E+03	S	30	30	6	0
45	8	2.00	5.00	4.61E+03	S	25	25	4.5	0
46	9	2.00	14.00	4.78E+03	S	68	68	7	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4512 c
 Mean Bkgd Count Rate: 4512 cpm
 SD Bkgd Count Rate: 187 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4626 c
 Mean Sample Count Rate: 4626 cpm
 SD Sample Count Rate: 199 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 25 Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion
 Dose: 25 mrem/y TEDE
 Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 388 cpm Is MDC 50% of DCGL No

Number of Measurements

Counting Time:	60	s	
Bkgd. Sigma:	83	cpm	
DCGL _w :	2.0E+02	cpm	
LBGR = 1/2 DCGL _w :	1.0E+02	cpm	
Delta = DCGL _w - LBGR:	1.0E+02	cpm	
Delta/Sigma:	1		
Type I - α:	0.05		Z1 - α 1.645
Type II - β:	0.05		Z1 - β 1.645
P _r	1		
N	9		

Statistics

Test: WRS

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)
 H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 286 Cube 25

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	1.00E+03	R	2	202	16	16
2	2	25	57	9.79E+02	R	-6	194	13	13
3	3	30	5	1.06E+03	R	21	221	18	18
4	4	10	28	1.01E+03	R	3	203	17	17
5	5	20	3	1.19E+03	R	61	261	19	19
6	6	45	30	9.86E+02	R	-4	196	14	14
7	7	7	20	9.41E+02	R	-18	182	12	12
8	8	12	43	9.11E+02	R	-27	173	11	11
9	9	65	10	9.91E+02	R	-2	198	15	15
10	10	33	15	9.00E+02	R	-31	169	10	10
38	1	0.00	1.00	9.35E+02	S	-20	-20	1	0
39	2	4.00	5.00	1.01E+03	S	4	4	3.5	0
40	3	9.00	15.00	1.09E+03	S	30	30	8	0
41	4	4.00	18.00	1.13E+03	S	42	42	9	0
42	5	5.00	12.00	1.02E+03	S	7	7	5	0
43	6	3.00	2.00	1.01E+03	S	4	4	3.5	0
44	7	6.00	13.00	1.00E+03	S	1	1	2	0
45	8	2.00	5.00	1.03E+03	S	11	11	6	0
46	9	2.00	14.00	1.07E+03	S	23	23	7	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 997 c
 Mean Bkgd Count Rate: 997 cpm
 SD Bkgd Count Rate: 83 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1033 c
 Mean Sample Count Rate: 1033 cpm
 SD Sample Count Rate: 57 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

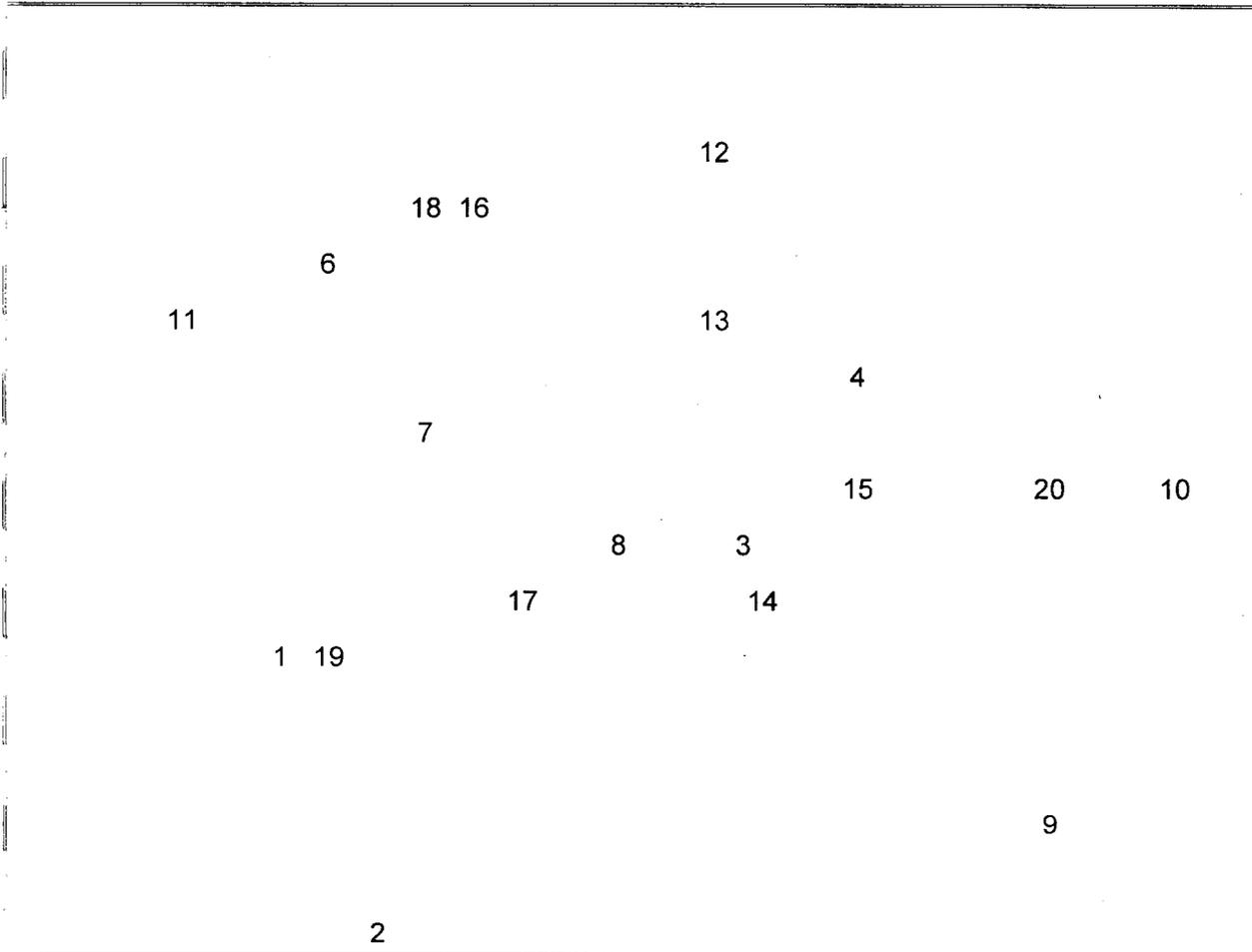
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.26. Impound Lot (Buildings 110003 through 11014)

Unit Designation:
Impound Lot

Unit Dimensions (ft):
120 x 75

Survey Pt.	X (ft)	Y (ft)	Value
1	25.	25.	4120.
2	35.	0.	3760.
3	73.	35.	4220.
4	85.	50.	4260.
5	0.	73.	3890.
6	30.	60.	4080.
7	40.	45.	4110.
8	60.	35.	4110.
9	105.	10.	4180.
10	118.	40.	3920.
11	15.	55.	4120.
12	70.	70.	4280.
13	70.	55.	4140.
14	75.	30.	4070.
15	85.	40.	4470.
16	45.	65.	3860.
17	50.	30.	3860.
18	40.	65.	4110.
19	30.	25.	4160.
20	105.	40.	4190.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α: Z1 - α:

Type II - β: Z1 - β:

P_r:

N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w)-survey unit may be released

Survey Unit: Impound Lot

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
61	1	2	2	3.72E+03	R	-33	27967	23	23
62	2	5	5	3.58E+03	R	-69	27931	21	21
63	3	10	5	3.64E+03	R	-54	27946	22	22
64	4	10	10	3.74E+03	R	-28	27972	24	24
65	5	15	10	4.21E+03	R	91	28091	30	30
66	6	15	5	3.79E+03	R	-16	27984	25.5	25.5
67	7	20	5	4.12E+03	R	69	28069	29	29
68	8	20	10	3.79E+03	R	-16	27984	25.5	25.5
69	9	25	10	4.02E+03	R	43	28043	28	28
70	10	25	5	3.90E+03	R	12	28012	27	27
41	1	25.00	25.00	4.12E+03	S	69	69	11.5	0
42	2	35.00	0.00	3.76E+03	S	-23	-23	1	0
43	3	73.00	35.00	4.22E+03	S	94	94	17	0
44	4	85.00	50.00	4.26E+03	S	104	104	18	0
45	5	0.00	73.00	3.89E+03	S	10	10	4	0
46	6	30.00	60.00	4.08E+03	S	58	58	7	0
47	7	40.00	45.00	4.11E+03	S	66	66	9	0
48	8	60.00	35.00	4.11E+03	S	66	66	9	0
49	9	105.00	10.00	4.18E+03	S	84	84	15	0
50	10	118.00	40.00	3.92E+03	S	18	18	5	0
51	11	15.00	55.00	4.12E+03	S	69	69	11.5	0
52	12	70.00	70.00	4.28E+03	S	109	109	19	0
53	13	70.00	55.00	4.14E+03	S	74	74	13	0
54	14	75.00	30.00	4.07E+03	S	56	56	6	0
55	15	85.00	40.00	4.47E+03	S	158	158	20	0
56	16	45.00	65.00	3.86E+03	S	2	2	2.5	0
57	17	50.00	30.00	3.86E+03	S	2	2	2.5	0
58	18	40.00	65.00	4.11E+03	S	66	66	9	0
59	19	30.00	25.00	4.16E+03	S	79	79	14	0
60	20	105.00	40.00	4.19E+03	S	86	86	16	0
						Sum		351.5	255

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 3851 c
 Mean Bkgd Count Rate: 3851 cpm
 SD Bkgd Count Rate: 207 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4081 c
 Mean Sample Count Rate: 4081 cpm
 SD Sample Count Rate: 160 cpm

Results of Final Status Survey

Test Statistic (W_r): 255
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 10
 Critical Value_{m,n}: 127

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w)-survey unit may be released

Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose: mrem/y TEDE
Model: Default Parameters

Radionuclide of Concern:

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC: cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α: Z1 - α:

Type II - β: Z1 - β:

P_r:

N:

Statistics

Test:

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w)-survey unit may be released

Survey Unit:

Site:

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
71	1	2	2	8.83E+02	R	-19	181	24	24
72	2	5	5	9.63E+02	R	7	207	26	26
73	3	10	5	8.60E+02	R	-26	174	21	21
74	4	10	10	9.38E+02	R	-1	199	25	25
75	5	15	10	1.04E+03	R	31	231	30	30
76	6	15	5	9.69E+02	R	9	209	27	27
77	7	20	5	1.01E+03	R	22	222	28.5	28.5
78	8	20	10	8.73E+02	R	-22	178	23	23
79	9	25	10	1.01E+03	R	22	222	28.5	28.5
80	10	25	5	8.66E+02	R	-24	176	22	22
51	1	25.00	25.00	9.47E+02	S	2	2	16	0
52	2	35.00	0.00	8.42E+02	S	-32	-32	2	0
53	3	73.00	35.00	9.46E+02	S	2	2	15	0
54	4	85.00	50.00	8.62E+02	S	-25	-25	4	0
55	5	0.00	73.00	8.45E+02	S	-31	-31	3	0
56	6	30.00	60.00	9.23E+02	S	-6	-6	12	0
57	7	40.00	45.00	9.61E+02	S	6	6	17	0
58	8	60.00	35.00	9.74E+02	S	10	10	19	0
59	9	105.00	10.00	9.66E+02	S	8	8	18	0
60	10	118.00	40.00	8.05E+02	S	-43	-43	1	0
61	11	15.00	55.00	8.86E+02	S	-18	-18	5	0
62	12	70.00	70.00	8.95E+02	S	-15	-15	6	0
63	13	70.00	55.00	9.43E+02	S	1	1	14	0
64	14	75.00	30.00	9.09E+02	S	-10	-10	8.5	0
65	15	85.00	40.00	1.00E+03	S	19	19	20	0
66	16	45.00	65.00	9.16E+02	S	-8	-8	11	0
67	17	50.00	30.00	9.08E+02	S	-11	-11	7	0
68	18	40.00	65.00	9.09E+02	S	-10	-10	8.5	0
69	19	30.00	25.00	9.37E+02	S	-1	-1	13	0
70	20	105.00	40.00	9.10E+02	S	-10	-10	10	0
Sum								362	255

Bkgd Counting Time:	<input type="text" value="60"/> s	Sample Counting Time:	<input type="text" value="60"/> s
Mean Bkgd Counts:	<input type="text" value="941"/> c	Mean Sample Counts:	<input type="text" value="918"/> c
Mean Bkgd Count Rate:	<input type="text" value="941"/> cpm	Mean Sample Count Rate:	<input type="text" value="918"/> cpm
SD Bkgd Count Rate:	<input type="text" value="67"/> cpm	SD Sample Count Rate:	<input type="text" value="54"/> cpm

Results of Final Status Survey

Test Statistic (W _r):	<input type="text" value="255"/>
Number of reference area samples (m):	<input type="text" value="10"/>
Number of survey unit samples (n):	<input type="text" value="10"/>
Critical Value _{m,n} :	<input type="text" value="127"/>

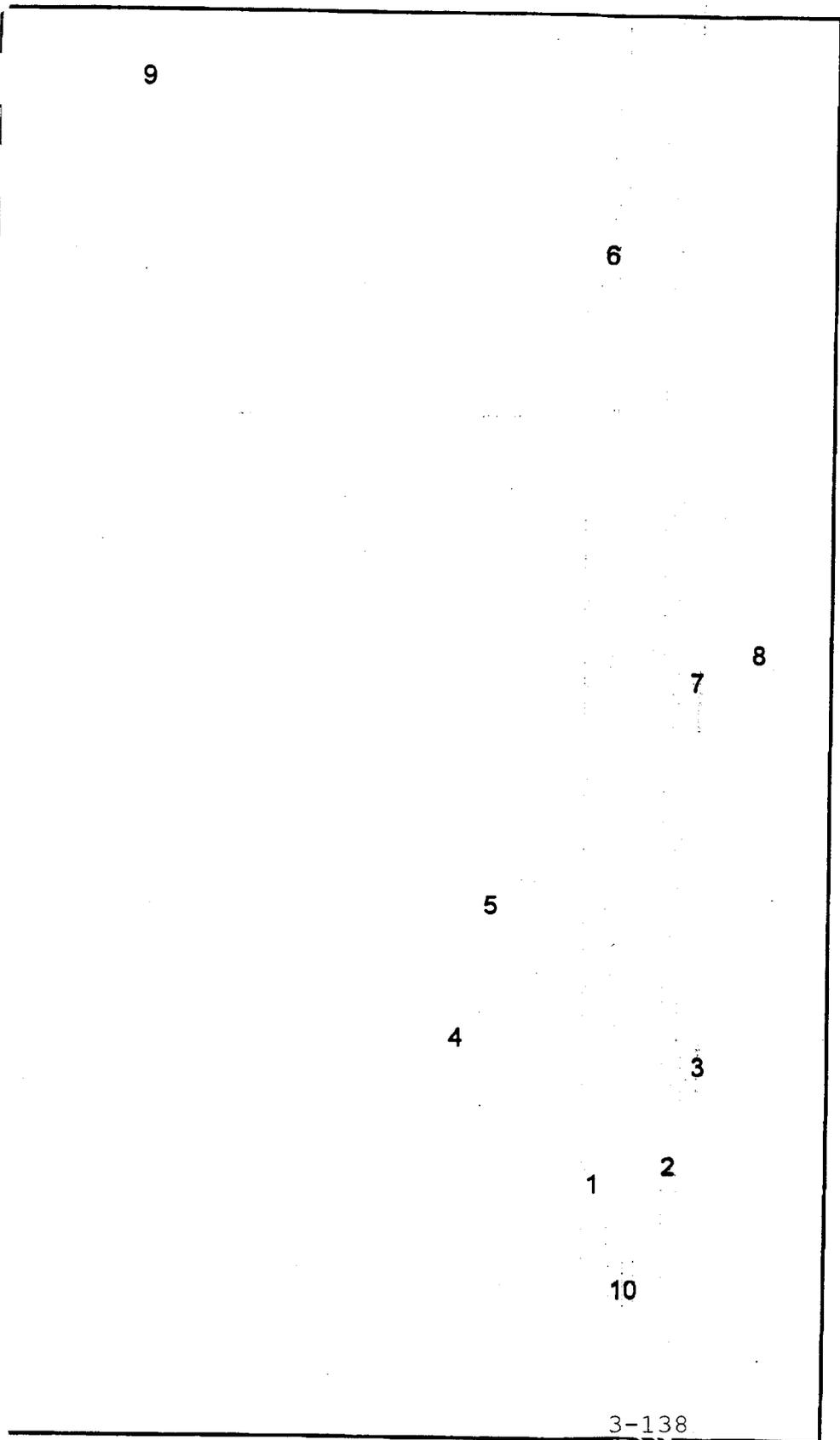
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w)-survey unit may be released

3.3.27. B-52 Loading and Maintenance Area, Unit 1

Unit Designation:
Concrete Pad Unit 1

Unit Dimensions (ft):
175 x 300

Survey Pt.	X (ft)	Y (ft)	Value
1	120.	51.	3280.
2	136.	55.	3280.
3	142.	76.	3150.
4	91.	82.	3180.
5	98.	110.	3100.
6	122.	246.	3110.
7	141.	157.	3120.
8	154.	163.	3260.
9	25.	282.	3170.
10	127.	28.	3190.



