PC-000456/0

GENERAL ATOMICS HOT CELL CHARACTERIZATION REPORT

prepared for

GA HOT CELL D&D PROJECT

CONTRACT NO. DE-AC03-95SF20798

PROJECT NO. 7340

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GENERAL ATOMICS

GENERAL ATOMICS

March 26, 1996

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Subject: Transmittal of the General Atomics Hot Cell Characterization Report (PC-000456/0)

Dear Mr. Davis:

Enclosed, per your request, is an additional copy of the subject document. If you have any questions, please call me at (619) 455-4240.

Best regards,

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c: w/o attachment:
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GENERAL ATOMICS

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LIST OF ACRONYMS

AAP	Actinide Activation Products
ACBM	Asbestos Containing Building Material
ALARA	As Low As Reasonably Achievable
CAL-DHS	California Department of Health Services
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CO	Corridor/Ladies Change Room
CoC	Chain of Custody
COLIWASA	Composite Liquid Waste Sampler
CR	Coffee Room
D&D	Decontamination and Decommissioning
D/I	Direct & Indirect
DOE	Department of Energy
DOT	Department of Transportation
EBOR	Experimental Beryllium Oxide Reactor
EPA	Environmental Protection Agency
ESTES	Engineering Scale Tritium Extraction System
GA	General Atomics
GM	Geiger-Muller
HA	Hallway
HCF	Hot Cell Facility
HLC	High-Level Cell
HP	Health Physics
HTGR	High Temperature Gas-Cooled Reactors
ICP	Inductively Coupled Plasma Spectrophotometry
LAS	Large Area Smear
LCR	Ladies Change Room
LLC	Low-Level Cell
LLD	Lower Limit of Detection
LR	Ladies Bathroom
LWV	Liquid Waste Vault
MAP	Mixed Activation Products
MDA	Minimum Detectable Activity
MET	Metallography Cell
MFP	Mixed Fission Products
MGCR	Marine Gas Cooled Reactor
MR	Men's Bathroom
NPR	New Production Reactor
NRC	U.S. Nuclear Regulatory Commission
PCB	Polychlorinated Biphenyl
PLM	Polarized Light Microscopy
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
R&D	research and development
RCRA	Resource Conservation and Recovery Act
SAA	Satellite Accumulation Area
SNM	Special Nuclear Material
SS	Storage Shed
TCLP	Toxicity Characteristics Leaching Procedure
TFE	thermionic fuel elements
TICs	Tentatively Identified Compounds

TOH	Total Organic Halogens
TRIGA	Training, Research, and Isotope Reactor
TTLC	Total Threshold Limit Concentration

LIST OF ABBREVIATIONS

Ag	silver
Am	americium
AtF	altamont clay, 15 to 30 percent slopes
B	boron
Be	beryllium
bkg	background
Bldg.	building
C	carbon
Cal Lab	General Atomics Nuclear Instrument Calibration Department
Cd	cadmium
Ce	cerium
cm	centimeter
Cm	curium
Co	cobalt
cpm	counts per minute
Cs	cesium
Cu	copper
dpm	disintegrations per minute
Eu	europium
Fe	iron
Fig.	figure
ft.	feet/foot
g	grams(s)
Gd	gadolinium
H	hydrogen
Hg	mercury
HNO_3	nitric acid
hr	hour
HrCr	huerhuero loam, 5 to 9 percent slopes, eroded
I	iodine
in.	inch(es)
K	potassium
K	thousand—when used with dpm
kg	kilogram(s)
Kr	krypton
l	liter(s)
m	meter(s)
mg	milligrams(s)
ml	milliliter(s)
msl	mean sea level
N.O.S.	not otherwise specified
Na	sodium
Nb	niobium
No.	number
O	oxygen
pa	probe area
Pb	lead
pCi	picocuries
pH	hydrogen ion concentration
Pu	plutonium
Ra	radium
Rb	rubidium

Ref.	reference
Rm.	room
Ru	ruthenium
S	sulfur
Sb	antimony
Sr	strontium
Th	thorium
U	uranium
Xe	xenon
yr	year
Zn	zinc
℃	degrees centigrade
μCi	micro curie(s)
μg	microgram(s)
μR	micro roentgen

EXECUTIVE SUMMARY

In support of efforts involving predominantly government funded nuclear research and development (R&D), General Atomics (GA) has continuously maintained an operational Hot Cell Facility (HCF) for over 30 years. Built in 1958 as a heavily-shielded remote-handling laboratory, the HCF has supported a wide variety of radiologically hazardous and/or toxic experimental operations. Specific authority for the operation of the HCF, and the possession therein of radioactive materials (including Special Nuclear Material (SNM), by-product, and source radioactive materials) is embodied in the Nuclear Regulatory Commission (NRC) and State of California Material Licenses (SNM-696 and 0145-80, respectively) issued by those agencies to General Atomics.

Usage of the Hot Cell has dropped significantly in recent years. This, in conjunction with the continuing private industrial development around the site, prompted the decision to decontaminate and decommission (D&D) the facility and remediate the surrounding area, if necessary for release to unrestricted use. GA and the Department of Energy (DOE) have established a cost sharing agreement to accomplish this D&D effort.

The approach to facility characterization is based upon NRC recommendations described in NUREG-5849 (Ref. 1-1). The purpose of the characterization sampling and analysis activities was to collect sufficient data to accurately define the extent and magnitude of facility contamination. The objective of the characterization effort was to provide data for decontamination and decommissioning, including decontamination techniques, schedules, costs, waste volumes, and health and safety considerations. The scope of characterization activities is outlined in detail in this report and included the collection of 206 soil samples, 405 concrete samples, 38 asphalt samples, 28 vegetation samples, 211 miscellaneous samples (floor tile, plaster, etc.), 41 asbestos samples, and 90 hazardous constituent samples (for Environmental Protection Agency (EPA) method analysis). In addition to sampling of physical media, visual and radiological surveys were conducted throughout the HCF and the Controlled Yard, and have been summarized on grid maps and visual survey forms included in the appendices of this report.

The heart of the HCF contains three shielded cells, the High-Level Cell (HLC), the Low-Level Cell (LLC) and the Metallography Cell (MET). The High-Level Cell was used to perform destructive post-irradiation examinations on fuels and structural materials. The Low-Level Cell served as the staging area for samples being transferred into and out of the High-Level Cell. The Metallography Cell was used to prepare irradiated fuel and metal samples (i.e., grinding) for use with the metallograph. Because of the nature of work performed in these cells, they are highly contaminated and have relatively high general area dose rates. For these reasons, characterization of the HLC, LLC and the MET has relied on process knowledge and limited measurement. On this basis, radiation levels associated with the presence of fuel debris have been identified throughout the HLC and MET and intermittent levels in the LLC. Contamination is also likely behind the steel plates lining the cells and into the structures to perhaps one inch. Concrete and subsurface soil core samples taken around the cells indicate a high probability of subsurface contamination under the north end of the MET and under much of the LLC. Process knowledge indicates that the subsurface contamination exists under the wells in the HLC.

The radiological assessment demonstrated that approximately 21% of the building floor area had no contamination and may possibly be free released. Surveys and sampling conducted for the facility indicated that 50% of the wall areas and 79% of the floor areas are radiologically contaminated. Many hot particles were found and a potential exists for hot particles to remain shielded beneath floor tiles and along the floor/wall junctions. The cell penetrations are contaminated and based upon the core drilling results, subsurface contamination has been verified in several areas within and below the facility. The construction materials on the HCF roof are contaminated and some areas of the exterior walls are also affected.

Hazardous constituent sampling for chemical contaminants was conducted in accordance with EPA requirements. Hazardous constituent surveys indicated that 23% of the floor and walls are contaminated with low levels of various hazardous constituents including PCBs, semi-volatile organic compounds and metals. Core sampling activities also resulted in positive confirmation of subsurface hazardous contaminants at low levels in areas where oils were used. Floor materials removed from these areas will need to be segregated as mixed waste due to the presence of both radiological and chemical contaminants in the floor. Results of the hazardous materials surveys conducted demonstrate that the majority of the rooms contain removable lead, asbestos, and PCB items.

A total of forty-one (41) samples were collected and analyzed for the presence of asbestos. Twenty-one (21) of the samples analyzed tested positive for asbestos. Samples taken from both the radiologically controlled and non-controlled regions of the HCF tested positive for asbestos. There is a potential for asbestos to be present in inaccessible portions of the HCF deemed excepted areas.

A soil assessment was conducted for the Controlled Yard surrounding the HCF. Associations of grid sampling locations were based on general proximity and topography. A majority of the Controlled Yard area showed some positive results for radiological contamination. These potentially affected areas will be addressed in the Decommissioning Plan. Subsurface materials collected from depths of 2' to 3' from contaminated portions of the Controlled Yard showed detectable radioisotope levels. The distribution of radioisotope constituents fall into discernible patterns. Hazardous constituents detected in the soil samples include slightly elevated levels of beryllium, cadmium, and lead.

The data provided in this Characterization Report will support D&D decisions made in preparing the Decommissioning Plan.

1. INTRODUCTION

1.1. Background for Decontamination and Decommissioning

In support of company efforts involving predominantly government funded nuclear research and development (R&D), General Atomics (GA) has continuously maintained a fully operational Hot Cell Facility (HCF) for over 30 years. Built in 1958 as a heavily shielded remote-handling laboratory, the Facility has supported a wide variety of radiologically hazardous and/or toxic experimental operations.

The hot cells have been used to perform post-irradiation examinations on fuels, structural materials, and instrumentation and for dosimetry. Most of the Projects involved examination of irradiated fuel and graphite for High Temperature Gas-Cooled Reactors (HTGR). Some of the very earliest examinations involved Hastelloy X-clad uranium oxide-beryllium oxide fuel for the Marine Gas Cooled Reactor (MGCR), which later was called the Experimental Beryllium Oxide Reactor (EBOR). The UO_2-BeO fuel for the EBOR was made in the part of the GA Hot Cell building that is currently the machine shop.

More recently, the Hot Cell facility has been used for the examination of thermionic fuel elements (TFE) for space power application and fuel for GA's own training, research, and isotope reactor (TRIGA).

In addition to examinations conducted in the cells, the controlled areas, such as the Physical Test Lab in the GA Hot Cell building have been used since 1980 for the Engineering Scale Tritium Extraction System (ESTES) project for the New Production Reactor (NPR) program.

The GA Hot Cell yard and the service gallery have been used for cask handling and cask maintenance activities, and for waste consolidation, packaging, and characterization (e.g., weighing, gamma scanning).

Specific authority for the operation of the HCF, and the possession therein of radioactive materials (including Special Nuclear Material (SNM), by-product, and source radioactive materials) is embodied in the Nuclear Regulatory Commission (NRC) and State of California Material Licenses (SNM-696 and 0145-80, respectively) issued by those agencies to General Atomics.

Usage of the Hot Cell has dropped significantly in recent years. This, in conjunction with the continuing private industrial development around the site, prompted the decision to decontaminate and decommission (D&D) the facility and remediate the surrounding area, if necessary for release to unrestricted use. GA and the Department of Energy (DOE) have established a cost sharing agreement to accomplish this D&D effort.

The data provided in this Characterization Report form the basis for planned decisions which will be determined in preparing the Decommissioning Plan. The Decommissioning Plan is required by NRC regulations and must be approved by the NRC, California Department of Health Services (CAL-DHS), and the DOE prior to commencing D&D activities.

1.2. Management Approach

The DOE has contracted with GA in a cost sharing arrangement as Prime Contractor and Site Manager of the GA Hot Cell D&D Project. The GA Project Manager provides technical

management and associated services as the prime Phase 1 D&D contractor. GA established a project organization which is shown in Figure 1-1.

Interfacing by GA with the NRC and CAL-DHS on licensing and compliance issues is conducted through Dr. Keith Asmussen, Director of Licensing, Safety, and Nuclear Compliance.

1.3. Purpose and Objectives of Characterization

The purpose of the characterization sampling activities was: 1) to quantify the physical and chemical characteristics of radiological and hazardous material contamination and the extent of contaminant distribution; 2) to quantify environmental parameters that affect potential human exposure from existing and residual radiological contamination under the unrestricted use condition; 3) to support evaluation of alternative decommissioning actions and detailed planning of a preferred approach for decontamination, decommissioning, and waste disposal; and 4) to support required decommissioning plan consideration of appropriate dose assessments and ALARA analyses to support selection of cleanup criteria and decommissioning approach. The objective of this characterization report is to provide sufficient data to support the D&D alternatives and methods for decommissioning planning.

In the NRC Proposed Branch Technical Position on Radiological Characterization (November 1994) two main objectives of site characterization activities in support of decommissioning are given. These are:

(1) to determine the type and extent of radiological contamination of structures, residues, and environmental media, including the rates of migration in order to assess the scope of proposed decommissioning actions, ensure the safety of workers, evaluate potential environmental releases during the decommissioning process, and determine the adequacy of funding or financial assurance, and

(2) to determine the environmental conditions that could affect the rate and directions of radionuclide transport and potential human and environmental exposures to radionuclides to support evaluation of alternative decommissioning actions and detailed planning of a preferred approach for decommissioning, decontamination, and waste disposal.

The characterization phase of D&D was performed under contract No. DE-AC03-84SF1 1962 (as revised by Contract Modification No. A040) with the DOE Oakland Operations Office. Contract Modification A040 specifically addresses characterization requirements for the HCF and surrounding soils. The characterization methodology is described in supporting procedures.

The approach to facility sampling and analysis is largely based upon recommendations described in NUREG-5849 (Ref. 1-1). The purpose of the characterization sampling and analysis activities was to collect sufficient data to more accurately define the extent and magnitude of facility contamination. These results were intended to provide data for decontamination and decommissioning, including decontamination techniques, schedules, costs, waste volumes, and health and safety considerations, which will be addressed in the Decommissioning Plan.

It was essential that the characterization sampling strategy be well-documented and statistically based in order to provide accurate and reliable data. The radiological and hazardous constituent characterization activities were performed following the approach outlined in the GA plans and procedures described above and were developed in principle

using the recommended methodology described in the following documents: 1) June 1992 draft document entitled "Manual for Conducting Radiological Surveys in Support of License Termination," NUREG-5849 (Ref. 1-1); 2) July 1992 draft document Branch Technical Position on "Site Characterization for Decommissioning Sites," (Ref. 1-2); 3) "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment," U.S. Reg. Guide 4.15 (Ref. 1-3); 4) "Quality Control for Environmental Measurements Using Gamma-Ray Spectrometry," EPA-600/7-77-144 (Ref. 1-4); 5) "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," QAMS 005/80 (Ref. 1-5); 6) "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846 (Ref. 1-6); and 7) "Samples and Sampling Procedures for Hazardous Waste Streams," EPA 600/2-80-018 (Ref. 1-7). Many additional references were reviewed and incorporated in this document and are provided in the References section.

Characterization activities included determination of background levels of radioactivity with detection sensitivity and accuracy equivalent to that for the data obtained from field survey techniques. Historical records and reports were examined to determine potential locations of radioactive and hazardous contamination. This information was used to develop maps for each facility room and the controlled yard to identify the locations of potential contaminants on the maps. These maps were used during the review of the facility drawings and the facility walk down to determine areas to be surveyed and sample media to be removed and analyzed.

The site and facility drawings were reviewed for locations of piping, drains, sewers, sumps, tanks and other components of liquid handling systems and penetrations into floors and walls for piping, conduit, anchor bolts, wall and floor interfaces and other similar building construction materials which were potential sites for accumulation of contaminants and pathways for migration into sub-floor soil and hollow wall spaces. Review of the facility and yard drawings was followed by a facility and site walk-down by a multi-discipline group to review field situations that could affect the survey plan.

To facilitate systematic selection of surveying and sampling locations, a facility and controlled yard grid system was established in accordance with NUREG-5849. Each sample location was assigned a grid point designator and recorded on the survey map and the HCF Characterization Sample Media Chain of Custody Data Sheet. Surveys and Sampling were performed by trained Health Physics and Hazardous Materials technicians that followed standard written procedures and used properly calibrated instruments that were sensitive to the suspected contaminants. In addition, quality assurance audits were conducted for field and laboratory activities, with corrective actions implemented where required.

Hazardous contaminants as defined by the Resource Conservation and Recovery Act (RCRA) and Title 22 of the California Code of Regulations (22 CCR) were also included in the characterization survey. Visual inspections were conducted for each area of the facility using specialized checklists to identify all potential hazardous contaminants. Results of visual inspections and field screening techniques were used to determine areas where media and swipe samples should be taken. Samples of construction debris and subsurface soils were analyzed for hazardous constituents at State-Certified Laboratories. The two (2) laboratories used for characterization of hazardous constituents were Thermo Analytical Laboratory (TMA) and the GA Radiochemistry Lab, which are both California-Certified Laboratories. The purpose of this analysis was to identify areas of the facility and yard that would fall under regulatory consideration for clean-up, disposal and management as hazardous or radioactive mixed waste. For soil samples, the type of contaminants present and the extent and magnitude of contamination could be estimated.

A certified asbestos contractor was hired to perform sampling of structures within the HCF that were suspected of containing asbestos bearing materials. Samples were taken from areas most likely to contain asbestos in an effort to determine the volume of asbestos materials that would require removal.

The results of each sampling effort and the methodologies used for the various sampling disciplines (radiological, hazardous, asbestos and soils) are presented in separate sections of this report. Section 2.0, Site Description, includes information about the site location, characteristics and building description. Section 3.0, Facility Radiological Assessment, provides the approach used for radiological sampling and discusses the results obtained. Section 4.0, Facility Hazardous Constituent Assessment , describes the approach and rationale for hazardous constituent sampling and discusses the results. Section 5.0 provides a description of the Facility Asbestos Assessment, and Section 6.0 describes the Soil Assessment and results. Section 7.0 summarizes the results presented for each section and conclusions which can be drawn from the report.

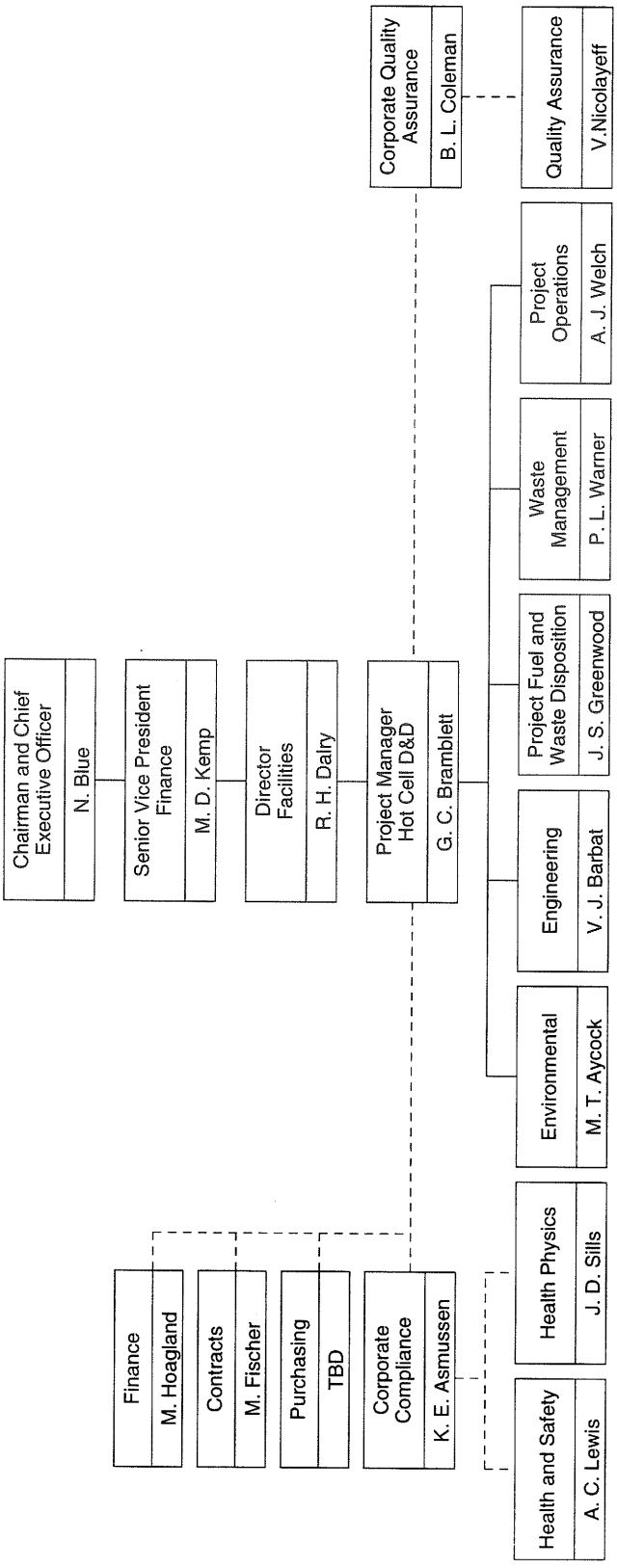

Figure 1-1—GA Characterization Organization

2. SITE DESCRIPTION

2.1. Location of Facility Site

The HCF is located within the General Atomics site. GA occupies approximately 120-acres (48-hectares) about 13 miles (21 km) north of downtown San Diego, California, just southwest of the convergence of Interstates 5 and 805, and approximately one mile east of the Pacific Ocean. The location of the site in relation to San Diego County is shown in Figure 2-1. The HCF occupies Building 23 and the outdoor service yard on GA's Main Site, as shown on Figure 2-2.

2.2. Ownership

The General Atomics Hot Cell Site, including the fenced, radiologically-controlled yard area, but excluding the Hot Cell Facility structure, Building 23, is situated on Lot 31 (the GA Main Site) of Torrey Pines Science Center Unit No. 2, in the City and County of San Diego, State of California, as shown on Map No. 12845, filed in the Office of the County Recorder for said county on July 23, 1991.

The Hot Cell Facility structure, Building 23, is situated on Lot 34 of Torrey Pines Science Center Unit No. 2, in the City and County of San Diego, State of California, as shown on Map No. 12845, filed in the Office of the County Recorder for said county on July 23, 1991. Lot 34 is wholly surrounded within the boundaries of Lot 31, described above.

The properties described above are utilized in their entirety by General Atomics and subtenants.

General Atomics
3550 General Atomics Court
San Diego, CA 92121-1194

Access to Lot 31 is afforded from General Atomics Court.

Access to Lot 34 is afforded from General Atomics Court across Lot 31.

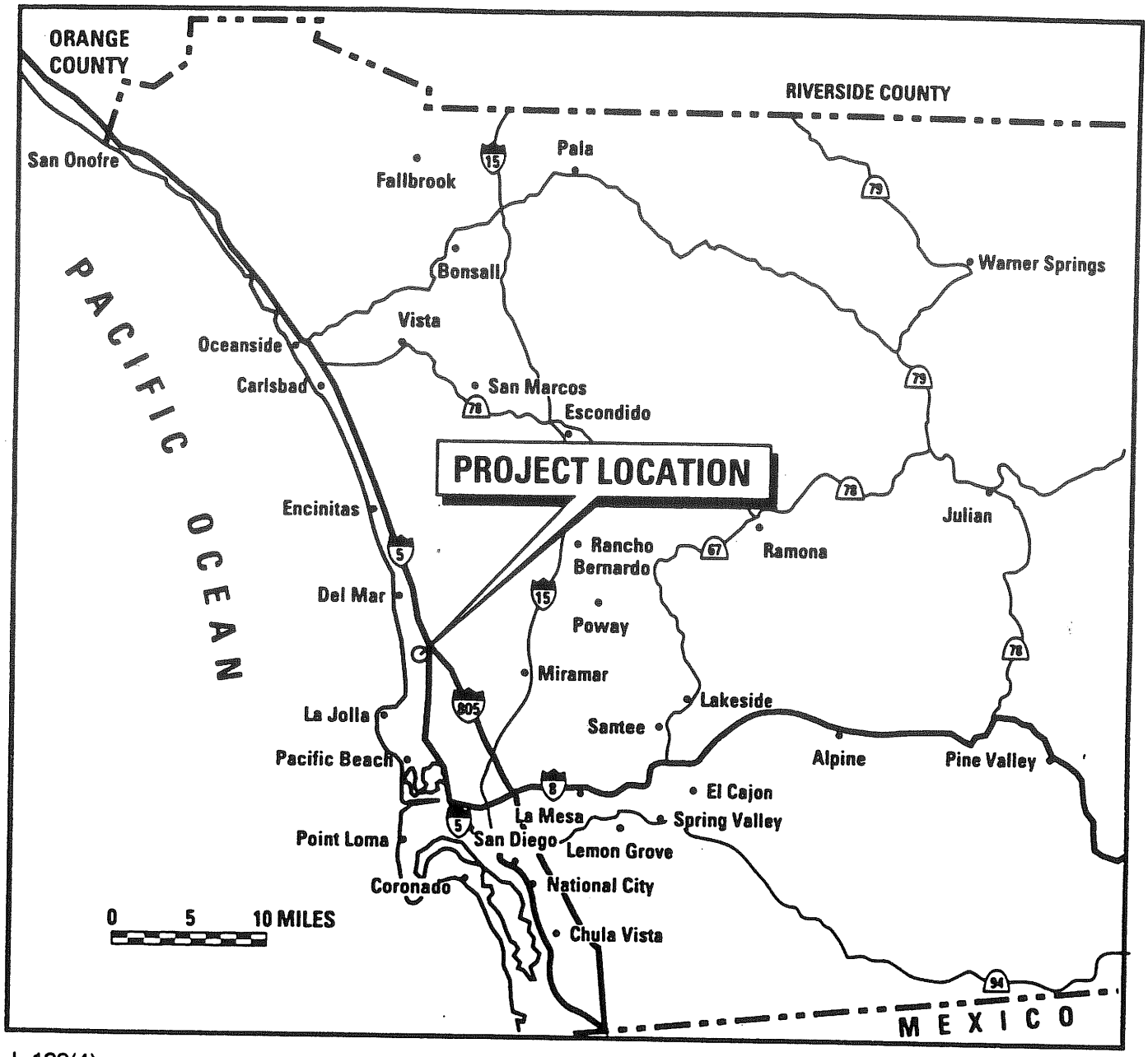

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Fig. 2-1—Regional Location

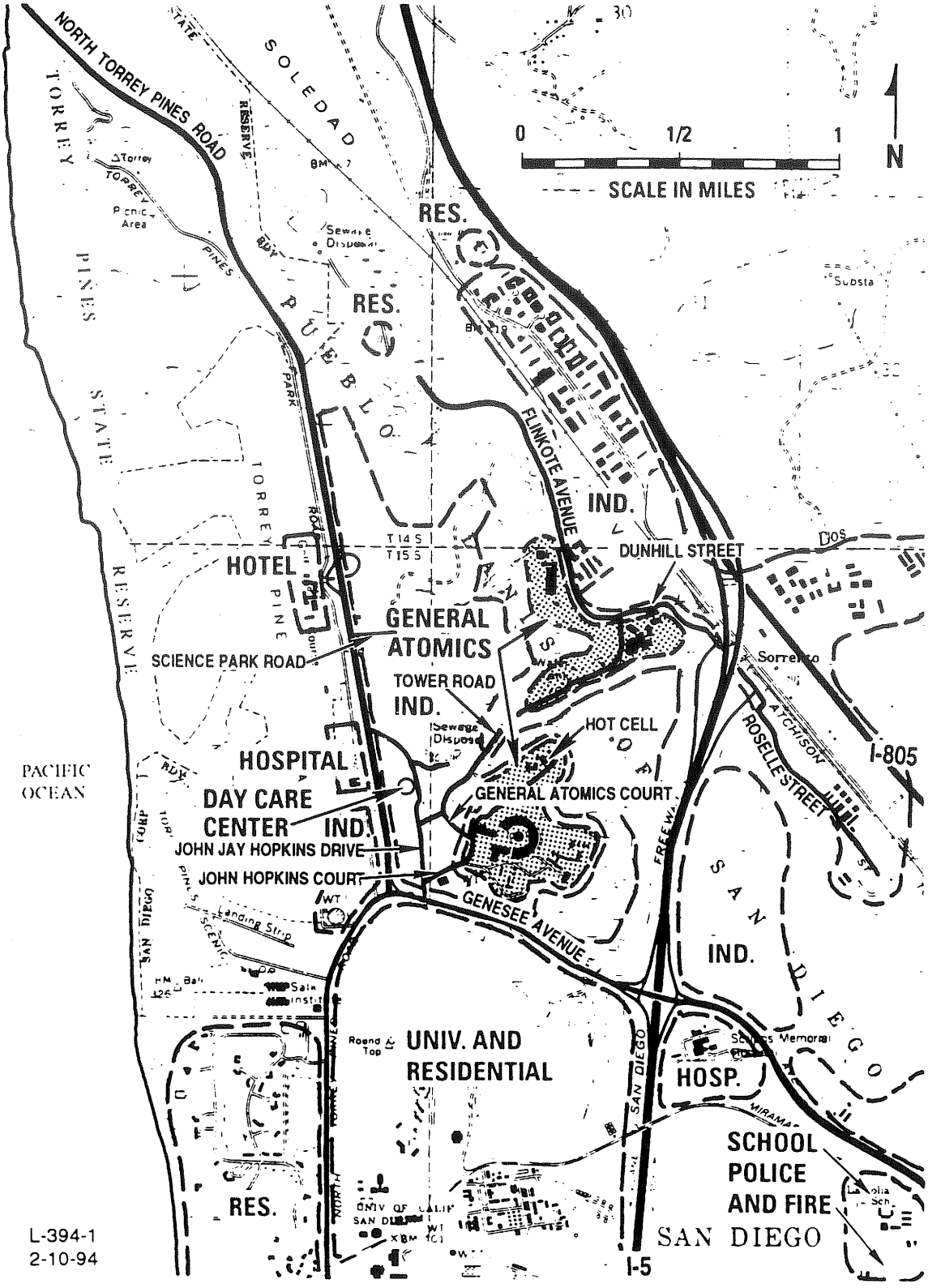


Fig. 2-2—GA Site and Surrounding Uses

2.3. Site and Facility History

The property, on which the General Atomics Hot Cell Site is situated, was acquired in 1956 from the City of San Diego, (as part of a 290 acre tract), by the General Dynamics Corporation, with the expressed purpose of the establishment of the John J. Hopkins Laboratory for Pure & Applied Science, later named the General Atomic Division of General Dynamics.

The General Atomics Hot Laboratory, later named the Hot Cell Facility, was designed and subsequently built in 1958 - 1959 by the Bechtel Corporation, San Francisco, CA. Construction of the Facility was initiated by the GA Metallurgy Department, to support the expected company efforts in the nuclear industry, including HTGR and TRIGA fuel research and development.

In late 1959, during the final phase of Facility construction, it was decided to expand the original 6,200 $ft.^2$ (579 m^2) building design, by the addition of a 1,200 $ft.^2$ (111 m^2)laboratory space to accommodate the EBOR fuel fabrication facility.

2.3.1. Licensing and Operations

General Atomics operates the Hot Cell Facility under authority of the U. S. Nuclear Regulatory Commission Special Nuclear Material License No. SNM-696, and the State of California Source and Byproduct License No. 0145-80. Licensed operations included receipt, handling, and shipment of radioactive materials shipping casks, and the remote handling, examination, and storage of previously-irradiated fuel materials. During the period of 1960 through 1972, the HCF was also licensed for work involving the development, fabrication, and inspection of UO_2-BeO fuel materials.

2.3.2. Processes Performed

Built in 1958 as a heavily shielded remote-handling laboratory, the facility has supported a wide variety of radiologically hazardous and/or toxic experimental operations in a safe, efficient manner. More than 100 hot cell examination projects have been conducted from as early as 1960.

The hot cells have been used to perform post-irradiation examinations on fuels, structural materials, and reactor dosimetry material and instrumentation. Most of the projects involved examination of irradiated fuel and graphite for HTGR fuel. Some of the very earliest examinations involved Hastelloy X-clad uranium oxide-beryllium oxide fuel for the MGCR, which later was called the EBOR. The UO_2-BeO fuel for the EBOR was fabricated in the part of the GA Hot Cell building that is currently the Machine Shop (Room 23/108).

Approximately a dozen examinations have involved thermionic fuel elements (TFE) for space power applications. The TFEs consisted of tungsten-clad uranium oxide, uranium carbide, or uranium-zirconium carbide emitters.

Besides remote examinations in the cells, the HCF controlled areas, such as the Physical Test Lab (Room 23/109), in the GA Hot Cell building have been used since 1980 for the ESTES project for the NPR program.

The GA Hot Cell controlled yard and the Service Gallery (Room 23/111) have been used for shipping cask handling and cask maintenance activities. These latter areas have been used extensively for waste consolidation, packaging, and characterization (e.g., weighing, gamma scanning).

2.3.3. Site Monitoring Programs

The primary contamination from past activities is contained within the HCF building and is monitored under an extensive surveillance and maintenance program. Existing monitoring data and historical information indicate that building radiological contamination consists of fission products, activation products and tritium. Many HCF structural components and permanent building equipment, especially exposed surfaces and items situated in the hot cells, manipulator repair area and below ground storage wells are radiologically contaminated. This is primarily the result of deposition and adsorption of airborne and water-soluble contaminants.

Samples were taken at the HCF to determine the contribution of the various radionuclides to the overall dose of radiation which HCF workers could be exposed. The primary contributor to the whole body dose is Cesium-137, which has a half-life of 30 years. The primary contributor to the dermal dose rate is Strontium-90, which has a half-life of 29 years.

2.4. Facility Description and Construction

As shown in Figure 2-3, the HCF occupies Building 23 and an outdoor service yard. The interior of the Building 23 has approximately 7,400 ft.^{2} (690 m^2) of floor space consisting of offices, three hot cells, an operating gallery and auxiliary areas.

Building 23 is surrounded by a 46,740 ft.^{2} (4,340 m^2) fenced service yard. The service yard includes several concrete pads used for staging heavy equipment and making material transfer into and out of the HCF building. The remaining area is comprised of asphalt, soil, scattered small rocks and disturbed vegetation. There is a small 400 ft.^{2} (37 m^2) metal ancillary building and four above ground waste storage tanks. Other equipment includes the ventilation filtration system and stack, and temporary storage areas. The yard is enclosed by a 7 ft. (2.13 m) high galvanized chain link fence. Access to the yard is controlled by physical barriers (fences and locked gates) and security personnel.

The High-Level Cell (Room 23/115), which is the largest of the three cells and which has the most shielding, is 8 ft. wide, 18 ft. long, and 15 ft. high (2.44 m x 5.49 m x 4.57 m). The cell walls range from 42 in. (1.07 m) thick high-density magnetite concrete on the front to 60 in. (1.52 m) thick conventional concrete on the rear. A two-section steel door separates this cell from the adjacent low-level cell; the lower section is 21 in. (0.53 m) thick and 11 ft. (3.35 m) high, and the upper section is 12 in. (0.30 m) thick and 3 1/2 ft. (1.07 m) high. There are three operating stations, two on the front wall and one on the end wall, each with a viewing window and two master-slave manipulators.

The Low-Level Cell (Room 23/113) is 10 ft. long, 8 1/2 ft. wide, and 15 ft. high (3.05 m x 2.59 m x 4.57 m). The walls of this cell are formed by the high-level cell door, a 17-in. (0.43 m) thick solid steel door to the Decontamination Room (23/118), a 36-in. (0.91 m) front wall and a 32-in. (0.81 m) back wall of high-density concrete. The front wall has a viewing window with manipulators and various shielded access holes. There are also shielded transfer tubes connecting the Low-Level Cell to the other two cells.

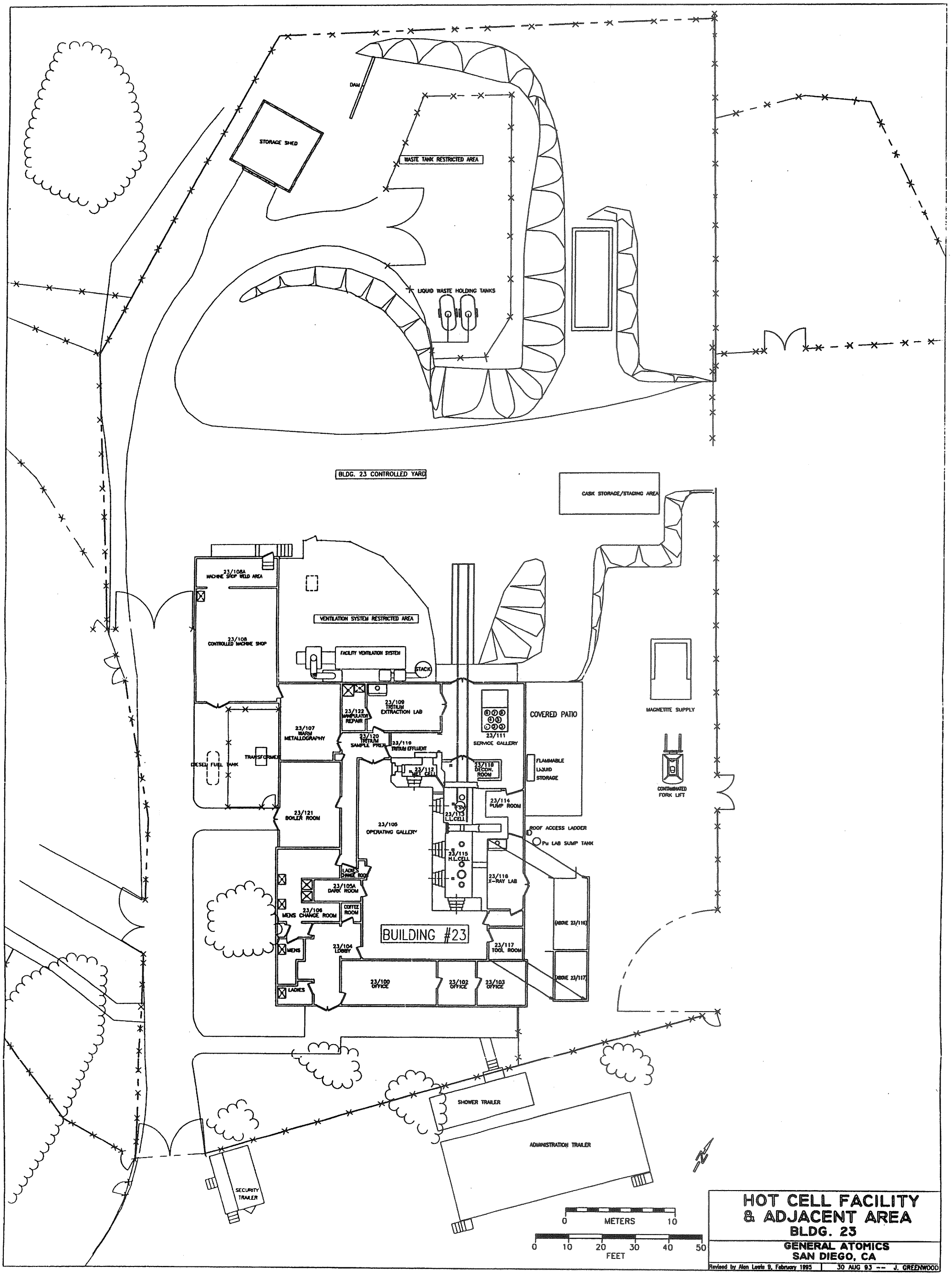


Fig. 2-3—Hot Cell Facility Layout

The Metallography Cell (Room 23/112) measures 9 ft. long, 5 ft. wide, and 11 1/2 ft. high (2.74 m x 1.52 m x 3.51 m). The walls are made of high-density concrete and range in thickness from 34 to 36 inches (0.86 m - 0.91 m). Personnel access to the cell is through a 15-in. (0.38 m) thick solid-steel sliding door to the service area. The front wall of the cell has one operating station equipped with a viewing window, manipulators, and access holes. The side wall of the cell contains a metallograph mounted is such a manner that the stage can be extended into the cell when the instrument is in use. When not in use the instrument is retracted into the cell wall, and a lead-filled shielding door located inside the cell is closed to protect the optical and electronic components.

The operating areas of each cell are those areas in which active work was performed on irradiated material and on samples removed from that material. These areas are neutronically isolated from the locations used solely for storage of SNM-bearing materials.

The HCF is presently in a fully-operational, yet safe shut-down condition. All required utility services, such as electrical service, water supply and natural gas supply are active. Building air ventilation and HEPA-filtered cell exhaust systems, instrument air supply compressors, and license required radiological monitoring instrumentation systems are in operation. All manually actuated and automated fire alarm/suppression systems are operational. All installed facility security and radiological alarm systems are operating normally. All remote handling mechanisms and auxiliary facility support equipment are operational, or are available for activation and use.

2.5. Physical Site Characteristics

2.5.1. Topography

Site topography is typical of coastal San Diego County, with bluffs and mesas interspersed with cliffs and ravines. The mesa runs in a northerly direction paralleling the coast and rising to a height of 400 ft. (122 m) above sea level between the site and the ocean. The topography of the site is characterized by steeply sloping canyons and relatively level mesa areas. The main GA site is located on Torrey Pines Mesa about one mile east of the ocean at an elevation of 340 ft. (105 m) above sea level.

2.5.2. Geology

The HCF is located on the top of the Torrey Pines Mesa at an elevation of approximately 340 feet (ft.) (105 meters [m]) above sea level. The HCF has been built on materials that have been mapped as artificial fill in Bulletin 200A, "Geology of the San Diego Metropolitan Area, California" (Ref. 2-1). Areas immediately adjacent to the artificial fill are mapped as Ardath Shale, a member of the La Jolla Group of Eocene Deposits, that "is predominantly weakly fissile [not in the nuclear sense, but in the geologic sense, i.e., easily split along closely spaced planes], olive-gray shale" (Ref. 2-1). Bulletin 200A presents a cross section on the Del Mar quadrangle showing subsurface formations approximately 750 ft. (230 m) northeast of the HCF. Based on this cross section, the Ardath Shale deposit in the HCF area is approximately 300 ft. (90 m) thick and is underlain by approximately 500 ft. (150 m) of Torrey Sandstone over approximately 250 ft. (76 m) of Delmar Formation. The quadrangle also shows that the westernmost occurrence of an unnamed fault is located approximately 450 ft. (140 m) north of the HCF.

Three 30 ft. (9.1 m) deep bore holes were completed in conjunction with the design of the HCF in 1958. Ground surface elevation at the boring locations ranged from 339 to 340 ft. (103 to 104 m) above mean sea level. The report indicated that the soils in the upper 5 to 8 ft. (1.5 to 2.4 m) of the three borings (A, B, and C) were "a sand, gravel and cobble

mixture." The test hole logs described the upper soil as "brownish gray sand, gravel and cobbles" that were "very tightly bedded together." Boring B was distinguished from Borings A and C by a 3 ft. (0.9 m) thick "grayish brown very fine to medium sand" with "few gravel" and a "trace of clay" that was encountered beneath the sand, gravel and cobble mixture. Beneath the sand, gravel and cobble mixture in Borings A and C and the fine to medium sand in Boring B, 8 to 14 ft. (2.4 to 4.3 m) of light grayish brown siltstone was observed. In Borings A and B the upper 2 to 4 ft. (0.6 to 1.2 m) of the light grayish brown siltstone was weathered. Weathering of the siltstone layer was not observed in Boring C. 3 ft. (0.9 m) of brown very fine to fine sand with a trace of clay was observed beneath the siltstone in Boring C, but was not present in Borings A and B. 2 to 4 ft. (0.6 to 1.2 m) of light tannish gray hard siltstone was observed in the three holes at elevations ranging from 314 to 320 ft. (96 to 98 m) above mean sea level. The remaining underlying materials observed in Boring A consisted of 2 ft. (0.6 m) of tannish gray compacted silt and 5 ft. (1.5 m) of light grayish brown siltstone. The remaining underlying materials observed in Boring B consisted of 5 ft. (1.5 m) of light grayish brown siltstone. The remaining underlying materials observed in Boring C consisted of 3 ft. (0.9 m) of light brown siltstone, 2 ft. (0.6 m) of light tannish gray hard siltstone and 5 ft. (1.5 m) of light grayish brown siltstone.

2.5.3. Soils

Soils present at the HCF have been mapped as Huerhuero Loam, 5 to 9 percent slopes, eroded (HrC_2), according to the Soil Survey San Diego Area, California (Ref. 2-2). The Soil Survey indicates that the Huerhuero series "soils have developed in sandy marine sediments" and consist of "moderately well drained loams that have a clay subsoil." The Soil Survey describes a representative Huerhuero profile as having a surface layer that "is brown and pale-brown, strongly acid and medium acid loam about 12 inches thick" (0.3 m thick) an upper subsurface layer that "extends to a depth of about 41 inches" (1.0 m) and "is brown, moderately alkaline clay" and an underlying "brown, mildly alkaline clay loam and sandy loam" layer that extends "to a depth of more than 60 inches" (1.5 m). The Soil Survey further indicates that "small areas of Las Flores and Olivenhain soils" and "alluvium derived from metabasic and metasedimentary rocks" are included in the HrC_2 mapping unit. Complete soil series descriptions have been included in Appendix B - Selected Soils Descriptions from the 1973 Soil Survey, San Diego Area, California.

Soils immediately downslope of the HCF have been mapped as Altamont Clay, 15 to 30 percent slopes (AtF), according to the Soil Survey. The Soil Survey indicates that "the Altamont series consists of well-drained clays that formed in material weathered from calcareous shale." The Soil Survey describes a representative Altamont profile as having a surface layer that "is dark-brown, neutral to moderately alkaline clay about 28 inches thick" (0.7 m thick) and a subsurface horizon that is a "dark-brown and light olive-brown, moderately alkaline heavy clay loam about 8 inches thick" (0.2 m thick) that lies over soft calcareous shale. The Soil Survey further indicates that "small areas of Linne clay loam" and "areas where the soil is only 10 inches over shale" (0.2 m over shale) are included in the AtF mapping unit.

2.5.4. Climate

The Torrey Pines Mesa and Sorrento Valley, as with most of San Diego County's coastal areas, has a semi-arid Mediterranean climate characterized by hot, dry summers and mild, wet winters. The mean annual temperature in the project vicinity is 61°F (33.8°C), with summer high temperatures in the low-90s (50°C) and winter lows in the mid-30s (16°C) (Ref. 2-3).

2.5.5. Local Winds and Dispersion Data

The prevailing day time wind direction is westerly, although easterly winds are almost as common during the winter months. During the day, the westerly winds developing from the Pacific high-pressure system are reinforced by the sea-land breeze caused by the Pacific Ocean resulting in stronger average wind velocities [6 to 9 mph (10 to 15 km/h)] than from the easterly land breeze [1 to 7 mph (1.6 to 11.6 km/h)]. The land breezes are most common during stable conditions and dominate the flow toward the ocean during the night and early morning hours. The airflow in either direction is channeled effectively by topographical features of the area. Strong winds are infrequent; the strongest recorded was 51 mph (82 km/h) from the southeast in 1944.

Data from an on-site meteorological system were used to provide atmospheric stability and wind frequency results. The on-site annual wind data are in good agreement with the wind rose data from the Miramar Naval Air Station.

2.5.6. Precipitation

The average annual rainfall for the city of San Diego is 10.4 in. (26.4 cm), but relatively large variations in monthly and seasonal totals occur. The average monthly precipitation from 1940 through 1970 ranges from 2.15 in. (5.5 cm) in February to 0.01 in. (0.03 cm) in July. Approximately 75% of the annual precipitation occurs from November through March. The maximum annual precipitation during the last 60 years was 24.9 in. (63.3 cm) occurring in 1941.

2.5.7. Groundwater

The HCF is located within the southwestern portion of the Soledad basin. As shown in the Water-Resources Investigations Report 88-4030 (Ref. 2-4), the Soledad basin makes up the northwestern part of the Los Penasquitos hydrographic subunit. Report 88-4030 indicates that imported water is the sole water supply in the southern part of the Soledad basin and that the southern part of the Soledad basin (and other areas addressed by the report) were notably lacking in wells available for sampling or measuring. Report 88-4030 also indicates that "groundwater has not been developed in the La Jolla Group [see Section 2.5.2] in the Soledad Basin" but that wells drilled in this unit in the San Dieguito basin (located north of the Soledad Basin) typically show water yields of 10 to 20 gal./min. (38 to 76 l/min.) with the Torrey Sandstone being more transmissive than the Del Mar Formation. Based on Report 88-4030, the alluvial fill found in the valleys around the HCF has not been developed for water supply.

No wells are present at or immediately adjacent to the HCF. No ground water was encountered during drilling of the 30 ft. (9.1 m) deep borings completed in conjunction with the design of the HCF in 1958. There is currently no reason to suspect that any groundwater contamination exists under the HCF.

2.5.8. Surface Water

The HCF lies within the Los Penasquitos Creek drainage basin. Drainage runs through the Soledad Valley into Los Penasquitos Creek, which flows to the northwest and empties into the Pacific Ocean. Detention basins and silt collection structures have been constructed for the development of the Torrey Pines Science Park that surrounds and includes the GA site to ensure that adverse downstream impacts will not occur from storm water run-off.

Surface water downstream from the site cannot be used domestically because of its intermittent flow and dirty condition during periods following rainstorms or heavy runoffs. No significant freshwater recreation areas exist within the local vicinity. Agriculture is not prevalent because soils are not well suited for agriculture, precipitation is limited, and groundwater quality (primarily in Penasquitos Valley) is considered marginal or inferior for irrigation. Water use in the vicinity of the site is limited by the ephemeral nature of many streams and the high suspended solids content of flow during the winter.

Floods do not represent a danger to the site as it is situated approximately 340 ft. (103 m) above the valley floor on a mesa. Also, drainage downstream from the site to the Pacific Ocean is unrestricted. The site is not located within a 100-Year Flood Zone.

Waste water collection services are supplied to the GA site by the San Diego Department of Public Utilities. Waste water from the site is discharged through the City's sewer system to the Point Loma treatment plant. Any waste water released to the city treatment system must meet the requirements of the San Diego Industrial Waste Discharge Permit.

2.5.9. Vegetation

The GA site is either developed with industrial and office uses and parking lots or professionally landscaped. The open space surrounding the HCF and the GA site is a combination of disturbed/developed lands, several eucalyptus groves and three distinct types of native or naturalized plant communities; coastal mixed chaparral, coastal sage scrub, and southern California grassland. No federally-listed endangered plant species are known to exist on or near the GA site (Ref. 2-5).

The most significant natural areas in the vicinity of the site are Torrey Pines Park, Torrey Pines State Reserve, Los Penasquitos Canyon Reserve, and Los Penasquitos Lagoon and associated marsh, all located west and northwest of the site along the coast (Figure 2-2). In addition to providing relatively undisturbed refuge-like habitats, the park and reserve contain a rare species of pine tree, the torrey pine (*Pinus torreyana*). This species is endemic to California, known to occur only in San Diego County and on Santa Rosa Island.

2.6. General Information on Exposed Population

The present population within the University Census Tract Subregion, in which the main site is primarily of an industrial and university campus makeup, with an estimated daytime total of up to 52,000 people (about 1,400 are GA employees). The immediate vicinity of the Flintkote Avenue facilities is zoned for industrial activity (Ref. 2-6).

Estimates of future growth indicate the area within a one mile (1.6 km) radius could have a daytime total of 57,000 by year 2000, based upon future industrial growth in the Sorrento Valley area and an increased number of students on the university campus. Because of terrain, zoning, and current land use, most future residential development will occur beyond a two mile radius from the site.

3. HOT CELL FACILITY RADIOLOGICAL ASSESSMENT

3.1. Criteria and Approach

The sampling strategy and survey procedures were prepared prior to commencing characterization activities to establish the specific guidelines and sampling strategy to be followed during the Hot Cell Facility (HCF) radiological assessment and characterization activities. The survey and sampling strategy had one goal: to determine the extent of the radiological contamination within the HCF, structure(s) and subsurface soil. To accomplish this goal, the HCF characterization was performed in four stages: 1) determine background radiation levels in soil, concrete, and asphalt; 2) review past records, reports, drawings, and the HCF walkdown; 3) perform the HCF characterization; and 4) evaluate the results and take additional samples and measurements to further quantify the extent of the contamination. The purpose and goal of each of these four stages is briefly described below and are described in greater detail in the subsequent sections of the HCF Radiological Assessment.

3.1.1. Background Levels of Natural Occurring Radionuclides

Background radioactivity levels are composed of naturally occurring materials (i.e., ^{238}U and ^{232}Th) and global fallout (i.e., ^{137}Cs) from the testing of nuclear weapons or nuclear reactor accidents. Background levels vary considerably throughout the world and must be determined for the General Atomics/La Jolla area. Therefore, it was necessary to obtain original and undisturbed soil, concrete, and asphalt samples on and near the GA site to determine the area background baseline levels.

Characterization samples with positive results will be compared to the background baseline and to the projected D&D radiological release levels for unrestricted use. At this time, only projected release criteria values can be used since the release levels must receive NRC/state approval as part of the formal Decommissioning Plan and will be presented to the NRC/ state for their approval in the Decommissioning Plan. The HCF projected guideline values were determined based upon previously established GA release criteria.

The minimum number of background samples was determined in accordance with the recommendations of NUREG/CR-5849, Section 8.6, "Identifying Additional Measurement/Sampling Needs" (Ref. 1-1). Although six to ten measurements are recommended as a minimum, a minimum of ten samples was obtained for each of the three sample media.

3.1.2. Review of the GA Hot Cell Site and Facility HCF Drawings, Historical Data, and HCF Walkdown

Reviewing historical data, HCF drawings, and performing a walkdown of the HCF before starting the radiological characterization was important for three reasons: 1) to determine the operational history of the HCF; 2) to determine construction history and type of construction material used; and 3) to locate and mark the sample areas of particular interest.

The purpose of reviewing historical data was to summarize the operational history of the HCF to determine impacts on HCF decontamination and dismantlement. The information gathered provided the type, form, quantity, and location of radioactive materials. Also included was the processing, handling, storage, and disposal methods, and any important incidents.

The purpose of reviewing the HCF drawings was to identify the sequence of the HCF construction and the types of construction material used. This review identified walls, entrances, and utilities that are either new construction, had been removed or the original function modified. This information was intended to determine judgement sampling locations and justified not sampling locations. Additional findings are discussed in Section 3.2 of this report.

The purpose of performing the HCF walkdown was to identify the location(s) of after-built construction or modifications and areas of suspected contamination or non-contaminated areas. This improved sampling strategy by including both suspected and non-suspected areas. By sampling both areas, the accuracy of estimated radioactive waste volume is optimized. Conclusions of the HCF walkdown are discussed in Section 3.4 of this report.

3.1.3. Perform the HCF Characterization

The purpose of characterizing the HCF was to determine the extent of the radioactive contamination in the HCF and subsurface soil for consideration in decommissioning planning. This was accomplished by surveying and sampling both the suspected and unsuspected areas. After completion of the D/I survey and collection of the sample media, the results were reviewed to determine the need for additional media sampling to further quantify the extent of the contamination.

3.1.4. Evaluate Results and Resample Selected Areas

After characterization of a room, the sample media was analyzed by laboratory instrumentation and the results were evaluated. For samples with unexpected positive results, additional samples were taken near the original sample to further determine the extent of the contamination or confirm that radioactive contamination was not present.

3.2. Site and HCF Drawings

HCF drawings were reviewed prior to starting characterization activities to identify sample locations and types of building materials. The review cycle focused on three areas: 1) determining the HCF site construction history; 2) the building materials used; and 3) the location of underground piping, ventilation ducts, utilities, and underground tanks.

The HCF construction history revealed after-built construction or room use modifications. By knowing the original design or use, potential for hidden contamination was investigated. For example, drawings revealed a sub-floor shoe scrubber pit that contained radioactive contamination which could not have been discovered without review of the drawings.

The type of building materials used affects the potential for subsurface contamination. Areas of focus during review were standard concrete or high density concrete, seam or seamless steel, porous or non-porous material, usage of floor sealants, paint or wax, concrete encased or non-encased piping, and thickness of floor concrete. Also investigated was the type and location of underground materials. This information provided for the possible locations of cracks, corrosion, and breakage of underground material which could lead to subsurface soil contamination.

3.2.1. Engineering Information

Prior to starting characterization activities, the Hot Cell D&D Engineering Manager reviewed the HCF drawings listed in Table 3-1, HCF Drawing Documents. The important

features and findings were transferred to the survey maps utilized in the HCF walkdown. A few of the more important discoveries that required or eliminated the need for radiological sampling were:

- Sub-floor shoe scrubber pit in 105A, 106 and 108.
- An underground ventilation duct connecting the shoe scrubber pits.
- Original foundation in Room 23/108 is approximately three (3) feet below existing foundation at the NW end.
- Several walls or doors were added after original construction, i.e., Rooms 100, 102, 103, 104, 116, and 121.
- Hot drain lines are seamless stainless steel and are encased in concrete. Based upon this information, corrosion of the pipe is unlikely, thus the need for using expensive borescope equipment was deemed unnecessary.
- Ventilation ducting is encased in concrete. Based upon this information, corrosion of the ventilation duct and subsequent soil contamination is unlikely.

Table 3-1—HCF Drawing Documents

Document No.	Rev.	Document No.	Rev.	Document No.	Rev.
23-93		PE23-93	A	PE23-94	A
PE23-95	A	PE23-95A	C	PE23-97	
PE23-98		PE23-99		PE23-100	
PE23-101		PE23-102	A	PE23-102	B
PE23-102	D	PE23-105	A	PE23-107	4
PE23-108		PE23-109	A	PE23-110	
PE23-111		PE23-112	A	PE23-113	
PE23-114		FE23-115		B23-116	
PE23-96	A	23-1		23-2	
23-3		23-4		23-5	
23-6		23-10		23-11	
23-10		A-C-200	4	A-C-201	4
23-202	3	A-A-105	7	A-A-106	5
A-A-107	5	A-A-108	4	A-A-109	8
A-A-110	8	A-S-256	7	A-S-257	5
A-S-259	4	A-S-260	4	A-S-261	4
A-S-265	1	A-S-271	7	A-S-272	9
A-S-273	9	A-S-274	6	A-S-275	5
A-S-276	6	A-S-277	7	A-S-278	4
A-S-279	10	A-S-280	4	A-S-281	2
A-E-305	5	A-E-308	0	A-E-309	3
A-M-400	4	A-M-411	6	A-M-412	6
A-M-413	5	A-M-414	3	A-M-415	4
A-M-416	1	A-M-417	4	A-M-418	3

3.2.2. Historical Information

Previous radiological surveys and reports were reviewed for potential locations of radioactive contamination. The findings identified locations that were of particular interest.

3.3. HCF Grid System

The HCF room grid system was developed following the guidelines and recommendations found in NUREG/CR-5849 (Ref. 1-1), page 4.9, Section 4.2.2 "Establishing Reference Grid Systems." By implementing this system, the following goals were attained:

- facilitate systematic selection of measuring/sampling locations.
- provide a mechanism for referencing a measurement back to a specific location so that the same survey point can be relocated for future evaluation.
- provide a convenient statistical means for determining average activity levels.

The grid system developed consisted of intersecting lines, referenced to a fixed room location. The grid lines were arranged in a perpendicular pattern, dividing the survey location into squares of equal area. The grid patterns on the horizontal surfaces were identified numerically on one axis and alphabetically on the other axis. For vertical surfaces, a third designator indicating position relative to the floor was used.

Within each grid, direct surveying was performed at all grid intersections, floor and wall junctions, exposed surfaces and any locations within grids having discolorations or other suspect markings. Indirect sampling was performed at the area(s) identified by the direct survey with the highest potential for contamination. Using this information, sample media was removed and analyzed for radioactive material, thus it is believed that implementation of this grid system sufficiently characterized most contamination levels and locations.

After sample media was removed, the sample was assigned an ID number in accordance with the sampling procedure, and the sample location was determined by the numerical and alphabetical grid designator. This information was then recorded on the HCF Characterization Sample Media Chain of Custody/Data Sheet (CoC) and HCF Characterization Sampling Isotopic Sample Log. The sample ID number was also physically labeled at the sample location to ensure sample referencing. This system provided a simple mechanism for referencing the measurement back to a specific location.

3.4. HCF and Site Walkdown

Following review of the HCF drawings and reports and after developing the HCF grid room maps, a HCF and site walkdown by a multi-discipline group was conducted. The purpose of performing the HCF walkdown was to identify the location(s) of after-built construction or modifications and areas of suspected contamination or non-contaminated areas. The identified locations and suspected areas were marked on the grid room maps. These marked maps were provided to the Health Physics (HP) characterization staff and were reviewed prior to starting a room characterization to ensure that all recommended sampling locations were surveyed and sampled. If the sampling location was inaccessible or would require further evaluation during D&D activities, the location was then placed on the HCF Exceptions List that is provided in Section 3.12. In addition to surveying and sampling as mentioned in Section 3.3 and later described in greater detail in Sections 3.7 and 3.8, some locations and areas that were identified in the walkdown that also were surveyed and/or sampled are presented below:

1. Coffee Room (CR)—the room was originally a janitor room - sample near sink;
2. Men's Room (MR)—upon entering the room, the wall immediately to the left is an after-built wall which was an entrance to the room;
3. Rooms 100/102/103, Offices—room partitions were installed after the original construction;
4. Room 104/104A, Lobby—several floor tiles have been removed and replaced; a drain may have been capped;

5. Room 105, Operating Gallery—some of the walls by the entrance to the ladies change room were after-built construction; a floor trench was used for water drainage;
6. Room 105A, Dark Room—room was used for photographing fuel segments, creating a potential for fuel hot particles;
7. Room 106, Men's Change Room—metal lockers have never been removed therefore no survey has been performed under and behind lockers; wood cabinets were installed in 1978-79; "cold" drains were marked "internal contamination";
8. Room 107, Warm Metallography—several locations on west wall near the ceiling have been recently modified; room entrance may have had a water fountain and sink; fume hoods were added after initial operation;
9. Room 108, Machine shop—floor slopes away from the room center towards the walls; exit stairs to backyard has a drain that previously backed up and a capped drain line; room entrance had a shoe scrubber pit; the double doors to the front yard were recently installed; drainage trench has been entombed in concrete; The wall separating 108 and 108A is an after-built wall;
10. Room 109, Tritium Extraction Lab—wall penetrations were recently added; entrance wall was recently added;
11. Room 116, X-Ray Lab—double doors to outside yard were installed after original construction; wall to hallway is new and wall has a history of contamination; support poles have gap between pole and floor; room originally had Pu experiments performed;
12. Room 117, Tool Room—room had experienced a large-scale spill and internal contamination along north wall is expected;
13. Room 118, Decontamination Room—walls were added after initial operation;
14. Room 119, Tritium Effluent—two new walls were added;
15. Room 121, Boiler Room—locked interior door used to be only entrance; double doors from the exterior are new;
16. Room 122, Manipulator Repair—high contamination throughout room; a new wall added;
17. Roof—roof slopes to the west; and
18. Exterior of building—asphalt outside X-Ray lab has slight depression area where Pu sump tank may have been; several new penetrations outside machine shop; some confined spaces in yard.

3.5. Classification of Areas

The characterization survey was designed such that areas with higher potential for contamination would receive a higher degree of survey effort and areas with a low potential for contamination would receive less survey effort, thus the process is both effective and efficient. The general approach used during the classification process is presented in Figure 3-1. Two area classifications were used; affected and unaffected areas. These classifications are defined as follows:

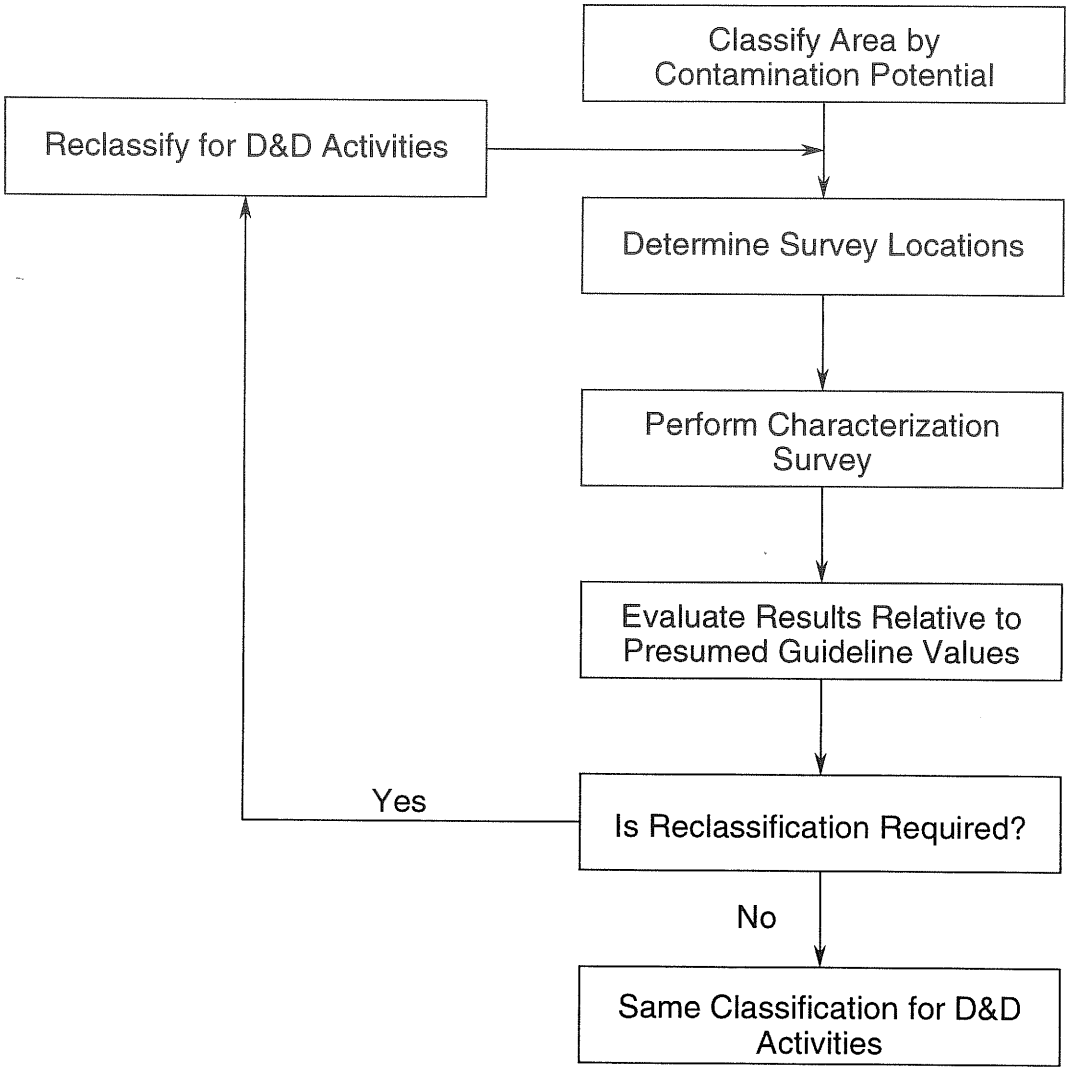


Figure 3-1—HCF Classification Flow Process

- affected areas—Areas that have potential radioactive contamination (based on process knowledge) or known radioactive contamination (based on past radiological surveillance).

- unaffected areas—All areas not classified as affected. These areas are not expected to contain residual radioactivity, based on knowledge of the site history and previous survey information.

Area classification may require alteration based upon early sample results (e.g., an area initially classified as an unaffected area will be reclassified to affected if survey results demonstrate the existence of fixed or removable contamination in excess of 25% of the projected guideline release levels).

NOTE: The characterization of the surrounding soil (i.e., soil, asphalt, and concrete) is addressed in Section 6.0, Soil Assessment. Also, the three cells, High-Level (HLC), Low-Level (LLC), and Met-Cell (MET), are classified as an affected area. However, due to the exposure rates inside the cells these areas are included on the "HCF Exceptions List" and based upon process knowledge and core results, estimates have been made on the extent of contamination.

3.5.1. HCF Interior

Approximately 80% of the interior has had a history of radioactive material usage. In order to maintain consistency in the characterization sampling, the entire interior was classified as an affected area. The interior walls, floor and ceiling of the HCF were divided into 1 m^2 grids and the grids were surveyed with a combination of direct (scanning), indirect (smears), and removal of construction material.

3.5.2. HCF Exterior

The exterior was classified as an unaffected area. The unaffected area was divided into 9 m^2 grids and the grids were surveyed with a combination of direct (scanning), indirect (smears), and removal of construction material.

3.6. Instrumentation

The portable field instrumentation and the scaler counting systems used during the characterization activities were calibrated, repaired, maintained, response checked and operated following General Atomics Nuclear Instrument Calibration Department (Cal Lab) and Health Physics procedures. Described below are the more significant features of the HCF instrumentation program.

3.6.1. Equipment Maintenance and Calibration

1. Except for battery and cable replacement associated with the portable instrumentation, all instrument repairs and calibration were performed by the Cal Lab.
2. A monthly instrument calibration inventory list was maintained and distributed by the Cal Lab which was cross referenced to the HCF HP instrument list. Any discrepancies were brought to the attention of the Cal Lab for correction.
3. Each instrument had an instrument check source sheet and if an instrument malfunctioned or was suspected of not performing correctly, it was removed from service and an "Out of Service" tag was attached to the instrument. The "Out of

Service" tag described the suspected problem and the instrument was transported to the Cal Lab for repair.

4. Additional information on instrument maintenance may be found in GA Health Physics procedures.

3.6.2. Equipment Use Technique

The surveying techniques used during characterization were in accordance with the instructions found in GA Health Physics procedures.

3.6.3. Detector Sensitivities

Whenever possible, the instrument and survey technique used had an Minimum Detectable Activity (MDA) which was less than 25% of the anticipated release guideline levels for structure surveys and less than 75% of the guideline levels for open land surveys, and preferable, as low as 10% of the guideline levels. The detection sensitivity was improved, when possible, by: 1) selecting an instrument with a higher efficiency or a lower background; 2) increasing the counting time; and 3) increasing the size of the sample or the effective probe area. Provided in Table 3-2 and Table 3-3 are the approximate detection sensitivities for the instruments used during characterization.

Table 3-2—Approximate Detection Sensitivities For Field Survey Instrumentation

Detector Type	Readout Device	Technique	Approximate Detection Sensitivity
alpha scintillation; 100 cm^2 probe area	countrate meter	scanning	200 dpm/100 cm^2
beta/gamma GM pancake 15.5 cm^2 probe area	countrate meter	scanning	1250-3000 dpm/100 cm^2
scintillation	countrate meter	scanning	2 - 5 µR/hr
gas flow proportional	countrate meter	scanning	1000 dpm/100 cm^2

Table 3-3—Measurement Sensitivities For Laboratory Analysis

Sample Type	Radionuclides or Radiation Measured	Procedure	Procedure/ Standard No.	Approximate Measurement Sensitivity
Smears (filter paper)	Gross Alpha	Alpha scintillation detector with scaler; 1-min count	HP-526	20 dpm
	Gross Beta	End window GM with scaler; 1-min count	HP-526	80 dpm
Soil/Media Sediment	^{137}Cs, ^{60}Co, ^{226}Ra, ^{232}Th, ^{235}U,	Gamma spectroscopy, 100-g or 500-g sample; 30-min analysis	HP-524	0.1 - 0.5 pCi/g
	^{234}U, ^{235}U, ^{238}U, ^{238}Pu, $^{239/240}Pu$, ^{228}Th, ^{230}Th, ^{232}Th, other alpha emitters	Alpha spectroscopy - pyrosulfate fusion and solvent extraction; surface barrier detector; pulse height analyzer; 1-g sample; 4 - 16-hour count	ACD:RC-015, 7500 U C	0.1-0.5 pCi/g

3.6.4. Quality Assurance for Instrumentation

1. Portable survey instruments and the scalers were source checked daily, or before each use, whichever was less frequent.

2. Friskers had response check readings taken from each scale normally used.

3. Ion chamber survey instruments had response check readings from the 0-5 mR/hr, 0-50 mR/hr, 0-500 mR/hr, and 0-5000 mR/hr scales.

4. GA Health Physics procedures document the techniques used in the implementation of quality control charts for the scaler counting systems.

3.6.5. Field and Laboratory Instruments

The instruments used for characterization are provided in Table 3-4.

Table 3-4—Characterization Instruments

Detector Model	Detector Type	Application
Eberline-RO2 & 2A	ionization chamber	beta/gamma exposure rate measurements
Teletector-6112D/B	GM tube	telescoping detector with GM probe for high range
Ludlum-2221/43-37 probe	gas proportional	alpha and beta/gamma floor monitor
Ludlum-3/44-9 probe	GM tube	beta/gamma surface contamination measurements
TBM-15	GM tube	beta/gamma surface contamination measurements
Eberline-RM14,14SA/HP260 probe	GM tube	beta/gamma surface contamination measurements
Ludlum-177	ZnS(Ag) scintillation	hand held alpha frisker
Ludlum μR	ionization chamber	environmental gamma exposure rates
Eberline SAC-4	ZnS(Ag) scintillation	alpha laboratory measurement of air samples and smears
Eberline BC-4	shielded GM pancake tube	beta laboratory measurement of air samples and smears
REGE Canberra S-100	gamma-ray spectroscopy system	gamma laboratory measurement of water, air, smear/media samples
Canberra 741DR	alpha spectroscopy	alpha laboratory measurement of water, air, and smear/media samples

3.7. Interior Survey

3.7.1. Direct Measurements

1. Whenever possible paint, wax, floor sealer, drain covers and ducts were removed to survey potentially contaminated areas.

2. Large area gas proportional detectors were used to survey floors.

3. The detector probe was moved over the area 1-2 detector widths per second and was slowed to 1/3 detector width per second for those situations when increasing count rates were indicated.

4. At a minimum, the direct scans were performed within the 1 m^2 grid at all grid intersections, floor and wall junctions, penetrations and any locations within the grid having discoloration or suspected contamination.

5. For areas of elevated levels, the locations were identified on the grid maps.

3.7.2. Indirect Measurements

1. A smear for removable contamination was obtained at the location of the highest direct surface activity measured. Sample analysis was performed in accordance with GA Health Physics procedures.

2. Cotton swabs were used to wipe small penetrations, such as cracks or anchor-bolt holes.

3. Smears and swabs were placed into smear holders to prevent cross-contamination and maintain chain-of-custody while awaiting analysis.

4. Drain covers were removed and a plumber "snake" or similar device was used to access the first low-point or "trap." In rooms with several drains and clean-out ports, approximately half of the drains were accessed and sampled and no further sampling was performed if all results were below release levels.

3.7.3. Construction Material Sampling and Measurements

1. Areas identified during direct and indirect sampling as having potential for subsurface contamination (e.g., hot spots, contamination in cracks, activity in porous materials, etc.) had sample media removed and counted on a gamma spectroscopy system.
2. Areas not suspected of containing contamination were also sampled to quantify the extent of the contamination.
3. Section 3.9, Sample Media Collection, provides additional information on sample media methods, documentation, and quality assurance criteria for analysis.

3.7.4. Sample numbers

1. At least one survey measurement (i.e., either direct, indirect or sample media) per 1 m^2 was taken. A minimum of 30 measurements per horizontal or vertical surface were taken. If a surface area was less than 30 m^2, a measurement was taken at 1 m^2 intervals.
2. Because of the inability to access the area and the fact that contamination was not suspected, measurements from above the suspended ceiling and the steel deck were performed on a case by case basis.

3.8. Exterior Survey

1. Direct scans and indirect measurements were performed at the grid line intersections and inside drains, ducts, etc.
2. In addition, the following potential sites for contamination were also surveyed:
   - areas of roof exhaust or air effluent discharge points
   - wall penetrations for process equipment, piping, and exhaust ventilation
   - roofing drainage points such as drip lines along overhangs, down spouts, and gutters
   - other areas including window ledges and outside exits (doors, doorways, landings, etc.) from former contamination control areas
   - drainage low points
3. It has been determined that the roof has been resurfaced, and that contaminates may have been trapped in the roofing materials.
4. Sample media was collected below a number of locations where initial survey results indicated positive results.
5. Sample media and/or core samples from the roof were taken from the drainage points (west end) and around the cell access plug.
6. Core samples would be considered from locations with elevated sample media results. Core samples on the roof were ultimately deemed unnecessary due to extent of contamination discovered in initial surveys.
7. Sample media or core sample was to be taken from an area that was unlikely to contain contaminants to validate sampling approach. These areas were determined after review of direct and indirect sampling results.

3.9. Sample Media Collection

3.9.1. Sampling Methods

1. When possible, areas identified during the HCF walkdown had sample media removed. The exact location for some of the identified areas (i.e., along baseboards, beneath partitions, modified entrances and walls) was determined after review of the direct and indirect sampling results.

2. Sample media was also taken from areas that were not suspected of having radioactive contaminants as well as areas where the direct and indirect survey results showed no elevated readings. The goal was to determine the extent of the contamination.

3. When sample media results indicated more extensive subsurface contamination than originally anticipated, additional samples were taken to better define the extent of the contamination.

4. Samples were removed using either hand held or power tools. The equipment was surveyed for contamination between samples to prevent cross-contamination of samples. An air sample was taken during removal to analyze for airborne radioactivity.

3.9.2. Sample Analysis and Documentation

1. All samples were assigned an ID number and a CoC form accompanied each sample.

2. Sample volume, preparation, and storage requirements were met per procedures.

3. Sample weights were determined by the GA HP laboratory.

3.9.3. Quality Assurance for the Laboratory

All samples were analyzed at the GA HP laboratory in accordance with the QA requirements stated. Two of the QA requirements were:

- The appropriate calibration and background standards were counted daily and plotted on QC charts.

- Approximately 5% of the analytical load consisted of quality control replicate samples

3.10. Core Sampling

3.10.1. Sampling Methods

1. A subcontractor (Yankee Engineering) who has been serving the nuclear industry since 1976 and specializes in performing, preparing, and analyzing core samples was used. The coring was performed using a standard concrete coring drill and the subsurface soil was obtained using hand tools. The concrete core drill was used when necessary to penetrate subsurface rock, concrete or other miscellaneous hard objects to access the subsurface soil.

2. The sampling locations selected were based on process knowledge, D/I survey results, and review of the HCF drawings.

3. A total of 17 core samples were taken. Four of the cores were chosen as "controls" due to the unlikelihood of subsurface contamination at those locations (C1-C5). The remaining 13 core samples were taken with the belief that if subsurface contamination existed, these locations would have the highest probability of detecting the contamination. The core locations may be found in Figure 3-2.

4. Due to the elevated dose rates in the three cells, cores were taken around the circumference of the cells and when possible, to a depth below the concrete foundation. This was deemed the best alternative to determine if contamination exists beneath the cells.

5. The soil characteristics determined the number of soil samples that were processed for analysis.

6. After receipt of core results from the sub-contractor, GA performed cores at an additional four locations to further define lateral and vertical profiles.

3.10.2. Sample Analysis and Documentation

1. Concrete core samples and soil samples were shipped back to the contractor laboratory for preparation and analysis.

2. The top one inch of each core sample was cut into two half-inch slices. In some cases, additional concrete slices were taken due to the potential for subsurface contamination.

3. A CoC was completed for all samples to be analyzed. Gamma spectroscopy was performed on 46 concrete and 43 soil samples. Wet chemistry and alpha spectroscopy was performed on 1 concrete and 4 soil samples.

4. Table 3-5 summarizes the core soil sample weights for the sub-contractor cores.

5. Core results are described in the applicable sub-sections of this section.

3.10.3. Quality Assurance for the Laboratory

Samples were analyzed in accordance with the contractor's Quality Assurance Program that was approved by General Atomics Quality Assurance Department. The contractors QA Program included the following elements:

- an internal process control program;
- Contractor's Laboratory Quality Control Audit committee's Blind Duplicate program;
- USCEA/NIST Measurement Assurance Program for the Nuclear Power Industry;
- U. S. EPA Interlaboratory Comparison Program; Analytics, Inc.;
- Commercial QC Programs for environmental and 10 CFR Part 50 media; and
- an inter-utility QC program with Houston Lighting and Power.
- Compliance with American Society of Mechanical Engineers, "Quality Assurance Program Requirements for Nuclear Facilities." Document ASME-NQA-1-1989.

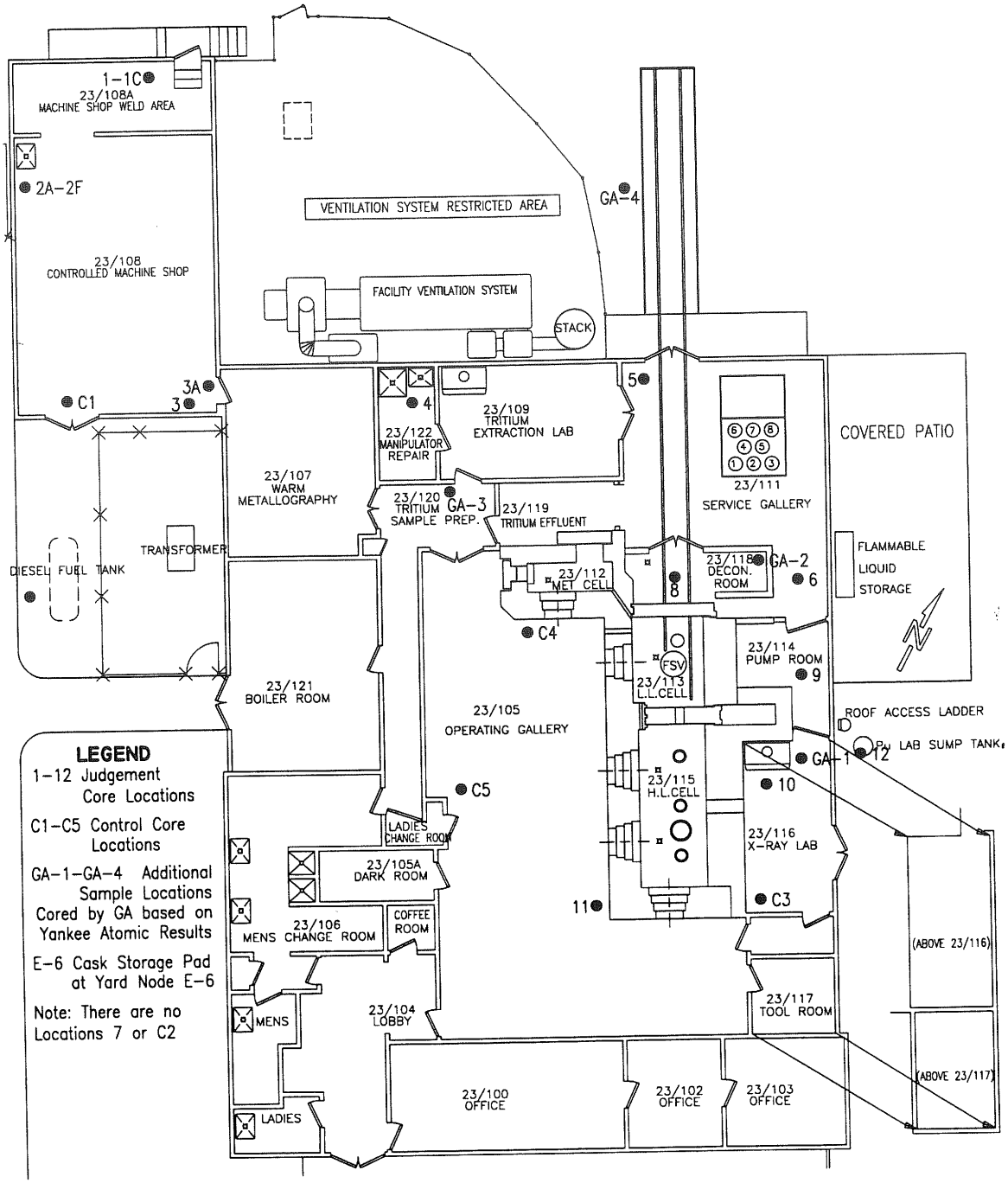


Fig. 3-2—Core Locations

Table 3-5—Core Soil Sample Weights

Core Location	Sample ID	Depth (inches)	Total Soil Content (gm)	Total Non-soil Content (gm)	Percent Soil to Total Sample
1B	23S-94-100-CH	4 - 24	1971.3	225.5	89.7
1B	23S-94-101-CH	32 - 36	223.6	585.6	27.6
1B	23S-94-102-CH	36 - 40	1016.4	223.5	82.0
2D	23S-94-135-CH	4.5 - 16	1802.0	0.0	100.0
2E	23S-94-103-CH	22 - 27	575.0	0.0	100.0
2E	23S-94-104-CH	27 - 40	1359.4	1298.5	51.1
3	23S-94-105-CH	5 - 7	595.0	52.0	92.0
3	23S-94-106-CH	7 - 15	1094.2	261.4	80.7
3	23S-94-107-CH	22 - 28	1489.6	440.0	77.2
4	23S-94-108-CH	16 - 24	242.3	283.1	46.1
4	23S-94-109-CH	24 - 35	948.0	344.7	73.3
5	23S-94-110-CH	13.5 - 22	663.1	593.4	52.8
5	23S-94-111-CH	27 - 46	1895.2	1022.7	65.0
6	23S-94-112-CH	12.5 - 21	1364.0	620.9	68.7
6	23S-94-113-CH	21 - 30	397.2	1001.2	28.4
8	23S-94-114-CH	13 - 24	95.8	2110.2	4.3
8	23S-94-115-CH	24 - 34	1381.4	1288.5	51.7
8	23S-94-116-CH	34 - 39	4.1	1104.6	0.4
8	23S-94-117-CH	39 - 46	228.8	1303.5	14.9
9	23S-94-118-CH	12 - 20	641.0	898.2	41.6
9	23S-94-119-CH	20 - 27	914.7	798.0	53.4
10	23S-94-136-CH	6 - 12	620.2	0.0	100.0
10	23S-94-137-CH	12 - 18	725.2	74.3	90.7
10	23S-94-138-CH	18 - 28	1937.5	420.2	82.2
10	23S-94-139-CH	32 - 37	1311.6	365.0	78.2
10	23S-94-140-CH	37 - 45	787.6	942.7	45.5
11	23S-94-120-CH	14 - 24	1030.5	267.6	79.4
11	23S-94-121-CH	24 - 32	656.4	247.4	72.6
11	23S-94-122-CH	32 - 36	728.4	37.4	95.1
12	23S-94-141-CH	16 - 30	3078.4	0.0	100.0
12	23S-94-142-CH	30 - 35	810.9	417.7	66.0
C-1	23S-94-123-CH	8 - 12	412.6	228.4	64.4
C-1	23S-94-124-CH	27 - 31	548.2	989.1	35.7
C-3	23S-94-125-CH	6 - 12	409.4	234.8	63.6
C-3	23S-94-126-CH	12 - 20	464.1	200.1	69.9
C-3	23S-94-127-CH	20 - 24	311.2	94.1	76.8
C-3	23S-94-128-CH	28 - 35	848.6	104.1	89.1
C-3	23S-94-129-CH	35 - 38	597.2	226.2	72.5
C-4	23S-94-130-CH	19 - 24	395.8	249.2	61.4
C-4	23S-94-131-CH	24 - 32	847.1	197.2	81.1
C-4	23S-94-132-CH	32 - 33	122.5	78.3	61.0
C-5	23S-94-133-CH	12 - 18	621.2	348.7	64.0
C-5	23S-94-134-CH	18 - 26	638.1	366.3	63.5

3.11. Survey Results

Survey data, sample media locations, external dose rates, elevated direct frisk levels, radiological exceptions list items, and specific and general remarks for each room were recorded on either the survey map, supplemental sheet(s) or the grid map. A summary of each room's survey data is presented in two tables: 1) Direct/Indirect Survey Results; and 2) Sample Media and Core Results. The purpose of each table is to provide an overview of the room's radiological conditions and is not intended to repeat all of the specific data from the survey documentation. If specific information or survey data is desired, the information may be found in the respective survey map, supplement sheet(s), or grid map. Presented below is a description of the information found in the survey documentation.

- survey map—general area and contact dose rates to be used for calculating the D&D person-rem estimates, smear results, instruments used, construction material (may be recorded on grid map in some instances) and general remarks.

- supplement sheets—smear results, general and specific remarks, and radiological exceptions list items. Any additional information concerning the radiological conditions or remaining equipment was provided.
- grid map—smear locations, elevated direct frisk levels, instruments used, construction material if not stated on the survey map, location of sample media collection locations and sample numbers, remarks, and radiological exceptions list items
- supplement grid map—locations of additional samples

3.11.1. 103, Office

3.11.1.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	14	floor tile	0/16	< 1 K	< 1 K
East Wall	14	painted cinder block	0/16	< 1 K	< 1 K
West Wall	14	post construction hardboard partition with insulation & two windows	0/16	< 1 K	< 1 K
North Wall	12	painted cinder block	0/15	< 1 K	< 1 K
South Wall	12	windows & metal panels with asbestos concrete insulation	0/7	< 1 K	< 1 K
Ceiling	14	drywall with acoustical tiles	0/20	< 1 K	< 1 K
Steel Deck	14	steel, listed as an exception item	0		
Comments: see radiological exceptions list numbers 11 & 32 and remarks R1- R5. All D/I measurements were below unrestricted use levels.					

3.11.1.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: concrete beneath 23O-94-003-CH	23C-94-006-CH	no peaks
floor: floor tile above 23C-94-006-CH	23O-94-003-CH	no peaks
floor: concrete beneath 23O-94-002-CH	23C-94-005-CH	no peaks
floor: floor tile above 23C-94-005-CH	23O-94-002-CH	no peaks
E. wall: painted cinder block	23C-94-003-CH	no peaks
N. wall: painted cinder block at water discoloration	23C-94-004-CH	no peaks

3.11.1.3. Grid Map and Supplement Sheets

See Appendix A, Pages A2 - A4

3.11.1.4. Remaining Equipment—the furniture found in this room was obtained from GA surplus and may be released to unrestricted use after HP survey.

a. two fume hoods used for preparing sample media
b. one desk and chair
c. one table
d. one large metal bookshelf
e. one door with glass (original door)

3.11.1.5. Evaluation/Summary

No hot particles were found in the room and all of the baseboards were removed. All smears and direct frisks, including air vents, were less than the release levels for beta/gamma and alpha. Based upon all results, this room appears to have no radioactive contamination. However, due to process knowledge of hot particles existing in the HCF, additional surveying along wall/floor junction and beneath floor tiles after removal is recommended prior to free release. No samples were taken from the south wall due to the

presence of asbestos material and the area between the window frame and wall should be surveyed though no contamination is expected. This area has been in used for preparation of low-level/environmental-level soil and construction media samples during HCF characterization, and precautionary re-survey by direct and indirect means will be necessary prior to final release.

3.11.2. 102, Office

3.11.2.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	14	floor tile	0/16	< 1 K	< 1 K
East Wall	14	post construction hardboard partition with insulation & two windows	0/12	< 1 K	< 1 K
West Wall	14	post construction hardboard partition with insulation & two windows	0/12	< 1 K	< 1 K
North Wall	12	painted cinder block	0/16	< 1 K	< 1 K
South Wall	12	windows & metal panels with asbestos concrete insulation	0/10	< 1 K	< 1 K
Ceiling	14	drywall & acoustical tile	0/20	< 1 K	< 1 K
Steel Deck	14	steel			
Comments: see radiological exceptions list numbers 12, 27, 28 & 29 and remarks R1 - R4. All D/I measurements were below unrestricted use levels. Wall partition was removed and no contamination was detected.					

3.11.2.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-010-CH	23O-94-005-CH	no peaks
floor: concrete beneath 23O-94-005-CH	23C-94-010-CH	no peaks
floor: floor tile above 23C-94-009-CH	23O-94-004-CH	no peaks
floor: concrete beneath 23O-94-004-CH	23C-94-009-CH	no peaks
floor: floor tile above 23C-94-011-CH	23O-94-006-CH	no peaks
floor: concrete beneath 23O-94-006-CH	23C-94-011-CH	no peaks
N. wall: painted cinder block	23C-94-008-CH	no peaks
N. wall: painted cinder block behind baseboard	23C-94-007-CH	0.82 ^{60}Co, sample was counted twice & both peaks were detected
N. wall: re-sample at 23C-94-007-CH	23C-95-318-CH	no peaks

3.11.2.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-5 – A-8

3.11.2.4. Remaining Equipment—most of the furniture found in this room was obtained from GA surplus and may be released for unrestricted use after HP survey. Lead bricks used for shielding counting equipment were obtained from TRIGA building and will be returned.

a. two large metal bookshelves
b. one refrigerator
c. one small metal bookcase
d. two wood cabinets
e. one metal table and 2 chairs
f. approximately 30 lead bricks used at the HP counting area

3.11.2.5. Evaluation/Summary

No hot particles were found in the room and all of the baseboards were removed, however, it may be possible that cinderblock sample 23C-94-007-CH may have contained a small hot particle. An adjacent area to sample 23C-94-007-CH was re-sampled and no activity

detected. All smears and direct frisks, including air vents, were less than the release levels for beta/gamma and alpha. Based upon all results, this room appears to have no radioactive contamination. However, due to process knowledge of hot particles occasionally being discovered in unrestricted parts of the HCF, additional surveying along wall/floor junction and beneath floor tiles after removal is recommended prior to free release. No samples were taken from the south wall due to asbestos material and the area between the window frame and wall should be surveyed though no contamination is expected. This room has been in use during HCF characterization to store radiological survey instrumentation, conduct HP counter/scaler operations, and store characterization samples. Precautionary re-survey by direct and indirect means will be necessary prior to final release.

3.11.3. 100, Office

3.11.3.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	36	floor tile	0/34	< 1 K	3 K
East Wall	14	post construction hardboard partition with insulation & two windows	0/9	< 1 K	< 1 K
West Wall	14	post construction hardboard partition with insulation & two windows	0/11	< 1 K	< 1 K
North Wall	30	painted cinder block	0/24	< 1 K	< 1 K
South Wall	30	windows & metal panels with asbestos concrete insulation	0/26	< 1 K	< 1 K
Ceiling	36	drywall & acoustical tile	0/44	< 1 K	< 1 K
Steel Deck	36	steel	0		
Comments: see radiological exceptions list numbers 19, 23, 24, 25 & 26 and remarks R1 - R6. No sample media was taken from east & west walls since direct frisk indicated no elevated levels and south wall due to asbestos. No hot particles were found.					

3.11.3.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-014-CH	23O-94-010-CH	no peaks
floor: concrete beneath 23O-94-010-CH	23C-94-014-CH	no peaks
floor: floor tile above 23C-94-002-CH	23O-94-009-CH	no peaks
floor: concrete beneath 23O-94-009-CH	23C-94-002-CH	no peaks
floor: floor tile above 23C-94-013-CH, fixed contamination, pre-removal 1 K/PA, post < 1 K/PA	23O-94-008-CH	2.70 ^{137}Cs
floor: concrete beneath 23O-94-008-CH, pre-removal < 1 K/PA	23C-94-013-CH	no peaks
floor: floor tile above 23C-94-012-CH, fixed contamination, pre-removal 3 K/PA, post 2 K/PA	23O-94-007-CH	0.78 ^{137}Cs
floor: concrete beneath 23O-94-007-CH, pre-removal 2 K/PA, post < 1 K/PA, at floor conduit penetration	23C-94-012-CH	5.9 ^{137}Cs
floor: re-sample at 23C-94-012-CH	23C-95-319-CH	No Peaks
floor: re-sample near 23C-94-012-CH	23C-95-320-CH	no peaks
N. wall: painted concrete taken at crack in the wall	23C-94-017-CH	no peaks
N. wall: concrete behind baseboard	23C-94-016-CH	0.39 ^{137}Cs
N. wall: re-sample near 23C-94-016-CH	23C-95-321-CH	no peaks
N. wall: painted concrete taken near ceiling vent	23C-94-015-CH	no peaks
N. wall: painted concrete	23C-94-001-CH	no peaks

3.11.3.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-9 – A-12

3.11.3.4. Remaining Equipment—desks and chairs found in this room were obtained from GA surplus and may be released for unrestricted use after HP survey.

a. four desks and chairs
b. two large wood cabinets
c. one small wood cabinet
d. one freezer

e. 2 metal bookcases
f. one large metal storage locker

3.11.3.5. Evaluation/Summary

No hot particles were found in the room and all of the baseboards were removed. However, it does appear that a hot particle was in sample 23C-94-012-CH due to the elevated readings in comparison with the overlaying tile sample 23O-94-007-CH. Except for two small isolated areas, all smears and direct frisks, including air vents, were less than the release levels for beta/ gamma and alpha. Samples were taken at two isolated areas. Based upon all results, the room appears to have some isolated areas of fixed contamination on the floor and wall just above the floor (old baseboard area). In addition, due to process knowledge of hot particles occasionally being discovered in unrestricted parts of the HCF, additional surveying along wall/floor junction and beneath floor tiles after removal is recommended. No samples were taken from the south wall due to the presence of asbestos material and the area between the window frame and wall should be surveyed though no contamination is expected. This area has been in use to support HCF characterization to a limited extent, and will receive a precautionary re-survey by direct and indirect means prior to final release.

3.11.4. 104, Office

3.11.4.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	26	floor tile	0/38	< 1 K	50 K
East Wall	32	see survey map	0/26	< 1 K	< 1 K
West Wall	20	see survey map	0/27	< 1 K	< 1 K
North Wall	20	see survey map	1/21	8 K	< 1 K
South Wall	20	see survey map	0/26	< 1 K	< 1 K
Ceiling	26	drywall & acoustical tile	0/42	< 1 K	< 1 K
Steel Deck	26	steel	0		
Comments: see radiological exceptions list numbers 14, 15, 18, 20, 30, 31, 33, 34, 35 & 36 and remarks R1 - R11. The 8 K dpm loose contamination was found on the wall vent near the change room entrance. 5 smear numbers were inadvertently used twice thus the total number of smears taken is 180. A few of hot particles were found on the baseboards and were not saved.					

3.11.4.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-019-CH	23O-94-012-CH	20.8 ^{137}Cs
floor: concrete beneath 23O-94-012-CH & behind baseboard. 3 K particle removed with sample	23C-94-019-CH	37.1 ^{137}Cs, 2.7 ^{60}Co
floor: floor tile above 23C-94-018-CH. 50 K hot spot	23O-94-011-CH	no peaks
floor: concrete beneath 23O-94-011-CH & 50 K particle removed with sample, particle must have been shielded in sample since activity levels were lower than expected	23C-94-018-CH	2.08 ^{137}Cs
floor: floor/wall junction & at 23O-94-011-CH/23C-94-018-CH & 60 K particle removed with sample	23O-94-016-CH	213 ^{137}Cs
floor: re-sample at 23O-94-016-CH	23O-95-177-CH	no peaks
floor: floor tile above 23C-94-022-CH	23O-94-015-CH	no peaks
floor: concrete beneath 23O-94-015-CH	23C-94-022-CH	1.61 ^{137}Cs
floor: floor tile above 23C-94-021-CH	23O-94-014-CH	0.76 ^{137}Cs, 1.11 ^{60}Co
floor: concrete beneath 23O-94-014-CH	23C-94-021-CH	0.5 ^{137}Cs
floor: floor tile above 23C-94-020-CH	23O-94-013-CH	1.87 ^{137}Cs
floor: concrete beneath 23O-94-013-CH	23C-94-020-CH	1.2 ^{137}Cs
floor: re-sample in center of the room	23C-95-322-CH	no peaks
floor: re-sample in center of the room	23C-95-323-CH	no peaks
W. wall: stucco & plaster	23O-94-001-CH	no peaks
N. wall: painted plaster	23O-94-018-CH	no peaks
N. wall: painted plaster beneath 8 K loose on vent	23O-94-017-CH	no peaks
S. wall: painted cinder block	23C-94-023-CH	no peaks
ceiling: plaster taken next to ceiling vent	23O-94-019-CH	no peaks

3.11.4.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-13 – A-17

3.11.4.4. Remaining Equipment

None

3.11.4.5. Evaluation/Summary

Several hot particles and locations of fixed activity were found along the wall/floor junction. Three samples had hot particles that were removed with the sample. However, based upon the gamma isotopic results of sample 23C-94-018-CH, it appears that the hot particle was effectively shielded within the sample media. Based upon the number of positive sample results, it appears that the lower 1 - 3" of the wall, floor tile, and concrete floor surface are contaminated. If undetected cracks exist between the floor/wall, a potential exists for subsurface contamination. Finally, HCF drawings show a drain or sink existed near grid B1, yet after removal of floor tiles no drain line could be found. This drain line could still exist beneath the concrete and radioactive contamination could exist around the drain/concrete area. Finally, the room contains a considerable amount of electrical components and other various small items that will require HP survey prior to release.

3.11.5. Ladies Bathroom (LR)

3.11.5.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	5	floor tile, ceramic tile & grout	0/8	< 1 K	< 1 K
East Wall	8	painted cinder block	0/11	< 1 K	< 1 K
West Wall	8	painted cinder block	0/15	< 1 K	< 1 K
North Wall	12	drywall & painted plaster	0/11	< 1 K	< 1 K
South Wall	12	painted cinder block	0/12	< 1 K	< 1 K
Ceiling	5	drywall & painted plaster	0/11	< 1 K	< 1 K
Steel Deck	5	steel	0		
Comments: see radiological exceptions list numbers 1, 21, 45, 46, 47 & 48 and remarks R1 - R4. No hot particles were found and all D/I measurements were below unrestricted use levels. A plumbers "snake" was used in floor drains and no contamination was detected.					

3.11.5.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: ceramic tile & grout	230-94-025-CH	no peaks
floor: concrete under 23O-94-025-CH	23C-94-031-CH	0.95 ^{137}Cs & recount had no peaks
floor: re-sample at 23C-94-031-CH	23C-95-324-CH	no peaks
floor: re-sample near 23C-94-031-CH	23C-95-325-CH	no peaks
N. wall: painted plaster below towel dispenser	23O-94-027-CH	no peaks
N. wall: painted plaster	23O-94-026-CH	no peaks
S. Wall: painted cinder block	23C-94-032-CH	0.59 ^{137}Cs
S. wall: re-sample at 23C-94-032-CH	23C-95-326-CH	No Peaks
S. wall: re-sample near 23C-94-032-CH	23C-95-327-CH	No Peaks

3.11.5.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-18 – A-21

3.11.5.4. Remaining Equipment

a. sink, toilet and mirror

3.11.5.5. Evaluation/Summary

A plumbers "snake" was used inside floor drains and clean-out ports and no radioactive material was detected. No hot particles were found in the room. All smears and direct frisks, including air vents, were less than the release levels for beta/gamma and alpha. Several items were placed on the radiological exceptions list and these items will be surveyed prior to release to unrestricted use. Based upon results, this room may have two isolated areas of low-level contamination. The re-samples of these two locations did not reveal contamination. The original samples (230-94-025-CH and 23C-94-032-CH) had very high levels of error associated with the 662 keV ^{137}Cs peak.

3.11.6. Men's Bathroom

3.11.6.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	10	ceramic tile & grout	0/15	< 1 K	< 1 K
East Wall	15	drywall, painted plaster & plywood	0/16	< 1 K	< 1 K
West Wall	15	drywall, painted plaster & plywood	0/13	< 1 K	< 1 K
North Wall	9	drywall & painted plaster	0/11	< 1 K	< 1 K
South Wall	9	drywall & painted plaster	0/9	< 1 K	< 1 K
Ceiling	10	drywall & painted plaster	0/12	< 1 K	< 1 K
Steel Deck	10	steel	0		
Comments: see radiological exceptions list numbers 37, 38 & 39 and remarks R1 - R5. No hot particles were detected and all D/I measurements were below unrestricted release levels. Plumbers "snake" was used in floor drains and no contamination was detected.					

3.11.6.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: concrete beneath ceramic tile & behind plywood covering old doorway	23C-94-029-CH	0.77 ^{137}Cs
E. wall: re-sample due to 23C-94-030-CH	23O-95-179-CH	no peaks
W. wall: painted cinder block	23C-94-030-CH	1.4 ^{137}Cs
W. wall: re-sample at 23C-94-030-CH	23C-95-328-CH	no peaks
W. wall: re-sample near 23C-94-030-CH (Below left)	23C-95-329-CH	no peaks
W. wall: re-sample near 23C-94-030-CH (Above right)	23C-95-330-CH	no peaks
N. wall: painted plaster near light switch	23O-94-024-CH	no peaks
S. wall: re-sample due to 23C-94-030-CH	23O-95-178-CH	no peaks

3.11.6.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-22 – A-25

3.11.6.4. Remaining Equipment

a. one sink, two toilets and one mirror

3.11.6.5. Evaluation/Summary

A plumbers "snake" was used inside floor drains and clean-out ports and no radioactive material was detected. No hot particles were found in the room. All smears and direct frisks, including air vents, were less than the release levels for beta/gamma and alpha. Several items were placed on the radiological exceptions list and these items will be surveyed prior to release to unrestricted use. Based upon all results, the top layer of the floor near the location of the old doorway will need to be removed, using means such as minor scabbling. The positive result from west wall is (23C-94-030-CH) is apparently not significant, as extensive re-sampling in adjacent areas did not yield positive results.

3.11.7. Coffee Room

3.11.7.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	4	floor tile	0/11	< 1 K	2 K
East Wall	12	drywall & painted plaster	0/7	< 1 K	< 1 K
West Wall	12	painted cinder block	0/8	< 1 K	5 K
North Wall	10	drywall & painted plaster	0/8	< 1 K	< 1 K
South Wall	10	drywall & painted plaster	0/8	< 1 K	< 1 K
Ceiling	4	drywall & painted plaster	0/7	< 1 K	< 1 K
Steel Deck	4	steel	0		
Comments: see radiological exceptions list numbers 16, 17, 22, 41, 43 & 44 and remarks R1 - R11. Several loose and fixed hot particles were found and three were saved for isotopic. Two hot particles were removed with sample media. Drain lines were not surveyed with plumbers "snake" due to difficulty of removing drain cover. Past surveys of room detected a fixed contaminated area on ceiling vent, however this area could not be found during characterization survey. The cause of the disappearance of the contaminated area is unknown, though it may have been a hot particle that either has been unknowingly moved to another location or may be lodged further in the ceiling ventilation duct and no longer readily detectable.					

3.11.7.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-026-CH & next to clean floor drain	23O-94-022-CH	2.39 ^{134}Cs, 3.15 ^{137}Cs, 1.73 ^{60}Co
floor: concrete beneath 23O-94-022-CH	23C-94-026-CH	no peaks
floor: floor tile above 23C-94-024-CH & 2 K fixed	23O-94-020-CH	1.06 ^{134}Cs, 1.32 ^{137}Cs
floor: concrete beneath 23O-94-020-CH, 2 K removed with sample	23C-94-024-CH	7.8 ^{137}Cs
floor: floor tile above 23C-94-025-CH & 2 K fixed	23O-94-021-CH	1.83 ^{134}Cs, 1.56 ^{137}Cs
floor: concrete beneath 23O-94-021-CH, 2 K particle removed with sample	23C-94-025-CH	0.9 ^{137}Cs
floor: re-sample near sink	23C-95-331-CH	no peaks
floor: hot particle	23HP-94-001-CH	^{137}Cs, ^{60}Co - can't quantify
floor: hot particle	23HP-94-002-CH	^{137}Cs, ^{60}Co - can't quantify
floor: hot particle	23HP-94-003-CH	^{137}Cs, ^{60}Co - can't quantify
W. wall: cinder block next to sink, 5 K particle removed with sample	23C-94-027-CH	2.2 ^{137}Cs
W. wall: re-sample at 23C-94-027-CH	23C-95-332-CH	no peaks
W. wall: cinder block at baseboard & sink	23C-94-028-CH	no peaks
N. wall: painted plaster above sink	23O-94-023-CH	no peaks

3.11.7.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-26 – A-30

3.11.7.4. Remaining Equipment

a. sink and associated piping

3.11.7.5. Evaluation/Summary

The room had several hot particles removed with Masslin® cloth and there may be additional particles along wall/floor junction and by floor drain. The ceiling vent, according to historical records, had fixed activity, but upon removal of the vent cover, survey results indicated no detectable contamination inside the ventilation duct. Further evaluation is needed inside the ceiling ventilation duct during decommissioning. Based upon the number of positive sample results and hot particles, it is probable that the lower 1 - 3" of the wall, floor tile, and concrete floor surface will need to be removed, using methods such as scabbling, and be disposed of as radioactive waste. If undetected cracks exist between floor/wall, the potential exists for subsurface contamination.

3.11.8. 105, Operating Gallery

3.11.8.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	150	floor tile	1/124	6 K	12 K
East Wall	90	painted steel plate surfaces on cell walls & painted drywall by 117	0/12	<1 K	<1 K
West Wall	90	steel studs with painted plaster surface	0/54	<1 K	<1 K
North Wall	60	painted steel plate surfaces on cell walls & painted drywall by entrance to 120	1/9	3 K	<1 K
South Wall	60	painted concrete cinder block	0/39	<1 K	<1 K
Ceiling	150	acoustical panels	0		
Steel Deck	150	steel			
Comments: see radiological exceptions list numbers 136 137, 138, 139, &140 and remark R1. Several smears (8 of 50) from the surfaces at cell wall penetrations were positive and it is clear that contamination exists within the penetrations. See the supplemental survey sheets on the exterior of the three cells. This conclusion is further supported by the contaminated lead penetrations located in the storage shed. Some hot particles and loose contamination were detected after removal of the baseboards which suggests that contamination probably exists along some of the floor/wall junctions. Direct frisks inside the pipe chase were up to 120 K dpm and 5 K dpm/LAS. Inside of pipe chase is contaminated and the potential for contamination exists inside the drains					

3.11.8.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-271-CH	23O-94-142-CH	2.22 ^{134}Cs, 5.91 ^{137}Cs, 1.78 ^{60}Co
floor: concrete beneath 23O-94-142-CH	23C-94-271-CH	1.84 ^{137}Cs, 0.88 ^{60}Co
floor: floor tile above 23C-94-272-CH	23O-94-143-CH	0.89 ^{134}Cs, 7.1 ^{137}Cs, 2.02 ^{60}Co
floor: concrete beneath 23O-94-143-CH	23C-94-272-CH	2.50 ^{137}Cs, 1.56 ^{60}Co, 0.43 ^{65}Zn
floor: floor tile above 23C-94-273-CH	23O-94-144-CH	0.62 ^{137}Cs
floor: concrete beneath 23O-94-144-CH	23C-94-273-CH	no peaks
floor: floor tile above 23C-94-274-CH	23O-94-151-CH	0.54 ^{134}Cs, 0.50 ^{137}Cs, 0.30 ^{60}Co
floor: concrete beneath 23O-94-151-CH	23C-94-274-CH	no peaks
floor: floor tile above 23C-94-275-CH, discolored tile	23O-94-152-CH	0.63 ^{137}Cs, probable ^{125}Sb
floor: concrete beneath 23O-94-152-CH	23C-94-275-CH	no peaks
floor: floor tile above 23C-94-276-CH, floor/cell wall junction	23O-94-153-CH	1.36 ^{134}Cs, 170 ^{137}Cs, 7.39 ^{60}Co
floor: concrete beneath 23O-94-153-CH	23C-94-276-CH	10.0 ^{137}Cs, 0.89 ^{60}Co
floor: floor tile above 23C-94-277-CH, along edge of conduit pipe chase	23O-94-154-CH	0.57 ^{134}Cs, 10.0 ^{137}Cs
floor: concrete beneath 23O-94-154-CH	23C-94-277-CH	no peaks
floor: re-sample near CA boundary	23C-95-354-CH	no peaks
floor: re-sample near room entrance	23C-95-355-CH	no peaks
floor: concrete at bottom of pipe chase next to drain	23C-94-278-CH	6.13 ^{137}Cs, 2.64 ^{60}Co
floor: concrete at bottom of pipe chase	23C-94-279-CH	2.05 ^{134}Cs, 19.2 ^{137}Cs, 7.42 ^{60}Co
floor: core 11, concrete sample, at HLC, 0 - 0.5" depth	23C-94-152-CH	no peaks
floor: core 11, concrete sample, at HLC, 0.5 - 1" depth	23C-94-153-CH	no peaks
floor: core 11, concrete sample, at HLC, 13 - 14" depth	23C-94-154-CH	no peaks
floor: core 11, soil sample, at HLC, 14 - 26" depth	23S-94-120-CH	no peaks
floor: core 11, soil sample, at HLC, 26 - 32" depth	23S-94-121-CH	no peaks
floor: core 11, soil sample, at HLC, 32 - 36" depth	23S-94-122-CH	no peaks
floor: core C-4, concrete sample, at MET, 0 - 0.5" depth	23C-94-163-CH	no peaks
floor: core C-4, concrete sample, at MET, 0.5 - 1" depth	23C-94-164-CH	no peaks
floor: core C-4, concrete sample, at MET, 18 - 19" depth	23C-94-165-CH	no peaks
floor: core C-4, soil sample, at MET, 19 - 24" depth	23S-94-130-CH	no peaks
floor: core C-4, soil sample, at MET, 24 - 32" depth	23S-94-131-CH	no peaks
floor: core C-4, soil sample, at MET, 32 - 33" depth	23S-94-132-CH	no peaks
floor: core C-5, concrete sample, at LCR, 0 - 0.5" depth	23C-94-166-CH	no peaks
floor: core C-5, concrete sample, at LCR, 0.5 - 1" depth	23C-94-167-CH	no peaks
floor: core C-5, concrete sample, at LCR, 11 - 12" depth	23C-94-168-CH	no peaks
floor: core C-5, soil sample, at LCR, 12 - 18" depth	23S-94-133-CH	no peaks
floor: core C-5, soil sample, at LCR, 18 - 24" depth	23S-94-134-CH	no peaks
floor: 6 K hot particle	23HP-94-017-CH	7217 pCi ^{137}Cs
E. wall: painted drywall	23O-94-156-CH	no peaks
E. wall: painted drywall at baseboard	23O-94-155-CH	no peaks
W. wall: behind baseboard, between high density concrete junction	23O-94-157-CH	no peaks
W. wall: painted plaster at horizontal crack	23O-94-158-CH	no peaks
W. wall: behind baseboard & high density concrete junction inside CA boundary	23O-94-160-CH	0.43 ^{137}Cs
W. wall: painted plaster inside CA boundary	23O-94-161-CH	no peaks
S. wall: painted drywall, added wall	23O-94-159-CH	no peaks
S. wall: painted concrete	23C-94-280-CH	no peaks
S. wall: painted concrete	23C-94-281-CH	no peaks

3.11.8.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-31 – A-40

3.11.8.4. Remaining Equipment

a. Manipulator mock-up station w/2 manipulators
b. 4 large and 4 small step-up boxes
c. 1 metal desk
d. 1 cart
e. 1 picnic table w/2 benches
f. 1 large table
g. 1 small table
h. 4 metal protective clothing cabinets
i. 4 chairs
j. 6 segregation drums - in CA
k. 2 metal bottle racks
l. 1 tool box
m. 10 manipulator arms
n. 1 PING 1A
o. 1 CAM

3.11.8.5. Evaluation/Summary

Floor tile and concrete along east and west walls, the three cells, and along and inside the concrete conduit pipe chase is contaminated. Samples from the non-contaminated area walls and remaining areas of the floor had no peaks, however, hot particles could exist beneath floor tiles and floor/wall junction. Further evaluation is recommended in the center of the room before free release of concrete. Drains in the pipe chase are believed to be "cold" drains but based upon process knowledge and concrete sample results near drains, contamination is a possibility inside drain lines. Inside surfaces of most of the cell penetrations are contaminated based upon smear results and from survey results of lead penetrations located in the storage shed.

3.11.9. 105A, Dark Room

3.11.9.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	8	floor tile	0/28	< 1 K	30 K
East Wall	8	painted drywall	0/6	< 1 K	15 K
West Wall	8	drywall & painted plaster	0/6	< 1 K	< 1 K
North Wall	16	drywall & painted plaster	0/12	< 1 K	< 1 K
South Wall	16	drywall & painted plaster	0/12	< 1 K	< 1 K
Ceiling	8	drywall & painted plaster	0/8	< 1 K	< 1 K
Steel Deck	8	steel	0		
Comments: see radiological exceptions list numbers 83, 84, 85, 86, 87, 88, 89 & 90 and see remarks R1 - R6. Over one hundred loose and fixed hot particles were found on the floor, metal cabinet, and behind cabinet on the floor and wall. The room was wiped down with Masslin® cloth until no loose hot particles were detected though there is a very good possibility that the metal cabinet and floor still have a few hot particles. Drain lines on south wall from metal cabinet were not sampled with a plumbers "snake" and further evaluation for contamination and hazardous materials is recommended. A floor pit was found and sampled. The floor pit has ventilation duct that, per HCF drawings, routes to the HEPA ventilation system. The door threshold was not removed and contamination is highly probable beneath threshold.					

3.11.9.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: hot particle in sample	23C-94-175-CH	4.91 ^{134}Cs, 83.1 ^{137}Cs, 3.18 ^{60}Co
floor:	23C-94-176-CH	0.53 ^{137}Cs, 0.78 ^{60}Co
floor:	23C-94-177-CH	no peaks
floor: hot particle	23HP-94-006-CH	^{134}Cs, ^{137}Cs, ^{60}Co, ^{154}Eu - can't quantify
floor: hot particle	23HP-94-007-CH	^{134}Cs, ^{137}Cs, ^{60}Co - can't quantify
E. wall: painted plaster	23O-94-070-CH	no peaks
W. wall:	23O-94-072-CH	no peaks
N. wall:	23O-94-073-CH	1.48 ^{60}Co
N. wall: re-sample 1 meter off floor	23O-95-183-CH	no peaks
N. wall: re-sample 2 meters off floor	230-95-184-CH	no peaks
S. wall: painted plaster	23O-94-071-CH	no peaks
floor pit:	23C-94-178-CH	no peaks
floor pit: filler sand	23S-94-143-CH	no peaks
floor pit: filler sand	23S-94-144-CH	0.16 ^{137}Cs, 0.26 ^{60}Co

3.11.9.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-41 – A-45

3.11.9.4. Remaining Equipment

a. long metal cabinet
b. door

3.11.9.5. Evaluation/Summary

The floor had over 100 hot particles and numerous particles were found in the metal storage cabinet. Upon additional survey and decontamination, the metal cabinet should be releasable to unrestricted use. No positive peaks were detected from sample media 23C-94-177-CH which was the only concrete floor sample that had no hot particles, thus the floor tile and 1/4" of concrete should be removed, using methods such as scabbling, and disposed of as radioactive waste. It is recommended that additional surveying inside the liquid drain lines be performed especially due to the presence of hot particles throughout the room. The floor pit had some fixed activity as did the filler sand. According to HCF drawings, the ventilation pipe goes to the HEPA ventilation system. If the piping which is encased in concrete can be removed, based upon past experience, the metal should be able to be decontaminated to unrestricted release levels with a CO_2 pelletizer or by another abrasive decontamination technique.

3.11.10. 106, Change Room

3.11.10.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	45	floor tile	see comments	< 1 K	120 K
East Wall	35	see survey map	see comments	< 1 K	< 1 K
West Wall	35	see survey map	see comments	< 1 K	6 K
North Wall	45	see survey map	see comments	< 1 K	< 1 K
South Wall	45	see survey map	see comments	< 1 K	< 1 K
Ceiling	45	drywall painted plaster	see comments	< 1 K	< 1 K
Steel Deck	45				
Comments: see radiological exceptions list numbers 68, 69, 70, 71, 72, 73, 74, 75 & 76 and remarks R1- R18. A total of 286 smears were taken and counted for beta/gamma and all were less than 1 K. Three smears from the storage closet had 20 dpm/100 cm^2 alpha. The vent on the door leading to the corridor had 12 K dpm in one area and was placed in a radbag for decontamination disposal. Several hot particles were found throughout the room. The shoe cleaning pit has fixed activity on walls inside pipe. HCF drawings show the vent routed to HEPA ventilation system.					

3.11.10.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: by shoe cleaner pit	23C-94-090-CH	no peaks
floor: tile in front of lockers & above 23C-94-054-CH	23O-94-039-CH	1.38 ^{134}Cs, 2.23 ^{137}Cs
floor: concrete beneath 23O-94-039-CH	23C-94-054-CH	no peaks
floor: concrete at locker base	23C-94-046-CH	4.2 ^{60}Co
floor: concrete at locker base	23C-94-047-CH	0.57 ^{137}Cs, 1.8 ^{60}Co
floor: floor tile above 23C-94-053-CH	23O-94-038-CH	1.42 ^{134}Cs, 1.26 ^{137}Cs
floor: concrete beneath 23O-94-038-CH, in front of lockers	23C-94-053-CH	no peaks
floor: concrete at locker base	23C-94-048-CH	2.09 ^{137}Cs, 2.39 ^{60}Co
floor: concrete from closet floor	23C-94-104-CH	0.66 ^{137}Cs
floor: floor tile above 23C-94-102-CH	23O-94-062-CH	no peaks
floor: concrete beneath 23O-94-062-CH	23C-94-102-CH	no peaks
floor: floor tile above 23C-94-107-CH & at contaminated drain	23O-94-066-CH	1.90 ^{137}Cs
floor: concrete beneath 23O-94-066-CH & at contaminated drain	23C-94-107-CH	1.13 ^{137}Cs, 3.18 ^{60}Co
floor: re-sample at CA drain	23C-95-356-CH	no peaks
floor: re-sample from center of the room	23C-95-357-CH	no peaks
floor: re-sample from center of the room - clean side	23C-95-358-CH	no peaks
floor:	23O-94-064-CH	0.85 ^{137}Cs
floor:	23C-94-105-CH	0.62 ^{137}Cs, 1.36 ^{60}Co
floor: inside shoe pit, w. wall	23C-94-089-CH	3.06 ^{137}Cs, 2.31 ^{60}Co
floor: inside shoe pit around ventilation pipe	23C-94-084-CH	1.64 ^{137}Cs, 1.61 ^{60}Co
floor: inside shoe pit in front of ventilation pipe	23C-94-085-CH	2.96 ^{137}Cs, 1.10 ^{60}Co
floor: inside shoe pit in front of ventilation pipe, 1.5" deep	23C-94-086-CH	no peaks
floor: inside shoe pit	23C-94-087-CH	26.1 ^{137}Cs, 1.96 ^{60}Co
floor: inside shoe pit, 1" deep	23C-94-088-CH	7.62 ^{137}Cs, 1.16 ^{60}Co
floor: hot particle from inside storage closet	23HP-94-004-CH	no peaks, particle not captured
E. wall: cinder block behind lockers	23C-94-045-CH	0.5 ^{137}Cs
W. wall: concrete	23C-94-101-CH	2.69 ^{137}Cs
W. wall: wall tile	23O-94-061-CH	no peaks
N. wall: cinder block at wall stains from roof leak	23C-94-106-CH	no peaks
N. wall: cinder block	23C-94-108-CH	1.16 ^{134}Cs, 4.56 ^{137}Cs, 7.01 ^{60}Co
N. wall: painted plaster	23O-94-060-CH	no peaks
N. wall: plaster wall at end of lockers	23O-94-032-CH	no peaks
S. wall: plaster from behind lockers	23O-94-033-CH	no peaks
S. wall: painted plaster	23O-94-067-CH	no peaks
ceiling: plaster	23O-94-065-CH	no peaks
storage closet: concrete from west wall	23C-94-103-CH	no peaks
storage closet: painted plaster from south wall	23O-94-063-CH	no peaks
storage closet: hot particle from wall	23HP-94-005-CH	^{60}Co - can't quantify

3.11.10.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-46 – A-51

3.11.10.4. Remaining Equipment—most if not all of the equipment should be releasable

a. metal clothes lockers
b. wood bench (has fixed activity)
c. dish washing machine used for cleaning respirators
d. one metal respirator drying cabinet
e. one wood shelf
f. two sinks (one for radioactive material to hot drain)
g. one large metal book case
h. 2 metal tables
i. one small wood shelf

3.11.10.5. Evaluation/Summary

The "cold" drain is posted as "internal contamination" and even though smears taken from inside the drain had no detectable contamination, further evaluation is recommended. A concrete sample from around the "cold" drain had positive results, thus the extent of

subsurface contamination is unknown. The concrete base for the metal change lockers had positive sample results and scabbling will be necessary, but samples from the adjacent walls showed no peaks except at the north corner. Floor tile removal and concrete surface removal, using methods such as scabbling, will be necessary in most of the room. The surface of the lower 4" of walls will need to be removed because of the presence of hot particles. Two concrete samples taken near the wall/floor junction were positive. The shoe cleaning pit has fixed contamination in concrete and inside of the pipe. HCF drawings indicate that pipe routes to the HEPA ventilation unit.

3.11.11. 107, Warm Metallography

3.11.11.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	41	painted concrete	27/54	10 K	100 K
East Wall	31	painted concrete plaster	7/41	20 K	bkg
West Wall	35	painted concrete block with plaster finish	12/24	1 K	bkg
North Wall	25	painted concrete block	16/23	1 K	bkg
South Wall	25	painted cement plaster with steel studs	24/34	4 K	bkg
Ceiling	41	steel deck	0		
Comments: see radiological exceptions list numbers 145, 146, 147, & 148 and remarks R1 & R2. LAS were taken on manipulator arms and all had positive results. The area behind the flammable storage locker was not surveyed and was placed on the radiological exceptions list. Two highly contaminated fume hoods were removed and the inside ventilation duct is contaminated. The duct opening is covered. Because of the radiation levels the room, direct frisk measurements could not be performed. Therefore, if the direct frisk measurement did not see any activity on the wall above the already high background, "bkg" is reported.					

3.11.11.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: painted concrete	23C-94-290-CH	13.9 ^{154}Eu, 164 ^{134}Cs, 2624 ^{137}Cs, 99.7 ^{60}Co
floor:	23C-94-291-CH	1.62 ^{134}Cs, 15.4 ^{137}Cs, 1.17 ^{60}Co
floor:	23C-94-292-CH	3.71 ^{137}Cs, 0.82 ^{60}Co
floor: taken at crack in floor	23C-94-293-CH	1.39 ^{134}Cs, 19.9 ^{137}Cs, 3.23 ^{60}Co
E. wall: seam along crack in wall	23O-94-167-CH	no peaks
E. wall: painted plaster and mesh	23O-94-169-CH	2.43 ^{137}Cs
E wall: re-sample 1 meter below 23O-94-167-CH	23O-95-204-CH	no peaks
E wall: re-sample 3 meters off floor over doorway	23O-95-205-CH	no peaks
W. wall:	23C-94-288-CH	no peaks
W. wall:	23C-94-289-CH	no peaks
W. wall: re-sample 2.5 meters off floor	23C-95-387-CH	no peaks
W. wall: re-sample 2.5 meters off floor by new block	23C-95-388-CH	no peaks
N. wall:	23C-94-286-CH	no peaks
N. wall:	23C-94-287-CH	no peaks
N. wall: re-sample 3 meters off floor	23C-95-386-CH	0.64 ^{137}Cs
S. wall: painted plaster & mesh	23O-94-170-CH	no peaks
S. wall: painted plaster & mesh	23O-94-171-CH	0.34 ^{137}Cs
s wall: re-sample 2 meters off floor	23O-94-203-CH	0.50 ^{137}Cs

3.11.11.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-52 – A-56

3.11.11.4. Remaining Equipment

a. manipulator hydraulic power lift unit - contaminated
b. five manipulator arms - contaminated

3.11.11.5. Evaluation/Summary

The concrete floor is contaminated and two samples taken from the east and south walls near the floor (first grid) were contaminated. It is likely that the lower 1 meter of the wall

surface will have to be removed. Additional samples from the upper portion of the walls will quantify the extent of contamination. Areas around and inside the manipulator openings are believed to be contaminated. Two highly contaminated fume hoods were recently removed and the ventilation duct is certainly contaminated. Subsurface soil from adjacent Room 122, Manipulator Repair Room, was contaminated. Further exploration to the southeast of Room 122 has also demonstrated the existence of some radioactivity in the subsurface soils below Room 120. It is likely that activity also exists in at least a portion of the subsurface soils below Room 107. Due to the proximity to Room 122, the potential exists for subsurface soil contamination at the east and north ends of the room.

3.11.12. 108, Beryllium Oxide Laboratory & Controlled Machine Shop

3.11.12.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	72	floor tile	see comments	3 K	320 K
East Wall	40	cinder block and painted cement plaster	see comments	< 1 K	100 K
West Wall	40	cinder block and painted cement plaster	see comments	1 K	< 1 K
North Wall	25	painted drywall and steel studs	see comments	2 K	5 K
South Wall	25	cinder block and painted cement plaster	see comments	< 1 K	<1 K
Ceiling	72	painted steel	see comments	1 K	<1 K
Comments: see radiological exceptions list numbers 126, 127, 128, 129, 130, 131, 132, 133, 134, & 135 and remarks R1 - R11. For description & contamination levels on the remaining equipment, see S1 - S28. The room had several hot particles in overhead utilities and ventilation duct. 5 out of the 350 smears taken in the room were above 1 K dpm/100 cm^2.					

3.11.12.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-242-CH, 2 K/PA	23O-94-130-CH	1.56 ^{134}Cs, 20.6 ^{137}Cs, 2.53 ^{60}Co
floor: concrete beneath 23O-94-130-CH	23C-94-242-CH	2.60 ^{134}Cs, 76.6 ^{137}Cs, 4.69 ^{60}Co
floor: floor tile above 23C-94-243-CH	23O-94-131-CH	0.61 ^{134}Cs, 11.5 ^{137}Cs, 4.97 ^{60}Co
floor: concrete beneath 23C-94-243-CH	23C-94-243-CH	2.03 ^{134}Cs, 83.4 ^{137}Cs, 13.0 ^{60}Co
floor: floor tile above 23C-94-244-CH, 3 K/PA	23O-94-132-CH	1.49 ^{134}Cs, 10.5 ^{137}Cs, 2.44 ^{60}Co, 3.75 ^{235}U
floor: concrete beneath 23O-94-132-CH	23C-94-244-CH	33.3 ^{137}Cs, unquantified ^{134}Cs
floor: floor tile above 23C-94-245-CH	23O-94-133-CH	0.74 ^{134}Cs, 6.06 ^{137}Cs, 2.63 ^{60}Co
floor: concrete beneath 23O-94-133-CH	23C-94-245-CH	7.40 ^{137}Cs, 0.81 ^{60}Co, 3.59 ^{235}U
floor: floor tile above 23C-94-246-CH, 18 K/PA	23O-94-134-CH	1.53 ^{134}Cs, 7.30 ^{137}Cs, 1.54 ^{60}Co
floor: concrete beneath 23O-94-134-CH	23C-94-246-CH	1.04 ^{137}Cs
floor: floor tile above 23C-94-247-CH, by sink, 14 K/PA	23O-94-135-CH	0.38 ^{134}Cs, 11.1 ^{137}Cs, 4.43 ^{60}Co
floor: concrete beneath 23O-94-135-CH, by sink	23C-94-247-CH	4.59 ^{137}Cs, 0.69 ^{60}Co
floor: floor tile above 23C-94-248-CH	23O-94-136-CH	6.59 ^{137}Cs, 0.57 ^{60}Co, probable ^{134}Cs
floor: concrete beneath 23O-94-136-CH	23C-94-248-CH	2.15 ^{137}Cs, 1.77 ^{60}Co
floor: floor tile above 23C-94-249-CH	23O-94-137-CH	15.8 ^{137}Cs, 4.37 ^{60}Co
floor: concrete beneath 23O-94-137-CH	23C-94-249-CH	2.25 ^{137}Cs, 0.52 ^{60}Co , 4.1 ^{235}U
floor: floor tile above 23C-94-250-CH, 320 K/PA hot particle	23O-94-138-CH	6.20 ^{137}Cs, 2.67 ^{60}Co
floor: concrete beneath 23O-94-138-CH	23C-94-250-CH	0.65 ^{134}Cs, 6.26 ^{137}Cs, 0.66 ^{60}Co
floor: floor tile above 23C-94-269-CH	23O-94-149-CH	14.7 ^{137}Cs, 4.67 ^{60}Co
floor: concrete beneath 23O-94-149-CH	23C-94-269-CH	9.26 ^{137}Cs, 1.13 ^{60}Co
floor: floor tile above 23C-94-270-CH	23O-94-150-CH	0.71 ^{134}Cs, 3.62 ^{137}Cs, 1.28 ^{60}Co
floor: concrete beneath 23O-94-150-CH	23C-94-270-CH	1.32 ^{134}Cs, 11.0 ^{137}Cs, 2.84 ^{60}Co, 5.44 ^{235}U
floor: hot particle	23HP-94-016-CH	1487 pCi ^{137}Cs
floor: core 2D, soil sample, near sink, 4.5 - 16" depth	23S-94-135-CH	no peaks
floor: core 2E, concrete sample, near sink, 0 - 0.5" depth	23C-94-121-CH	0.064 ^{134}Cs, 7.96 ^{137}Cs, 0.212 ^{60}Co
floor: core 2E, concrete sample, near sink, 0.5 - 1" depth	23C-94-122-CH	0.133 ^{137}Cs
floor: core 2E, concrete sample, near sink, 6 - 7" depth	23C-94-123-CH	no peaks
floor: core 2E, concrete sample, near sink, 21 - 22" depth	23C-94-124-CH	no peaks
floor: core 2E, soil sample, near sink, 22 - 27" depth	23S-94-103-CH	no peaks
floor: core 2E, soil sample, near sink, 27 - 40" depth	23S-94-104-CH	no peaks
floor: core 3, concrete sample, room entrance, 0 - 0.5" depth	23C-94-125-CH	0.148 ^{137}Cs
floor: core 3, concrete sample, room entrance, 0.5 - 1" depth	23C-94-126-CH	no peaks
floor: core 3, soil sample, room entrance, 5 - 7" depth	23S-94-105-CH	no peaks
floor: core 3, soil sample, room entrance, 7 - 15" depth	23S-94-106-CH	no peaks
floor: core 3, concrete sample, room entrance, 15 - 16" depth	23C-94-127-CH	no peaks
floor: core 3, concrete sample, room entrance, 20 - 21" depth	23C-94-128-CH	no peaks
floor: core 3, soil sample, room entrance, 22 -28" depth	23S-94-107-CH	no peaks

Location & Remarks	Sample ID	Results (pCi/g)
floor: core C-1, concrete sample, by double doors, 0-0.5" depth	23C-94-155-CH	0.405 ^{137}Cs
floor: core C-1, concrete sample, by double doors, 0.5-1" depth	23C-94-156-CH	no peaks
floor: core C-1, concrete sample, by double doors, 7 - 8" depth	23C-94-157-CH	no peaks
floor: core C-1, soil sample, by double doors, 8 - 12" depth	23S-94-123-CH	no peaks
floor: core C-1, concrete sample, by double doors, 12-13" depth	23C-94-158-CH	no peaks
floor: core C-1, concrete sample, by double doors, 14-15" depth	23C-94-159-CH	no peaks
floor: core C-1, concrete sample, by double doors, 26-27" depth	23C-94-160-CH	no peaks
floor: core C-1, soil sample, by double doors, 27 - 31" depth	23S-94-124-CH	no peaks
E. wall:	23C-94-264-CH	no peaks
E. wall:	23C-94-263-CH	no peaks
E. wall:	23C-94-262-CH	0.01 ^{60}Co (single peak)
E. wall: hot particle	23HP-94-015-CH	515 pCi ^{134}Cs, 15200 pCi ^{137}Cs
E. wall:	23C-94-261-CH	no peaks
E. wall:	23C-94-260-CH	no peaks
W. wall:	23C-94-255-CH	no peaks
W. wall:	23C-94-253-CH	no peaks
W. wall:	23C-94-254-CH	0.29 ^{137}Cs
W. wall:	23C-94-252-CH	1.27 ^{137}Cs, 0.89 ^{60}Co
W. wall:	23C-94-256-CH	no peaks
W. wall:	23C-94-251-CH	1.00 ^{137}Cs, 2.26 ^{60}Co
N. wall:	23O-94-140-CH	11.8 ^{137}Cs, 33.6 ^{60}Co
N. wall:	23O-94-141-CH	14.2 ^{137}Cs, 52.8 ^{60}Co
N. wall:	23O-94-139-CH	no peaks
N. wall: re-sample 2 meters above 23O-94-141-CH	23O-95-190-CH	no peaks
N. wall: re-sample above entrance way to 108A	23O-95-191-CH	no peaks
S. wall:	23C-94-257-CH	no peaks
S. wall:	23C-94-258-CH	0.45 ^{137}Cs
S. wall:	23C-94-259-CH	0.85 ^{137}Cs
S. wall: re-sample above 23C-94-257-CH	23C-95-369-CH	no peaks
S. wall: re-sample below 23C-94-257-CH	23C-95-370-CH	no peaks
S. wall: re-sample near entrance door	23C-95-371-CH	no peaks

3.11.12.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-57 – A-66

3.11.12.4. Remaining Equipment

See S1 - S28 on supplement sheets. A total of 28 pieces of equipment are currently in the room. The supplement sheets state the contamination levels for each piece of equipment and, based upon process knowledge and the type of equipment, describe the likelihood of being able to free release each piece of equipment.

3.11.12.5. Evaluation/Summary

The entire tile floor and sub-floor concrete is contaminated to approximately 0.4" depth. The west wall by the sink is contaminated and remaining walls had intermittent positive results. It will be necessary to remove drywall paper to facilitate release of wall materials. Overhead utilities and vent ducts have hot particles. It is difficult to quantify the extent of wall contamination due to the existence of hot particles. Cost-benefit analysis of attempts to partially decontaminate the walls is recommended. Overhead items must be removed and decontaminated prior to any dismantlement due to number of hot particles detected. Refer to S1 - S28 for description of remaining equipment and the likelihood of releasing the equipment. Generally, a large portion of the machine shop equipment may be releasable after decontamination efforts, though this will be extremely intensive. The ventilation duct will need sampling for SNM prior to dismantlement due to the ^{235}U found in 108A and operational history of the room. Historical reports suggested probable subsurface contamination due to a 108 & 108A subsurface trench but no positive results were indicated in any of the four concrete cores. It is recommended that additional sampling of trench should be taken during D&D phase.

3.11.13. 108A, Machine Shop Weld Area

3.11.13.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	19	floor tile	2/24	2 K	600 K
East Wall	10	painted cement plaster on cinder block	0/18	< 1 K	< 1 K
West Wall	10	painted cement plaster on cinder block	0/14	< 1 K	< 1 K
North Wall	28	painted cement plaster on cinder block	0/47	< 1 K	< 1 K
South Wall	26	painted drywall on steel studs	0/39	< 1 K	15 K
Ceiling	19	painted steel	0/30	< 1 K	< 1 K
Comments: see radiological exceptions list numbers 120, 121, 122, 123, 124, & 125 and remarks R1 - R12. For description of remaining equipment and contamination levels on equipment, see S1 - S4. Room had several hot particles in overhead utilities and ventilation duct. Area of the stairs had 220 dpm/100 cm^2 alpha. Direct frisk with portable alpha detector had levels of 5,000 - 35,000 dpm per probe area.					

3.11.13.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-230-CH	23O-94-122-CH	0.74 ^{134}Cs, 40.0 ^{137}Cs, 10.5 ^{60}Co, 3.25 ^{235}U
floor: concrete beneath 23O-94-122-CH	23C-94-230-CH	158 ^{137}Cs, 5.79 ^{60}Co
floor: floor tile above 23C-94-231-CH	23O-94-123-CH	4.19 ^{137}Cs, 3.41 ^{60}Co
floor: concrete beneath 23O-94-123-CH	23C-94-231-CH	4.52 ^{137}Cs
floor: floor tile above 23C-94-232-CH	23O-94-124-CH	8.04 ^{137}Cs, 8.94 ^{60}Co
floor: concrete beneath 23O-94-124-CH	23C-94-232-CH	3.11 ^{137}Cs
floor: floor tile above 23C-94-233-CH	23O-94-125-CH	1.49 ^{134}Cs, 26.9 ^{137}Cs, 7.95 ^{60}Co
floor: concrete beneath 23O-94-125-CH	23C-94-233-CH	29.8 ^{137}Cs, 1.60 ^{60}Co
floor: floor tile above 23C-94-234-CH	23O-94-126-CH	1.46 ^{134}Cs, 152 ^{137}Cs, 94.9 ^{60}Co, 46.6 ^{235}U, 1.02 ^{241}Am
floor: concrete beneath 23O-94-126-CH	23C-94-234-CH	159 ^{137}Cs, 19.4 ^{60}Co, 28.2 ^{235}U
floor: 1/8" - 1/4" depth, surface sample 23C-94-234-CH	23C-94-235-CH	51.7 ^{137}Cs, 2.49 ^{60}Co, 4.58 ^{235}U
floor: 350 K hot particle	23HP-94-013-CH	910 pCi ^{154}Eu, 230 pCi ^{134}Cs, 6806 pCi ^{137}Cs
floor: 600 K hot particle	23HP-94-014-CH	1084 pCi ^{154}Eu, 1284 pCi ^{134}Cs, 109000 pCi ^{137}Cs
floor: core 1B, concrete sample, near stairs, 0 - 0.5" depth	23C-94-117-CH	1.734 ^{137}Cs
floor: core 1B, concrete sample, near stairs, 0.5 - 1" depth	23C-94-118-CH	no peaks
floor: core 1B, soil sample, near stairs, 4 - 24" depth	23S-94-100-CH	0.51 $^{233/234}$U, 0.26 ^{235}U, 0.46 ^{238}U
floor: core 1B, concrete sample, near stairs, 24 - 25" depth	23C-94-119-CH	no peaks
floor: core 1B, concrete sample, near stairs, 31 - 32" depth	23C-94-120-CH	no peaks
floor: core 1B, soil sample, near stairs, 32 - 36" depth	23S-94-101-CH	no peaks
floor: core 1B, soil sample, near stairs, 36 - 40" depth	23S-94-102-CH	no peaks
E. wall:	23C-94-241-CH	22.3 ^{137}Cs, 4.28 ^{60}Co
E. wall: re-sample 2 meters above 23C-94-241-CH	23C-95-374-CH	no peaks
E. wall: re-sample near S. wall.	23C-95-375-CH	no peaks
W. wall: below penetration	23C-94-236-CH	no peaks
W. wall: around water pipe	23C-94-237-CH	no peaks
N. wall:	23C-94-238-CH	no peaks
N. wall:	23C-94-239-CH	1.65 ^{137}Cs
N. wall:	23C-94-240-CH	16.3 ^{95}Nb
N. wall: re-sample 2 meters above 23C-94-239-CH	23C-95-373-CH	no peaks
N. wall: re-sample 2.7 meters above floor	23C-95-372-CH	no peaks
S. wall:	23O-94-127-CH	44.3 ^{137}Cs, 3.97 ^{60}Co
S. wall:	23O-94-128-CH	1.14 ^{137}Cs
S. wall:	23O-94-129-CH	2.97 ^{134}Cs, 1500 ^{137}Cs, 23.3 ^{60}Co
S. wall: re-sample 3 meters from floor, W. end	23O-95-192-CH	no peaks
S. wall: re-sample 0.5 meters above left of 23O-94-128-CH	23O-95-193-CH	no peaks

3.11.13.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-67 – A-73

3.11.13.4. Remaining Equipment

See S1 - S4 on supplement sheets. A total of 4 pieces of equipment are currently in the room. However, Health Physics personnel are currently surveying and attempting to release the equipment as time permits during characterization activities. The supplement sheets state the contamination levels for each piece of equipment and based upon process

knowledge and type of equipment, describe the likelihood of being able to free release each piece of equipment.

3.11.13.5. Evaluation/Summary

The top 0.4" of the entire floor will require removal, using methods such as scabbling. The surface of the lower portion of the walls will need to be removed, using methods such as scabbling, and some of the drywall on the south wall will need to be disposed as radioactive waste. ^{235}U was detected by the stairs and floor drain and the floor drain is clogged. This may indicate possible subsurface contamination, however, core samples only showed positive results at the top 0.4" of the floor surface. Historical reports suggested subsurface contamination due to a 108 & 108A subsurface trench but no positive results were indicated in any of the four concrete cores and therefore it is recommended that additional sampling should be taken during D&D phase. The ventilation duct will need to be sampled for SNM prior to dismantlement.

3.11.14. 109, Physical Test Lab/ESTES Lab

3.11.14.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	24	painted concrete	6/25	18 K	40 K
East Wall	16	concrete block with painted plaster	0/8	< 1 K	< 1 K
West Wall	26	painted drywall	0/9	< 1 K	< 1 K
North Wall	24	concrete block with painted plaster	0/12	< 1 K	< 1 K
South Wall	24	concrete block with painted plaster	0/16	< 1 K	< 1 K
Ceiling	24	painted steel deck	see 100E		
Comments: see radiological exceptions list numbers 100, 101, & 107 and remark R1. The tritium fume hood is still used and additional surveying will be necessary.					

3.11.14.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor:	23C-94-214-CH	1.36 ^{134}Cs, 157 ^{137}Cs, 4.61 ^{60}Co
floor:	23C-94-215-CH	1.99 ^{134}Cs, 404 ^{137}Cs, 12.6 ^{60}Co
floor:	23C-94-216-CH	4.13 ^{134}Cs, 193 ^{137}Cs, 4.95 ^{60}Co
floor:	23C-94-217-CH	1.17 ^{134}Cs, 84.2 ^{137}Cs, 2.18 ^{60}Co
floor:	23C-94-218-CH	1.61 ^{134}Cs, 158 ^{137}Cs, 8.63 ^{60}Cs
E. wall: painted plaster over cinder block	23O-94-106-CH	no peaks
E. wall: re-sample 2 meters from floor near N. wall	23O-95-199-CH	no peaks
W. wall:	23O-94-103-CH	no peaks
W. wall: re-sample 2.8 meters off floor	23O-95-196-CH	no peaks
N. wall: painted plaster over cinder block	23O-94-107-CH	no peaks
N. wall: re-sample 2 meters off floor, near hood	23O-95-197-CH	no peaks
N. wall: re-sample 0.5 meters off the floor, below 23O-95-197-CH	23O-95-198-CH	0.72 ^{137}Cs, 0.39 ^{60}Co
S. wall: painted plaster	23O-94-104-CH	no peaks
S. wall	23O-94-105-CH	0.67 ^{137}Cs
S. wall: re-sample 2.8 meters off floor	23O-95-194-CH	no peaks
S. wall: re-sample above entrance to 119	23O-95-195-CH	no peaks

3.11.14.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-74 – A-77

3.11.14.4. Remaining Equipment

a. fume hood
b. temporary Storage Accumulation Area (SAA)

3.11.14.5. Evaluation/Summary

The surface of the floor will need to be removed, using methods such as scabbling. The contamination levels behind the fume hood are unknown; therefore, this location has been placed on the radiological exceptions list. Only 1 out of 5 initial wall samples had a positive result which indicates a need for limited removal of the wall surfaces, using methods such as scabbling. Further evaluation of the walls is recommended before free releasing the walls.

3.11.15. 111, Service Gallery

3.11.15.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	72	Painted Concrete	69/80	280 K	bkg
East Wall	60	Painted Cinder Block	8/66	10 K	bkg
West Wall	38	Painted Cinder Block	16/60	12 K	bkg
North Wall	30	Painted Cinder Block	15/57	6 K	bkg
South Wall	40	Painted Plaster	24/56	23 K	bkg
Ceiling	75	Steel deck			
Comments: see radiological exceptions list numbers 152 - 158 and remarks R1 - R3. Hot particle 1 mR/hr, 68 mrad/hr. Dose rates over pit in excess of 100 mrem/hr. Because of the radiation levels the room, direct frisk measurements could not see the 1000 dpm/pa levels. Therefore, if the direct frisk measurement did not see any activity on the wall above the already high background, "bkg" is reported.					

3.11.15.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: 1/2" - 3/4"	23C-95-315-CH	0.51 ^{134}Cs, 11.2 ^{137}Cs, 1.30 ^{60}Co
floor: 1/2" - 3/4", between trolley tracks	23C-95-316-CH	28.7 ^{241}Am, 5.72 ^{134}Cc, 1103 ^{137}Cs, 57.1 ^{60}Co
floor: 1/2" - 3/4"	23C-95-317-CH	3.03 ^{134}Cs, 15.6 ^{137}Cs, 1.87 ^{60}Co
Hot particle	23HP-95-021-CH	1 mR/hr, 68 mrad/hr
E. wall: 2 meters off floor	23C-95-309-CH	4.12 ^{137}Cs, 1.04 ^{60}Co
E. wall: 0.5 meters off floor	23C-95-308-CH	11.0 ^{137}Cs, 3.10 ^{60}Co
E. wall: 2 meters off floor	23C-95-307-CH	25.0 ^{137}Cs, 12.6 ^{60}Co
E. wall: 0.5 meters off floor	23C-95-306-CH	40.5 ^{137}Cs, 16.3 ^{60}Co
W. wall:	23C-95-312-CH	4.11 ^{137}Cs, 1.91 ^{60}Co
W. wall:	23C-95-313-CH	15.1 ^{137}Cs, 14.9 ^{60}Co
W. wall: above Decontamination Room	23C-95-314-CH	6.19 ^{137}Cs, 1.43 ^{60}Co
W. wall:	23C-95-310-CH	2.19 ^{137}Cs, 2.16 ^{60}Co
floor: core 5, concrete sample, loading dock, 0 - 0.5" depth	23C-94-132-CH	10.8 ^{134}Cs, 295 ^{137}Cs, 10.5 ^{60}Co
floor: core 5, concrete sample, loading dock, 0.5 - 1" depth	23C-94-133-CH	no peaks
floor: core 5, concrete, near loading dock, 12.5 - 13.5" depth	23C-94-134-CH	no peaks
floor: core 5, soil sample, loading dock, 13.5 - 22" depth	23S-94-110-CH	no peaks
floor: core 5, soil sample, loading dock, 27 - 46" depth	23S-94-111-CH	no peaks
floor: core 6, concrete sample, SE corner, 0 - 0.5" depth	23C-94-135-CH	14.8 ^{134}Cs, 139 ^{137}Cs, 0.63 ^{60}Co
floor: core 6, concrete sample, SE corner, 0.5 - 1" depth	23C-94-136-CH	0.126 ^{137}Cs
floor: core 6, concrete sample, SE corner, 11.5 - 12.5" depth	23C-94-137-CH	no peaks
floor: core 6, soil sample, SE corner, 12.5 - 21" depth	23S-94-112-CH	0.104 ^{134}Cs, 0.161 ^{137}Cs
floor: core 6, soil sample, SE corner, 21 - 30" depth	23S-94-113-CH	0.146 ^{134}Cs, 0.302 ^{137}Cs
N. wall:	23C-95-304-CH	23.2 ^{137}Cs, 17.3 ^{60}Co
N. wall:	23C-95-305-CH	5.77 ^{137}Cs, 4.95 ^{60}Co
N. wall:	23C-95-311-CH	1.59 ^{137}Cs, 2.66 ^{60}Co
S. wall:	23O-95-175-CH	1.18 ^{137}Cs
S. wall:	23O-95-176-CH	1.87 ^{137}Cs, 1.03 ^{60}Co

3.11.15.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-78 – A-83

3.11.15.4. Remaining Equipment

3.11.15.5. Evaluation/Summary

The contamination levels for subsurface soil at core location 6 increases with depth. Additional subsurface sampling (2 locations) in adjacent Room 118 suggests a broad lateral extent of low-level subsurface soil contamination below the Service Gallery also. Concrete floors will require scabbling to at least 1" depth. Walls, with the exception of the south wall, are composed of concrete/cinderblock. All wall samples were contaminated. Scabbling will be required on concrete walls if remediation is to be performed. Due to the magnitude of affected wall area, a cost-benefit evaluation is recommended prior to initiating remediation.

3.11.16. 112, Metallography Cell

The Metallography Cell has been included on the radiological exceptions list (Table 3-6), Section 3.12, due to the dose rates and expected contamination levels inside the room. It is certain that the entire interior contents will be disposed of as radioactive waste. Concrete and subsurface cores were taken around the cell and the results indicate that soil contamination is extremely likely at the north end of the cell. The contamination is from irradiated fuel sample preparation, i.e., grinding, etc., for the metallograph. The isotopes expected are similar to the rest of the HCF.

3.11.17. 113, Low-Level Cell

The LLC has been included on the radiological exceptions list (Table 3-6), Section 3.12, due to the dose rates and contamination levels inside the room. The steel plates for the low-level cell floor, walls, and ceiling will be disposed of as radioactive waste. Review of HCF drawings and records strongly suggests subsurface contamination within the concrete. The extent of the contamination will have to be determined during D&D activities. It is highly probable that up to 1" of wall and ceiling concrete behind the steel plates will need scabbling and disposal as radioactive waste. This is likely to be adversely affected by any penetrations that were added after initial operation of the HCF. Penetrations after initial construction are likely to be contaminated for their entire length. Concrete and subsurface cores were taken around the cells and the results indicate soil contamination is certain below the LLC. Based upon all core results, either the Decontamination Room or LLC is the probable source for much of the subsurface soil contamination and the depth of the contamination is unknown. Survey results from the cell lead penetrations stored in the storage shed would indicate that the inside of the penetrations are most likely contaminated. Further sampling will be necessary during D&D phase. The contamination in the LLC for the most part has come from the HLC. The isotopes expected are similar to the rest of the HCF.

3.11.18. 115, High-Level Cell

The HLC has also been placed on the radiological exceptions list (Table 3-6), Section 3.12, due to the dose rates and contamination levels inside the room. The steel plates for the HLC floor, walls, and ceiling will be disposed of as radioactive waste. It is highly probable that up to 1" of the walls, floor, and ceiling concrete behind the steel plates will need to be removed, using methods such as scabbling, and disposal as radioactive waste. The extent of contaminants may have been adversely affected by a full cell decontamination performed in 1978. Past HCF D&D Projects have encountered similar findings. Concrete and subsurface cores were taken around the cells and the results indicate that soil contamination below the HLC is unlikely. However, based on process knowledge, there still exists the

potential for soil contamination just below the concrete floor foundation of the HLC. Previously, contamination was detected in soil up to 18 ft. below grade level. It is likely that construction/installation of storage wells moved activity into subsurface soils. Review of historical HP records indicate that surveys in hole in HLC showed a 10 mR/hr gamma area in wall of hole at approximately 8 ft. below floor. Interviews with personnel who worked at the HCF during the installation of the LLC & HLC below-ground storage wells believe the contamination entered the storage well from the cell floor. With little or no introduction of water into the storage wells, little migration of the contaminants should have occurred, though the storage well depth is up to 18 ft. Survey results from the cell lead penetrations stored in the storage shed would indicate that the inside of the penetrations are most likely contaminated. Further sampling will be necessary during D&D phase. The HLC is the source for almost all of the contamination in the rest of the HCF. The cell was used for the destructive examination of irradiated specimens and fuel. The floor and walls are contaminated with fuel and metal "dust" from the cutting operations performed in the HLC. The isotopes expected are similar to the rest of the HCF.

3.11.19. 114, Hydraulic Pump Room

3.11.19.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	15	painted concrete slab	15/15	60 K	see comments
East Wall	24	painted cinder block	9/9	1 K	see comments
West Wall	24	painted steel plate	12/12	1 K	see comments
North Wall	19	steel stud with cement plaster	9/12	8 K	see comments
South Wall	10	painted high density concrete	15/15	3 K	see comments
Steel Deck	15	steel	0/3	< 1 K	see comments
Comments: see radiological exceptions list number 92 and remarks R1 - R9. Approximately 4 m^2 of the approximate floor area is from the topside of exterior high level cell door. Smears from topside were up to 20 K dpm/100 cm^2 smearable and 40 mrad/hr. The floor had one location reading up to 40 mrad/hr and the remaining floor fixed readings were not greater than the general area dose rates.					

3.11.19.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor:	23C-94-187-CH	26.3 ^{134}Cs, 21.1 ^{137}Cs, 0.52 ^{60}Co
floor: 1" below 23C-94-187-CH	23C-94-187A-CH	2984 ^{134}Cs, 2497 ^{137}Cs, 54.7 ^{60}Co
floor:	23C-94-188-CH	2042 ^{134}Cs, 1614 ^{137}Cs, 70.6 ^{60}Co
floor:	23C-94-189-CH	2057 ^{134}Cs, 23,700 ^{137}Cs, 911 ^{60}Co
floor:	23C-94-190-CH	3504 ^{134}Cs, 16,110 ^{137}Cs, 614 ^{60}Co
floor: core 9, concrete sample, in hallway, 0 - 0.5" depth	23C-94-141-CH	26.7 ^{134}Cs, 1106 ^{137}Cs, 38.6 ^{60}Co
floor: core 9, concrete sample, in hallway, 0.5 - 1" depth	23C-94-142-CH	1.134 ^{137}Cs
floor: core 9, concrete sample, in hallway, 11.6 - 12" depth	23C-94-143-CH	0.074 ^{137}Cs
floor: core 9, soil sample, in hallway, 12 - 20" depth	23S-94-118-CH	0.354 ^{134}Cs, 0.326 ^{137}Cs
floor: core 9, soil sample, in hallway, 20 - 27" depth	23S-94-119-CH	2.061 ^{134}Cs, 1.624 ^{137}Cs
topside of exterior high level cell door cavity	23C-94-179-CH	29.3 ^{154}Eu, 31.1 ^{125}Sb, 63.8 ^{134}Cs, 3115 ^{137}Cs, 68.3 ^{60}Co
floor: hot particle	23HP-94-008-CH	^{137}Cs, ^{60}Co, ^{241}Am (^{241}Pu) - can't quantify
E. wall:	23C-94-182-CH	1.02 ^{137}Cs, 1.80 ^{60}Co
E. wall:	23C-94-181-CH	0.61 ^{137}Cs, 1.35 ^{60}Co
E. wall: re-sample higher up the wall	23C-95-376-CH	no peaks
W. wall: high density concrete	23C-94-180-CH	0.51 ^{137}Cs
W. wall: high density concrete	23C-94-185-CH	0.63 ^{134}Cs, 3.06 ^{137}Cs, 1.17 ^{60}Co
W. wall: re-sample 3 meters up the wall	23C-95-377-CH	0.20 ^{137}Cs
N. wall: painted plaster	23O-94-091-CH	0.85 ^{134}Cs, 2.11 ^{137}Cs
N. wall: painted plaster	23O-94-092-CH	1.04 ^{137}Cs
N. wall: re-sample 3 meters up the wall	23O-95-200-CH	no peaks
S. wall: high density concrete	23C-94-183-CH	no peaks
S. wall: high density concrete	23C-94-184-CH	0.55 ^{134}Cs, 0.80 ^{137}Cs
S. wall: high density concrete	23C-94-186-CH	1.16 ^{137}Cs, 0.57 ^{60}Co
S. wall: re-sample 3 meters up the wall	23C-95-378-CH	0.27 ^{134}Cs (not likely correct)

3.11.19.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-84 – A-88

3.11.19.4. Remaining Equipment—all equipment is contaminated and is unlikely to be free released.

a. two pump motors that operate high level cell door
b. misc. electrical panels, switches on wall

3.11.19.5. Evaluation/Summary

Sample results clearly indicate that all room surfaces will require removal, using methods such as scabbling, and disposal as radioactive waste. The extent of the wall contamination should be limited to the first 1/4" depth due to high density concrete used. Concrete cores indicate that the floor is contaminated to at least 1" and subsurface soil contamination exists. The soil activity levels increase in depth with the deepest sample at 27" from floor surface. Adjacent room subsurface cores and explorations indicate that it is likely that low-level contamination exists in subsurface soils below this room.

3.11.20. 116, Plutonium Lab/X-Ray Room

3.11.20.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	18	floor tile	12/12	3 K	100 K
East Wall	15	painted cinder block	2/16	3 K	30 K
West Wall	15	painted steel plate	0/15	< 1 K	see comments
North Wall	7	painted high density concrete with rock	0/3	< 1 K	see comments
South Wall	7	painted plaster with steel studs	0/9	< 1 K	see comments
Ceiling	18	painted steel deck	0/2 LAS	< 1 K	see comments
Comments: see radiological exceptions list numbers 108, 109, 110 & 111 and remarks R1 - R3. Background levels were between < 0.2 - 0.8 mR/hr which made it difficult to determine if fixed contamination existed on the walls. Areas behind fume hood are currently inaccessible to obtain sample media and the contamination levels and dose rates are considerably higher than were expected. A water spill allowed migration of water from the Decontamination Room (Room 118) to enter LLC and HLC and also enter this room and the adjacent areas. The fume hood should eventually be moved from the wall so further samples may be obtained to determine the cause of elevated rad levels. Baseboards were not removed due to the likelihood of hot particles. The entire floor is covered with herculite, due to a water incident, to allow access to Hot Cell yard and thus only six locations were chosen for taking sample media. All floor smears had positive results and it was deemed unnecessary to select more smear locations since it can be concluded that the entire floor has smearable contamination.					

3.11.20.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: tile above 23C-94-222-CH	23O-94-117-CH	441 ^{134}Cs, 325 ^{137}Cs, 16.8 ^{60}Co
floor: concrete beneath 23O-94-117-CH	23C-94-222-CH	10.3 ^{134}Cs, 39.9 ^{137}Cs, 4.20 ^{60}Co
floor: tile above 23C-94-220-CH	23O-94-115-CH	145 ^{134}Cs, 121 ^{137}Cs, 2.37 ^{60}Co
floor: concrete beneath 23O-94-115-CH	23C-94-220-CH	26.9 ^{134}Cs, 25.6 ^{137}Cs
floor: tile above 23C-94-219-CH	23O-94-121-CH	172 ^{134}Cs, 134 ^{137}Cs, 3.33 ^{60}Co
floor: concrete beneath 23O-94-121-CH	23C-94-219-CH	5.38 ^{134}Cs, 18.6 ^{137}Cs
floor: tile above 23C-94-221-CH	23O-94-116-CH	293 ^{134}Cs, 236 ^{137}Cs, 376 ^{60}Co
floor: concrete beneath 23O-94-116-CH	23C-94-221-CH	2.09 ^{134}Cs, 15.8 ^{137}Cs, 0.38 ^{60}Co
floor: core 10, concrete sample, at fume hood, 0 - 0.5" depth	23C-94-169-CH	0.243 ^{134}Cs, 11.0 ^{137}Cs, 0.352 ^{60}Co, 0.51 $^{233/234}U$, 0.26 ^{235}U, 0.46 ^{238}U
floor: core 10, concrete sample, at fume hood, 0.5 - 1" depth	23C-94-170-CH	1.15 ^{137}Cs, 0.10 ^{60}Co
floor: core 10, concrete sample, at fume hood, 1.1 - 1.5" depth	extra sample provided by YAEL	0.089 ^{137}Cs
floor: core 10, soil sample, at fume hood, 6 - 12" depth	23S-94-136-CH	1.07 $^{233/234}U$
floor: core 10, soil sample, at fume hood, 12 - 18" depth	23S-94-137-CH	no peaks
floor: core 10, soil sample, at fume hood, 18 - 28" depth	23S-94-138-CH	no peaks
floor: core 10, soil sample, at fume hood, 32 - 37" depth	23S-94-139-CH	no peaks
floor: core 10, soil sample, at fume hood, 37 - 45" depth	23S-94-140-CH	no peaks
floor: core 12, outside yard at Pu tank area, 16 - 30" depth	23S-94-141-CH	no peaks
floor: core 12, outside yard at Pu tank area, 30 - 35" depth	23S-94-142-CH	4.356 ^{137}Cs, 1.087 ^{60}Co, 9.15 $^{233/234}U$, 0.51 ^{235}U, 1.63 ^{238}U

Location & Remarks	Sample ID	Results (pCi/g)
floor: core 12, water sample from hole, service water leak	23O-94-168-CH	no peaks
floor: core C-3, concrete sample, SE corner, 0 - 0.5" depth	23C-94-161-CH	243 ^{134}Cs, 341 ^{137}Cs, 2.18 ^{60}Co
floor: core C-3, concrete sample, SE corner, 0.5 - 1" depth	23C-94-162-CH	0.18 ^{134}Cs, 2.75 ^{137}Cs, 2.18 ^{60}Co
floor: core C-3, concrete sample, SE corner, 1.1- 1.5" depth	extra sample provided by YAEL	0.103 ^{137}Cs
floor: core C-3, soil sample, SE corner, 6 - 12" depth	23S-94-125-CH	0.53 $^{233/234}$U
floor: core C-3, soil sample, SE corner, 12 - 20" depth	23S-94-126-CH	no peaks
floor: core C-3, soil sample, SE corner, 20 - 24" depth	23S-94-127-CH	no peaks
floor: core C-3, soil sample, SE corner, 28 - 35" depth	23S-94-128-CH	no peaks
floor: core C-3, soil sample, SE corner, 35 - 38" depth	23S-94-129-CH	no peaks
floor: core GA-1 12"- 18 " sample	23S-95-174-CH	0.23 ^{60}Co
floor: core GA-1 48"- 54 " sample	23S-95-175-CH	No Peaks
E. wall:	23C-94-223-CH	0.3 ^{137}Cs
E. wall:	23C-94-224-CH	no peaks
E. wall: re-sample 2 meters from floor, near 23C-94-223-CH	23C-95-366-CH	no peaks
E. wall: re-sample 2 meters from floor, near door	23C-95-367-CH	no peaks
E. wall: re-sample 2 meters from floor, above 23C-94-224-CH	23C-95-368-CH	no peaks
S. wall: painted plaster	23O-94-112-CH	no peaks
S. wall: re-sample below old manipulator opening	23O-95-189-CH	no peaks

3.11.20.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-89 – A-93

3.11.20.4. Remaining Equipment

a. fume hood

3.11.20.5. Evaluation/Summary

Areas around and behind baseboards were not sampled due to the strong possibility of exposing hot particles. This room was affected by flooding that originated in the Decontamination Room that also migrated into the HLC and LLC. Dose rates and contamination levels are higher than expected behind fume hood and the cause is unknown. Results indicate that at least the lower 3" of wall, floor tile, and concrete floor is contaminated to at least 1" depth. All subsurface soil taken during core sampling had no positive results. Subsurface soil cores did not yield positive radiological results, but subsurface samples taken at the X-Ray Room to Pump Room door and to the north of the outside double doors were positive, suggesting limited potential for low-level radioactive contamination in some areas.

3.11.21. 116A, Plutonium Lab/X-Ray Room Mezzanine

3.11.21.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	18	corrugated steel deck	0/24	15 K/LAS	100k
East Wall	18	painted cinder block	0/18	< 1 K	1 K
West Wall	18	painted concrete (bottom 1/3) & painted steel (top 2/3)	0/18	< 1 K	1 K
North Wall	4	painted concrete	0/10	4 K/LAS	< 1 K
South Wall	9	painted plaster	0/9	< 1 K	< 1 K
Steel Deck	18	steel	0/41	1 K/LAS	< 1 K
Comments: see radiological exceptions list numbers 93, 94, 95, 96, 97, 98 & 99 and remarks R1 - R8. All smear results were less than release limits but Large Area Smear (LAS) found positive results. Some hot particles were found and sent for isotopic analysis.					

3.11.21.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: hot particle	23HP-94-009-CH	^{134}Cs, ^{137}Cs, ^{60}Co, ^{241}Am (^{241}Pu) - can't quantify
floor: hot particle	23HP-94-010-CH	^{154}Eu, ^{134}Cs, ^{137}Cs - can't quantify
E. wall:	23C-94-193-CH	0.32 ^{137}Cs
E. wall:	23C-94-192-CH	no peaks
E. wall:	23C-94-191-CH	no peaks
E. wall: re-sample at 23C-94-193-CH	23C-95-379-CH	no peaks
E. wall: re-sample near south wall near floor	23C-95-380-CH	no peaks
W. wall:	23O-94-096-CH	no peaks
W. wall:	23O-94-097-CH	1.02 ^{134}Cs, 2.39 ^{137}Cs
W. wall:	23C-94-194-CH	no peaks
W. wall:	23C-94-195-CH	no peaks
N. wall:	23C-94-196-CH	3.80 ^{137}Cs
S. wall:	23O-94-093-CH	no peaks
S. wall:	23O-94-094-CH	3.21 ^{137}Cs, 0.87 ^{60}Co
S. wall:	23O-94-095-CH	0.45 ^{137}Cs
S. wall: re-sample to quantify extent, near 23O-94-093-CH	23O-94-201-CH	no peaks

3.11.21.3. Grid Map and Supplement Sheets

See Appendix A, Pages A94 – A-99

3.11.21.4. Remaining Equipment

a. This room currently has approximately 10 bags of small material that is being retained for the operations group.