Survey Unit: B-52 Loading Area, Section 1

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 487 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 104 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 528

Type I - α: 0.05

Z1 - α: 1.645

Type II - β: 0.05

Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.44E+03	R	0	28000	16	16
2	2	25	57	4.47E+03	R	8	28008	17	17
3	3	30	5	4.50E+03	R	16	28016	18.5	18.5
4	4	10	28	4.50E+03	R	16	28016	18.5	18.5
5	5	20	3	4.37E+03	R	-18	27982	14	14
6	6	45	30	4.36E+03	R	-20	27980	13	13
7	7	7	20	4.67E+03	R	59	28059	20	20
8	8	12	43	4.35E+03	R	-23	27977	12	12
9	9	65	10	4.31E+03	R	-33	27967	11	11
10	10	33	15	4.42E+03	R	-5	27995	15	15
11	1	120.00	1.00	3.28E+03	S	-295	-295	9.5	0
12	2	136.00	5.00	3.28E+03	S	-295	-295	9.5	0
13	3	142.00	26.00	3.15E+03	S	-328	-328	4	0
14	4	91.00	32.00	3.18E+03	S	-321	-321	6	0
15	5	98.00	60.00	3.10E+03	S	-341	-341	1	0
16	6	122.00	196.00	3.11E+03	S	-338	-338	2	0
17	7	141.00	107.00	3.12E+03	S	-336	-336	3	0
18	8	154.00	113.00	3.26E+03	S	-300	-300	8	0
19	9	25.00	232.00	3.17E+03	S	-323	-323	5	0
20	10	127.00	-22.00	3.19E+03	S	-318	-318	7	0
							Sum	210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4439 c
 Mean Bkgd Count Rate: 4439 cpm
 SD Bkgd Count Rate: 104 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3183 c
 Mean Sample Count Rate: 3183 cpm
 SD Sample Count Rate: 73 cpm

Results of Final Status Survey

Test Statistic (W_r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value _{m,n} :	127

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Section 1

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 98 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 20 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 15

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
41	1	5	10	7.41E+02	R	5	205	17	17
42	2	25	57	7.13E+02	R	-4	196	13	13
43	3	30	5	7.49E+02	R	7	207	20	20
44	4	10	28	7.26E+02	R	0	200	15	15
45	5	20	3	7.20E+02	R	-2	198	14	14
46	6	45	30	7.43E+02	R	5	205	18	18
47	7	7	20	7.37E+02	R	3	203	16	16
48	8	12	43	7.45E+02	R	6	206	19	19
49	9	65	10	7.03E+02	R	-7	193	12	12
50	10	33	15	6.87E+02	R	-13	187	11	11
11	1	120.00	1.00	7.40E+02	S	4	4	6	0
12	2	136.00	5.00	7.29E+02	S	1	1	4	0
13	3	142.00	26.00	7.33E+02	S	2	2	5	0
14	4	91.00	32.00	7.42E+02	S	5	5	7	0
15	5	98.00	60.00	6.89E+02	S	-12	-12	2	0
16	6	122.00	196.00	7.50E+02	S	8	8	8	0
17	7	141.00	107.00	7.09E+02	S	-6	-6	3	0
18	8	154.00	113.00	7.72E+02	S	15	15	10	0
19	9	25.00	232.00	6.70E+02	S	-18	-18	1	0
20	10	127.00	-22.00	7.52E+02	S	8	8	9	0
							Sum	210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 726 c
 Mean Bkgd Count Rate: 726 cpm
 SD Bkgd Count Rate: 20 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 726 c
 Mean Sample Count Rate: 726 cpm
 SD Sample Count Rate: 32 cpm

Results of Final Status Survey

Test Statistic (W_r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value _{m,n} :	127

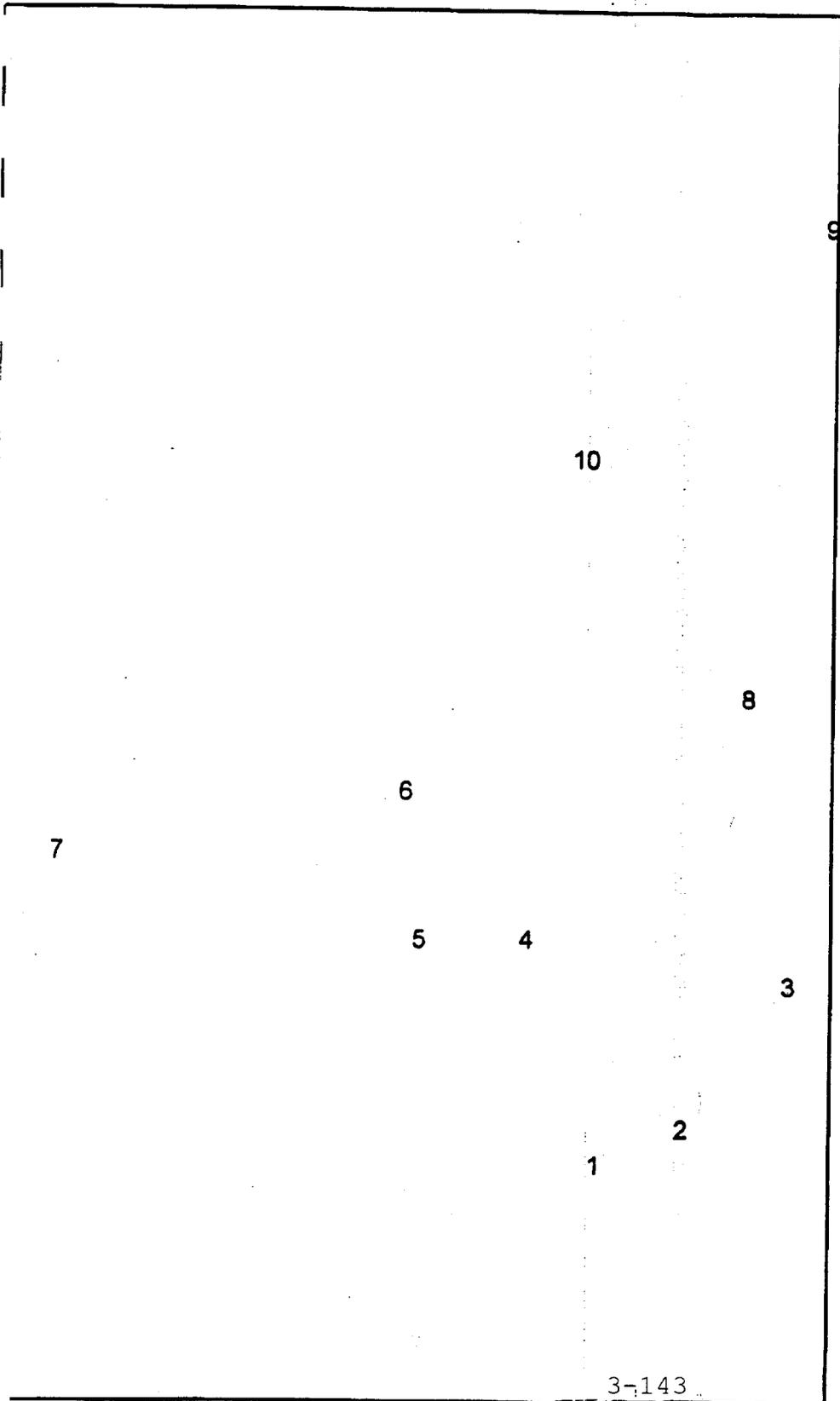
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.28. B-52 Loading and Maintenance Area, Unit 2

Unit Designation:
Concrete Pad Unit 2

Unit Dimensions (ft):
175 x 300

Survey Pt.	X (ft)	Y (ft)	Value
1	122.	48.	3170.
2	141.	56.	3230.
3	164.	87.	3080.
4	107.	97.	3220.
5	84.	97.	3150.
6	81.	129.	3330.
7	7.	116.	3030.
8	155.	149.	3290.
9	172.	250.	3080.
10	119.	200.	3320.



Survey Unit: B-52 Loading Area, Section 2

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 487 cpm Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 104 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 528

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.44E+03	R	0	28000	16	16
2	2	25	57	4.47E+03	R	8	28008	17	17
3	3	30	5	4.50E+03	R	16	28016	18.5	18.5
4	4	10	28	4.50E+03	R	16	28016	18.5	18.5
5	5	20	3	4.37E+03	R	-18	27982	14	14
6	6	45	30	4.36E+03	R	-20	27980	13	13
7	7	7	20	4.67E+03	R	59	28059	20	20
8	8	12	43	4.35E+03	R	-23	27977	12	12
9	9	65	10	4.31E+03	R	-33	27967	11	11
10	10	33	15	4.42E+03	R	-5	27995	15	15
21	1	297.00	-2.00	3.17E+03	S	-323	-323	5	0
22	2	316.00	6.00	3.23E+03	S	-308	-308	7	0
23	3	339.00	37.00	3.08E+03	S	-346	-346	2.5	0
24	4	282.00	47.00	3.22E+03	S	-310	-310	6	0
25	5	259.00	47.00	3.15E+03	S	-328	-328	4	0
26	6	256.00	79.00	3.33E+03	S	-282	-282	10	0
27	7	182.00	66.00	3.03E+03	S	-359	-359	1	0
28	8	330.00	99.00	3.29E+03	S	-293	-293	8	0
29	9	347.00	200.00	3.08E+03	S	-346	-346	2.5	0
30	10	294.00	150.00	3.32E+03	S	-285	-285	9	0
Sum								210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4439 c
 Mean Bkgd Count Rate: 4439 cpm
 SD Bkgd Count Rate: 104 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3176 c
 Mean Sample Count Rate: 3176 cpm
 SD Sample Count Rate: 101 cpm

Results of Final Status Survey

Test Statistic (W_r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value $w_{m,n}$:	127

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: **B-52 Loading Area, Section 2**

Site: **NAS, Barbers Point**

Plan

Classification: **Class 3**

DCGL Criterion

Dose: **25** mrem/y TEDE
Model: **D&D** Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): **2.0E+02** dpm 100cm⁻² **6.3E+02** cpm
Area Factor: **n/a**
DCGL_(emc): **n/a**

Instrumentation

Model: **Eberline E-600** Cal. Date: **2-Feb-99** Serial No. **200**

Detector: **FIDLER** Cal. Date: **2-Feb-99** Serial No. **512**

Type Survey:

Fixed

Detector Efficiency: **2%** cpm dpm⁻¹
Detector Area: **127** cm²
Probe Height: **10** cm
Probe Field of View: **15708** cm²
MDC: **98** cpm

Is MDC 50% of DCGL **Yes**

Number of Measurements

Counting Time: **60** s
Bkgd. Sigma: **20** cpm
DCGL_w: **6.3E+02** cpm
LBGR = 1/2 DCGL_w: **3.1E+02** cpm
Delta = DCGL_w - LBGR: **3.1E+02** cpm
Delta/Sigma: **15**
Type I - α: **0.05**
Type II - β: **0.05**
P_r: **1**
N: **9**

Z1 - α **1.645**

Z1 - β **1.645**

Statistics

Test: **WRS**

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
41	1	5	10	7.41E+02	R	5	205	17	17
42	2	25	57	7.13E+02	R	-4	196	13	13
43	3	30	5	7.49E+02	R	7	207	20	20
44	4	10	28	7.26E+02	R	0	200	15	15
45	5	20	3	7.20E+02	R	-2	198	14	14
46	6	45	30	7.43E+02	R	5	205	18	18
47	7	7	20	7.37E+02	R	3	203	16	16
48	8	12	43	7.45E+02	R	6	206	19	19
49	9	65	10	7.03E+02	R	-7	193	12	12
50	10	33	15	6.87E+02	R	-13	187	11	11
21	1	297.00	-2.00	7.37E+02	S	3	3	8	0
22	2	316.00	6.00	7.26E+02	S	0	0	5	0
23	3	339.00	37.00	7.32E+02	S	2	2	7	0
24	4	282.00	47.00	7.31E+02	S	1	1	6	0
25	5	259.00	47.00	7.16E+02	S	-3	-3	4	0
26	6	256.00	79.00	7.44E+02	S	6	6	10	0
27	7	182.00	66.00	7.38E+02	S	4	4	9	0
28	8	330.00	99.00	7.05E+02	S	-7	-7	2	0
29	9	347.00	200.00	7.12E+02	S	-5	-5	3	0
30	10	281.61	162.42	6.82E+02	S	-14	-14	1	0
						Sum		210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 726 c
 Mean Bkgd Count Rate: 726 cpm
 SD Bkgd Count Rate: 20 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 727 c
 Mean Sample Count Rate: 727 cpm
 SD Sample Count Rate: 13 cpm

Results of Final Status Survey

Test Statistic (W _r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value _{m,n} :	127

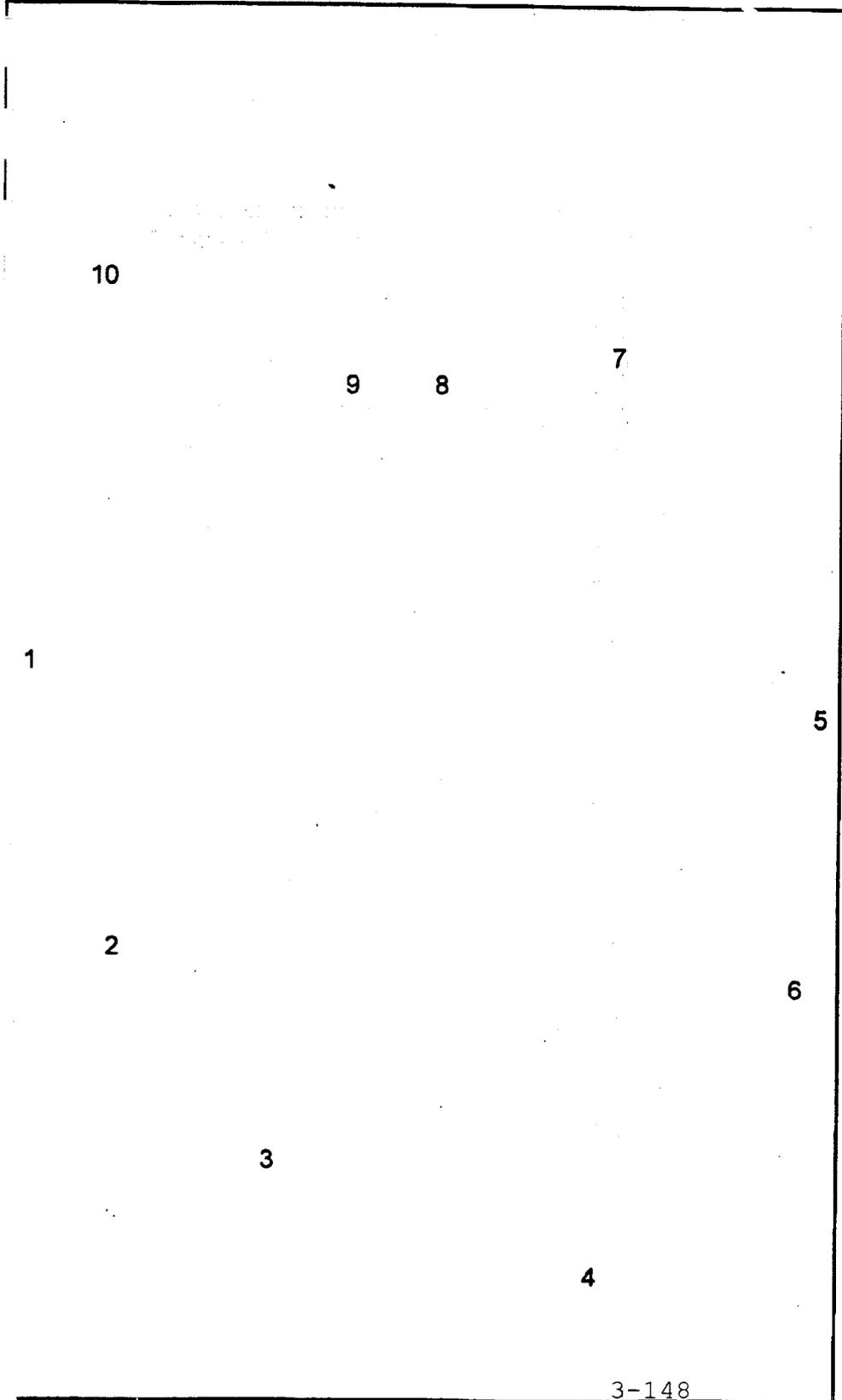
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.29. B-52 Loading and Maintenance Area, Unit 3

Unit Designation:
Concrete Pad Unit 3

Unit Dimensions (ft):
175 x 300

Survey Pt.	X (ft)	Y (ft)	Value
1	0.	156.	3360.
2	18.	95.	3240.
3	51.	49.	3260.
4	120.	23.	3260.
5	169.	144.	3260.
6	164.	86.	3230.
7	125.	221.	3140.
8	87.	215.	3140.
9	68.	215.	3140.
10	15.	238.	3130.



Survey Unit: B-52 Loading Area, Section 3

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 487 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 104 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 528

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.44E+03	R	0	28000	16	16
2	2	25	57	4.47E+03	R	8	28008	17	17
3	3	30	5	4.50E+03	R	16	28016	18.5	18.5
4	4	10	28	4.50E+03	R	16	28016	18.5	18.5
5	5	20	3	4.37E+03	R	-18	27982	14	14
6	6	45	30	4.36E+03	R	-20	27980	13	13
7	7	7	20	4.67E+03	R	59	28059	20	20
8	8	12	43	4.35E+03	R	-23	27977	12	12
9	9	65	10	4.31E+03	R	-33	27967	11	11
10	10	33	15	4.42E+03	R	-5	27995	15	15
31	1	350.00	106.00	3.36E+03	S	-275	-275	10	0
32	2	368.00	45.00	3.24E+03	S	-305	-305	6	0
33	3	401.00	-1.00	3.26E+03	S	-300	-300	8	0
34	4	470.00	-27.00	3.26E+03	S	-300	-300	8	0
35	5	519.00	94.00	3.26E+03	S	-300	-300	8	0
36	6	514.00	36.00	3.23E+03	S	-308	-308	5	0
37	7	475.00	171.00	3.14E+03	S	-331	-331	3	0
38	8	437.00	165.00	3.14E+03	S	-331	-331	3	0
39	9	418.00	165.00	3.14E+03	S	-331	-331	3	0
40	10	365.00	188.00	3.13E+03	S	-333	-333	1	0
							Sum	210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4439 c
 Mean Bkgd Count Rate: 4439 cpm
 SD Bkgd Count Rate: 104 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3226 c
 Mean Sample Count Rate: 3226 cpm
 SD Sample Count Rate: 74 cpm

Results of Final Status Survey

Test Statistic (W_r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value _{m,n} :	127

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Section 3

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 98 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 20 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 15

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: B-52 Loading Area, Sec 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
41	1	5	10	7.41E+02	R	5	205	17	17
42	2	25	57	7.13E+02	R	-4	196	13	13
43	3	30	5	7.49E+02	R	7	207	20	20
44	4	10	28	7.26E+02	R	0	200	15	15
45	5	20	3	7.20E+02	R	-2	198	14	14
46	6	45	30	7.43E+02	R	5	205	18	18
47	7	7	20	7.37E+02	R	3	203	16	16
48	8	12	43	7.45E+02	R	6	206	19	19
49	9	65	10	7.03E+02	R	-7	193	12	12
50	10	33	15	6.87E+02	R	-13	187	11	11
31	1	350.00	106.00	7.08E+02	S	-6	-6	5	0
32	2	368.00	45.00	7.29E+02	S	1	1	7	0
33	3	401.00	-1.00	7.35E+02	S	3	3	8	0
34	4	470.00	-27.00	7.58E+02	S	10	10	9	0
35	5	519.00	94.00	6.80E+02	S	-15	-15	1	0
36	6	514.00	36.00	7.28E+02	S	1	1	6	0
37	7	475.00	171.00	7.00E+02	S	-8	-8	4	0
38	8	437.00	165.00	6.85E+02	S	-13	-13	2.5	0
39	9	418.00	165.00	6.85E+02	S	-13	-13	2.5	0
40	10	365.00	188.00	7.84E+02	S	18	18	10	0
Sum								210	155

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 726 c
 Mean Bkgd Count Rate: 726 cpm
 SD Bkgd Count Rate: 20 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 712 c
 Mean Sample Count Rate: 712 cpm
 SD Sample Count Rate: 27 cpm

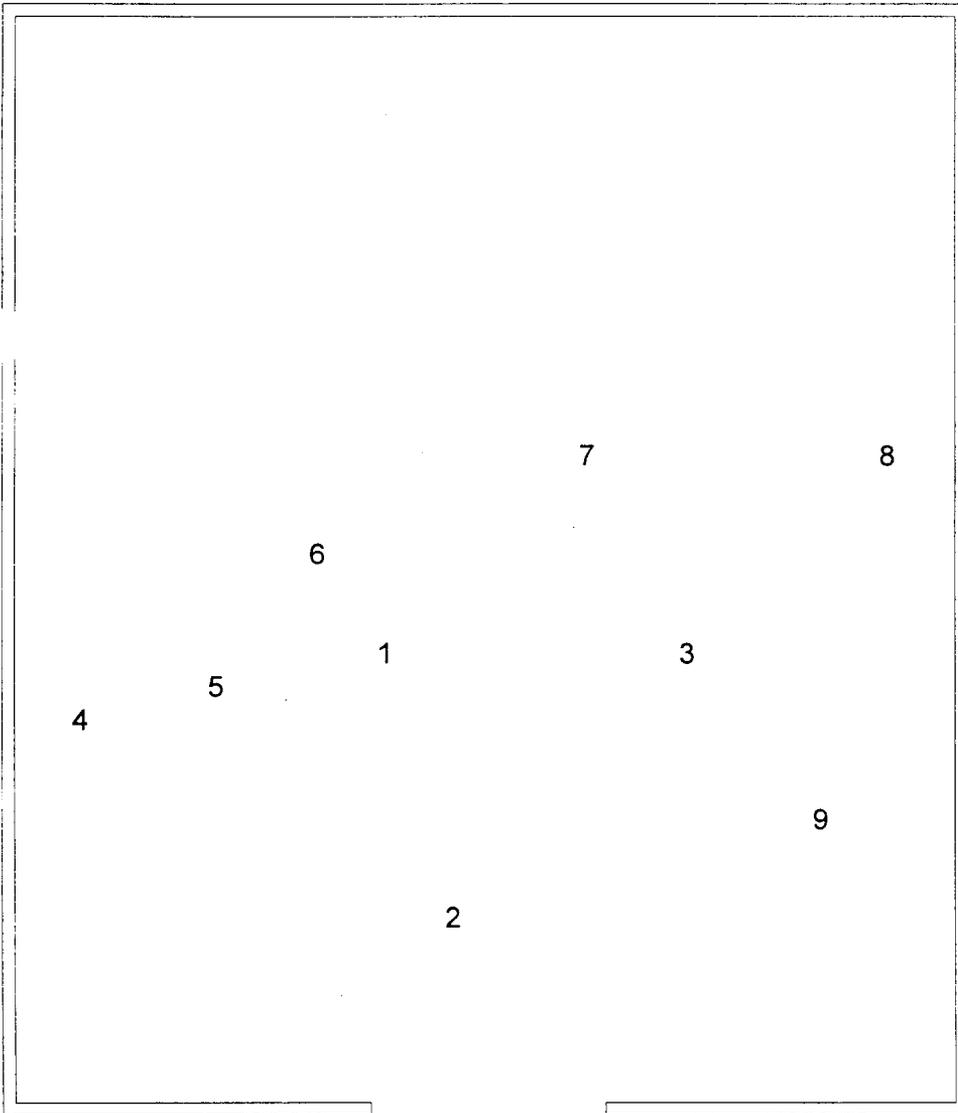
Results of Final Status Survey

Test Statistic (W _r):	155
Number of reference area samples (m):	10
Number of survey unit samples (n):	10
Critical Value _{m,n} :	127

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation: Building 1711
Unit Dimensions (ft): 28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	10.	13.	4050.
2	12.	5.	3810.
3	19.	13.	4060.
4	1.	11.	4160.
5	5.	12.	4010.
6	8.	16.	4020.
7	16.	19.	4090.
8	25.	19.	4150.
9	23.	8.	4050.



Survey Unit: Bldg. 1711

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - α: 0.05 Z1 - α 1.645

Type II - β: 0.05 Z1 - β 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1711

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
56	1	10.00	13.00	4.05E+03	S	-106	-106	4.5	0
57	2	12.00	5.00	3.81E+03	S	-168	-168	1	0
58	3	19.00	13.00	4.06E+03	S	-104	-104	6	0
59	4	1.00	11.00	4.16E+03	S	-78	-78	9	0
60	5	5.00	12.00	4.01E+03	S	-117	-117	2	0
61	6	8.00	16.00	4.02E+03	S	-114	-114	3	0
62	7	16.00	19.00	4.09E+03	S	-96	-96	7	0
63	8	25.00	19.00	4.15E+03	S	-81	-81	8	0
64	9	23.00	8.00	4.05E+03	S	-106	-106	4.5	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4044 c
 Mean Sample Count Rate: 4044 cpm
 SD Sample Count Rate: 102 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1711

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^2, 6.3E+02 cpm

Area Factor: n/a

DCGL(eme): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 589 cpm Is MDC 50% of DCGL: No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 2.0E+02 cpm

LBGR = 1/2 DCGL_w: 1.0E+02 cpm

Delta = DCGL_w - LBGR: 1.0E+02 cpm

Delta/Sigma: 1

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_w

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_w - survey unit may be released

Survey Unit: Bldg 1711

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
56	1	10.00	13.00	9.27E+02	S	-20	-20	9	0
57	2	12.00	5.00	8.51E+02	S	-45	-45	1	0
58	3	19.00	13.00	8.92E+02	S	-32	-32	3	0
59	4	1.00	11.00	9.06E+02	S	-27	-27	8	0
60	5	5.00	12.00	9.05E+02	S	-27	-27	7	0
61	6	8.00	16.00	8.81E+02	S	-35	-35	2	0
62	7	16.00	19.00	8.93E+02	S	-31	-31	4	0
63	8	25.00	19.00	9.04E+02	S	-28	-28	6	0
64	9	23.00	8.00	8.94E+02	S	-31	-31	5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 895 c
 Mean Sample Count Rate: 895 cpm
 SD Sample Count Rate: 21 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

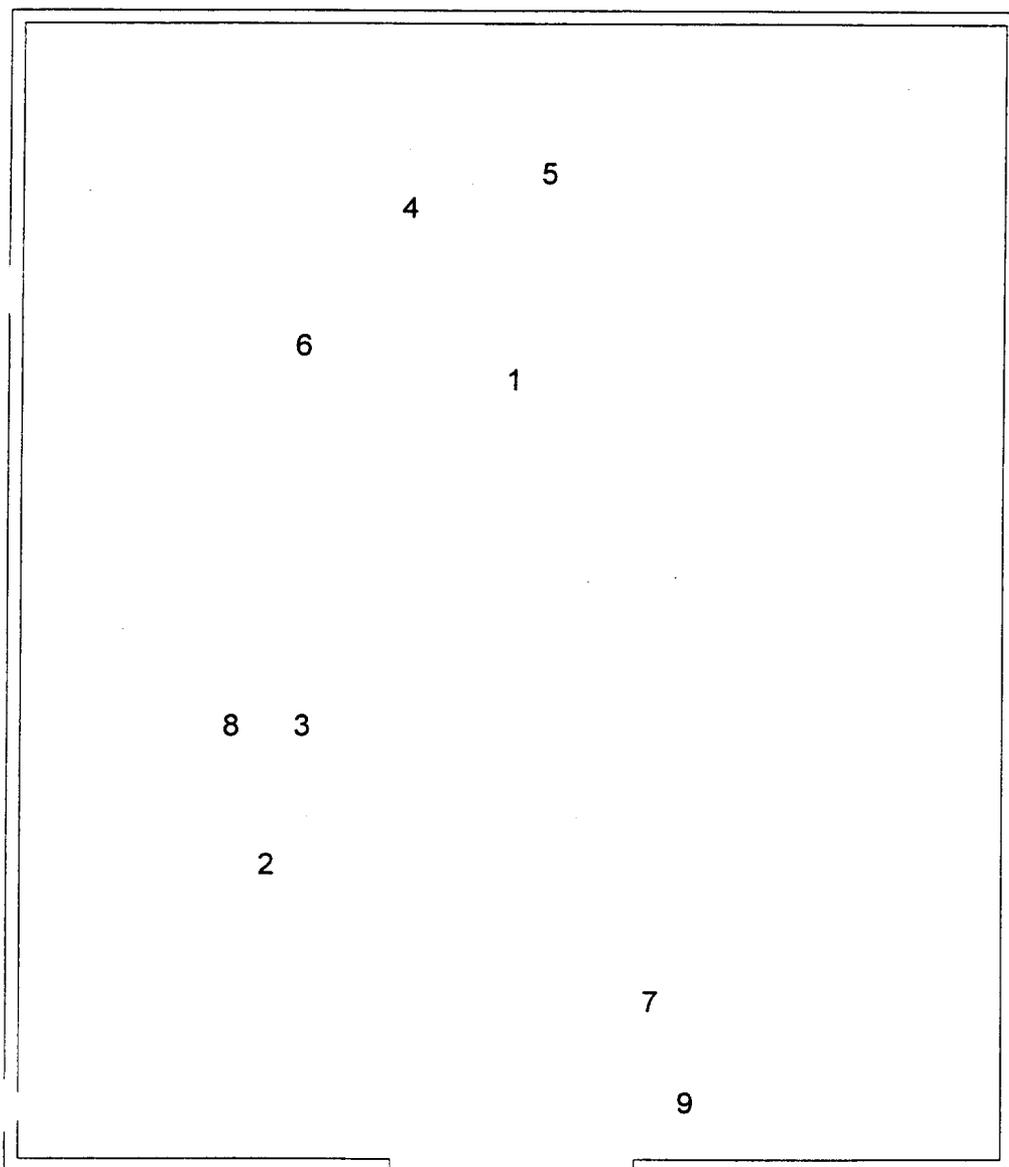
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.31. Building 1712

Unit Designation:
Building 1712

Unit Dimensions (ft):
28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	13.	22.	3790.
2	6.	8.	3920.
3	7.	12.	3920.
4	10.	27.	4050.
5	14.	28.	3980.
6	7.	23.	4010.
7	17.	4.	3840.
8	5.	12.	3920.
9	18.	1.	3560.