3.11.21.5. Evaluation/Summary

The floor is corrugated steel with minimum loose surface contamination, but with several areas with fixed contamination. Using an abrasive decontamination technique and possibly minor cutting around seam areas, the floor should eventually be able to be free released. The surfaces of the north and south walls will require removal, using methods such as scabbling. The west wall will require removal of contaminated paint from the steel plate. Cinder block appears to have no contamination. Based upon use of room, it is possible to find some minor surface contamination within two of the penetration openings. The east wall has some minor contamination at the lower 2 - 4".

3.11.22. Hallway (HA)

3.11.22.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	4	floor tile	1/3	5 K	150 K
East Wall	4	painted cinder block	0/3	< 1 K	< 1 K
West Wall	2	painted plaster	0/3	< 1 K	< 1 K
North Wall	7	painted plaster and steel studs	0/7	< 1 K	< 1 K
South Wall	9	painted drywall	0/9	< 1 K	< 1 K
Ceiling	4	painted steel deck	0	< 1 K/LAS	< 1 K
Comments: see radiological exceptions list numbers 112 & 113, and remarks R1 & R2. Due to a spill, the floor is covered with herculite to allow access to Hot Cell yard. Hot particles are certain behind baseboards and between floor tiles.					

3.11.22.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: floor tile above 23C-94-225-CH	23O-94-118-CH	6.62 ^{134}Cs, 4.84 ^{137}Cs
floor: concrete beneath 23O-94-118-CH	23C-94-225-CH	no peaks
floor: floor tile above 23C-94-226-CH	23O-94-119-CH	48.0 ^{134}Cs, 39.6 ^{137}Cs, 2.53 ^{60}Co
floor: concrete beneath 23O-94-119-CH	23C-94-226-CH	1.10 ^{134}Cs, 0.71 ^{137}Cs
floor: floor tile above 23C-94-227-CH	23O-94-120-CH	464 ^{134}Cs, 377 ^{137}Cs, 4.22 ^{60}Co
floor: concrete beneath 23O-94-120-CH	23C-94-227-CH	25.8 ^{134}Cs, 22.0 ^{137}Cs
E. wall:	23C-94-228-CH	no peaks
E. wall:	23C-94-229-CH	no peaks
N. wall:	23O-94-114-CH	no peaks
S. wall: at wall seam	23O-94-113-CH	no peaks

3.11.22.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-100 – A-102

3.11.22.4. Remaining Equipment

none

3.11.22.5. Evaluation/Summary

The floor tile, surfaces of concrete, and the bottom 6" of the walls are contaminated and will need to be disposed of as radioactive waste. Hot particles are certain behind baseboards and if there exists any cracks or seams between floor/wall junction, water would have seeped into subsurface. The upper portion of the walls appear to have no contamination.

3.11.23. 117, Tool Room

3.11.23.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	9	floor tile	2/18	25 K	120 K
East Wall	8	painted cinder block	0/9	< 1 K	< 1 K
West Wall	7	painted drywall	0/9	< 1 K	< 1 K
North Wall	7	painted drywall	0/9	< 1 K	< 1 K
South Wall	7	painted cinder block	0/9	< 1 K	< 1 K
Ceiling	9	steel paneled	0/12	< 1 K	< 1 K
Comments: see radiological exceptions list number 40 and remarks R1 - R5. North side of floor has had standing contaminated water in the past and is posted as a contaminated area. Many hot particles were detected in the north, northeast side of the floor.					

3.11.23.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: concrete beneath 23O-94-037-CH, in contaminated area	23C-94-049-CH	2.1 ^{134}Cs, 2.7 ^{137}Cs
floor: floor tile above 23C-94-049-CH, in contaminated area	23O-94-037-CH	100.9 ^{134}Cs, 111.4 ^{137}Cs, 25.0 ^{60}Co
floor: floor tile bordering steel plate	23O-94-041-CH	3.3 ^{134}Cs, 2.73 ^{137}Cs, 1.02 ^{60}Co
floor: concrete beneath steel plate	23C-94-052-CH	no peaks
floor: concrete beneath 23O-94-036-CH	23C-94-050-CH	no peaks
floor: floor tile above 23C-94-050-CH	23O-94-036-CH	no peaks
floor: SW corner - Resample	23C-95-353-CH	no peaks
E. wall: re-sample near floor, north end	23C-95-333-CH	no peaks
E. wall: re-sample near floor, south end	23C-95-335-CH	0.85 ^{137}Cs
E. wall: re-sample 1.5 meters off floor	23C-95-334-CH	no peaks
W. wall: drywall at floor, wall, door frame junction	23O-94-034-CH	no peaks
W wall: re-sample, 1.5 meters off floor	23O-95-180-CH	no peaks
N. wall: drywall	23O-94-035-CH	no peaks
N. wall: drywall above 23O-94-037-CH, in contaminated area	23O-94-040-CH	6.73 ^{134}Cs, 6.08 ^{137}Cs
N wall: re-sample of drywall between O-035 and O-037	23O-95-181-CH	no peaks
N. wall: re-sample at 2 meters off floor	23O-95-182-CH	no peaks
S. wall: painted cinder block	23C-94-051-CH	no peaks
S. wall: re-sample near the floor	23C-95-336-CH	no peaks

3.11.23.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-103 – A-106

3.11.23.4. Remaining Equipment

a. wood cabinet
b. wood door

3.11.23.5. Evaluation/Summary

The floor tiles, 1/4" of concrete surface, and the lower 6" of the north wall is contaminated and will need to be disposed of as radioactive waste. Upper wall samples had no peaks and thus it is likely that the contamination is restricted to the lower portion of the north wall. The remaining floor area may have undetected hot particles since floor tile around steel plate had positive peaks yet the concrete had none.

3.11.24. 117A, Tool Room Mezzanine

3.11.24.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	18	steel decking	0/24	< 1 K	< 1 K
East Wall	13	painted cinder block	0/14	< 1 K	< 1 K
West Wall	4	acoustical panels	0/4	< 1 K	< 1 K
North Wall	12	painted plaster with steel mesh screen	0/12	< 1 K	< 1 K
South Wall	12	painted cinder block	0/12	< 1 K	< 1 K
Steel Deck	18	steel	0/20	< 1 K	< 1 K
Comments: see radiological exceptions list number 58 and remarks R1 & R2. No hot particles detected with LAS.					

3.11.24.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
E. wall: painted cinder block	23O-94-043-CH	no peaks
N. wall: painted plaster	23C-94-062-CH	no peaks
S. wall: painted cinder block	23C-94-061-CH	no peaks

3.11.24.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-107 – A-109

3.11.24.4. Remaining Equipment

none

3.11.24.5. Evaluation/Summary

All survey data from the room had no detectable contamination, however, this room was used to store radioactive material and further surveying on corrugated steel floor seams in a low background area would be recommended prior to free releasing material.

3.11.25. 118, Decontamination Room

3.11.25.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	14	concrete	5/15	100 K	bkg
East Wall	7	masonry with cement plaster	3/10	3 K	bkg
West Wall	7	concrete covered by steel	12/16	120 K	bkg
North Wall	13	masonry with cement plaster	7/15	5 K	bkg
South Wall	13	part with masonry with cement plaster & part with concrete covered by steel	8/18	17 K	bkg
Ceiling	14	steel covered with cement plaster	10/26	42 K	bkg
Comments: see radiological exceptions list numbers 141, 142, 143, & 144 and remarks R1 - R7. Several hot particles were found and smears from the floor were taken under the herculite. A Visual inspection of the floor drain suggests that cracks may exist between the drain and surrounding concrete. Several LAS were taken and all had positive results. Because of the radiation levels in the room, direct frisk measurements could not see the 1000 dpm/pa levels. Therefore, if the direct frisk measurement did not see any activity on the wall above the already high background, "bkg" is reported.					

3.11.25.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: 0 - 1/8" depth	23C-94-282-CH	1085 ^{134}Cs, 16250 ^{137}Cs, 613 ^{60}Co
floor: 1/4" - 1/2" depth	23C-94-283-CH	18.9 ^{134}Cs, 360 ^{137}Cs, 20.9 ^{60}Co
floor:	23C-94-284-CH	2.33 ^{154}Eu, 67.6 ^{134}Cs, 3320 ^{137}Cs, 413 ^{60}Co
floor: core 8, concrete sample, between tracks, 0 - 0.5" depth	23C-94-138-CH	103 ^{134}Cs, 8672 ^{137}Cs, 309 ^{60}Co
floor: core 8, concrete sample, between tracks, 0.5 - 1" depth	23C-94-139-CH	0.08 ^{134}Cs, 2.56 ^{137}Cs, 1.26 ^{60}Co
floor: core 8, concrete sample, between tracks, 12 - 13" depth	23C-94-140-CH	0.357 ^{137}Cs
floor: core 8, soil sample, between tracks, 13 - 24" depth	23S-94-114-CH	0.207 ^{137}Cs
floor: core 8, soil sample, between tracks, 24 - 34" depth	23S-94-115-CH	0.727 ^{137}Cs
floor: core 8, soil sample, between tracks, 34 - 39" depth	23S-94-116-CH	no analysis performed, only 4 g of soil available, rest was rock
floor: core 8, soil sample, between tracks, 39 - 46" depth	23S-94-117-CH	0.308 ^{134}Cs, 4.84 ^{137}Cs, 0.252 ^{60}Co
floor: core GA-2 6"- 12 " sample	23S-95-191-CH	0.98 ^{137}Cs, 0.37 ^{60}Co, 0.11 ^{134}Cs
floor: core GA-2 12"- 18 " sample	23S-95-192-CH	0.82 ^{137}Cs, 0.20 ^{60}Co
floor: core GA-2 18"- 24 " sample	23S-95-193-CH	0.50 ^{137}Cs
floor: core GA-2 24"- 30 " sample	23S-95-194-CH	0.18 ^{137}Cs
floor: core GA-2 30"- 36 " sample	23S-95-195-CH	0.41 ^{137}Cs, 0.09 ^{60}Co
floor: core GA-2 36"- 42 " sample	23S-95-196-CH	0.52 ^{137}Cs, 0.22 ^{60}Co
floor: core GA-2 42"- 48 " sample	23S-95-197-CH	0.57 ^{137}Cs, 0.12 ^{60}Co
N. wall:	23O-94-162-CH	2.07 ^{137}Cs, 3.29 ^{60}Co
N. wall:	23O-94-163-CH	1.52 ^{134}Cs, 16.9 ^{137}Cs, 51.2 ^{60}Co
S. wall:	23O-94-164-CH	3.40 ^{137}Cs, 1.73 ^{60}Co
S. wall: 0 - 1/8" depth	23O-94-165-CH	1.48 ^{241}Am, 3.02 ^{154}Eu, 120 ^{134}Cs, 689 ^{137}Cs, 345 ^{60}Co
S. wall: concrete at 1/8" - 1/4" depth at 23O-94-165-CH location	23C-94-285-CH	139 ^{134}Cs, 552 ^{137}Cs, 68.9 ^{60}Co
Ceiling:	23O-94-166-CH	0.99 ^{60}Co
Ceiling: hot particle	23HP-94-018-CH	105000 pCi ^{137}Cs, 3232 pCi ^{60}Co
Ceiling: hot particle	23HP-94-019-CH	1090 pCi ^{134}Cs, 6855 pCi ^{137}Cs, 3731 pCi ^{60}Co

3.11.25.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-110 – A-113

3.11.25.4. Remaining Equipment

3.11.25.5. Evaluation/Summary

The surface of all walls will require removal, using methods such as scabbling. Concrete floor is contaminated is through entire depth. Subsurface soil is also contaminated with an activity profile that increases with depth until a hard layer is reached. Based upon all core results, it appears that the source for the subsurface soil contamination is either from the LLC or Decontamination Room. A visual examination of the floor drain suggests that the

seal around the drain and concrete may have cracks and water may have migrated into the subsurface soil.

3.11.26. 119, ESTES Effluent System

3.11.26.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	12	painted concrete	5/15	4 K	bkg
East Wall	0	111, Service Gallery entrance	0	NA	bkg
West Wall	15	painted dry wall and wood studs	4/20	7 K	bkg
North Wall	24	painted cinder block	10/23	3 K	bkg
South Wall	24	lower 2/3 painted steel upper 1/3 painted concrete	25/40	24 K	bkg
Ceiling	12	steel deck	1/2	1 K	bkg
Comments: see radiological exceptions list numbers 149, 150, & 151 and remarks R1- R6. Hot particles were found. Several LAS were taken on walls and all had positive results, up to 40 K dpm/100 cm^2. Direct frisk inside the manipulator storage holes on the west wall had 100 K dpm/pa - 200 K dpm/pa. One smear from the south wall has 100 dpm/100 cm^2 alpha.					

3.11.26.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: 2000 cpm by north wall	23C-94-294-CH	3.57 ^{134}Cs, 1709 ^{137}Cs, 34.8 ^{60}Co
floor: 0 - 1/8" deep by met cell	23C-94-295-CH	1322 ^{137}Cs, 57.7 ^{60}Co
floor: 1/4 - 1/2" deep by met cell	23C-94-296-CH	90.5 ^{137}Cs, 4.69 ^{60}Co
floor: inside west door	23C-94-297-CH	13.8 ^{134}Cs, 1463 ^{137}Cs, 22.1 ^{60}Co
floor:	23C-94-298-CH	1.00 ^{134}Cs, 456 ^{137}Cs, 21.3 ^{60}Co
W. wall: near floor	23O-94-172-CH	24.5 ^{137}Cs, 17.2 ^{60}Co
W. wall: 2.5 meters from the floor	23O-94-173-CH	2.96 ^{137}Cs, 1.31 ^{60}Co
W. wall: 3.8 meters from the floor	23O-94-174-CH	9.57 ^{137}Cs, 1.55 ^{60}Co
N. wall: footing for wall	23C-94-299-CH	165 ^{137}Cs, 61.1 ^{60}Co
N. wall:	23C-94-300-CH	30.6 ^{137}Cs, 14.1 ^{60}Co
N. wall: inside opening in cinderblock wall	23C-94-301-CH	255 ^{137}Cs, 35.8 ^{60}Co
N. wall: below duct	23C-94-302-CH	2.86 ^{137}Cs, 0.72 ^{60}Co
N. wall:	23C-94-303-CH	4.62 ^{137}Cs, 1.42 ^{60}Co
S. wall: hot particle from top of Met cell door	23HP-94-020-CH	^{137}Cs, ^{60}Co detected but not quantified

3.11.26.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-114 – A-117

3.11.26.4. Remaining Equipment

3.11.26.5. Evaluation/Summary

The concrete floor surfaces show extensive contamination in all locations sampled. Re-sampling of this area to establish depth of contaminant penetration will be performed to determine depth of concrete removal required during decontamination. All samples of north (cinder block) and west (drywall) walls were positive at all heights tested. Manipulator repair activities are the probable cause of the fixed radiological contamination throughout the room. Removal of drywall and extensive scabbling of painted cinder block will be required. These efforts should not be undertaken until after all items are removed from the Metallography Cell and initial decontamination of the cell is completed.

3.11.27. 120, ESTES Sample Preparation

3.11.27.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	15	concrete	1/19	4 K	180 K
East Wall	14	painted drywall	4/24	7 K	200 K
West Wall	11	painted cinder block	4/28	2 K	100 K
North Wall	27	painted cinder block	1/45	4 K	3 mR/hr
South Wall	19	painted plaster	1/33	1 K	15 K
Ceiling	15	steel deck	2/32	2 K	100 K
Comments: see radiological exceptions list numbers 102, 103, 104, 105, & 106 and remarks R1 - R8. Several hot particles were found, highest 300 K dpm. East wall penetrations had 20 K dpm - 200 K dpm.					

3.11.27.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor:	23C-94-208-CH	1.31 ^{134}Cs, 216 ^{137}Cs, 11.4 ^{60}Co
floor: paint sample above 23C-94-208-CH	23O-94-109-CH	23.5 ^{134}Cs, 348 ^{137}Cs, 52.4 ^{60}Co
floor:	23C-94-207-CH	196 ^{137}Cs, 4.46 ^{60}Co
floor: paint sample above 23C-94-207-CH	23O-94-108-CH	15.9 ^{134}Cs, 394 ^{137}Cs, 109 ^{60}Co
floor:	23C-94-210-CH	36.7 ^{137}Cs, 0.93 ^{60}Co
floor: paint sample above 23C-94-212-CH	23O-94-111-CH	10.4 ^{134}Cs, 128 ^{137}Cs, 41.4 ^{60}Co, 38.1 ^{94}Nb
floor:	23C-94-212-CH	0.66 ^{134}Cs, 29.4 ^{137}Cs, 3.20 ^{60}Co
floor:	23O-94-101-CH	2.14 ^{134}Cs, 33.3 ^{137}Cs, 8.21 ^{60}Co
floor:	23C-94-209-CH	0.74 ^{134}Cs, 90.8 ^{137}Cs, 1.08 ^{60}Co
floor: paint sample above 23C-94-209-CH	23O-94-110-CH	14.2 ^{134}Cs, 113 ^{137}Cs, 21.7 ^{60}Co
floor: 300 K hot particle	23HP-94-011-CH	^{154}Eu, ^{134}Cs, ^{137}Cs, ^{60}Co - can't quantify
floor: 110 K hot particle	23HP-94-012-CH	^{134}Cs, ^{137}Cs, ^{144}Ce - can't quantify
floor: core GA-3 6"- 12 " sample	23S-95-176-CH	0.17 ^{137}Cs
floor: core GA-3 12"- 18 " sample	23S-95-177-CH	No Peaks
floor: core GA-3 18"- 24 " sample	23S-95-178-CH	No Peaks
floor: core GA-3 24"- 30 " sample	23S-95-179-CH	No Peaks
floor: core GA-3 30"- 36 " sample	23S-95-180-CH	No Peaks
floor: core GA-3 36"- 42 " sample	23S-95-181-CH	No Peaks
floor: core GA-3 42"- 48 " sample	23S-95-182-CH	0.11 ^{137}Cs
floor: core GA-3 48"- 54 " sample	23S-95-183-CH	0.08 ^{137}Cs
E. wall:	23O-94-098-CH	13.2 ^{137}Cs, 2.59 ^{60}Co
W. wall:	23O-94-100-CH	3.41 ^{137}Cs, 1.27 ^{60}Co
W. wall:	23C-94-213-CH	0.43 ^{137}Cs, 2.63 ^{60}Co
N. wall:	23C-94-211-CH	1.13 ^{137}Cs, 0.63 ^{60}Co
S. wall:	23O-94-102-CH	0.66 ^{137}Cs
ceiling: paint from the top of duct	23O-94-099-CH	89.3 ^{137}Cs, 9.74 ^{60}Co

3.11.27.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-118 – A-122

3.11.27.4. Remaining Equipment

a. wood work bench
b. door to operating gallery

3.11.27.5. Evaluation/Summary

All of the walls have hot particles, loose and fixed contamination. All surfaces will need to be removed throughout room, using methods such as scabbling. The room has many penetrations and inaccessible items that are listed as radiological exceptions that will require additional surveying. A potential exists that some penetrations will have contamination throughout penetration opening.

3.11.28. Corridor/Ladies Change Room

3.11.28.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	15	concrete with multiple layers of paint	0/23	< 1 K	see comments
East Wall	48	painted plaster	0/33	< 1 K	see comments
West Wall	48	painted cinder block	0/31	< 1 K	see comments
North Wall	5	none, direct entrance to 120	0/2	< 1 K	see comments
South Wall	5	painted plaster & cement	0/6	< 1 K	see comments
Ceiling	15	acoustical tile	0/23	< 1 K	< 1 K
Steel Deck	15	steel	0		
Comments: see radiological exceptions list numbers 13, 49, 50, 51, 52 & 53 and remarks R1 - R4. The floor and lower 12" of walls are covered with several layers of paint, numerous hot particles and fixed contamination.					

3.11.28.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: concrete at floor/wall junction	23C-94-034-CH	0.58 ^{134}Cs, 22.2 ^{137}Cs, 18.5 ^{60}Co
floor: re-sample below 23C-94-034-CH	23C-95-362-CH	2.12 ^{137}Cs, 0.60 ^{60}Co
floor: re-sample beneath the re-sample of 23C-94-034-CH	23C-95-363-CH	no peaks
floor: concrete at floor/wall junction	23C-94-035-CH	27.7 ^{134}Cs, 784 ^{137}Cs, 13.0 ^{60}Co
floor: re-sample below 23C-94-035-CH	23C-95-364-CH	0.32 ^{134}Cs, 8.71 ^{137}Cs, 0.81 ^{60}Co
floor: re-sample beneath the re-sample of 23C-94-035-CH	23C-95-365-CH	2.88 ^{137}Cs
floor: concrete at floor/wall junction	23C-94-037-CH	2.9 ^{134}Cs, 53.9 ^{137}Cs, 21.4 ^{60}Co
floor: concrete next to conduit trench	23C-94-039-CH	1.6 ^{137}Cs
E. wall: painted plaster	23O-94-028-CH	2.72 ^{137}Cs
E. wall: re-sample at waist level by LCR	23O-95-187-CH	no peaks
E. wall: re-sample at waist level by LCR	23O-95-188-CH	0.30 ^{137}Cs
E. wall: painted plaster	23O-94-029-CH	0.63 ^{137}Cs
E. wall: re-sample above 23O-94-029-CH at waist level	23O-95-185-CH	no peaks
E. wall: re-sample above 23O-94-029-CH near drop ceiling	23O-95-186-CH	no peaks
W. wall: painted cinder block	23C-94-033-CH	no peaks
W. wall: painted cinder block with liquid stains/discoloration	23C-94-036-CH	0.6 ^{60}Co
W. wall: re-sample 0.5 meters above 23C-94-036-CH	23C-95-361-CH	no peaks
W. wall: re-sample 1 meter below 23C-94-036-CH	23C-95-360-CH	no peaks
W. wall: re-sample 2 meters from floor by 121 entrance	23C-95-359-CH	no peaks
W. wall: painted cinder block	23C-94-038-CH	no peaks
N. wall: painted drywall	23O-94-031-CH	no peaks
S. wall: painted plaster	23O-94-030-CH	no peaks

3.11.28.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-123 – A-126

3.11.28.4. Remaining Equipment

a. sealed source cabinet

3.11.28.5. Evaluation/Summary

The floor and lower 6 - 12" of the walls have several layers of paint that have numerous hot particles and contamination fixed within the paint. This area will require at least 1/2 - 1" of the concrete to be removed, using methods such as scabbling. The operating gallery conduit trench extends into the ladies change room and was not evaluated since the metal cover could not be removed, but results from operating gallery trench had positive results.

3.11.29. 121, Boiler/Utility Room

3.11.29.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	38	concrete slab	0/47	< 1 K	< 1 K
East Wall	31	unpainted cinder block	0/21	< 1 K	< 1 K
West Wall	31	unpainted cinder block	0/19	< 1 K	< 1 K
North Wall	24	painted cement plaster	0/18	< 1 K	< 1 K
South Wall	24	unpainted cinder block	0/18	< 1 K	< 1 K
Ceiling	38	steel deck	0/16	< 1 K	< 1 K
Comments: see radiological exceptions list numbers 2, 3, 4, 5, 6, 7, 8 & 42 and remarks R1.					

3.11.29.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: at old entrance	23C-94-041-CH	1.4 ^{137}Cs
floor: at old entrance	23C-94-042-CH	13.7 ^{137}Cs
floor: at old entrance	23C-94-043-CH	4.1 ^{137}Cs
floor: at entrance to room	23C-94-040-CH	0.5 ^{137}Cs
floor: asphalt just outside entrance to room	23BL-94-002-CH	0.59 ^{137}Cs
floor: re-sample left of entrance	23C-95-381-CH	1.42 ^{137}Cs, 1.10 ^{60}Co
floor: re-sample right of entrance	23C-95-382-CH	no peaks
floor: re-sample near north wall	23C-95-384-CH	no peaks
floor: re-sample near south east corner	23C-95-383-CH	no peaks
E. wall: re-sample near door knob	23C-95-385-CH	no peaks
W. wall: cinder block at bolt hole	23C-94-044-CH	no peaks

3.11.29.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-127 – A-130

3.11.29.4. Remaining Equipment

a. refer to the radiological exceptions list numbers referenced in comments section of the D/I survey results table for the number of inaccessible electrical panels, ventilation duct, motors, etc.

3.11.29.5. Evaluation/Summary

Large sections of the concrete floor have positive sample results and it appears that the entire surface layer of the floor will have to be removed, using methods such as scabbling. An asphalt sample taken just outside the entrance had positive results and thus some of the surrounding asphalt may have to be disposed as radioactive waste. Many large pieces of equipment have been listed on the radiological exceptions list that will require additional surveying to be free released.

3.11.30. 122, Manipulator Repair Room

3.11.30.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level mrem/hr (γ) & mrad/hr (β)
Floor	12	painted concrete & steel sump pit	12/12	220 K	100 - gamma 2800 - beta
East Wall	16	painted drywall	9/14	8 K	30 - gamma
West Wall	16	painted plaster, steel plate & glass window	13/14	12 K	10 - gamma
North Wall	13	painted plaster over concrete block	10/10	10 K	10 - gamma
South Wall	13	painted plaster over concrete block	9/11	20 K	10 - gamma
Ceiling	12	steel deck	0		
Comments: see radiological exceptions list numbers 114, 115, 116, 117, 118 & 119 and remarks R1 & R2. The room was decontaminated extensively prior to characterization. General area dose rates range from 2.5 - 15 mR/hr and an area over the floor sump pit has dose rates up 100 mrem/hr and 2800 mrad/hr. Note that values in last column are in mrem/hr (γ) and mrad/hr (β) and not dpm/PA.					

3.11.30.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor:	23C-94-265-CH	14.6 ^{134}Cs, 1019 ^{137}Cs, 61.6 ^{60}Co
floor:	23C-94-266-CH	4.36 ^{134}Cs, 369 ^{137}Cs, 138 ^{60}Co
floor:	23C-94-267-CH	65.2 ^{134}Cs, 4319 ^{137}Cs, 7113 ^{60}Co, 35.3 ^{154}Eu
floor:	23C-94-268-CH	5.42 ^{134}Cs, 419 ^{137}Cs, 21.0 ^{60}Co
floor: pit area debris	23O-94-147-CH	5729 ^{134}Cs, 85220 ^{137}Cs, 5126 ^{60}Co, 48.2 ^{95}Nb, 200 ^{154}Eu, 13.2 ^{241}Am, probable ^{125}Sb
floor: core 4, concrete sample, center of room, 0 - 0.5" depth	23C-94-129-CH	1.97 ^{134}Cs, 327 ^{137}Cs, 25.7 ^{60}Co
floor: core 4, concrete sample, center of room, 0.5 - 1" depth	23C-94-130-CH	no peaks
floor: core 4, concrete sample, center of room, 15 - 16" depth	23C-94-131-CH	no peaks
floor: core 4, soil sample, center of room, 16 - 24" depth	23S-94-108-CH	no peaks
floor: core 4, soil sample, center of room, 24 - 35" depth	23S-94-109-CH	0.197 ^{137}Cs
E. wall:	23O-94-148-CH	3.73 ^{137}Cs, 0.74 ^{60}Co
N. wall: re-sample to quantify extent	23O-95-202-CH	0.53 ^{137}Cs, 1.56 ^{60}Co
S. wall: seam/painted plaster	23O-94-145-CH	2.49 ^{137}Cs, 1.18 ^{60}Co
S. wall: painted plaster	23O-94-146-CH	14.4 ^{137}Cs, 22.3 ^{60}Co

3.11.30.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-131 – A-134

3.11.30.4. Remaining Equipment

All equipment listed is highly contaminated and decontamination efforts may not be cost effective:

a. three manipulator arms
b. small wooden shelf and steel table
c. sink
d. drop lights in ceiling
e. ventilation duct
f. couple of small shelves
g. see exceptions list due to misc. conduit, electrical boxes, supports, etc.

3.11.30.5. Evaluation/Summary

All room surfaces will require removal, using methods such as scabbling, and remaining equipment decontaminated extensively or disposed of as radioactive waste. Experience suggests that the ceiling is contaminated; the ceiling was not accessed during characterization due to safety concerns. Concrete contamination extended to 0.5" depth, but was clean beyond this depth. Subsurface contamination was detected in the 24" - 35" depth, but not at 16" - 24" depth (concrete extent was 0" - 16" depth). Additional exploration at the doorway between Room 120 and Room 109 also showed contamination, though of lesser degree, from 48" - 60" depth. These results suggest that activity has been migrating below the HCF.

3.11.31. Storage Shed

3.11.31.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	36	unpainted concrete slab	4/58	20 K	3 K
East Wall	15	unpainted sheet metal	0/18	< 1 K	< 1 K
West Wall	15	unpainted sheet metal	0/9	< 1 K	< 1 K
North Wall	17	unpainted sheet metal	0/15	< 1 K	< 1 K
South Wall	17	unpainted sheet metal	0/18	< 1 K	< 1 K
Ceiling	36	unpainted sheet metal	0/2	< 1 K	< 1 K
Comments: see radiological exceptions list numbers 9, 10, 54, 55, 56, 57 & 59 and remarks R1 - R4. Loose contamination was found on top of the wooden rack holding contaminated lead penetrations for high and low level cells. No loose contamination was detected on the concrete floor.					

3.11.31.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor: at entrance	23C-94-060-CH	2.6 ^{137}Cs
floor: asphalt from just outside the entrance	23BL-94-010-CH	6.49 ^{137}Cs, 1.17 ^{60}Co
floor: in front of the contaminated rack	23C-94-057-CH	8.6 ^{134}Cs, 23.1 ^{137}Cs
floor: at surface crack in the concrete	23C-94-058-CH	2.3 ^{137}Cs
floor: foam insulation between floor and wall	23O-94-042-CH	184 ^{137}Cs, 17.1 ^{60}Co
floor:	23C-94-059-CH	1.1 ^{134}Cs, 4.9 ^{137}Cs

3.11.31.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-135 – A-137

3.11.31.4. Remaining Equipment

NOTE: The storage shed is used for temporary storage of materials and equipment and thus this list may change

a. wooden rack with lead penetrations from HLC & LLC
b. 2 metal shelves with plywood planks (one disassembled)
c. portable HEPA unit
d. three barrels of lead bricks (barrels are scheduled to be moved to another GA building)
e. 2 shipping cask
f. 3 old contaminated air samplers
g. 1 contaminated chair
h. 1 contaminated metal bag rack
i. misc. scrap metal and items on metal shelf

3.11.31.5. Evaluation/Summary

The surface of the concrete floor and the foam that is between concrete foundation and metal shed is contaminated. Isolated areas of fixed contamination were found on the disassembled metal shelf and plywood planks stored in the shed. The wooden rack holding the lead cell penetrations is highly contaminated and plastic wrapping material is deteriorating and caution should be used when removing penetrations. In addition, several small mice were found in this area and rattlesnakes have been observed in the past. A shipping cask is on a wooden skid and is posted as contaminated and no survey was performed inside cast. An asphalt sample from outside entrance had positive results.

3.11.32. Roof

3.11.32.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	693	loose gravel, asphalt roofing & insulation and steel deck under insulation	0/58	< 1 K	4 K
Comments: see radiological exceptions list numbers 60, 61, 62 & 65 and remarks R1 - R3.					

3.11.32.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
top layer of gravel above 23O-94-084-CH	23O-94-055-CH	10.9 ^{137}Cs, 1.40 ^{60}Co
roof material beneath 23O-94-055-CH	23O-94-084-CH	3.45 ^{137}Cs, 1.99 ^{60}Co
top layer of gravel	23O-94-047-CH	10.2 ^{137}Cs, 1.70 ^{60}Co, 0.59 ^{234}Th
roof material at stack exhaust	23O-94-085-CH	43.2 ^{137}Cs, 12.1 ^{60}Co
unpainted cinder block	23C-94-064-CH	30.8 ^{137}Cs, 20.9 ^{60}Co
top layer of gravel above 23O-94-080-CH	23O-94-044-CH	48.7 ^{137}Cs, 1.52 ^{60}Co
roof material beneath 23O-94-044-CH	23O-94-080-CH	38.1 ^{137}Cs, 3.09 ^{60}Co
top layer of gravel above 23O-94-081-CH	23O-94-046-CH	28.4 ^{137}Cs, 0.90 ^{60}Co
roof material beneath 23O-94-046-CH	23O-94-081-CH	11.7 ^{137}Cs, 5.03 ^{60}Co
top layer of gravel above 23O-94-077-CH	23O-94-048-CH	8.89 ^{137}Cs
roof material beneath 23O-94-048-CH	23O-94-077-CH	3.33 ^{137}Cs, 2.51 ^{60}Co
top layer of gravel above 23O-94-078-CH	23O-94-049-CH	8.94 ^{137}Cs
roof material beneath 23O-94-049-CH	23O-94-078-CH	0.84 ^{137}Cs
roof material beneath gravel	23O-94-079-CH	1.27 ^{137}Cs
roof material beneath gravel	23O-94-074-CH	no peaks
re-sample of roof material between O-074 & O-075	23O-95-206-CH	no peaks
re-sample of roof gravel between O-074 & O-075	23O-95-207-CH	2.18 ^{137}Cs
top layer of gravel	23O-94-052-CH	8.08 ^{137}Cs, 1.76 ^{60}Co
top layer of gravel	23O-94-053-CH	3.72 ^{137}Cs, 0.66 ^{60}Co
top layer of gravel above 23O-94-083-CH	23O-94-050-CH	3.45 ^{137}Cs
roof material beneath 23O-94-050-CH	23O-94-083-CH	0.56 ^{137}Cs
top layer of gravel above 23O-94-082-CH	23O-94-051-CH	2.14 ^{137}Cs
roof material beneath 23O-94-051-CH	23O-94-082-CH	1.58 ^{137}Cs
roof material beneath gravel	23O-94-075-CH	26.8 ^{60}Co
top layer of gravel above 23O-94-076-CH	23O-94-054-CH	1.89 ^{137}Cs
roof material beneath 23O-94-054-CH	23O-94-076-CH	no peaks
top layer of gravel	23O-94-045-CH	32.8 ^{137}Cs, 1.12 ^{60}Co
vegetation from gutter	23V-94-001-CH	1.15 ^{137}Cs
vegetation from gutter	23V-94-002-CH	3.38 ^{137}Cs, 4.25 ^{60}Co
vegetation from gutter	23V-94-003-CH	3.31 ^{137}Cs, 6.56 ^{60}Co
vegetation from gutter	23V-94-004-CH	0.84 ^{134}Cs, 5.92 ^{137}Cs, 7.01 ^{60}Co

3.11.32.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-138 – A-140

3.11.32.4. Remaining Equipment

Refer to the radiological exceptions list numbers listed in the comments section of the D/I survey results table.

3.11.32.5. Evaluation/Summary

The entire roofing material contains licensed material; this includes loose gravel, asphalt roofing material and insulation. All four vegetation samples taken from drain gutters had positive results.

3.11.33. Exterior

3.11.33.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
East Wall	171	unpainted concrete cinder block	0/19	< 10 K/LAS	< 1 K
West Wall	171	unpainted concrete cinder block	0/21	< 1 K	< 1 K
North Wall	126	unpainted concrete cinder block	0/12	< 1 K	< 1 K
South Wall	126	unpainted concrete cinder block	0/23	< 1 K	< 1 K
Comments: see radiological exceptions list numbers 63, 64, 66, 67, & 77 and remarks on each supplement sheet.					

3.11.33.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
E. wall	23C-94-072-CH	no peaks
E. wall	23C-94-073-CH	no peaks
E. wall	23C-94-074-CH	0.82 ^{60}Co
E. wall: re-sample taken 1 meter above 23C-94-074-CH	23C-95-349-CH	no peaks
E. wall: re-sample taken 1 meter left of 23C-94-074-CH	23C-95-350-CH	1.46 ^{60}Co
E. wall: re-sample 1 meter right of 23C-94-074-CH	23C-95-348-CH	0.31 ^{137}Cs
E. wall: re-sample taken at 23C-94-074-CH	23C-95-347-CH	0.46 ^{137}Cs
E. wall	23C-94-075-CH	no peaks
E. wall	23C-94-095-CH	no peaks
E. wall	23C-94-096-CH	1.30 ^{137}Cs
E. wall: re-sample at 23C-94-096-CH	23C-95-342-CH	0.50 ^{137}Cs
E. wall: re-sample 1 meter above 23C-94-096-CH	23C-95-343-CH	no peaks
E wall. re-sample 1 meter left of 23C-94-096-CH	23C-95-344-CH	no peaks
E wall. re-sample 1 meter below of 23C-94-096-CH	23C-95-345-CH	no peaks
E wall. re-sample at other duct	23C-95-346-CH	no peaks
E. wall	23C-94-097-CH	no peaks
E. wall	23C-94-098-CH	no peaks
W. wall	23C-94-066-CH	no peaks
W. wall	23C-94-069-CH	no peaks
W. wall	23C-94-070-CH	no peaks
W. wall: discoloration in cinder block	23C-94-071-CH	1.3 ^{137}Cs, 1.9 ^{60}Co
W. wall: re-sample 1 meter above 23C-94-071-CH	23C-95-337-CH	2.33 ^{137}Cs, 2.89 ^{60}Co
W. wall: re-sample 1 meter left of 23C-94-071-CH	23C-95-338-CH	no peaks
W. wall: re-sample 1 meter below 23C-94-071-CH	23C-95-339-CH	0.72 ^{60}Co
W. wall: re-sample 1 meter right of 23C-94-071-CH	23C-95-340-CH	1.02 ^{137}Cs, 1.05 ^{60}Co
W. wall: re-sample at 23C-94-071-CH	23C-95-341-CH	0.38 ^{137}Cs, 0.65 ^{60}Co
N. wall	23C-94-065-CH	1.13 ^{137}Cs
N. wall	23C-94-144-CH	0.56 ^{137}Cs
N. wall	23C-94-145-CH	0.38 ^{137}Cs
N. wall	23C-94-146-CH	14.0 ^{137}Cs, 16.4 ^{60}Co
N. wall	23C-94-147-CH	3.24 ^{137}Cs, 1.20 ^{60}Co
N. wall	23C-94-148-CH	1.10 ^{137}Cs, 0.67 ^{60}Co
N. wall	23C-94-149-CH	1.23 ^{137}Cs, 0.84 ^{60}Co
N. wall	23C-94-150-CH	2.48 ^{134}Cs, 31.1 ^{137}Cs, 5.54 ^{60}Co
N. wall	23C-94-151-CH	0.80 ^{137}Cs
S. wall: unpainted cinder block	23C-94-067-CH	0.49 ^{137}Cs
S. wall: re-sample 1 meter right of 23C-94-067-CH	23C-95-393-CH	no peaks
S. wall: re-sample 1 meter above 23C-94-067-CH	23C-95-394-CH	no peaks
S. wall: re-sample 1 meter left 23C-94-067-CH	23C-95-395-CH	no peaks
S. wall: re-sample 1 meter below 23C-94-067-CH	23C-95-396-CH	no peaks
S. wall: re-sample at 23C-94-067-CH	23C-95-392-CH	0.33 ^{137}Cs
S. wall: textured concrete block	23C-94-068-CH	no peaks

3.11.33.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-141 – A-151

3.11.33.4. Remaining Equipment

a. HEPA ventilation unit on the east side that supports the Decontamination Room - contaminated
b. metal "bird cage" ladder for access to roof
c. miscellaneous gas bottles, electrical panels, and storage cabinets on east side
d. metal awning covering old stack monitor and hazardous material SAA

3.11.33.5. Evaluation/Summary

Surfaces of the entire north side wall will require removal, using methods such as scabbling. The Service Gallery doors should be decontaminated to free release levels with abrasive decontamination methods.

3.11.34. 108 Roof and Exterior

3.11.34.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	100	loose gravel, roofing asphalt, insulation and steel deck under insulation	0/20	< 1 K	15 K
East Wall	63	unpainted cinder block	0/8	< 1 K	< 1 K
West Wall	63	unpainted cinder block	0/7	< 1 K	< 1 K
North Wall	40	unpainted cinder block	0/9	< 1 K	< 1 K
South Wall	40	unpainted cinder block	0/4	< 1 K	< 1 K
Comments: see radiological exceptions list numbers 79, 80, 81 & 82 and remark R1.					

3.11.34.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
roof: cinder block	23C-94-078-CH	no peaks
roof: cinder block	23C-94-077-CH	0.68 ^{137}Cs
roof: roof material with hot particle	23O-94-089-CH	628 ^{137}Cs
roof: roof material	23O-94-090-CH	32.5 ^{137}Cs, 50.1 ^{60}Co
roof: top layer of gravel	23O-94-058-CH	5.44 ^{137}Cs, 1.56 ^{60}Co
roof: top layer of gravel above 23O-94-087-CH	23O-94-059-CH	7.58 ^{137}Cs, 7.44 ^{60}Co
roof: roof material beneath 23O-94-059-CH	23O-94-087-CH	2.12 ^{137}Cs, 3.24 ^{60}Co
roof: top layer of gravel above 23O-94-086-CH	23O-94-056-CH	15.0 ^{137}Cs, 8.85 ^{60}Co
roof: roof material beneath 23O-94-056-CH	23O-94-086-CH	1.98 ^{137}Cs, 3.63 ^{60}Co
roof: top layer of gravel above 23O-94-088-CH	23O-94-057-CH	13.4 ^{137}Cs, 19.5 ^{60}Co
roof: roof material beneath 23O-94-057-CH	23O-94-088-CH	3.06 ^{60}Co
roof: cinder block	23C-94-076-CH	no peaks
E. wall	23C-94-099-CH	no peaks
E. wall	23C-94-100-CH	1.92 ^{137}Cs, 4.33 ^{60}Co
E. wall	23C-94-115-CH	0.80 ^{137}Cs
E. wall	23C-94-116-CH	no peaks
E. wall: re-sample to quantify extent	23C-95-351-CH	no peaks
E. wall: re-sample to quantify extent	23C-95-352-CH	no peaks
E. wall: re-sample to quantify extent	23C-95-397-CH	2.77 ^{137}Cs, 1.35 ^{60}Co
E. wall: re-sample to quantify extent	23C-95-398-CH	1.84 ^{137}Cs, 0.87 ^{60}Co
E. wall: re-sample to quantify extent	23C-95-399-CH	no peaks
W. wall	23C-94-082-CH	no peaks
W. wall	23C-94-083-CH	0.36 ^{137}Cs
W. wall: re-sample left of 23C-94-083-CH	23C-95-390-CH	no peaks
W. wall: re-sample right of 23C-94-083-CH	23C-95-391-CH	no peaks
W. wall: re-sample at 23C-94-083-CH	23C-95-389-CH	no peaks
W. wall: at old penetration	23C-94-093-CH	no peaks
W. wall	23C-94-094-CH	no peaks
W. wall	23C-94-109-CH	no peaks
W. wall	23C-94-110-CH	no peaks
N. wall	23C-94-111-CH	1.86 ^{134}Cs, 1.82 ^{134}Cs
N. wall	23C-94-112-CH	1.01 ^{134}Cs, 0.97 ^{137}Cs
N. wall	23C-94-113-CH	1.15 ^{137}Cs
N. wall	23C-94-114-CH	0.93 ^{134}Cs, 1.35 ^{137}Cs
S. wall	23C-94-079-CH	no peaks
S. wall	23C-94-080-CH	no peaks
S. wall	23C-94-081-CH	no peaks

3.11.34.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-152 – A-154

3.11.34.4. Remaining Equipment

none

3.11.34.5. Evaluation/Summary

The 108 roof and north side exterior wall are contaminated. Large portions of the east side are also contaminated from ground level to approximately 9 meters above grade, suggesting need for removal of lower east wall surfaces. Cinder blocks on the roof have no positive results, but additional sampling will be performed prior to free release.

3.11.35. Outside HEPA Unit

3.11.35.1. Grid Map and Supplement Sheets

See Appendix A, Pages A-155 – A-158

3.11.35.2. Evaluation/Summary

The entire HEPA unit is listed as a radiological exceptions list item. Based upon process knowledge and HCF records, the HEPA system has extensive internal contamination. Consideration should be given to volume reduction prior to disposal as radioactive waste or the use of an abrasive decontamination method could probably release the metal as scrap.

3.11.36. Stack Sampling Pit

3.11.36.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	2	unpainted concrete slab	0/2	< 1 K	< 1 K
East Wall	3	unpainted concrete slab	0/2	< 1 K	< 1 K
West Wall	4	unpainted concrete slab	0/2	< 1 K	< 1 K
North Wall	3	unpainted concrete slab	0/2	< 1 K	< 1 K
South Wall	2	unpainted concrete slab	1/6	8 K	< 1 K
Ceiling	1	unpainted concrete slab	0/1	< 1 K	< 1 K
Comments: see radiological exceptions list number 91 and remarks R1 - R6. Room is posted as a confined space.					

3.11.36.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
floor:	23C-94-173-CH	54.5 ^{137}Cs, 17.2 ^{60}Co
floor: 1" below 23C-94-173-CH	23C-94-174-CH	2.29 ^{137}Cs, 1.57 ^{60}Co
floor: miscellaneous debris and dirt from floor	23O-94-069-CH	172 ^{137}Cs, 104 ^{60}Co
W. wall:	23C-94-171-CH	no peaks
N. wall:	23C-94-172-CH	no peaks

3.11.36.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-159 – A-160

3.11.36.4. Remaining Equipment

a. RM12 Ratemeter
b. logarithmic pulse integrator Eberline Model LPI 1A

3.11.36.5. Evaluation/Summary

The room is posted as a confined space. The concrete floor is contaminated and one smear from equipment had 8 K smearable which suggests that the equipment may have internal contamination.

3.11.37. Ventilation Exhaust Pit

3.11.37.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	2	unpainted concrete slab	0	< 1 K	see comments
East Wall	2	unpainted concrete slab	0/3	< 1 K	see comments
West Wall	2	unpainted concrete slab	0/3	< 1 K	see comments
North Wall	4	unpainted concrete slab	0/4	< 1 K	see comments
South Wall	4	unpainted concrete slab	0/4	< 1 K	see comments
lid	2	metal	0	< 1 K	see comments
Comments: see remarks R1 & R2. Room is posted as a confined space. 2 K/LAS was detected on valve and duct. General area dose rates are 5 - 30 mR/hr due to ventilation duct.					

3.11.37.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
soil from drain pit	23S-94-145-CH	3.75 ^{134}Cs, 376 ^{137}Cs, 343 ^{60}Co, 2.25 ^{154}Eu

3.11.37.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-161 – A-162

3.11.37.4. Remaining Equipment

none

3.11.37.5. Evaluation/Summary

No sample of concrete was taken due to process knowledge that pit has contained contaminated water for which gamma scan indicated 0.117 mCi/55 gal drum. Surfaces of concrete will require removal, using methods such as scabbling, and the small pit at the base of the ladder had approximately 6 inches of water which indicates very poor drainage into subsurface soil. HCF drawings show that the pit empties into subsurface soil which may be clay substance to cause such slow drainage. Slow migration of contaminants in the subsurface soils is considered likely and will require attention when this pit is dismantled.

3.11.38. Liquid Waste Vault

3.11.38.1. Direct/Indirect Survey Results

Surface	Approx. Area (m^2)	Construction Material	Smears # Positive/Total	Highest Level dpm/100 cm^2	Highest Level dpm/PA
Floor	0.6	concrete slab	1/1	6 K	see comments
East Wall	0.3	concrete slab	1/1	200 K	see comments
West Wall	0.3	concrete slab	1/1	1 K	see comments
North Wall	0.6	concrete slab	1/1	3 K	see comments
South Wall	0.6	concrete slab	1/1	1 K	see comments
lid	0.6	steel	1/2	2 K	see comments
Comments: see remarks R1, R2 & R3. Dose rate were 10 - 25 mR/hr. Floor had approximately 3" of mud.					

3.11.38.2. Sample Media & Core Results

Location & Remarks	Sample ID	Results (pCi/g)
soil from east end	23S-94-146-CH	36.5 ^{235}U, 12.1 ^{134}Cs, 6958 ^{137}Cs, 10.2 ^{154}Eu, 3697 ^{60}Co, 12.9 ^{241}Am Note large activity of ^{241}Am suggests large activity of ^{241}Pu.
soil from west end	23S-94-147-CH	72.1 ^{235}U, 6.24 ^{134}Cs, 4510 ^{137}Cs, 5.06 ^{154}Eu, 1536 ^{60}Co
breach in asphalt-surface soil	23S-95-206-CH	13.0 ^{235}U, 5.72 ^{134}Cs, 709 ^{137}Cs, 201 ^{60}Co, 2.0 ^{154}Eu, 6.79 ^{241}Am
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Asphalt on surface	23BL-95-036-CH	7.59 ^{235}U, 3.94 ^{134}Cs, 249 ^{137}Cs, 68.3 ^{60}Co
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil below asphalt (6"-12")	23S-95-198-CH	0.24 ^{137}Cs
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (12"-18")	23S-95-199-CH	no peaks
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (18"-24")	23S-95-200-CH	0.09 ^{137}Cs
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (24"-30")	23S-95-201-CH	no peaks
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (30"-36")	23S-95-202-CH	no peaks
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (36"-42")	23S-95-203-CH	no peaks
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (42"-5484")	23S-95-204-CH	no peaks
Core Sample GA-4 taken adjacent to Liquid Waste Drain Line Vault. Soil (48"-54")	23S-95-205-CH	no peaks

3.11.38.3. Grid Map and Supplement Sheets

See Appendix A, Pages A-163

3.11.38.4. Remaining Equipment

a. portion of hot drain line

3.11.38.5. Evaluation/Summary

Concrete will require complete removal, due to extensive contamination. Silt/soil in the pit was extensively contaminated and contained up to 216 µg ^{235}U/g of soil. A core sample taken adjacent to the liquid waste vault showed only trace radioactivity though the overlying asphalt was heavily contaminated. Soil samples taken at a crack in the asphalt approximately 6" away from the core location (and closer to the pit) showed very elevated activity suggesting that this pit had likely filled past capacity at sometime in the past. This area will be further evaluated prior to dismantlement.

3.11.39. Background

3.11.39.1. Sample Media

Location & Remarks	Sample ID	Results (pCi/g)
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-026-CH	6.72 ^{238}U, 6.82 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-027-CH	6.55 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-028-CH	6.66 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-029-CH	5.94 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-030-CH	5.82 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-031-CH	4.86 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-032-CH	4.90 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-033-CH	6.35 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-034-CH	6.36 ^{232}Th recount: 4.63 ^{238}U, 5.64 ^{232}Th
asphalt: see survey map 23-94-611-CH for sample location	23BL-94-035-CH	6.10 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-197-CH	5.02 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-198-CH	3.49 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-199-CH	4.59 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-200-CH	3.36 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-201-CH	5.70 ^{238}U, 4.88 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-202-CH	3.83 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-203-CH	3.48 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-204-CH	5.23 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-205-CH	3.52 ^{232}Th
concrete: see survey map 23-94-610-CH for sample location	23C-94-206-CH	3.89 ^{232}Th
soil: see survey map 23-94-612-CH for sample location, soil was from GA property and appeared to be original and undisturbed soil. After soil was collected, it was determined that the area was recently backfilled . Invalid.	23S-94-148-CH	2.34 ^{238}U, 2.73 ^{232}Th
soil: see survey map 23-94-612-CH for sample location, soil was from GA property and appeared to be original and undisturbed soil. After soil was collected, it was determined that the area was recently backfilled . Invalid.	23S-94-149-CH	1.30 ^{238}U, 2.01 ^{232}Th
soil: see survey map 23-94-612-CH for sample location, soil was from GA property and appeared to be original and undisturbed soil. After soil was collected, it was determined that the area was recently backfilled . Invalid.	23S-94-150-CH	1.33 ^{238}U, 2.27 ^{232}Th
soil: see survey map 23-94-612-CH for sample location, soil was from GA property and appeared to be original and undisturbed soil. After soil was collected, it was determined that the area was recently backfilled . Invalid.	23S-94-151-CH	2.05 ^{238}U, 1.76 ^{232}Th
soil: see survey map 23-94-612-CH for sample location, soil was from GA property and appeared to be original and undisturbed soil. After soil was collected, it was determined that the area was recently backfilled . Invalid.	23S-94-152-CH	1.78 ^{238}U, 2.62 ^{232}Th
soil: see survey map 23-94-612-CH for sample location	23S-94-153-CH	0.22 ^{137}Cs, 1.88 ^{238}U, 2.26 ^{232}Th
soil: see survey map 23-94-612-CH for sample location	23S-94-154-CH	0.16 ^{137}Cs, 1.89 ^{238}U, 2.60 ^{232}Th
soil: see survey map 23-94-612-CH for sample location	23S-94-155-CH	0.21 ^{137}Cs, 1.52 ^{238}U, 2.14 ^{232}Th
soil: see survey map 23-94-612-CH for sample location	23S-94-156-CH	0.16 ^{137}Cs, 2.04 ^{238}U, 2.60 ^{232}Th
soil: see survey map 23-94-612-CH for sample location	23S-94-157-CH	0.20 ^{137}Cs, 1.66 ^{238}U, 2.51 ^{232}Th
soil: see survey map 23-94-646-CH, location 1 at 0 - 6"	23S-94-158-CH	0.15 ^{137}Cs, 1.36 ^{238}U, 1.44 ^{232}Th
soil: see survey map 23-94-646-CH, location 1 at 6 - 12"	23S-94-159-CH	1.76 ^{238}U, 1.67 ^{232}Th
soil: see survey map 23-94-646-CH, location 2 at 0 - 6"	23S-94-160-CH	0.25 ^{137}Cs, 1.68 ^{238}U, 1.80 ^{232}Th
soil: see survey map 23-94-646-CH, location 2 at 6 - 12"	23S-94-161-CH	2.43 ^{238}U, 1.61 ^{232}Th
soil: see survey map 23-94-646-CH, location 3 at 0 - 6"	23S-94-162-CH	0.12 ^{137}Cs, 1.71 ^{238}U, 1.96 ^{232}Th
soil: see survey map 23-94-646-CH, location 3 at 6 - 12"	23S-94-163-CH	1.99 ^{238}U, 1.13 ^{232}Th
soil: see survey map 23-94-646-CH, location 4 at 0 - 6"	23S-94-164-CH	0.19 ^{137}Cs, 1.10 ^{238}U, 1.36 ^{232}Th
soil: see survey map 23-94-646-CH, location 4 at 6 - 12"	23S-94-165-CH	1.10 ^{238}U, 1.21 ^{232}Th
soil: see survey map 23-94-646-CH, location 5 at 0 - 6"	23S-94-166-CH	0.48 ^{137}Cs, 1.32 ^{238}U, 1.80 ^{232}Th
soil: see survey map 23-94-646-CH, location 5 at 6 - 12"	23S-94-167-CH	0.99 ^{238}U, 1.15 ^{232}Th
soil: see survey map 23-94-646-CH, location 6 at 0 - 6"	23S-94-168-CH	0.14 ^{137}Cs, 1.90 ^{238}U, 1.85 ^{232}Th
soil: see survey map 23-94-646-CH, location 6 at 6 - 12"	23S-94-169-CH	1.50 ^{238}U, 1.46 ^{232}Th
soil: see survey map 23-94-646-CH, location 7 at 0 - 6"	23S-94-170-CH	0.10 ^{137}Cs, 1.91 ^{238}U, 1.67 ^{232}Th
soil: see survey map 23-94-646-CH, location 7 at 6 - 12"	23S-94-171-CH	2.74 ^{238}U, 1.81 ^{232}Th
soil: see survey map 23-94-646-CH, location 8 at 0 - 6", soil was from a different location than 1 -7 and did not appear to be original and undisturbed soil. Invalid.	23S-94-172-CH	1.14 ^{238}U, 2.20 ^{232}Th
soil: see survey map 23-94-646-CH, location 8 at 6 - 12"	23S-94-173-CH	1.40 ^{238}U, 2.30 ^{232}Th
soil: see survey map 23-95-00048-CH at 0- 6"	23S-95-184-CH	0.11 ^{137}Cs, 1.58 ^{238}U, 1.58 ^{232}Th
soil: see survey map 23-95-00048-CH at 0- 6"	23S-95-186-CH	0.36 ^{137}Cs, 0.98 ^{238}U, 2.09 ^{232}Th
soil: see survey map 23-95-00048-CH at 0- 6"	23S-95-187-CH	0.20 ^{137}Cs, 1.82 ^{238}U, 1.69 ^{232}Th
soil: see survey map 23-95-00048-CH at 0- 6"	23S-95-189-CH	0.25 ^{137}Cs, 0.89 ^{238}U, 1.61 ^{232}Th
soil: see survey map 23-95-00048-CH at 0- 6"	23S-95-190-CH	0.35 ^{137}Cs, 0.88 ^{238}U, 2.57 ^{232}Th

3.11.39.2. Grid Map and Supplement Sheets

See Appendix A, Pages A-164 – A-167

3.11.39.3. Evaluation/Summary

In performing this background soil study, it proved difficult to locate areas where soils were not disturbed by construction activity in recent history. The study did benefit from nearby parks and preserves for this reason. Background surface soils contained, on average, 0.21 pCi/g ^{137}Cs (±0.2), 1.54 pCi/g ^{238}U (±0.76), and 1.97 pCi/g ^{232}Th (±0.82). Subsurface soil below 6" depth did not demonstrate detectable ^{137}Cs and showed no appreciable deviation in ^{238}U and ^{232}Th concentrations. Soil sampling locations for background soils are shown in Figure 3-3.

3.11.40. ^{90}Sr Wet Chemistry Results

The radiological contaminants at the HCF include a pure beta emitter (^{90}Sr) in significant quantities. This nuclide is detectable in gross β–γ measurements, but cannot be identified by gamma spectroscopy measurements. Gamma spectroscopy measurement is typically used to evaluate bulk materials such as concrete and soil prior to release to unrestricted use. In order to be able to account for ^{90}Sr activity when measuring activity by gamma spectroscopy, a study was done to compare ^{90}Sr activity to ^{137}Cs (^{137}Cs and ^{90}Sr have similar fission yields and physical half-lives) as determined by wet chemistry by Thermo-Analytical (TMA) Inc. The results of these measurements are summarized in Table 3-7 below. More extensive evaluation of soils data will be performed prior to start of HCF dismantlement.

3.12. Radiological Exceptions List

The objective of the characterization survey activities was to determine the extent of radioactive contamination within the HCF and subsurface soil. However, certain areas, due to inaccessibility as known high dose rates were placed on a Radiological Exceptions List (see Table 3-6). This list identifies equipment and locations that were not surveyed during this phase of the project. Since the contamination status cannot be accurately determined, such areas and equipment become Health Physics hold points that must be integrated into the D&D Schedule. Contamination status will then be verified by Health Physics during dismantlement and removed from the Radiological Exceptions List.

The HCF Radiological Exceptions List is comprised of six columns; Room No., Item No., No. of Items, Location and Description, Survey by HP, and To Radwaste. The function of each of these are as follows:

- Room No.—Room number or room acronym identifies item origin.
- Item No.—Each radiological exceptions list item received an unique sequential number. This number may be found on the corresponding room grid map and supplement sheet for additional information.
- No. of Items—For similar items, an estimate was made on the total number. For a large number of similar items, ">1" was used.
- Location & Description—The location and any additional information that could assist in the D&D planning was provided.
- Survey by HP—This column was checked if after further surveying and minor decontamination the item should be released for unrestricted use.
- To Radwaste—This column was checked if after additional surveying and decontamination, the item will probably be contaminated and disposed of as radioactive waste.

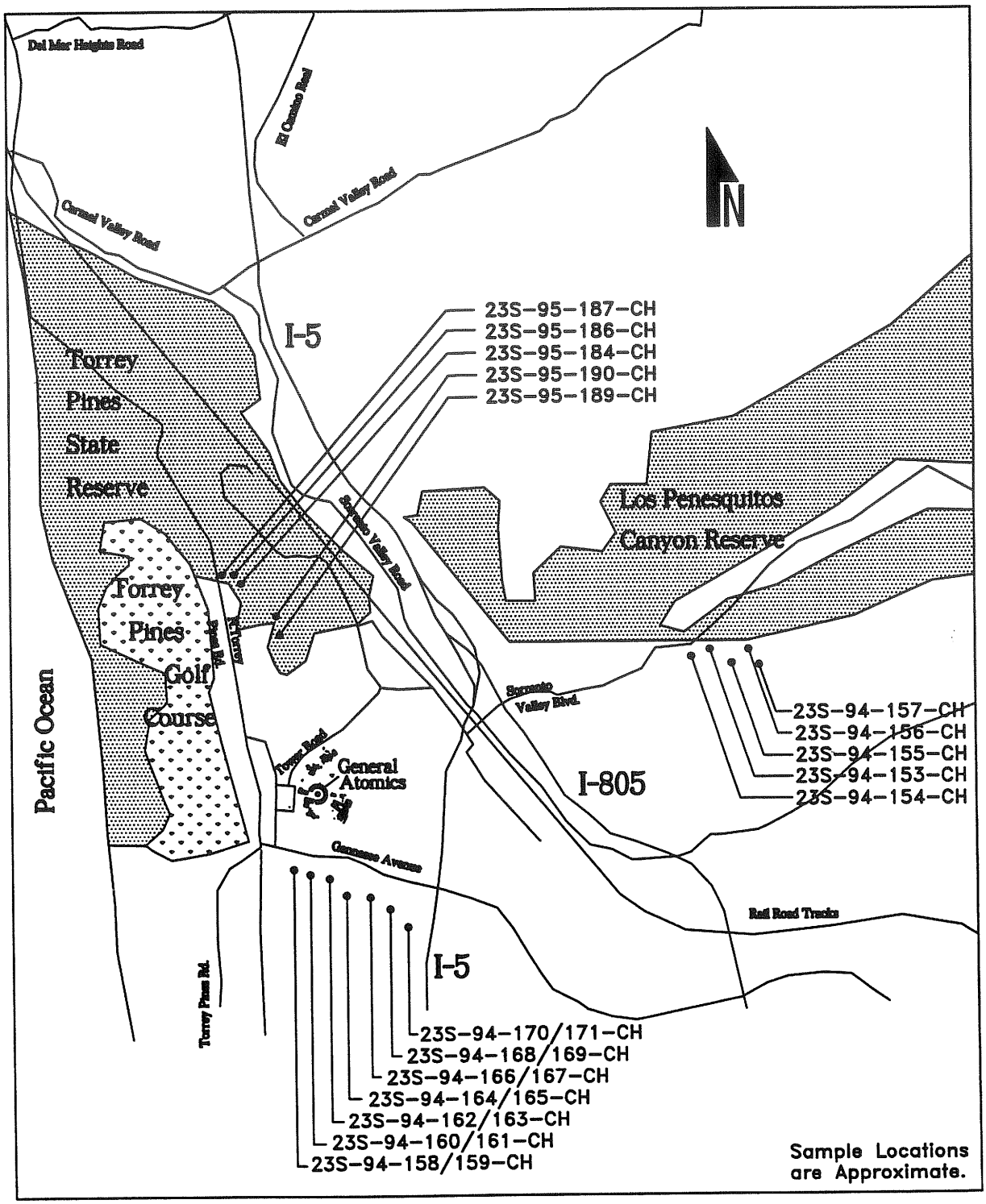


Fig. 3-3—Soil Sampling Locations

Table 3-6—HCF Radiological Exceptions List

Room No.	Item No.	No. of Items	Location & Description	Survey by HP	To Radwaste
Ladies Room	1E	1	drain & access in west wall	X	
121	2E	1	large electrical panel along south wall, approx. 10 ft.^{2}	X	
121	3E	1	internal and top surface of large ventilation duct work traversing ceiling	X	
121	4E	2	air compressors, motor and pump for boiler (under and internal)	X	
121	5E	1	electrical panel (approx. 1 m^2) on wall (behind)	X	
121	6E	1	cabinet mounted to wall (lower east end)	X	
121	7E	1	boiler (internal and beneath) and all associated piping	X	
121	8E	1	bottom of trench (standing oil & water) & possible drain	X	
Storage Shed	9E	1	under, behind, and inside contaminated storage rack	X	X
Storage Shed	10E	1	under and behind shelves up to ceiling	X	X
103	11E	1	steel deck & walls above dropped ceiling and topside of dropped ceiling	X	
102	12E	1	steel deck & walls above dropped ceiling and topside of dropped ceiling	X	
Corridor by Ladies Room	13E	1	walls, topside, and steel deck above suspended ceiling	X	
104	14E	1	area behind plywood on west wall	X	
104	15E	1	area behind phone box	X	
Coffee Room	16E	1	area behind sink	X	
Coffee Room	17E	2	floor and sink drains	X	
104	18E	1	steel deck ceiling and area above suspended ceiling	X	
100	19E	1	steel deck ceiling, wall above drop ceiling and topside of drop ceiling	X	
104	20E	1	added hardboard wall and floor that it is covering	X	
Ladies Room	21E	1	top of dropped ceiling, walls above dropped ceiling & steel deck	X	
Coffee Room	22E	1	top of dropped ceiling, walls above dropped ceiling & steel deck	X	
100	23E	2	east and west walls are post-construction partitions of hardboard & insulation	X	
100	24E	2	junction boxes and associated cable trays running beneath floor	X	
100	25E	1	window frame between window and wall	X	
100	26E	1	ventilation duct work above dropped ceiling	X	
102	27E	1	ventilation duct work above dropped ceiling	X	
102	28E	1	area between wall and floor	X	
102	29E	1	wall is post construction partition made of hardboard & insulation that needs to be surveyed internally and between floor-wall junction	X	
104	30E	1	electrical panel breaker box (inside and behind)	X	
104	31E	3	ceiling vents and ventilation duct work above ceiling	X	
103	32E	1	wall is post construction partition made of hardboard & insulation that needs to be surveyed internally and between floor-wall junction	X	
104	33E	2	area behind display cases	X	
104	34E	1	area covered by shelves	X	
104	35E	23	misc. elect. outlets, boxes, conduit, lights, controls & sensors (walls & ceiling)	X	
104	36E	1	drain clean-out in wall	X	
Men's Room	37E	5	5 drain lines from sink, urinal, 2 toilets and 1 floor drain	X	
Men's Room	38E	1	walls, steel deck, topside of drop ceiling and above dropped ceiling	X	
Men's Room	39E	1	ventilation duct work above dropped ceiling	X	
117	40E	1	contaminated area along north wall will require further HP monitoring upon dismantlement	X	X
Coffee Room	41E	1	ceiling vents and ventilation duct work above ceiling	X	
121	42E	2	2 floor drains (possibly another drain in trench) for overflow for water heater and one drain in trench	X	
Coffee Room	43E	1	area behind paper towel dispenser	X	
Coffee Room	44E	9	misc. elect. outlets, boxes, conduit, lights, controls & sensors	X	
Ladies Room	45E	1	ceiling vent and ventilation duct work above dropped ceiling	X	
Ladies Room	46E	6	area behind toilet, toilet seat protector holder, paper towel dispenser, sink, mirror & coat hooks	X	
Ladies Room	47E	2	sink and toilet drains	X	
Ladies Room	48E	6	misc. electrical outlets, boxes, lights, controls & sensors	X	
Corridor by Ladies Room	49E	2	electrical panels mounted to wall, north end	X	
Corridor by Ladies Room	50E	3	ventilation ducting, misc. piping and fire sprinkler piping in overhead	X	
Corridor by Ladies Room	51E	1	conduit pipe trench in ladies change room floor	X	
Corridor by Ladies Room	52E	1	sealed door to boiler room	X	
Corridor by Ladies Room	53E	2	two door jams and 23/106 threshold	X	
Storage Shed	54E	2	electrical panels (behind)	X	
Storage Shed	55E	1	floor to ceiling storage shelves with backing	X	
Storage Shed	56E	1	area between floor and wall filled with insulating foam, direct frisk results > background levels	X	X
Storage Shed	57E	1	ceiling of shed	X	

Table 3-6—HCF Radiological Exceptions List

Room No.	Item No.	No. of Items	Location & Description	Survey by HP	To Radwaste
117A	58E	1	ventilation duct internal	X	
Storage Shed	59E	1	disassembled shelving and assembled shelving (particular plywood)	X	X
Exterior roof	60E	1	ventilation duct work internal	X	
Exterior roof	61E	1	roof surface under roofing material	X	
Exterior roof	62E	2	roof access cover and hot cell hydraulic vertical door mechanism components	X	
Exterior east face	63E	1	cinder block wall behind ventilation duct work	X	
Exterior east face	64E	1	cinder block wall behind gas bottles	X	
Exterior roof	65E	1	area between flashing and cinder block wall	X	
Exterior east face	66E	1	ventilation duct work including motors, fans, HEPAs (internal and external)	X	X
Exterior east face	67E	>1	misc. electrical panels, conduit, brackets, racks mounted on wall	X	
106	68E	2	ceiling vents and associated duct work above ceiling	X	
106	69E	1	area above dropped ceiling to steel deck ceiling	X	
106	70E	1	area under and behind dishwasher	X	
106	71E	3	area behind contaminated sink, soap dispenser & towel rack	X	
106	72E	3	area behind sink, soap dispenser & towel rack	X	
106	73E	9	sink drains, floor drains, and clean-outs	X	X
106	74E	1	bench in men's change room, fixed activity		X
106	75E	43	misc. electrical outlets, boxes, conduit, lights, control & sensors	X	
106	76E	4	pipe in walls of pits and electrical outlet	X	
Exterior north face	77E	>1	misc. pipes, penetrations, racks and electric panels against wall	X	
Exterior HEPA face	78E	1	internal HEPA ventilation, plenum box, air pumps, fans, motors, system, housing ducting, filter	X	X
Exterior 108	79E	1	wall between room 108 & 107	X	
Exterior 108	80E	>4	bottle rack lifting platform (areas behind, internal, between) two pump sheds with pumps - bottle storage rack	X	
Exterior 108	81E	1	between wall and door frame and under threshold	X	
Exterior 108	82E	>2	possible pre existing penetration location two down spout housing between housing and wall	X	
105A	83E	2	ceiling vents and associated ductwork above ceiling	X	
105A	84E	1	area above dropped ceiling to steel deck ceiling	X	
105A	85E	14	misc. electrical outlets, boxes, conduit, lights, controls, sprinklers, sensors on walls and ceiling	X	
105A	86E	1	sink drain line in south wall		X
105A	87E	1	sink and cabinet	X	X
105A	88E	1	vent in door	X	
105A	89E	1	door threshold and floor underneath	X	
105A	90E	1	duct in pit	X	
Storage Shed pit	91E	>3	beneath, behind, and internal various pieces of instrumentation on wall and floor	X	X
114	92E	>1	misc. equipment, pipes, electrical boxes, conduit on wall and floor	X	X
116A	93E	2	ducts in east wall	X	
116A	94E	1	duct in south wall	X	
116A	95E	2	penetrations behind cover plates in south wall	X	
116A	96E	1	filter housing and ductwork	X	
116A	97E	>25	penetrations into hollow part of ribbed decking	X	
116A	98E	3	inaccessible areas between I-beams and ceiling	X	
116A	99E	9	misc. electrical conduit, boxes, lights, controls, sensors on walls and ceilings	X	
109	100E	2	behind and internal of tritium monitor fume hood and associated ventilation ducting	X	X
109	101E	>1	door frames, gauges, misc. conduit, electric switches, panels, boxes	X	
120	102E	4	penetrations through wall (covered)	X	
120	103E	1	drain clean-out	X	X
120	104E	1	inside of ductwork	X	X
120	105E	>1	misc. pipes, electrical boxes, conduit on walls and ceiling	X	X
120	106E	2	walls or part of walls added later (covered)	X	
109	107E	1	steel decking and upper walls	X	
116	108E	1	fume hood (under, inside and behind) & wall & floor behind fume hood	X	X
116	109E	3	steel door frame to Room 114, single door to hallway, & inside door jam of double doors to outside yard	X	X
116	110E	1	HLC penetration plug - space between plug & wall	X	X
116	111E	1	vent - air flow vent between Room 116 & hall (around frame inside wall)	X	
Hallway by X-Ray Lab	112E	1	airflow vent frame and wall junction on north wall	X	

Table 3-6—HCF Radiological Exceptions List

Room No.	Item No.	No. of Items	Location & Description	Survey by HP	To Radwaste
Hallway by X-Ray Lab	113E	1	door frame and wall junction on west wall	X	
122	114E	1	beneath sump and behind splash walls	X	X
122	115E	3	manipulator arms in overhead	X	X
122	116E	1	ventilation duct in overhead and along N & W walls	X	X
122	117E	2	drain lines - one in sink and sump	X	X
122	118E	>1	misc. equipment, piping, conduit, electrical boxes, switches	X	
122	119E	1	walls and ceiling in overhead	X	
108A	120E	1	drainage trench in sub-floor that has been filled and covered	X	X
108A	121E	2	patched penetration in east and west wall	X	
108A	122E	1	floor drain in northeast corner		X
108A	123E	1	south wall, internally and area that it covers. wall added later	X	X
108A	124E	>20	misc. pipes, elect. conduit, boxes, controls, lights	X	
108A	125E	4	misc. equipment left in floor	X	
108	126E	1	filled-in shoe scrubber pit	X	X
108	127E	1	patched penetrations	X	
108	128E	1	north wall, internally and area that it covers, wall added later	X	X
108	129E	2	sink and floor drain on west wall/floor intersection		X
108	130E	>20	misc. pipes, elect conduit, boxes, controls, lights, etc.	X	X
108	131E	2	machine ventilation ducts and air condition ducts, inaccessible surfaces	X	X
108	132E	1	moat around perimeter of the room that has been filled with concrete	X	
108	133E	1	doors added later. area that it covers (south wall)	X	
108	134E	24	misc. equipment left in room and area that it covers	X	X
108	135E	3	inaccessible areas behind cabinets and sink (W & E walls)	X	
105	136E	>1	inaccessible areas in overhead including walls, acoustical ceiling panels, ventilation duct work, upper steel deck, conduit, fire sprinkler system and other misc. equipment	X	
105	137E	>1	95% of remaining unsurveyed portion of pipe chase approx. 1 1/2 ft. below floor with misc. instrument cables, electrical conduit and, according to blue prints, three drains		X
105	138E	1	area behind and under PING 1A	X	
105	139E	>20	misc. pieces of equip, electrical panels, alarm panel, conduit, areas where baseboards could not be removed etc. on walls	X	
105	140E	>1	hot cell walls and penetrations and all associated equipment - HLC, LLC, MET	X	X
118	141E	>20	misc. equipment, pipes, electrical conduit, boxes, controls	X	X
118	142E	2	Inaccessible surfaces in and behind ducts		X
118	143E	1	floor drain		X
118	144E	2	tracks in floor have inaccessible surfaces	X	X
107	145E	1	Hydraulic Power Lift Unit and are beneath unit	X	X
107	146E	2	Ventilation on both North and South walls	X	X
107	147E	1	Flammable Locker - area beneath locker	X	X
107	148E	>1	Misc. Equipment, piping, manipulator arms and penetration	X	X
119	149E	1	Duct work inaccessible surfaces	X	X
119	150E	2	Wall added later. Inaccessible surfaces and area wall covers (West & East walls)	X	X
119	151E	<1	Misc. Equipment, piping, electrical conduit, boxes, controls, lights, etc. (Walls and overhead)	X	X
111	152E	1	Decontamination Room HEPA system duct work and return vents	X	X
111	153E	1	Storage pits (Added later into existing pool)	X	X
111	154E	1	Ceiling. Not accessed during survey, including crane	X	
111	155E	1	Tracks in floor. Inaccessible cracks & other areas	X	
111	156E	1	Decontamination Room walls added later. Material & covered area	X	
111	157E	1	East wall going into room 119 added later. Material & covered area on walls	X	
111	158E	>20	Misc. Equipment, piping, electrical conduit, boxes, controls, etc.	X	X
112	N/A	All	Metallography Cell		
113	N/A	All	Low-Level Cell		
115	N/A	All	High-Level Cell		

Table 3-7—^{90}Sr Wet Chemistry Results

Sample Id	^{60}Co-TMA (pCi/g)	^{60}Co-GA (pCi/g)	^{60}Co Ratio TMA/GA	^{134}Cs-TMA (pCi/g)	^{134}Cs-GA (pCi/g)	^{134}Cs Ratio TMA/GA	^{137}Cs-TMA (pCi/g)	^{137}Cs-GA (pCi/g)	^{137}Cs Ratio TMA/GA	^{90}Sr-TMA (pCi/g)	Ratio ^{90}Sr/^{137}Cs TMA
23C-94-279-CH	8.58	7.42	1.16	2.12	2.05	1.03	17.24	19.20	0.90	4.918	0.285
23C-94-108-CH	18.16	7.01	2.59	0.86	1.16	0.74	2.55	4.56	0.56	0.332	0.130
23C-94-290-CH	116.80	99.70	1.17	212.80	164.00	1.30	2882.00	2624.00	1.10	1295.000	0.449
23C-94-215-CH	15.44	12.60	1.23	1.90	1.99	0.96	898.00	404.00	2.22	143.100	0.159
23C-94-049-CH	0.62			2.17	2.10	1.03	1.99	2.70	0.74	0.391	0.197
23C-94-257-CH	22.47	22.10	1.02	15.60	13.80	1.13	1387.00	1463.00	0.95	166.100	0.120
23C-94-212-CH	2.55	3.20	0.80	0.64	0.66	0.97	32.26	29.40	1.10	8.105	0.251
23C-94-035-CH	9.03	13.00	0.69	44.46	27.70	1.61	1176.00	784.00	1.50	11.880	0.010
23C-94-057-CH	0.09			7.17	8.60	0.83	23.10	23.10	1.00	0.912	0.039
23C-94-243-CH	23.62	13.00	1.82	3.08	2.03	1.51	125.30	83.40	1.50	17.640	0.141
23C-94-235-CH	3.97	2.49	1.59	0.15			77.15	51.70	1.49	10.300	0.134
23C-94-190-CH	634.90	614.00	1.03	3550.00	3504.00	1.01	15340.00	16110.00	0.95	188.300	0.012
23C-94-231-CH	0.28	0.38	0.74	2.60	2.09	1.24	16.16	15.80	1.02	0.325	0.020
23O-94-165-CH	441.30	345.00	1.28	128.90	120.00	1.07	655.10	689.00	0.95	206.100	0.315
23C-94-282-CH	1016.00	613.00	1.66	1970.00	1085.00	1.82	26540.00	16250.00	1.63	793.900	0.030
23C-94-267-CH	5669.00	7113.00	0.80	49.25	65.20	0.76	3157.00	4319.00	0.73	1293.000	0.410
23S-94-046-CH	13.59	14.00	0.97	0.12			106.50	107.20	0.99	26.100	0.245
23S-94-049-CH	12.73	13.30	0.96	0.16			65.30	73.50	0.89	8.437	0.129
23S-94-055-CH	16.33	18.40	0.89	2.54	2.49	1.02	75.18	84.00	0.90	2.046	0.027
23S-94-058-CH	86.13	107.30	0.80				122.60	126.80	0.97	37.890	0.309
23S-94-063-CH	10.11	10.90	0.93	1.40	1.32	1.06	106.50	110.40	0.96	12.160	0.114
Mean			1.16			1.12			1.10		0.168
Std Deviation			0.47			0.29			0.38		0.131

3.13. Summary of Radiological Characterization Results

The summary of the radiological results are presented by grouping rooms according to similar radiological conditions and proximity to each other. The specific findings for each room may be found in Section 3.11 of this report.

NOTE: Many floor areas within the non-contaminated areas had no positive results and may possibly be able to be free released. However, in consideration of the history of hot particles within and outside the HCF, it appears that it is warranted to remove all floor tile for eventual disposal as contaminated prior to final release survey. Also, minimal surveys were performed on the steel deck above the suspended ceiling and this will require more detailed evaluation during D&D activities.

3.13.1. Offices (Sections 3.11.1 through 3.11.3), Lobby (Section 3.11.4), and Bathrooms (Sections 3.11.5 and 3.11.6)

Some isolated areas on the floor and walls had positive results and may require minor scabbling to remove the contamination. In general, the rooms do not contain radioactive material.

3.13.2. Change Room (Section 3.11.10), Dark Room (Section 3.11.9), Coffee Room (Section 3.11.7), Operating Gallery (Section 3.11.8), and Boiler Room (Section 3.11.29)

All floor tile and baseboards should be removed. The top 0.25" of the floor (a few isolated areas may be contaminated deeper into the concrete) and 1 - 4" of the lower walls have contamination and will require decontamination. Many hot particles were found and a potential exits for hot particles to have been shielded beneath floor tiles and along the floor/wall junctions. The cell penetrations are contaminated and the extent is unknown. The floor drain in the change room and operating gallery suggests the potential for minor contamination inside the "clean" drains.

3.13.3. Tool Room (Section 3.11.23), X-Ray Room (Section 3.11.20), Hallway (Section 3.11.22), and Mezzanines (Section 3.11.21 and Section 3.11.24)

The top 1 - 1.5" of the concrete floor, lower portions of the walls and isolated areas on the upper portions of the walls are contaminated. The Mezzanine above the tool room appears to have no contamination but the seams of the corrugated steel floor will need further surveying during dismantlement. The Mezzanine above the X-Ray room has some isolated wall contamination and hot spots around penetrations. Paint will need to be removed from the walls with steel plates.

3.13.4. Corridor (Section 3.11.28), ESTES Effluent System Room (Section 3.11.26), ESTES Sample Preparation Room (Section 3.11.27), and Physical Test Lab/ESTES Lab (Section 3.11.14)

Most of the concrete floors and walls are contaminated. Hot particles are in the overhead utilities and in the case of the corridor, fixed within the floor paint. If any cracks exist in the floor, concrete contamination will be more extensive. Based upon the core drilling results, subsurface soil contamination beneath portions of the ESTES lab is likely certain.

3.13.5. Pump Room (Section 3.11.19), Decontamination Room (Section 3.11.25), Service Gallery (Section 3.11.15), and Manipulator Repair (Section 3.11.30)

Floor contamination may be up to 1.5" deep in many areas and wall contamination is extensive. The ceiling was not surveyed and based upon room results, known instances of airborne radioactivity, contamination of the ceiling is likely. Core results demonstrate that subsurface soil contamination is identified. Soil contamination with SNM is evident in yard areas immediately adjacent to the X-Ray Room from the Pu sump tank area. Subsurface soil contamination was also identified below the Decontamination Room, Pump Room, Service Gallery, and Manipulator Repair rooms.

3.13.6. Manipulator Repair (Section 3.11.11)

Floor contamination in concrete exists up to 1.5" depth, and several locations of contamination were identified in lower portions of drywall and plaster walls. Extensive contamination in abandoned fume hood ventilation exhaust ducts is likely. Subsurface soils may have been affected by the source of subsurface soil contamination in adjacent Room 122, Manipulator Repair.

3.13.7. Machine Shop (Section 3.11.12) and Machine Shop Weld Area (Section 3.11.13)

The entire floor and large portions of the walls are contaminated. Many hot particles were found in the overhead utilities. Uranium-235 was found in the NE corner and the ventilation system must be sampled for SNM prior to dismantlement. Even though core results showed limited subsurface contamination only in the machine shop weld area, process knowledge indicates that the subsurface trench area should have additional samples taken during D&D. Many of the stock and pieces of remaining equipment should be free released after minor decontamination and survey.

3.13.8. Exterior

The entire roof, associated material and north wall contain licensed material. The Room 108 east wall appears to be contaminated extensively. The remaining walls appear to have some minor isolated areas of contamination. The outside ventilation unit is contaminated and should be disposed of as radioactive waste by compaction or similar volume reduction process after definitive evaluation for SNM.

3.13.9. Metallography Cell (Section 3.11.16), Low-Level Cell (Section 3.11.17), and High-Level Cell (Section 3.11.18)

The heart of the HCF is its three shielded cells, the High-Level Cell, the Low-Level Cell and the Metallography Cell. The High-Level Cell was used to perform destructive post-irradiation examinations on fuels and structural materials. The Low-Level Cell acted as the staging area for sample being transferred into and out of the High-Level Cell. The Metallography Cell was used to prepare irradiated fuel and metal samples, i.e., grinding, for use with the metallograph. Because of the nature of work performed in these cells, they are highly contaminated and have relatively high general area dose rates. It is certain that the entire interior of these cells will have to be disposed of as radioactive waste along with an estimated 1" of the wall and ceiling concrete behind the steel plates lining the walls. Concrete and subsurface soil cores taken around the cells indicate a high probability of subsurface contamination under the north end of the Metallography Cell and under much of the Low-Level Cell. Process knowledge indicates that subsurface contamination does exist under the wells in the High-Level Cell.