Survey Unit: Bldg. 1712

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^-2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGLw: 1.1E+05 cpm

LBGR = 1/2 DCGLw: 5.5E+04 cpm

Delta = DCGLw - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

Pr: 1

N: 9

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1712

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data	Adj. Data	Ranks	Ref. Area
						dpm 100cm ⁻²	dpm 100cm ⁻²		Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
38	1	13.00	22.00	3.79E+03	S	-173	-173	2	0
39	2	6.00	8.00	3.92E+03	S	-140	-140	5	0
40	3	7.00	12.00	3.92E+03	S	-140	-140	5	0
41	4	10.00	27.00	4.05E+03	S	-106	-106	9	0
42	5	14.00	28.00	3.98E+03	S	-124	-124	7	0
43	6	7.00	23.00	4.01E+03	S	-117	-117	8	0
44	7	17.00	4.00	3.84E+03	S	-160	-160	3	0
45	8	5.00	12.00	3.92E+03	S	-140	-140	5	0
46	9	18.00	1.00	3.56E+03	S	-231	-231	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3888 c
 Mean Sample Count Rate: 3888 cpm
 SD Sample Count Rate: 147 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1712

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^2, 6.3E+02 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 589 cpm

Is MDC 50% of DCGL: No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 2.0E+02 cpm

LBGR = 1/2 DCGL_w: 1.0E+02 cpm

Delta = DCGL_w - LBGR: 1.0E+02 cpm

Delta/Sigma: 1

Type I - alpha: 0.05

Type II - beta: 0.05

P_r: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

H_0 - Null Hypthesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1712

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
38	1	13.00	22.00	9.27E+02	S	-20	-20	7	0
39	2	6.00	8.00	8.60E+02	S	-42	-42	3	0
40	3	7.00	12.00	9.22E+02	S	-22	-22	6	0
41	4	10.00	27.00	9.49E+02	S	-13	-13	9	0
42	5	14.00	28.00	9.07E+02	S	-27	-27	5	0
43	6	7.00	23.00	8.92E+02	S	-32	-32	4	0
44	7	17.00	4.00	8.39E+02	S	-48	-48	2	0
45	8	5.00	12.00	9.28E+02	S	-20	-20	8	0
46	9	18.00	1.00	8.23E+02	S	-54	-54	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 894 c
 Mean Sample Count Rate: 894 cpm
 SD Sample Count Rate: 44 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

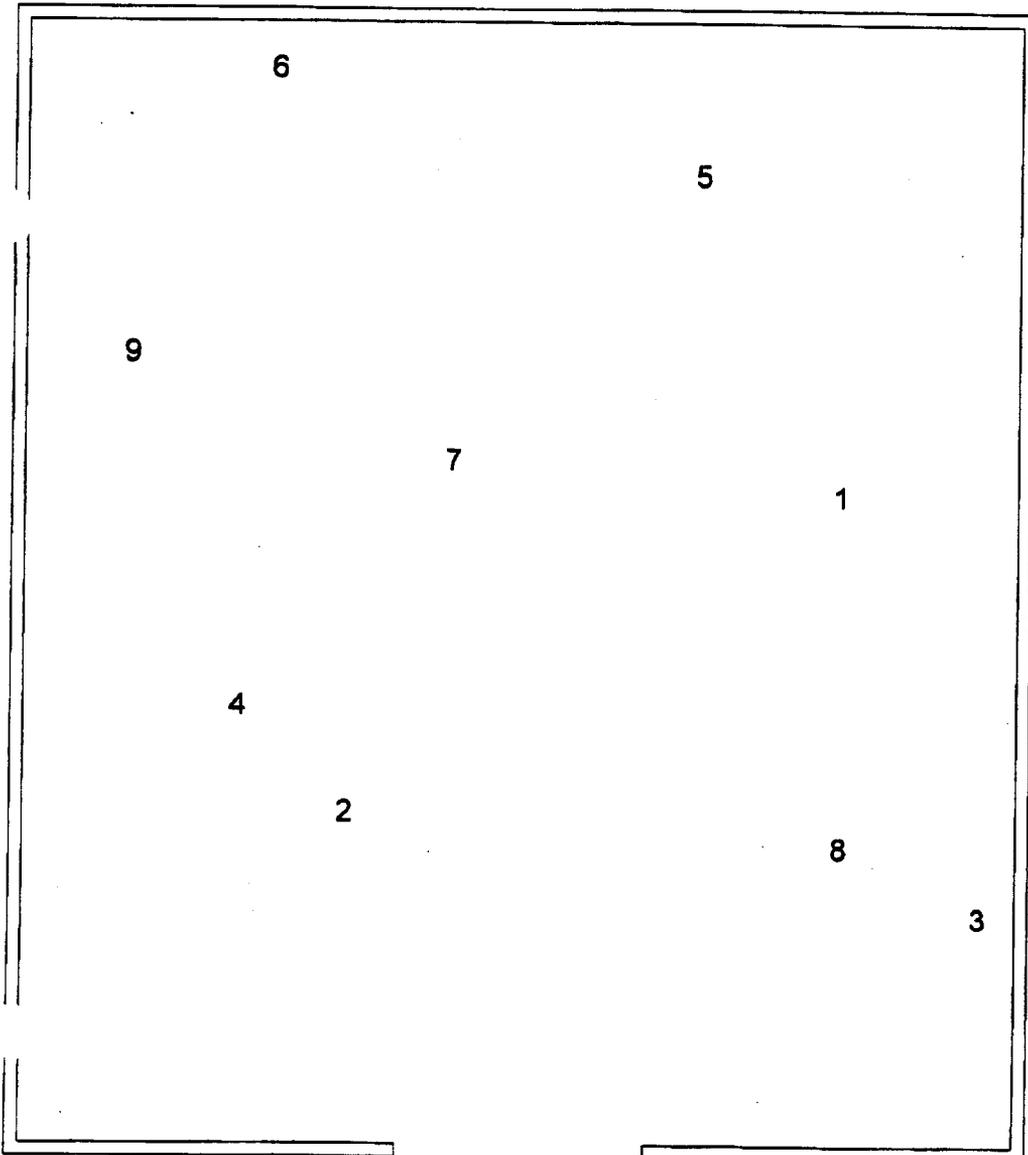
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.32. Building 1715

Unit Designation:
Building 1715

Unit Dimensions (ft):
28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	22.	18.	3900.
2	8.	9.	3750.
3	26.	6.	4090.
4	5.	12.	3990.
5	18.	27.	4240.
6	6.	30.	3890.
7	11.	19.	3960.
8	22.	8.	4030.
9	2.	22.	4020.



Survey Unit: Bldg. 1715

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^-2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05 Z1 - alpha: 1.645

Type II - beta: 0.05 Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_w

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_w - survey unit may be released

Survey Unit: Bldg. 1715

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
20	1	22.00	18.00	3.90E+03	S	-145	-145	3	0
21	2	8.00	9.00	3.75E+03	S	-183	-183	1	0
22	3	26.00	6.00	4.09E+03	S	-96	-96	8	0
23	4	5.00	12.00	3.99E+03	S	-122	-122	5	0
24	5	18.00	27.00	4.24E+03	S	-58	-58	9	0
25	6	6.00	30.00	3.89E+03	S	-147	-147	2	0
26	7	11.00	19.00	3.96E+03	S	-129	-129	4	0
27	8	22.00	8.00	4.03E+03	S	-112	-112	7	0
28	9	2.00	22.00	4.02E+03	S	-114	-114	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3986 c
 Mean Sample Count Rate: 3986 cpm
 SD Sample Count Rate: 138 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1715

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL(w): 2.0E+02 dpm 100cm^2 6.3E+02 cpm
Area Factor: n/a
DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1
Detector Area: 127 cm^2
Probe Height: 10 cm
Probe Field of View: 15708 cm^2
MDC: 589 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGLw: 2.0E+02 cpm
LBGR = 1/2 DCGLw: 1.0E+02 cpm
Delta = DCGLw - LBGR: 1.0E+02 cpm
Delta/Sigma: 1
Type I - alpha: 0.05
Type II - beta: 0.05
Pr: 1
N: 9

Z1 - alpha: 1.645
Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1715

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
20	1	22.00	18.00	8.99E+02	S	-29	-29	4	0
21	2	8.00	9.00	8.64E+02	S	-40	-40	1	0
22	3	26.00	6.00	8.69E+02	S	-39	-39	2	0
23	4	5.00	12.00	9.14E+02	S	-25	-25	5	0
24	5	18.00	27.00	9.55E+02	S	-11	-11	7	0
25	6	6.00	30.00	9.65E+02	S	-8	-8	8	0
26	7	11.00	19.00	8.94E+02	S	-31	-31	3	0
27	8	22.00	8.00	9.66E+02	S	-8	-8	9	0
28	9	2.00	22.00	9.44E+02	S	-15	-15	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 919 c
 Mean Sample Count Rate: 919 cpm
 SD Sample Count Rate: 40 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

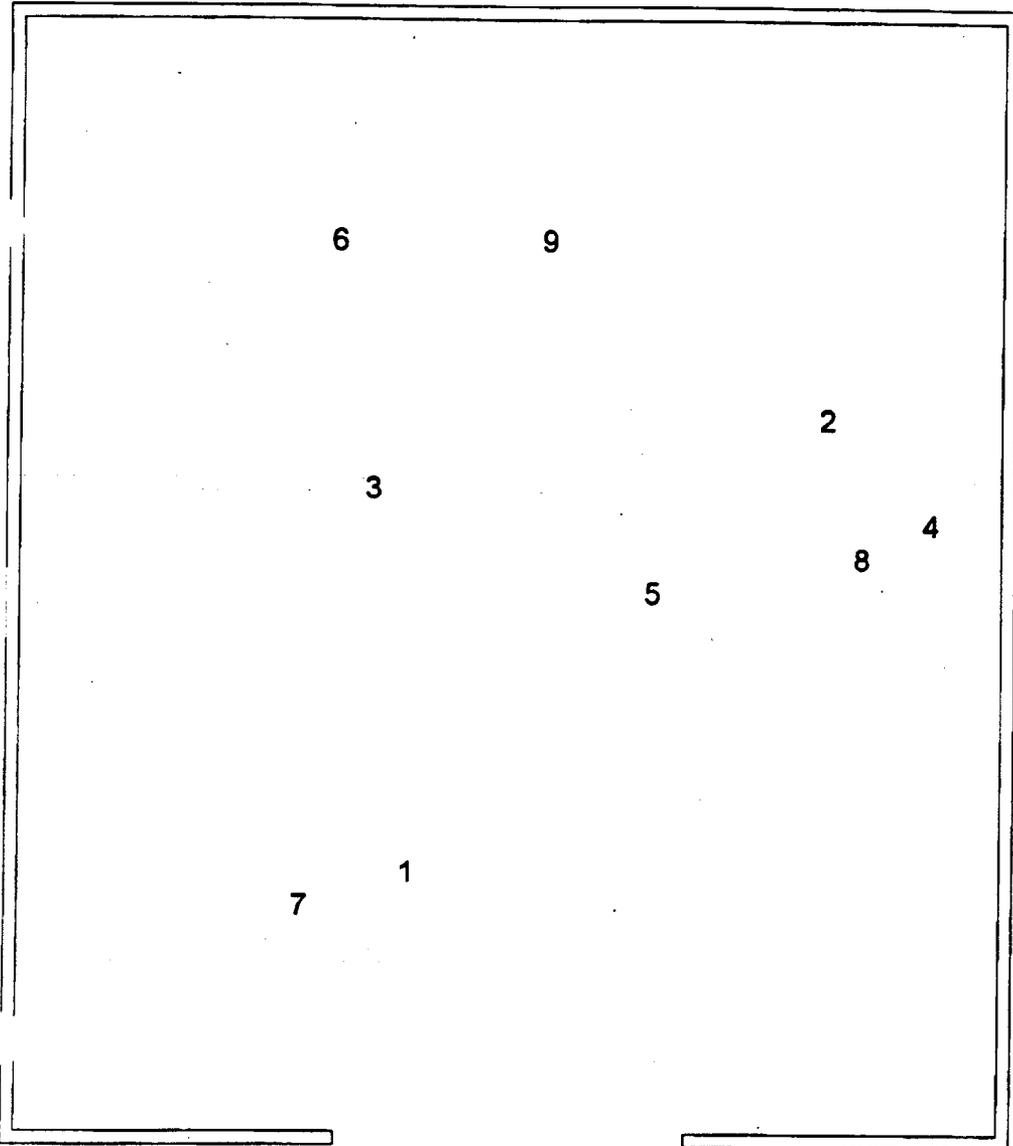
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.33. Building 1716

Unit Designation:
Building 1716

Unit Dimensions (ft):
28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	10.	7.	3780.
2	22.	20.	3840.
3	9.	18.	3800.
4	25.	17.	3600.
5	17.	15.	3800.
6	8.	25.	3910.
7	7.	6.	3820.
8	23.	16.	3730.
9	14.	25.	3980.