4. FACILITY HAZARDOUS CONSTITUENT ASSESSMENT

4.1. Criteria and Approach

This section describes activities and results associated with hazardous constituent characterization of the HCF. The characterization of the surrounding soils is discussed in Section 6.0. Section 4.1 describes the criteria and approach for performing hazardous characterization, Section 4.2 discusses how site and facility drawings were used in the assessment, Section 4.3 discusses the grid system used, Section 4.4 describes the facility walk-down, Section 4.5 discusses the classification of areas for hazardous contaminants, Section 4.6 describes the sampling procedures used, Section 4.7 is a presentation of the hazardous constituent data, Section 4.8 describes the analytical results and visual surveys for each room, Section 4.9 discusses the hazardous constituent exception areas and Section 4.10 is an evaluation of the data presented. Appendix B of the report includes the visual surveys for each area included in the characterization report.

The purpose of the hazardous constituent characterization activities was: 1) to quantify the physical and chemical characteristics of hazardous constituent contamination and the extent of contaminant distribution; 2) to quantify environmental parameters that affect potential human exposure from existing and residual hazardous contamination under the unrestricted use condition; and 3) to support evaluation of alternative decommissioning actions and detailed planning of a preferred approach for decommissioning, decontamination, and waste disposal. One of the main objectives associated with hazardous constituent evaluation for D&D planning is to identify surfaces, structures, equipment and other items that could potentially become mixed waste when removed from the facility if they are both hazardous and radioactive. The HCF has structures in it now which have both hazardous and radioactive contaminants associated with them. Identification of areas contaminated with both radioactive and hazardous constituents (i.e., mixed) is part of characterization because the process identifies surfaces, structures, equipment and other items that are contaminated now, but once removed from the facility (i.e., generated), will be required to be managed as mixed waste. Example: The scabbling removed from certain floors during D&D will be accumulated and segregated as mixed waste, for further testing, until proven otherwise. The scabbling has not been generated yet, but characterization data will provide an indication of how to properly manage the debris, once it is generated by D&D activities.

The hazardous constituent characterization activities were performed following the approach outlined in General Atomics procedures. The objectives associated with the identification of hazardous constituents within the HCF include: 1) providing data to support D&D alternatives selected which will involve segregation and management of hazardous materials from non-hazardous wastes, 2) providing data to estimate potential mixed waste volumes to be generated during D&D activities, 3) providing data which can be used to make informed decisions with regard to industrial hygiene concerns associated with hazardous constituent, and 4) providing hazardous constituents data to support informed decisions that may effect regulatory clean-up levels.

4.2. Site and Facility Drawings

The site and facility drawings were reviewed for the locations of piping, drains, sewers, sumps, tanks and other components of liquid handling systems; penetrations into floors and walls for piping, conduit, anchor bolts, wall/floor interfaces and other similar building construction materials which are potential areas for accumulation of contaminants and pathways for migration into sub-floor soil and hollow wall spaces. In addition, construction materials that contain hazardous constituents, such as asbestos-containing

transite, painted metal, fluorescent light ballasts (PCBs), brass plumbing, door hardware (containing brass and oil) and other items were noted from the drawings. Locations of underground piping, ventilation ducts, utilities, tanks, and any other subsurface items were identified, where possible. This information was used during the pre-characterization facility walk-down to help identify potential locations where samples would be collected. For the purpose of evaluation of potential areas where mixed waste could occur, Lead and Brass (which leaches lead) were included in the drawing review and visual surveys. Information was also obtained on the location of lead paint which was used throughout the HCF. Structures containing Magnetite were also included in the initial review, but were determined to be non-hazardous.

4.3. Facility Grid System

The grid system used for the location of radioactive samples as described in Section 3.0 is the same system that was used to designate hazardous sample locations and was established in accordance with the requirements of NUREG/CR-5849 (Ref. 1-1). The system consisted of intersecting lines, referenced to a fixed site location or bench mark. The grid lines were arranged in a perpendicular pattern, dividing the survey location into squares or blocks of equal area. Grids were established for the floors walls and ceilings and were marked with permanent black markers. Each sample taken was assigned a grid point designator and was recorded on the room grid survey map and recorded in the hazardous sample log. Sample identification numbers from the log book were also marked in permanent ink on the wall surfaces to indicate where samples were taken.

4.4. Facility Walk-Down

Following review of the facility investigation report and facility drawings, and the establishment of the facility grid maps, a site and facility walk-down was conducted by a group of technical specialists assigned to the characterization project for their expertise. The group consisted of a certified health physicist, an environmental engineer, and the facility manager, who had several years of process knowledge regarding HCF operations. The purpose of the walk-down was to identify from the facility drawings potential locations of hazardous constituents and construction materials that had the potential of being hazardous material. Areas identified as potential hazardous material locations were marked on the survey maps, or visibly tagged as an area requiring sampling.

4.5. Classification of Areas

As described in Section 3.0, the facility investigation report was reviewed for potential locations of hazardous contamination. Table 4-1, "Hazardous Constituent Samples," lists the hazardous constituents that were considered in the sampling activities. Maps utilized for each facility room were produced in duplicate in order for hazardous constituent visual surveys to be conducted concurrently with radioactive surveys. The maps were utilized during facility walk downs to locate areas from which sample media was collected in order to evaluate hazardous constituents and where wipe samples should be taken. Site and facility drawings were reviewed for potential contaminant pathways for hazardous constituents as well as radiological. The classifications for hazardous constituent evaluations include the following definitions:

- Affected areas—Areas that have potential hazardous constituent contamination (based on process knowledge) or known hazardous contamination (based on historical information or structural and manufacturer's information).

- Unaffected areas—All areas not classified as affected. Areas which are known to be free of hazardous materials or constituents based on site history and structural information existing for the facility.

Table 4-1—Hazardous Constituent Samples

Waste Stream	Analysis/EPA Method[a]
Corrosive liquids	pH (field): pH meter: pH: 9040 TCLP metals: 6010/7000 series
Metal contaminants (including sludge)	Volatile hydrocarbons: 8240 Semi-volatile hydrocarbons: 8270 TCLP metals: 6010/7000 series pH: 9040
PCB waste	PCB: 8080
Waste machine coolant	Volatile hydrocarbons: 8240 Semi-volatile hydrocarbons: 8270 TCLP metals: 6010/7000 series pH: 9040
Waste oil	Flash point 1010; Total organic halogens: 9020 Cd, Cr, Pb, Zn: 6010/7000 Series PCB: 8080
Waste solvents (Halogenated and non-halogenated)	Volatile hydrocarbons: 8240 Semi-volatile hydrocarbons: 8270 Flash point: 1010
Paint materials	Volatile organics: 8240 Semi-volatile hydrocarbons: 8270 TCLP metals: 6010/7000 series
Lab-pack chemicals (various)	Confirm Waste Storage Disposal Request ID (8240, 8270,9310,9040,6010/7000) as appropriate
Lead and brass	TCLP metals: 6010/7000 series Process knowledge

[a] EPA method number from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA publication, SW-846, 1986, Third Edition. Analyses selected from list based on expected contamination.

4.5.1. Affected Areas

1. A 100% visual survey was performed utilizing the hazardous constituent survey form provided as Figure 4-1. One form was completed for each wall, ceiling, and floor of the rooms surveyed.
2. After reviewing information compiled on the forms, and from process knowledge, information regarding each hazardous constituent suspected as listed in Table 4-1 Hazardous Constituent Samples was transferred to grid maps to indicate areas having the highest potential for hazardous contaminants.
3. Wipe samples were taken from 1 m squares in accordance with the methods described in Section 4.6.5 for areas and equipment that showed visible residue of hazardous contamination such as oils.
4. pH paper was utilized as a screening method for field testing of surfaces suspected to be contaminated with acid or caustic solution residues.
5. Removal of construction sample materials was performed for materials that were suspected to contain hazardous constituents. Sample collection equipment is listed in Table 4-2 and sample volumes, containers, preservation and holding times are listed in Table 4-3.

6. Hazardous samples were shipped to a contract laboratory which is certified by the State of California for hazardous waste evaluations and EPA SW-846 methods. The Environmental Engineer determined which EPA test methods listed in Table 4-1 would be performed based on process knowledge, visual inspection, and physical inspection.

Table 4-2—Sample Collection Equipment

Equipment	Use
Cotton gauze pads	Collect wipe samples
Composite liquid waste sampler (COLIWASA)	Sample liquids from tanks or 55-gallon drums
Stainless steel hand trowels	Collect soil samples
Hand auger	Collect surface and near surface soil
Plastic sheeting/plastic bags	Protect surfaces and package samples for shipping
Pick and Shovel	Break up asphalt for sample collection
Trier/Thief	Collect dry bulk materials
Trier	Sludge
Roto hammers	Break up asphalt and concrete for sample collection

Table 4-3—Sample Volumes, Containers, Preservation, and Holding Times

Analysis - Method	Matrix	Minimum Sample Size	Container	Preservation	Holding Time
pH- EPA 9040	Liquid	250 mL	Plastic or glass	Unpreserved	Immediate/field
Total metals (8 TCLP metals) EPA 6010/7000	Liquid	500 mL	Glass with Teflon-lined caps or plastic	Cool, 4°C	14 days before 180 days after extraction
Volatile Organics - EPA 8249	Liquid	3-40 mL	Glass with Teflon-lined cap	2 - HCl	
EPA 8240	Solid	4 oz	Plastic/glass with Teflon-lined cap	Cool, 4°C	14 days
Semi-volatile Organics - EPA 8270	Liquid	2.5 L	Glass with Teflon-lined cap	Cool, 4°C	7 days before 40 days after extraction
Radionuclides - Gross Alpha EPA 9310	Liquid	500 mL	Plastic	HNO_3, pH<2, Cool	6 months
Radionuclides - Gross Beta EPA 9310	Liquid	500 mL	Plastic	HNO_3, pH<2, Cool	6 months
TTLC metals - EPA 6010 7000	Liquid Solid	500 mL 100 g	Plastic or glass	HNO_3 Cool 4°C	6 months (Hg 28 days)
PCB - EPA 8080	Solid Oils	100 g 40 mL	Glass	4°C	14 days
Extractable Fuel Hydrocarbons					

4.5.2. Unaffected Areas

Unaffected areas for hazardous constituent sampling were areas which were known to be free of hazardous materials or constituents based on site history and structural information existing for the facility. For each area that was considered to be unaffected, the following activities were performed:

1. A 100% visual survey was performed utilizing the hazardous constituent survey form provided as Figure 4-1. One form was completed for each wall, ceiling, and floor of the rooms surveyed.

2. Hazardous constituents that appeared as fixtures or construction materials associated with the room , such as lead weights on doors, or transite on wallboard were noted on the visual surveys, but due to identification through process knowledge obtained from construction drawings, did not require sampling.

4.6. Sampling Procedures

Sampling and analysis was conducted in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 and analysis was conducted by labs and methods certified by the State of California. The California Code of Regulations incorporates the federal RCRA regulations by reference in several cases related to management of hazardous wastes. Under the California Code of Regulations (CCR) Criteria for Identifying the Characteristics of Hazardous Waste, Section 22-66261.20 (c) states "sampling and sample management of wastes and other materials for analysis and testing pursuant to this article shall be in accord with the sampling planning, methodology and equipment, and the sample processing, documentation and custody procedures specified in chapter nine of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 (incorporated by reference, see Section 66260.11 of this chapter). In addition to the sampling methods in chapter nine of SW-846, the Department will consider samples obtained by using any of the other applicable sampling methods specified in Appendix I of this chapter to be representative samples." The SW-846 Methods are routinely accepted by the State.

It is important to remember that the data has been generated for characterization purposes only, and not for the purpose of final designation of hazardous wastes at this time. Technicians performing sampling of hazardous constituents were trained in environmental sampling techniques and in HCF-specific procedures for packaging and handling of samples.

HAZARDOUS CONSTITUENT SURVEY FORM

DATE _____ ROOM NO. _____

GRID NOS. _____ SURFACE: ☐ EAST ☐ FLOOR

_____ ☐ WEST ☐ CEILING

_____ ☐ NORTH

_____ ☐ SOUTH

☐ Acids, Aqueous	☐ Manometer/Flowmeter containing Hg
☐ Aerosol Cans, misc. materials	☐ Metal, Misc. elemental
☐ Asbestos, Friable	☐ Metal contaminated materials, Misc.
☐ Asbestos, Non-friable	☐ Metal plated equipment and building materials
☐ Beryllium (Be, BeO)	☐ Metal solders and soldered materials
☐ Bases, Aqueous	☐ Oil contaminated materials
☐ Brass equipment	☐ Oil, Hydraulic
☐ Decon Solution (Aqueous, General)	☐ Oil, Mineral
☐ Decon Solution (Organic, General)	☐ Oil, PCB Containing/contaminated
☐ Decon Solution (SynTech)	☐ Oil, Pump
☐ Decon Solution (Water)	☐ Oil, Synthetic
☐ Fluorescent Light Bulbs	☐ Paint, Un-used
☐ Freon	☐ Paint, Un-used, containing Lead
☐ Grease contaminated materials	☐ Paint, Un-used, Lead free
☐ HEPA Filters	☐ Paint, Used, containing Lead
☐ HEPA Filters (Absolute)	☐ Paint, Used, Lead free
☐ Hg Switches	☐ PCB Light Ballasts
☐ Lead Bricks/Shielding	☐ Solid, misc. N.O.S.
☐ Liquid, misc. N.O.S.	☐ Tar
☐ Magnetite	☐ Transite

NOTES: _____

_____

_____

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

INSPECTED BY: _____ DATE: _____

PRINTED NAME: _____ TIME: _____

Figure 4-1—Hazardous Constituent Survey Form

4.6.1. Field Screening Methods

Various methods for screening hazardous constituents were used throughout the facility during visual inspections and sampling activities to determine areas and equipment that would require construction media and other types of samples to be taken. Paint, fixtures, equipment and tooling suspected of containing contaminants were field tested for lead, PCBs and pH as necessary prior to taking physical samples. Positive results were documented during the visual inspections on the Hazardous Constituent Survey Form. Areas that demonstrated positive results for PCBs or lead that required further verification were sampled and sent to the lab for confirmation. The results of field screening were documented in field notebooks used by hazardous materials technicians performing these tests.

4.6.2. Sample Media Collection

Construction media samples such as concrete and paint surfacing were collected through the use of scrapers, Hilti® Roto Hammers (with an attachment scabbling tool) and miscellaneous scabbling and scraping tools. Oils samples were field tested for PCBs and then drained directly from machining equipment into sample containers and handled in accordance with chain-of-custody requirements. In some cases, tiles were removed from floor areas and both the tile and the subsurface concrete was sampled at various depths to confirm the extent of hazardous contamination present. The results of sample media analyzed is presented in Section 4.7 and 4.8 of this report.

4.6.3. Sampling Equipment

Table 4-2 lists the types of sampling equipment used to collect the samples specified in the Sampling and Analysis Document. Sampler collectors also utilized the following:

- Personal Protective Equipment as specified in the Radiation Work Permits, Hazardous Work Authorization, and supporting procedures
- Weatherproof field log books and indelible markers
- Sample containers
- Packing material such as Styrofoam beads
- Fiberglass tape (to seal coolers) Coolers to ship samples
- Chain-of-Custody forms, labels, and seals
- Refrigerator to store samples

Sample containers were specified as "certified clean" as required by the statement of work developed with the analytical laboratory. Containers for samples and preservatives were provided by the laboratory.

4.6.4. Sample Volumes, Containers, Preservation and Holding Time

Samples taken were handled in accordance with EPA SW-846 Procedures. Table 4-3 lists the referenced analysis method, the media matrix, and the applicable volumes, containers, preservation and holding times for each type of sample.

4.6.5. Wipe Sampling Procedures

After the visual survey was performed, the interior surfaces of some areas and equipment were wipe sampled to assess whether any residual contamination was present. Areas that had been designated as "affected" through the use of process knowledge and manufacturer's specifications (i.e., lead-painted areas known to be contaminated) were not wipe sampled. In these cases, construction materials (surface scrapings, etc.)were collected in an effort to verify process knowledge. Wipe samples, where warranted, were collected and handled as follows:

1. The interior surfaces of each unit were gridded into 1 m squares. At least one wipe sample was taken for each square meter suspected of having contaminants.
2. A gauze pad was saturated with 20 ml. of the appropriate liquid material (e.g., de-ionized water). The selected analytical lab provided the appropriate solutions for saturating the gauze pad.
3. The moistened pad was used to thoroughly swab a 1 m^2 area. Even pressure was applied and the area was wiped in a systematic way; for example, from top to bottom then left to right.
4. The wipe sample was placed in a clean glass jar, appropriate preservatives added as necessary, and the jar lid secured. Table 4-3 summarizes the appropriate sample volumes, containers, preservatives, and holding times for each analysis.
5. A label and custody seal were affixed to each glass jar. The sample number, analytical analyses to be conducted, and the location from which the sample was taken was written on each label. The sampling time, date, location, and number of containers was recorded on a chain-of-custody record.
6. Steps 2 through 5 were repeated for each sampling location to obtain the necessary number of samples for all analytical parameters of interest.
7. The samples were stored in a refrigerator prior to being packed in a cooler for transport to a California-certified analytical laboratory.
8. All sampling locations were recorded on a grid map and documented in the field log kept for characterization activities.

4.6.6. Background Water Sampling

Sampling was conducted of the water supply used for equipment rinsing and wipe sampling. Background water samples were taken as follows:

1. The source of water for sampling decontamination was identified.
2. The water supply was turned on and water allowed to flow for at least 5 minutes prior to sampling. The water supply was not turned off until the sampling is completed. Deionized water was sampled for a representative container of water used.
3. Table 4-3 summarizes the container type, minimum sample volume, and preservatives used for each analytical test.
4. Each grab sample was apportioned into the appropriate sample containers for each type of analysis, appropriate preservatives as shown in Table 4-3 was added, and the sample container lids secured.
5. A label denoting a unique sample number identifying which grab sample it is, analyses to be conducted, and the sample location was affixed to each sample container. A custody seal was applied and a chain-of-custody record was initiated.

6. The samples were stored in a refrigerator prior to transport to a California-certified laboratory.

4.6.7. Sampling Equipment Decontamination

The majority of sampling equipment used (Coliwasas, etc.) was disposable.

Sampling equipment that was not disposable was decontaminated between samples to prevent cross contamination. These steps included:

- Removal and disposal of sampling gloves between sampling locations
- Washing the grab sampler, hand auger, picks, shovels, scabbling devices or COLIWASA after each sample with soap or detergent solution, followed by a rinse with tap water and a final rinse with de-ionized water.

At least one sample was taken of the rinse water from equipment decontamination to verify adequacy of equipment cleaning procedures. This sample was analyzed for the potential hazardous contaminants of interest.

NOTE: The use of hazardous chemicals for decontamination (i.e., acetone, nitric acid) within the HCF is prohibited to prevent generation of mixed waste.

4.6.8. Laboratory Analytical Methods

4.6.8.1. Laboratory Reporting Limits

Before implementation of characterization of the HCF, specific state-of-California certified analytical laboratories were identified to analyze the samples (TMA and the GA Radiochemistry Laboratories). A Statement of Work (SOW) was established with a selected certified analytical laboratory before the initiation of characterization activities. The SOW established the analyses of interest. Each sample was labeled with the analyses to be performed and each sample shipment was accompanied by a sampling parameter sheet and chain-of-custody document which also delineated the analyses to be performed for each sample. The laboratory selected for analysis of hazardous constituents is certified/registered as an environmental testing laboratory pursuant to the provisions of the California Environmental Improvement Act of 1988. The reporting limits for the laboratory are as specified in the laboratory procedures outlined in U.S. EPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (Ref. 1-6), and EPA 600/2-80-018 "Samples and Sampling Procedures for Hazardous Waste Streams" (Ref.1-7). The Practical Quantitation Limits (PQLs) for each analysis were included with the test results received for all hazardous samples analyzed by the certified laboratory.

4.6.8.2. Quality Assurance and Quality Control

The certified laboratory used for hazardous constituent analysis has a standardized Quality Control Program in place for each laboratory used. The laboratory's QA program satisfies the environmental monitoring and measurement requirements mandated by State and Federal regulatory agencies, including the Environmental Protection Agency (EPA), the U.S. Department of Health and Human Services, the Nuclear Regulatory Commission and the California Department of Health Services.

Under the QA Program in place for the laboratory, all routinely performed analyses were subject to initial precision and accuracy level checks through the use of replicate and spiked

samples. The analysts are required to demonstrate proficiency; and the instrumentation used was required to have a program of scheduled calibration and maintenance. Reagent purity was specified for all chemical reagents used, including solvents and gases. Every piece of data obtained from the characterization analysis was also subjected to quality control evaluations prior to reporting results.

4.7. Hazardous Constituent Data

Table 4-4 lists the results reported by room number for areas that were sampled physically for hazardous constituents. This table provides a summary of the analytical data accumulated for the HCF. Asbestos sampling results are presented in Section 5.0 of this report for the entire facility and soil sampling results are presented in Section 6.0 for the controlled yard surrounding the HCF. Results in this section are organized by room number or area description, a sample ID number unique to the hazardous constituent samples, the wall, ceiling or floor surface that the sample was taken from, the sample type (i.e., surface, paint, core, etc.), the type of analysis performed, the EPA method number for the analysis, and the results (in µg/kg, mg/kg, or mg/L).

Note that results for volatile organics (EPA Method 8240) and semi-volatile organics (EPA Method 8270) include "tentatively identified compounds." In accordance with EPA SW-846 methods (Ref. 1-6), up to 10 organic compounds of greatest apparent concentration for the purgeable organic fraction were tentatively identified using an approved Mass Spectral Library, and in accordance with specific mass spectrometry guidelines. If no valid tentative identifications were made, the compound has been reported as "unknown" and an additional classification of the unknown compound is given (i.e., unknown aromatic, unknown hydrocarbon, unknown acid type, unknown chlorinated compound). These values were reported in Table 4-4.

A detailed description of these results is reported in the following Section 4.8, Results Reported by Room Number, which also includes an overview of the visual inspection results, the PCB Inventory, the grid maps and the summary for results reported from each room. Copies of the visual inspections performed for each surface are included as Appendix B to this report.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
103 Office	HCC/09/29/001/P	North Wall	Surface, Paint	TCLP, Pb	6010	<0.05 mg/l
102 Office	HCC/10/03/002/P	East Wall	Surface, Paint	TCLP, Pb	6010	0.20 mg/l
100 Office	HCC/10/04/003/P	South Wall	Surface, Paint	TCLP, Pb	6010	0.68 mg/l
104 Lobby	HCC/10/12/005/P	North Wall	Surface, Paint	TCLP, Pb	6010	<0.05 mg/l
Ladies Bathroom	HCC/10/05/004/P	East Wall	Surface, Paint	TCLP, Pb	6010	<0.05 mg/l
Men's Bathroom	HCC/10/12/006/P	East Wall	Surface, Paint	TCLP, Pb	6010	<0.05 mg/l
Coffee Room	HCC/10/12/007/P	North Wall	Surface, Paint	TCLP, Pb	6010	<0.05 mg/l
105 Operating Gallery	HCC/12/13/018/P	West Wall	Surface, Paint & Concrete	TCLP, Pb	6010	0.13 mg/l
105A Dark Room	HCC/11/15/010/P	West Wall	Surface, Paint	TTLC, Pb	7420	21 mg/kg
				TCLP, Pb	6010	<0.04 mg/l
105A Dark Room	HCC/12/07/01/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.25 mg/l
						Cadmium <0.005 mg/l
						Chromium 0.10 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	1254 49 µg/kg
				Semi-Volatile	8270	di-n-butyl phthalate 890 µg/kg
						3,3-dichlorobenzidine 1420 µg/kg
				TICs	8270	Unknown ketone 12 mg/kg
						Unknown ketone 23 mg/kg
						4-hydroxy-4-methyl-2-pentanone 8962 mg/kg
						substituted cyclopentene 7.9 mg/kg
						Unknown ketone 14.5 mg/kg
						2,6-dimethyl-6-nitro-2-hepten-4-one 38.2 mg/kg
						Unknown alcohol 137 mg/kg
						2-butoxy-phosphate (3:1) ethanol 3.3 mg/kg
						Unknown alkane 2.6 mg/kg
						Unknown hydrocarbon 2.6 mg/kg
						Unknown alkane 3.3 mg/kg
						Unknown ketone 3.3 mg/kg
106 Change Room	HCC/10/19/009/P	East Wall	Surface, Paint	TTLC, Pb	7420	21 mg/kg
				TCLP, Pb	6010	<0.04 mg/l
107 Warm Metallography	HCC/11/29/015/P	North Wall	Surface, Paint & Plaster	TCLP, Pb	6010	<0.04 mg/l
107 Warm Metallography	Refer to 23/CO, HCC/10/14/008/P for Floor (Paint), .13 mg/l Pb					

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
107 Warm Metallography	HCC/12/07/03/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.23 mg/l
						Cadmium 0.062 mg/l
						Chromium 0.07 mg/l
						Lead 0.17 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	1254 792 µg/kg
				Semi-Volatile	8270	phenol 170 µg/kg
						di-n-butyl phthalate 3130 µg/kg
						butylbenzylphthalate 390 µg/kg
						bis(2-ethylhexyl) phthalate 2130 µg/kg
				TICs	8270	4-hydroxy-4-methyl-2-pentanone 1540 µg/kg
						Unknown hydrocarbon 3.9 mg/kg
						Unknown alcohol 15.9 mg/kg
						Unknown alkane 3.9 mg/kg
						Unknown alkane 3.6 mg/kg
						Unknown alkane 4.7 mg/kg
						Unknown alkane 2.8 mg/kg
						Unknown alkane 3.7 mg/kg
						2-butoxy-phosphate (3:1) ethanol 58.6 mg/kg
						Unknown alkane 4.2 mg/kg
						Unknown hydrocarbon 2.2 mg/kg
						Unknown alkane 6.2 mg/kg
						Unknown alkane 5.5 mg/kg
						Unknown alkane 4.5 mg/kg
						Unknown alkane 3.8 mg/kg
						Unknown alkane 3.4 mg/kg
						Unknown alkane 3.9 mg/kg
						Unknown alkane 2.1 mg/kg
						Unknown hydrocarbon 4.2 mg/kg
						Unknown hydrocarbon 4.1 mg/kg

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
107 Warm Metallography	HCC/12/02/05/O	Manipulator Hoist	Oil	Flash Point	1010	>140° F
				PCBs	8080	ND
				Semi-Volatile	8270	di-n-octyl phthalate 240 mg/kg
				TICs	8270	Butylated hydroxytoluene1900 mg/kg
						Unknown alkane 1900 mg/kg
						Unknown alkane 1900 mg/kg
						Unknown alkane 1900 mg/kg
						Unknown alkane 6200 mg/kg
						Unknown alkane 3000 mg/kg
						Unknown alkane 5300 mg/kg
						Unknown alkane 2800 mg/kg
						Unknown alkane 5200 mg/kg
						Unknown alkane 2500 mg/kg
						Unknown alkane 3800 mg/kg
						Unknown alkane 2800 mg/kg
						trimethyl-dodecane isomer 2900 mg/kg
						Unknown alkane 2800 mg/kg
						Unknown alkane 3900 mg/kg
						Unknown alkane 2200 mg/kg
						Unknown alkane 2200 mg/kg
						Unknown hydrocarbon 1900 mg/kg
						Unknown alkane 3300 mg/kg
						Unknown alkane 2000 mg/kg
						Unknown alkane 2200 mg/kg
				TOH	9020	196 mg/kg
				TTLC Metals(1)	7420	Arsenic <10 mg/kg
						Barium <13 mg/kg
						Cadmium 11 mg/kg
						Chromium <2.6 mg/kg
						Lead <10 mg/kg
						Mercury <0.09 mg/kg
						Selenium <10 mg/kg
						Silver <1.3 mg/kg
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/29/016/P	Vent Pipe above bandsaw	Surface, Paint	TTLC, Pb	7420	570 mg/kg
				TCLP, Pb	6010	0.76 mg/l
108 Beryllium Ox. Lab & Controlled Mach. Shop	Refer to 23/108A, HCC/11/29/017/P for Walls (Paint), 2.6 mg/l TCLP Pb					

(1) TTLC was run because less than 0.5% solids.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/12/09/06/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.24 mg/l
						Cadmium <0.005 mg/l
						Chromium 0.09 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	1254 75 µg/kg
				Semi-Volatile	8270	naphthalene 5900 µg/kg
						2-methynaphthalene 1220 µg/kg
						butylbenzylphthalate 1740 µg/kg
						bis(2-ethylhexyl) phthalate 1200 µg/kg
				TICs	8270	4-methyl-3-penten-2-one 116 mg/kg
						4-hydroxy-4-methyl-2-pentanone 9660 mg/kg
						Unknown cyclopentene 12.4 mg/kg
						Unknown ketone 8.5 mg/kg
						2,6-dimethyl-6-nitro-2-hepton-4-one 42.6 mg/kg
						Unknown alcohol 131 mg/kg
						Unknown hydrocarbon 14.4 mg/kg
						Unknown acid ester 5.2 mg/kg
						Unknown hydrocarbon 4.6 mg/kg
						Unknown hydrocarbon 16.4 mg/kg
						Unknown alkane 4.6 mg/kg
						Unknown hydrocarbon 3.3 mg/kg
						Unknown polynuclear aromatic hydrocarbon 3.9
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/2/003/S	Floor	Core 2F 22"-30"	Be	ICP	0.44 mg/kg
				TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.38 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				Vol. Organics	8240	Methylene Chloride 1µg/kg
						Acetone 17 µg/kg
				Semi-Volatiles	8270	di-n-butylphthalate 61µg/kg
						bis(2-ethylhexyl) phthalate 38 µg/kg
				TICs	8270	4-hydroxyl-4-methyl-2-pentanone 10200 µg/kg
						Unknown hydrocarbon 770 µg/kg
						2,5 Hexanedicine 150 µg/kg
						Unknown ketone 620 µg/kg

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/2/004/S	Floor	Core 2F 30"-35"	Be	ICP	0.40 mg/kg
				TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.90 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				Vol. Organics	8240	Methylene Chloride 2µg/kg
						Acetone 17 µg/kg
						1,1-dichloroethene 19 µg/kg
						Benzene 1 µg/kg
						Toluene 1µg/kg
				Semi-Volatiles	8270	benzo(a) anthracene 140 µg/kg
				TICs	8270	4-hydroxy-4-methyl-2-pentanone (A,B) 5530 µg/kg
						Unknown alcohol (B) 930 µg/kg
						Unknown hydrocarbon 930 µg/kg
						Unknown hexanedioic acid ester (B) 16500 µg/kg
						Unknown acid ester(B)1700 µg/kg
						Unknown polynuclear aromatic hydrocarbon 1400
						Unknown hydrocarbon 934 µg/kg
						Unknown alkane 1870 µg/kg
						Unknown alkane 1560 µg/kg
						Unknown alkane 1560 µg/kg
						Unknown hydrocarbon 2340 µg/kg
						Unknown hydrocarbon 1870 µg/kg
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/2/001/S	Floor	Core 3A 4"-5"	Be	ICP	<0.43 mg/kg
				TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.22 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				Vol. Organics	8240	Methylene chloride 2µg/kg
						Acetone 11 µg/kg
						1,2 dichloroethane 4 µg/kg
				TICs	8240	2-ethyl-1-hexanol 70 µg/kg
				Semi-Volatiles	8270	di-n-butylphthalate 49 µg/kg
						bis(2-ethylhexyl) phthalate 44 µg/kg
				TICs	8270	4-hydroxy-4-methyl-2-pentanone (A) 1540 µg/kg
						Unknown ketone (B) 850 µg/kg
						Unkn. hydrocarbon(B) 160 µg/kg
						Unknown hydrocarbon 240 µg/kg
						Unkn. hydrocarbon(B) 360 µg/kg
						Unknown alkane 200 µg/kg
						Unknown hexanedioic acid ester (B) 26100 µg/kg

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/29/01/O	Cut-Off Saw: Lube	Lube Oil	Flash Point	1010	68° F
				PCBs	8080	1248 204 mg/kg
						1254 61 mg/kg
				TOH	9020	1620 mg/kg
				TTLC Metals(1)	7420	Arsenic <8.0 mg/kg
						Barium 47 mg/kg
						Cadmium <0.99 mg/kg
						Chromium <2.0 mg/kg
						Lead 160 mg/kg
						Mercury <0.09 mg/kg
						Selenium <8.0 mg/kg
						Silver <1.0 mg/kg
				Semi-Vol Orgs	8270	ND
				TICs	8270	3-butylthiol-methyl ester, propionic acid 1200 mg/kg
						Sub. Trithiolane 1500 mg/kg
						Nonadecane 1500 mg/kg
						Nonadecane 1200 mg/kg
						Unknown alkane 700 mg/kg
						Unknown alkane 1700 mg/kg
						Unknown alkane 800 mg/kg
						Unknown alkane 1800 mg/kg
						Unknown hydrocarbon 800 mg/kg
						Unknown alcohol 1400 mg/kg
						Unknown hydrocarbon 700 mg/kg
						Unknown hydrocarbon 1700 mg/kg
						Unknown alkane 2500 mg/kg
						Unknown alkane 1300 mg/kg
						Unknown hydrocarbon 700 mg/kg
						Unknown alkane 2800 mg/kg
						Unknown alkane 1800 mg/kg
						pentadecane 4400 mg/kg
						Unknown hydrocarbon 1000 mg/kg
						Unknown hydrocarbon 900 mg/kg

(1) TTLC was run because less than 0.5% solids.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/29/02/O	Cut-Off Saw: Gear Oil	Gear Oil	Flash Point	1010	>140° F
				PCBs	8080	ND
				TOH	9020	4680 mg/kg
				TTLC Metals(1)	7420	Arsenic <8.0 mg/kg
						Barium <10 mg/kg
						Cadmium <1.0 mg/kg
						Chromium <2.0 mg/kg
						Lead 560 mg/kg
						Mercury <0.09 mg/kg
						Selenium <8.0 mg/kg
						Silver <1.0 mg/kg
				Semi-Vol Orgs	8270	ND
				TICs	8270	tetradecane 5000 mg/kg
						nonadecane 6400 mg/kg
						Unknown alkane 1000 mg/kg
						Unknown alkane 4900 mg/kg
						Unknown alkane 1900 mg/kg
						Unknown alkane 1800 mg/kg
						Unknown hydrocarbon 1400 mg/kg
						Unknown hydrocarbon 1000 mg/kg
						Unknown alkane 2900 mg/kg
						Unknown hydrocarbon 1200 mg/kg
						Unknown alkane 1300 mg/kg
						Unknown alkane 1200 mg/kg
						Unknown alkane 1800 mg/kg
						Unknown hydrocarbon 1000 mg/kg
						Unknown alkane 2700 mg/kg
						Unknown hydrocarbon 1500 mg/kg
						Unknown hydrocarbon 1700 mg/kg
						pentacane 15200 mg/kg
						Unknown alkane 2100 mg/kg
						Unknown alkane 1000 mg/kg

(1) TTLC was run because less than 0.5% solids.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/29/03/O	Van Norman Mill	Gear Oil	Flash Point	1010	>150° F
				PCBs	8080	ND
				TOH	9020	62 mg/kg
				TTLC Metals(1)	7420	Arsenic <10.0 mg/kg
						Barium <12.0 mg/kg
						Cadmium 26.0 mg/kg
						Chromium <2.4 mg/kg
						Lead 14 mg/kg
						Mercury <0.08 mg/kg
						Selenium <10.0 mg/kg
						Silver <1.2 mg/kg
				Semi-Vol Orgs	8270	phenanthrene 67 mg/kg
				TICs	8270	Unknown alkane 1600 mg/kg
						Unknown alkane 1600 mg/kg
						Unknown alkane 2500 mg/kg
						Unknown alkane 960 mg/kg
						Sub. cyclohexane 1500 mg/kg
						Unknown alkane 3200 mg/kg
						Unknown hydrocarbon 1500 mg/kg
						tetramethyl-hexadecane isomer 1900 mg/kg
						Unknown hydrocarbon 1700 mg/kg
						Unknown alkane 1400 mg/kg
						Unknown hydrocarbon 700 mg/kg
						Unknown hydrocarbon 2000 mg/kg
						Unknown alkane 8100 mg/kg
						Unknown hydrocarbon 2200 mg/kg
						Unknown hydrocarbon 1000 mg/kg
						Unknown alkane 3100 mg/kg
						Unknown alkane 1700 mg/kg
						Unknown hydrocarbon 800 mg/kg
						Unknown hydrocarbon 1400 mg/kg
						Unknown hydrocarbon 1400 mg/kg

(1) TTLC was run because less than 0.5% solids.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108 Beryllium Ox. Lab & Controlled Mach. Shop	HCC/11/29/04/O	Large Lathe	Gear Oil	Flash Point	1010	>150° F
				PCBs	8080	1248 48 mg/kg
						1254 52 mg/kg
				TOH	9020	134 mg/kg
				TTLC Metals(1)	7420	Arsenic <8.0 mg/kg
						Barium 58 mg/kg
						Cadmium <1.0 mg/kg
						Chromium <2.0 mg/kg
						Lead <8.0 mg/kg
						Mercury <0.08 mg/kg
						Selenium <8.0 mg/kg
						Silver <1.0 mg/kg
				Semi-Vol Orgs	8270	ND
				TICs	8270	Unknown alkane 2000 mg/kg
						Unknown alkane 3500 mg/kg
						Unknown alkane 4600 mg/kg
						Unknown hydrocarbon 1900 mg/kg
						Unknown alkane 5000 mg/kg
						Unknown alkane 3300 mg/kg
						Unknown cyclo alkane 2000 mg/kg
						Unknown alkane 1300 mg/kg
						Unknown alkane 4800 mg/kg
						Unknown alkane 7300 mg/kg
						Unknown alkane 4900 mg/kg
						Unknown hydrocarbon 1400 mg/kg
						Unknown hydrocarbon 2000 mg/kg
						Unknown alkane 2100 mg/kg
						Unknown hydrocarbon 1700 mg/kg
						Unknown alkane 7800 mg/kg
						Unknown hydrocarbon 1700 mg/kg
						Unknown alkane 1600 mg/kg
						Unknown alkane 3700 mg/kg
						Unknown hydrocarbon 1600 mg/kg
108A Machine Shop Weld Area	HCC/11/29/017/P	North Wall	Surface, Paint	TTLC, Pb	7420	2000 mg/kg
				TCLP, Pb	6010	2.6 mg/l

(1) TTLC was run because less than 0.5% solids.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
108A Machine Shop Weld Area	HCC/11/2/006/S	Floor	Core 1C 4"-24"	Be	ICP	<0.50 mg/kg
				TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.13 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				Vol. Organics	8240	Acetone 36 µg/kg
						1,2 dichloroethane 4 µg/kg
				TICs	8240	2-ethyl-1-hexanol 14 µg/kg
				Semi-Volatiles	8270	di-n-butylphthalate 52 µg/kg
				TICs	8270	4-hydroxy-4-methyl-2-pentanone (A,B) 10500 µg/kg
						Unknown ketone 160 µg/kg
						Unknown ketone (B) 780 µg/kg
						Unkn. hydrocarbon(B) 280 µg/kg
						Unknown ketone (B) 560 µg/kg
						Unknown alcohol (B) 1300 µg/kg
						Unknown hexanedioic acid ester (B) 18800 µg/kg
						Unknown hydrocarbon 200 µg/kg
109 Physical Test Lab/ESTES Lab	HCC/12/07/04/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.17 mg/l
						Cadmium 0.069 mg/l
						Chromium 0.04 mg/l
						Lead 2.3 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	1254 366 µg/kg
109 Ph. Tst Lab/ESTES Lab	Refer to 23/CO, HCC/10/14/008/P for Floor (Paint), .13 mg/l Pb					
111 Service Gallery	(No Samples Taken- Unaffected Hazardous Area) Refer to 23/CO, HCC/10/14/008/P for Floor(Paint) .13 mg/l Pb, and to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06					
112 Metallography Cell	(Hazardous Exception Area)					
113 Low-level Cell	(Hazardous Exception Area)					
115 High-level Cell	(Hazardous Exception Area)					
114 Hydraulic Pump Rm	Refer to 23/CO, HCC/10/14/008/P for Floor (Paint) .13 mg/l Pb (TCLP)					
114 Hydraulic Pump Rm	Refer to 23/116A, HCC/11/29/013/P for Walls (Paint) 0.06 mg/l Pb (TCLP)					

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
114 Hydraulic Pump Rm	HCC/12/07/02/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.27 mg/l
						Cadmium 0.005 mg/l
						Chromium 0.04 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	1254 1140 µg/kg
				Semi-Volatiles	8270	ND
				TICs	8270	4-hydroxy-4-methyl-2-pentanone 6840 mg/kg
						Unknown alcohol 63 mg/kg
						Unknown alkane 46 mg/kg
						Unknown alkane 36 mg/kg
						Substituted heptadecane 46 mg/kg
						Substituted heptadecane 43 mg/kg
						Eicosene isomer 33 mg/kg
						Unknown alkane 53 mg/kg
						Unknown alkane 76 mg/kg
						Unknown alkane 69 mg/kg
						Unknown alkane 72 mg/kg
						Unknown alcohol 49 mg/kg
						Unknown alkane 59 mg/kg
						Unknown alkane 43 mg/kg
						Unknown hydrocarbon 49 mg/kg
						Unknown alkane 69 mg/kg
						Unknown alkane 102 mg/kg
						Unknown hydrocarbon 33 mg/kg
						Unknown alkane 66 mg/kg
						Unknown alkane 46 mg/kg
116 Pu Lab/X-ray Room	Refer to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06 mg/l Pb					
116A Pu Lab/X-ray Room	HCC/11/29/013/P	West Wall	Surface, Paint	TCLP, Pb	6010	0.06 mg/l
Hallway	Refer to 23/116A, HCC/11/29/013/P for Walls (Paint) 0.06 mg/l Pb					
117 Tool Room	HCC/11/15/012/P	North Wall	Surface, Paint	TCLP, Pb	6010	<0.04 mg/l
117A Tool Room Mezzanine	HCC/11/15/011/P	Duct Work	Surface, Paint	TCLP, Pb	6010	1.6 mg/l
118 Decon Room	(Hazardous Exception Area) Refer to 23/CO, HCC/10/14/008/P for Floor (Paint) .13 mg/l Pb, and to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06 mg/l Pb					
119 ESTES Effluent System	(No Samples Taken - Unaffected Hazardous Area) Refer to 23/CO, HCC/10/14/008/P for Floor (Paint) .13 mg/l Pb, and to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06					
120 ESTES Sample Prep	(No Samples Taken - Unaffected Hazardous Area) Refer to 23/CO, HCC/10/14/008/P for Floor (Paint) .13 mg/l Pb, and to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06					
Corridor/Ladies Change Rm	HCC/10/14/008/P	Floor	Surface, Paint	TCLP, Pb	6010	0.13 mg/l
	Refer to 23/116A, HCC/11/29/013/P for Walls(Paint) 0.06 mg/l Pb					

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
121 Boiler/Utility Room	HCC/12/15/07/SS	Floor	Surface, Concrete	TCLP Metals	6010	Arsenic <0.04 mg/l
						Barium 0.50 mg/l
						Cadmium <0.005 mg/l
						Chromium 0.14 mg/l
						Lead <0.04 mg/l
						Mercury <0.0002 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l
				PCBs	8080	ND
				Semi-Volatiles	8270	naphthalene 1150 µg/kg
						di-n-butyl pthalate 1730 µg/kg
						butyl benzyl-phthalate 1110 µg/kg
						bis(2-ethylhexyl) phthalate 2030 µg/kg
				TICs	8270	4-methyl-3-penten-2-one 58 mg/kg
						4-hydroxy-4-methyl-2-pentanone 9872 mg/kg
						Substituted cyclopentene 14.5 mg/kg
						Unknown alcohol 9.9 mg/kg
						Unknown hydrocarbon 42.9 mg/kg
						Unknown alcohol 128.8 mg/kg
						Unknown alkane 11.9 mg/kg
						Unknown alkane 39.6 mg/kg
						Substituted cyclohexane 6.6 mg/kg
						Unknown alkane 27.1 mg/kg
						Unknown hydrocarbon 5.9 mg/kg
						Unknown alkane 27.1 mg/kg
						Unknown alkane 13.2 mg/kg
						Unknown alkane 4.6 mg/kg
						Unknown hydrocarbon 4.6 mg/kg
						Unknown hydrocarbon 13.9 mg/kg
						Unknown alkane 7.3 mg/kg
						Unknown alkane 7.9 mg/kg
122 Manipulator Repair Room	HCC/12/07/05/SS	East Wall	Surface, Swipe	Total Metals(2)	6010	Cadmium 22 mg/kg
						Chromium 95 mg/kg
						Lead 630 mg/kg
						Zinc 1200 mg/kg
				PCBs	8080	1254 1040 µg/kg
						1260 750 µg/kg
122 Manipulator Repair Room	Refer to 23/CO, HCC/10/14/008/P for Floor (Paint) .13 mg/l Pb, and to 23/107, HCC/11/29/015/P for Walls(Paint) <0.04 mg/l Pb					
Storage Shed	(Unaffected Hazardous Area)					
Roof	(Unaffected Hazardous Area - See Section 5.0 Asbestos)					
Exterior	(Unaffected Hazardous Area)					
108 Roof and Exterior	(Unaffected Hazardous Area - See Section 5.0 Asbestos)					
Outside HEPA Unit	(Hazardous Exception Area)					
Stack Sampling Pit	(Unaffected Hazardous Area)					
Ventillation Exhaust Pit	(Unaffected Hazardous Area)					

(2) Total Metals was performed in place of TCLP Metals due to limited sample quantity.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
Liquid Waste Vault	HCC/02/14/08/SS	Bottom	Composite Soil	TTLC Metals(3)	6010	Antimony <0.5 mg/kg
						Arsenic <10 mg/kg
						Barium 49.5 mg/kg
						Beryllium 285 mg/kg
						Cadmium 5.83 mg/kg
						Chromium 10.8 mg/kg
						Cobalt 2.18 mg/kg
						Copper 40.6 mg/kg
						Lead 71.6 mg/kg
						Mercury ND
						Molybdenum <0.5 mg/kg
						Nickel 6.85 mg/kg
						Selenium <1 mg/kg
						Silver <0.5 mg/kg
						Thallium <0.5 mg/kg
						Vanadium 30.4 mg/kg
						Zinc 448 mg/kg
Diesel Tank	HCC/11/4/007/S	Earth	Core 67"-84"	Semi-Volatiles	8270	di-n-butyl pthalate 173 µg/kg
						butyl benzyl-phthalate 64 µg/kg
						bis(2-ethylhexyl) phthalate 64 µg/kg
						pyrene 55 µg/kg
					TICs	4-hydroxy-4-methyl-2-pentanone (A,B) 65300 µg/kg
						Unknown alcohol (B) 411 µg/kg
						Unknown alkane 501 µg/kg
						Unknown ketone (B) 364 µg/kg
						Unknown alkane 182 µg/kg
						Unknown alkane 347 µg/kg
						Unknown alkane 274 µg/kg
						Unknown alkane 866 µg/kg
						Unknown alkane 319 µg/kg
						Unknown alkane 274 µg/kg
						Unknown benzenedicarboxylic acid ester 227 µg/kg
						Unknown alkane 227 µg/kg
						Unknown alkane 182 µg/kg
						Unknown hydrocarbon 227 µg/kg
						Unknown hydrocarbon 1280 µg/kg
						Unknown hexanedioic acid ester (B) 7890 µg/kg
						Unknown alkane 319 µg/kg
						Unknown alkane 364 µg/kg
						Unknown alkane 364 µg/kg
						Unknown alkane 319 µg/kg
				Extractable Fuel Hydrocarbons	Mod.8015	ND
				Vol. Organics	8240	Acetone 46 µg/kg
					TICs	ND
				TCLP	6010	Arsenic <0.04 mg/l
						Barium 0.45 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury 0.0005 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l

(3) TTLC performed on-site, sample radiation levels too high for off-site lab.

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

Table 4-4—Hazardous Constituent Data

Room Number	Sample Numbers	Surface	Sample Type	Analysis	Method	Results
Diesel Tank	HCC/11/4/008/S	Earth	Core 49"-67"	Semi-Volatiles	8270	di-n-butyl pthalate 192 µg/kg
						pyrene 64 µg/kg
						bis(2-ethylhexyl) phthalate 60 µg/kg
					TICs	4-hydroxy-4-methyl-2-pentanone (A,B) 63100 µg/kg
						Unknown hydrocarbon 460 µg/kg
						Unknown ketone (B) 782 µg/kg
						Substituted undecane 276 µg/kg
						Unknown alkane 460 µg/kg
						Unknown alkane 368 µg/kg
						Unknown alkane 1330 µg/kg
						Unknown alkane 507 µg/kg
						Unknown alkane 414 µg/kg
						Unknown benzenedicarboxylic acid ester 185 µg/kg
						Unknown alkane 322 µg/kg
						Unknown hydrocarbon 276 µg/kg
						Unknown hydrocarbon 368 µg/kg
						Unknown hexanedioic acid ester (B) 11500 µg/kg
						Unknown alkane 230 µg/kg
						Unknown alkane 368 µg/kg
						Unknown alkane 368 µg/kg
						Unknown alkane 230 µg/kg
						Unknown alkane 322 µg/kg
				Vol. Organics	8240	methylene chloride 1µg/kg
					TICs	ND
				Extractable Fuel Hydrocarbons	Mod.8015	ND
				TCLP	6010	Arsenic 0.05 mg/l
						Barium 0.34 mg/l
						Cadmium <0.005 mg/l
						Chromium <0.01 mg/l
						Lead <0.04 mg/l
						Mercury 0.0003 mg/l
						Selenium <0.04 mg/l
						Silver <0.005 mg/l

ND=Non-Detectable, TICs=Tentatively Identified Compounds.

4.8. Results Reported by Room Number

4.8.1. Room 103, Office

4.8.1.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. From construction drawings and upon visual screening, it was determined that the south wall may contain asbestos material. The ceiling contains insulation around the air vent and a sprinkler system containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware on the west side is brass. The north wall is constructed of concrete block, painted with thick white paint. A sample of the paint from the north wall was taken to be analyzed for TCLP lead.

4.8.1.2. PCB Inventory

There are two fluorescent light fixtures on the ceiling containing two ballasts.

4.8.1.3. Grid Map

Refer to Figure 4-2 for the grid map for this room.

4.8.1.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the North Wall. Results were less than .05 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for Land Disposal Restricted (LDR) wastes.

4.8.2. Room 102, Office

4.8.2.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. From construction drawings and upon visual screening, it was determined that the south wall may contain asbestos material. The ceiling contains insulation around the air vent and a sprinkler system containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware on the east wall is brass. The east wall is constructed of wood, painted with thick white paint. A sample of the paint from the east wall was taken to be analyzed for TCLP lead.

4.8.2.2. PCB Inventory

There are six light fixtures with bulbs and three ballasts.

4.8.2.3. Grid Map

Refer to Figure 4-3 for the grid map of this room.

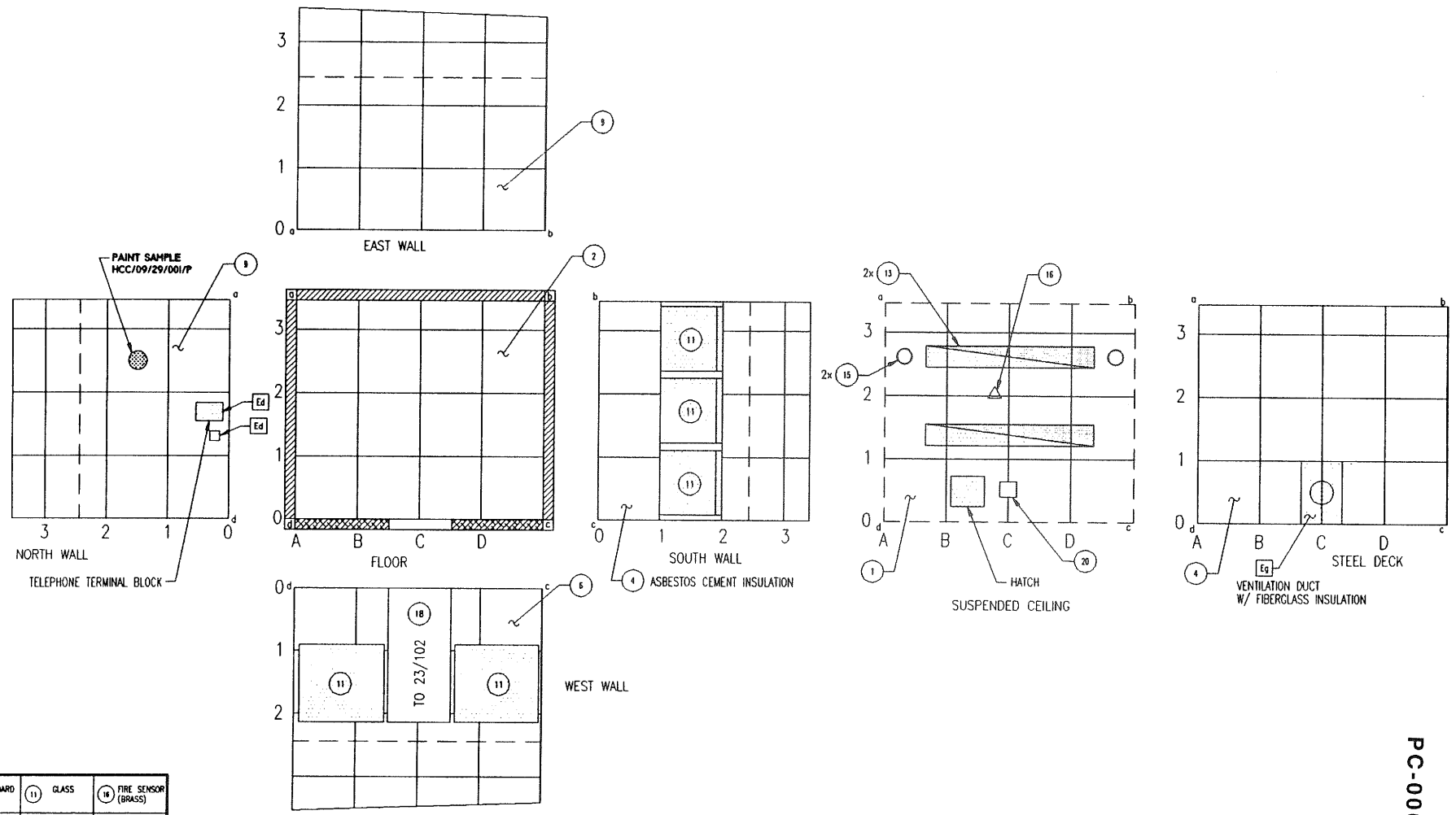


Fig. 4-2—Room 103

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/103
DESCP	OFFICE
ELECT. FILE:	CDW-103.DWG

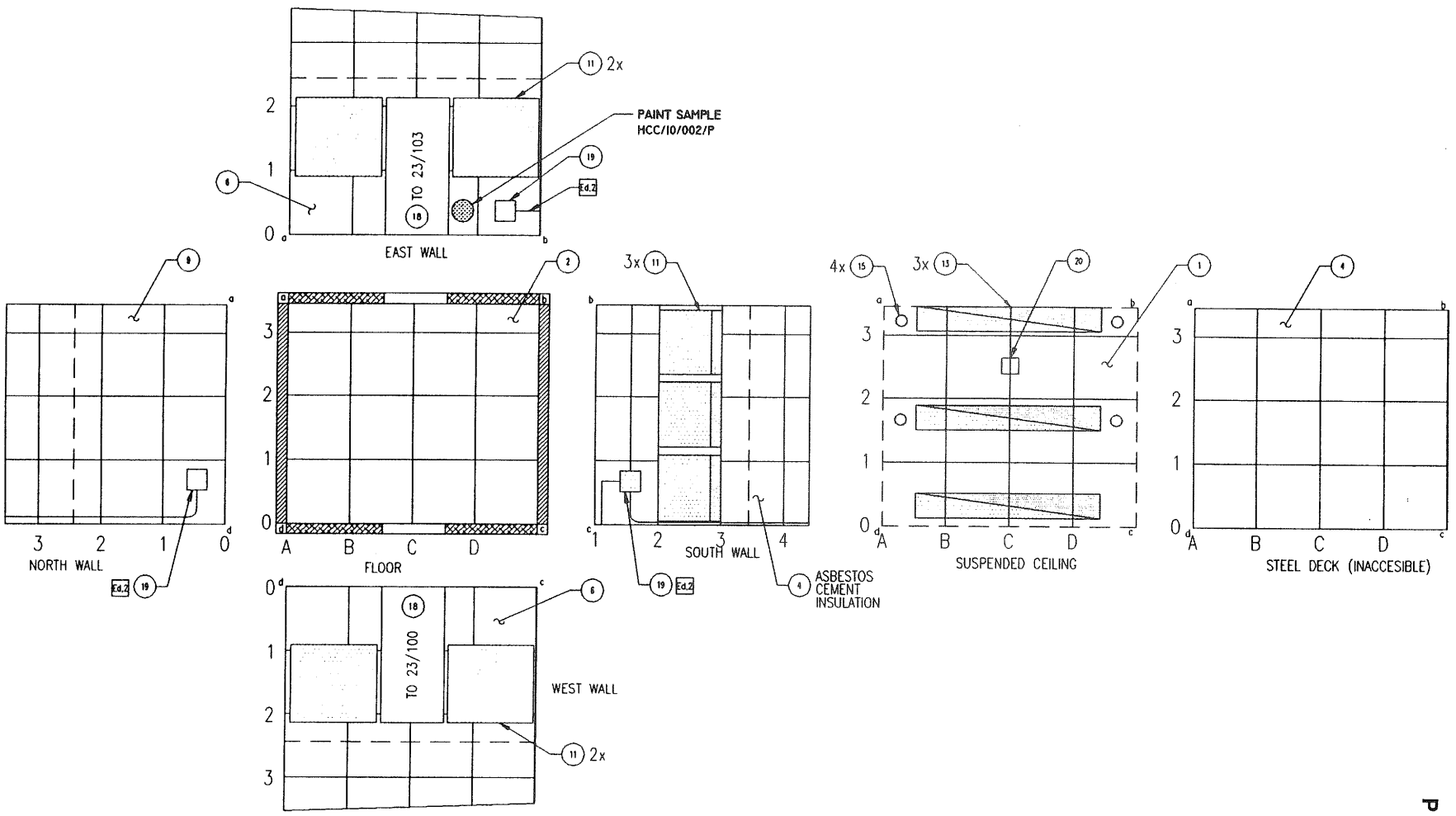


Fig. 4-3—Room 102

1 CEILING TILE	8 HARDBOARD	11 GLASS	18 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	6 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	16 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/102
DESCP	OFFICE
ELECT. FILE:	CDW-102.DWG

4.8.2.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the East Wall. Results were .20 mg/l which is less than the regulatory limit of 5.0 ppm.

4.8.3. Room 100, Office

4.8.3.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. From construction drawings and upon visual screening, it was determined that the south wall may contain asbestos material. The ceiling contains six sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware on the west wall is brass. A sample of the paint from the south wall was taken to be analyzed for TCLP lead.

4.8.3.2. PCB Inventory

The ceiling of this room has six light fixtures, 12 bulbs and six ballasts that may contain PCBs.

4.8.3.3. Grid Map

Refer to Figure 4-4 for the grid map of this room.

4.8.3.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the East Wall. Results were .68 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.

4.8.4. Room 104, Lobby

4.8.4.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware on the east wall is brass. A sample of the paint from the west wall was taken to be analyzed for TCLP lead.

4.8.4.2. PCB Inventory

The ceiling of this room has three ballasts that may contain PCBs.

4.8.4.3. Grid Map

Refer to Figure 4-5 for the grid map of this room.

4.8.4.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the West Wall. Results were less than .05 mg/l which is less than the regulatory limit of 5.0 mg/l for LDR wastes.

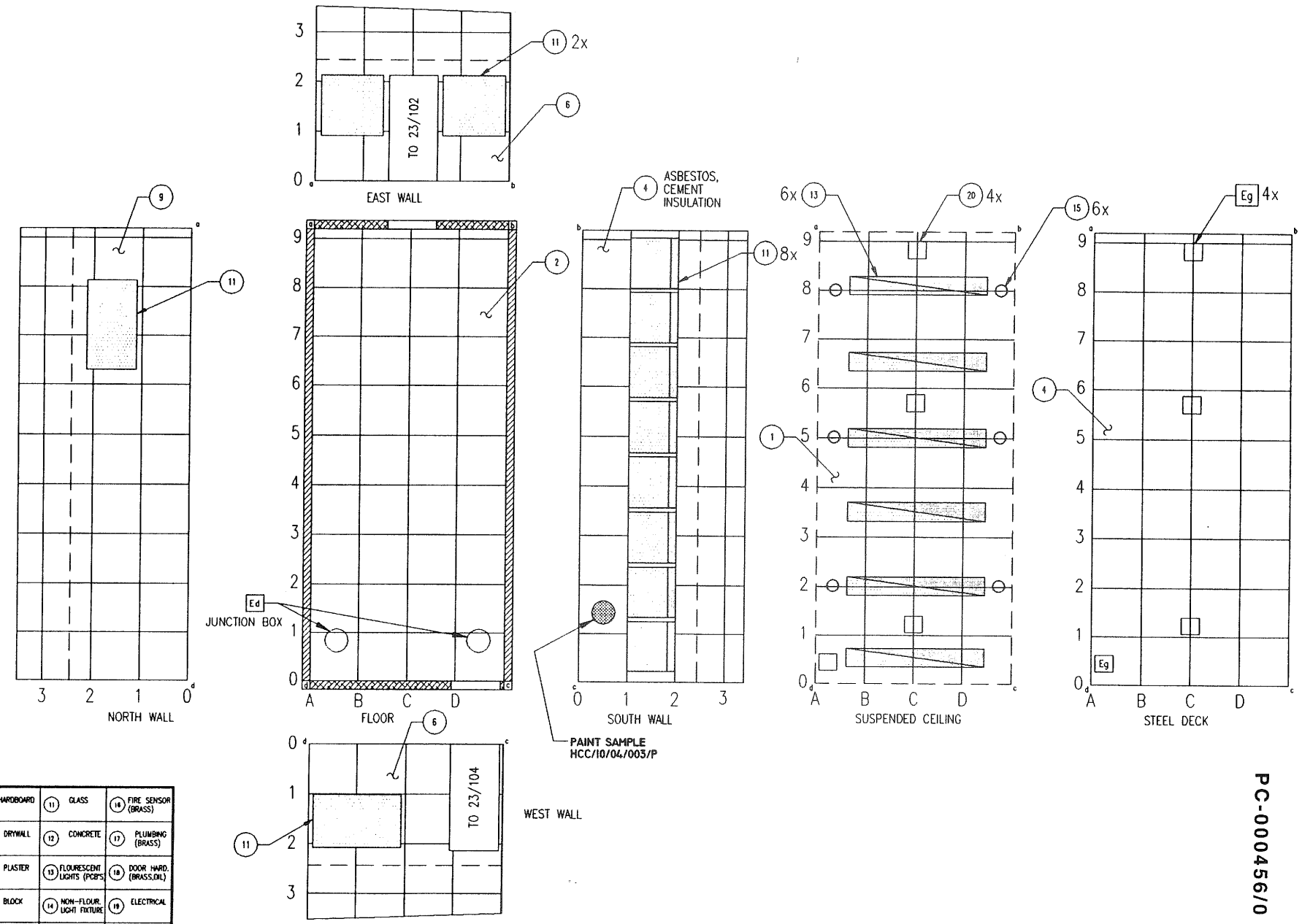


Fig. 4-4—Room 100

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/100
DESCP	OFFICE
ELECT. FILE:	CDW-100.DWG

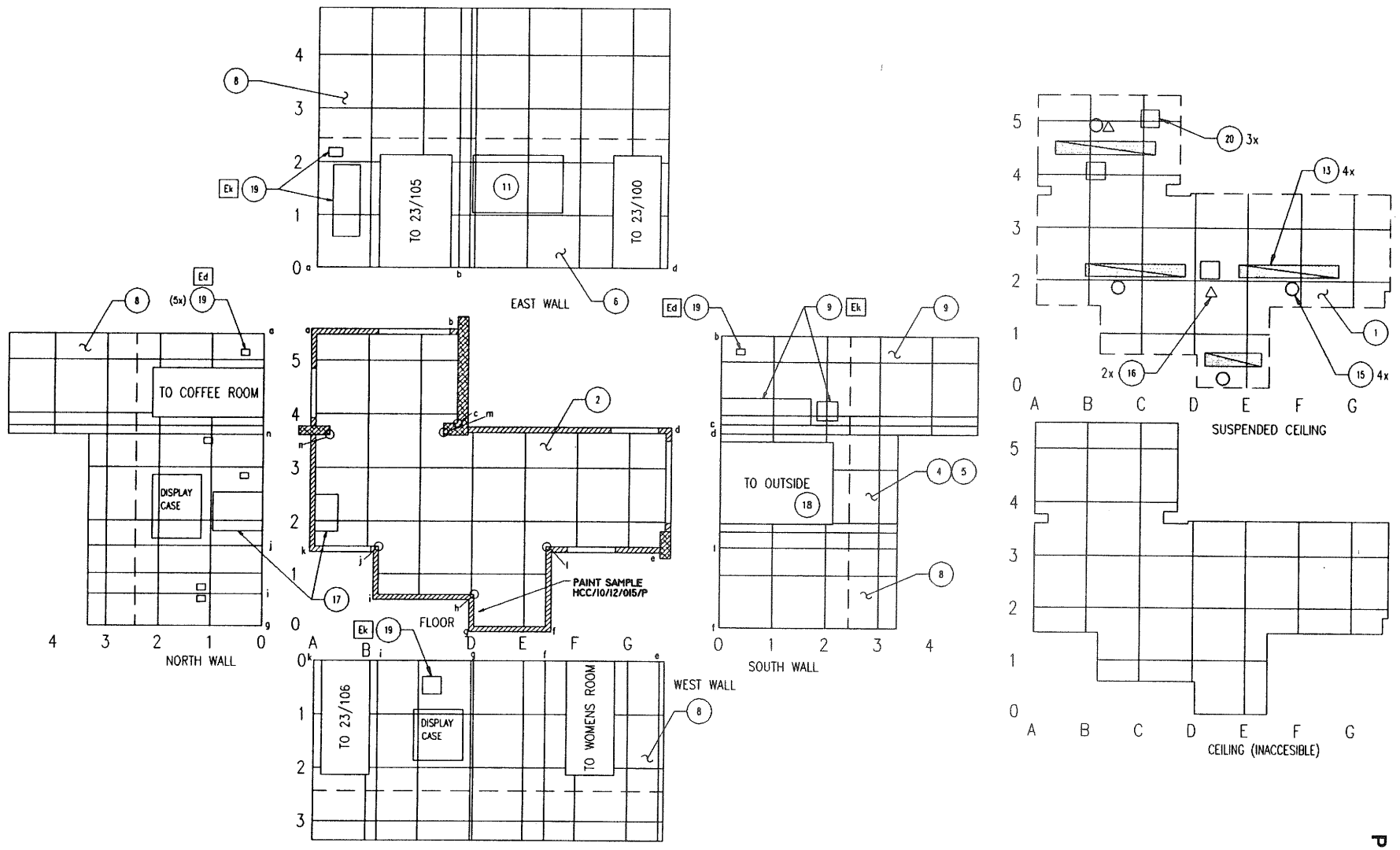


Fig. 4-5—Room 104

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/104
DESCP	LOBBY
ELECT. FILE:	CDW-104

4.8.5. Ladies Bathroom

4.8.5.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass. A sample of the paint from the east wall was taken to be analyzed for TCLP lead. There appear to be lead joints in the drain lines to this room.

4.8.5.2. PCB Inventory

The ceiling of this room has incandescent light fixtures which are not PCB-suspect.

4.8.5.3. Grid Map

Refer to Figure 4-6 for the grid map of this room.

4.8.5.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the East Wall. Results were less than 0.05 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.

4.8.6. Men's Bathroom

4.8.6.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass, some containing residual oil. A sample of the paint from the east wall was taken to be analyzed for TCLP lead. There appear to be lead joints in the drain lines to this room.

4.8.6.2. PCB Inventory

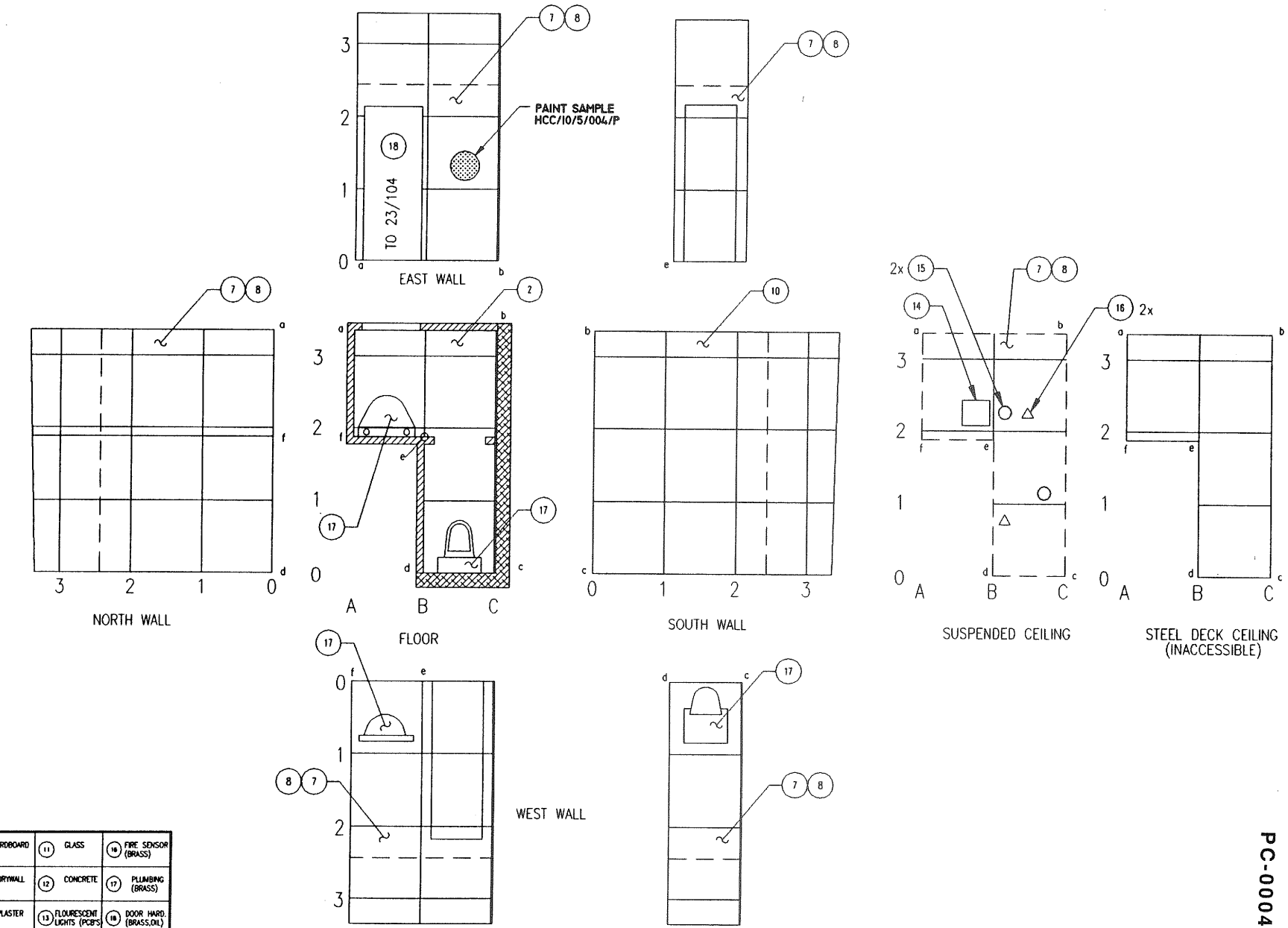
The ceiling of this room has incandescent light fixtures which are not PCB-suspect.

4.8.6.3. Grid Map

Refer to Figure 4-7 for the grid map of this room.

4.8.6.4. Sample Results

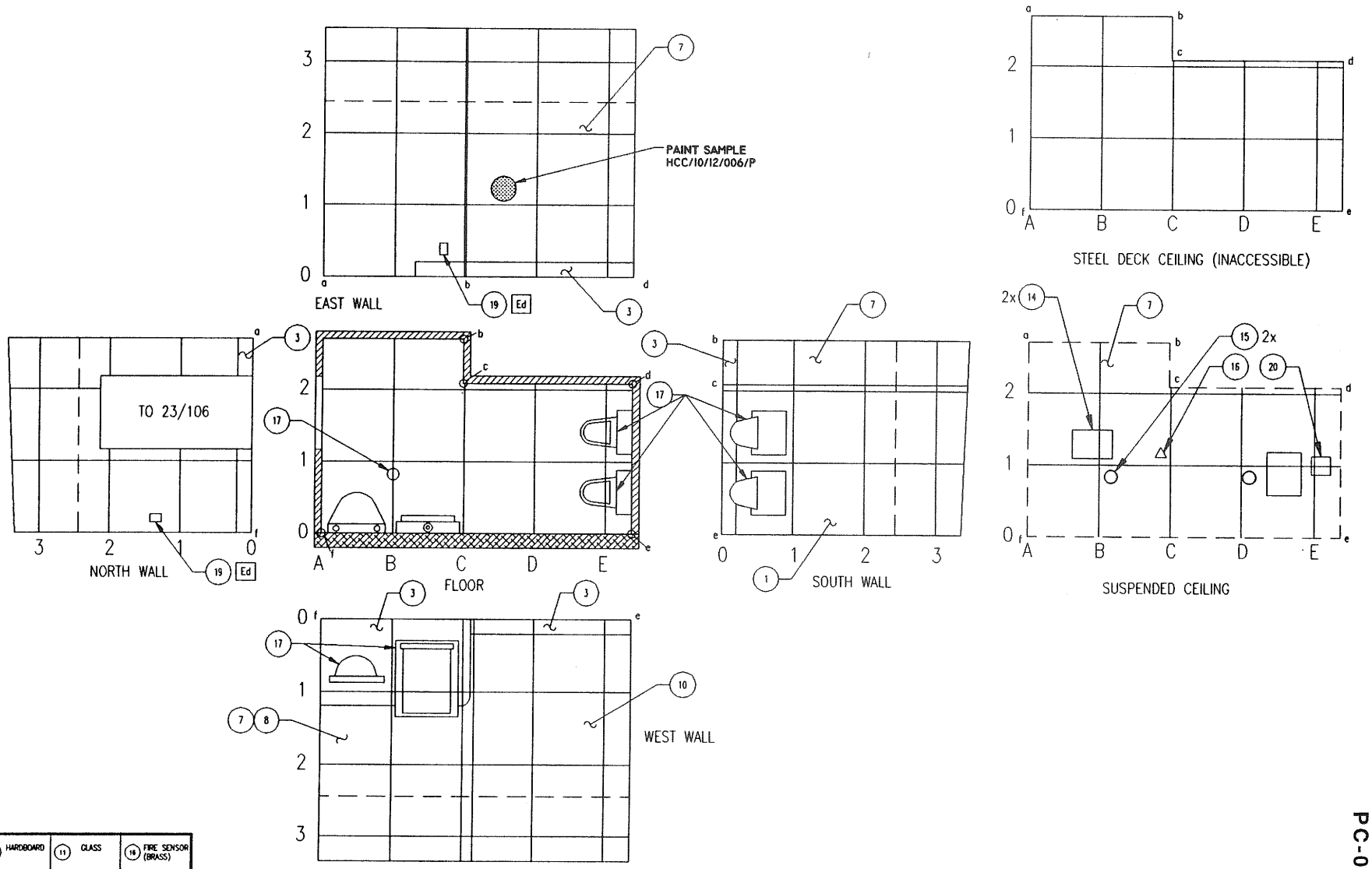
Sample results for this room included TCLP for Lead Paint for the East Wall. Results were less than 0.05 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/LADIES
DESCP	LADIESROOM
ELECT. FILE:	CDW-LADY.DWG

Fig. 4-6—Ladies Bathroom



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/MENS
DESCP	MENS ROOM
ELECT. FILE:	CDW-MENS.DWG

Fig. 4-7—Men's Bathroom

4.8.7. Coffee Room

4.8.7.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. There is a large sink that may contain brass or lead piping. There is also a trap door in the ceiling. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass, some containing residual oil. A sample of the paint from the north wall was taken to be analyzed for TCLP lead. There are lead joints in the drain lines to this room.

4.8.7.2. PCB Inventory

The ceiling of this room has incandescent light fixtures which are not PCB-suspect.

4.8.7.3. Grid Map

Refer to Figure 4-8 for the grid map of this room.

4.8.7.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the North Wall. Results were less than 0.05 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.

4.8.8. 105, Operating Gallery

4.8.8.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass, some containing residual oil. A sample of the paint from the west wall was taken to be analyzed for TCLP lead. There are lead joints in the drain lines to this room. There are mercury transformers and switches located on the North Wall. The Cell Windows in this area are filled with mineral oil that will need to be analyzed for radioactive and hazardous contaminants, which was not accessible during characterization. Lead used as shielding for the cell is visible (about 300 bricks). There is Zinc piping and components on all walls. There is evidence of lead joints along the trenches which parallel the cells located on the floor. The east wall contains various pieces of manipulator equipment which have a variety of metal components including brass, lead and magnetite used for shielding.

4.8.8.2. PCB Inventory

There are about 30 ballasts and about 120 fluorescent light bulbs in the ceiling. The ballasts are PCB-suspect.

4.8.8.3. Grid Map

Refer to Figure 4-9 for the grid map of this room.

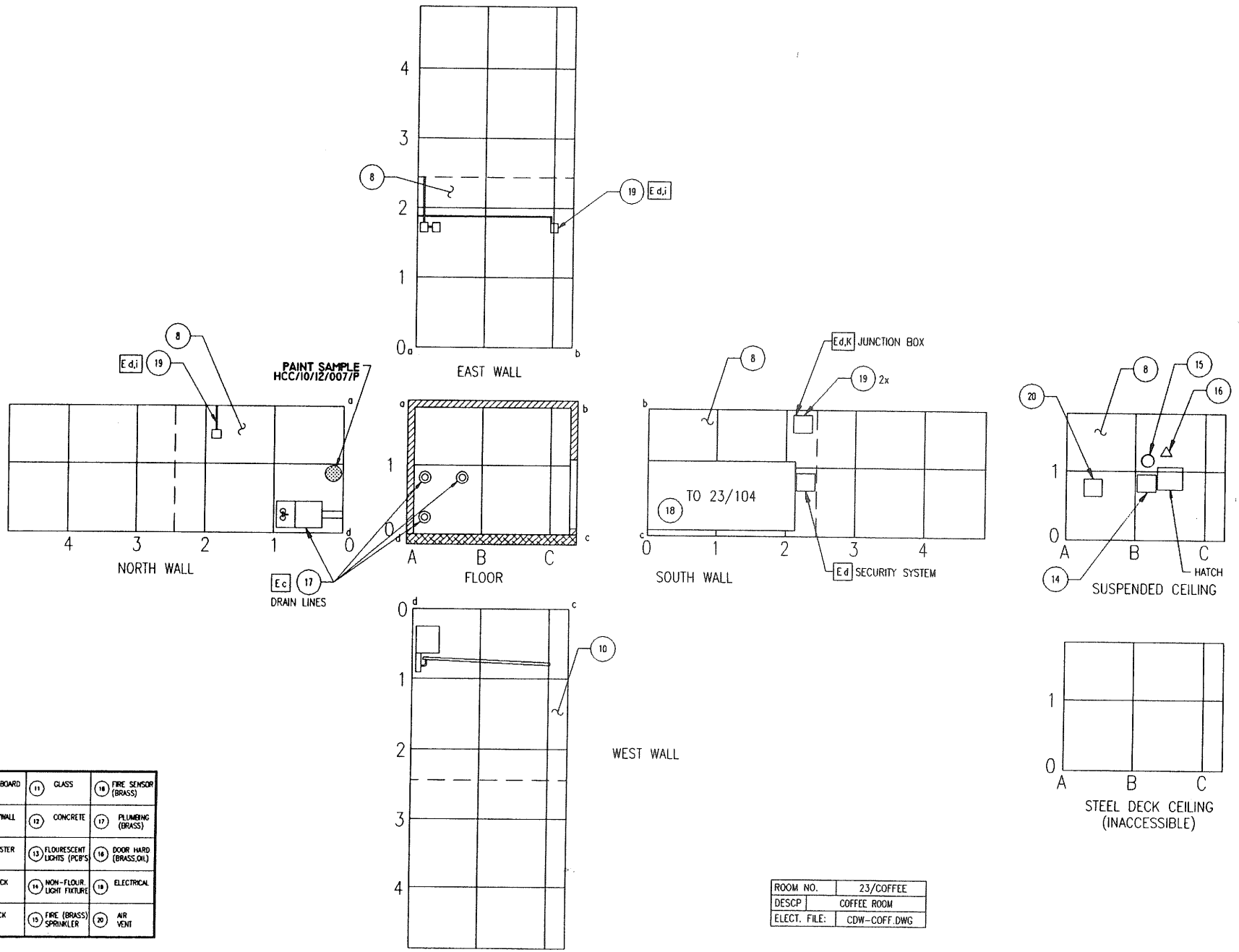


Fig. 4-8—Coffee Room

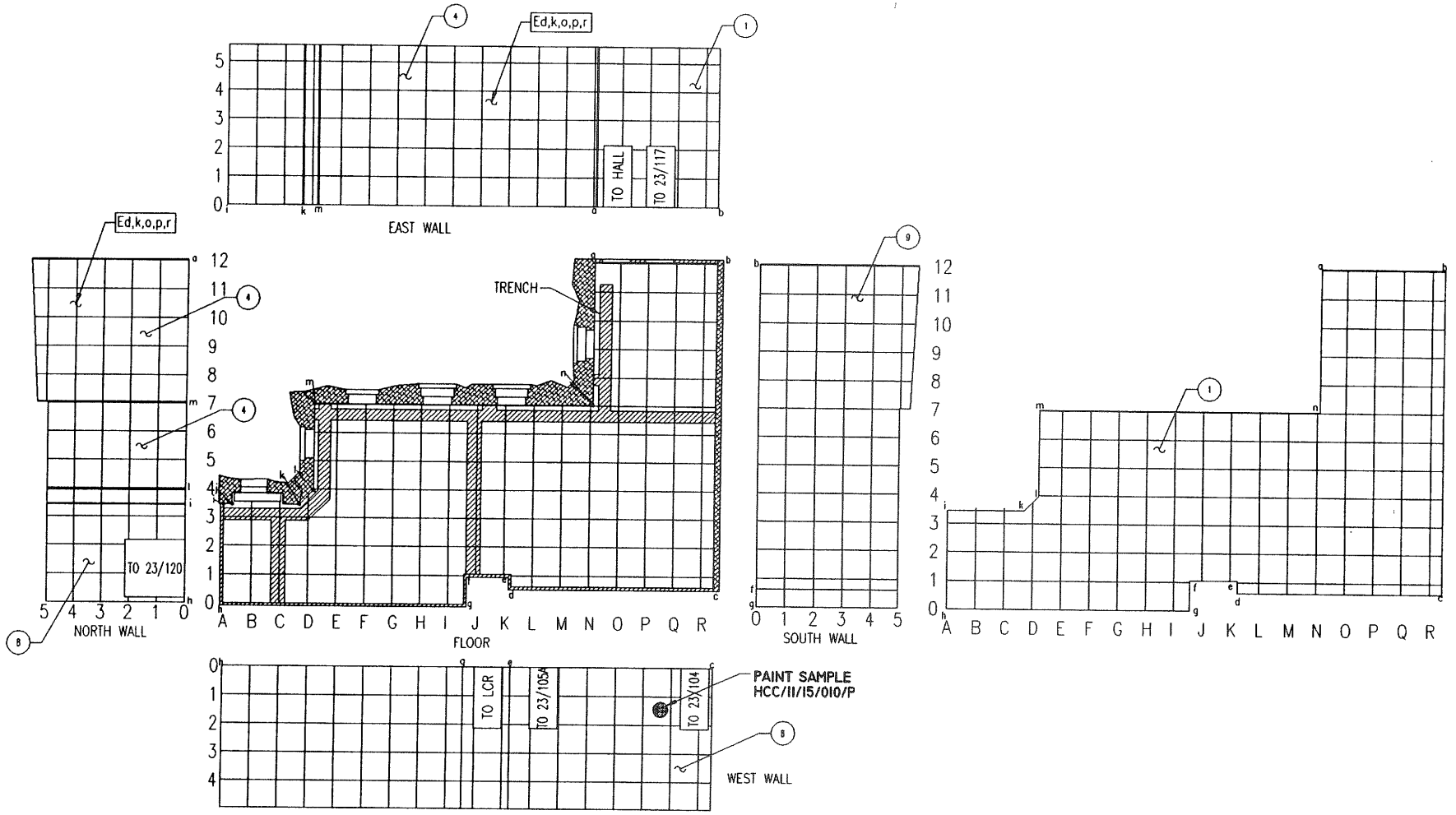


Fig. 4-9—Room 105, Operating Gallery

(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD. (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO.	23/105
DESCP	OPERATING GALLERY
ELECT. FILE:	CDW-105.DWG

4.8.8.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the West Wall. Results were less than 0.13 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.

4.8.9. 105A, Dark Room

4.8.9.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The room is constructed of painted drywall. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass. A sample of the paint from the west wall was taken to be analyzed for TCLP lead. Samples were also taken from the floor due to visible stains and based on historical information regarding the use of chemicals in this room.

4.8.9.2. PCB Inventory

The ceiling of this room has incandescent light fixtures which are not PCB-suspect. However, samples taken from concrete removed from the floor indicate that trace amounts of PCBs are present in the concrete surface of the floor(49 µg/kg).

4.8.9.3. Grid Map

Refer to Figure 4-10 for the grid map of this room.

4.8.9.4. Sample Results

Refer to Table 4-4 for a complete listing of all sample results for this room. Sample results for this room included TCLP for Lead Paint for the West Wall. Results were less than 0.04 mg/l which is below than the regulatory limit of 5.0 mg/l. Samples of concrete taken from the floor indicate the presence of PCB 1254 at levels of 49 µg/l. Semi-Volatiles were present in mg/kg quantities in the surface concrete of the floor. The material removed from the floor will need to be re-sampled during removal to determine if such debris will be exempt from LDR restrictions for hazardous debris.

4.8.10. 106, Change Room

4.8.10.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered by non-friable asbestos tiles (see Section 5.0 for asbestos details). The door hardware and fixtures within the room are brass. There is a sink that contains brass hardware. The drain lines and covers contain brass and lead joints. A sample of the paint from the east wall was taken to be analyzed for TCLP lead.

4.8.10.2. PCB Inventory

The ceiling of this room contains six ballast within the light fixtures which are PCB-suspect.

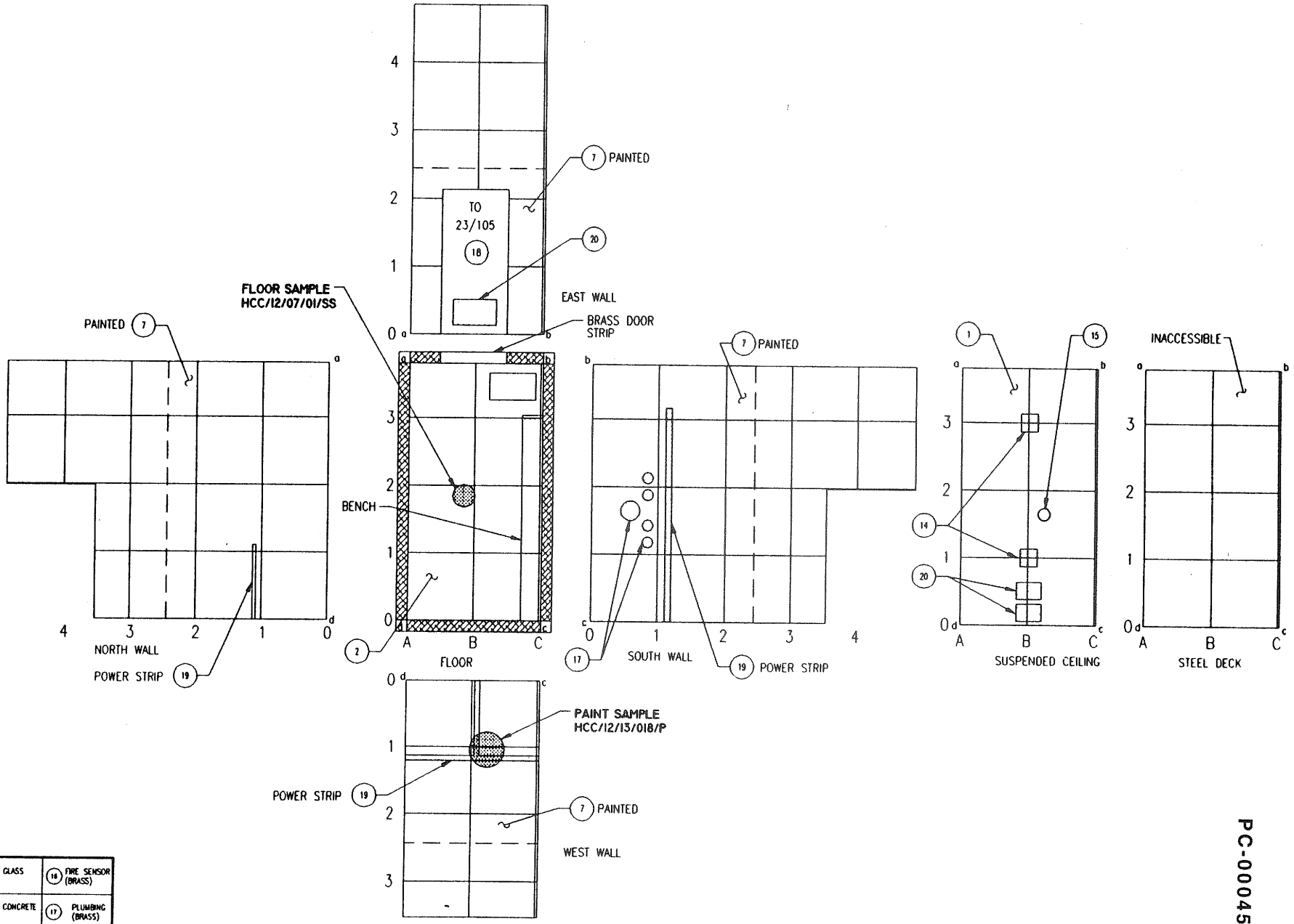


Fig. 4-10—Room 105A, Dark Room

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S	18 DOOR HARD (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/105A
DESCP	DARK ROOM
ELECT FILE	CDW 105A

4.8.10.3. Grid Map

Refer to Figure 4-11 for the grid map of this room.

4.8.10.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the East Wall. Results were less than 0.04 mg/l which is less than the regulatory limit of 5.0 mg/l for Pb for LDR wastes.

4.8.11. 107, Warm Metallography

4.8.11.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The west wall is block with plaster and there are copper and galvanized utility lines along this wall. The North wall has vent duct work and brass equipment in the air monitors. The south wall is painted plaster with vent duct work; the wall has visible carbon stains from the heating system The floor is painted concrete, the same as the corridor. The door hardware and fixtures within the room are brass. A sample of the paint from the north wall was taken to be analyzed for TCLP lead. Samples were also taken from the floor due to visible stains and based on historical information regarding the use of chemicals in this room. There is a manipulator hoist stored in this room. A sample of the hoist oil was analyzed for various parameters listed in Table 4-4.

4.8.11.2. PCB Inventory

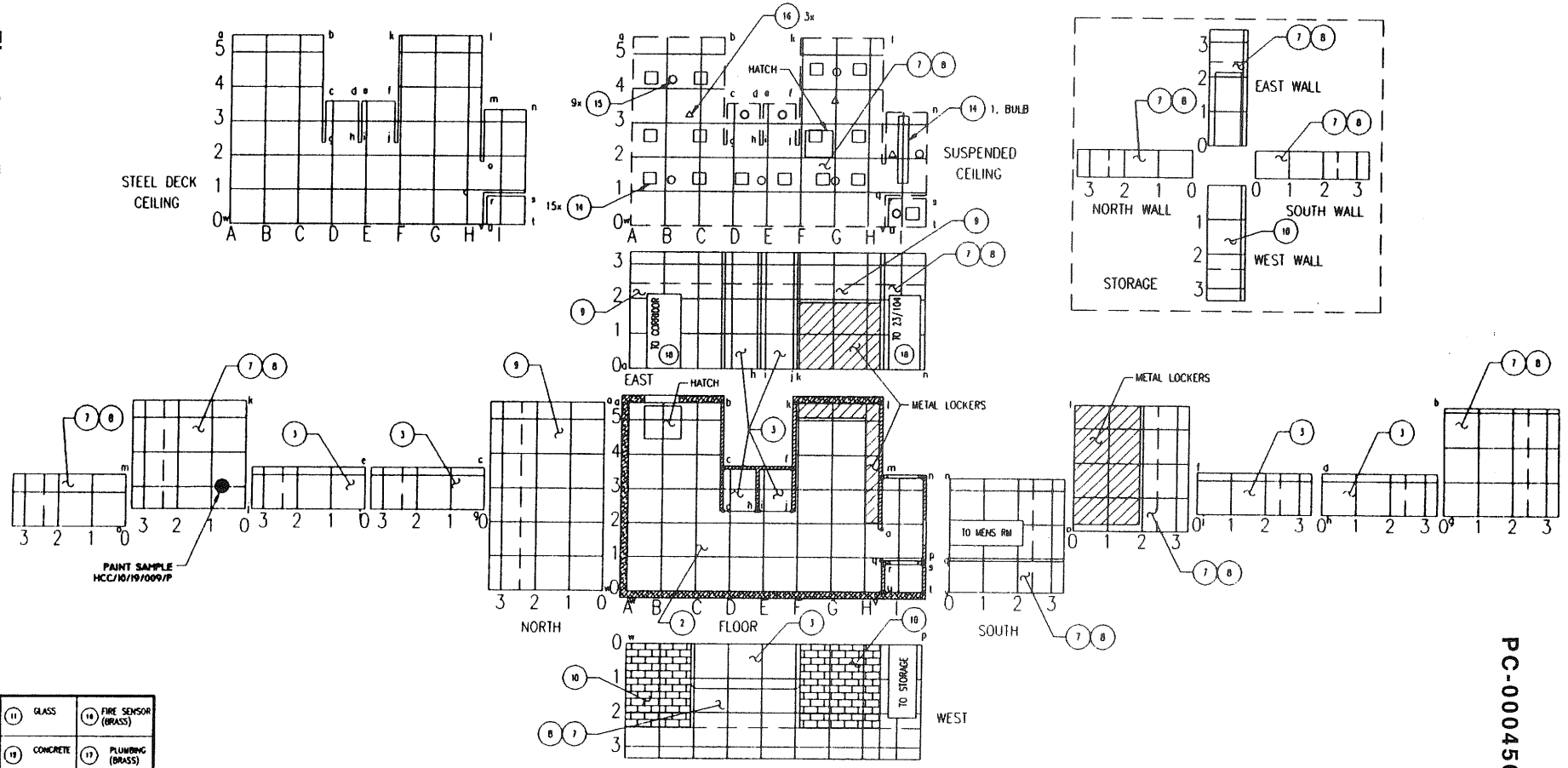
The ceiling of this room has six ballast. Samples taken from concrete removed from the floor indicate that trace amounts of PCBs are present in the concrete. The manipulator hoist has been stored in this room, however, results of the oil analysis for the hoist show that it was non-PCB.

4.8.11.3. Grid Map

Refer to Figure 4-12 for the grid map of this room.

4.8.11.4. Sample Results

Refer to Table 4-4 for a complete listing of all sample results for this room. Sample results for this room included TCLP for Lead Paint for the North Wall. Results were <.04 mg/l which is below the regulatory limit of 5.0 mg/l. Samples of concrete taken from the floor indicate the presence of PCB 1254 at levels of 792 µg/l. Semi-Volatiles were present in the floor in mg/kg quantities, however, because of the presence of PCBs and lead, the floor materials removed from this room will need to re-sampled to determine if they are LDR materials. The oil from the manipulator hoist was analyzed for hazardous constituents and will be disposed of as hazardous waste when the equipment is no longer in use.



CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD (BRASS,OIL)
PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO	23/106
DESCP	MENS CHANGE ROOM
EFFCT FILE	LOW 106.DWG

Fig. 4-11—Room 106, Change Room

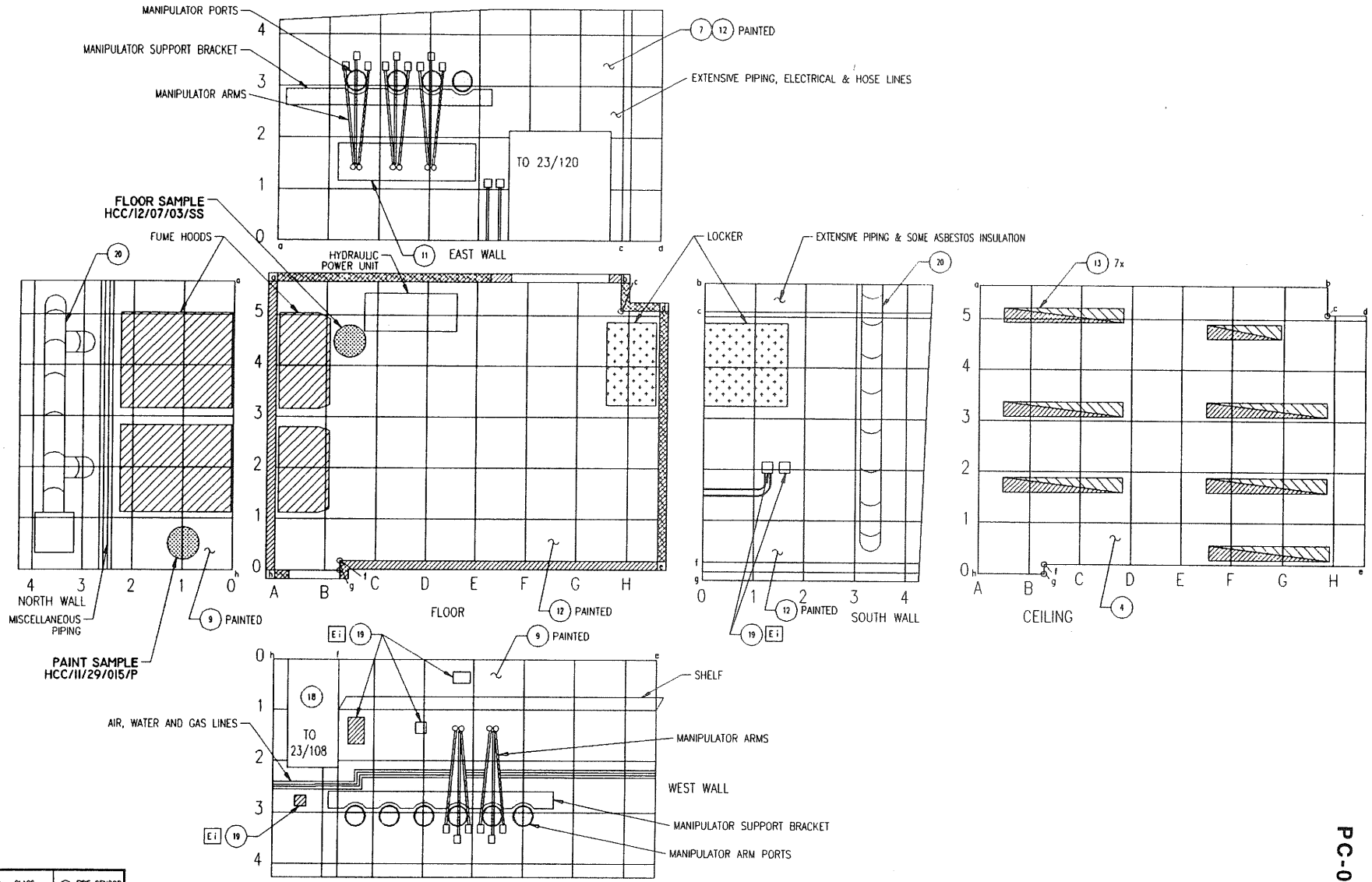


Fig. 4-12—Room 107, Warm Metallography

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/107
DESCP	WARM METALLOGRAPHY SHOP
ELECT. FILE:	CDW-107.DWG

PC-000456/0

4.8.12. 108, Beryllium Oxide Laboratory and Controlled Machine Shop

4.8.12.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The east wall is painted block and contains several valves and switches that are brass including air, gas and water lines; also electrical conduit, and vent duct work. The south wall has two large circuit panels, gas, water and air lines with galvanized and brass valves, steel doors containing glass and brass. The west wall is similar and has wall heaters and lead joints associated with drain lines. The north wall is similar to the rest of the room and has a vent pipe (previously used for beryllium venting) above the bandsaw that was sampled because of lead paint. The ceiling contains 30 ballasts, 60 fluorescent bulbs, two wall heaters, beryllium vent duct work, electrical conduit, and brass sprinkler systems. The floor contains several large pieces of electrical machining equipment including 2 mills, 2 lathes, 3 drill presses, 1 cut-off saw, 1 sander, and other miscellaneous machining tools and cabinets. The floor is covered with the same asbestos tile that is present throughout the building, but appears to be heavily stained from oils associated with the machining operations. The visual inspection of this room resulted in this area being classified as an "affected" hazardous area. Several samples were taken in this location, including cores of the floor to verify if the oil contamination had spread to the subsurface.

4.8.12.2. PCB Inventory

The ceiling of this room has 30 ballast. Samples taken from surface concrete removed from the floor indicate that trace amounts of PCBs are present in the concrete. The machines containing oil in this room were sampled and analyzed for various parameters including PCBs. The large lathe and the cut-off saw both contain PCBs in the regulatory range of >50 but <500 ppm. These items will need to be managed as PCB equipment until they are dismantled and dispositioned.

4.8.12.3. Grid Map

Refer to Figure 4-13 for the grid map of this room.

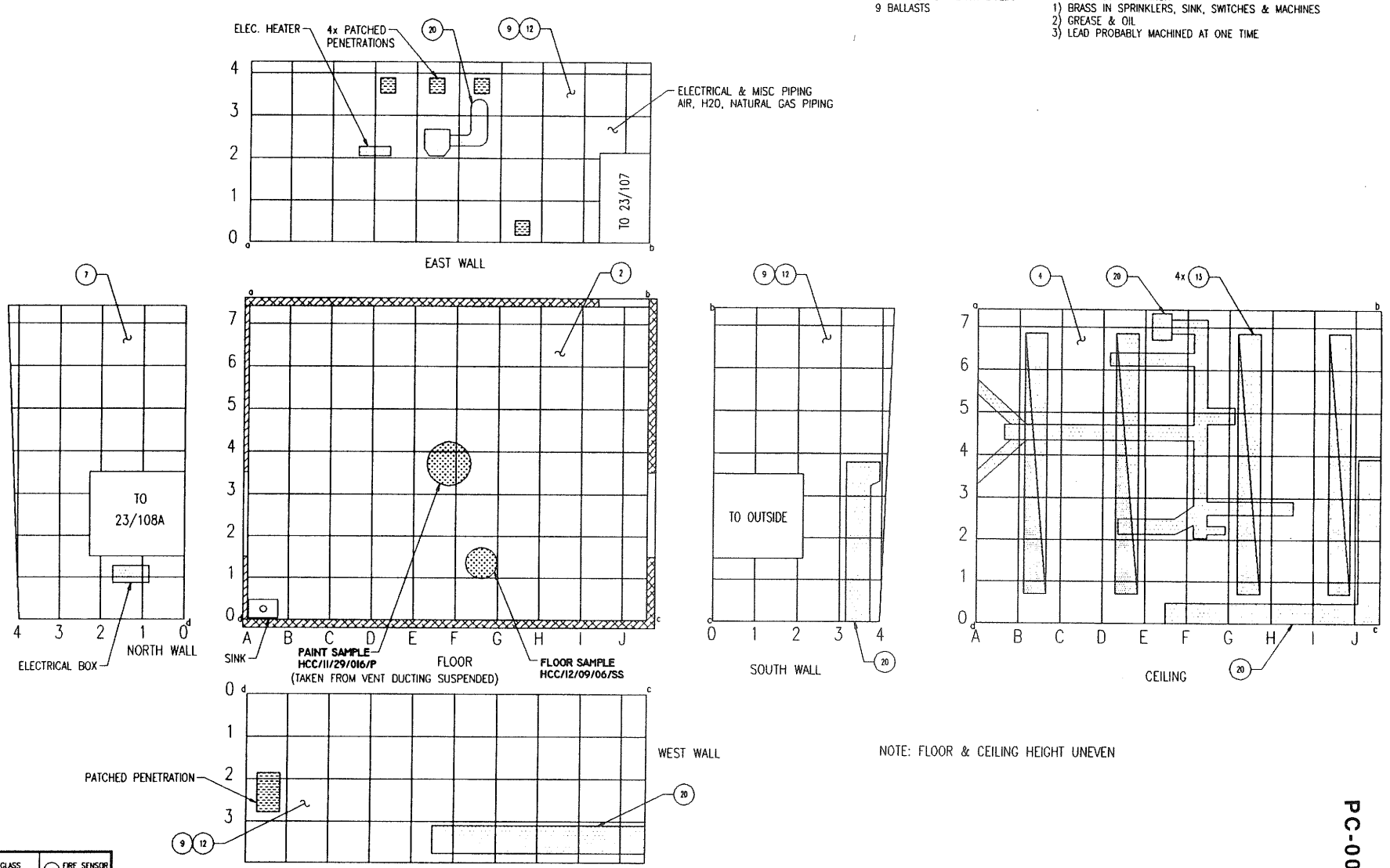
4.8.12.4. Sample Results

Refer to Table 4-4 for a complete listing of all sample results for this room, including core samples. Sample results for this room included TCLP for lead paint on the vent pipe above the bandsaw which is the same paint present on the ventilation system throughout this room. Results were 0.76 mg/kg for lead which is less than the regulatory limit of 5.0 mg/l. Samples of concrete taken from the floor indicate the presence of PCB 1254 at levels of 75 µg/kg. Semi-Volatiles were present in the floor in µg/kg quantities, however, because of the presence of PCBs, the floor materials removed from this room will need to be evaluated as mixed waste. Cores 2F and 3A were taken from this room to a level of 35" for Core 2F. The results indicate that the TCLP metals detected in the cores were less than the detection limits (except for Barium) and volatile and semi-volatile organics were detected at µg/kg quantities. Paint samples for the walls of this room are the same as for room 108A which has a TCLP value for lead of 2.6 mg/l.

A total of four oil samples were taken from machining equipment in this room which included samples from the Cut-off saw, the Van Norman Mill, and the Large Lathe. The results indicate that all oils will need to be managed as hazardous, PCB, or mixed waste once removed from the equipment for disposal. For a complete listing of the equipment sampled and the results, refer to Table 4-4.

1) Hg SWITCHES FOR LIGHTS
2) FILTER AND DROP SYSTEM FOR MACHINE DUST
3) ELECTRIC HEATER
   9 FLOURESCENT LIGHT FIXTURES
   18 FLOURESCENT LIGHT BULBS
   9 BALLASTS

NOTE: Be CONTAMINATION
1) BRASS IN SPRINKLERS, SINK, SWITCHES & MACHINES
2) GREASE & OIL
3) LEAD PROBABLY MACHINED AT ONE TIME



NOTE: FLOOR & CEILING HEIGHT UNEVEN

(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO.	23/108
DESCP	MACHINE SHOP
ELECT. FILE:	CDW-108A.DWG

Fig. 4-13—Room 108, Beryllium Oxide Laboratory and Controlled Machine Shop

4.8.13. 108A, Machine Shop Weld Area

4.8.13.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is covered with dusts and paint. The drain pipe contains lead. There is copper piping along the East Wall with lead solder in it, and zinc conduit lines on the walls. The ceiling has ballasts and is steel with lead and brass components. The door hardware and fixtures within the room are brass, some containing residual oil. A sample of the paint from the north wall was taken to be analyzed for TCLP lead. Based on visual results and a review of the activities conducted in this area, a Core Sample (1C) was taken at a depth of 4" to 24" and analyzed for various constituents.

4.8.13.2. PCB Inventory

The ceiling of this room has 10 ballasts suspected of containing PCBs and about 20 fluorescent bulbs.

4.8.13.3. Grid Map

Refer to Figure 4-14 for the grid map of this room.

4.8.13.4. Sample Results

Sample results for this room included TCLP for Lead Paint for the North Wall. Results were 2.6 mg/l which is less than the regulatory limit of 5.0 mg/l. The Core results are presented in Table 4-4 and demonstrate that TCLP metals were non-detectable, with the exception of Barium (0.13 mg/l). Volatile organics such as acetone were detected in µ/kg (ppb) quantities and semi-volatiles were also detected (di-n-butyl phthalate) in ppb quantities. These levels are low enough to be evaluated for exemptions from Land Disposal Restrictions under the hazardous debris regulations.

4.8.14. 109, Physical Test Lab/ESTES Lab

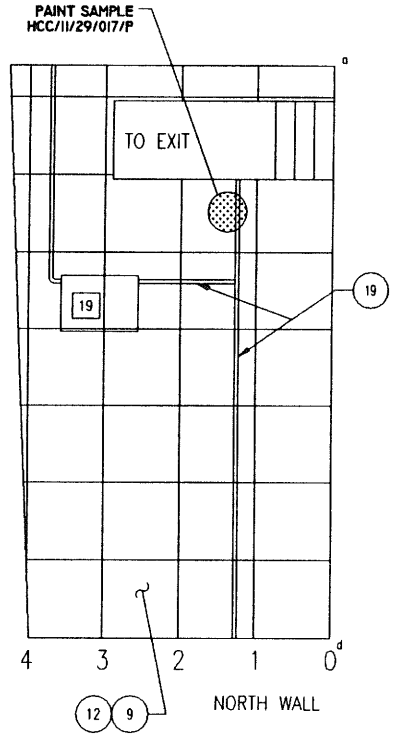
4.8.14.1. Visual Inspection Results

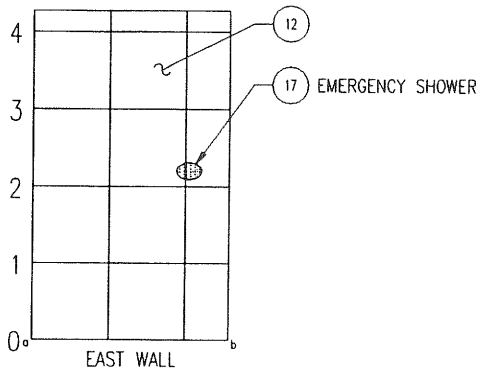
A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is concrete covered with paint. A sample of the floor was taken to perform hazardous contaminant analysis. The door hardware and fixtures within the room are brass. An emergency lighting system with battery is on the south and east walls There is duct work throughout the room and copper and brass water lines. The ceiling has three light units and a steel crane support. The ceiling is constructed of painted steel.

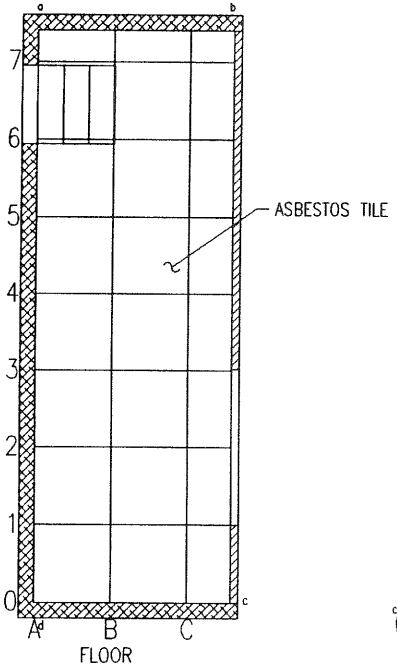
4.8.14.2. PCB Inventory

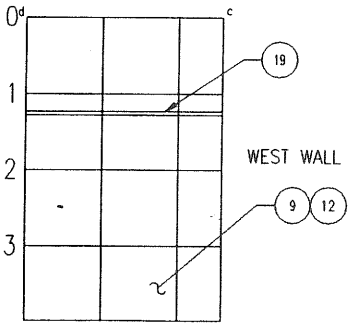
The ceiling of this room has three ballasts that are PCB-suspect. Samples taken from concrete removed from the floor indicate that trace amounts of PCBs (366 µg/kg) are present in the concrete.

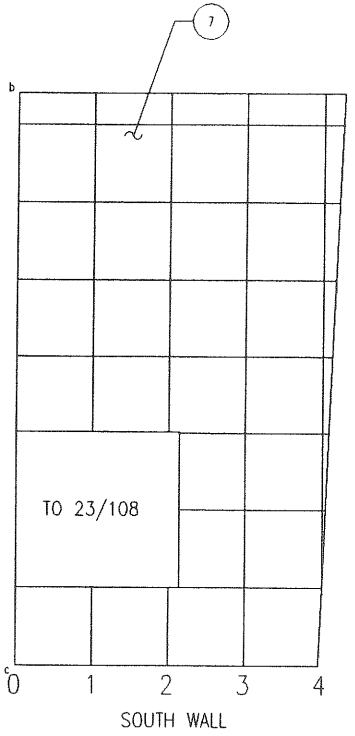
ALL WALLS PAINTED HOSPITAL GREEN
BRASS: SPRINKLERS, VALVES & ELECTRICAL
LEAD: ELECTRICAL
NO VISIBLE OILS

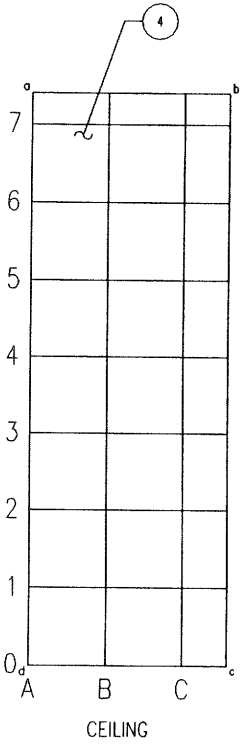












(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD. (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO.	23/108A
DESCP	MACH. SHOP WELDING
ELECT. FILE:	CDW-108A.DWG

Fig. 4-14—Room 108A, Machine Shop Weld Area

4.8.14.3. Grid Map

Refer to Figure 4-15 for the grid map of this room.

4.8.14.4. Sample Results

Refer to Table 4-4 for a complete listing of all sample results for this room. Samples of concrete taken from the floor indicate the presence of PCB 1254 at levels of 366 µg/kg. Semi-volatiles were present in mg/kg quantities. TCLP results were below detection limits with the exception of Lead (2.3 mg/l) and Barium (.17 mg/l). Although hazardous constituents were detected in the floor, the levels are low enough to be evaluated for exemptions from LDR restrictions under the hazardous debris rule.

4.8.15. 111, Service Gallery

4.8.15.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling contains sprinkler systems containing brass. The floor is painted concrete and has steel runners for the trolley system. The paint in this room is the same as that used in room 116A therefore no paint samples were taken in this room. The west wall has lead and magnetite used for shielding. The south wall has lead and magnetite, two electrical; motors and air duct work. The east wall has electrical conduit and emergency lighting, two air vents with pre-filters and water lines coated with insulation. The north wall has two double doors with brass fittings on the doors. There is an overhead crane system that was in use at the time of the visual inspection and may need to be sampled later.

4.8.15.2. PCB Inventory

The ceiling of this room has 12 ballasts suspected of containing PCBs.

4.8.15.3. Grid Map

Refer to Figure 4-16 for the grid map of this room.

4.8.15.4. Sample Results

There were no samples taken for this room, however the floor paint in this room is the same as in room 114 which has a TCLP value of .13 mg/l. The wall paint is the same as that used in room 116A where results indicate TCLP lead of 0.06 mg/kg which is less than the regulatory limit of 5.0 mg/l.

4.8.16. 112, Metallography Cell

This room was classified as a radiological and hazardous exception area which is considered to be too contaminated to enter for inspection or sampling purposes.

4.8.16.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The cell contains electrical motors and equipment, brass polishers, painted concrete walls, pieces of lead, sodium lighting and various pieces of contaminated equipment items.

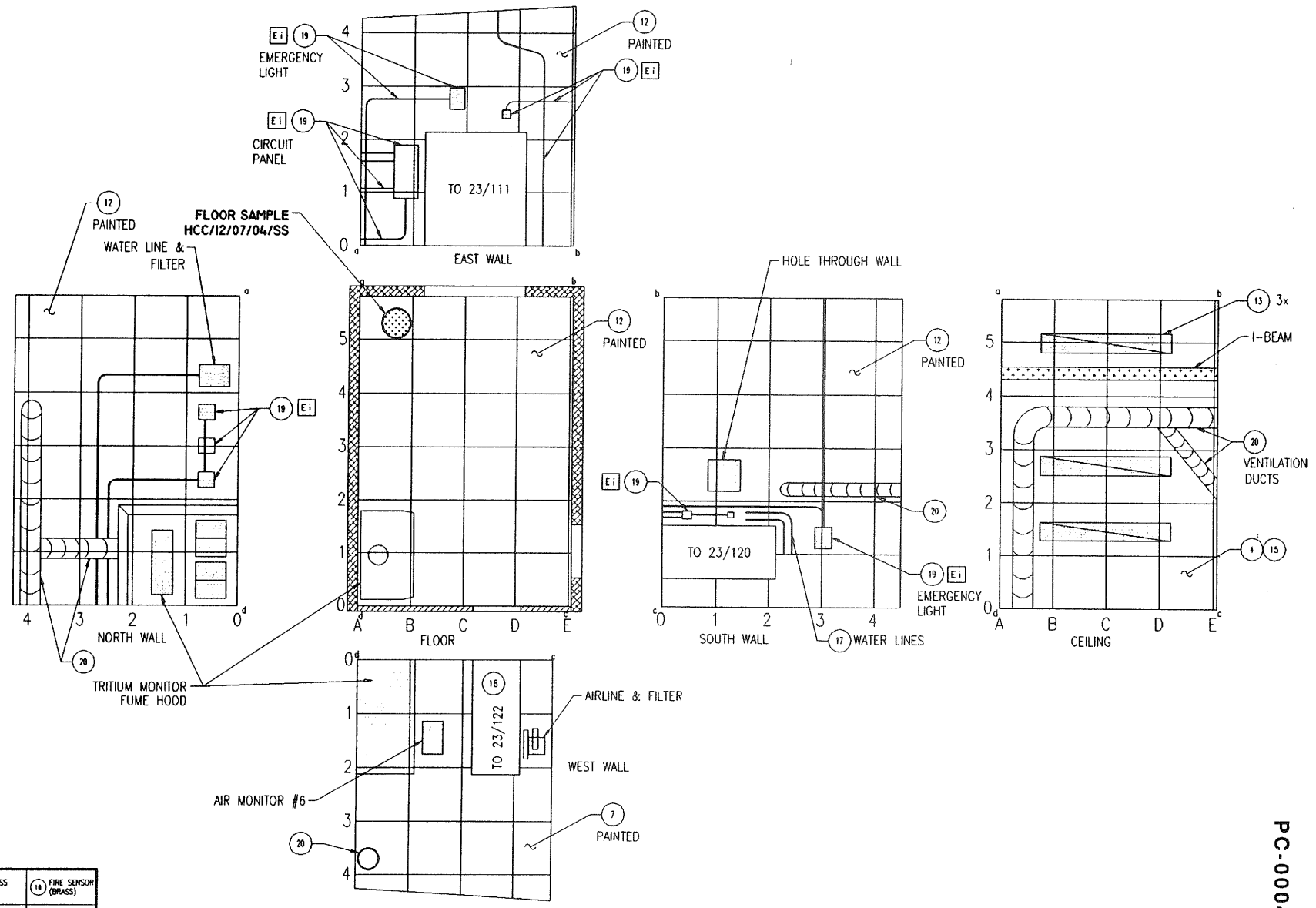
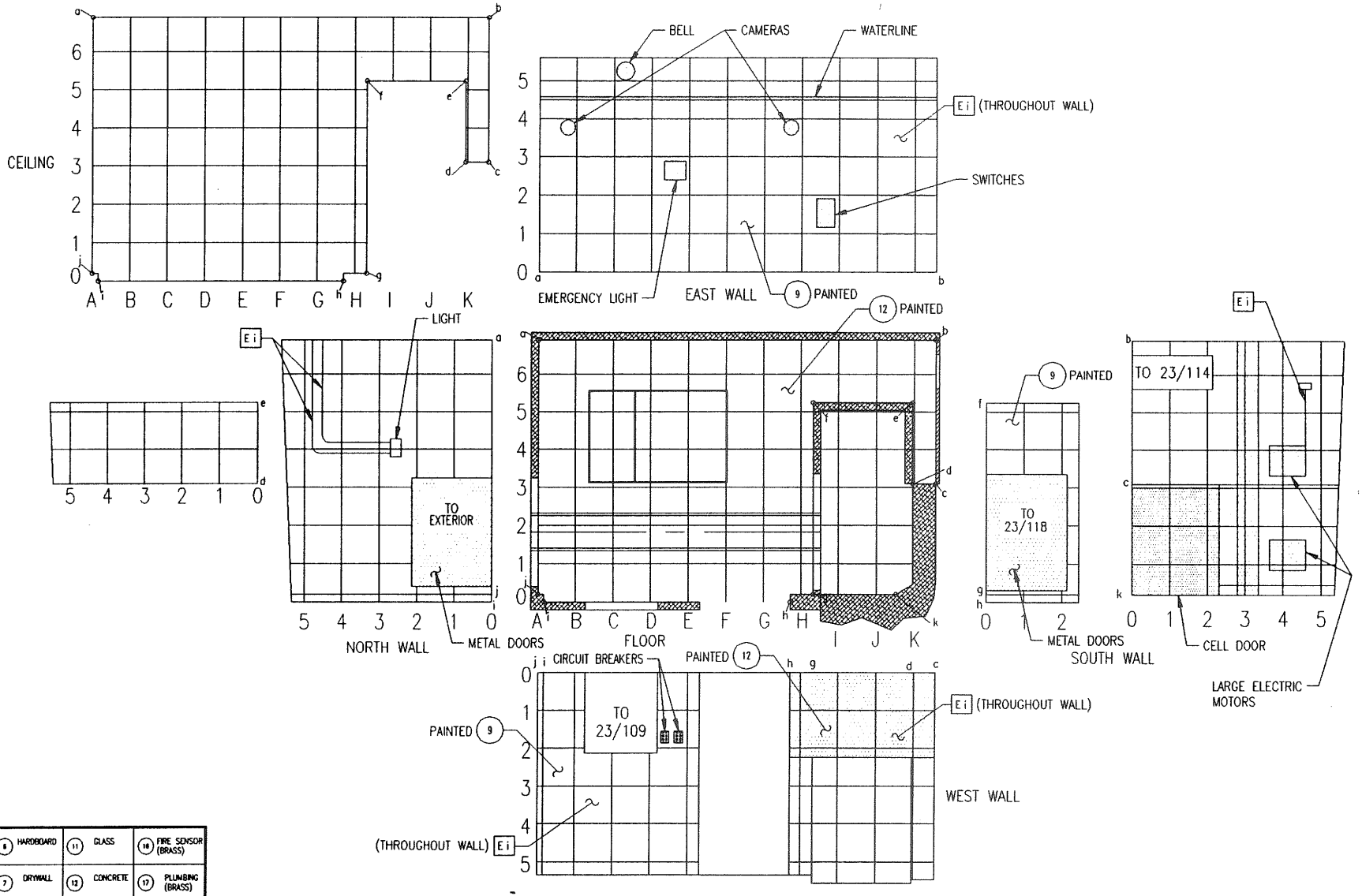


Fig. 4-15—Physical Test Lab/ESTES Lab

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/109
DESCP	TRITIUM EXTRACTION LAB
ELECT. FILE:	CDW-109.DWG



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/111
DESCP	SERVICE GALLERY
ELECT. FILE:	CDW-111.DWG

Fig. 4-16—Room 111, Service Gallery

4.8.16.2. PCB Inventory

There were no PCB-suspect items listed for this room.

4.8.16.3. Grid Map

This area was classified as a radiological and hazardous exception area, therefore, a hazardous grid map was not prepared for this room.

4.8.16.4. Sample Results

This area was classified as a radiological and hazardous exception area, therefore, hazardous sampling was not performed for this room.

4.8.17. 113, Low-Level Cell

This room was classified as a radiological and hazardous exception area which is considered to be too contaminated to enter for inspection or sampling purposes.

4.8.17.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The room contains brass equipment, HEPA filters, pre-filters, lead bricks used for shielding, magnetite, various metal plated equipment and building materials, painted concrete walls, sodium lighting, crane and electrical equipment and motors.

4.8.17.2. PCB Inventory

There were no PCB-suspect items listed for this room.

4.8.17.3. Grid Map

This area was classified as a radiological and hazardous exception area, therefore, a hazardous grid map was not prepared for this room.

4.8.17.4. Sample Results

This area was classified as a radiological and hazardous exception area, therefore, hazardous sampling was not performed for this room.

4.8.18. 115, High-Level Cell

This room was classified as a radiological and hazardous exception area which is considered to be too contaminated to enter for inspection or sampling purposes.

4.8.18.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The room contains equipment manufactured from brass, HEPA filters, pre-filters, lead bricks used for shielding, magnetite, various metal plated equipment and building materials, painted concrete walls, sodium lighting, crane and electrical equipment and motors.

4.8.18.2. PCB Inventory

There were no PCB-suspect items listed for this room.

4.8.18.3. Grid Map

This area was classified as a radiological and hazardous exception area, therefore, a hazardous grid map was not prepared for this room.

4.8.18.4. Sample Results

This area was classified as a radiological and hazardous exception area, therefore, hazardous sampling was not performed for this room.

4.8.19. 114, Hydraulic Pump Room

4.8.19.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The ceiling is painted metal and contains sprinkler systems made of brass. The floor is concrete and painted but has residual oil stains on it from the storage of pumps containing oil. A sample of the floor paint was taken at the time of the inspection. The majority of the room is painted concrete block. On the west wall, brass, lead and magnetite were identified.

4.8.19.2. PCB Inventory

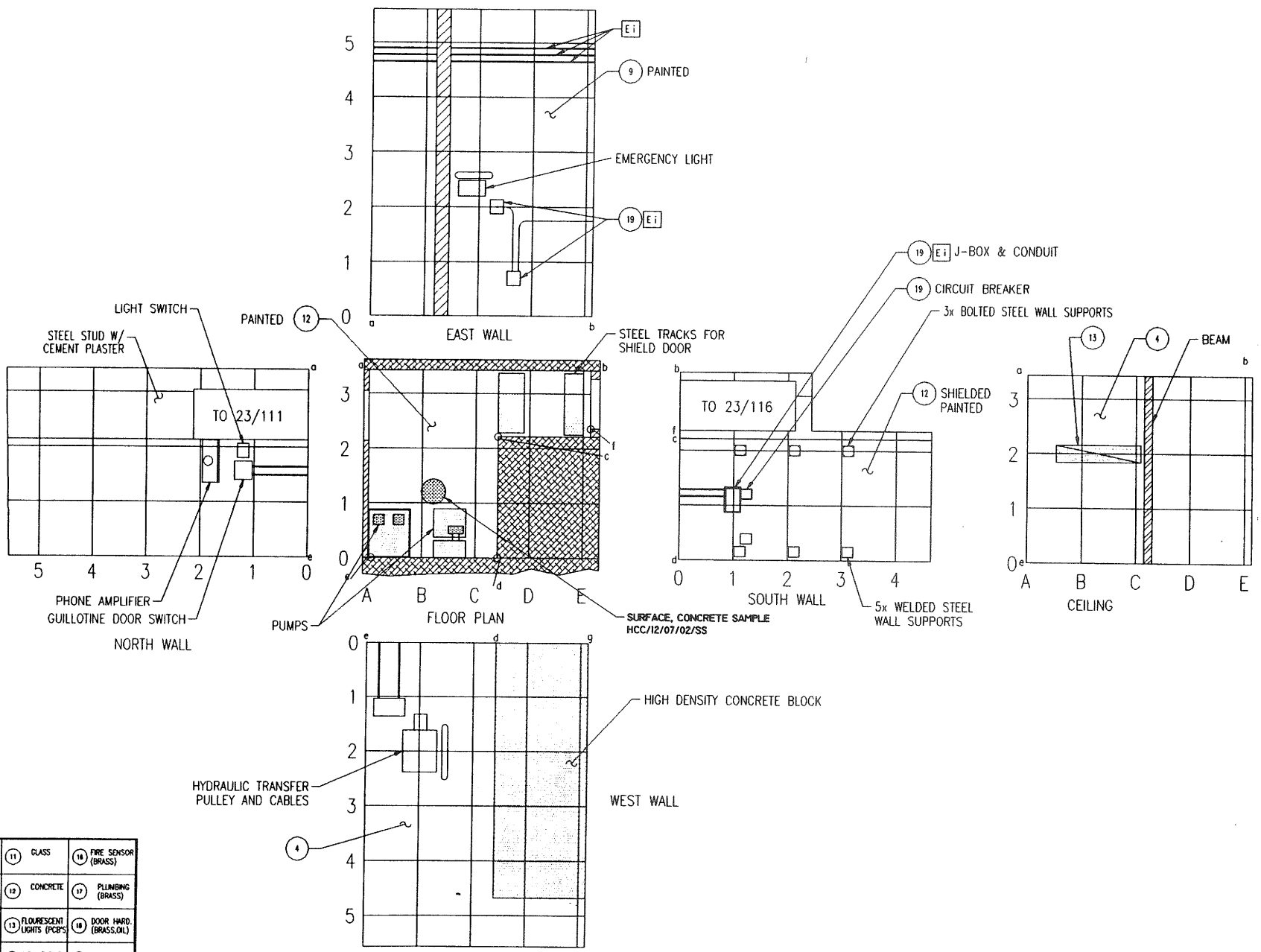
The ceiling of this room has one ballast that is PCB-suspect.

4.8.19.3. Grid Map

Refer to Figure 4-17 for the grid map of this room.

4.8.19.4. Sample Results

Refer to Table 4-4 for a complete listing of samples taken for this room. Sample results for this room included TCLP for Lead Paint for the floor. Results were less than 0.04 mg/l which is less than the regulatory limit of 5.0 mg/l. Trace amounts of PCB 1254 were found at 1140 µg/kg. Semi-Volatiles were non-detectable, however there were several Tentatively Identified Compounds (TICs) found in mg/kg quantities. These results indicate that the floor surface is contaminated with hydrocarbons which will need to be evaluated with regard to Land Disposal Restrictions when this material is removed. The wall paint in this room is the same as in 116A which had a TCLP value for lead of 0.06 mg/l.



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/114
DESCP	PUMP ROOM
ELECT. FILE:	CDW-114.DWG

Fig. 4-17—Room 114, Hydraulic Pump Room

4.8.20. 116, Plutonium Lab/X-Ray Room

4.8.20.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall has a built-in fume hood against a painted concrete wall. There is lead located in the hood. The south wall is painted drywall and has electrical and copper utility lines. The west wall consists of painted concrete with lead and magnetite for shielding. The east wall is painted block and has two door opening into the controlled yard. There is brass hardware, electrical conduit and a circuit breaker on this wall. There are no visible signs of leaks on the floor which is tile covered. The ceiling has two light fixtures and overhead sprinklers containing brass.

4.8.20.2. PCB Inventory

There are two ballasts in this room that are PCB-suspect.

4.8.20.3. Grid Map

Refer to Figure 4-18 for the grid map of this room.

4.8.20.4. Sample Results

This area was considered to be an "unaffected" hazardous area, therefore no sampling was required. However, paint samples for the walls in this room were the same as for room 116A which had a TCLP value of 0.06 mg/l.

4.8.21. 116A, Plutonium Lab/X-Ray Room Mezzanine

4.8.21.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The west wall of this area is painted metal over lead and magnetite. A sample of paint was taken from this area as it was lead-suspect. The south wall is painted concrete. The east wall is painted concrete block with electrical conduit and roof supports. The north wall has a large vent duct work assembly with pre-filters. The ceiling is painted steel with electrical conduit and two 4' light fixtures and overhead sprinkler systems. The floor is constructed of galvanized metal. This area was classified as "unaffected" as there were no visible signs of spills or leaks.

4.8.21.2. PCB Inventory

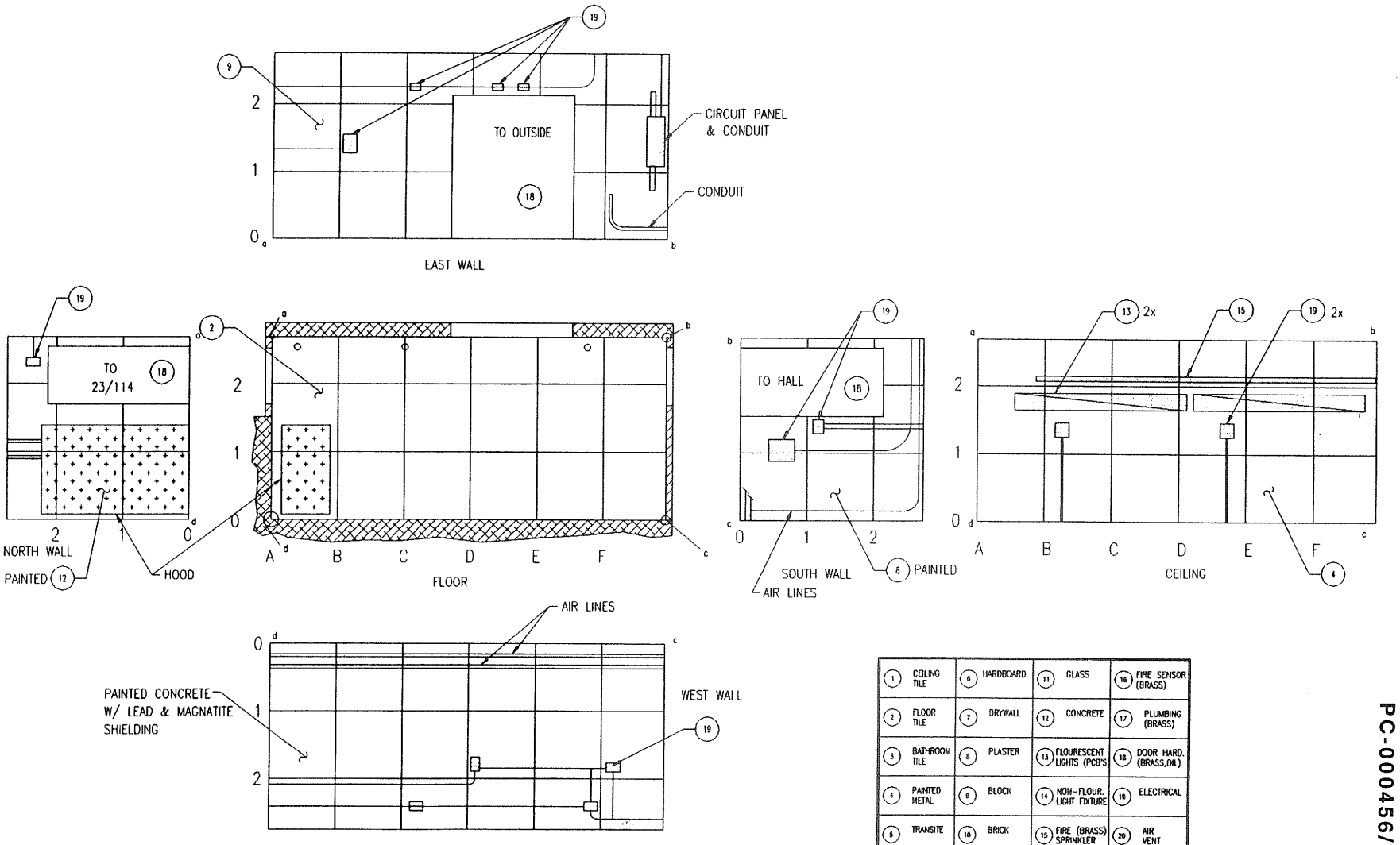
The ceiling of this room has two ballasts which are PCB-suspect.

4.8.21.3. Grid Map

Refer to Figure 4-19 for the grid map of this room.

4.8.21.4. Sample Results

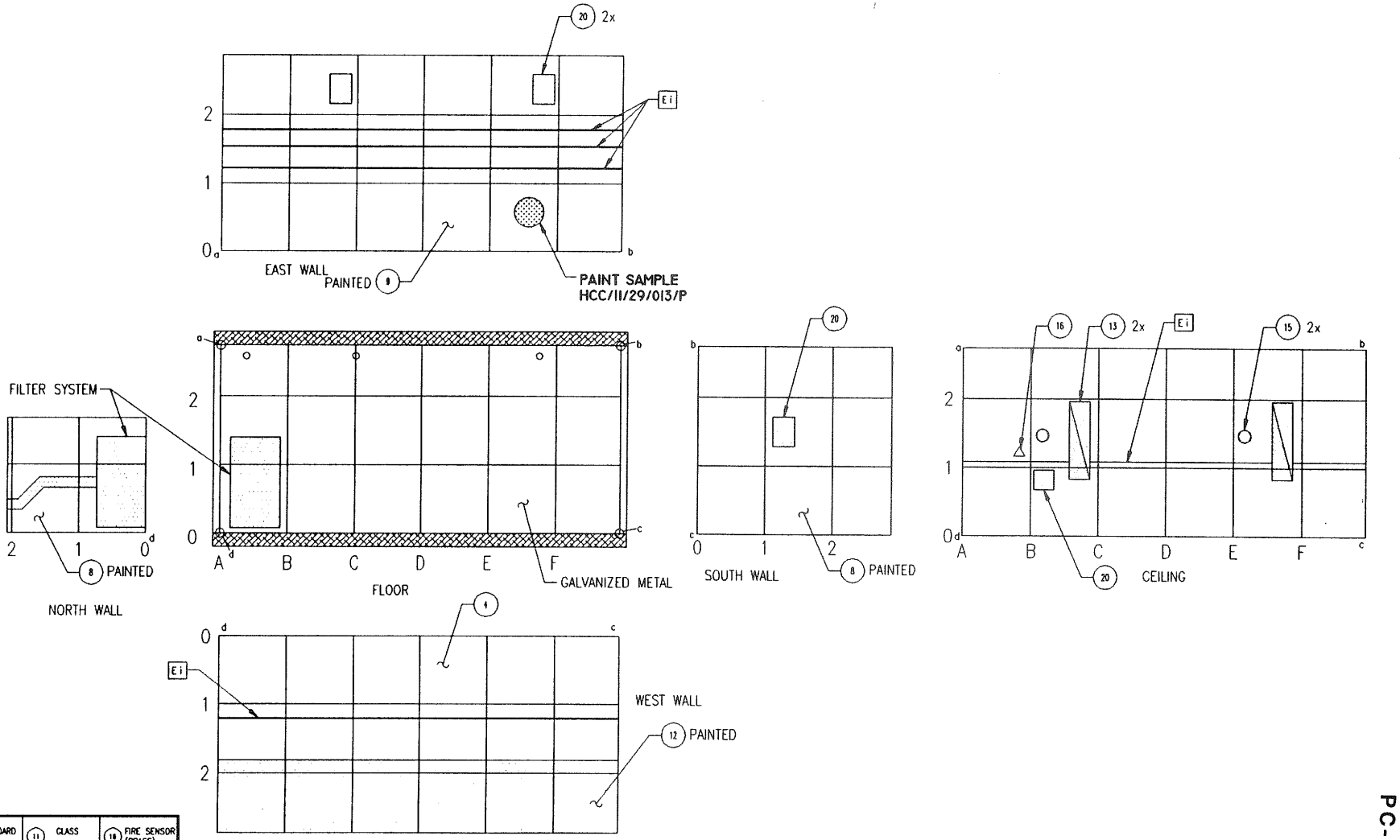
A sample of paint and wall scraping was taken from the west wall. The results indicate TCLP lead levels of 0.06 mg/l which is below the 5.0 mg/l regulatory limit.



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/116
DESCP	X-RAY LAB
ELECT FILE:	CDW-116.DWG

Fig. 4-18—Room 116, Plutonium Lab/X-Ray Room



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/116A
DESCP	OVERHEAD ROOM 116
ELECT. FILE:	CDW-116A.DWG

Fig. 4-19—Room 116A, Plutonium Lab/X-Ray Room Mezzanine

4.8.22. Hallway

4.8.22.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The east wall is painted concrete block. The west wall has brass door hardware. The north and south walls are painted drywall with electrical conduit and a brass door on the north. The ceiling is painted steel with sprinklers and electrical conduit. The floor is the same non-friable asbestos tile that appears throughout various areas of the building. This room was classified as an "unaffected" area for hazardous constituents.

4.8.22.2. PCB Inventory

The ceiling of this room has no PCB ballasts.

4.8.22.3. Grid Map

Refer to Figure 4-20 for the grid map of this room.

4.8.22.4. Sample Results

This room was considered to be an "unaffected" hazardous area, therefore no sampling was required. However, paint used on the walls in this room is the same as that on the walls in room 116A which has a TCLP value of 0.06 mg/l and is less than the 5.0 mg/l regulatory limit.

4.8.23. 117, Tool Room

4.8.23.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall is painted fiberboard. A paint sample was taken from this wall which is representative of the whole room. The south and east wall are painted concrete block with electrical conduit and gas lines. The floor is covered by non-friable asbestos tiles and there is a large steel plate on the floor with concrete beneath it. The ceiling has four 8' ballasts and brass equipment on the sprinkler systems.

4.8.23.2. PCB Inventory

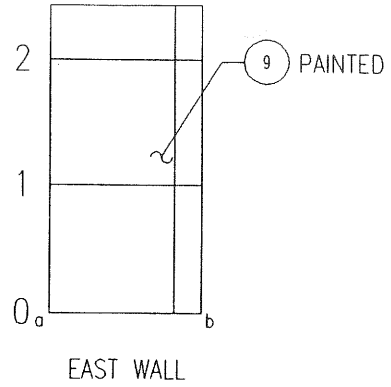
The ceiling of this room has four ballasts that are PCB-suspect.

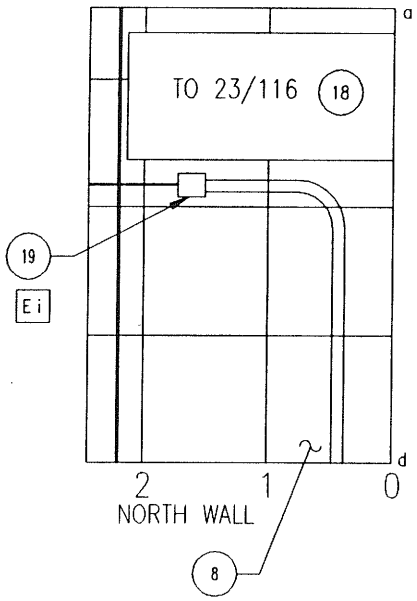
4.8.23.3. Grid Map

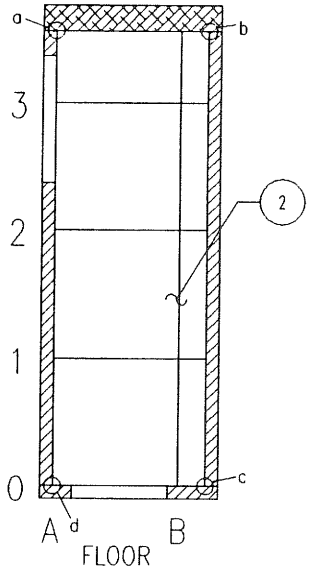
Refer to Figure 4-21 for the grid map of this room.

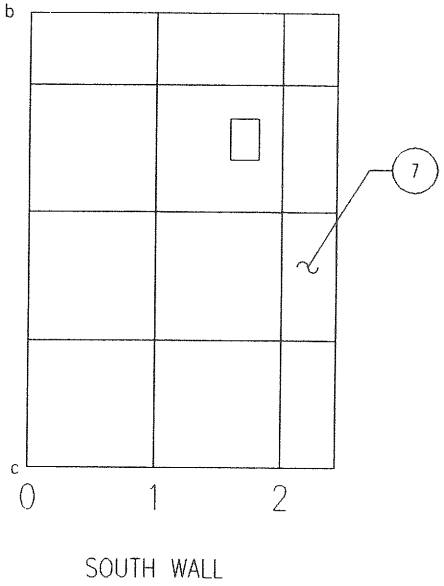
4.8.23.4. Sample Results

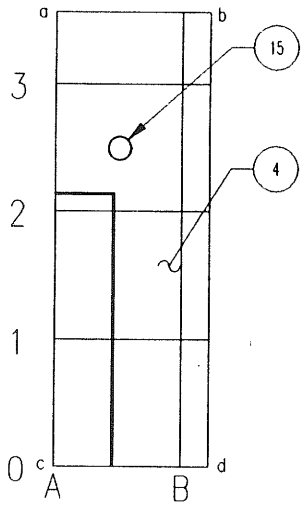
A paint sample was taken from the north wall of this room to be analyzed for TCLP lead. The results were less than 0.04 mg/l which is below the 5.0 mg/l regulatory limit.

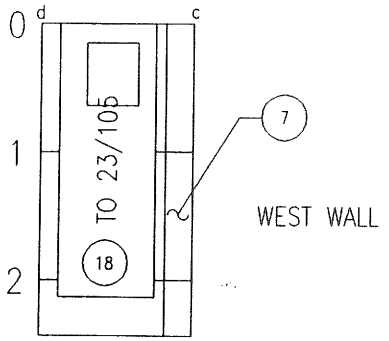












1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/HALL
DESCP	HALLWAY
ELECT. FILE:	CDW-HALL.DWG

Fig. 4-20—Hallway

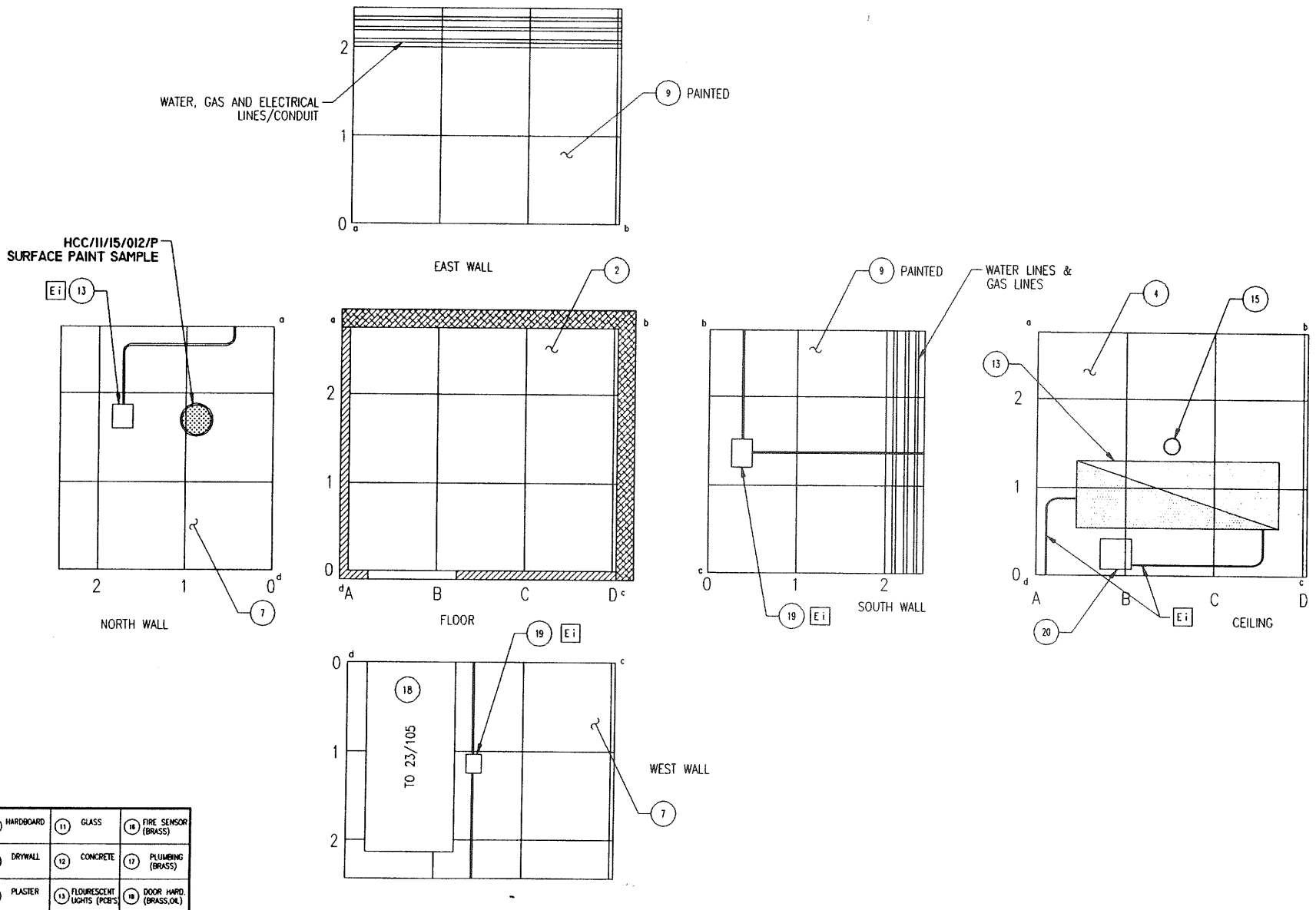


Fig. 4-21—Room 117, Tool Room

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/117
DESCP	TOOL ROOM
ELECT. FILE:	CDW-117.DWG

4.8.24. 117A, Tool Room Mezzanine

4.8.24.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall is constructed of painted block wall and has zinc pipes and copper lines with solder. A paint sample that is representative of the room was taken from the duct work at this location to for lead analysis. The east and south walls are of the same construction. The ceiling has two 8' fluorescent lamps, 1 ballast and contains zinc conduit. The floor is a painted steel deck. This room was considered to be an "unaffected" hazardous area as there were no visible spill residues present.

4.8.24.2. PCB Inventory

The ceiling of this room has one ballast.

4.8.24.3. Grid Map

Refer to Figure 4-22 for the grid map of this room.

4.8.24.4. Sample Results

A sample of the duct work paint was taken from this room and analyzed for TCLP, lead. The results are 1.6 mg/l which are below the 5.0 mg/l regulatory limit.

4.8.25. 118, Decon Room

4.8.25.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The south wall has electrical switches containing solder joints, brass contacts and has a door containing lead and magnetite. The door has a hydraulic line containing oil used to move the door. The east wall is painted concrete and the north wall is painted plaster. The west wall is half block and half concrete with an electrical box and zinc conduit. The ceiling contains eight 4' fluorescent lamps, two ballasts, zinc conduit and electrical components containing solder joints. The floor is the same material as the corridor.

4.8.25.2. PCB Inventory

The ceiling of this room has two ballasts which are PCB-suspect.

4.8.25.3. Grid Map

Refer to Figure 4-23 for the grid map of this room.

4.8.25.4. Sample Results

This area was classified as a "hazardous exception area" (refer to Table 4-5), therefore no samples were taken in this room. Paint on the floor is the same as in the corridor which resulted in TCLP lead detection levels of .13 mg/l, below the 5.0 mg/l regulated limit. The wall paint is the same as that used in 116A which has a TCLP lead limit of 0.06 mg/l which is below the regulatory limit of 5.0 mg/l.

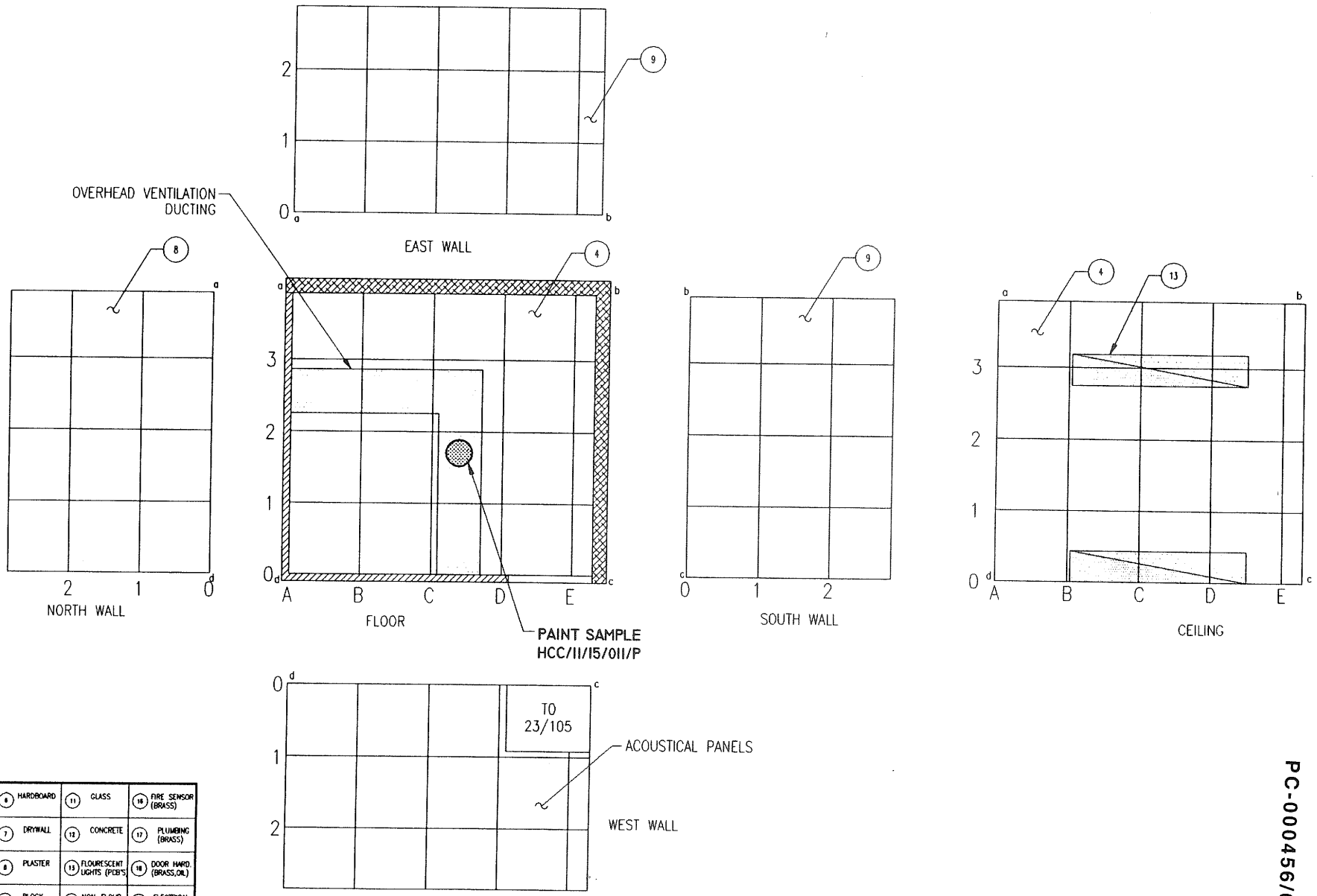


Fig. 4-22—Room 117A, Tool Room Mezzanine

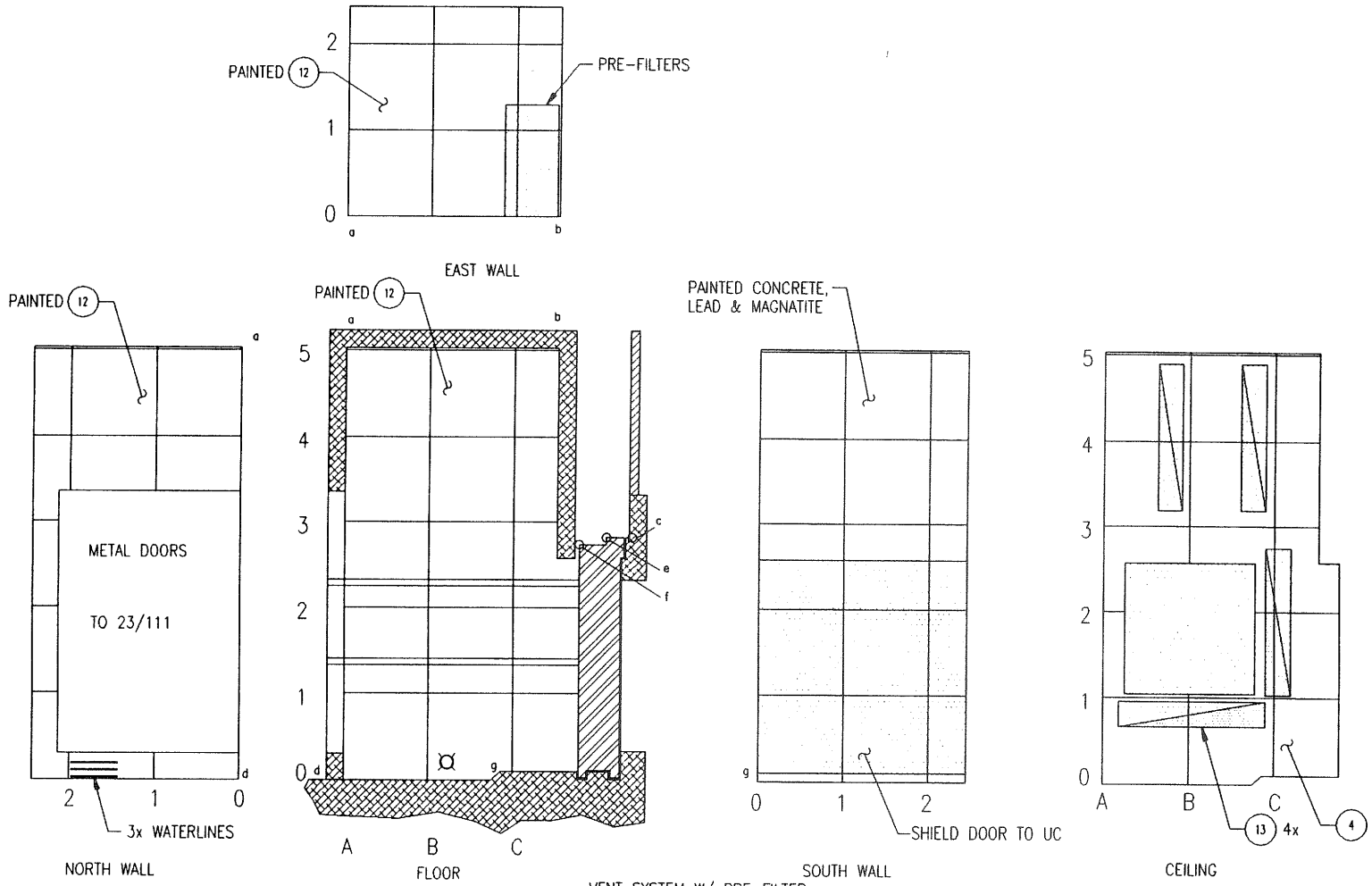


Fig. 4-23—Room 118, Decon Room

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/118
DESCP	DECON ROOM
ELECT. FILE:	CDW-118.DWG

4.8.26. 119, ESTES Effluent System

4.8.26.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The west wall is painted drywall with wood framework and has three steel plugs protruding from the wall that are about 12" in diameter. The east wall is the framework for the double doors to this room, The north wall is painted block and has copper, galvanized and electrical conduit, one circuit breaker and a power strip. The south wall is painted concrete and has a crane fixture (in use at the time of characterization) lead shielding, electrical conduit, two air monitors and one circuit breaker. The floor is painted concrete with an electrical line going into the floor. The ceiling is painted steel with one 8' light fixture, air duct work and electrical conduit. This area was classified as an "unaffected" hazardous area as there are no signs of visible spill contamination.

4.8.26.2. PCB Inventory

The ceiling of this room has one fixture containing a ballast which is PCB-suspect.

4.8.26.3. Grid Map

Refer to Figure 4-24 for the grid map of this room.

4.8.26.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no samples were taken. The floor in this room is painted with the same paint used in the corridor which has a TCLP for lead of .13 mg/l which is below the 5.0 mg/l. The wall paint in this room is the same as that used in room 116A which has a TCLP for lead of 0.06 mg/l.

4.8.27. 120, ESTES Sample Preparation

4.8.27.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north and west walls of this room is painted concrete block. The south and east are painted drywall. The ceiling has asbestos on the piping, and one light ballast. The floor is painted concrete and is the same paint used in the corridor.

4.8.27.2. PCB Inventory

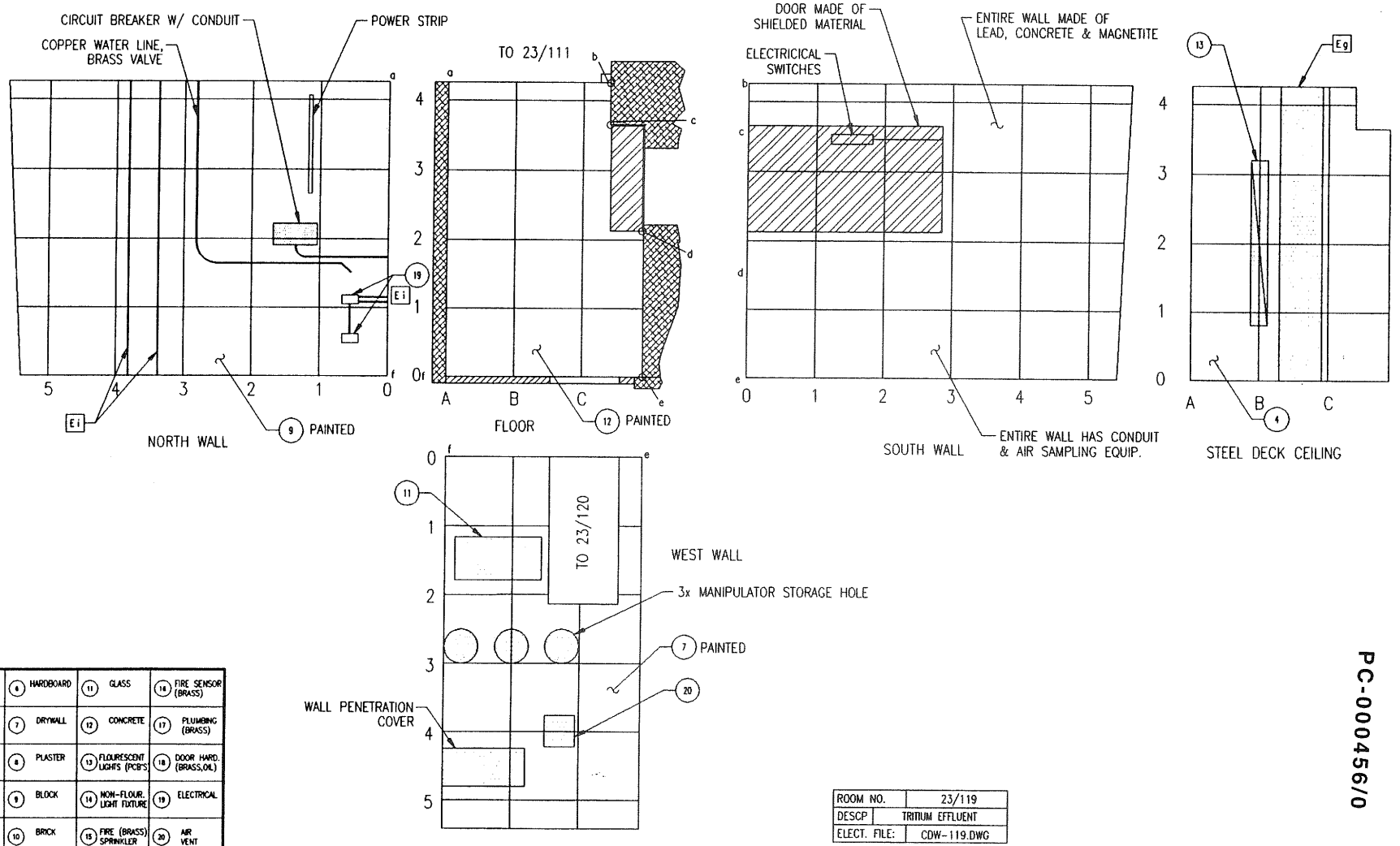
The ceiling of this room has one ballast which is PCB-suspect.

4.8.27.3. Grid Map

Refer to Figure 4-25 for the grid map of this room.

4.8.27.4. Sample Results

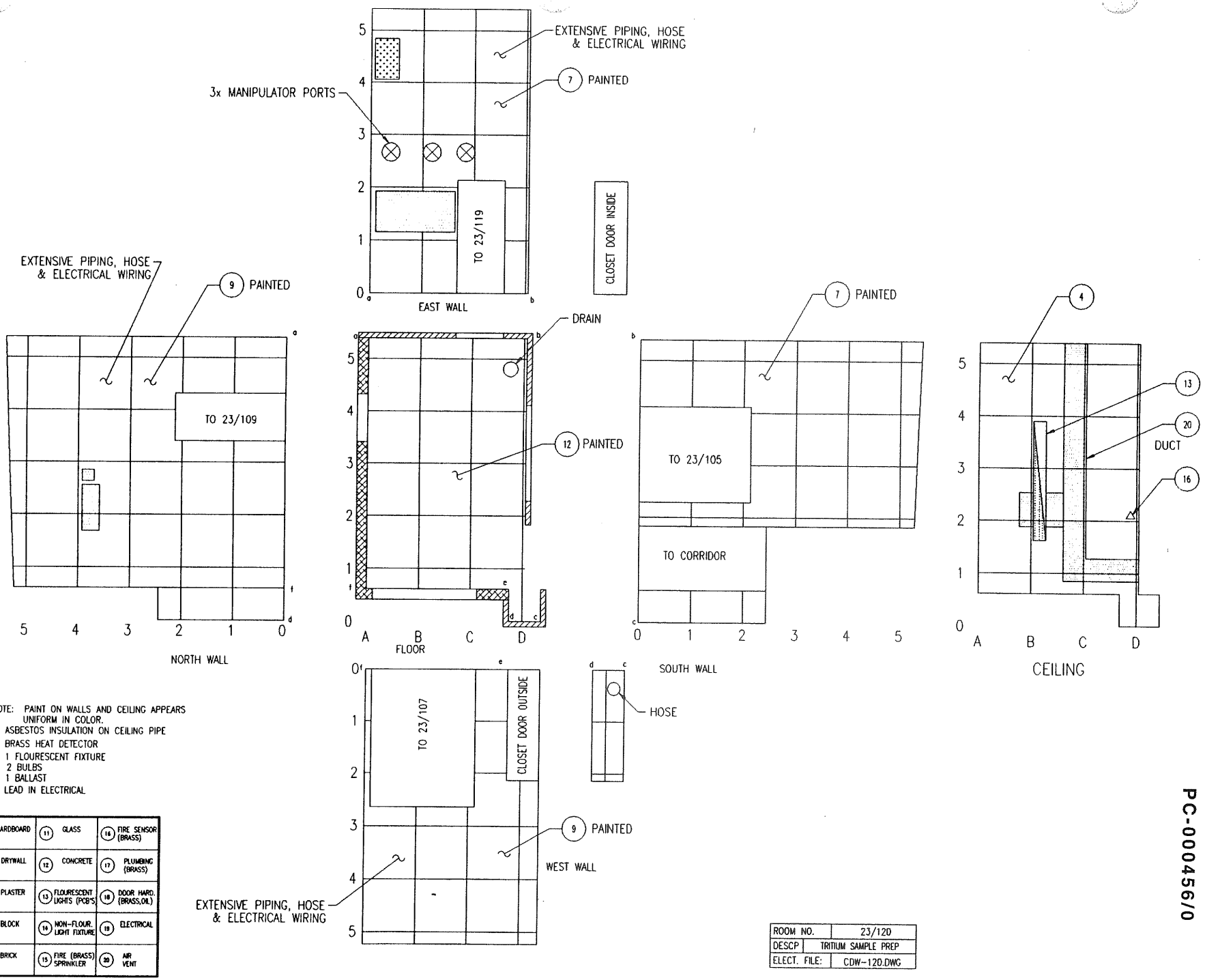
This area was classified as an "unaffected" hazardous area, therefore no samples were taken. The floor in this room is painted with the same paint used in the corridor which has a TCLP for lead of .13 mg/l which is below the 5.0 mg/l. The wall paint in this room is the same as that used in room 116A which has a TCLP for lead of 0.06 mg/l.