Survey Unit: Bldg. 1716

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^-2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_w

H_a - Alternative Hyp: The survey unit mean is less than the DCGL_w - survey unit may be released

Survey Unit: Bldg. 1716

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
29	1	10.00	7.00	3.78E+03	S	-175	-175	3	0
30	2	22.00	20.00	3.84E+03	S	-160	-160	7	0
31	3	9.00	18.00	3.80E+03	S	-170	-170	4.5	0
32	4	25.00	17.00	3.60E+03	S	-221	-221	1	0
33	5	17.00	15.00	3.80E+03	S	-170	-170	4.5	0
34	6	8.00	25.00	3.91E+03	S	-142	-142	8	0
35	7	7.00	6.00	3.82E+03	S	-165	-165	6	0
36	8	23.00	16.00	3.73E+03	S	-188	-188	2	0
37	9	14.00	25.00	3.98E+03	S	-124	-124	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3807 c
 Mean Sample Count Rate: 3807 cpm
 SD Sample Count Rate: 107 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1716

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL(w): 2.0E+02 dpm 100cm^2 6.3E+02 cpm
Area Factor: n/a
DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1
Detector Area: 127 cm^2
Probe Height: 10 cm
Probe Field of View: 15708 cm^2
MDC: 589 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGLw: 2.0E+02 cpm
LBGR = 1/2DCGLw: 1.0E+02 cpm
Delta = DCGLw - LBGR: 1.0E+02 cpm
Delta/Sigma: 1
Type I - alpha: 0.05
Type II - beta: 0.05
Pr: 1
N: 9

Z1 - alpha: 1.645
Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1716

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
29	1	10.00	7.00	8.77E+02	S	-36	-36	5	0
30	2	22.00	20.00	8.33E+02	S	-50	-50	3	0
31	3	9.00	18.00	9.52E+02	S	-12	-12	9	0
32	4	25.00	17.00	8.80E+02	S	-35	-35	7	0
33	5	17.00	15.00	8.64E+02	S	-40	-40	4	0
34	6	8.00	25.00	8.78E+02	S	-36	-36	6	0
35	7	7.00	6.00	8.18E+02	S	-55	-55	1	0
36	8	23.00	16.00	8.32E+02	S	-51	-51	2	0
37	9	14.00	25.00	8.97E+02	S	-30	-30	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 870 c
 Mean Sample Count Rate: 870 cpm
 SD Sample Count Rate: 41 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

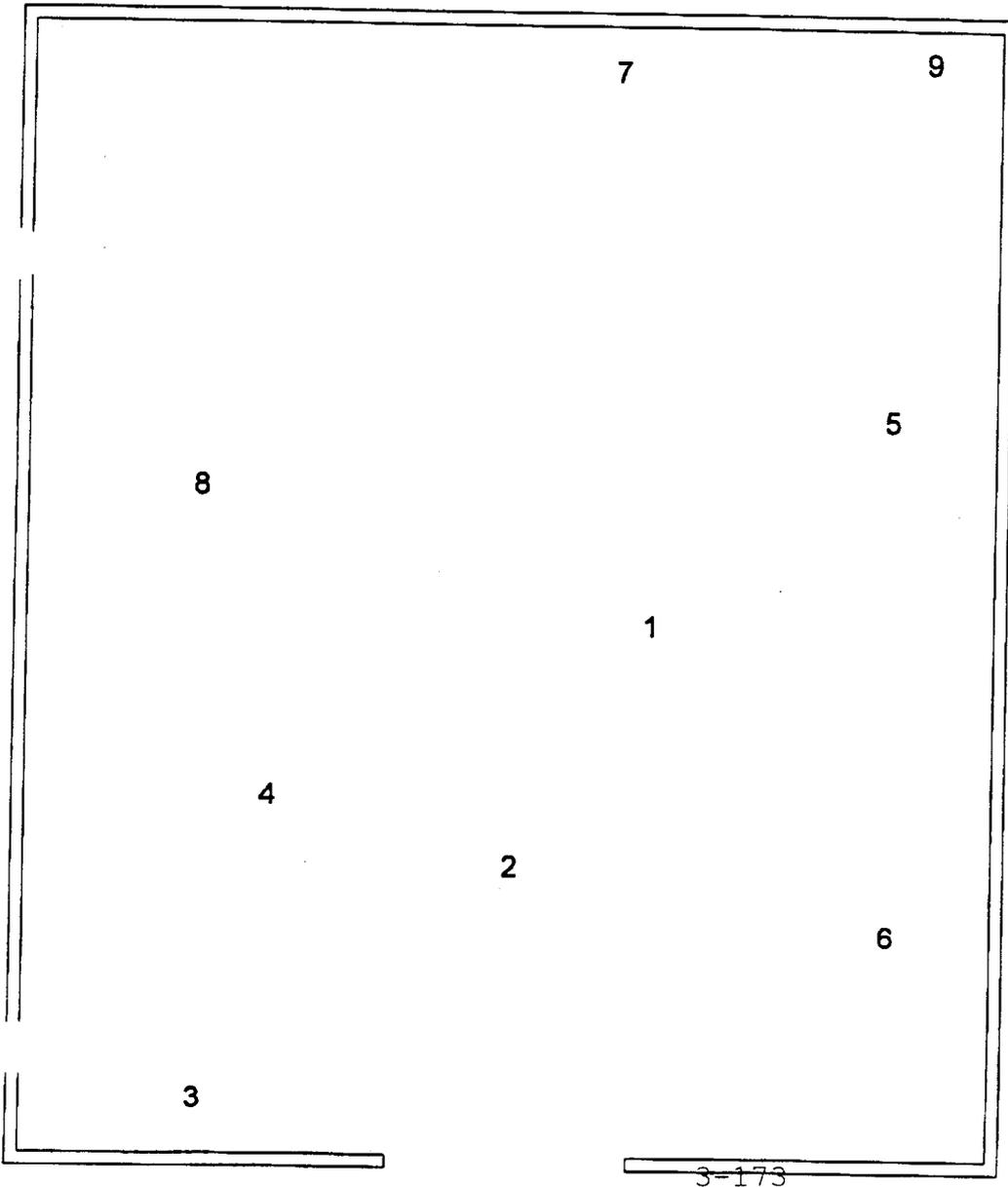
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.34. Building 1717

Unit Designation:
Building 1717

Unit Dimensions (ft):
28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	17.	15.	3730.
2	13.	8.	3620.
3	4.	1.	3710.
4	6.	10.	3690.
5	24.	21.	3850.
6	24.	6.	3930.
7	16.	31.	3940.
8	4.	19.	3730.
9	25.	32.	4000.



Survey Unit: Bldg. 1717

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion
 Dose: 25 mrem/y TEDE
 Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm⁻¹

Detector Area: 20 cm²

Probe Height: 10 cm

Probe Field of View: 7854 cm²

MDC: 2386 cpm Is MDC 50% of DCGL: Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1717

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
47	1	17.00	15.00	3.73E+03	S	-188	-188	4.5	0
48	2	13.00	8.00	3.62E+03	S	-216	-216	1	0
49	3	4.00	1.00	3.71E+03	S	-193	-193	3	0
50	4	6.00	10.00	3.69E+03	S	-198	-198	2	0
51	5	24.00	21.00	3.85E+03	S	-157	-157	6	0
52	6	24.00	6.00	3.93E+03	S	-137	-137	7	0
53	7	16.00	31.00	3.94E+03	S	-134	-134	8	0
54	8	4.00	19.00	3.73E+03	S	-188	-188	4.5	0
55	9	25.00	32.00	4.00E+03	S	-119	-119	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3800 c
 Mean Sample Count Rate: 3800 cpm
 SD Sample Count Rate: 133 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1717

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL(w): 2.0E+02 dpm 100cm^2 6.3E+02 cpm
Area Factor: n/a
DCGL(emb): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1
Detector Area: 127 cm^2
Probe Height: 10 cm
Probe Field of View: 15708 cm^2
MDC: 589 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGLw: 2.0E+02 cpm
LBGR = 1/2 DCGLw: 1.0E+02 cpm
Delta = DCGLw - LBGR: 1.0E+02 cpm
Delta/Sigma: 1
Type I - alpha: 0.05
Type II - beta: 0.05
Pr: 1
N: 9

Z1 - alpha: 1.645
Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1717

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
47	1	17.00	15.00	8.93E+02	S	-31	-31	8	0
48	2	13.00	8.00	8.65E+02	S	-40	-40	7	0
49	3	4.00	1.00	7.91E+02	S	-64	-64	1	0
50	4	6.00	10.00	8.59E+02	S	-42	-42	4	0
51	5	24.00	21.00	8.60E+02	S	-42	-42	5	0
52	6	24.00	6.00	8.18E+02	S	-55	-55	2	0
53	7	16.00	31.00	9.30E+02	S	-19	-19	9	0
54	8	4.00	19.00	8.31E+02	S	-51	-51	3	0
55	9	25.00	32.00	8.62E+02	S	-41	-41	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 857 c
 Mean Sample Count Rate: 857 cpm
 SD Sample Count Rate: 41 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

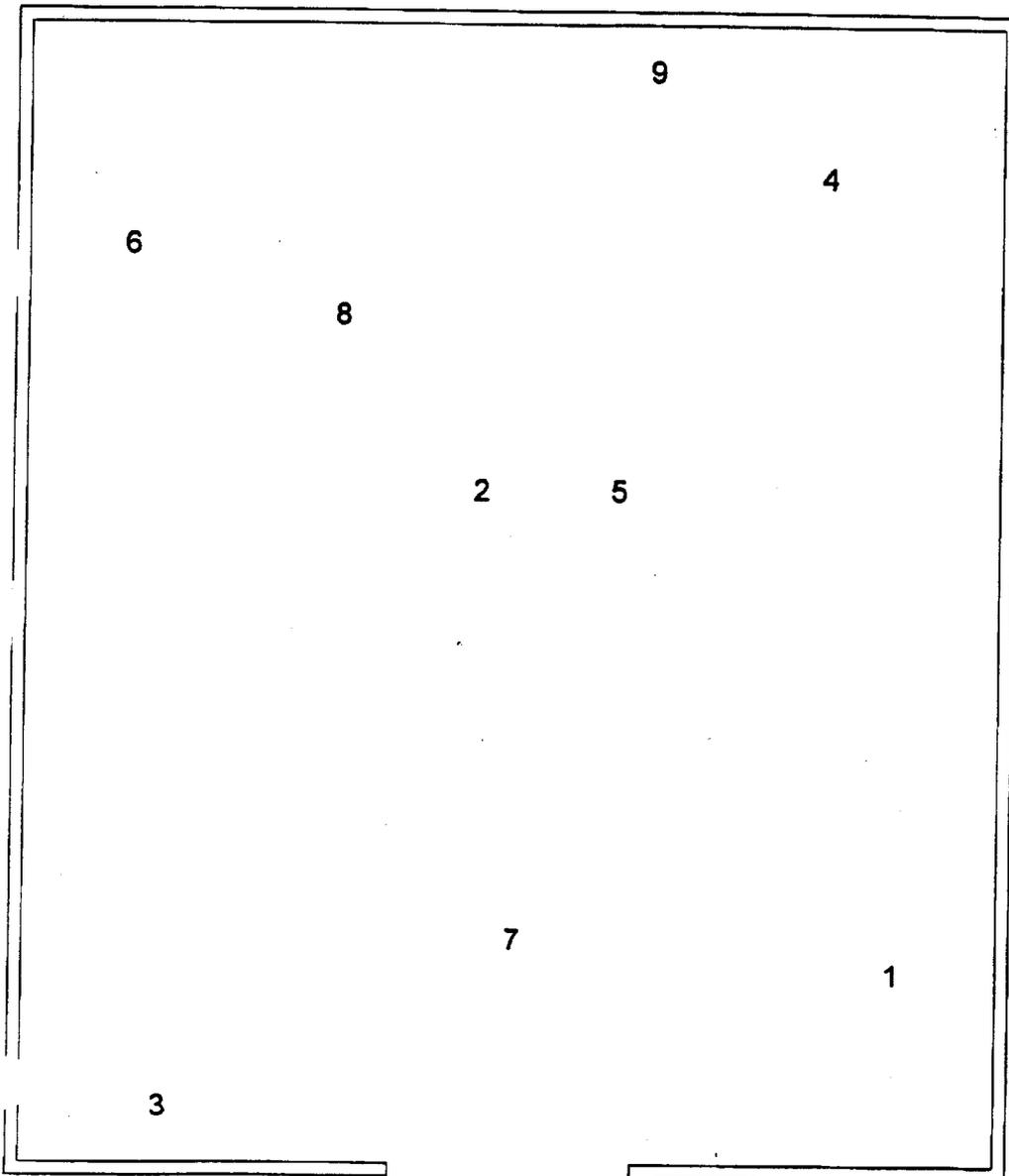
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.35. Building 1718

Unit Designation:
Building 1718

Unit Dimensions (ft):
28 x 32

Survey Pt.	X (ft)	Y (ft)	Value
1	24.	5.	3780.
2	12.	19.	3880.
3	3.	1.	3970.
4	22.	28.	3880.
5	16.	19.	3820.
6	2.	26.	3870.
7	13.	6.	3630.
8	8.	24.	4090.
9	17.	31.	3970.



Survey Unit: **Bldg. 1718**

Site: **NAS, Barbers Point**

Plan

Classification: **Class 3**

DCGL Criterion

Dose: **25** mrem/y TEDE
Model: **D&D** Default Parameters

Radionuclide of Concern: **Cs-137**

DCGL_(w): **2.8E+04** dpm 100cm⁻² **1.1E+05** cpm

Area Factor: **n/a**

DCGL_(emc): **n/a**

Instrumentation

Model: **Eberline E-600** Cal. Date: **2-Feb-99** Serial No. **200**

Detector: **Eberline SPA-3** Cal. Date: **2-Feb-99** Serial No. **10009**

Type Survey: **Fixed**

Detector Efficiency: **5%** cpm dpm⁻¹

Detector Area: **20** cm²

Probe Height: **10** cm

Probe Field of View: **7854** cm²

MDC: **2386** cpm

Is MDC 50% of DCGL: **Yes**

Number of Measurements

Counting Time: **60** s

Bkgd. Sigma: **512** cpm

DCGL_w: **1.1E+05** cpm

LBGR = 1/2 DCGL_w: **5.5E+04** cpm

Delta = DCGL_w - LBGR: **5.5E+04** cpm

Delta/Sigma: **107**

Type I - α: **0.05**

Z1 - α: **1.645**

Type II - β: **0.05**

Z1 - β: **1.645**

P_r: **1**

N: **9**

Statistics

Test: **WRS**

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1718

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
11	1	19.00	4.00	3.78E+03	S	-175	-175	2	0
12	2	12.00	9.00	3.88E+03	S	-150	-150	5.5	0
13	3	9.00	14.00	3.97E+03	S	-127	-127	7.5	0
14	4	3.00	7.00	3.88E+03	S	-150	-150	5.5	0
15	5	20.00	20.00	3.82E+03	S	-165	-165	3	0
16	6	8.00	35.00	3.87E+03	S	-152	-152	4	0
17	7	14.00	30.00	3.63E+03	S	-213	-213	1	0
18	8	2.00	37.00	4.09E+03	S	-96	-96	9	0
19	9	17.00	42.00	3.97E+03	S	-127	-127	7.5	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3877 c
 Mean Sample Count Rate: 3877 cpm
 SD Sample Count Rate: 131 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg 1718

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 589 cpm Is MDC 50% of DCGL: No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 2.0E+02 cpm

LBGR = 1/2 DCGL_w: 1.0E+02 cpm

Delta = DCGL_w - LBGR: 1.0E+02 cpm

Delta/Sigma: 1

Type I - α: 0.05 Z1 - α: 1.645

Type II - β: 0.05 Z1 - β: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1718