1 CEILING TILE	6 HARDBOARD	11 GLASS	14 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/119
DESCP	TRITIUM EFFLUENT
ELECT. FILE:	CDW-119.DWG

Fig. 4-24—Room 119, ESTES Effluent System



NOTE: PAINT ON WALLS AND CEILING APPEARS UNIFORM IN COLOR.
1) ASBESTOS INSULATION ON CEILING PIPE
2) BRASS HEAT DETECTOR
3) 1 FLOURESCENT FIXTURE
   2 BULBS
   1 BALLAST
4) LEAD IN ELECTRICAL

1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/120
DESCP	TRITIUM SAMPLE PREP
ELECT. FILE:	CDW-120.DWG

Fig. 4-25—Room 120, ESTES Sample Preparation

4.8.28. Corridor/Ladies Change Room

4.8.28.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The west wall is painted concrete block with circuit panels, conduit, and two doors containing brass hardware. The south and east wall are painted plaster. The ceiling is constructed of painted ceiling panels and contains brass sprinkler systems and three ballasts. The floor is painted concrete with several thick layers of paint. A sample of the paint was taken for TCLP lead analysis.

4.8.28.2. PCB Inventory

The ceiling of this room has three ballasts.

4.8.28.3. Grid Map

Refer to Figure 4-26 for the grid map of this room.

4.8.28.4. Sample Results

The floor in this room was painted with the same paint used in rooms 119 and 120 and was sampled and has a TCLP for lead of .13 mg/l which is below 5.0 mg/l. The wall paint in this room is the same as that used in room 116A which has a TCLP for lead of 0.06 mg/l.

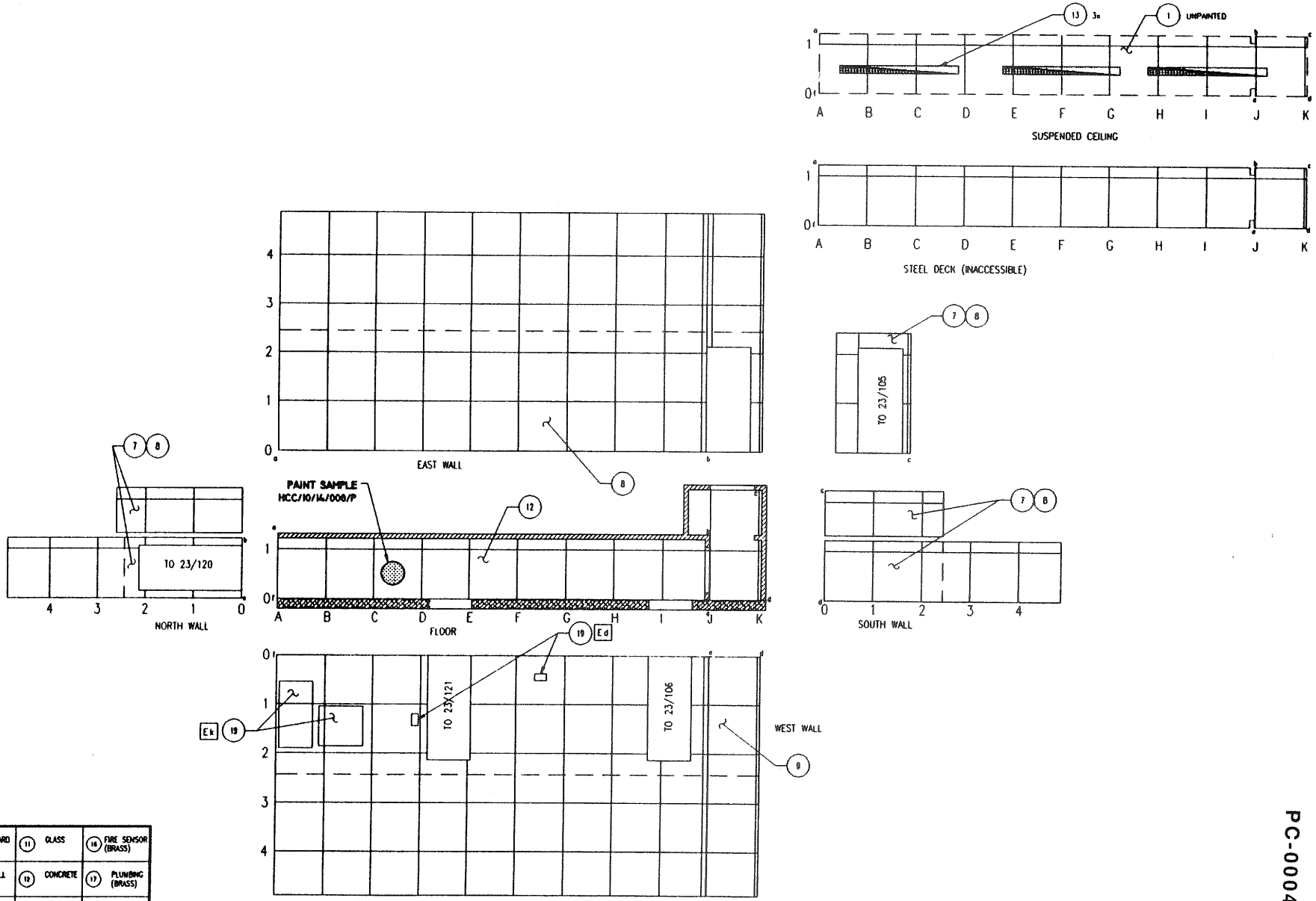
4.8.29. 121, Boiler/Utility Room

4.8.29.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall is constructed of painted drywall and has copper water lines, electrical conduit, gas lines, a water heater and the air filter system for breathing air. The south wall is of block construction and has one large transformer, and two smaller transformers which are still in use. The east wall has utility and electrical lines similar to those on the north wall. The door in this location has brass and oily components. The west wall is concrete block with similar utility lines and gages, and a set of double doors with brass hardware. The ceiling is painted steel and has four 4' light fixtures, electrical conduit and motors, duct work and a brass sprinkler system. The floor is concrete, unpainted and has visible oil residue around the air compressors. A sample of the surface concrete was taken due to the visible oil present. There is a drainage trench in the middle of the floor, and drain lines containing lead joints.

4.8.29.2. PCB Inventory

The ceiling of this room has four light ballasts that are PCB-suspect. The transformers were in service and could not be sampled, however manufacturer's information regarding the construction of the HCF indicates that they are dry type transformers and are not PCB-suspect.



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/CORRIDOR/LCR
DESCP	CORRIDOR/LADIES CHANGE Rm.
ELECT. FILE:	CDW-CORR.DWG

Fig. 4-26—Corridor/Ladies Change Room

4.8.29.3. Grid Map

Refer to Figure 4-27 for the grid map of this room.

4.8.29.4. Sample Results

Table 4-4 contains a complete listing of the sample results associated with this room. A sample of the floor surface concrete was taken and analyzed for various hazardous constituents. TCLP values for metals were below regulated limits, and PCBs were non-detectable. Semi-volatiles were detected in µg/kg levels, however the Tentatively Identified Compounds(TICs) were identified in mg/kg quantities, the highest was an unknown alcohol which was detected at a level of 128.8 mg/kg and 4-hydroxy-4-methyl-2-pentanone at 9872 mg/kg. Various levels of hydrocarbons and alkanes were detected and these results are also listed in Table 4-4. The levels are high enough to require re-sampling of materials removed from the floor to determine if they will exceed LDR limitations for disposal as hazardous debris.

4.8.30. 122, Manipulator Repair Room

4.8.30.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall has lines containing brass valves and in air flow equipment. Insulation on the piping is asbestos (see Section 5.0 for more details). The south wall is painted plaster with one electrical outlet. The east wall has a dark residue covering it and was swipe sampled to determine if metallic residues were present. The west wall is painted plaster with galvanized water lines and brass and tin components. The floor has lead in the pipe joints, and possible lead contamination on the floor from storage of lead bricks in this location. There is a grating trench that has large amounts of visible dirt and dust present. Paint on the floor is the same as that sampled in the corridor. The ceiling has zinc galvanized water lines and two ballasts.

4.8.30.2. PCB Inventory

The ceiling of this room has two ballasts which are PCB-suspect. A surface swipe of the east wall revealed removable PCB contamination in µg/kg quantities.

4.8.30.3. Grid Map

Refer to Figure 4-28 for the grid map of this room.

4.8.30.4. Sample Results

Table 4-4 lists the results for swipe samples taken in this room. cadmium, chromium, lead and zinc were all detected at mg/kg levels. The swipe suggests that this contamination is removable. PCBs were also detected including 1254 at 1040 µg/kg and 1260 at 750 µg/kg. The swipe results suggest that this is also removable contamination. Samples of the paint on the walls were not taken for this room as this is the same paint sampled in Room 107 which has a TCLP lead value of <0.04 mg/l. Debris removed from the walls during D&D will need to be evaluated with regard to LDR for hazardous debris. The floor paint is the same as that sampled in the corridor which has a TCLP value of .13 mg/l which is below the 5.0 mg/l regulatory limit.

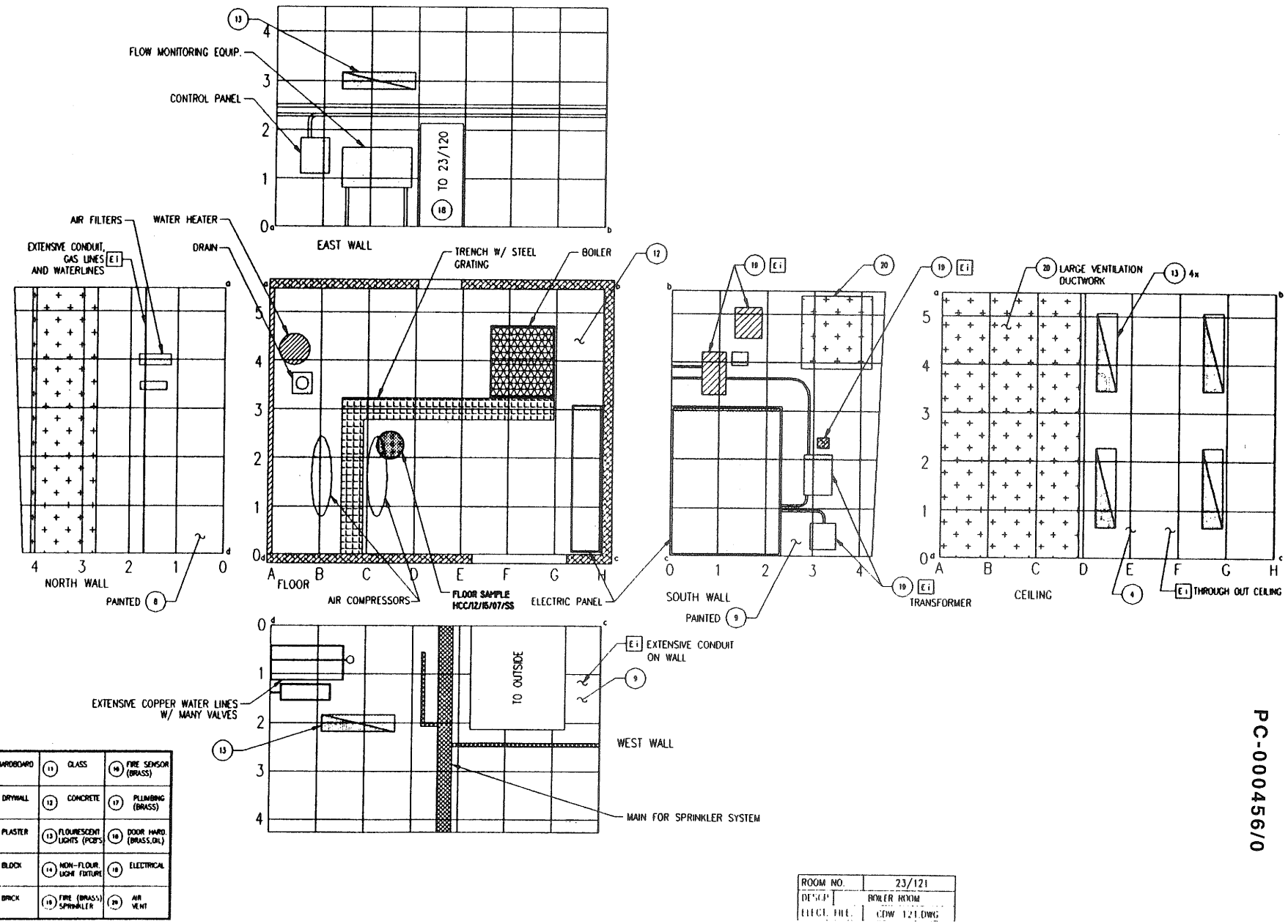


Fig. 4-27—Room 121, Boiler/Utility Room

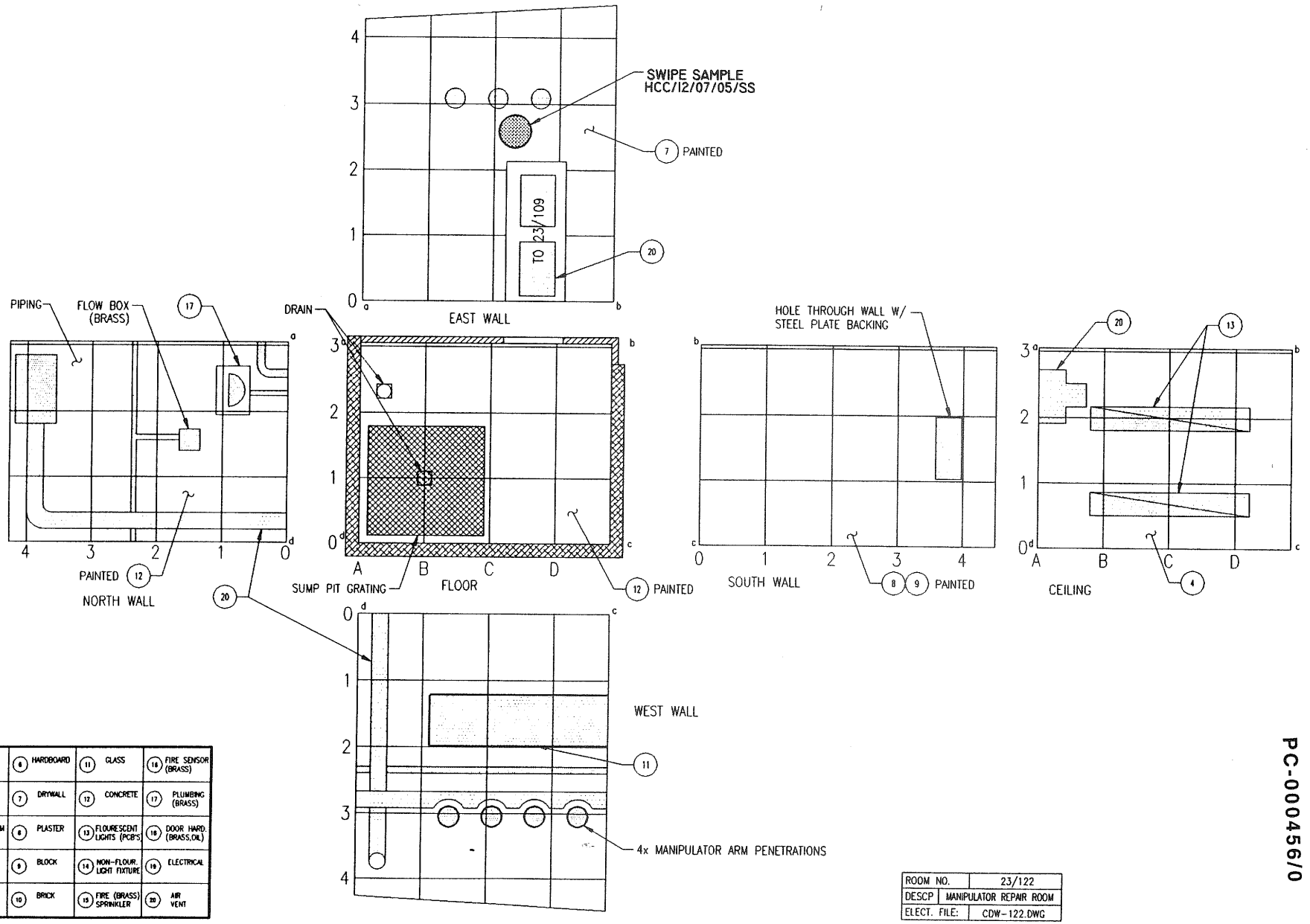


Fig. 4-28—Room 122, Manipulator Repair Room

4.8.31. Storage Shed

4.8.31.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The north wall is unpainted galvanized sheeting with one glass window. The south wall is the same but is movable (doors) with electrical conduits, switches and plugs. The east wall is similar galvanized sheeting with one 4'x3' window. The west wall has a window, electrical conduit and one circuit panel with two HV switches and is constructed of galvanized sheeting. The ceiling is also of galvanized sheeting, with electrical conduit and two standard lights. The floor is unpainted concrete and has no visible signs of residue. A dry type three phase transformer is stored here.

4.8.31.2. PCB Inventory

The ceiling of this room has two incandescent lights that are not PCB-suspect.

4.8.31.3. Grid Map

Refer to Figure 4-29 for the grid map of this room.

4.8.31.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no samples were taken.

4.8.32. Roof

4.8.32.1. Visual Inspection Results

A visual inspection of this room was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The roof is covered with loose gravel over asphalt roofing material. There's a series of galvanized duct work present and electrical conduit. Asbestos adhesives are suspected and samples of the roof were taken primarily to determine if asbestos is present or not (see Section 5.0 for details on asbestos).

4.8.32.2. PCB Inventory

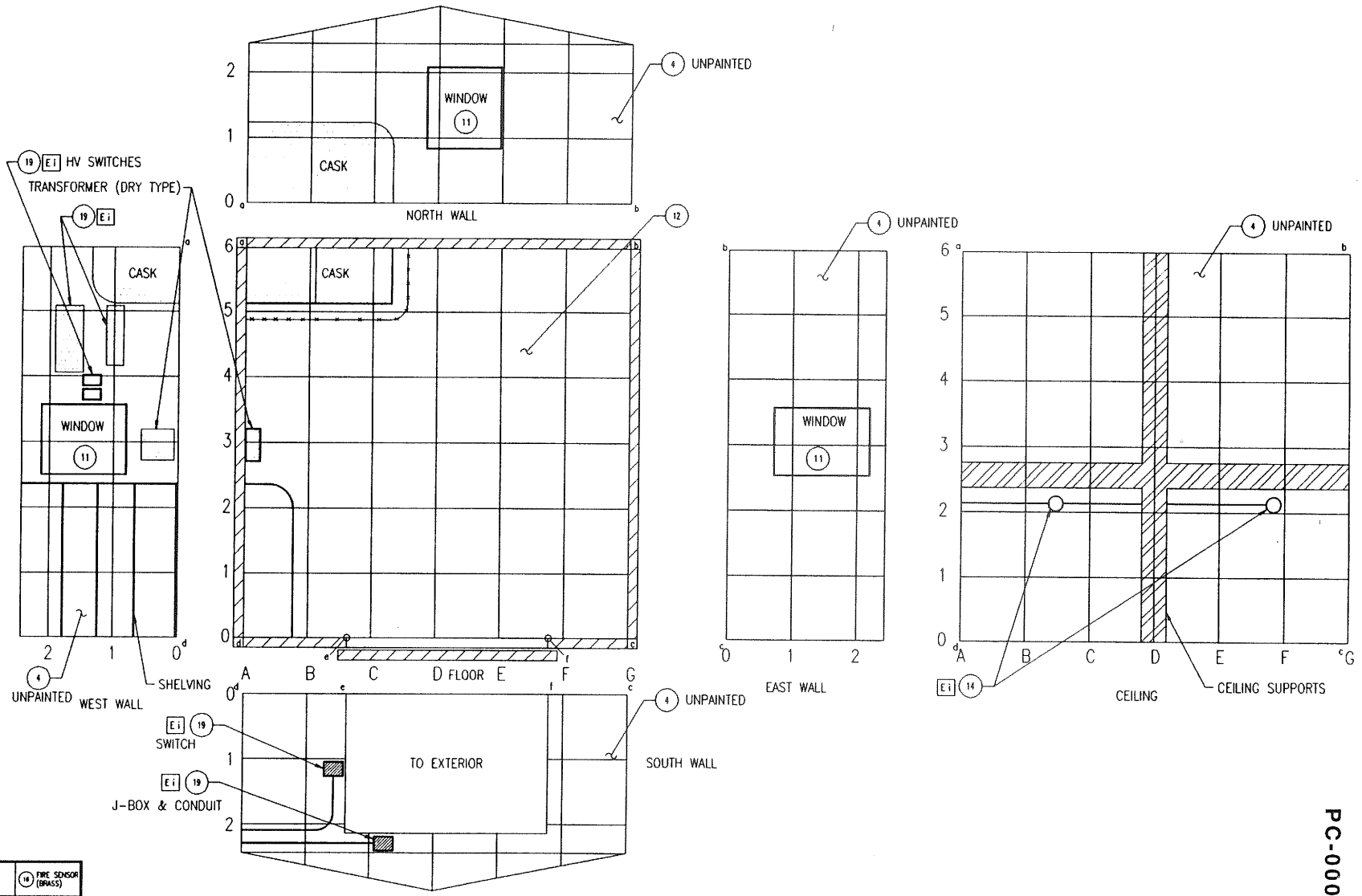
There is no PCB-suspect equipment associated with this area.

4.8.32.3. Grid Map

Refer to Figure 4-30 for the grid map of this area.

4.8.32.4. Sample Results

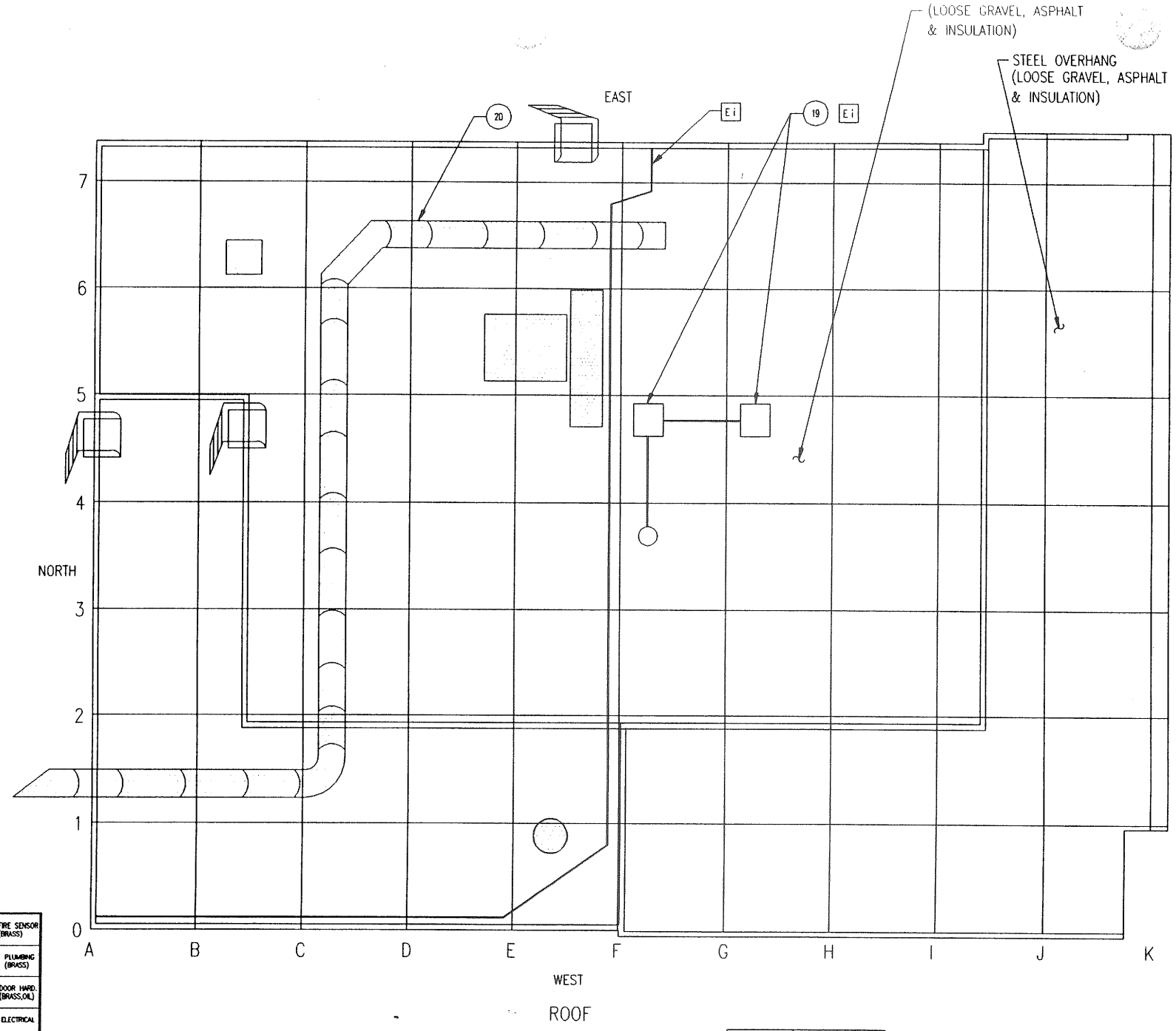
There were no hazardous samples taken from the roof except for those associated with the asbestos investigation which is described in detail in Section 5.0.



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/SHED
DESCP	STORAGE SHED
ELECT. FILE:	CDW-SHED.DWG

Fig. 4-29—Storage Shed



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/ROOF
DESCP	HOTCELL ROOF
ELECT. FILE:	CDW-ROOF.DWG

Fig. 4-30—Roof

4.8.33. Exterior

4.8.33.1. Visual Inspection Results

A visual inspection of the exterior was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. The exterior is constructed of unpainted concrete block and has various utilities including electrical conduit, galvanized lines and sheeting, an air conditioning unit on the west side, two mercury lights with ballasts that are PCB-suspect and doors containing oil reservoirs. The east side of the exterior has transformers and switches which are non-PCB-suspect. There is asbestos insulation on the east side and a bank of HEPA filters and pre-filters. The sprinkling water feed lines, tap water lines, gas lines and fire suppression system containing 18 CO_2 cylinders are also located on the east side of the building. There are three 8' fluorescent lights and circuit breakers (53 on east side), one small transformer and two emergency lights with batteries. There were no visible signs of hazardous contamination residues present upon visual inspection, therefore this area was classified as "unaffected."

4.8.33.2. PCB Inventory

The east side of the building has one large transformer bank and one small transformer that are dry type transformers and non-PCB. The west side has one large transformer box that is empty.

4.8.33.3. Grid Map

Refer to Figure 4-31 through Figure 4-34 for the grid maps of this area.

4.8.33.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no hazardous samples other than those associated with asbestos were collected.

4.8.34. 108 Roof and Exterior

4.8.34.1. Visual Inspection Results

A visual inspection of this area was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the building. This portion of the building is constructed of concrete block and has electrical conduit and one small fluorescent light unit, PVC piping, copper water lines, two pumps(in use), a hydraulic lift, galvanized rain gutters, six breakers and switches. The roof of this area is similar to the roofing on the rest of the building with electrical conduit, gravel, tar paper, and asbestos roofing materials (see Section 5.0 for asbestos details).

4.8.34.2. PCB Inventory

This area has no PCB-suspect equipment.

4.8.34.3. Grid Map

Refer to Figure 4-35 for the grid map of this room.

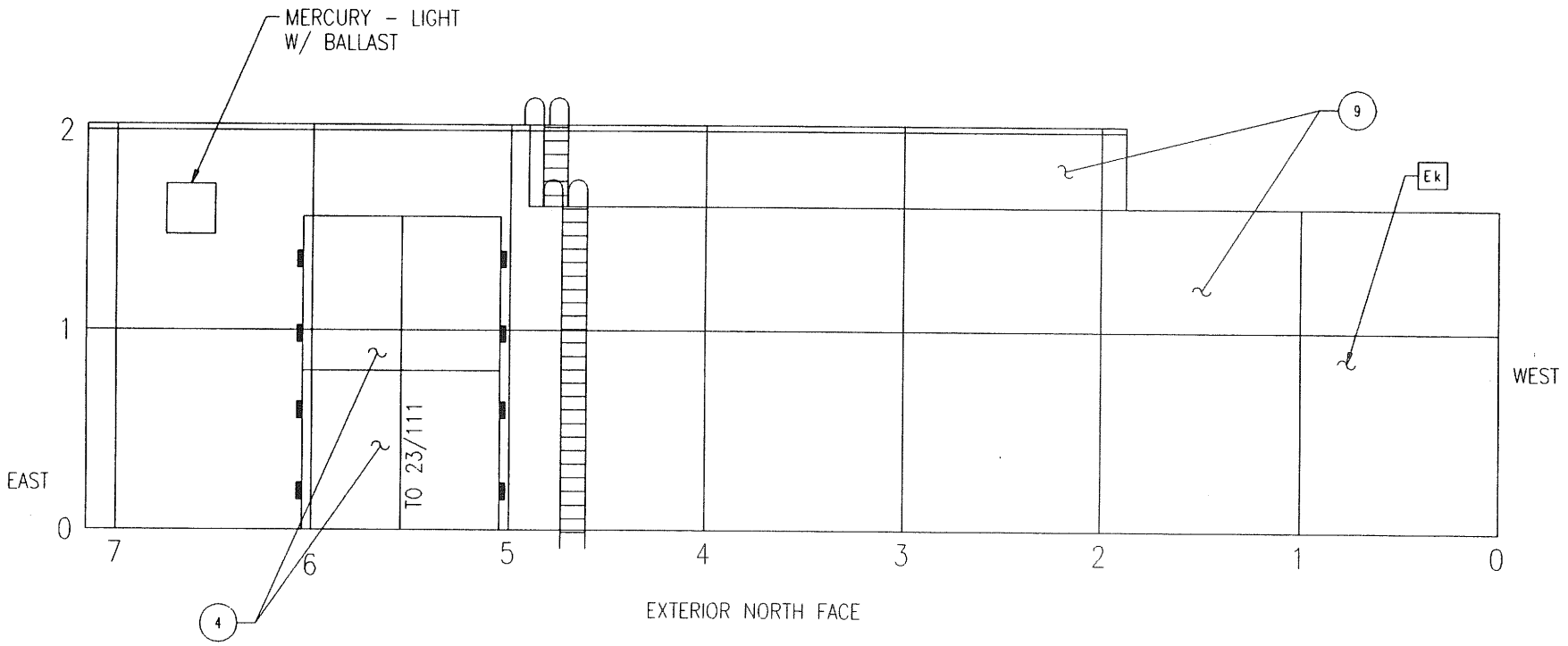
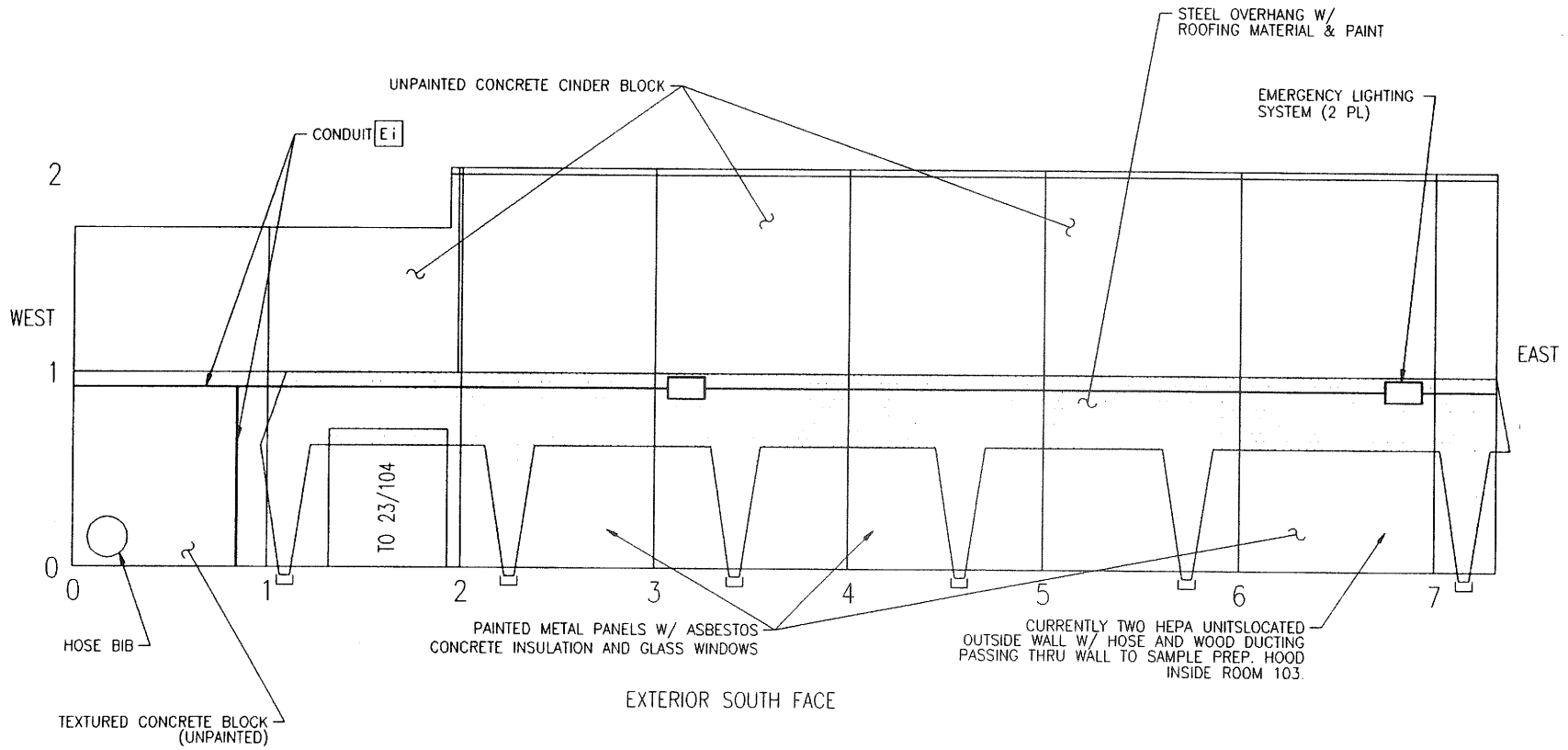


Fig. 4-31—Exterior, North

(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD. (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

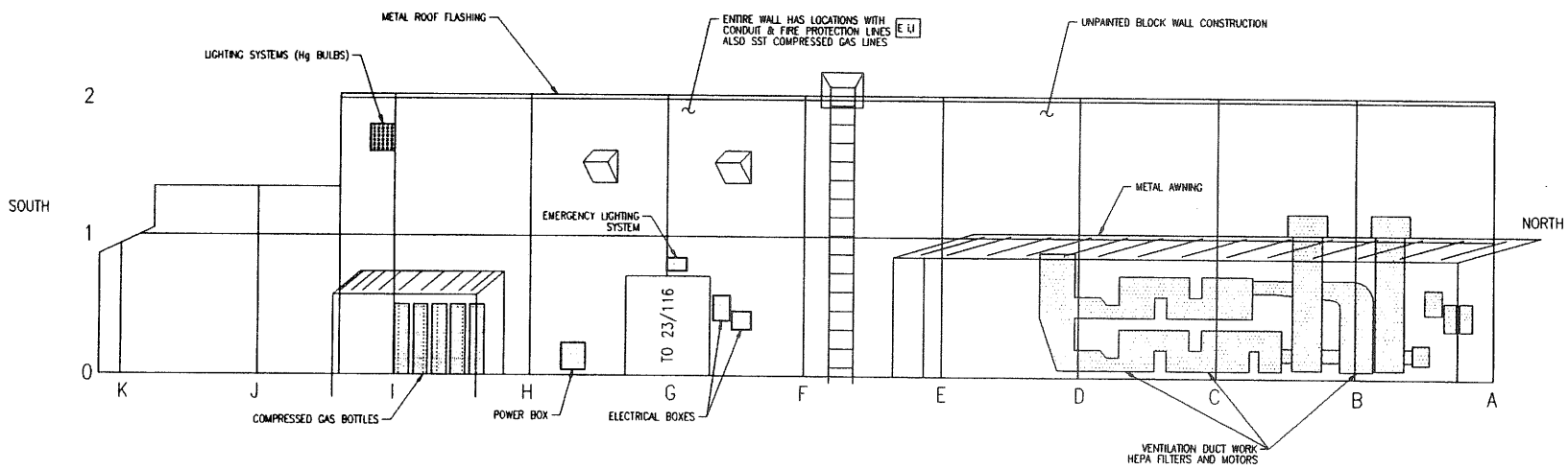
ROOM NO.	23/NORTH-FACE
DESCP	EXTERIOR NORTH FACE
ELECT. FILE:	CDW-NORT.DWG



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/SOUTH-FACE
DESCP	WALL EXTERIOR
ELECT. FILE:	CDW-SOTH.DWG

Fig. 4-32—Exterior, South

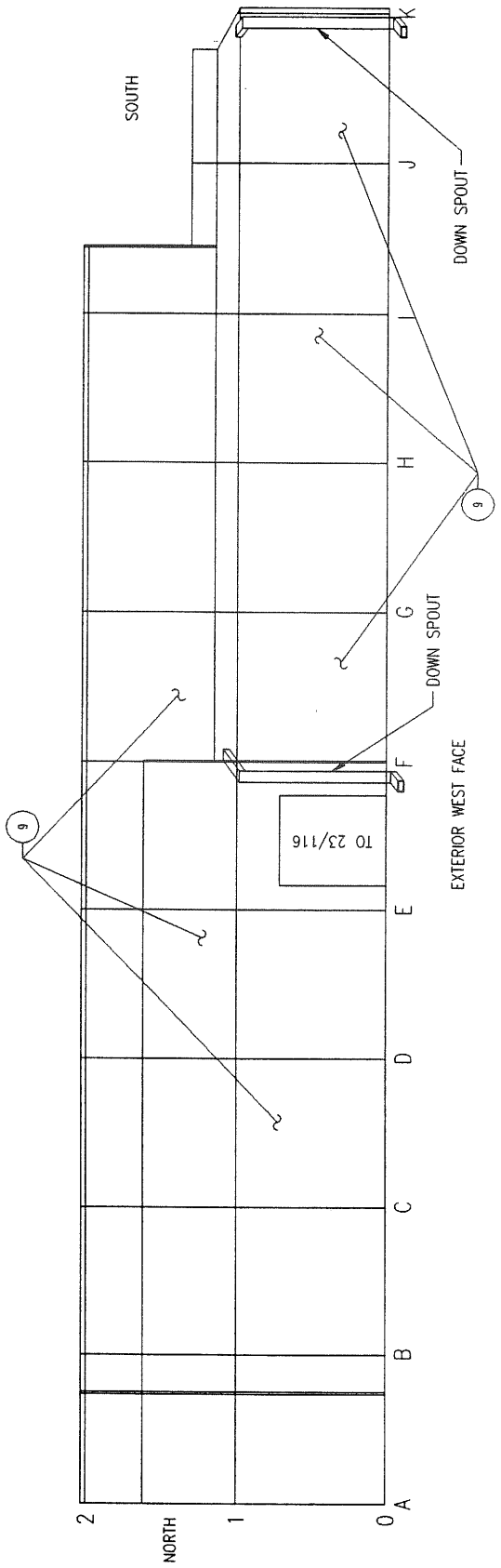


EXTERIOR EAST-FACE

(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD. (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO.	23/EAST-FACE
DESCP	WALL EXTERIOR
ELECT. FILE:	CDW-EAST.DWG

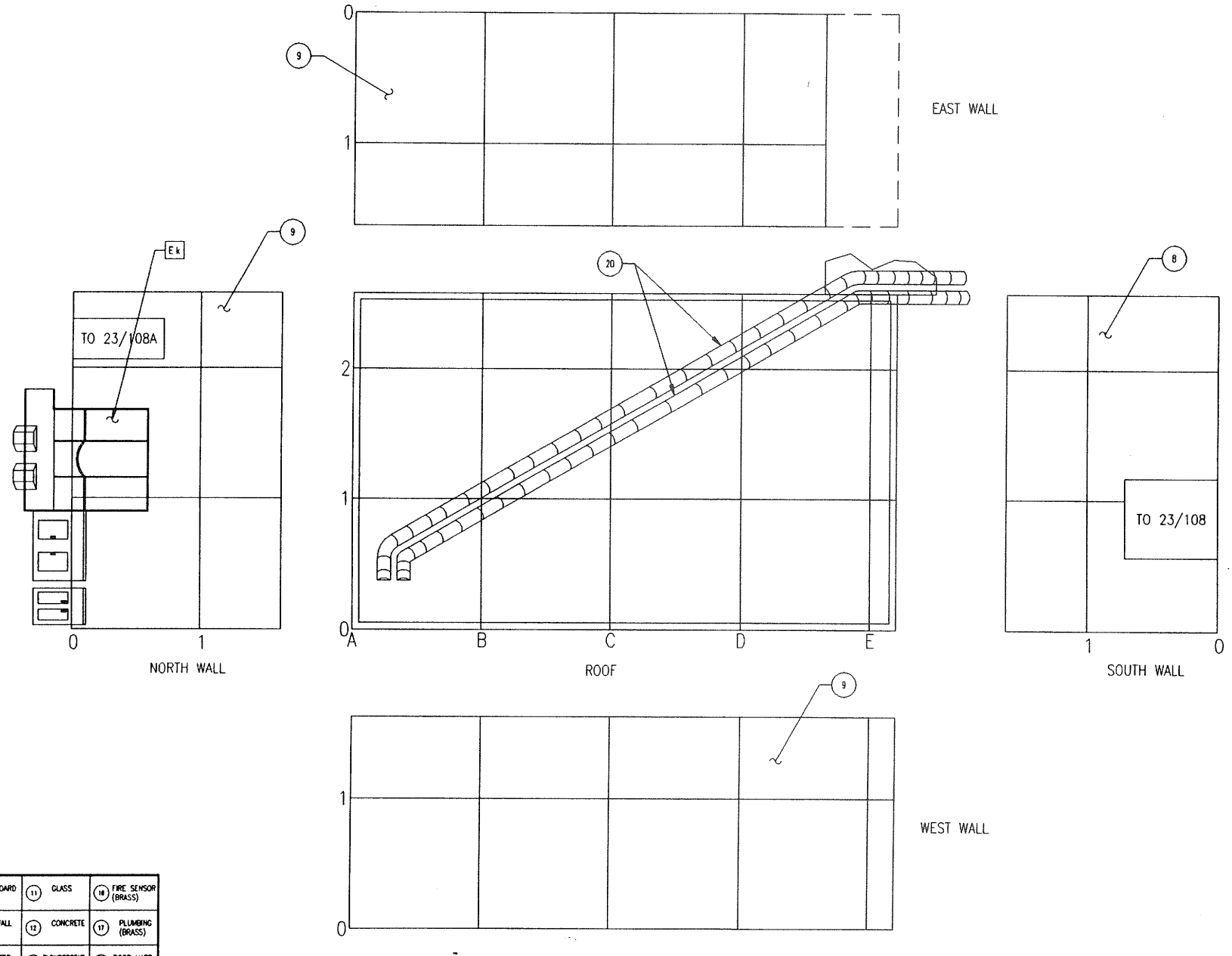
Fig. 4-33—Exterior, East



ROOM NO.	23/WEST-FACE
DESCP	EXTERIOR WEST FACE
ELECT. FILE:	CDW-WEST.DWG

① CEILING TILE	⑥ HARDBOARD	⑪ GLASS	⑯ FIRE SENSOR (BRASS)
② FLOOR TILE	⑦ DRYWALL	⑫ CONCRETE	⑰ PLUMBING (BRASS)
③ BATHROOM TILE	⑧ PLASTER	⑬ FLOURESCENT LIGHTS (PCB'S)	⑱ DOOR HARD (BRASS,OIL)
④ PAINTED METAL	⑨ BLOCK	⑭ NON-FLOUR. LIGHT FIXTURE	⑲ ELECTRICAL
⑤ TRANSITE	⑩ BRICK	⑮ FIRE (BRASS) SPRINKLER	⑳ AIR VENT

Fig. 4-34—Exterior, West



1 CEILING TILE	6 HARDBOARD	11 GLASS	16 FIRE SENSOR (BRASS)
2 FLOOR TILE	7 DRYWALL	12 CONCRETE	17 PLUMBING (BRASS)
3 BATHROOM TILE	8 PLASTER	13 FLOURESCENT LIGHTS (PCB'S)	18 DOOR HARD. (BRASS,OIL)
4 PAINTED METAL	9 BLOCK	14 NON-FLOUR. LIGHT FIXTURE	19 ELECTRICAL
5 TRANSITE	10 BRICK	15 FIRE (BRASS) SPRINKLER	20 AIR VENT

ROOM NO.	23/108-EXTERIOR
DESCP	ROOM 108 EXTERIOR
ELECT. FILE:	CDW-108R.DWG

Fig. 4-35—Room 108 Roof and Exterior

4.8.34.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no hazardous samples other than those associated with asbestos were collected.

4.8.35. Outside HEPA Unit

4.8.35.1. Visual Inspection Results

A visual inspection of this equipment was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the unit. The unit is composed of stainless steel and galvanized metal and has electrical motors containing oil contaminated parts and brass equipment. The unit contains 20 HEPA filters and 18 pre-filters. This area was determined to be an "unaffected" hazardous area.

4.8.35.2. PCB Inventory

This unit has no PCB-suspect equipment.

4.8.35.3. Grid Map

There is no grid map for this unit.

4.8.35.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no hazardous samples were collected.

4.8.36. Stack Sampling Pit

4.8.36.1. Visual Inspection Results

A visual inspection of this area was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of this area. All surfaces are unpainted concrete with electrical conduit and outlets. There is one piece of equipment located here, the Logarithmic Pulse Integrator, (Eberline Model # LPI 1A) and a steel ladder on the north wall. This area was determined to be an "unaffected" hazardous area.

4.8.36.2. PCB Inventory

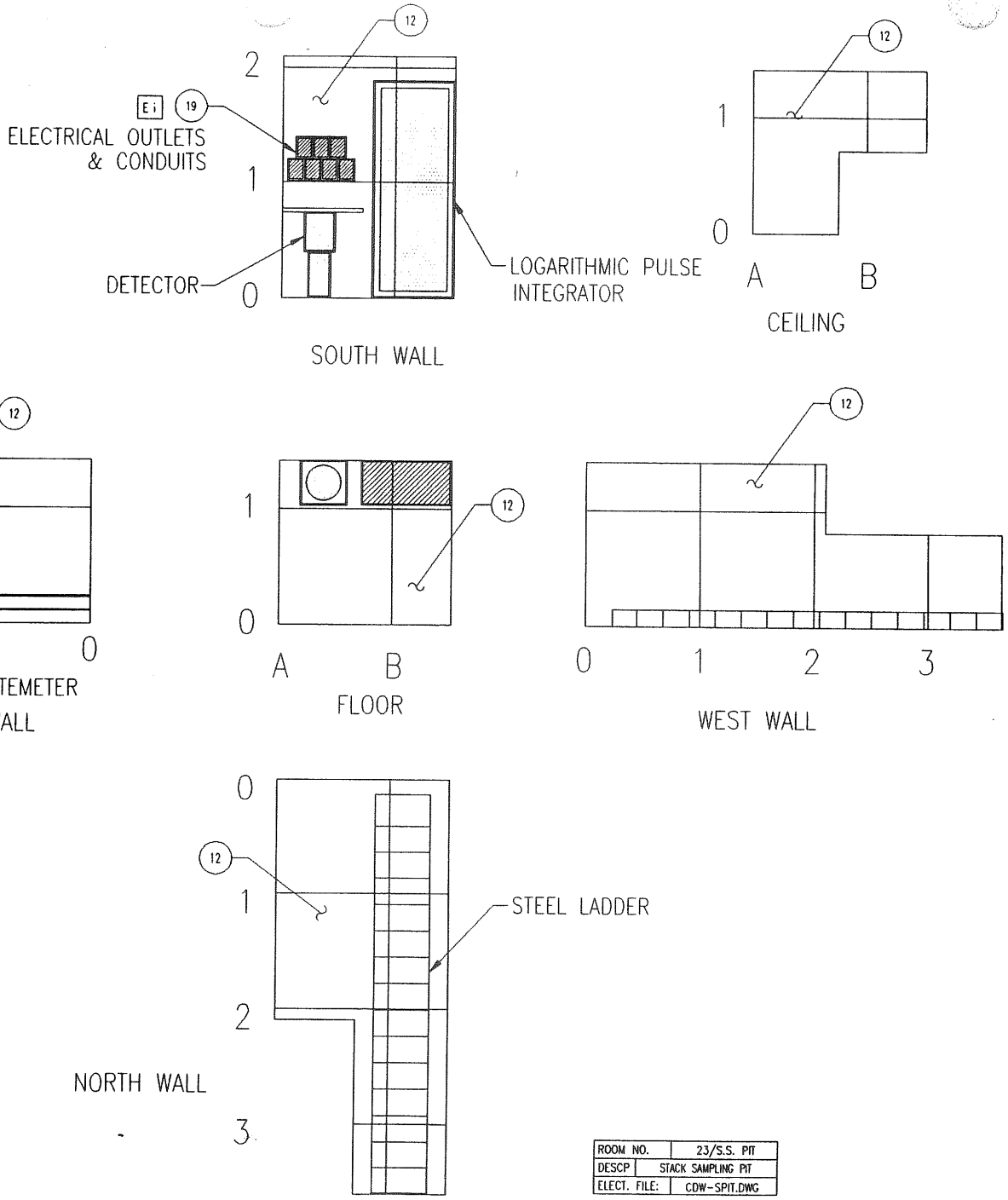
This unit has no PCB-suspect equipment.

4.8.36.3. Grid Map

Refer to Figure 4-36 for the grid map of this pit.

4.8.36.4. Sample Results

This area was classified as an "unaffected" hazardous area, therefore no hazardous samples other than those associated with asbestos were collected.



(1) CEILING TILE	(6) HARDBOARD	(11) GLASS	(16) FIRE SENSOR (BRASS)
(2) FLOOR TILE	(7) DRYWALL	(12) CONCRETE	(17) PLUMBING (BRASS)
(3) BATHROOM TILE	(8) PLASTER	(13) FLOURESCENT LIGHTS (PCB'S)	(18) DOOR HARD. (BRASS,OIL)
(4) PAINTED METAL	(9) BLOCK	(14) NON-FLOUR. LIGHT FIXTURE	(19) ELECTRICAL
(5) TRANSITE	(10) BRICK	(15) FIRE (BRASS) SPRINKLER	(20) AIR VENT

ROOM NO.	23/S.S. PIT
DESCP	STACK SAMPLING PIT
ELECT. FILE:	CDW-SPIT.DWG

Fig. 4-36—Stack Sampling Pit

4.8.37. Ventilation Exhaust Pit

4.8.37.1. Visual Inspection Results

A visual inspection of this area was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction of the pit. The pit is 4'x4'x10' and is constructed of unpainted concrete. The pit has a steel ladder and galvanized duct work, with a steel lid covering the pit. This area was determined to be an "unaffected" hazardous area.

4.8.37.2. PCB Inventory

There is no PCB-suspect equipment at this location.

4.8.37.3. Grid Map

Refer to Figure 4-37 for the grid map of the pit.

4.8.37.4. Sample Results

This area was classified as an "unaffected," hazardous area, therefore no hazardous samples were collected.

4.8.38. Liquid Waste Vault

4.8.38.1. Visual Inspection Results

A visual inspection of this area was conducted using the Hazardous Constituent Survey Form, Figure 4-1 to identify the presence of any hazardous materials used in the construction. The vault is constructed of concrete and has dimensions of 24"x24"x32" and is covered with a steel lid. There is 2 1/4" PVC piping in the vault at either end with hose clamps at each end for attachment. There is also electrical conduit in this location. Sediment was removed from the interior of this vault to be analyzed for hazardous constituents.

4.8.38.2. PCB Inventory

There's no PCB equipment associated with the vault.

4.8.38.3. Grid Map

There was no hazardous grid map prepared for this area.

4.8.38.4. Sample Results

A sample of sediment from the vault was taken but could not be shipped off-site due to levels of radiological contamination. The sample was sent to GA's State-certified on-site laboratory and analyzed for TTLC metals to determine if the contents are regulated as hazardous waste in the State of California. The results indicated that the sample contained high levels of Barium (49.5 mg/l), Beryllium (285 mg/l), Cadmium (5.83 mg/l), Chromium (10.8 mg/l), Lead (71.6 mg/l), Vanadium (30.4 mg/l) and Zinc(448 mg/l). The regulatory level for Beryllium in California is 75 mg/l, therefore this sediment must be managed as a California hazardous/mixed waste.

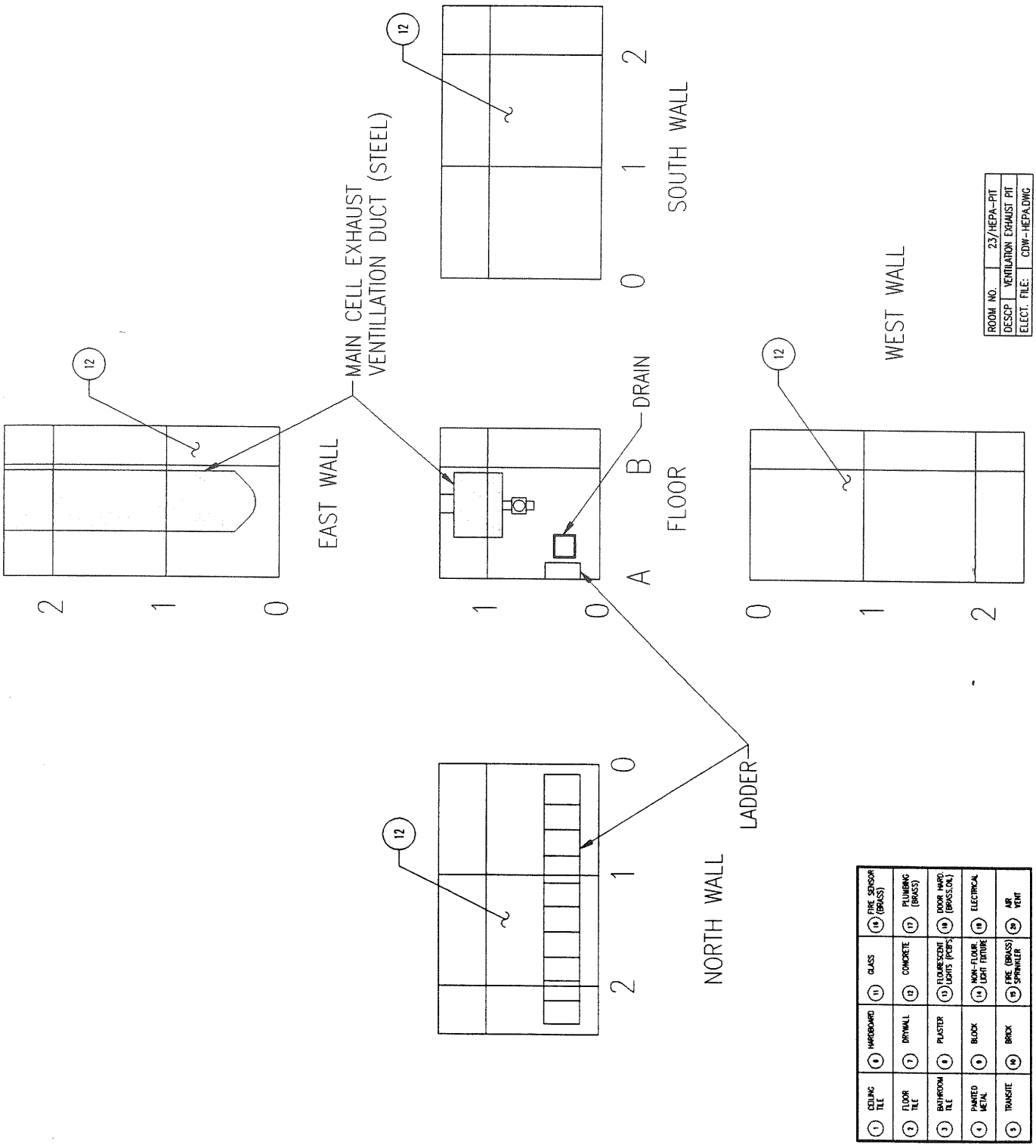


Fig. 4-37—Ventilation Exhaust Pit

4.9. Hazardous Constituent Exceptions List

The objective of hazardous characterization survey activities was to determine the extent and magnitude of potential contaminants within the HCF and subsurface soil. However when factoring in sampling and analysis costs, budget, schedule and accessibility of area, and estimated waste volumes, it is recommended that a Hazardous Exception List be developed. The exception list is used to identify areas, items, equipment and locations that are likely to contain hazardous contamination, but for various reasons, were not accessible at the time of characterization. Exception items that were not identified in the preliminary list were added on a case by case basis during field sampling activities. Note that the hazardous exception areas have been documented on each grid map Section 4.0 with the letter "E" for exception and a second letter that applies to the type of exception as listed in Table 4-5 "Hazardous Constituent Exceptions List." Some of these items have been determined to be hazardous based on visual inspection and construction information available at the time of characterization (i.e., Lead shielding). Items that were inaccessible or in use during characterization may require sampling when the equipment is no longer in use or during D&D (i.e., manipulator equipment).

Table 4-5—Hazardous Constituent Exceptions List

a.	drain lines - corrosion and breakage of piping lends to subsurface soil contamination
b.	steel columns in concrete, roof, walls - migration of contaminants behind steel structure
c.	drains
d.	electrical receptacles imbedded in walls, ceilings
e.	wooden door frames - porous material
f.	areas around doorways where glue has been applied
g.	ventilation ducting
h.	wall, wall/floor, and wall/ceiling joints - migration into hollow spaces
i.	conduit
j.	suspected underground tanks
k.	behind electrical panels
l.	sprinkler system
m.	earthquake pile caps
n.	High, Low, and Met Cells
o.	manipulator equipment
p.	sealed electrical motors
q.	lead and magnetite structures not visible to surface
r.	sealed hydraulic lines

4.10. Summary of Hazardous Constituent Characterization Results

The results presented in this section have been evaluated with regard to the level of hazardous contamination present for each room at the HCF; and compared with results from Section 3.0 to determine areas of the HCF that will have potential for generating mixed wastes during D&D. In addition, this review includes an evaluation of the potential for subsurface contamination in rooms that had signs of contamination from oils and other liquids noted in the visual inspections. The summary of the hazardous results are presented by grouping rooms into one of three categories: Low, Moderate, and Hazardous Exception Areas. The categories are defined as follows:

- Low Hazard—Rooms where visual inspections and surface sampling results revealed low (less than RCRA or California regulatory limits) or non-detectable levels of hazardous constituent contamination, with the exception of having removable lead, asbestos or PCB items. These rooms are not expected to have sub-surface, or sub-floor hazardous contamination.

- Moderate Hazard—Rooms where visual inspections and surface (as well as subsurface) sampling resulted in hazardous constituent values that were detectable or above regulated levels (RCRA or State of California criteria). Note that some of these rooms also had sub-surface contamination detected at various levels. These results are presented in the previous sections and summarized in Table 4-4.

- Hazardous Exception Areas—As presented in Section 4.9 above and listed in Table 4-5, the exception list is used to identify areas, items, equipment and locations that are likely to contain hazardous contamination, but for various reasons, were not accessible at the time of characterization. Exception items that were not identified in the preliminary list were added on a case by case basis during field sampling activities. Note that in some of these areas, hazardous constituent contamination may be present, but for ALARA reasons, samples could not be taken, or if taken, could not be accepted at the contract laboratory due to radiological restrictions.

4.10.1. Low Hazard Rooms/Areas

Rooms that were visually inspected and sampled at the surface that resulted in low (less than RCRA or State of California regulatory limits) or non-detectable levels of hazardous constituent contamination (with the exception of removable lead, asbestos and PCB items) include rooms 103 Office, 102 Office, 100 office, 104 Lobby, Ladies Bathroom, Men's Bathroom, Coffee Room, 105 Operating Gallery, 106 Change Room, 116 Pu Lab/X-ray Room, 116A Pu Lab/X-ray Room Mezzanine, Hallway, 117 Tool Room, 117A Tool Room Mezzanine, 119 ESTES Effluent System, 120 ESTES Sample Preparation, Corridor, Storage Shed, Roof, Exterior, 108 Roof and Exterior, Stack Sampling Pit, and the Ventilation Exhaust Pit.

Although these areas are considered to be low hazard contaminant areas, Lead values obtained for paint samples in some rooms were less than the TCLP regulated limit of 5.0 ppm, but had high TTLC values. Because of these lead levels, and the possibility of generation of lead dust during D&D activities, these rooms will need to be evaluated prior to the start of D&D with regard to industrial hygiene considerations for the removal of lead paint from the walls and floor (if required for radioactive decontamination).The rooms included in this category are: 116 Pu Lab/X-Ray Room (TTLC Pb 130 mg/kg), 116A Pu Lab/X-ray room mezzanine (TTLC Pb 130 mg/kg), 119 ESTES Effluent System (TTLC, Pb 130 mg/kg), 120 ESTES Sample Prep., and the Corridor (TTLC 130 mg/kg).

For the purpose of D&D planning, the low hazard rooms will require the removal of asbestos and lead prior to demolition. PCB items such as ballasts must be segregated from the debris generated. It is anticipated that several of the Low Hazard rooms and areas will be able to be decontaminated and released as non-hazardous and non-radioactive (the 103, 102 and 100 offices, 104 lobby, and Bathrooms).

4.10.2. Moderate Hazard Rooms/Areas

Rooms where visual inspections and surface (as well as subsurface) sampling resulted in hazardous constituent values that were detectable or above regulated levels (RCRA or State of California criteria) were grouped into the Moderate Hazard category. Rooms and areas grouped into this category include: 105A Dark Room, 107 Warm Metallography, 108 Beryllium Oxide Lab and Controlled Machine Shop, 108A Machine Shop Weld Area, 109 Physical Test Lab/ESTES Lab, 111 Service Gallery, 114 Hydraulic Pump Room, 121 Boiler Room, 122 Manipulator Repair, Liquid Waste Vault, and the Diesel Tank.

Some of the rooms/areas in this category had sample results indicating that contamination from hazardous constituents has penetrated the floor, and in some cases may have caused subsurface contamination. The areas in which core samples were taken include room 108 Beryllium Oxide Lab and Controlled Machine Shop and room 108A Machine Shop Weld Area. These results indicated that there were trace amounts of organic (semi-volatile) contamination in the cores that were taken. Further sampling and analysis will be required during D&D for these areas to determine if the materials removed from the floor and sub-surface will be regulated as Land Disposal Restricted (LDR) wastes, or if the levels can be exempted under the hazardous debris rule. Under this rule, and in accordance with the debris treatment standards (40 CFR 268.45) treated hazardous debris is excluded from the definition of hazardous waste provided that the debris is treated to the performance or design and operation standards by an extraction or destruction technology and the treated debris does not exhibit a characteristic of a hazardous waste. The excluded debris can be disposed in an industrial landfill (Subtitle D) rather than a RCRA permitted landfill (subtitle C). Note that these exemptions apply to disposal of certain low-level radioactive mixed wastes if they meet the Hanford waste acceptance criteria for hazardous debris.

For D&D planning purposes, rooms that are considered to be moderately contaminated with hazardous constituents will need to be evaluated to insure that the D&D methods recommended for radioactive contaminant removal will also be feasible for hazardous contaminant removal. It is likely that materials scabbled from the walls of these areas will be analyzed to determine if it is classified as mixed waste and will need to be segregated from other wastes wherever possible. It addition, decontamination may require that contaminated surfaces (such as the walls in room 122 Manipulator Repair) be wiped clean with detergent solutions prior to scabbling to remove surface contamination such as lead dust and oils.

4.10.3. Hazardous Exception Areas

As presented in Section 4.9 above and listed in Table 4-5, the exception list is used to identify areas, items, equipment and locations that are likely to contain hazardous contamination, but for various reasons, were not accessible at the time of characterization. Some of the rooms could not be accessed for ALARA reasons, and in some areas, samples would have been too radiologically contaminated to be accepted at the contract labs performing the hazardous analysis. Visual inspections were done on these areas and the details of these observations are reported in Section 4.8 and in Appendix B. The Hazardous Exception Areas include the items listed in Table 4-5 and the following areas: 112 Metallography Cell, 113 Low-Level Cell, 115 High-Level Cell, 118 Decon Room, and the outside HEPA units. These areas will require further evaluation during D&D, however, based on historical information, only trace amounts of hazardous materials (with the exception of Lead) were used in these areas and no reportable spills of hazardous chemicals were recorded.

5. FACILITY ASBESTOS ASSESSMENT

5.1. Criteria and Approach

One of the primary objectives of the HCF characterization activities was to determine the type, quantity and location of asbestos containing building material (ACBM) in the HCF. The asbestos information gathered during characterization was intended to be used to estimate costs of asbestos abatement and disposal. The investigation for ACBM in the HCF was performed by a subcontractor; Ameritech Design & Engineering Inc., selected through competitive bidding. Prior to commencement of asbestos characterization activities, Ameritech prepared procedures, to establish the specific guidelines and sampling strategies to be followed during characterization. The characterization approach implemented included a review of documents detailing HCF history, facility construction drawings, a facility walkdown, sample collection and analysis, and evaluation and documentation of laboratory results. The asbestos characterization activities and objectives are described in greater detail in the following sections.

5.2. Asbestos Characterization Activities

The investigation of the HCF for ACBM was approached sequentially through a complete pre-sampling review of documents detailing HCF history, facility construction drawings, a facility walkdown, selection of sampling locations, collection of sample media, analysis of samples in a California State certified laboratory, and evaluation and documentation of laboratory results.

The information regarding HCF operational history and construction materials obtained by reviewing reports and facility drawings, and performing a facility walkdown was instrumental in identifying ACBM and selecting sample locations. Samples were extracted following completion of the reviews and facility walkdown. Sampling activities were not conducted in exception areas; regions of the HCF inaccessible to characterization activities. The following sections contain descriptions of the methodology of each aspect of the characterization approach implemented.

5.2.1. Review of the GA Hot Cell Site and Facility Drawings and Historical Data

Hot Cell Facility historical data was reviewed by GA for information pertinent to construction and characterization of the HCF for ACBM. The examination of the data did not reveal information pertinent to the characterization of the HCF for ACBM.

5.2.2. Review of Facility Drawings

Facility drawings were reviewed by GA and Ameritech to identify the facility construction sequence and type of construction materials used. Construction materials identified on the facility drawings known or suspected of containing asbestos were located and noted on grid maps. The reviews of the facility drawings revealed several items identified as possible ACBM. These items were slated for visual characterization and inspection during the facility walkdown in order to verify identification as ACBM or to select locations to be sampled.

5.2.3. Facility Walk-Down

A facility walkdown was conducted by a multi-discipline group consisting of GA health physics, GA environmental engineering, and Ameritech inspectors. The primary goal of the facility walkdown was locating potentially ACBM not listed or represented on facility

drawings such as pipe insulation, wallboard materials, ceiling and floor tiles, mastic, etc.. The facility walkdown also served to identify locations of after-built construction and modifications suspected of being made with ACBM. The information gathered during the facility walkdown was used to select additional sampling locations not determined during facility drawing reviews, identify items known to be ACBM, and confirm sampling locations chosen from reviewing facility drawings.

The facility walkdown focused on identifying surfacing materials, thermal system insulation, and miscellaneous materials likely to contain asbestos. Once potential ACBM items were located, homogeneous sampling areas (areas uniform in color, texture, construction/application date, and general appearance) were delineated for sampling and analysis.

5.2.4. Sampling Exception Areas

Sampling activities were not conducted in exception areas; defined as regions of inaccessible to characterization activities. The main exception areas pertinent to asbestos characterization include:

- ventilation ducting,
- behind electrical panels,
- High, Low, and Met Cells,
- interior of hollow walls, floors, or ceiling spaces,
- drain lines, and
- underground storage tanks.

5.2.5. Sample Collection

Sample collection was performed following the selection of sample locations identified during the review of historical records, facility drawings, and the facility walkdown. GA environmental engineering and GA health physics provided support for two Ameritech inspectors performing sampling activities.

Prior to sample extraction, the surfaces of all items suspected of containing asbestos (walls, ceilings, structural members, etc.) were tested for friability by touch. A friable material is easily crumbled or pulverized and will typically generate a powder if rubbed by hand. Friable materials can be made non-friable, in the absence of trauma, by encapsulating the material surface. Surfaces of suspect items were tested for friability where paint or encapsulant may be thinly applied or deteriorated.

Sample extraction was conducted by Ameritech inspectors. The sample media was obtained by moistening the area to be sampled with water, then extracting the sample using a sharp cutting instrument. Voids in friable material, left from removal of samples, were encapsulated to reduce airborne hazards.

Ameritech collected a total of 41 samples. Samples were taken from all thermal system insulation unless unambiguously identified as non-asbestos (e.g., fibrous glass with the characteristic pink or yellow color, rubber, or Styrofoam). All insulation on boilers and pipe fitting muds and cements, considered potentially ACBM, were sampled. Floor and ceiling tiles, considered ACBM, were also sampled.

All samples were assigned an Ameritech identification number. Each sample was surveyed by GA health physics for radiological contamination prior to release of the sample to the Ameritech laboratory for analysis.

5.3. Lab Analysis and Results

Ameritech prepared documentation of sampling activities, laboratory analysis, and laboratory results. The results are provided in the following sections.

5.3.1. Laboratory Methods and Reporting Limits

All samples were analyzed at Ameritech's state certified laboratory. The samples were analyzed by the industrial standard method of polarized light microscopy (PLM) in accordance with EPA reference method 600/M4-82-020. The regulatory reporting level of the Ameritech Laboratory was set by the State of California. The State of California viewed any building material that contained an asbestos content of greater than 0.10% to be ACBM. Ameritech's laboratory reported a positive reading for any sample containing greater than 0.10% of an asbestos type such as Chrysotile, Amosite, Tremolite, or Crocidolite.

5.3.2. Laboratory Results

A total of forty-one (41) samples were collected and analyzed for the presence asbestos. Twenty-one (21) of the samples analyzed tested positive for asbestos. Samples taken from both the radiologically controlled and non-controlled regions of the HCF tested positive for asbestos. Inaccessible portions of the HCF deemed excepted areas, will have to examined for asbestos construction materials and components during decontamination and decommissioning.

Table 5-1 summarizes laboratory results for the samples taken for asbestos characterization by providing sample identification numbers, sample locations, sample descriptions, asbestos types and percents, non-asbestos fiber types, matrix types, and sample colors. Table 5-2 contains descriptions of the ACBM identified in each HCF location. Figure 5-1 illustrates the extent of asbestos present in the HCF. The locations of ACBM and sample locations are specified on facility characterization grid maps contained in Figure 5-2 - Figure 5-28. Grid maps are not provided for HCF regions determined to be free of ACBM unless samples were taken from the region. Photographic records of each sample location are provided in Figure 5-29 - Figure 5-37.

Table 5-1—Laboratory Results of Samples Taken for Asbestos Characterization

Sample ID Number	Laboratory ID Number	Sample Location	Room Name	Sample Description	Asbestos Type and %	Non-Asbestos Fiber Type	Sample Color	Matrix Type
1	BO-9772	Room 121	Boiler Room	Pipe Elbow	10% Chrysotile	Mineral Wool, Cellulose	White	Sulfate
2	BO-9773	Room 121	Boiler Room	Boiler Insulation	ND	Mineral Wool	White	Opaque Resin
3	BO-9774	Room 121	Boiler Room	Valve Mud	30% Chrysotile	Mineral Wool	White	Sulfate
4	BO-9775	Room 121	Boiler Room	Pipe Insulation	15% Chrysotile	Fiber Glass, Cellulose	Gray	Sulfate
5	BO-9776	Room 121	Boiler Room	Expansion Cloth	65% Chrysotile	Cellulose	Gray	Sulfate
6	BO-9777	Room 121	Boiler Room	Wall Material	ND	ND	Gray	Opaque Sulfate Resin
7	BO-9778	Room 121	Boiler Room	Flue Insulation	3% Chrysotile 15% Amosite	ND	White	Sulfate
8	BO-9779	Roof	Roof	Mastic	5% Chrysotile	ND	Black	Carbonate Resin
9	BO-9780	Roof	Roof	Mastic	15% Chrysotile	ND	Black/Gray	Carbonate Resin
10	BO-9781	Roof	Roof	Core	ND	Fiber Glass, Cellulose	Black	Silicate Resin
11	BO-9782	Roof	Roof	Walk Pad	ND	Fiber Glass, Cellulose	Black	Opaque resin
12	BO-9783	Roof	Roof	Core	ND	Fiber Glass, Cellulose	Black	Opaque Silicate Resin
13	BO-9784	Roof	Roof	Stack Insulation	ND	Cellulose	Gray	Carbonate, Mica, Resin, Sulfate
14	BO-9785	Roof	Roof	Felt	ND	Fiber Glass	Black/Gray	Silicate Resin
15	BO-9786	Roof	Roof	Mastic	ND	Cellulose	Black	Opaque Resin
16	BO-9787	Roof	Roof	Core	3% Chrysotile	Cellulose	Black	Opaque Resin
17	BO-9788	Roof	Roof	Transite Flue	15% Chrysotile 5% Amosite 15% Crocidolite	ND	Gray	Clay Resin
18	BO-9789	Exterior	Exterior	Cinder Block Mortar	ND	ND	Gray	Silicate, Mica, Sulfate, Opaque
19	BO-9790	Exterior	Exterior	Straight Pipe	ND	Mineral Wool	Yellow	Resin
20	BO-9791	Room 117	Tool Room	9x9 Floor Tile	10% Chrysotile	Cellulose	Gray	Carbonate, Sulfate, Clay
21	BO-9792	Room 117	Tool Room	Floor Mastic	7% Chrysotile	ND	Black	Carbonate, Opaque Resin
22	BO-9793	Room 117	Tool Room	Drywall	ND	Cellulose	White	Sulfate
23	BO-9794	Room 105	Operating Gallery	2x4 Ceiling Tile	ND	Mineral Wool, Cellulose	Gray	Perlite
24	BO-9795	Room 105	Operating Gallery	9x9 Floor Tile	6% Chrysotile	Cellulose	Gray	Carbonate Clay
25	BO-9796	Room 105	Operating Gallery	Wall Mud	2% Chrysotile	ND	White	Carbonate, Sulfate, Mica
26	BO-9797	Room 104	Lobby	Wall Plaster	ND	ND	Gray	Silicate, Mica, Sulfate, Opaque
27	BO-9798	Room 104	Lobby	Base Board Mastic	5% Tremolite	Cellulose	Brown	Clay, Resin
28	BO-9799	Room 104	Lobby	9x9 Floor Tile	8% Chrysotile	ND	Brown	Carbonate, Clay
29	BO-9800	Room 104	Lobby	Floor Mastic	9% Chrysotile	ND	Black	Resin, Carbonate, Opaque
30	BO-9801	Room 104	Lobby	Wall Plaster	ND	Talc	White	Sulfate, Silicate
31	BO-9802	Room 104	Lobby	Ceiling Tile Glue	10% Tremolite	Fiber Glass	Brown	Clay, Resin
32	BO-9803	Room 104	Lobby	12x12 Ceiling Tile Glue	ND	Mineral Wool	Brown	Resin
33	BO-9804	Room 100	Office	Ceiling Tile Glue	10% Tremolite	Fiber Glass	Brown	Resin, Clay
34	BO-9805	Room 102	Office	Wall Board	ND	Cellulose	Brown	Resin
35	BO-9806	Room 100	Office	12x12 Ceiling Tile	ND	Mineral Wool	Tan	Resin
36	BO-9807	Room 100	Office	9x9 Floor Tile	7% Chrysotile	ND	Gray	Carbonate, Sulfate, Clay
C1	BO-9808	Room 108A	Machine Shop	9x9 Floor Tile	8% Chrysotile	ND	Brown	Carbonate, Clay, Resin
C2	BO-9809	Room 108	Machine Shop	Wall Plaster	ND	ND	Gray	Silicate, Sulfate
C3		Room 111	Service gallery	Pipe Insulation		Sample radiologically Contaminated	Gray	
C4	BO-9810	Above 116	Above X-Ray Lab	Duct Sealant	3% Chrysotile	ND	Gray	Carbonate, resin
C5	BO-9811	Above 116	Above X-Ray Lab	Expansion Cloth	ND	Fiber Glass	Gray/White	Resin, Clay

ND= Not Detected

Table 5-2—Items Containing Asbestos at the HCF

Room	Items Containing Asbestos
103, Office	Floor tile and mastic Ceiling tile adhesive
102, Office	Floor tile and mastic Ceiling tile adhesive
100, Office	Floor tile and mastic Ceiling tile adhesive
Room 104/104A, Lobby	Floor tile and mastic Ceiling tile adhesive
Ladies Room (LR)	Floor tile and mastic
Men's Room (MR)	Floor tile and mastic
Coffee Room (CR)	Floor tile and mastic
Room 105, Operating Gallery	Floor tile and mastic Wall mud construction material
Room 105A, Dark Room	Floor tile and mastic
Room 106, Men's Change Room	Floor tile and mastic
Room 107, Warm Metallography	Pipe insulation
Room 108, Machine Shop	Floor tile and mastic
108A, Machine Shop Weld Area	Floor tile and mastic
Room 109, Tritium Extraction Lab	No ACBM identified
Room 111, Service Gallery	Pipe insulation
Room 112, Metallography Cell	Exempt Area
Room 113, Low-Level Cell	Exempt Area
Room 115, High-Level Cell	Exempt Area
Room 114, Hydraulic Pump Room	No ACBM identified
Room 116, Plutonium Lab/X-Ray Room	Floor tile and mastic
Room 116A, Plutonium Lab/X-Ray Room Mezzanine	Duct Sealant
Hallway	Floor tile and mastic
Room 117, Tool Room	Floor tile and mastic
Room 117A, Tool Room Mezzanine	No ACBM identified
Room 118, Decon Room	No ACBM identified
Room 119, ESTES Tritium Effluent	Pipe insulation
Room 120, ESTES Sample Preparation	Pipe insulation
Corridor/Ladies Change Room	Pipe insulation
Room 121, Boiler Room	Pipe insulation materials Expansion cloth
Room 122, Manipulator Repair	Pipe insulation
Storage Shed	No ACBM identified
Roof	Roof core Roof mastic Transite flue pipe
Exterior of building	South wall construction panels
Room 108 Roof and Exterior	No ACBM identified
Outside HEPA Unit	Sealant/insulation (sample 13)
Stack Sampling Pit	Not accessed by inspectors No ACBM identified
Ventilation Exhaust Pit	Not accessed by inspectors No ACBM identified

Ameritech prepared volume estimates of grouped by item description (i.e., roofing material, floor tile, etc.). Table 5-3 contains descriptions of the asbestos groups, estimated volumes, classifications as friable or non-friable, and ranges of asbestos percent.

Table 5-3—Estimated Volumes of ACBM at the HCF

Description	Estimated Volume (cubic feet)	Friable	Asbestos %
Pipe Insulation	60	X	15
Expansion Cloth	10	X	65
Flue Insulation	25	X	15
Transite Pipe	10		15
Roofing Material	5000		3-15
9x9 Floor Tile	500		7-10
Rm. 105 Wall Mud	15	X	2
Baseboard Mastic	70		5
12x12 Ceiling Tile Glue	70		10
Interior Duct Sealant	15		3
Exterior Transite Panels	35		ND

5.4. Quality Assurance

GA Quality Assurance prepared a detailed assessment of the asbestos characterization activities conducted by Ameritech. The assessment was performed prior to receiving the final asbestos results in order to provide Ameritech with sufficient time to respond to comments without impacting the characterization schedule. The assessment included an evaluation of Ameritech's performance and adherence to the asbestos characterization subcontract. The GA Quality Assurance assessment concluded that all requirements specified in the asbestos characterization subcontract were satisfied.