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	10	210	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	15	215	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
11	1	24.00	5.00	8.12E+02	S	-57	-57	1	0
12	2	12.00	19.00	9.22E+02	S	-22	-22	8	0
13	3	3.00	1.00	8.90E+02	S	-32	-32	6.5	0
14	4	22.00	28.00	8.54E+02	S	-44	-44	5	0
15	5	16.00	19.00	8.29E+02	S	-52	-52	2	0
16	6	2.00	26.00	8.42E+02	S	-47	-47	4	0
17	7	13.00	6.00	8.38E+02	S	-49	-49	3	0
18	8	8.00	24.00	8.90E+02	S	-32	-32	6.5	0
19	9	17.00	31.00	9.64E+02	S	-9	-9	9	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 871 c
 Mean Sample Count Rate: 871 cpm
 SD Sample Count Rate: 49 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

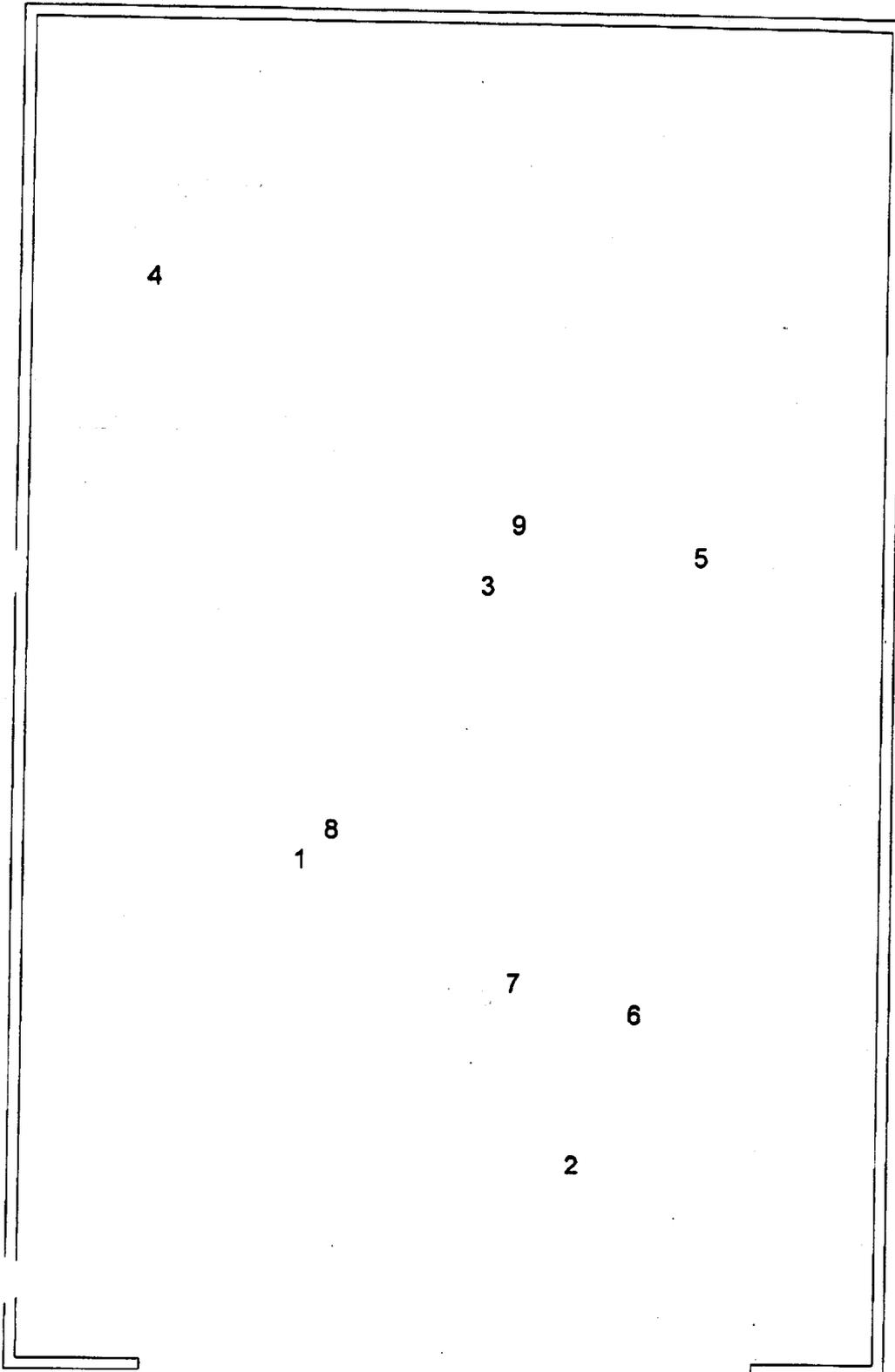
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.36. Building 1682 Room 1

Unit Designation:
Building 1682 Unit 1

Unit Dimensions (ft):
28 x 44

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	16.	3390.
2	17.	6.	3010.
3	14.	25.	3210.
4	3.	35.	3430.
5	21.	26.	3230.
6	19.	11.	3000.
7	15.	12.	3240.
8	9.	17.	3270.
9	15.	27.	3200.



Survey Unit: Bldg. 1682 - Rm 1

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 2386 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 512 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 107

Type I - alpha: 0.05

Type II - beta: 0.05

P_r: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	5.37E+03	R	230	28230	19	19
2	2	25	57	4.43E+03	R	-10	27990	13	13
3	3	30	5	4.41E+03	R	-15	27985	12	12
4	4	10	28	4.48E+03	R	3	28003	15	15
5	5	20	3	4.50E+03	R	8	28008	16	16
6	6	45	30	3.28E+03	R	-303	27697	10	10
7	7	7	20	4.46E+03	R	-2	27998	14	14
8	8	12	43	4.53E+03	R	16	28016	17	17
9	9	65	10	4.82E+03	R	90	28090	18	18
10	10	33	15	4.40E+03	R	-17	27983	11	11
56	1	10.0	13.0	4.05E+03	S	-106	-106	4.5	0
57	2	12.0	5.0	3.81E+03	S	-168	-168	1	0
58	3	19.0	13.0	4.06E+03	S	-104	-104	6	0
59	4	1.0	11.0	4.16E+03	S	-78	-78	9	0
60	5	5.0	12.0	4.01E+03	S	-117	-117	2	0
61	6	8.0	16.0	4.02E+03	S	-114	-114	3	0
62	7	16.0	19.0	4.09E+03	S	-96	-96	7	0
63	8	25.0	19.0	4.15E+03	S	-81	-81	8	0
64	9	23.0	8.0	4.05E+03	S	-106	-106	4.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4468 c
 Mean Bkgd Count Rate: 4468 cpm
 SD Bkgd Count Rate: 512 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 4044 c
 Mean Sample Count Rate: 4044 cpm
 SD Sample Count Rate: 102 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 1

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL(w): 2.0E+02 dpm 100cm^2, 6.3E+02 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm^-1

Detector Area: 127 cm^2

Probe Height: 10 cm

Probe Field of View: 15708 cm^2

MDC: 588 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGLw: 6.3E+02 cpm

LBGR = 1/2 DCGLw: 3.1E+02 cpm

Delta = DCGLw - LBGR: 3.1E+02 cpm

Delta/Sigma: 2

Type I - alpha: 0.05

Type II - beta: 0.05

Pi: 1

N: 9

Z1 - alpha: 1.645

Z1 - beta: 1.645

Statistics

Test: WRS

Ho - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.

The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 1

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	9	209	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	16	216	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
56	1	10.0	13.0	9.50E+02	S	-13	-13	2	0
57	2	12.0	5.0	1.11E+03	S	38	38	8.5	0
58	3	19.0	13.0	1.01E+03	S	6	6	6	0
59	4	1.0	11.0	9.30E+02	S	-19	-19	1	0
60	5	5.0	12.0	9.80E+02	S	-4	-4	5	0
61	6	8.0	16.0	1.11E+03	S	38	38	8.5	0
62	7	16.0	19.0	1.09E+03	S	31	31	7	0
63	8	25.0	19.0	9.53E+02	S	-12	-12	3	0
64	9	23.0	8.0	9.75E+02	S	-5	-5	4	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 1012 c
 Mean Sample Count Rate: 1012 cpm
 SD Sample Count Rate: 72 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

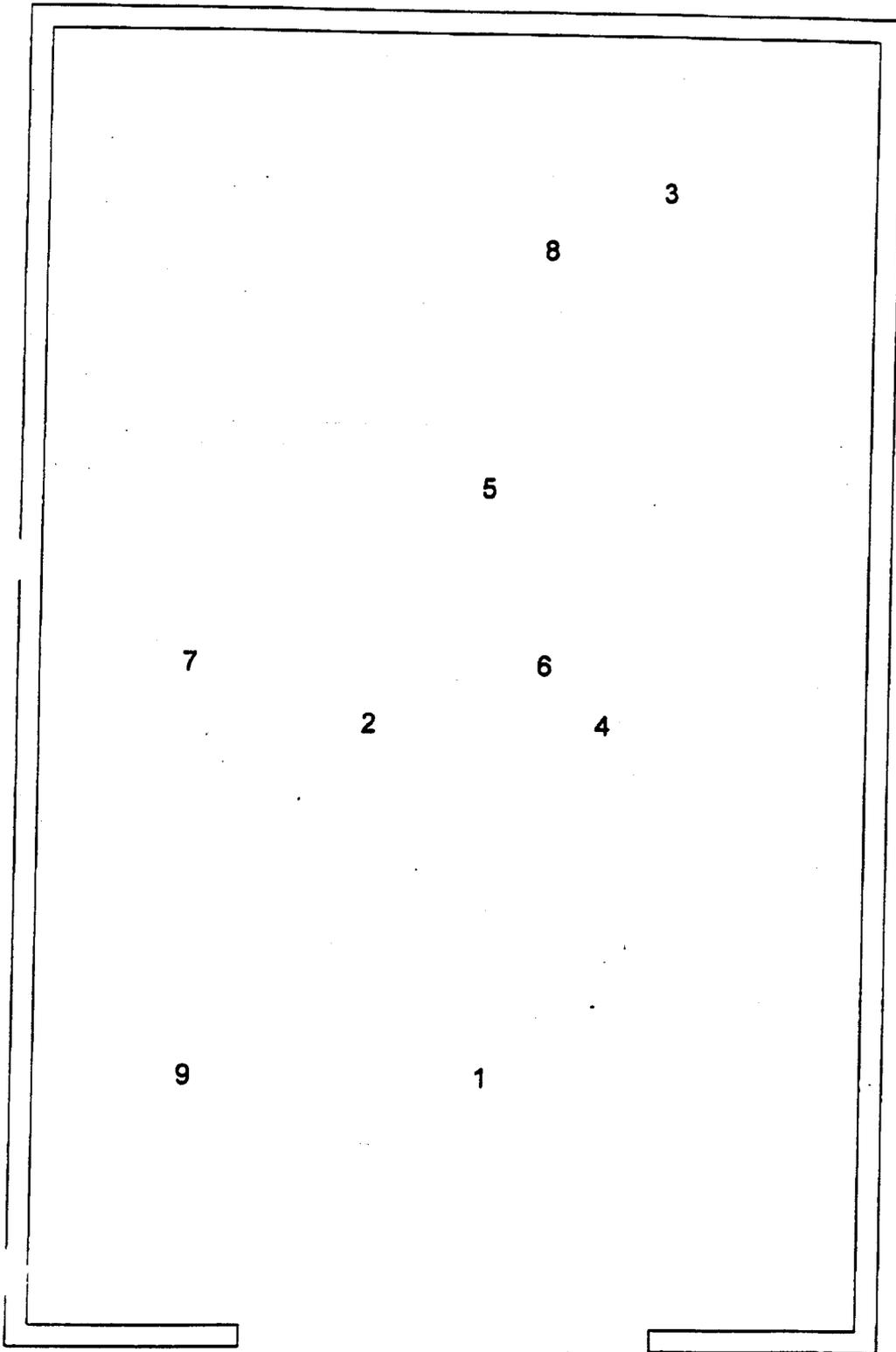
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.37. Building 1682 Room 2

Unit Designation:
Building 1682 Unit 2

Unit Dimensions (ft):
14 x 22

Survey Pt.	X (ft)	Y (ft)	Value
1	7.	4.	3610.
2	5.	10.	3630.
3	10.	19.	3840.
4	9.	10.	3550.
5	7.	14.	3700.
6	8.	11.	3670.
7	2.	11.	3670.
8	8.	18.	3730.
9	2.	4.	3790.



Survey Unit: Bldg. 1682 - Rm 2

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1189 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 255 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 216

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp.: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.62E+03	R	36	28036	17	17
2	2	25	57	4.64E+03	R	41	28041	18	18
3	3	30	5	4.52E+03	R	11	28011	14	14
4	4	10	28	4.60E+03	R	31	28031	16	16
5	5	20	3	3.94E+03	R	-137	27863	10	10
6	6	45	30	4.54E+03	R	16	28016	15	15
7	7	7	20	4.33E+03	R	-38	27962	12	12
8	8	12	43	4.89E+03	R	105	28105	19	19
9	9	65	10	4.40E+03	R	-20	27980	13	13
10	10	33	15	4.30E+03	R	-45	27955	11	11
11	1	7.00	16.00	3.61E+03	S	-221	-221	2	0
12	2	5.00	6.00	3.63E+03	S	-216	-216	3	0
13	3	10.00	25.00	3.84E+03	S	-162	-162	9	0
14	4	9.00	35.00	3.55E+03	S	-236	-236	1	0
15	5	7.00	26.00	3.70E+03	S	-198	-198	6	0
16	6	8.00	11.00	3.67E+03	S	-206	-206	4.5	0
17	7	2.00	12.00	3.67E+03	S	-206	-206	4.5	0
18	8	8.00	17.00	3.73E+03	S	-190	-190	7	0
19	9	2.00	27.00	3.79E+03	S	-175	-175	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4478 c
 Mean Bkgd Count Rate: 4478 cpm
 SD Bkgd Count Rate: 255 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3688 c
 Mean Sample Count Rate: 3688 cpm
 SD Sample Count Rate: 90 cpm

Results of Final Status Survey

Test Statistic (W_r): 145
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 9
 Critical Value_{m,n}: 120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 2

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Pu-239

DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm

Area Factor: n/a

DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed

Detector Efficiency: 2% cpm dpm⁻¹

Detector Area: 127 cm²

Probe Height: 10 cm

Probe Field of View: 15708 cm²

MDC: 588 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 126 cpm

DCGL_w: 6.3E+02 cpm

LBGR = 1/2 DCGL_w: 3.1E+02 cpm

Delta = DCGL_w - LBGR: 3.1E+02 cpm

Delta/Sigma: 2

Type I - α: 0.05

Type II - β: 0.05

P_r: 1

N: 9

Z1 - α: 1.645

Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.