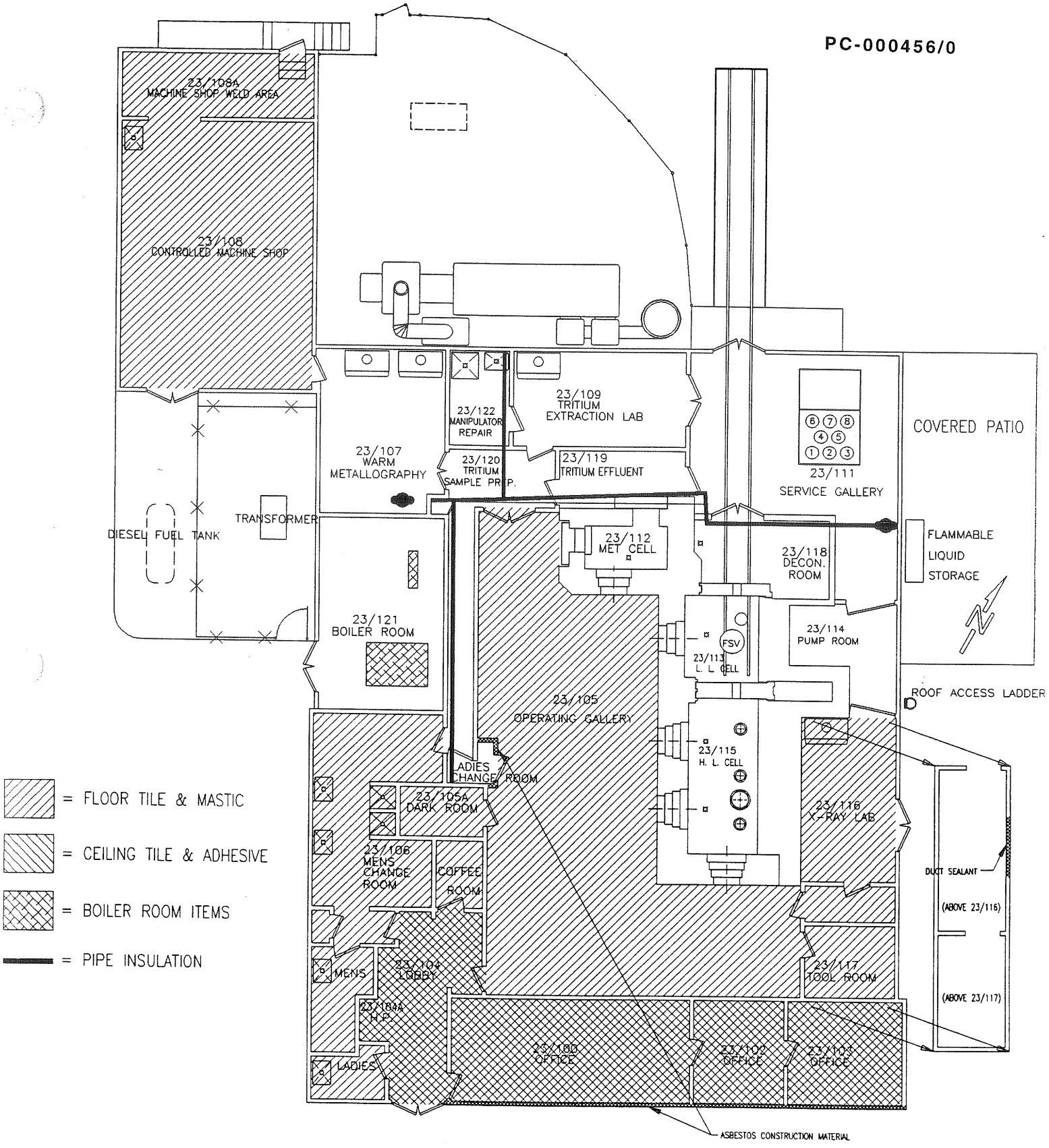


Fig. 5-1—HCF Plan View Illustrating Location of ACBM (Roof Not Shown)

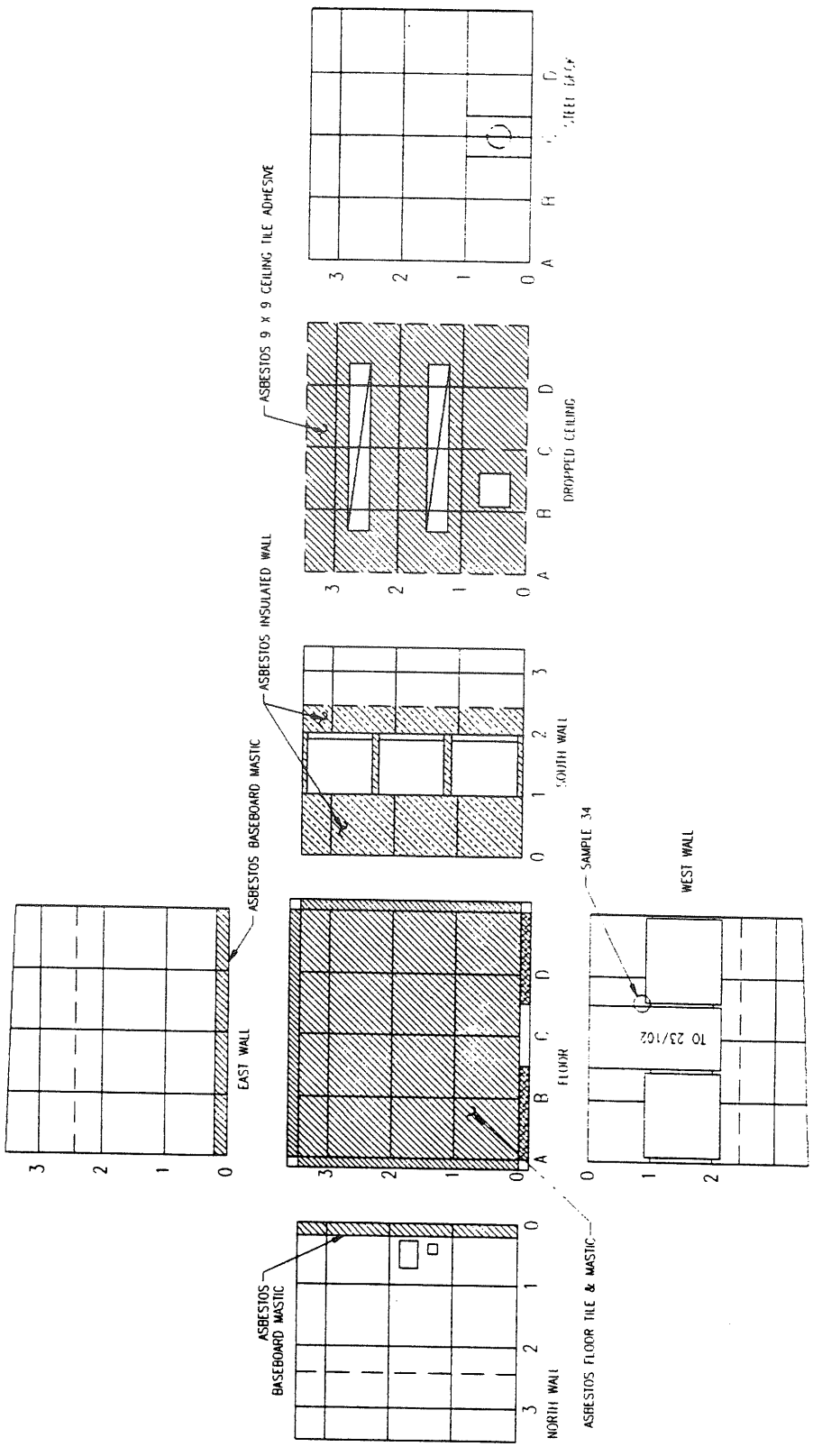


Fig. 5-2—103 Office

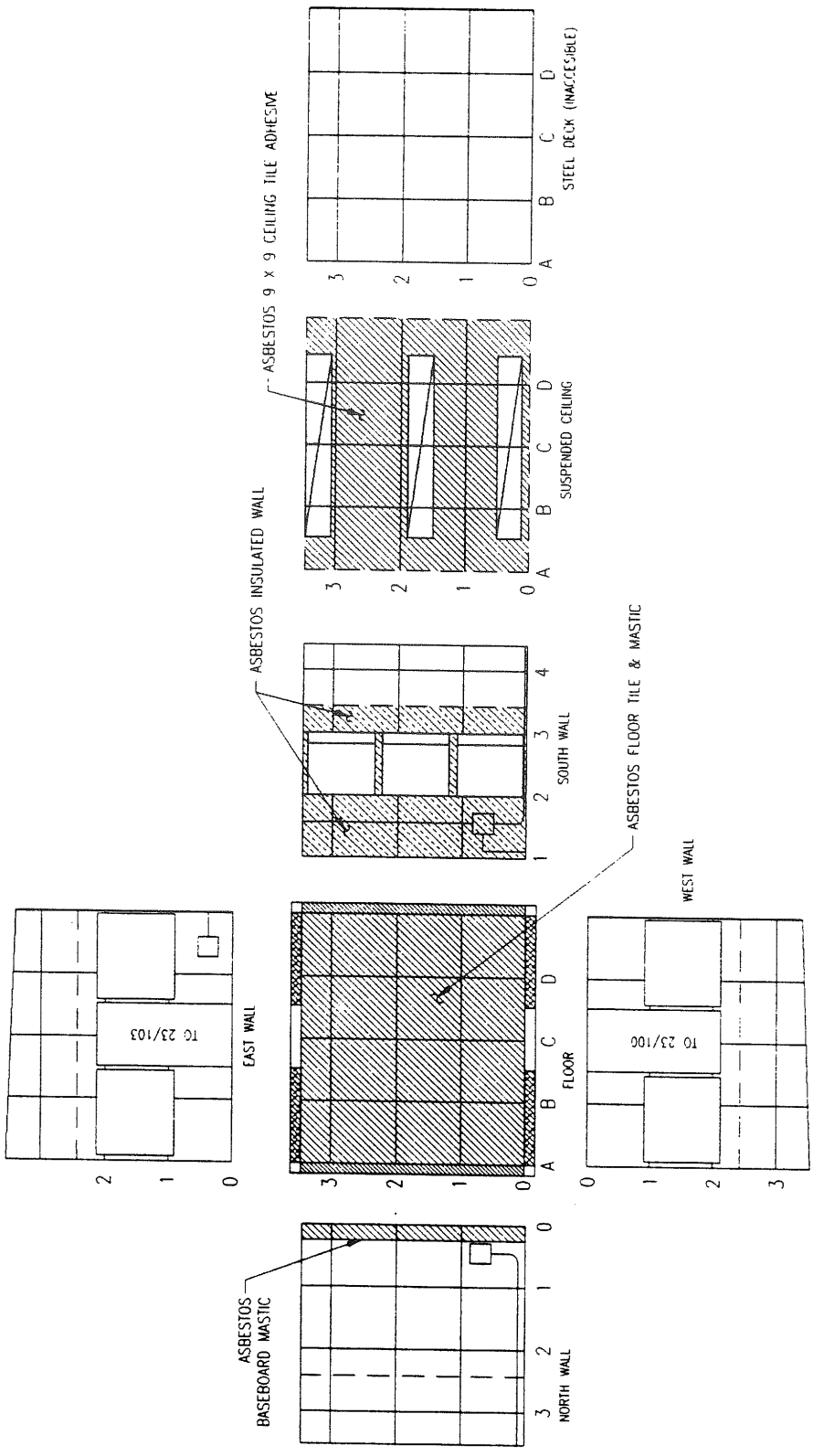


Fig. 5-3—102 Office

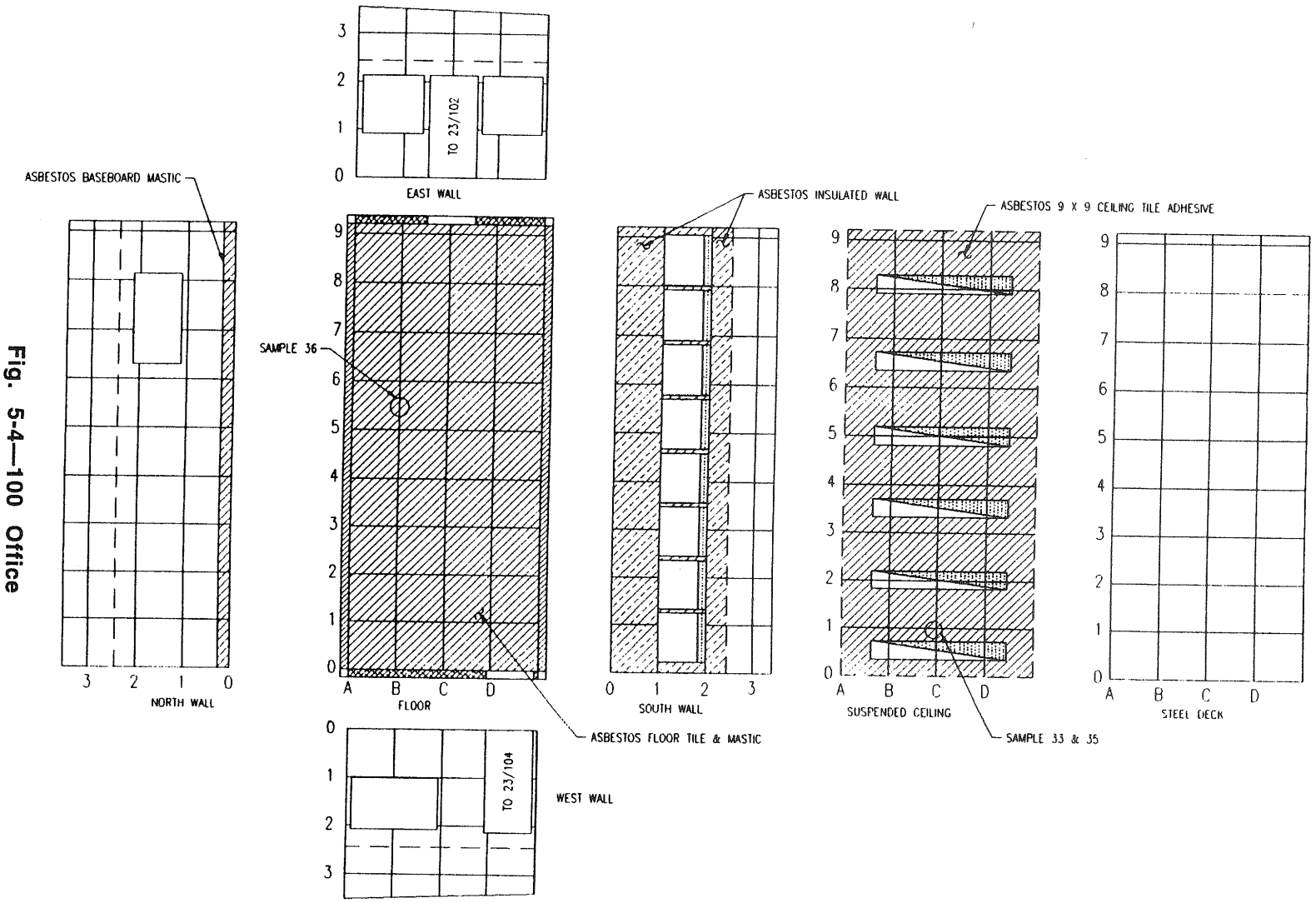


Fig. 5-4—100 Office

ROOM NO.	23/100
DESCP	OFFICE
ELECT FILE	HDW 100.DWG

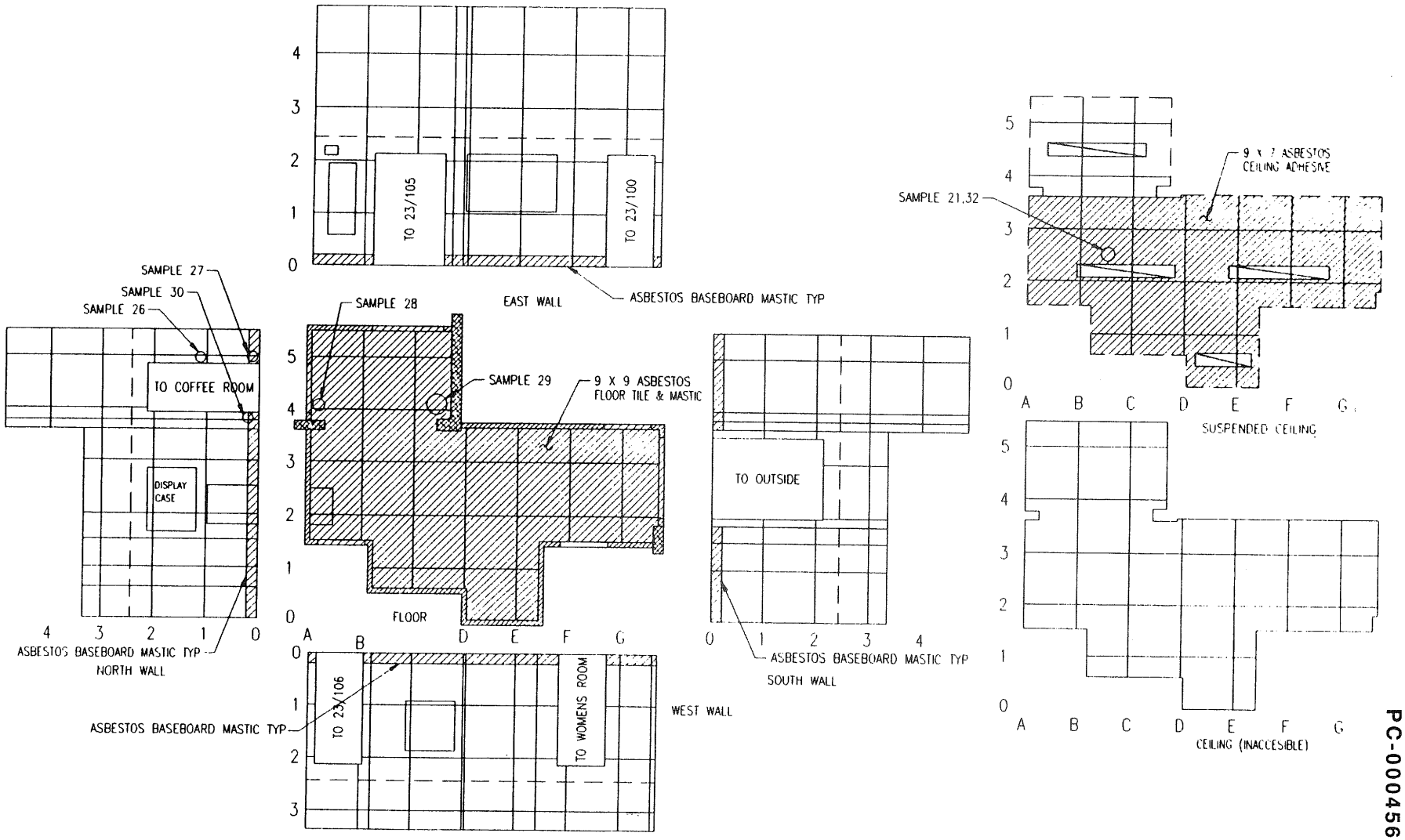


Fig. 5-5—104 Office

ROOM NO.	23/104
DESCR	LOBBY
EFFECT FILE	BDW 104

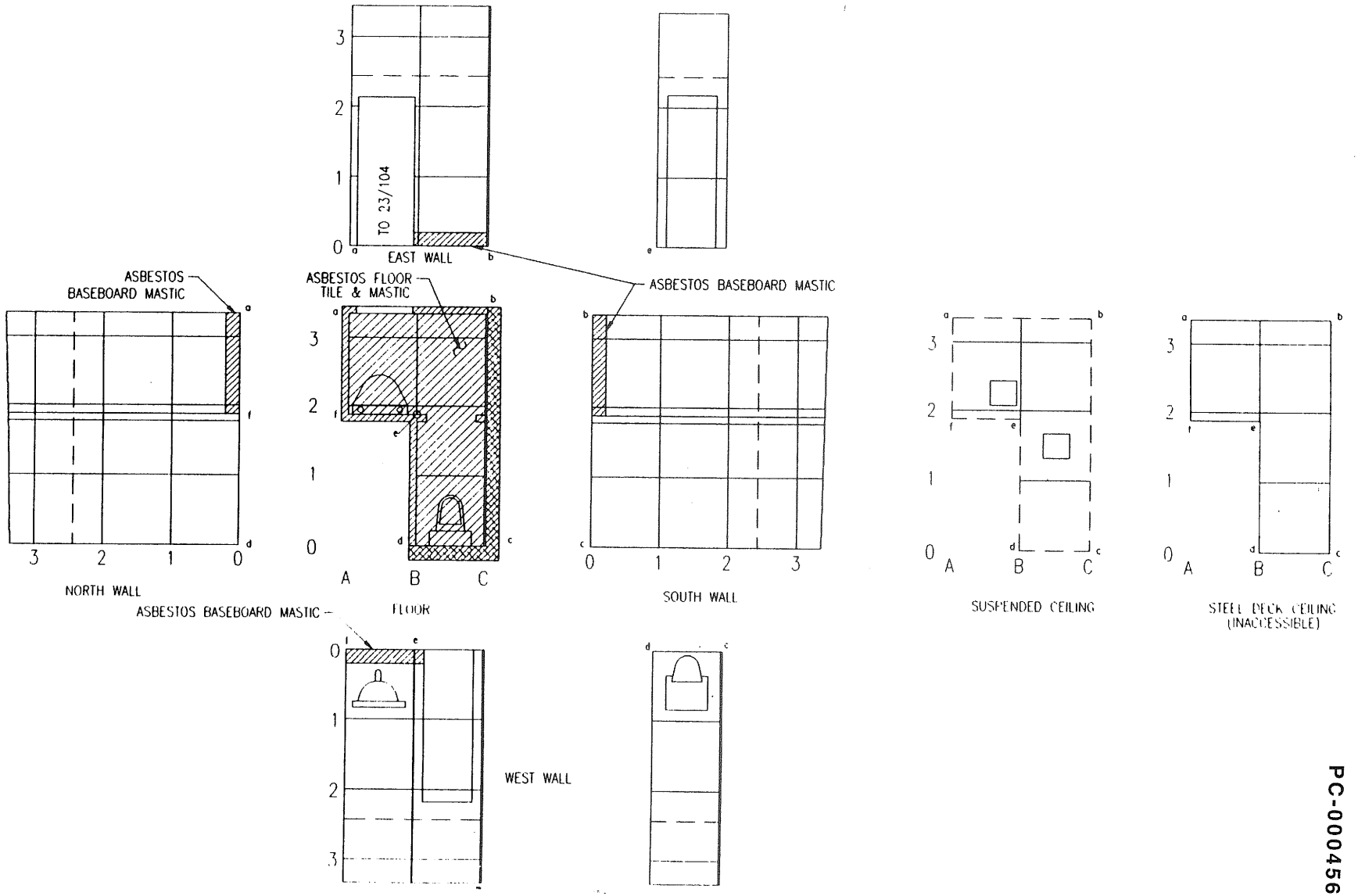


Fig. 5-6—Ladies Bathroom

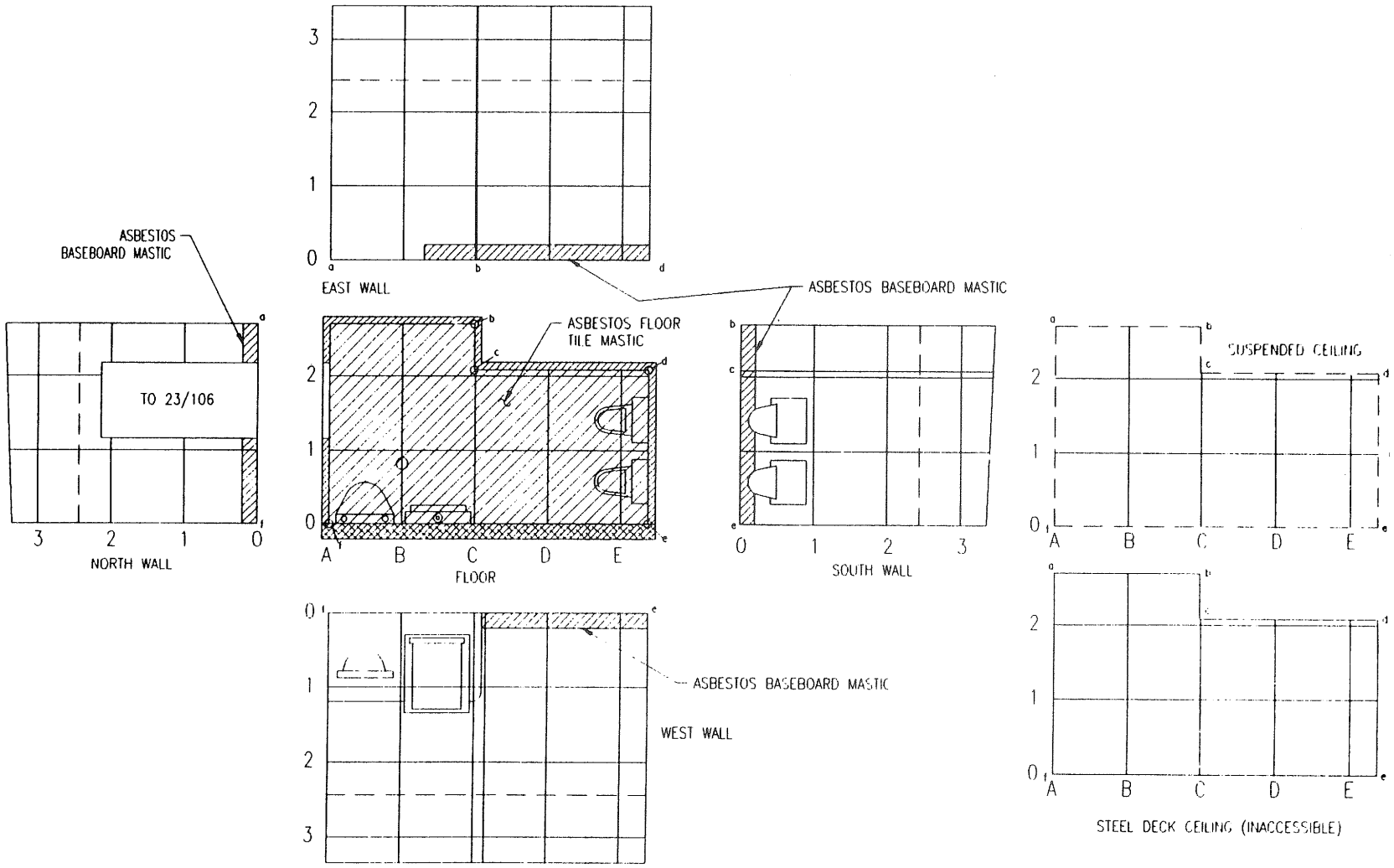


Fig. 5-7—Men's Bathroom

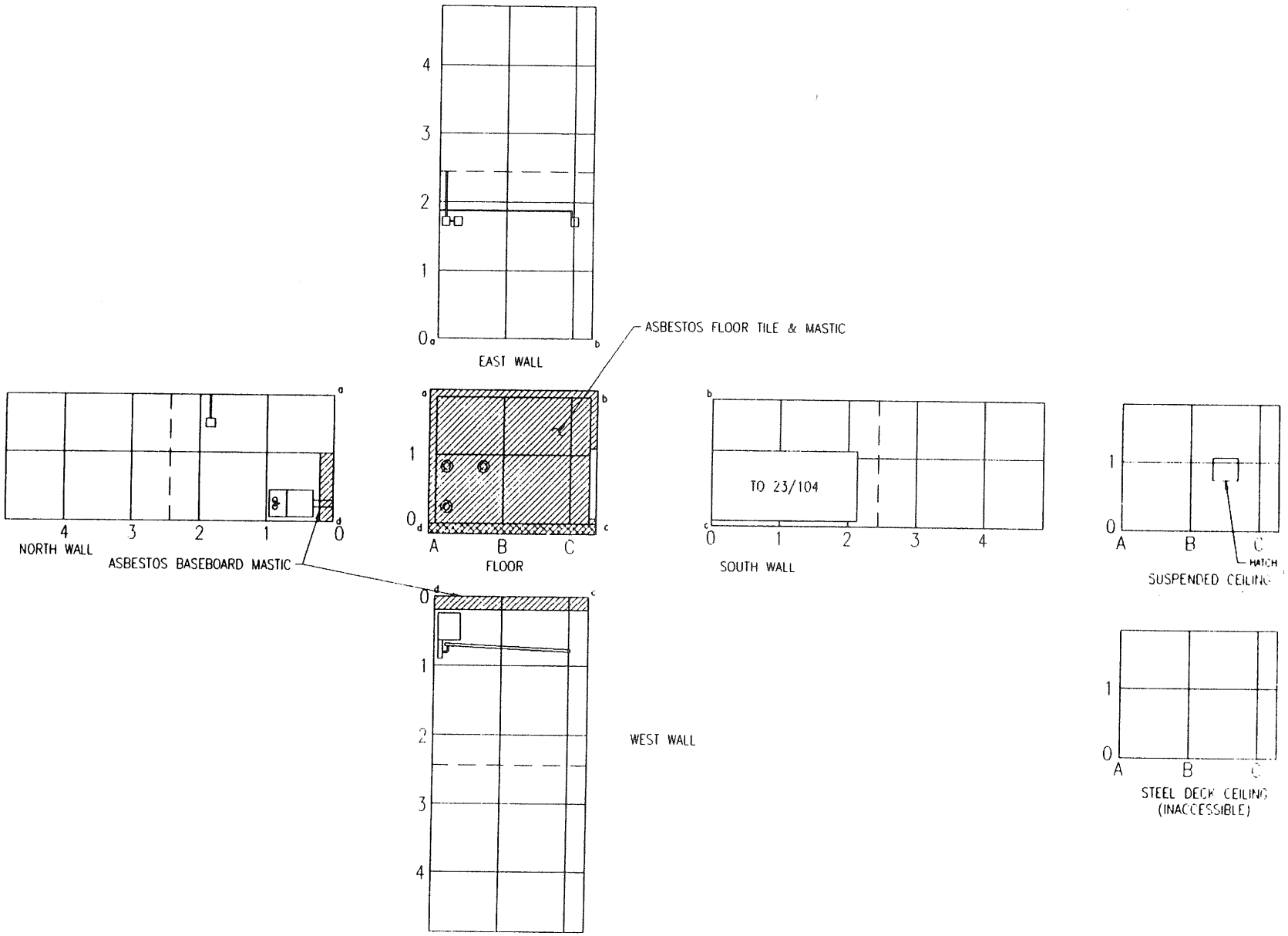


Fig. 5-8—Coffee Room

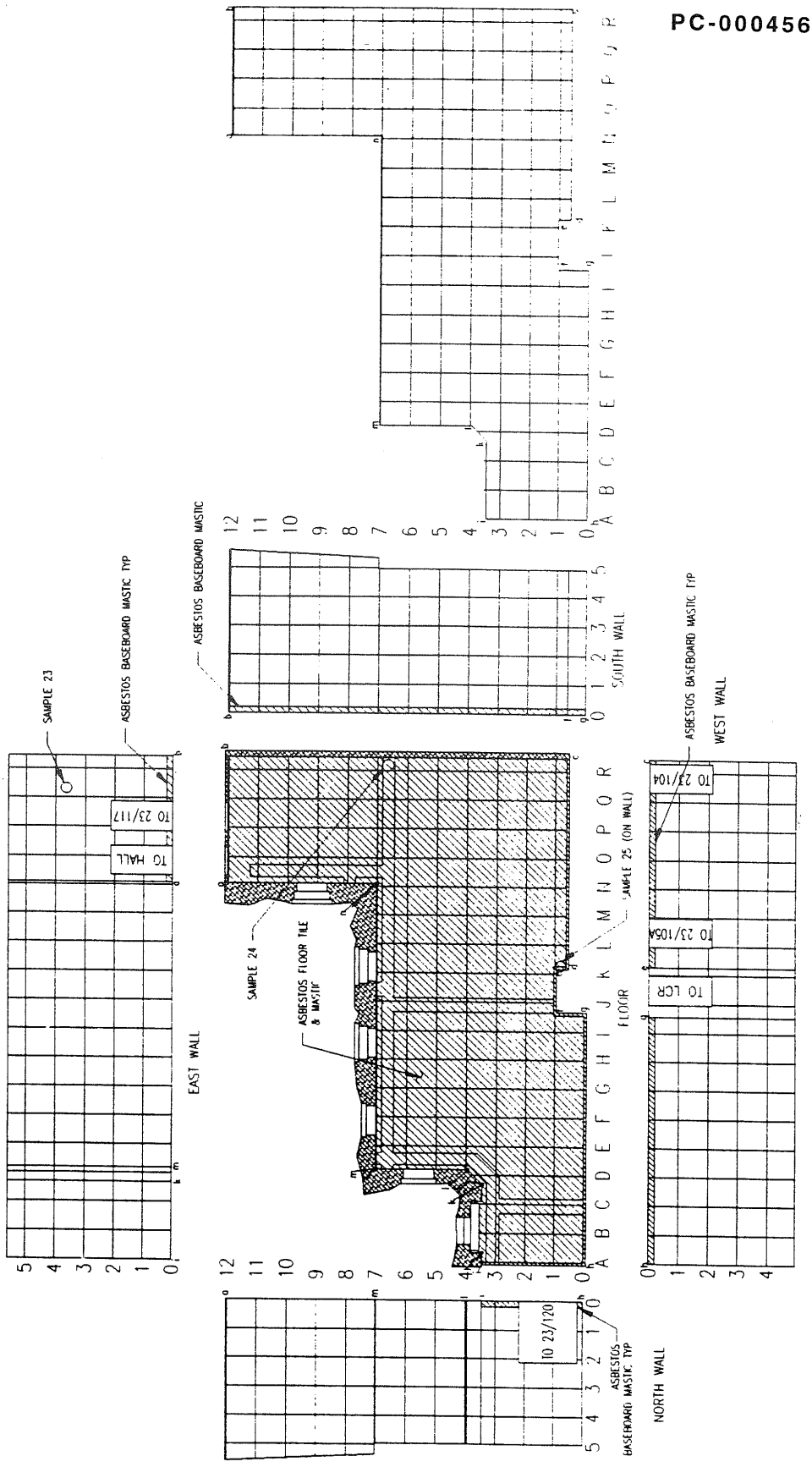
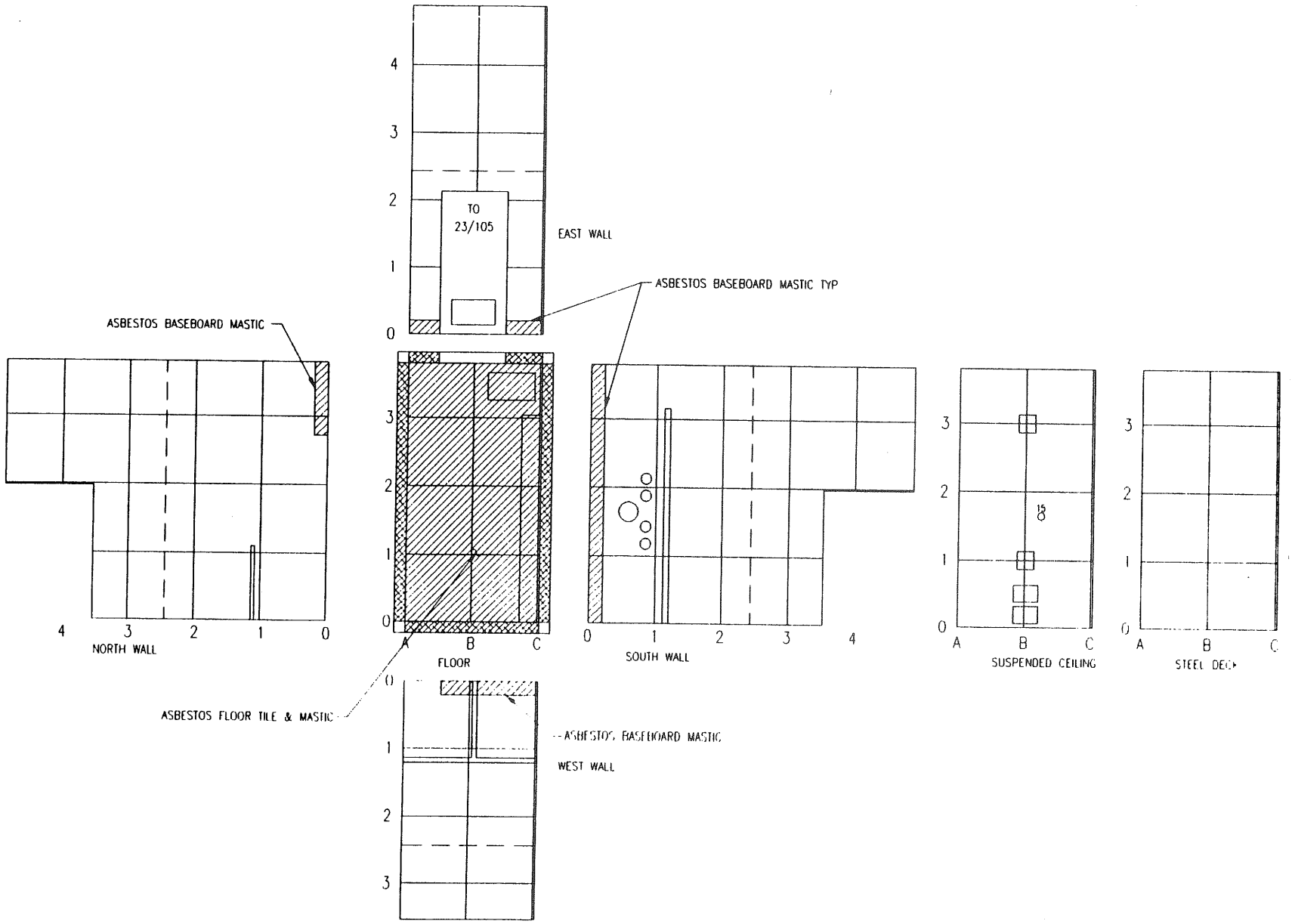


Fig. 5-9—105 Operating Gallery



ROOM NO.	23/105A
DESCP	DARK ROOM
DUCT FILE	HDW 105A

Fig. 5-10—105A Dark Room

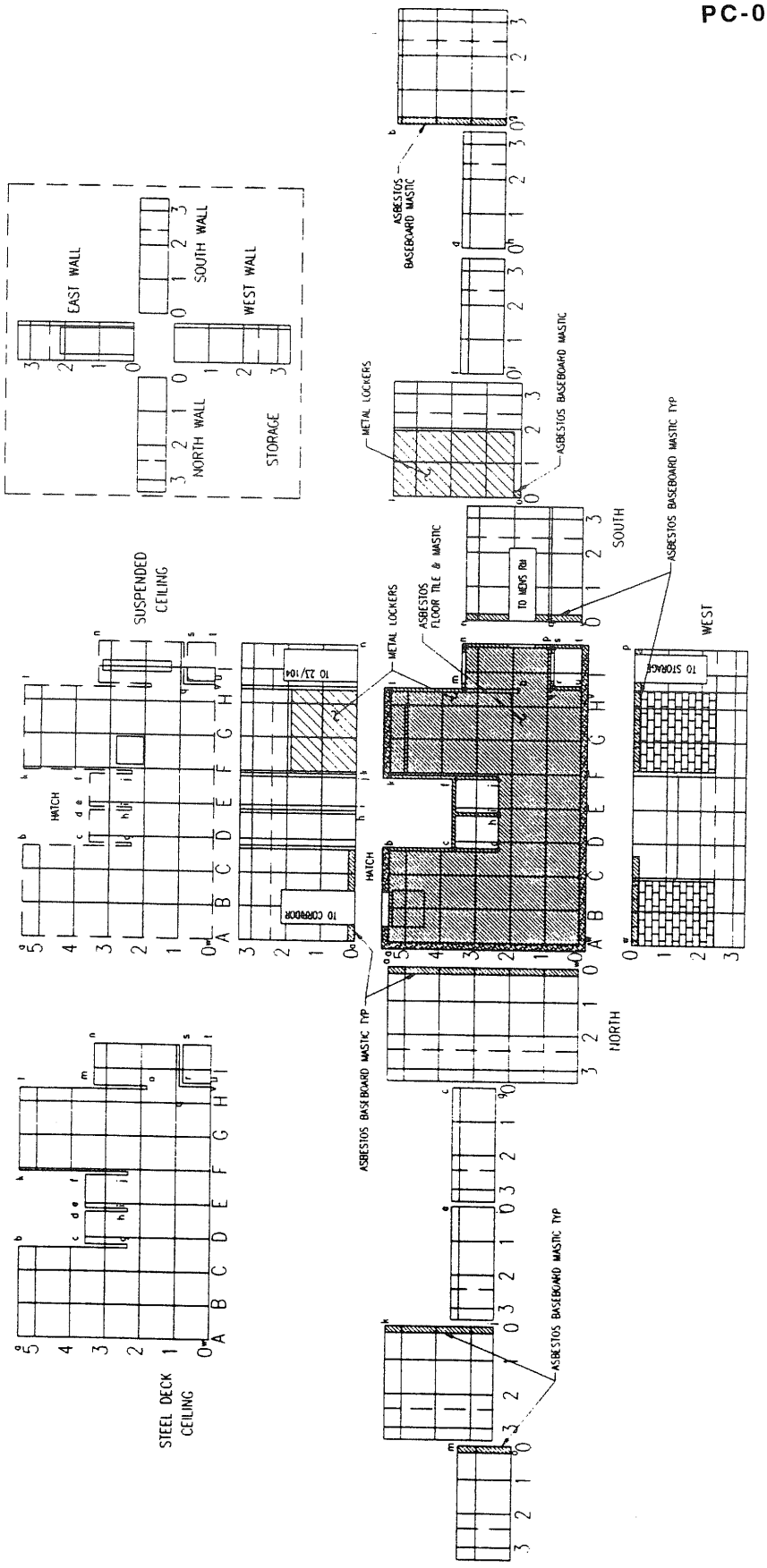
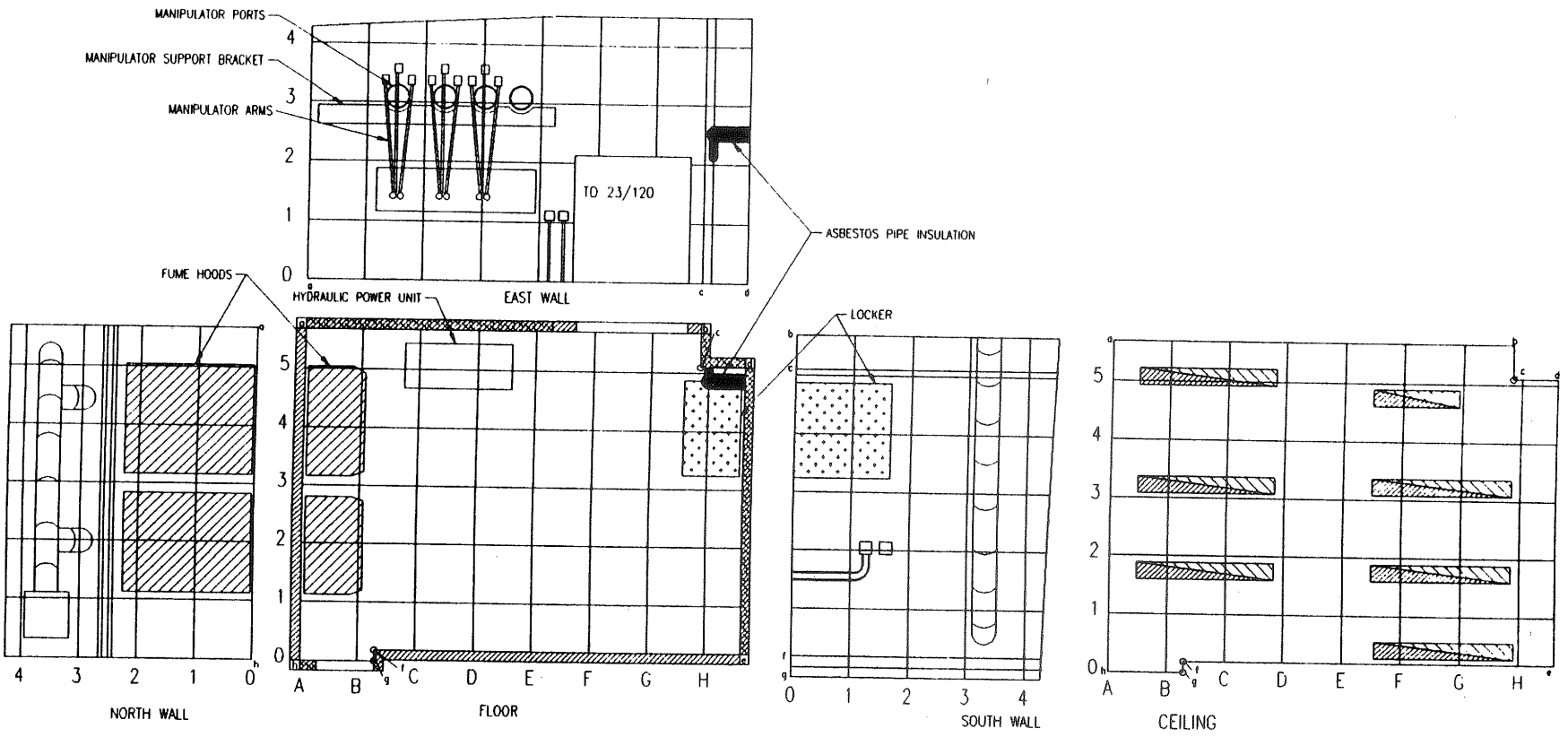


Fig. 5-11—106 Men's Changing Room



ROOM NO.	23/107
DESCP	WARM METALLOGRAPHY SHOP
ELECT FILE	BDW-107.DWG

Fig. 5-12—107 Warm Metallography

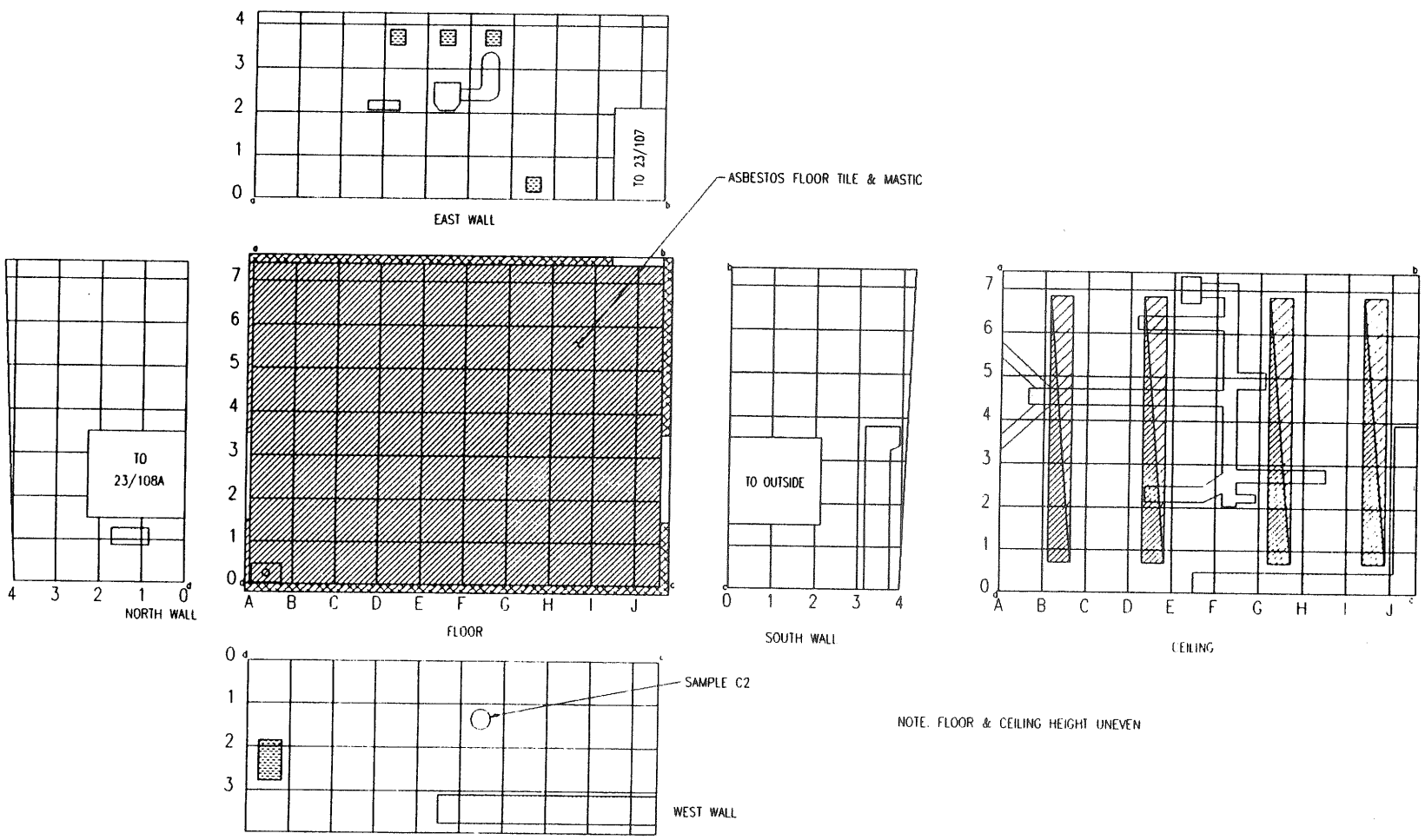


Fig. 5-13—108 Machine Shop

ROOM NO	23/108
DESCP	MACHINE SHOP
EFECT FILE	BDW 108A.DWG

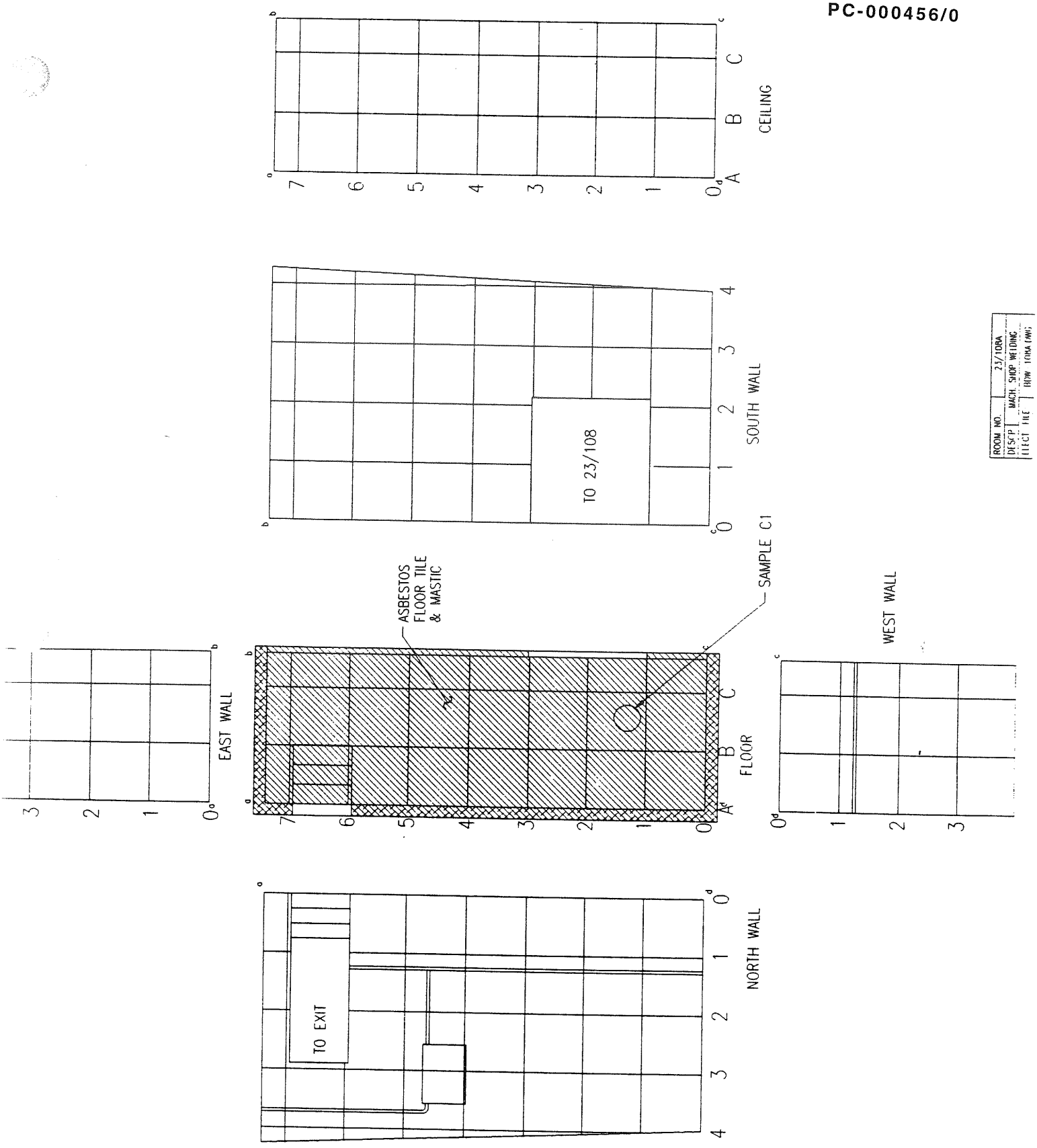


Fig. 5-14—108A Machine Shop Weld

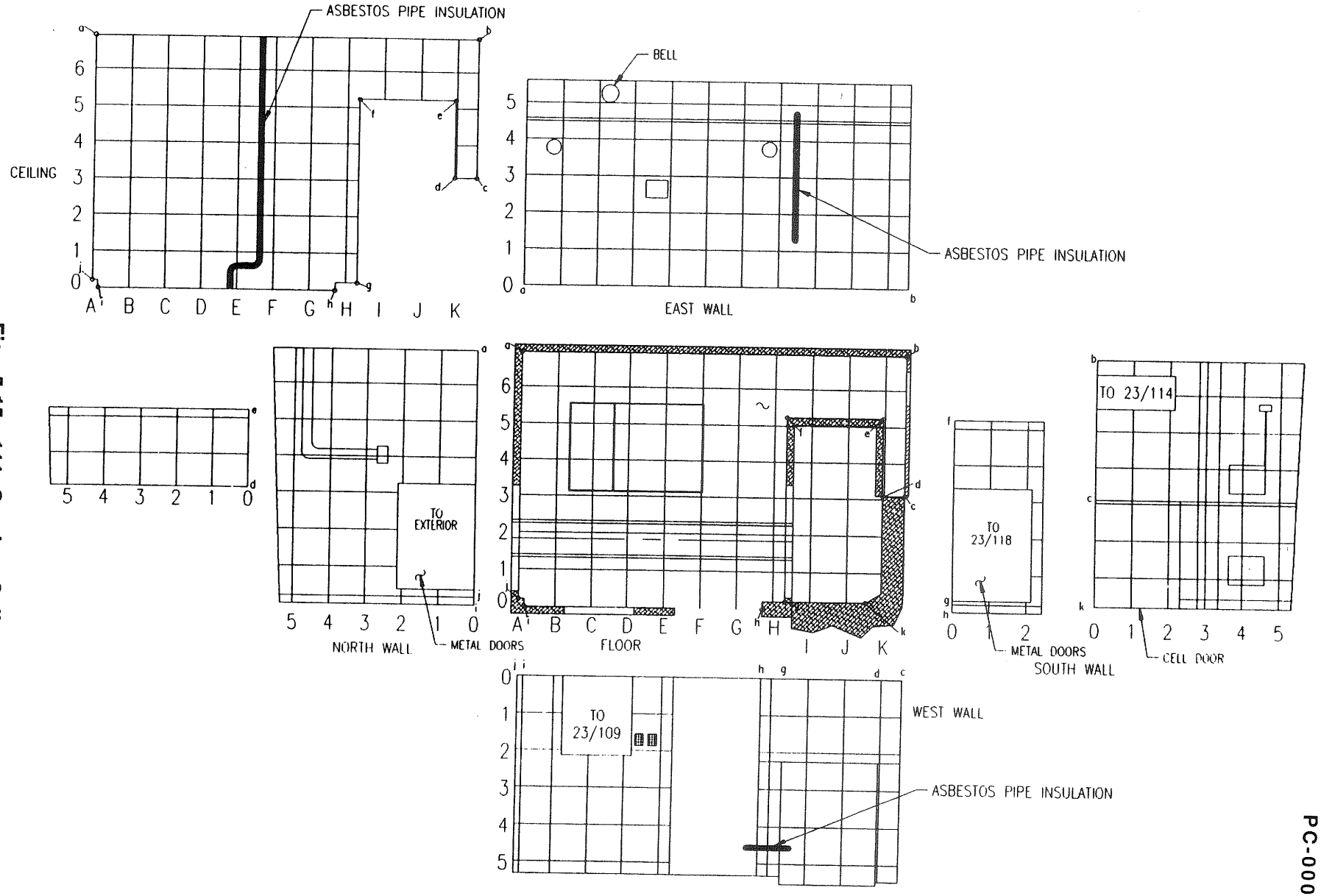


Fig. 5-15—111 Service Gallery

ROOM NO.	23/111
DESCP	SERVICE GALLERY
ELEC. FILE	HDW-111.DWG

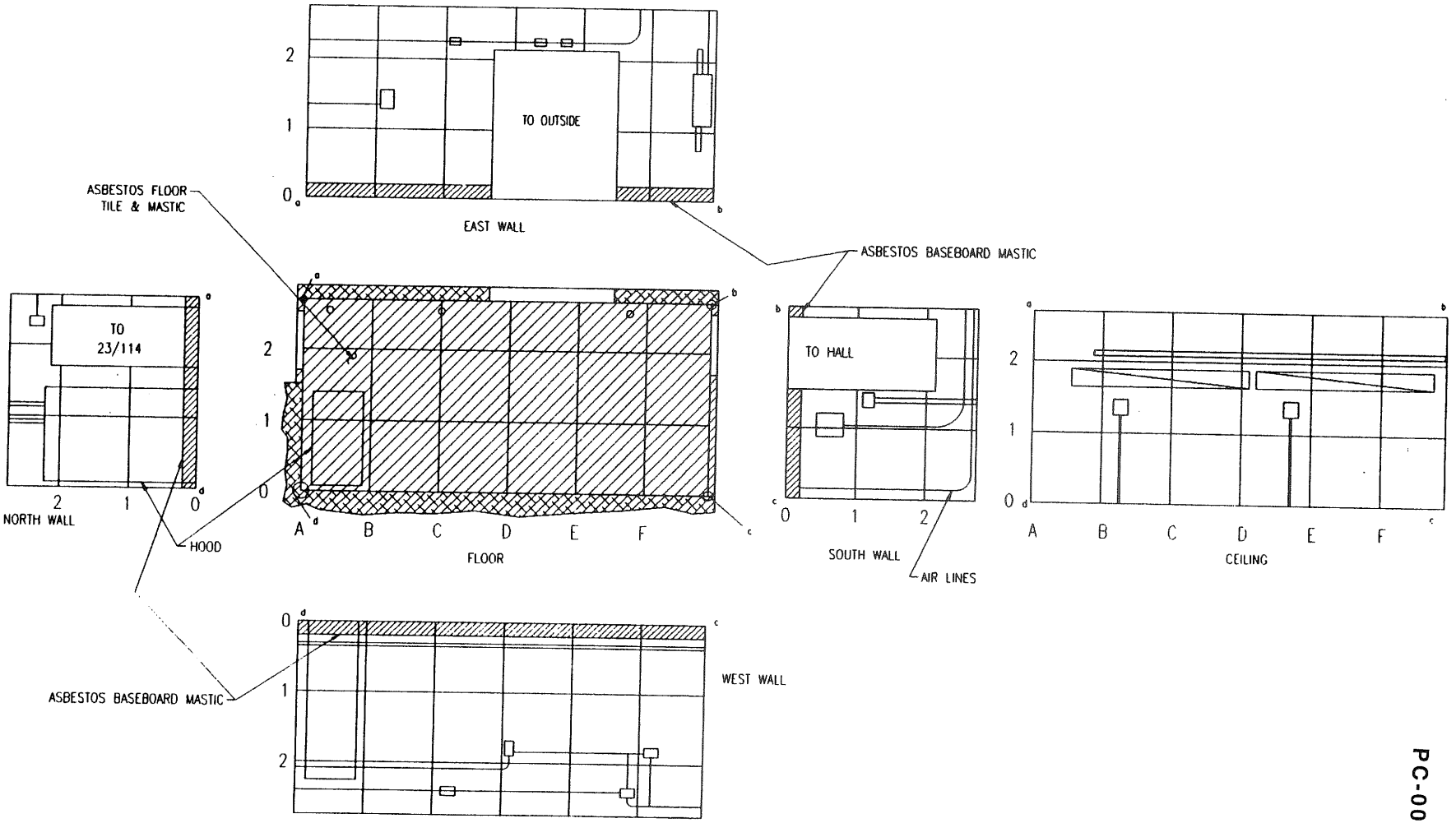


Fig. 5-16—116 X-Ray

ROOM NO.	23/116
DESCP	X RAY LAB
ELECT FILE	CDW 116.DWG

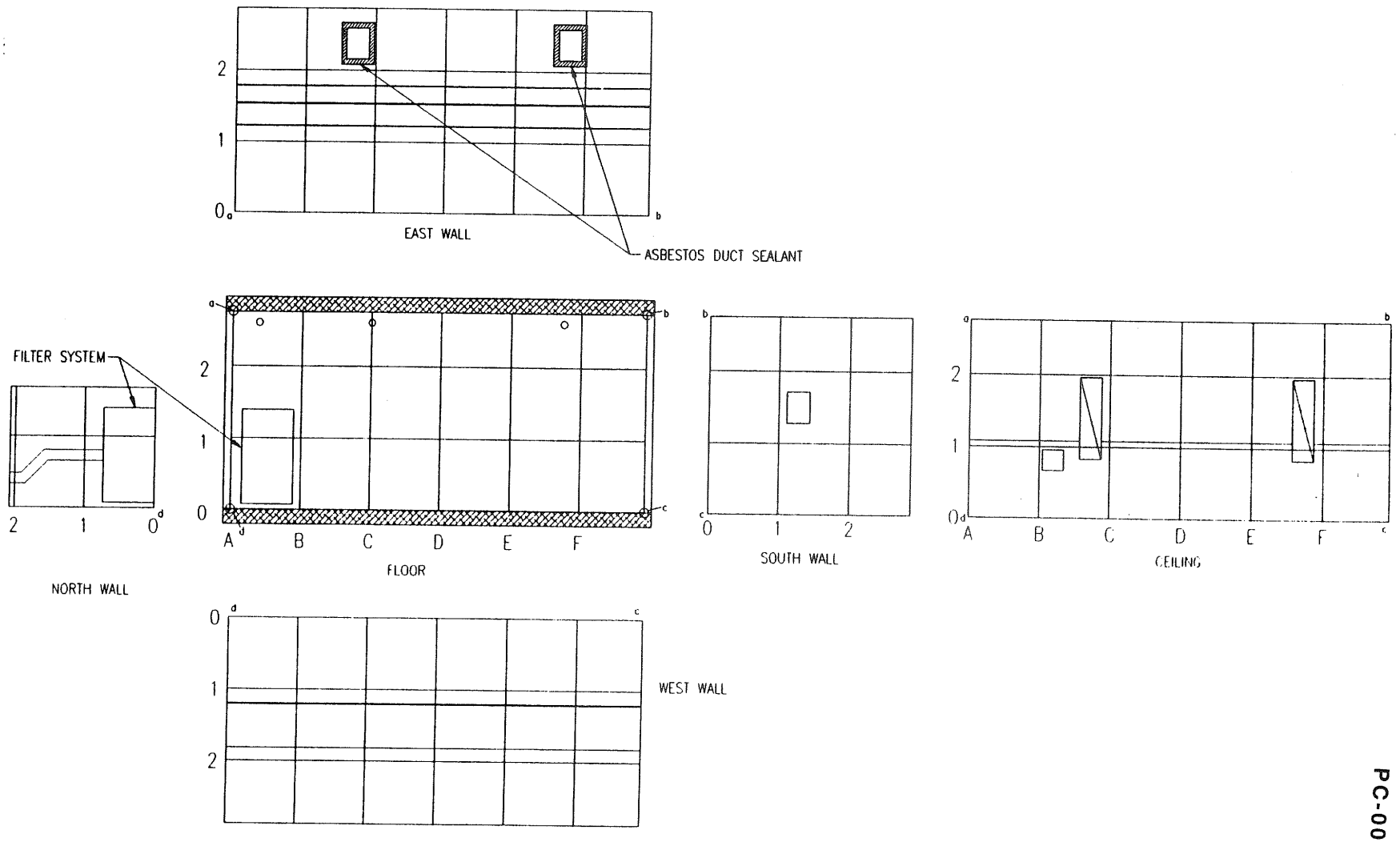


Fig. 5-17—116A X-Ray Mezzanine

ROOM NO.	23/116A
DESCP	OVERHEAD ROOM 116
EFECT FILE	BDW-116A.DWG

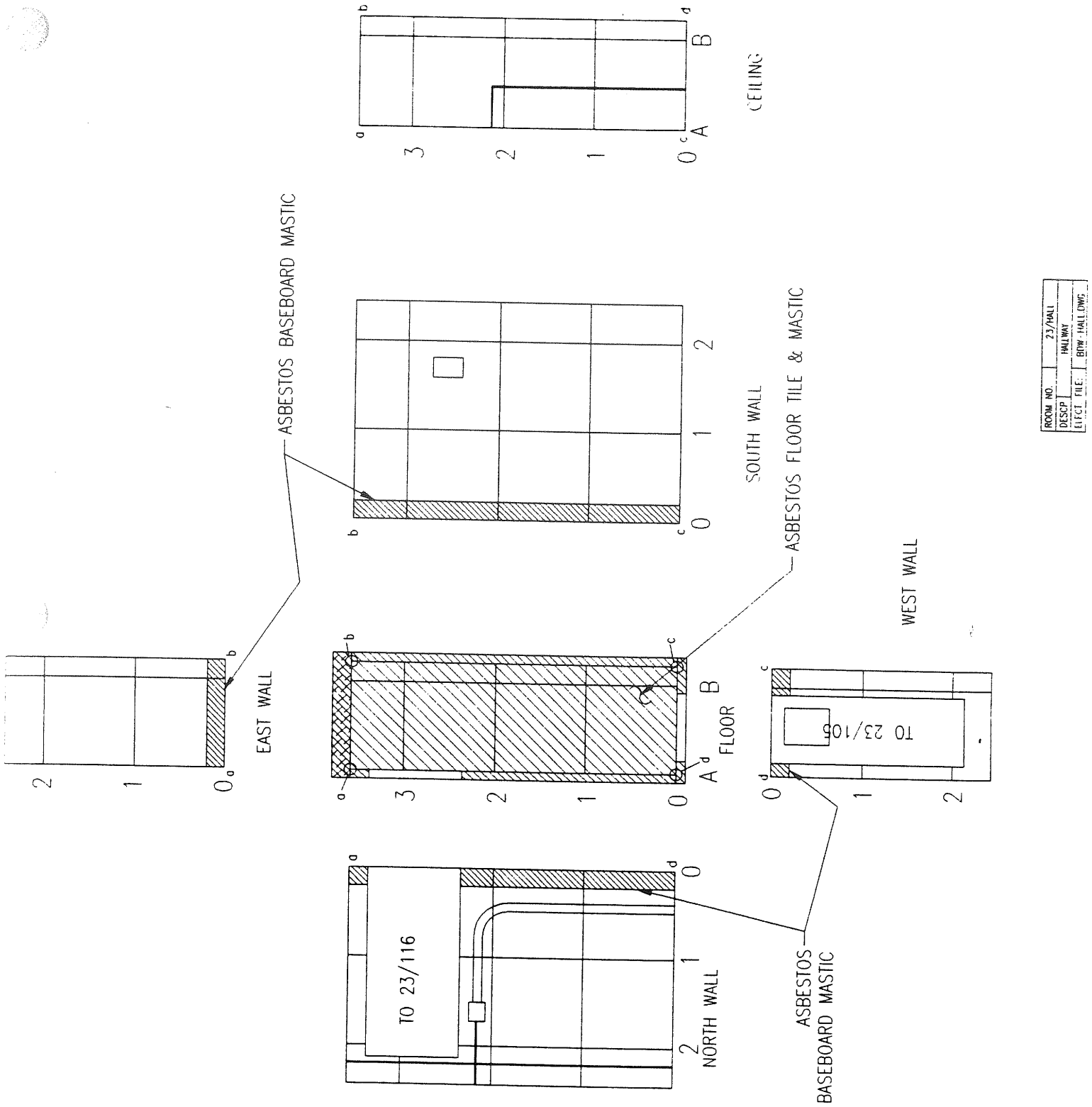


Fig. 5-18—Hallway

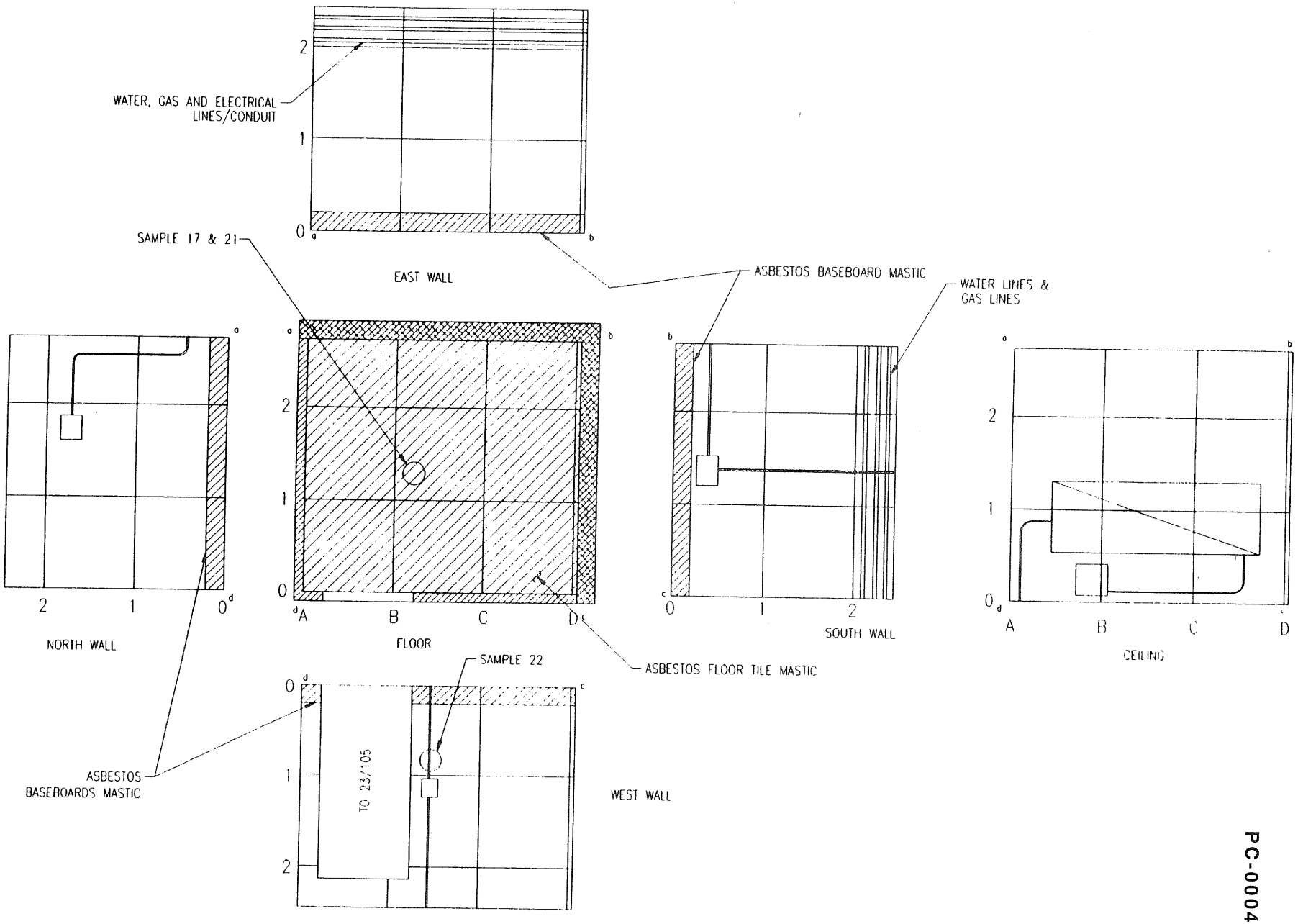


Fig. 5-19—117 Tool Room

PC-000456/0

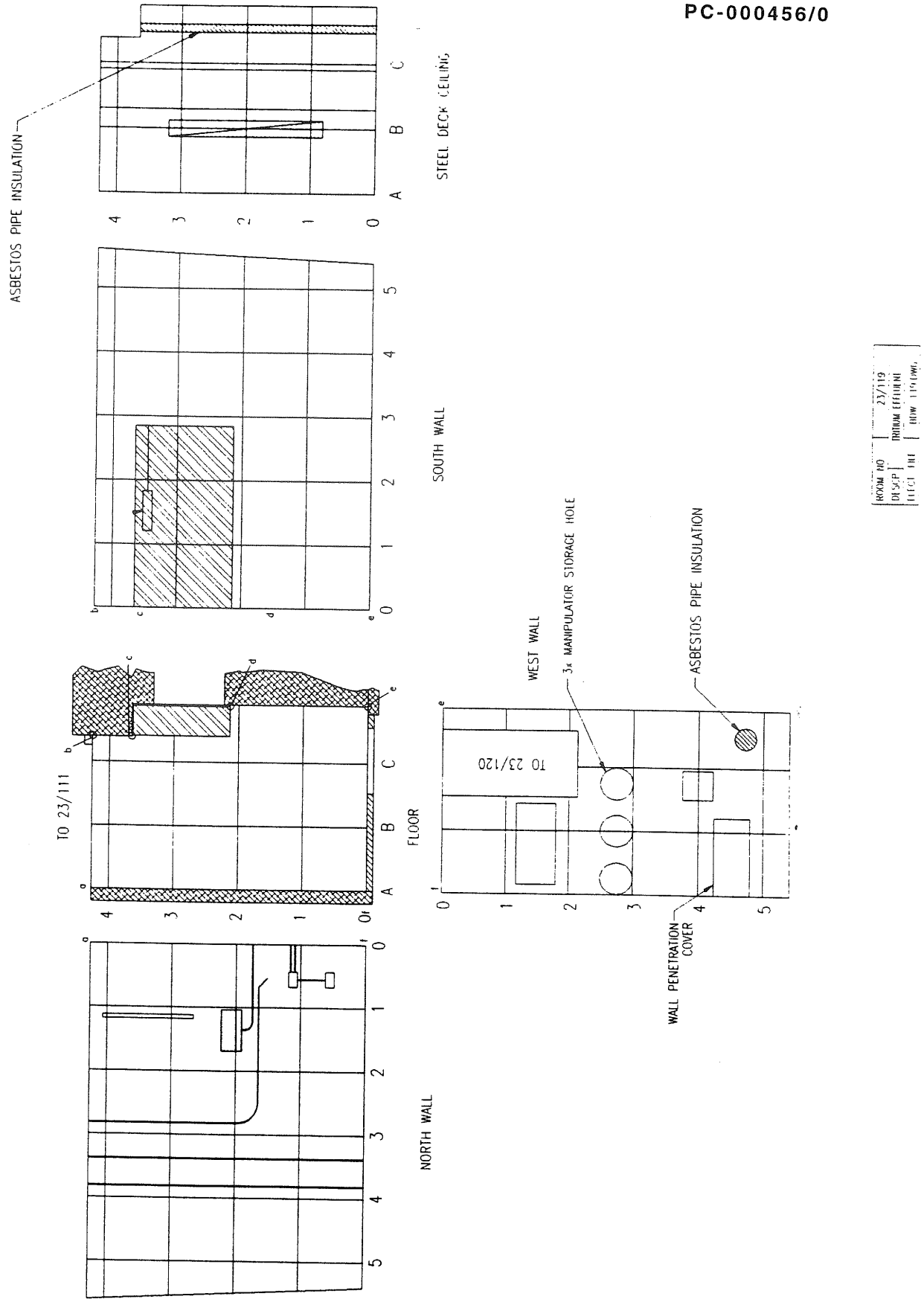


Fig. 5-20—119 ESTES Tritium

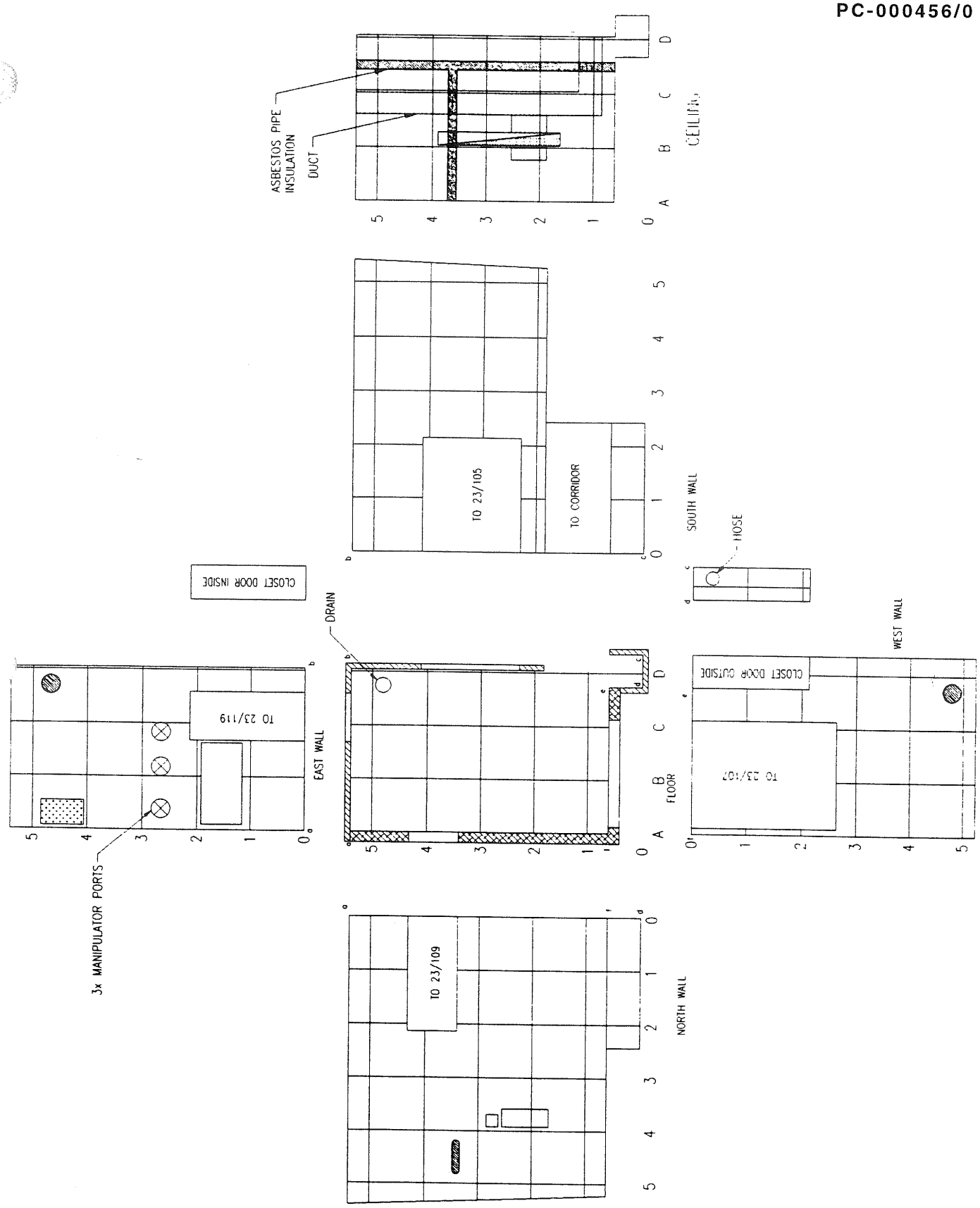


Fig. 5-21—120 ESTES Tritium

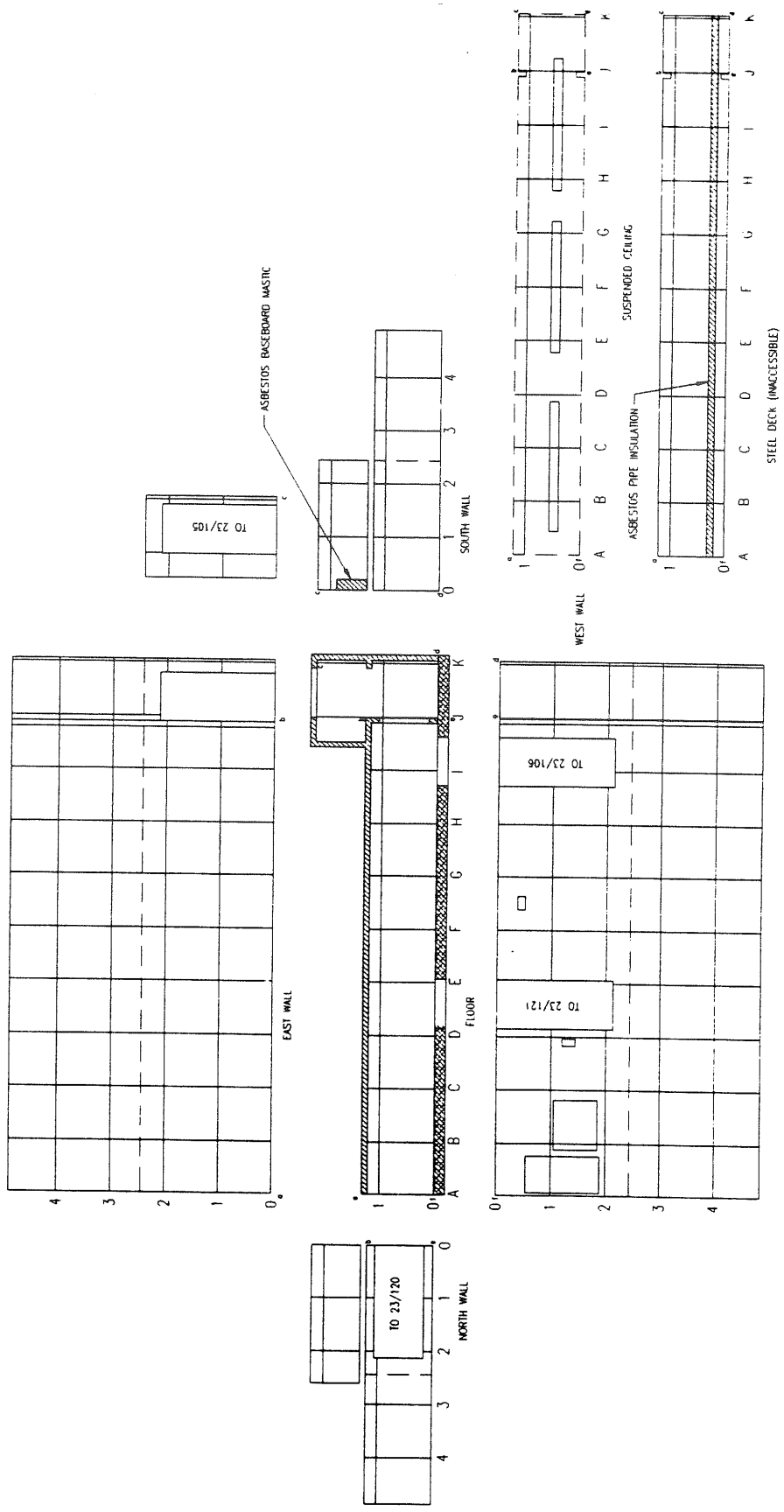


Fig. 5-22—Corridor/Ladies Changing Room

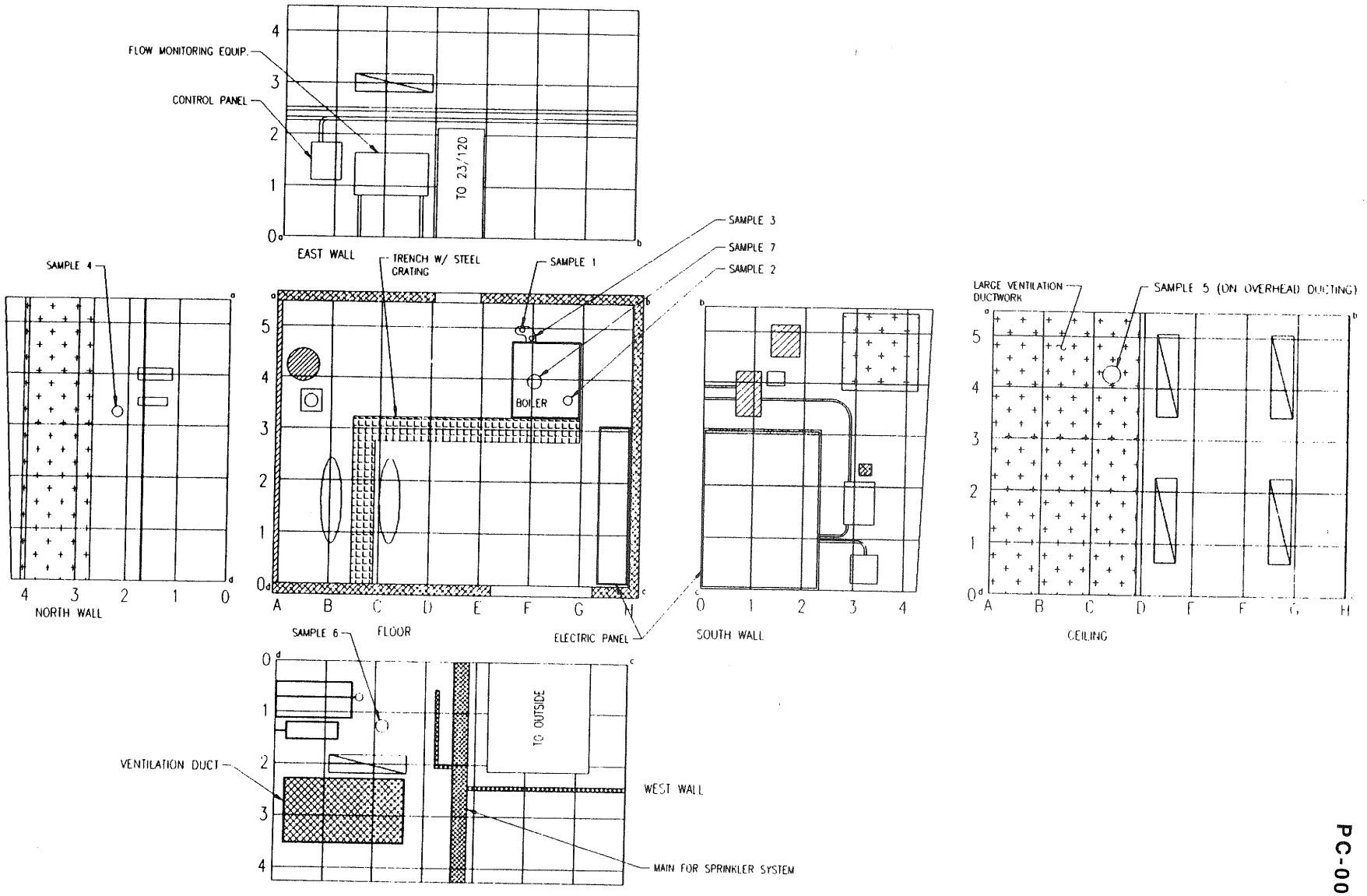


Fig. 5-23—121 Boiler Room

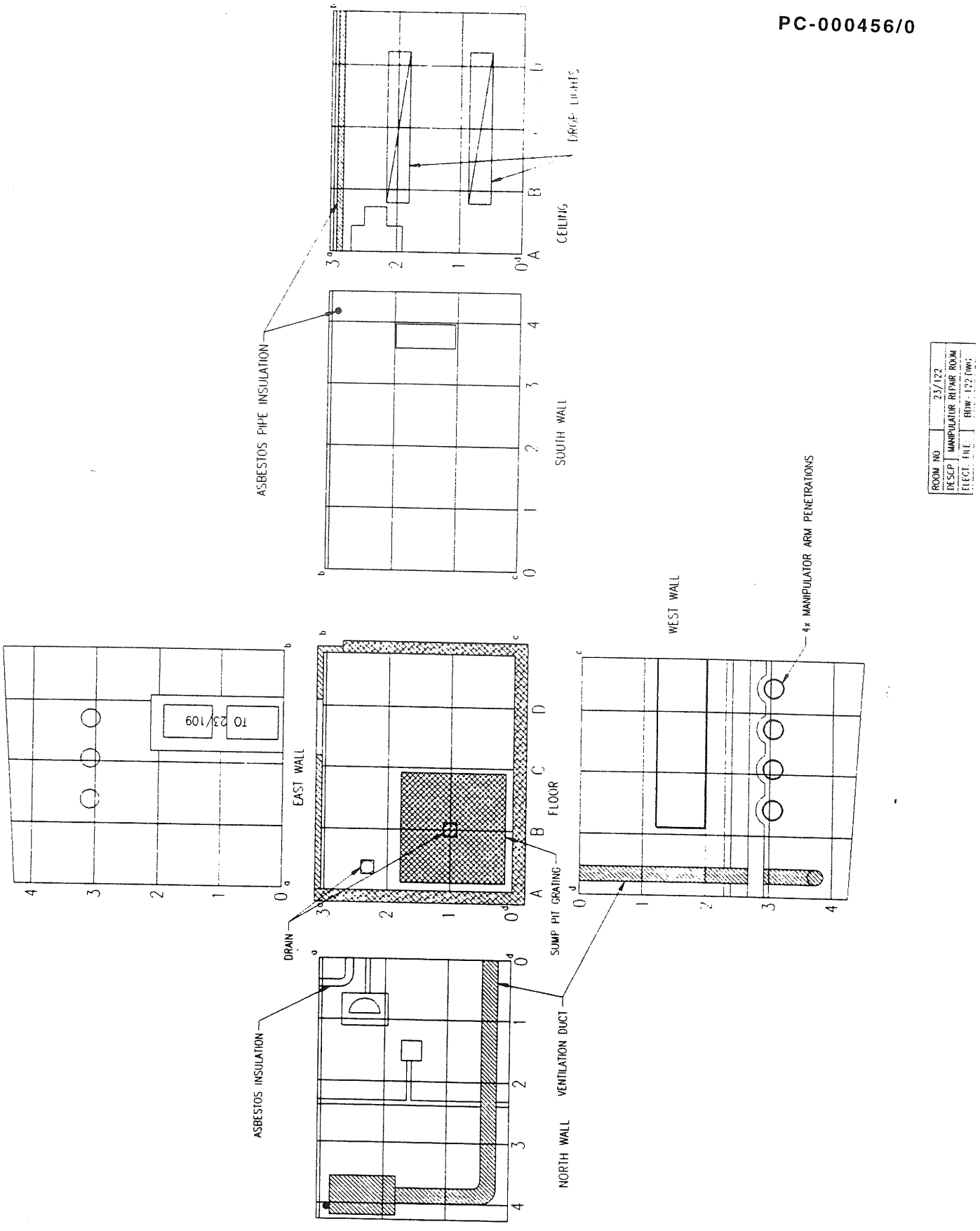


Fig. 5-24—122 Manipulator Repair Room

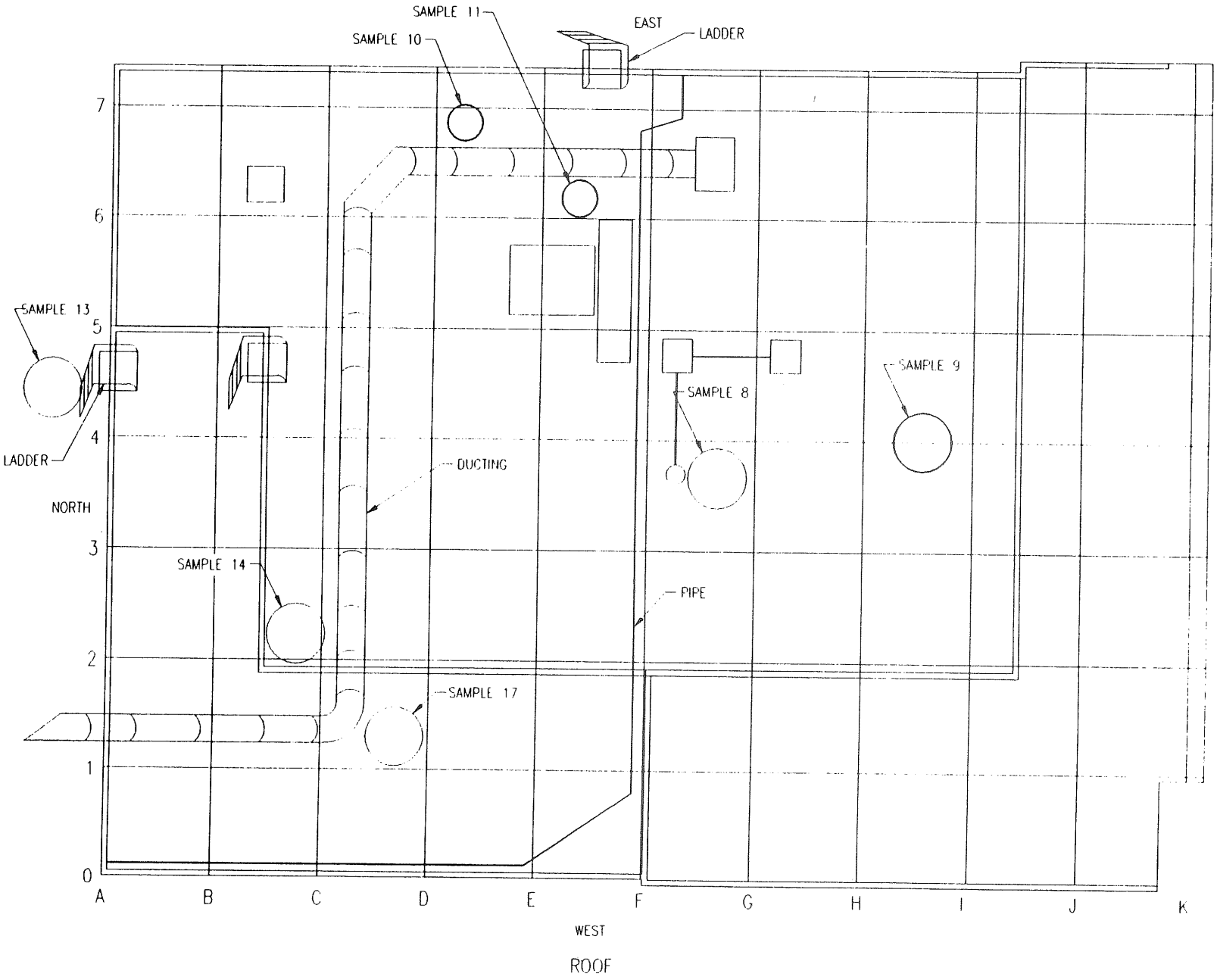

SAMPLE 11
SAMPLE 10
EAST
LADDER
SAMPLE 13
LADDER
NORTH
DUCTING
SAMPLE 8
SAMPLE 9
SAMPLE 14
PIPE
SAMPLE 17
SOUTH
WEST
ROOF
A
B
C
D
E
F
G
H
I
J
K
0
1
2
3
4
5
6
7