The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 2

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	9	209	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	16	216	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
11	1	7.00	16.00	9.80E+02	S	-4	-4	6	0
12	2	5.00	6.00	9.35E+02	S	-18	-18	3	0
13	3	10.00	25.00	1.10E+03	S	35	35	9	0
14	4	9.00	35.00	9.25E+02	S	-21	-21	2	0
15	5	7.00	26.00	9.95E+02	S	1	1	7	0
16	6	8.00	11.00	9.70E+02	S	-7	-7	5	0
17	7	2.00	12.00	9.09E+02	S	-26	-26	1	0
18	8	8.00	17.00	9.63E+02	S	-9	-9	4	0
19	9	2.00	27.00	9.99E+02	S	3	3	8	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 975 c
 Mean Sample Count Rate: 975 cpm
 SD Sample Count Rate: 56 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

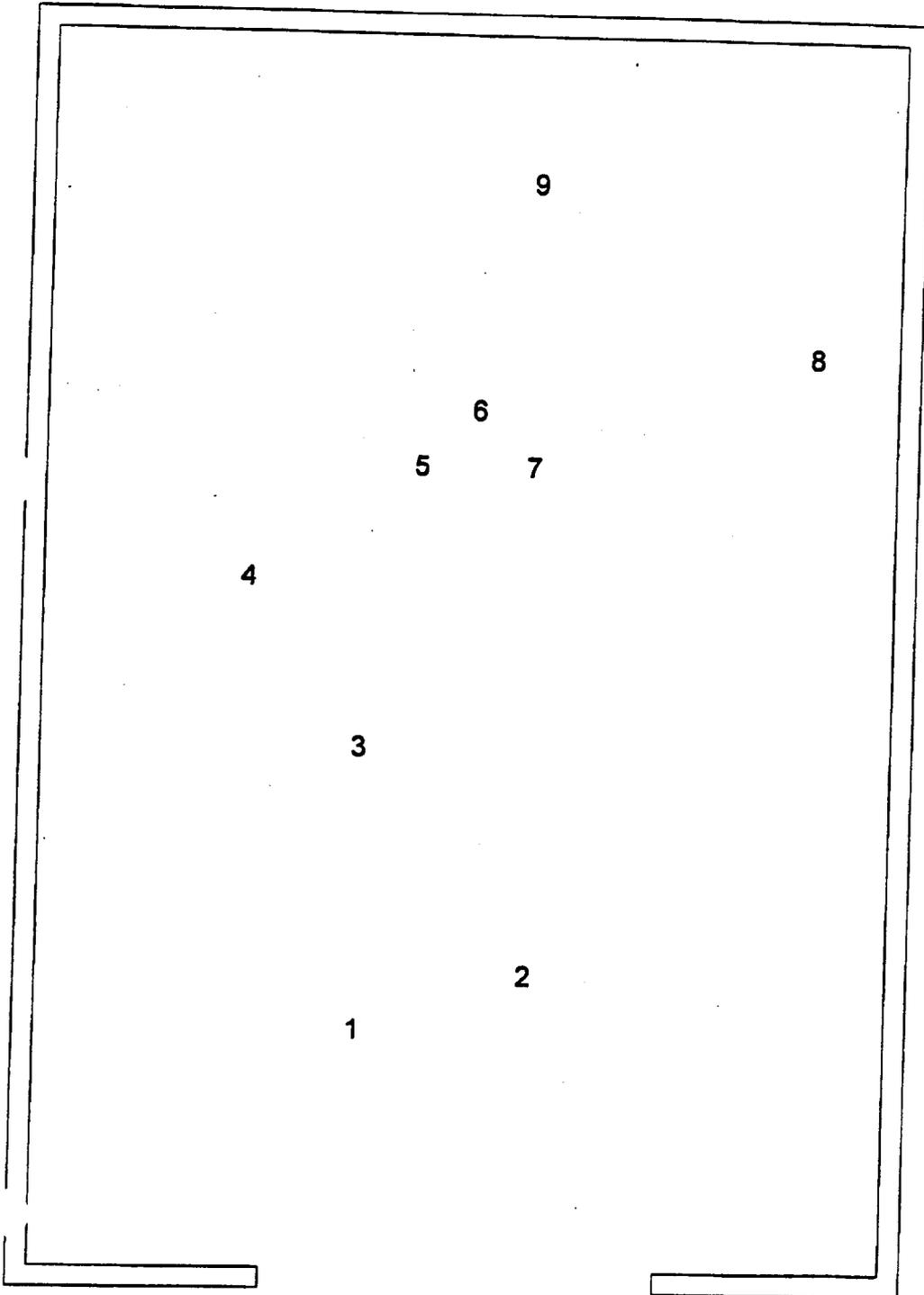
The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

3.3.38. Building 1682 Room 3

Unit Designation:
Building 1682 Unit 3

Unit Dimensions (ft):
15 x 22

Survey Pt.	X (ft)	Y (ft)	Value
1	5.	4.	3540.
2	8.	5.	3470.
3	5.	9.	3560.
4	3.	12.	3560.
5	6.	14.	3640.
6	7.	15.	3630.
7	8.	14.	3430.
8	13.	16.	3610.
9	8.	19.	3600.



Survey Unit: Bldg. 1682 - Rm 3

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern: Cs-137

DCGL(w): 2.8E+04 dpm 100cm^2, 1.1E+05 cpm

Area Factor: n/a

DCGL(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed

Detector Efficiency: 5% cpm dpm^-1

Detector Area: 20 cm^2

Probe Height: 10 cm

Probe Field of View: 7854 cm^2

MDC: 1189 cpm Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s

Bkgd. Sigma: 255 cpm

DCGL_w: 1.1E+05 cpm

LBGR = 1/2 DCGL_w: 5.5E+04 cpm

Delta = DCGL_w - LBGR: 5.5E+04 cpm

Delta/Sigma: 216

Type I - alpha: 0.05

Z1 - alpha: 1.645

Type II - beta: 0.05

Z1 - beta: 1.645

P_r: 1

N: 9

Statistics

Test: WRS

H_0 - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL(w)

H_a - Alternative Hyp: The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.62E+03	R	36	28036	17	17
2	2	25	57	4.64E+03	R	41	28041	18	18
3	3	30	5	4.52E+03	R	11	28011	14	14
4	4	10	28	4.60E+03	R	31	28031	16	16
5	5	20	3	3.94E+03	R	-137	27863	10	10
6	6	45	30	4.54E+03	R	16	28016	15	15
7	7	7	20	4.33E+03	R	-38	27962	12	12
8	8	12	43	4.89E+03	R	105	28105	19	19
9	9	65	10	4.40E+03	R	-20	27980	13	13
10	10	33	15	4.30E+03	R	-45	27955	11	11
29	1	5.00	4.00	3.54E+03	S	-239	-239	3	0
30	2	8.00	5.00	3.47E+03	S	-257	-257	2	0
31	3	5.00	9.00	3.56E+03	S	-234	-234	4.5	0
32	4	3.00	12.00	3.56E+03	S	-234	-234	4.5	0
33	5	6.00	14.00	3.64E+03	S	-213	-213	9	0
34	6	7.00	15.00	3.63E+03	S	-216	-216	8	0
35	7	8.00	14.00	3.43E+03	S	-267	-267	1	0
36	8	13.00	16.00	3.61E+03	S	-221	-221	7	0
37	9	8.00	19.00	3.60E+03	S	-224	-224	6	0
							Sum	190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4478 c
 Mean Bkgd Count Rate: 4478 cpm
 SD Bkgd Count Rate: 255 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3560 c
 Mean Sample Count Rate: 3560 cpm
 SD Sample Count Rate: 71 cpm

Results of Final Status Survey

Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: **Bldg. 1682 - Rm 3**

Site: **NAS, Barbers Point**

Plan

Classification: **Class 3**

DCGL Criterion

Dose: **25** mrem/y TEDE
Model: **D&D** Default Parameters

Radionuclide of Concern: **Pu-239**

DCGL_(w): **2.0E+02** dpm 100cm⁻² **6.3E+02** cpm

Area Factor: **n/a**

DCGL_(emc): **n/a**

Instrumentation

Model: **Eberline E-600** Cal. Date: **2-Feb-99** Serial No. **213**

Detector: **FIDLER** Cal. Date: **2-Feb-99** Serial No. **512**

Type Survey: **Fixed**

Detector Efficiency: **2%** cpm dpm⁻¹

Detector Area: **127** cm²

Probe Height: **10** cm

Probe Field of View: **15708** cm²

MDC: **588** cpm

Is MDC 50% of DCGL **No**

Number of Measurements

Counting Time: **60** s

Bkgd. Sigma: **126** cpm

DCGL_w: **6.3E+02** cpm

LBGR = 1/2 DCGL_w: **3.1E+02** cpm

Delta = DCGL_w - LBGR: **3.1E+02** cpm

Delta/Sigma: **2**

Type I - α: **0.05**

Type II - β: **0.05**

P_r: **1**

N: **9**

Z1 - α: **1.645**

Z1 - β: **1.645**

Statistics

Test: **WRS**

H₀ - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp.

The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 3

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	9	209	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	16	216	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
29	1	5.00	4.00	9.00E+02	S	-29	-29	2	0
30	2	8.00	5.00	9.81E+02	S	-3	-3	6	0
31	3	5.00	9.00	1.00E+03	S	3	3	7	0
32	4	3.00	12.00	1.01E+03	S	6	6	8	0
33	5	6.00	14.00	9.55E+02	S	-11	-11	4	0
34	6	7.00	15.00	1.02E+03	S	9	9	9	0
35	7	8.00	14.00	8.99E+02	S	-29	-29	1	0
36	8	13.00	16.00	9.47E+02	S	-14	-14	3	0
37	9	8.00	19.00	9.77E+02	S	-4	-4	5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 965 c
 Mean Sample Count Rate: 965 cpm
 SD Sample Count Rate: 44 cpm

Results of Final Status Survey

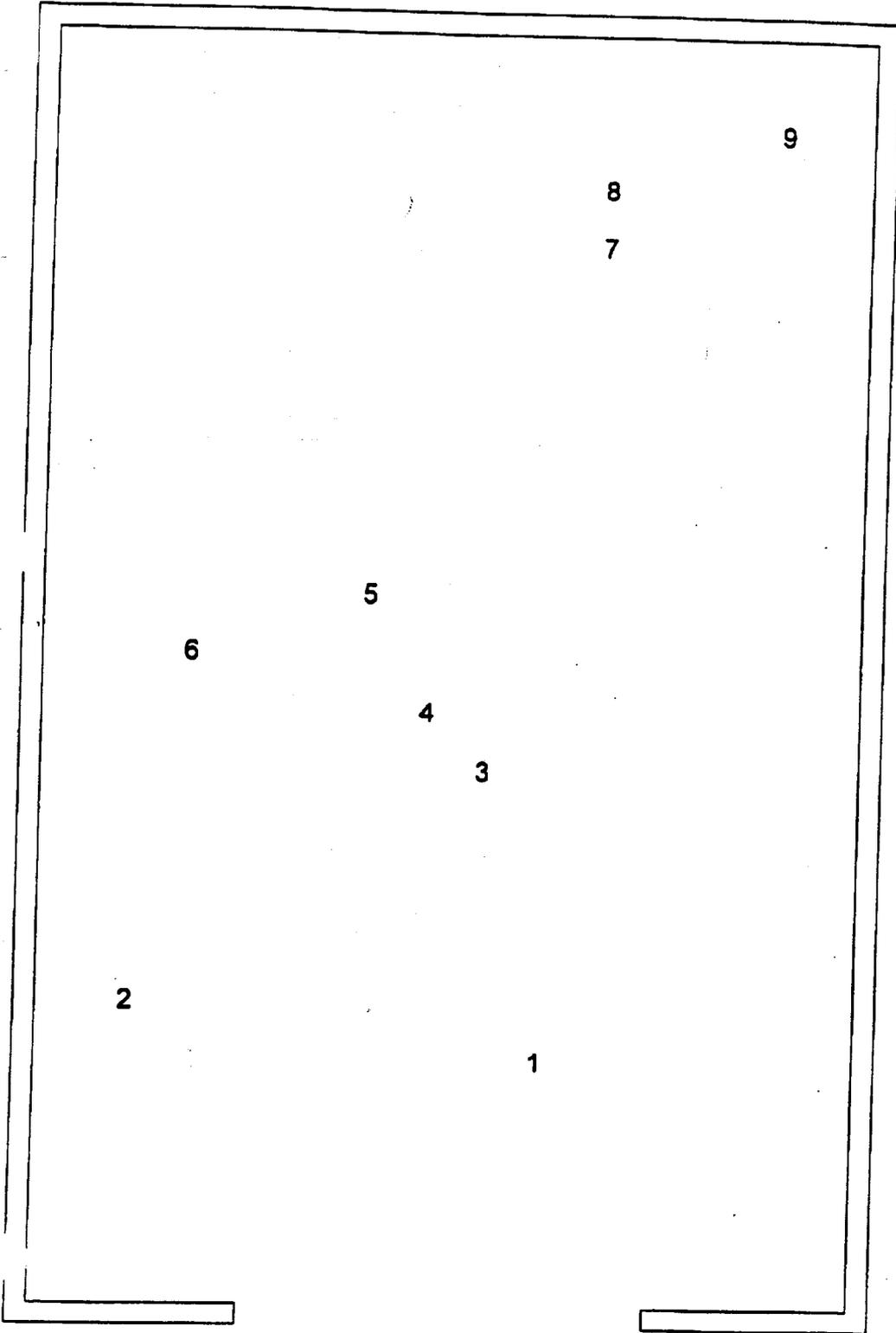
Test Statistic (W _r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 1682 Unit 4

Unit Dimensions (ft):
14 x 22

Survey Pt.	X (ft)	Y (ft)	Value
1	8.	4.	3600.
2	1.	5.	3620.
3	7.	9.	3580.
4	6.	10.	3680.
5	5.	12.	3640.
6	2.	11.	3660.
7	9.	18.	3690.
8	9.	19.	3810.
9	12.	20.	3810.



Survey Unit:

Site:

Plan

Classification:

DCGL Criterion

Dose mrem/y TEDE
Model Default Parameters

Radionuclide of Concern

DCGL_(w): dpm 100cm⁻² cpm

Area Factor:

DCGL_(emc):

Instrumentation

Model: Cal. Date: Serial No.

Detector: Cal. Date: Serial No.

Type Survey:

Detector Efficiency: cpm dpm⁻¹

Detector Area: cm²

Probe Height: cm

Probe Field of View: cm²

MDC cpm Is MDC 50% of DCGL

Number of Measurements

Counting Time: s

Bkgd. Sigma: cpm

DCGL_w: cpm

LBGR = 1/2 DCGL_w: cpm

Delta = DCGL_w - LBGR: cpm

Delta/Sigma:

Type I - α:

Z1 - α

Type II - β:

Z1 - β

P_r

N

Statistics

Test

H₀ - Null Hypothesis The survey unit mean is equal to or exceeds the DCGL_(w)

H_a - Alternative Hyp. The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 4

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.62E+03	R	36	28036	17	17
2	2	25	57	4.64E+03	R	41	28041	18	18
3	3	30	5	4.52E+03	R	11	28011	14	14
4	4	10	28	4.60E+03	R	31	28031	16	16
5	5	20	3	3.94E+03	R	-137	27863	10	10
6	6	45	30	4.54E+03	R	16	28016	15	15
7	7	7	20	4.33E+03	R	-38	27962	12	12
8	8	12	43	4.89E+03	R	105	28105	19	19
9	9	65	10	4.40E+03	R	-20	27980	13	13
10	10	33	15	4.30E+03	R	-45	27955	11	11
38	1	8.00	4.00	3.60E+03	S	-224	-224	2	0
39	2	1.00	5.00	3.62E+03	S	-218	-218	3	0
40	3	7.00	9.00	3.58E+03	S	-229	-229	1	0
41	4	6.00	10.00	3.68E+03	S	-203	-203	6	0
42	5	5.00	12.00	3.64E+03	S	-213	-213	4	0
43	6	2.00	11.00	3.66E+03	S	-208	-208	5	0
44	7	9.00	18.00	3.69E+03	S	-201	-201	7	0
45	8	9.00	19.00	3.81E+03	S	-170	-170	8.5	0
46	9	12.00	20.00	3.81E+03	S	-170	-170	8.5	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4478 c
 Mean Bkgd Count Rate: 4478 cpm
 SD Bkgd Count Rate: 255 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3677 c
 Mean Sample Count Rate: 3677 cpm
 SD Sample Count Rate: 84 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 4

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL_(w): 2.0E+02 dpm 100cm⁻² 6.3E+02 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed
Detector Efficiency: 2% cpm dpm⁻¹
Detector Area: 127 cm²
Probe Height: 10 cm
Probe Field of View: 15708 cm²
MDC: 588 cpm

Is MDC 50% of DCGL: No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGL_w: 6.3E+02 cpm
LBGR = 1/2 DCGL_w: 3.1E+02 cpm
Delta = DCGL_w - LBGR: 3.1E+02 cpm
Delta/Sigma: 2
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 4

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	9	209	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	16	216	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
38	1	8.00	4.00	1.01E+03	S	6	6	8.5	0
39	2	1.00	5.00	9.99E+02	S	3	3	7	0
40	3	7.00	9.00	8.97E+02	S	-30	-30	1	0
41	4	6.00	10.00	9.48E+02	S	-14	-14	2	0
42	5	5.00	12.00	9.93E+02	S	1	1	5	0
43	6	2.00	11.00	1.01E+03	S	6	6	8.5	0
44	7	9.00	18.00	9.78E+02	S	-4	-4	4	0
45	8	9.00	19.00	9.55E+02	S	-11	-11	3	0
46	9	12.00	20.00	9.95E+02	S	1	1	6	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 976 c
 Mean Sample Count Rate: 976 cpm
 SD Sample Count Rate: 37 cpm

Results of Final Status Survey

Test Statistic (W_r):

Number of reference area samples (m):

Number of survey unit samples (n):

Critical Value_{m,n}:

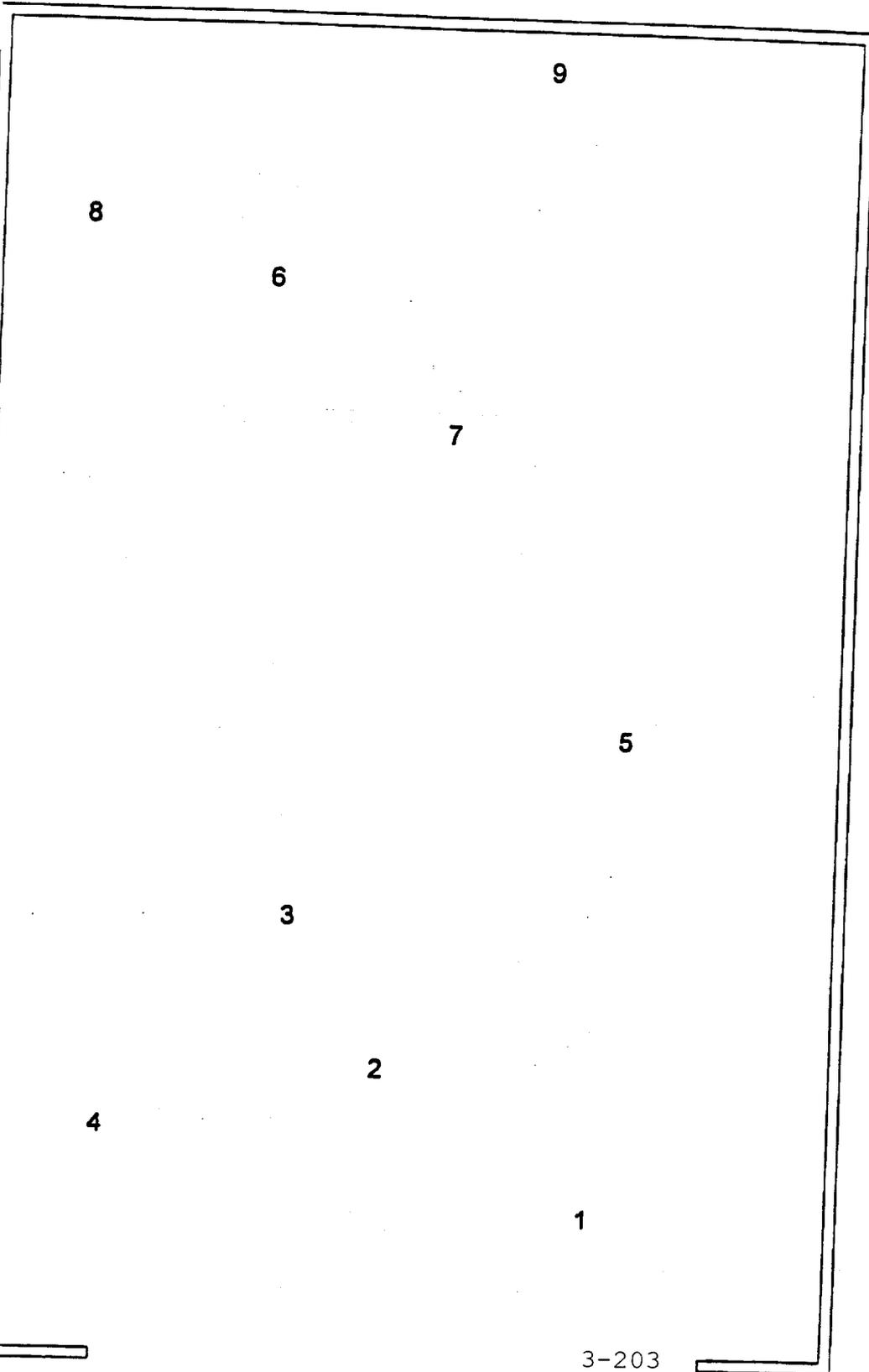
145
10
9
120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Unit Designation:
Building 1682 Unit 5

Unit Dimensions (ft):
28 x 44

Survey Pt.	X (ft)	Y (ft)	Value
1	19.	4.	3210.
2	12.	9.	3220.
3	9.	14.	3360.
4	3.	7.	3420.
5	20.	20.	3150.
6	8.	35.	3120.
7	14.	30.	3280.
8	2.	37.	3390.
9	17.	42.	2970.



Survey Unit: Bldg. 1682 - Rm 5

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Cs-137
DCGL_(w): 2.8E+04 dpm 100cm⁻² 1.1E+05 cpm
Area Factor: n/a
DCGL_(emc): n/a

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 200

Detector: Eberline SPA-3 Cal. Date: 2-Feb-99 Serial No. 10009

Type Survey: Fixed
Detector Efficiency: 5% cpm dpm⁻¹
Detector Area: 20 cm²
Probe Height: 10 cm
Probe Field of View: 7854 cm²
MDC: 1189 cpm

Is MDC 50% of DCGL Yes

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 255 cpm
DCGL_w: 1.1E+05 cpm
LBGR = 1/2 DCGL_w: 5.5E+04 cpm
Delta = DCGL_w - LBGR: 5.5E+04 cpm
Delta/Sigma: 216
Type I - α: 0.05
Type II - β: 0.05
P_r: 1
N: 9

Z1 - α: 1.645
Z1 - β: 1.645

Statistics

Test: WRS

H₀ - Null Hypothesis: The survey unit mean is equal to or exceeds the DCGL_(w)
H_a - Alternative Hyp.: The survey unit mean is less than the DCGL_(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 5

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	4.62E+03	R	36	28036	17	17
2	2	25	57	4.64E+03	R	41	28041	18	18
3	3	30	5	4.52E+03	R	11	28011	14	14
4	4	10	28	4.60E+03	R	31	28031	16	16
5	5	20	3	3.94E+03	R	-137	27863	10	10
6	6	45	30	4.54E+03	R	16	28016	15	15
7	7	7	20	4.33E+03	R	-38	27962	12	12
8	8	12	43	4.89E+03	R	105	28105	19	19
9	9	65	10	4.40E+03	R	-20	27980	13	13
10	10	33	15	4.30E+03	R	-45	27955	11	11
47	1	19.0	4.0	3.21E+03	S	-323	-323	4	0
48	2	12.0	9.0	3.22E+03	S	-320	-320	5	0
49	3	9.0	14.0	3.36E+03	S	-285	-285	7	0
50	4	3.0	7.0	3.42E+03	S	-269	-269	9	0
51	5	20.0	20.0	3.15E+03	S	-338	-338	3	0
52	6	8.0	35.0	3.12E+03	S	-346	-346	2	0
53	7	14.0	30.0	3.28E+03	S	-305	-305	6	0
54	8	2.0	37.0	3.39E+03	S	-277	-277	8	0
55	9	17.0	42.0	2.97E+03	S	-384	-384	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 4478 c
 Mean Bkgd Count Rate: 4478 cpm
 SD Bkgd Count Rate: 255 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 3236 c
 Mean Sample Count Rate: 3236 cpm
 SD Sample Count Rate: 145 cpm

Results of Final Status Survey

Test Statistic (W_r): 145
 Number of reference area samples (m): 10
 Number of survey unit samples (n): 9
 Critical Value_{m,n}: 120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 5

Site: NAS, Barbers Point

Plan

Classification: Class 3

DCGL Criterion

Dose: 25 mrem/y TEDE
Model: D&D Default Parameters

Radionuclide of Concern

Pu-239
DCGL(w): 2.0E+02 dpm 100cm^-2
Area Factor: n/a
DCGL(emc): n/a
6.3E+02 cpm

Instrumentation

Model: Eberline E-600 Cal. Date: 2-Feb-99 Serial No. 213

Detector: FIDLER Cal. Date: 2-Feb-99 Serial No. 512

Type Survey: Fixed
Detector Efficiency: 2% cpm dpm^-1
Detector Area: 127 cm^2
Probe Height: 10 cm
Probe Field of View: 15708 cm^2
MDC: 588 cpm

Is MDC 50% of DCGL No

Number of Measurements

Counting Time: 60 s
Bkgd. Sigma: 126 cpm
DCGLw: 6.3E+02 cpm
LBGR = 1/2 DCGLw: 3.1E+02 cpm
Delta = DCGLw - LBGR: 3.1E+02 cpm
Delta/Sigma: 2
Type I - alpha: 0.05
Type II - beta: 0.05
Pr: 1
N: 9

Z1 - alpha: 1.645
Z1 - beta: 1.645

Statistics

Test: WRS

H0 - Null Hypothesis

The survey unit mean is equal to or exceeds the DCGL(w)

Ha - Alternative Hyp.

The survey unit mean is less than the DCGL(w) - survey unit may be released

Survey Unit: Bldg. 1682 - Rm 5

Site: NAS, Barbers Point

Reference "R" and Sample "S" data - Wilcoxon Rank Sum (WRS) Test

Log #	Point #	x feet	y feet	cpm	R or S	Data dpm 100cm ⁻²	Adj. Data dpm 100cm ⁻²	Ranks	Ref. Area Ranks
1	1	5	10	8.74E+02	R	-37	163	11	11
2	2	25	57	1.02E+03	R	9	209	16	16
3	3	30	5	9.87E+02	R	-1	199	14	14
4	4	10	28	8.13E+02	R	-57	143	10	10
5	5	20	3	1.01E+03	R	6	206	15	15
6	6	45	30	9.49E+02	R	-13	187	13	13
7	7	7	20	1.03E+03	R	12	212	17	17
8	8	12	43	9.08E+02	R	-26	174	12	12
9	9	65	10	1.04E+03	R	16	216	18	18
10	10	33	15	1.28E+03	R	92	292	19	19
47	1	19.0	4.0	1.00E+03	S	3	3	5	0
48	2	12.0	9.0	9.50E+02	S	-13	-13	2	0
49	3	9.0	14.0	1.02E+03	S	9	9	7.5	0
50	4	3.0	7.0	9.95E+02	S	1	1	4	0
51	5	20.0	20.0	1.02E+03	S	9	9	7.5	0
52	6	8.0	35.0	9.62E+02	S	-9	-9	3	0
53	7	14.0	30.0	1.03E+03	S	12	12	9	0
54	8	2.0	37.0	1.01E+03	S	6	6	6	0
55	9	17.0	42.0	9.45E+02	S	-15	-15	1	0
Sum								190	145

Bkgd Counting Time: 60 s
 Mean Bkgd Counts: 991 c
 Mean Bkgd Count Rate: 991 cpm
 SD Bkgd Count Rate: 126 cpm

Sample Counting Time: 60 s
 Mean Sample Counts: 992 c
 Mean Sample Count Rate: 992 cpm
 SD Sample Count Rate: 32 cpm

Results of Final Status Survey

Test Statistic (W_r):	145
Number of reference area samples (m):	10
Number of survey unit samples (n):	9
Critical Value _{m,n} :	120

The W_r statistic is greater than the critical value, therefore the null hypothesis is rejected
 The survey unit mean is less than the DCGL(w) - survey unit may be released

Section 4 REFERENCES

1. Multi-Agency Radiation Survey And Site Investigation Manual (MARSSIM), NUREG-1575/EPA 402/R-97/016, December 1997
2. U.S. EPA, Health Effects Assessment Summary Tables FY-1995 Annual, (EPA 540/R-95/036, May 1995)
3. U.S. EPA, RAGS/HHEM Part B, Development of Risk-Based Preliminary Remediation Goals (OSWER Directive 9285.7-01B)
4. USNRC, Scenarios for Assessing Potential Doses Associated with Residual Radioactivity, Policy and Guidance Directive PG-8-08, May 1994

Section 5 DOCUMENTS REVIEWED

1. Environmental Baseline Study, Naval Air Station Barbers Point
2. Department of Energy, Nevada Operations Office, letter of 14 Dec 98, with enclosures.
3. B57 Quality Assurance Service Test (QAST) Dec 91-Mar 92
4. Mine Readiness Certification Inspection (MRCI) 1989
5. DOD Narrative Summaries of Accidents Involving US Nuclear Weapons 1950-1980
6. PACOM Flag Officer Nuclear Accident Course Book 1983 & 1987
7. Planning Letter for Operating Safety Review of P-3C Aircraft With B57 Nuclear Depth Bomb
8. Nuclear Technical Proficiency Inspection (NTPI) of Barbers Point 1977-1992
B90 Site Survey
9. Nuclear Safety Counsel Meeting Minutes 1988-1992
10. OPNAVINST 8110.20A (Feb 87)
11. Safety Study and Review of Nuclear Weapons Systems
12. OPNAVINST 8023.19A (Feb 79)
13. Safety Criteria And Standards For The Movement of Nuclear Weapons by Non-Combatant Delivery Vehicles
14. OPNAVINST 5040.65 (Oct 87)
15. DON Nuclear Weapons Technical Inspection (NWTI) and Nuclear Weapons Readiness Certification
16. Special Draft Study of Logistics of Air Launched Weapons 1985-86
17. Various Inter-Service Support Agreements and Plans
18. Various Radio Messages (SAAM) & Non-Strategic Decertification Direction