Fig. 5-25—Roof

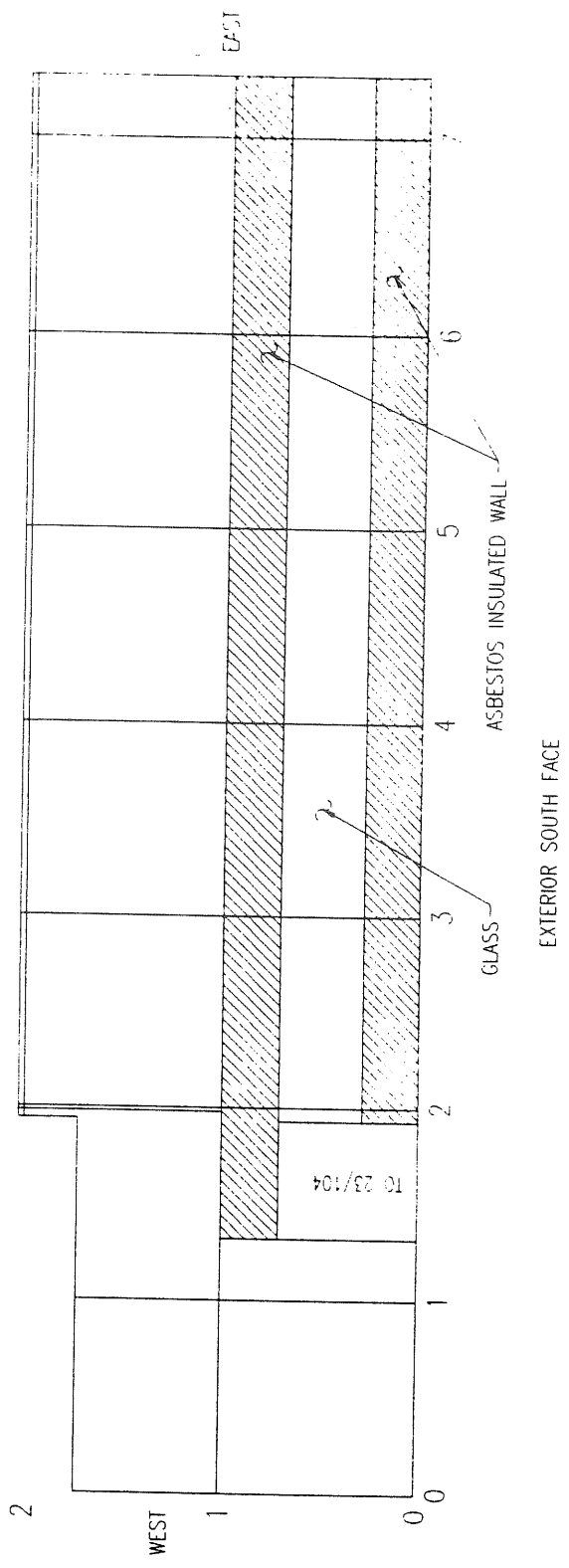


Fig. 5-26—Exit South

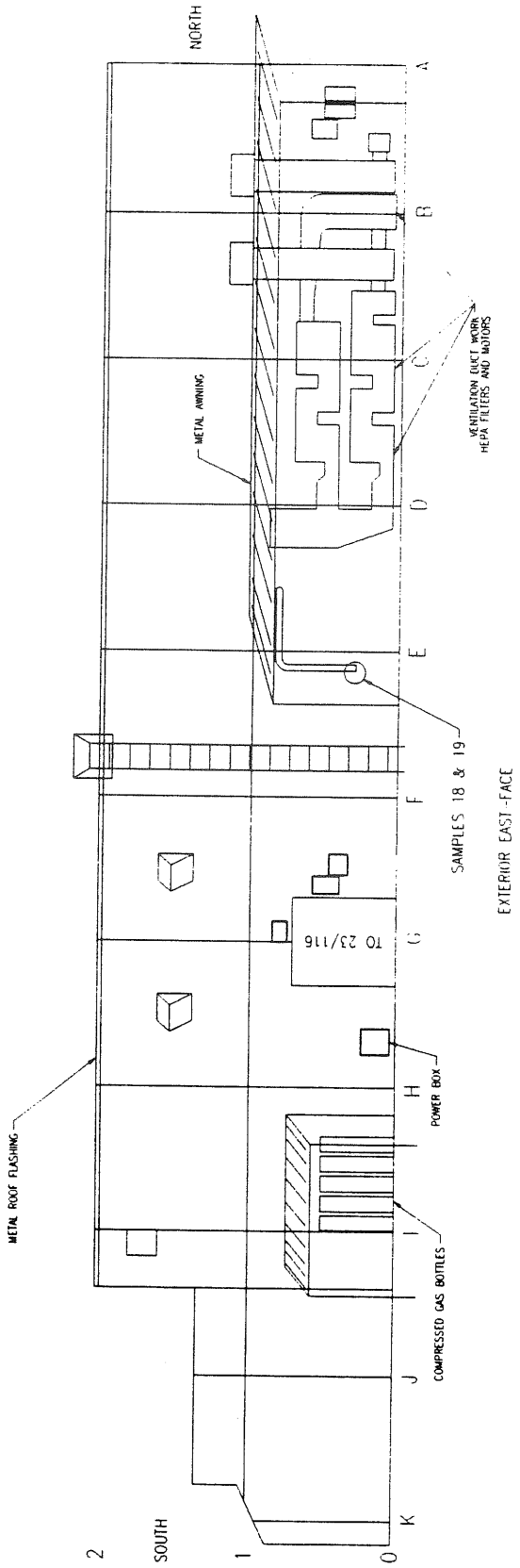


Fig. 5-27—Exit East

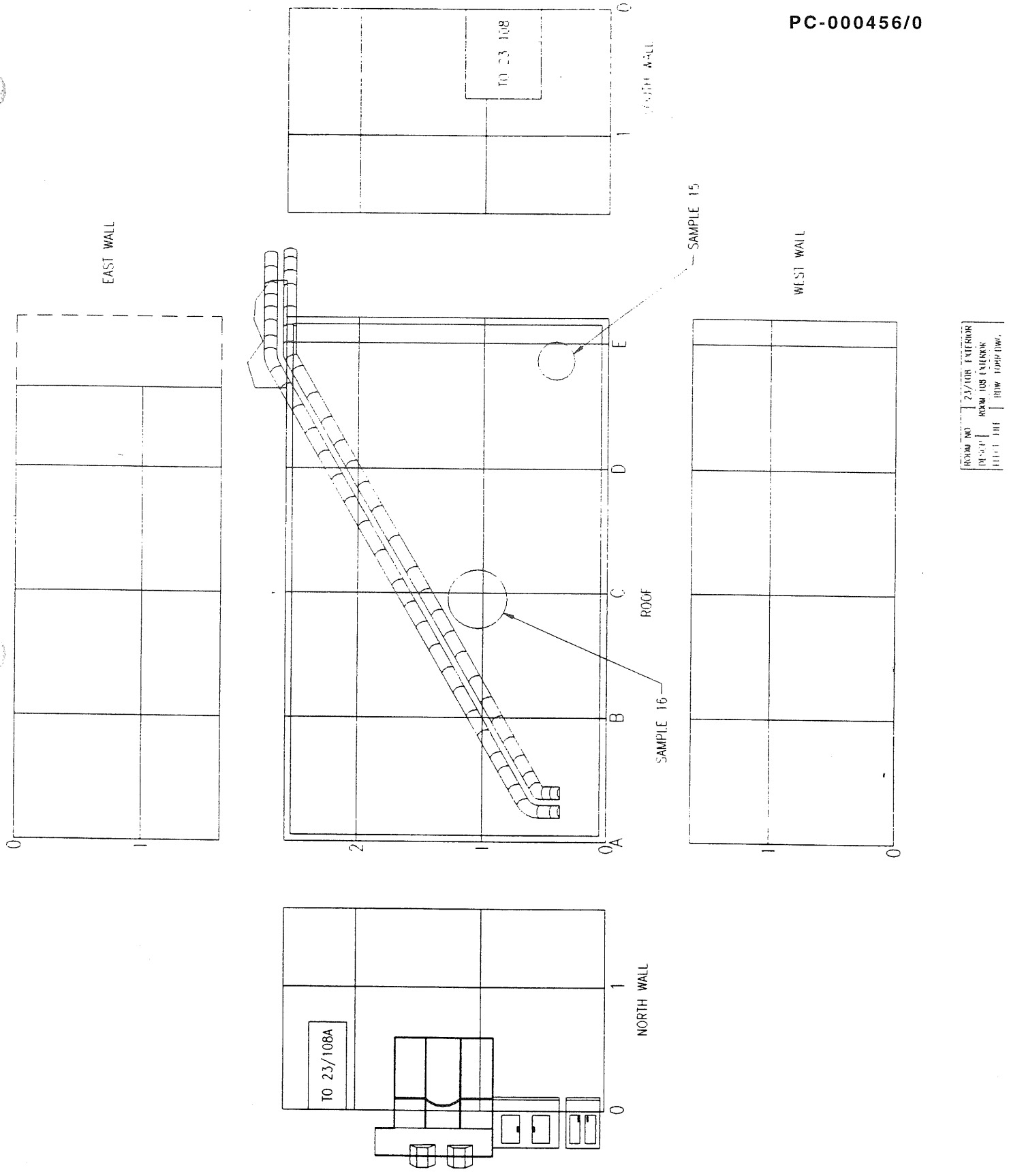
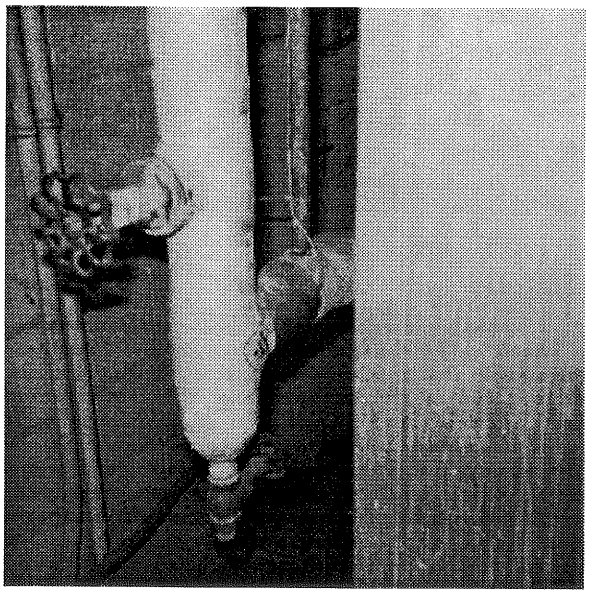
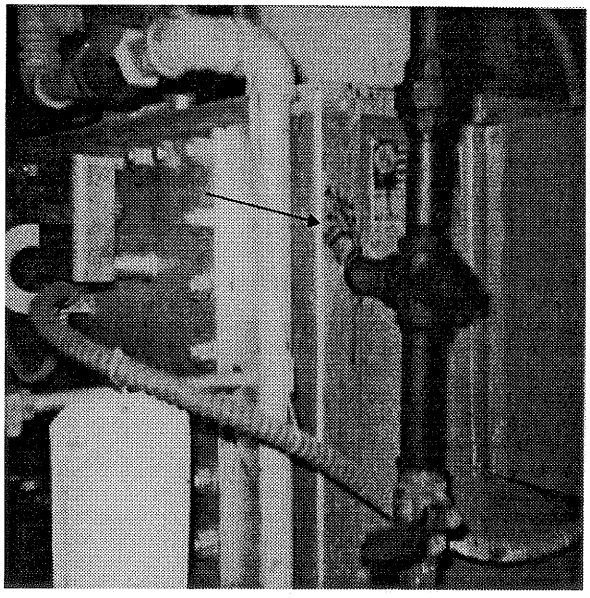


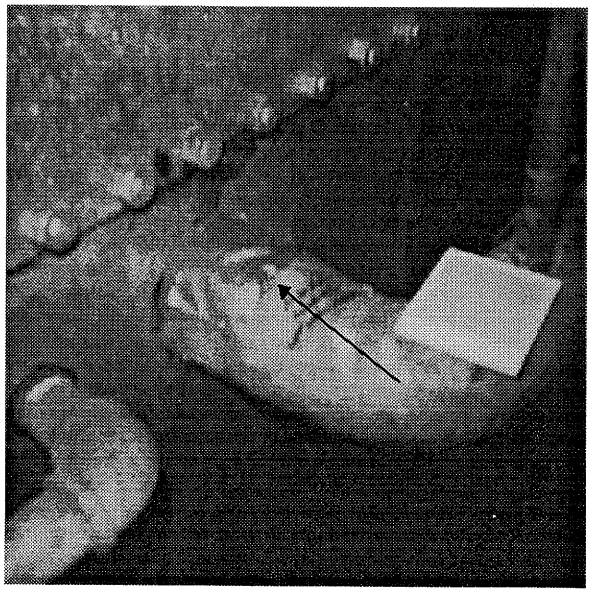
Fig. 5-28—108 Exit



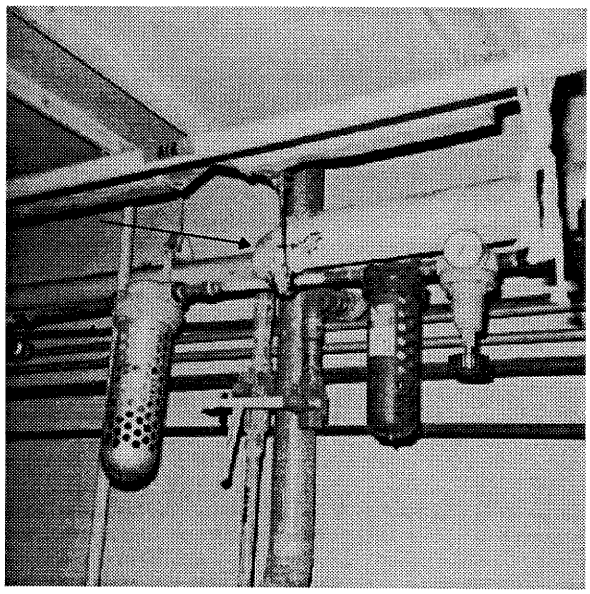
Asbestos Sample No. 1—Boiler Room



Asbestos Sample No. 2—Boiler Room



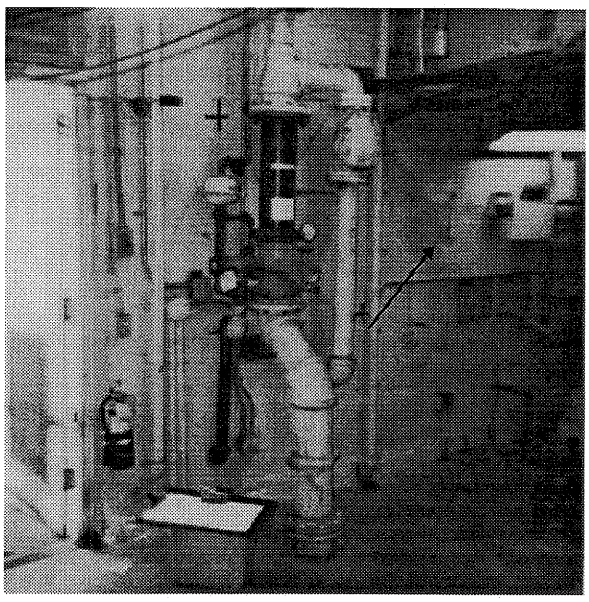
Asbestos Sample No. 3—Boiler Room (Under Duct Tape)



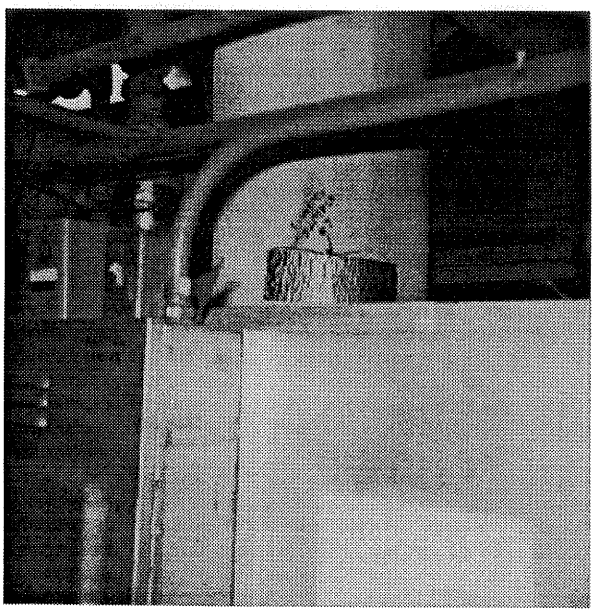
Asbestos Sample No. 4—Boiler Room

Figure 5-29—Sample Locations

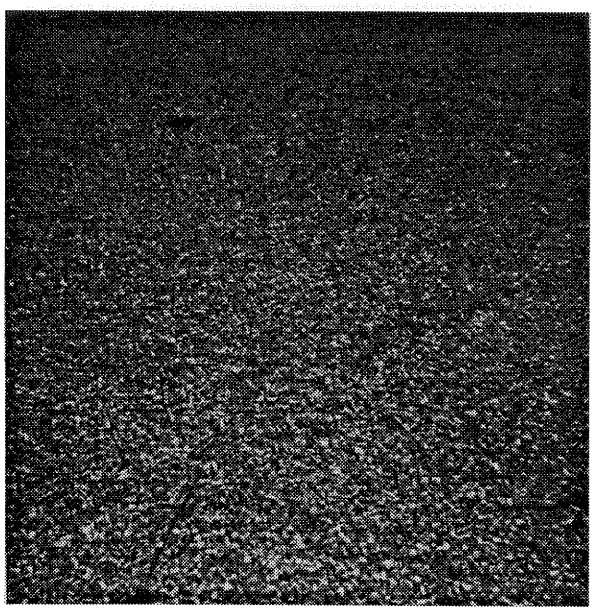
Asbestos Sample No. 5—Boiler Room



Asbestos Sample No. 6—Boiler Room (West Wall)

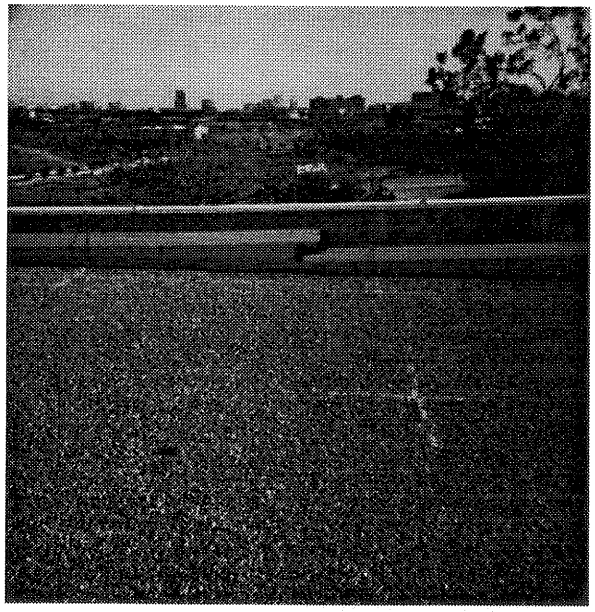


Asbestos Sample No. 7—Boiler Room

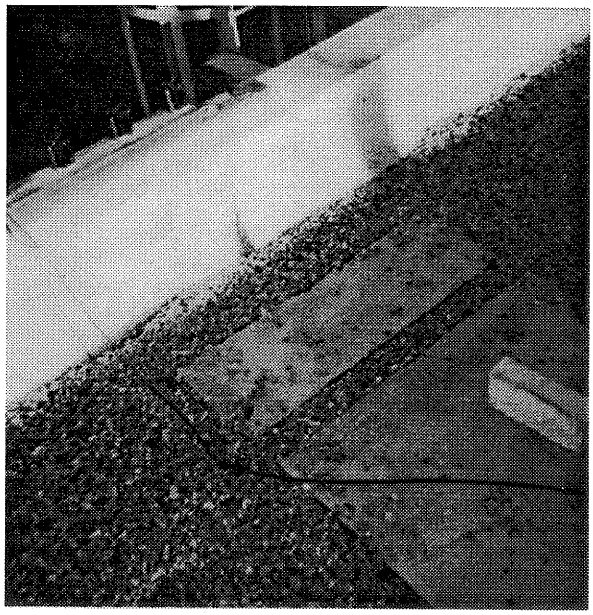


Asbestos Sample No. 8—Roof

Figure 5-30—Sample Locations

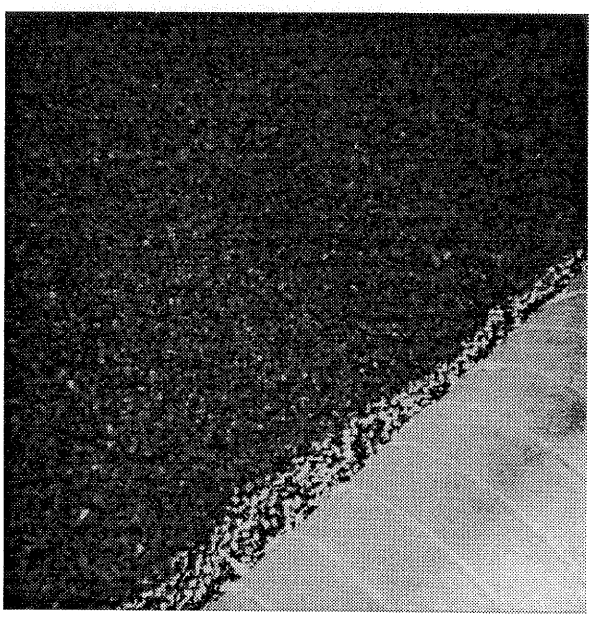


Asbestos Sample No. 9—Roof



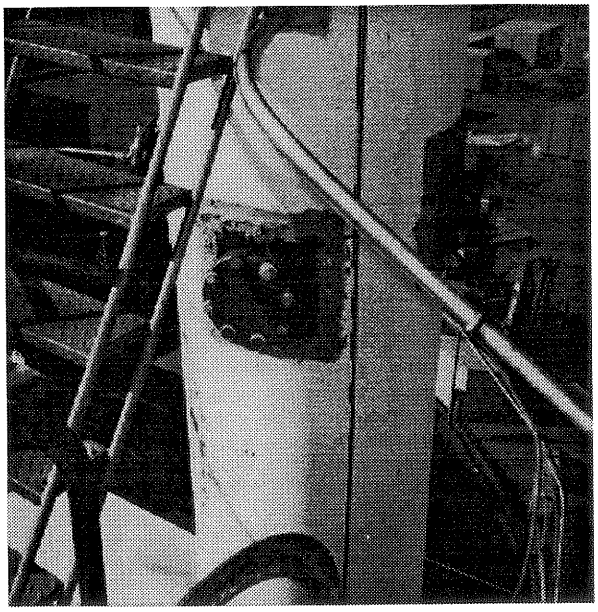
Asbestos Sample No. 10—Roof

Asbestos Sample No. 11—Roof

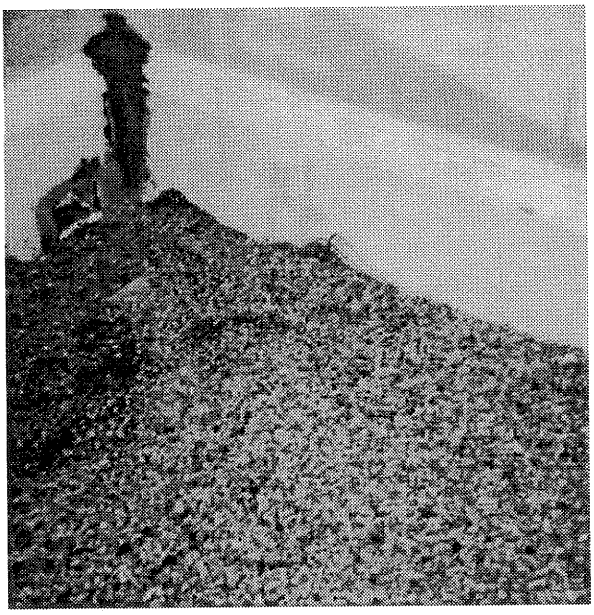


Asbestos Sample No. 12—Roof

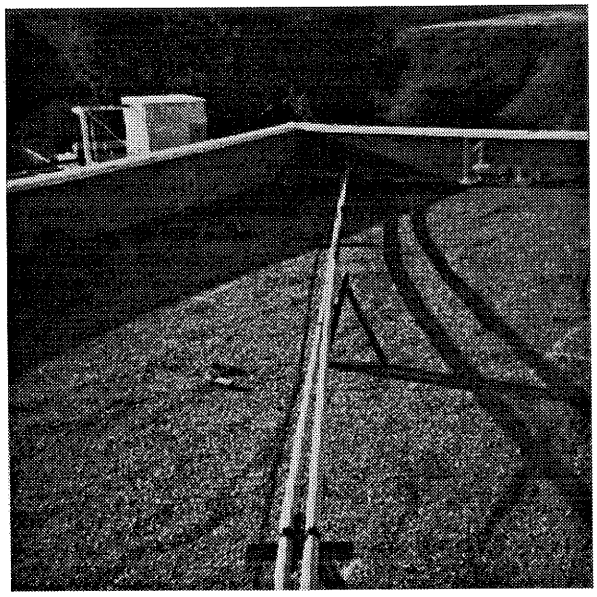
Figure 5-31—Sample Locations



Asbestos Sample No. 13—Roof



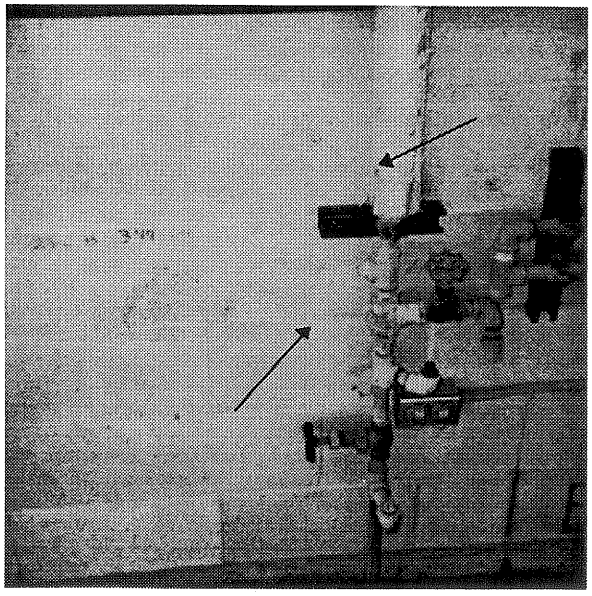
Asbestos Sample No. 14—Roof



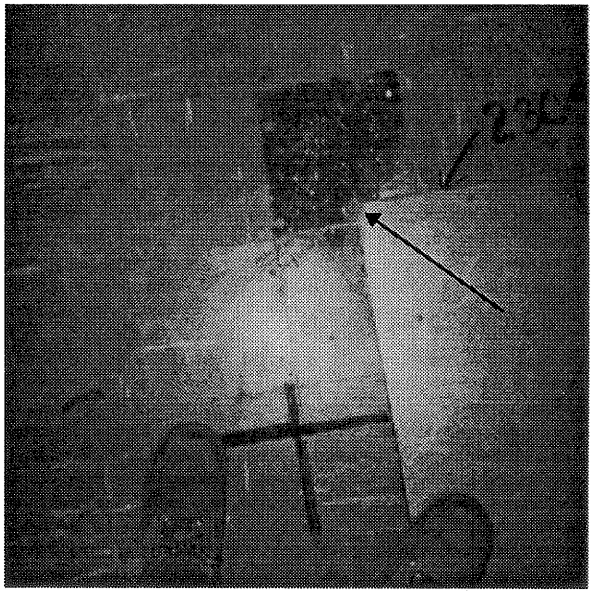
Asbestos Sample Nos. 15 & 16—Roof

Asbestos Sample No. 17—Roof

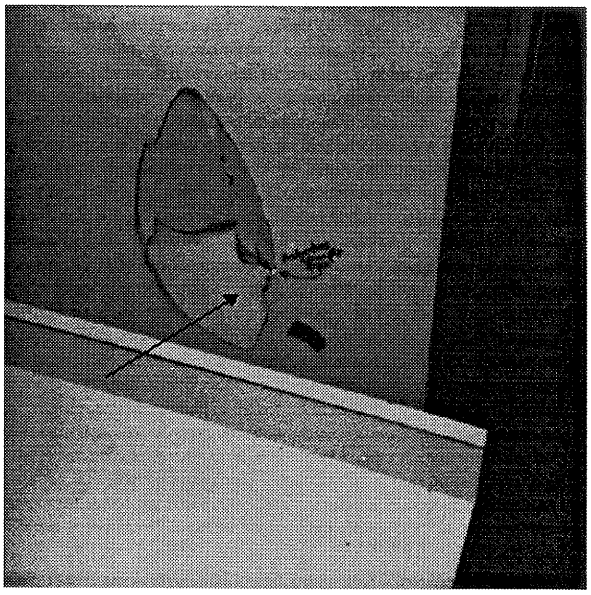
Figure 5-32—Sample Locations



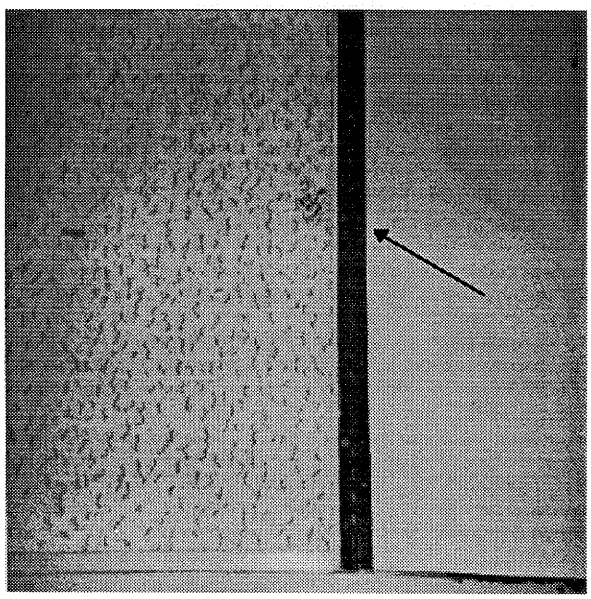
Asbestos Sample Nos. 18 & 19—



Asbestos Sample Nos. 20 & 21—Room 117

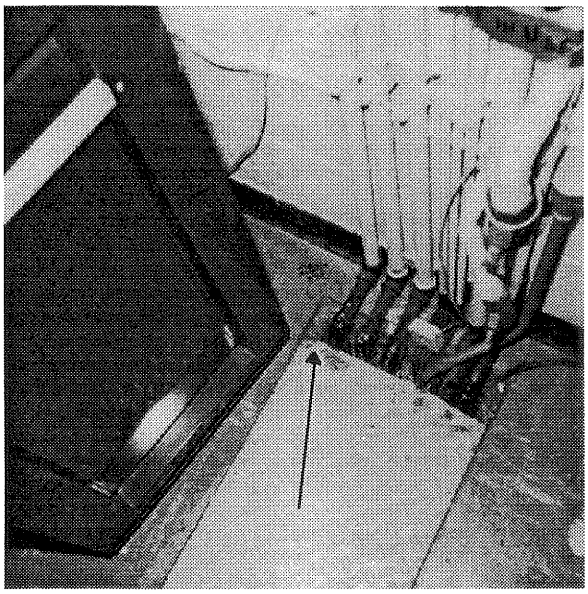


Asbestos Sample No. 22—Room 117 (West Wall)

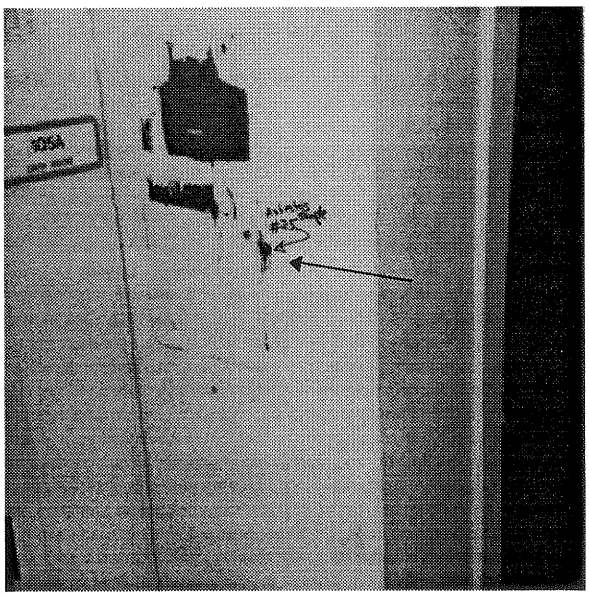


Asbestos Sample No. 23—Room 105 (East Wall Outside Room 117A)

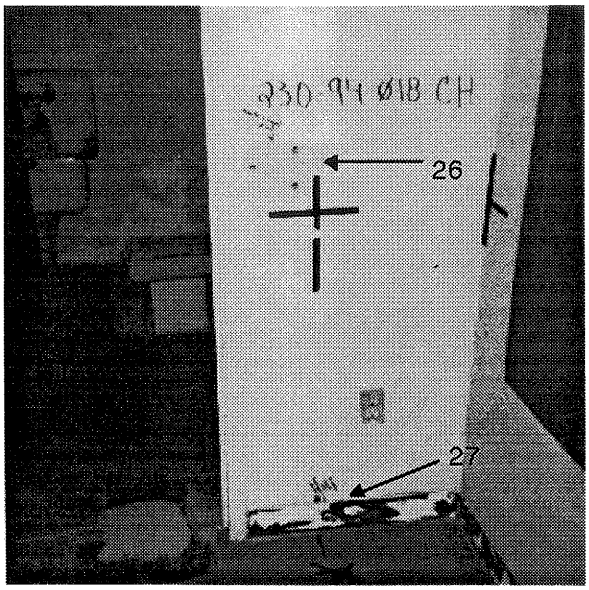
Figure 5-33—Sample Locations



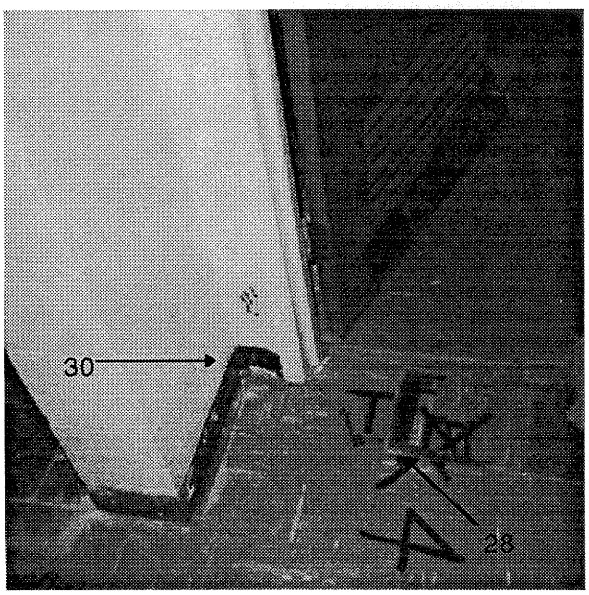
Asbestos Sample No. 24—Room 105 (South Wall/ Floor)



Asbestos Sample No. 25—Room 105 (West Wall)

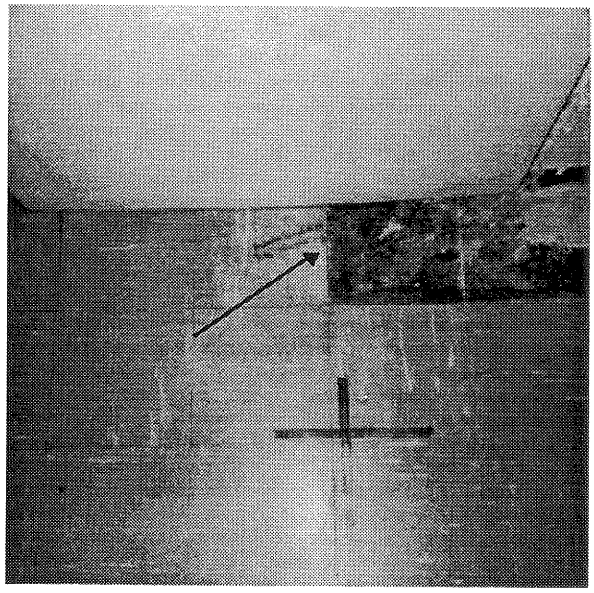


Asbestos Sample Nos. 26 & 27—Room 104

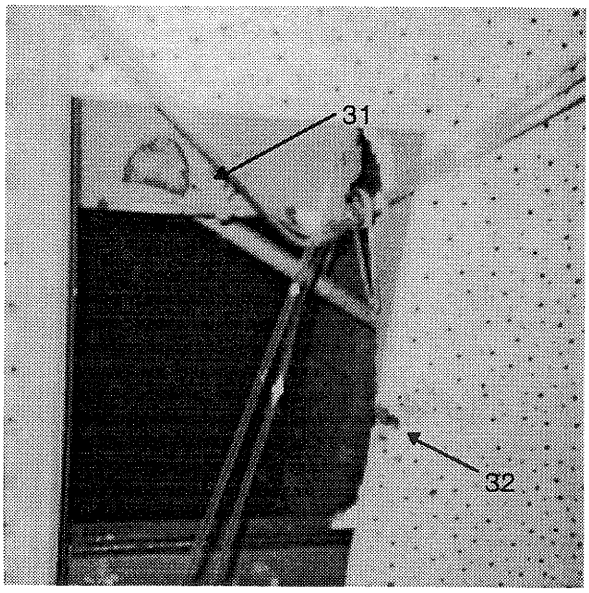


Asbestos Sample Nos. 28 & 30—Room 104

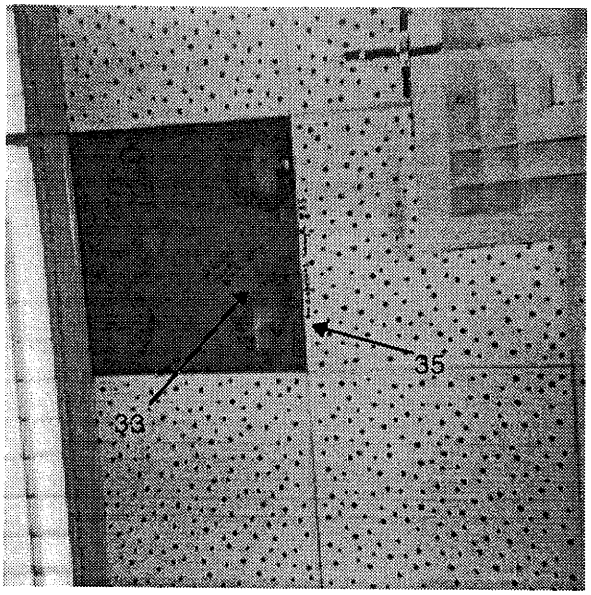
Figure 5-34—Sample Locations



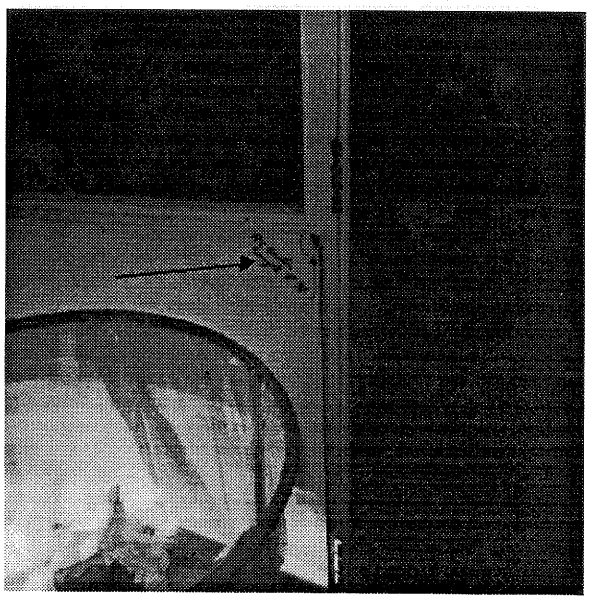
Asbestos Sample No. 29—Room 104



Asbestos Sample Nos. 31 & 32—Room 104

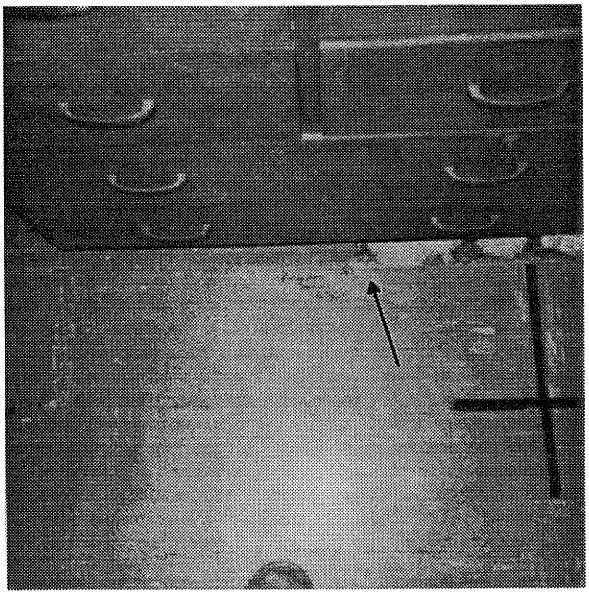


Asbestos Sample Nos. 33 & 35—Room 100

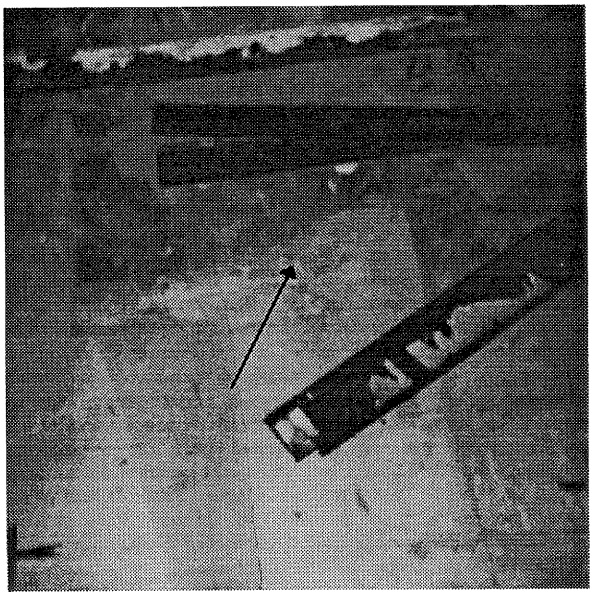


Asbestos Sample No. 34—Room 102

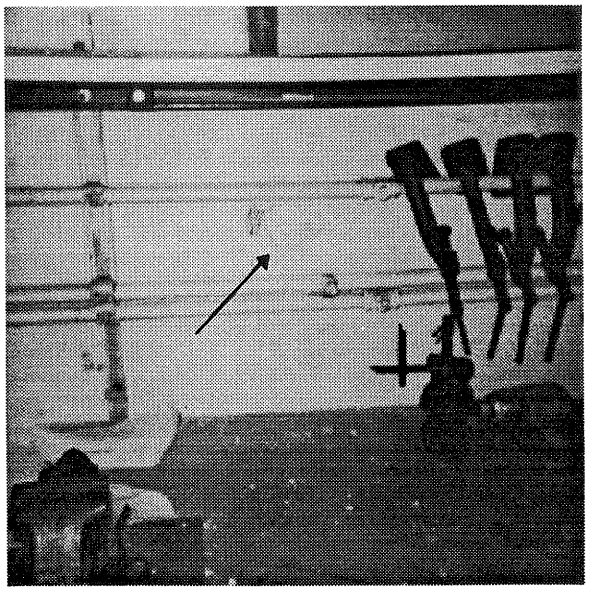
Figure 5-35—Sample Locations



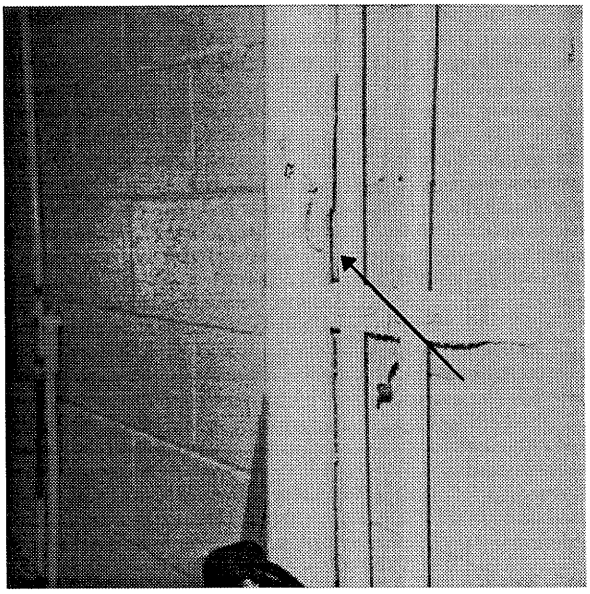
Asbestos Sample No. 36—Room 100



Asbestos Sample No. C1—Room 108

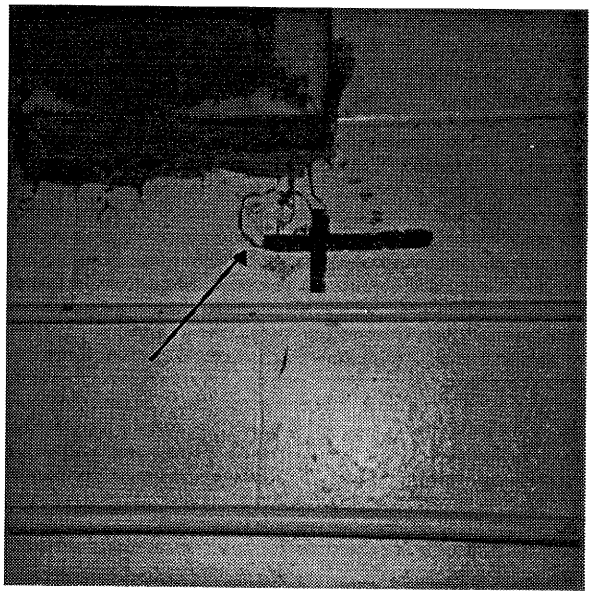


Asbestos Sample No. C2—Room 108

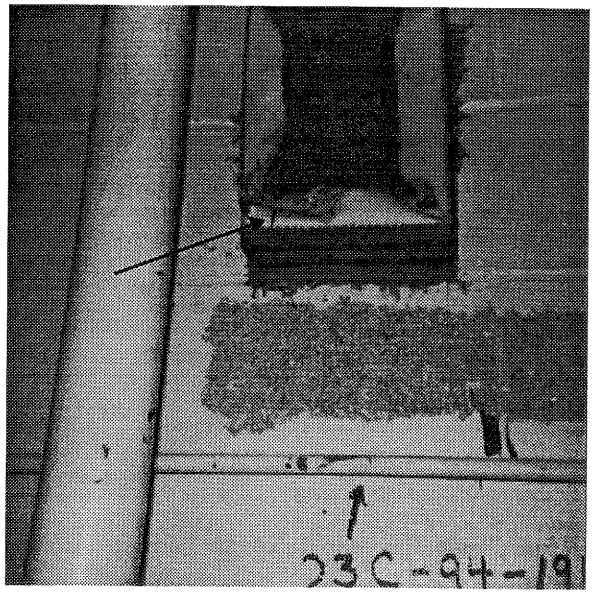


Asbestos Sample No. C3—Room 111

Figure 5-36—Sample Locations



Asbestos Sample No. C4—Room 116A



Asbestos Sample No. C5—Room 116A

Figure 5-37—Sample Locations

6. SOIL ASSESSMENT

This section describes soil and surface paving sampling activities conducted in the areas located beyond the Hot Cell Facility (HCF) building foundations and within the perimeter fence. This section has been divided into nine sections. The criteria and approach taken in completing the assessment are described in Section 6.1. Section 6.2 identifies historical site and facility drawings used as references during the assessment. Section 6.3 describes the facility grid system used to identify sampling locations. Section 6.4 describes the basis for classification of identified areas of interest at the HCF. Section 6.5 discusses the sampling locations and depth intervals. Section 6.6 lists instruments used during sample collection. Section 6.7 reports the procedures followed during sample collection and identifies modifications made to accommodate conditions encountered in the field. Section 6.8 enumerates procedures used to analyze soil and paving samples. Section 6.9 presents the results of geologic investigations, radiological analyses and hazardous constituent analyses.

6.1. Criteria and Approach

The overall objective of the assessment was to obtain sufficient data to support the decontamination and decommissioning (D&D) of the HCF in the most cost-effective manner from a total project perspective. It is recognized that, as stated in the July 1992 NRC Branch Technical Position on "Site Characterization for Decommissioning Sites" (page 2, Section 1.1) (Ref. 1-2), while "some iteration [in site characterization] may be expected and is desirable at some sites," excessive iteration can cause delay and substantial cost increases. The approach taken in the site assessment was to perform "desirable iteration" when clearly the iterative approach is consistent with the overall project schedule and minimizes overall project costs. Examples of situations where characterization would reasonably be incorporated into the detailed D&D schedule include areas that are currently not or only poorly accessible and areas where characterization data would be duplicated by confirmational sampling that will be required during actual remediation.

The specific intent of the activities completed was to obtain an understanding of subsurface conditions, to complete a scoping-level assessment of contaminant occurrence in shallow materials within the HCF perimeter fence (and outside of the HCF building foundations), and to determine if contaminants had migrated into the subsurface in areas with the greatest potential for contaminant penetration into the subsurface. This intent was met by reviewing historical and contemporary facility information, classifying and ranking areas of interest, and completing judgement and grid sampling strategies.

An understanding of subsurface conditions was developed based on historical borings and facility drawings and by completing approximately 3.3 ft. (1.0 m) deep borings in the three areas with greatest potential for contaminant penetration into the subsurface and at three node locations placed across the HCF. Subsurface lithology was observed and correlated across the HCF.

A scoping-level assessment of contaminant occurrence in shallow materials within the HCF perimeter fence (and outside of the HCF building foundations) was completed by collecting surface and near-surface materials from 42 borings located at the nodes of a 33 ft. (10 m) by 33 ft. (10 m) rectangular grid system. Node sampling location and judgement sampling location data were correlated. Where appropriate, grid sampling locations were associated with potential areas of concern based on proximity and general topography.

Potential areas of interest and the associated potential contaminants were identified based on review of HCF historical information. The areas of interest were ranked based on the

relative known or suspected levels of contaminant(s) released, known or potential areas/ volumes impacted, expected contaminant persistence in the environment, contaminant mobility, probable migration pathways and surface topography, contemporary indication of contaminant occurrence, and the potential impact of contaminant occurrence on the level of effort required for remediation. The three highest ranked areas (Item R11–General Trestle Area, Items R13, R16, R35–Liquid Waste Tanks Area, and S06–Drainage Path from Liquid Waste Tanks Area) were addressed by three judgement sampling locations at each area. The judgment sampling locations were selected based on historical and contemporary facility information and contemporary site topography and drainage patterns. Where appropriate, judgement sampling and node sampling location data were correlated.

6.2. Site and Facility Drawings

Seven historical drawings of the GA site and the HCF were reviewed to provide data on historical ground surface elevations and topography at the HCF and current and historical land use areas at the HCF (see Table 6-1). Of these seven drawings, one was prepared in 1958, two were prepared in 1959, three in 1967, and one in 1978. Evaluation of pre- and post-construction topography at the HCF was performed in order to identify surface slopes and areas subject to historical filling and grading activities. Identification of current and historical land use areas aided in the determination of judgement sampling locations.

6.3. Facility Grid System

The HCF grid system was developed following the guidelines and recommendations presented in NUREG/CR-5849 (Ref. 1-1), page 4.9, Section 4.2.2, "Establishing Reference Grid Systems." Implementation of the grid system provided a base for systematic (grid-based) sampling purposes and a reference for judgement sampling locations.

The grid system implemented for the HCF characterization soil sampling locations consisted of perpendicular grid lines spaced 10 m apart (see Figure 6-1). The origin of the sampling grid is designated A-0 and is located at the chain link fence gate located at the southwestern corner of the HCF. Grid lines A through G run approximately southeast to northwest, and grid lines 0 through 10 run approximately southwest to northeast. The intersections of grid lines were designated nodes A-0 through G-10. The quadrants enclosed by the grid lines were numbered 1 through 77.

Table 6-1—Hot Cell Facility Areas with Known Contaminant Occurrence

Group	Item No.	Designation	Location	Land-Use History	Current Condition	Contaminant(s)	Referenced Documents
Division 1—Historical							
Radio-actives	R01	Approximately 15 m East of Liquid Waste Tanks Area	Figure 6-1–Quadrants 54 & 55	• No specific land use • 6/59–Unpaved • 4/67–May have been disturbed and/or paved	• Unpaved, asphalted or partially asphalted soil	• MFP • MAP	• PE–23–31 (6/30/59 Drawing) • PE–23–95 (4/13/67 As Built)
	R04	Operations in Low-Level Cell; Ventilation Stack	Ground surface area impacted is not defined	• Controlled area	• Unpaved and paved soil	• Kr • Xe • I • Rb	
	R33	Approximately 2 m North of Trestle Terminus	Figure 6-1–Quadrant 40	• Part of yard area asphalted during initial construction of HCF	• Asphalt cracked and weathered	• MFP • MAP • AAP	• PE–23–31 (6/30/59 Drawing)
	R36	Ventilation Stack	Ground surface area impacted is not defined	• Controlled area	• Unpaved and paved soil	• MFP • MAP • AAP (trace)	
	R23	Loaded Low-Level Rad Waste bbls. Storage Area	Figure 6-1–Quadrant 34	• No documented specific historical land use • Area asphalted at unknown time • 8/78–Area may have been disturbed during construction of canopy extension	• Asphalt covered	• MFP • MAP • BeO	• PE–23–111 (8/78 Drawing)
	R42	Asphalt Contamination in Asphalt Yard Area	General asphalted areas of controlled yard	• Part of yard area asphalted during initial construction of HCF	• Asphalt covered	• MFP • MAP • AAP (trace possible) • BeO (trace possible)	• PE–23–31 (6/30/59 Drawing)
	R09	EBOR Laboratory Perimeter Moat	Immediately north of Rm. 23/108 Figure 6-1–Quadrant 37	• No documented specific land use • Unpaved soil	• Unpaved and possibly some asphalted soil	• Elemental Be • $BeO/UO_2/ThO_2$ • MFP • MAP • AAP (trace)	• PE–23–31 (6/30/59 Drawing) • PE–23–95 (4/13/67 As Built)
	R20	Liquid Waste Tanks Area	Vicinity of Liquid Waste Tanks Area Figure 6-1–Quadrants 53 & 54	• No documented specific land use	• Unpaved and paved soil	• Elemental Na • Kerosene	
Division 1—Contemporary							
Radio-actives	S02	Hot Particles found in Fenced Yard Areas	Areas around Bldg. 23	• Portions of area asphalted during initial construction of HCF • Paving and repaving occurred in areas during history of operations in and around Bldg. 23	• Unpaved and Paved Soil	• Hot Particles	
Division 1—Historical and Contemporary							
Radio-actives	R11	General Trestle Area	General trestle area and area below and immediately north of trestle	• Area asphalted during initial construction of HCF • 6/67-Original asphalt likely disturbed during trestle pad construction	• Asphalted around concrete pad supporting trestle; Asphalt cracked and weathered	• MFP • MAP	• PE-23-31 (6/30/59 Drawing) • PE-23-97 (6/15/67 Drawing) • PE-23-95 (4/13/67 As Built)
Mixed: Radio-actives and Inorganics	R13 R16 R35	Liquid Waste Tanks Area	≈ 1 m beyond fenced waste tank area and depression extending westward to the dam Figure 6-1–Quadrants 53, 54, 60, 61, 67 & 68	• Portions of area asphalted during initial construction of HCF • 4/67-Northern portion of area may have been disturbed during paving operations • 2/94-Western portion of area may have been disturbed during dam construction	• Unpaved and asphalted soil; Additional portions of the area will be asphalted prior to implementation of this work plan	• MFP • MAP • BeO	• PE-23-31 (6/30/59 Drawing) • PE-23-94 (4/7/67 Drawing)

Table 6-1—Hot Cell Facility Areas with Known Contaminant Occurrence

Group	Item No.	Designation	Location	Land-Use History	Current Condition	Contaminant(s)	Referenced Documents
Division 2—Immediately Adjacent to Historical and Contemporary							
Mixed: Radio-actives and Inorganics	R12	BEO Storage Shed	Low area north and east of shed and roadway south of shed Figure 6-1–Quadrants 58, 59 65 & 66	• Area not asphalted during initial construction of HCF through 6/57 • 7/62 - Typical survey results showed loose contamination present at ≤7.2 µg Be/100 cm^2 in interior of shed • Shed later used to store MFP contaminated hardware, incl. cell penetration plugs, used manipulators, etc.	• Partially asphalted soil	• MFP • MAP • BeO	• PE-23-31 (6/30/59 Drawing) • PE-23-97 (6/15/67 Drawing)
	R18	Former Shed Location	Figure 6-1–Quadrant 34	• 6/65 - Records indicated the establishment of a shed for the storage of any facility materials considered to be neutron poisons • Area asphalted at unknown time • 8/78–Area may have been disturbed during construction of canopy extension	• Asphalt covered	• Depleted U • Natural U • B • Cd • Gd	• PE-23-31 (6/30/59 Drawing) • PE-23-111 (8/78 Drawing)
	P04	Lead Metal Shielding Materials Storage in Paved Yard Areas	A major portion of the paved yard generally located north and northwest of the trestle terminus	• 1959-1992 - Outdoor storage of lead metal shielding materials (primarily in the form of bricks, often contaminated from prior radiological laboratory use) • 1992 - Remaining inventory of lead shielding was decontaminated and/or processed for mixed waste disposal	• Paved	• MFP • MAP • AAP • Pb (and related oxidation products)	
	P05	Shipping Cask Storage/Staging Area	Figure 6-1–Quadrants 40, 41, 47 & 48	• 1959-Present - Outdoor storage of shipping casks and cask hardware	• Concrete pad surrounded by asphalt paving over 3' lateral subsurface extension of pad; Asphalt slopes gently away from pad on all sides	• MFP • MAP • AAP (possible trace) • Pb • Depleted U	• PE-23-31 (6/30/59 Drawing) • PE-23-95 (4/13/67 As Built)
	R10	Traffic Pattern from Double Door Installed through South Bulkhead of Rm. 23/108	South of Rm. 23/108 Figure 6-1–Quadrants 23 & 30	• 1/62 - Doorway installed through south bulkhead of Rm. 23/108 • 1/62 forward - Doorway utilized for contaminated equipment transport access into and out of Bldg. 23	• Concrete and asphalt covered soil	• Elemental Be (as particulates) • BeO (as particulates) • $BeO/UO_2/ThO_2$ (as particulates) • MFP (possible) • MAP (possible) • AAP (possible trace)	
	S05	Drainage Pathways from Building 23 across Paved and Unpaved Surfaces in Areas not Addressed by a Specific Item No.	Controlled Yard	• Spans complete HCF land use history	• Unpaved and paved soil	• Radioactives and inorganics	• PE-23-31 (6/30/59 Drawing) • PE-23-95 (4/13/67 As Built)
	S06	Drainage Path from Liquid Waste Tanks Area	Adjacent to Controlled Yard Fence	• No specific land use	• Unpaved soil	• Radioactives and inorganics	
Inorganics	P01	Buried Copper Pipes	From Rm. 23/108 to former hydrogen tank location east of Bldg. 23	• 1959-1968 - Underground copper pipes in service between EBOR laboratory (Rm. 23/108) and former hydrogen gas fuel storage tank • c. 1968 tank removed for disposal; underground pipes left in place	• Asphalt cracked and weathered	• Cu • Cu oxidation products (Solids and possibly aqueous solutions)	
Petroleum Hydro-carbons	P03	Soils around Underground Diesel Storage Tank	West of Rm. 23/121 Figure 6-1–Quadrant 16	• 1959-1978 - 1100 gal. (11'8" long, 4' d.) underground (tank bottom at 6' below ground surface) in service as part of boiler system • c. 1978 tank was drained and backfilled with sand; tank and supply lines left in place • No record of product loss during in service period	• Concrete and asphalt (steel plate over part of tank area)	• Diesel	• PE-23-90 (6/30/59 Drawing)

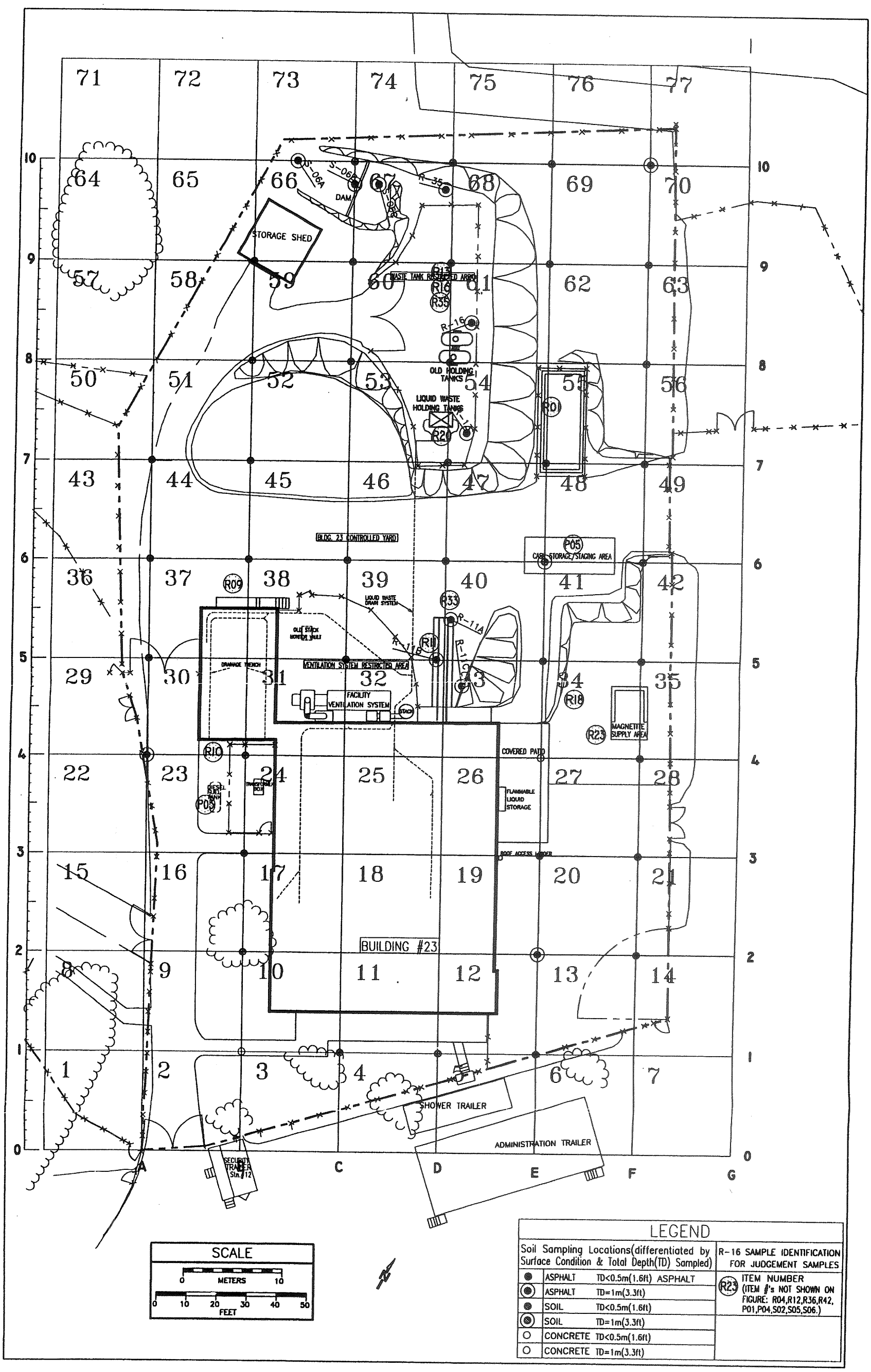


Fig. 6-1—General Locations for Items of Interest and Soil Sampling Locations at the Hot Cell Facility Yard

6.4. Classification of Areas

Areas of interest in the soils surrounding the HCF were separated into three divisions (see Sections 6.4.1 and 6.4.2). Division 1 consisted of areas with known historical and/or contemporary contaminant occurrence (see Table 6-1). Division 2 consisted of areas immediately adjacent to locations of known contaminant use or occurrence (See Table 6-1). Division 3 consisted of areas not expected to have been affected by facility operations. Division 1 areas were of highest priority since these areas were known or thought to be most likely to fall under the NUREG/CR-5849 (Ref. 1-1) "affected" classification. Division 2 areas were areas that have no known contaminant occurrence, but that can not be clearly considered "unaffected" without further review. By definition, Division 3 areas meet the NUREG/CR-5849 (Ref. 1-1) "Unaffected" classification. No areas were assigned to Division 3. Within Division 1 and 2, areas were grouped based on contaminant types(s) (see Table 6-1). [Note. The letter/number combination used as the item number generally refers to the Item Number designation used in historical data for the site.]

Division 1 and 2 areas were ranked based on the likelihood for measurable contemporary contaminant occurrence and/or the overall impact of contaminant occurrence on the scope of the D&D. Rankings were based generally on the relative known or suspected levels of contaminant(s) released, known or potential areas/volumes impacted, expected contaminant persistence in the environment, contaminant mobility, probable migration pathways, and contemporary indication of contaminant occurrence. Expected persistence in the environment and the mobility of contaminants were based on data obtained from published references.

6.4.1. Division 1—Areas with Historical and/or Contemporary Contaminant Occurrence

Areas of potential contamination due to historical contaminant occurrence were documented in historical data for the site.

Areas with contemporary contaminant occurrence were identified based on field scanning completed as part of the ongoing surveillance activities or as a result of records of the occurrence and cleanup of recent events. Field scanning data were obtained to address specific HCF issues and did not necessarily constitute a comprehensive survey of the HCF.

Division 1 areas were further classified into areas with only historical contaminant occurrence, areas with only contemporary contaminant occurrence and areas with both historical and contemporary contaminant occurrence. The three sub-groups of Category 1 areas are listed and described in Table 6-1.

6.4.2. Division 2—Areas Immediately Adjacent to Locations of Known Contaminant Occurrence

Areas immediately adjacent to locations of known contaminant occurrence were identified based on proximity to Division 1 areas. Category 2 areas are listed and described in Table 6-1.

6.5. Sampling Locations and Depth Intervals

HCF soil characterization sampling activities were conducted between September 14, 1994, and October 18, 1994, by Barrett Consulting Group personnel. The sampling activities were conducted by, or under the direct supervision of, a California-state registered geologist. Prior to initiation of sampling activities, all field staff met with the project health and safety manager to review the specific sampling activities. Sampling activities consisted

of the collection of surface and subsurface materials from accessible systematic (grid node) and judgement sampling locations (see Table 6-2).

Systematic sampling of the unpaved and paved areas was completed at the nodes of the 10 m by 10 m grid system (see Figure 6-1). A total of 42 node locations were sampled. Of these 42 systematic sampling locations, 19 locations were unpaved and 23 locations were paved (or concrete surfaced). Deeper soil samples were collected from systematic sampling locations A-4, E-2 and F-10 for the purposes of lithologic characterization. The lithologic characterization samples were collected and evaluated to provide data on subsurface conditions across the HCF. Collection of lithologic characterization samples was attempted at sampling location C-6, however, the presence of spongy soil conditions prevented collection of samples at this location to depths greater than 11.5 in. (28.2 cm).

Judgement samples were collected in the three highest ranked areas (Item R11–General Trestle Area; Item R13, R16, R35–Liquid Waste Tanks Area; and S06–Drainage Path from Liquid Waste Tanks Area) (see Figure 6-2 and Figure 6-3). With the exception of samples collected in the Liquid Waste Tanks Area (sample locations R-13, R-16 and R-35), the three judgement sampling locations in each of three areas were selected in the accessible portion of features showing highest field scanning results. The field scanning was performed over surface features that tend to accumulate and retain particles or liquids and/or would provide a conduit for contaminant migration into the subsurface (e.g., cracks, joints, unpaved surfaces and surfaces showing evidence of puddling and accumulation of fine-grained sediments). Due to the relatively high background radiation in the Liquid Waste Tanks Area, field scanning was not performed.

Depth intervals generally consisted of surface materials or pavings and the approximately 6 in. (15 cm) interval beneath the surface sample. Field conditions which impaired penetration of the sampling tools (very hard subsurface material or spongy soils) resulted in modification to sampling intervals. Field observations which resulted in adjustment of targeted sampling interval included the identification of soil features associated with greater potential for contaminant accumulation (e.g., clayey zones) and delineation of contamination migration and/or field measurement of elevated radiation levels in non-target intervals. Due to the extremely hard materials encountered in the field, samples from depths greater than 1.6 ft. (0.5 m) were only collected at the judgement sampling locations and the three nodes (A-4, E-2, and F-10) selected for determining lithologic conditions. Thirty-eight of the 42 node sampling locations were completed at depths between 6 to 17 in. (15 to 42.5 cm). The presence of 22 in. (55 cm) of concrete at the surface of sampling location E-6 necessitated extending the depth of this sample location to a total of 35.0 in. (87.5 cm) below ground surface. As previously noted, deeper samples were collected at three nodes (A-4, E-2 and F-10) for lithologic characterization. Sampling locations A-4, E-2 and F-10 were completed to depths of 87.5 cm, 100 cm and 90 cm, respectively.

Table 6-2—Summary of Sample Interval Selection Criteria

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	Sample Interval Selection Criteria[1]
A-4	0.0-5.0 (0.0-2.0)	23BL-94-022-CH	Asphalt	Interval selected based on thickness of asphalt.
	5.0-30.0 (2.0-12.0)	23S-94-087-CH	Fill[2]	Interval selected to obtain sufficient volume of sample.
	60.0-87.5 (24.0-35.0)	23S-94-088-CH	Soil/Fill[2]	Interval selected to obtain sufficient volume of sample.
A-5	0.0-7.5 (0.0-3.0)	23BL-94-013-CH	Asphalt	Interval selected based on thickness of asphalt.
	7.5-27.5 (3.0-11.0)	23S-94-044-CH	Fill	Interval selected to obtain sufficient volume of sample.
A-6	0.0-7.5 (0.0-3.0)	23BL-94-012-CH	Asphalt	Interval selected based on thickness of asphalt.
	7.5-32.5 (3.0-13.0)	23S-94-040-CH	Ag. Base/ Fill[2]	Interval selected to obtain sample from aggregate base layer below asphalt.
	32.5-40.0 (13.0-16.0)	23S-94-039-CH	Siltstone	(Note: deeper sample does have this sample ID #)
A-7	0.0-6.2 (0.0-2.5)	23BL-94-014-CH	Asphalt	Interval selected based on thickness of asphalt.
	6.2-23.8 (2.5-9.5)	23S-94-043-CH	Fill[2]	Interval selected to obtain sufficient volume of sample.
B-1	0.0-15.0 (0.0-6.0)	23C-94-063-CH	Concrete	Interval selected based on thickness of concrete.
	15.0-42.5 (6.0-17.0)	23S-94-077-CH	Topsoil	Interval selected to obtain sufficient volume of sample.
B-2	1.2-23.8 (0.5-9.5)	23S-94-085-CH	Topsoil	Interval selected to obtain sufficient volume of sample. [Note: organic matter sample from 0.0 to 1.2 cm (0.0 to 0.5 in.) was not collected.]
	23.8-35.0 (9.5-14.0)	23S-94-086-CH	Topsoil	Interval selected to obtain sufficient volume of sample.
B-3	0.0-7.5 (0.0-3.0)	23BL-94-021-CH	Asphalt	Interval selected based on thickness of asphalt.
	7.5-23.8 (3.0-9.5)	23S-94-078-CH	Weathered Conglom.	—
B-4	0.0-15.0 (0.0-6.0)	23S-94-079-CH	Weathered Conglom.	Interval selected to obtain sufficient volume of sample.
	15.0-30.0 (6.0-12.0)	23S-94-080-CH	Conglom.	—
B-6	0.0-5.0 (0.0-2.0)	23BL-94-011-CH	Asphalt	Interval selected based on thickness of asphalt.
	5.0-22.5 (2.0-9.0)	23S-94-038-CH	Fill[2]	Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
B-7	0.0-3.8 (0.0-1.5)	23BL-94-015-CH	Asphalt	Interval selected based on thickness of asphalt.
	5.0-25.0 (2.0-10.0)	23S-94-041-CH	Gravel Conglom.	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
B-8	0.0-12.5 (0.0-5.0)	23S-94-075-CH	Fill	Interval selected to obtain sufficient volume of sample.
	12.5-30.0 (5.0-12.0)	23S-94-076-CH	Topsoil[2]	Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
B-9	0.0-12.5 (0.0-5.0)	23BL-94-020-CH	Asphalt	Interval selected based on thickness of asphalt.
	12.5-30.0 (5.0-12.0)	23S-94-074-CH	Fill/ Siltstone	Sample collected from two different soil types. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
C-1	2.5-13.8 (1.0-5.5)	23S-94-081-CH	Fill[2]	Interval selected to obtain sufficient volume of sample. [Note: organic matter sample from 0.0 to 2.5 cm (0.0 to 1.0 in.) was not collected].
	13.8-30.0 (5.5-12.0)	23S-94-082-CH	Fill[2]	—

Table 6-2—Summary of Sample Interval Selection Criteria

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	Sample Interval Selection Criteria[1]
C-5	0.0-3.8 (0.0-1.5)	23BL-94-017-CH	Asphalt	Interval selected based on thickness of asphalt.
	3.8-17.5 (1.5-7.0)	23S-94-042-CH	Soil	—
C-6	0.0-13.8 (0.0-5.5)	23BL-94-016-CH	Asphalt	Interval selected based on thickness of asphalt.
	13.8-28.2 (5.5-11.5)	23S-94-037-CH	Aggregate Base	Interval selected to obtain sample from aggregate base layer below asphalt. Presence of spongy subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
C-7	Not Sampled - Stored Materials Prevented Access to Sampling Location			
C-8	0.0-15.0 (0.0-6.0)	23S-94-070-CH	Alluvium/ Colluvium	—
	21.2-42.5 (8.5-17.0)	23S-94-071-CH	Siltstone	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
C-9	0.0-12.5 (0.0-5.0)	23S-94-068-CH	Alluvium	Interval selected to obtain sufficient volume of sample.
	15.0-40.0 (6.0-16.0)	23S-94-069-CH	Alluvium	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
C-10	0.0-20.0 (0.0-8.0)	23S-94-066-CH	Alluvium	Interval selected to obtain sufficient volume of sample.
	20.0-40.0 (8.0-16.0)	23S-94-067-CH	Alluvium	Interval selected to obtain sufficient volume of sample. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
D-1	1.2-18.8 (0.5-7.5)	23S-94-083-CH	Fill[2]	Interval selected to obtain sufficient volume of sample. [Note: organic matter sample from 0.0 to 1.2 cm (0.0 to 0.5 in.) was not collected.]
	18.8-45.0 (7.5-18.0)	23S-94-084-CH	Fill[2]	Interval selected to obtain sufficient volume of sample.
D-5	Not Sampled - Trestle Prohibited Access with Sampling Equipment			
D-6	0.0-7.5 (0.0-3.0)	23BL-94-009-CH	Asphalt	Interval selected based on thickness of asphalt.
	7.5-20.0 (3.0-8.0)	23S-94-036-CH	Aggregate Base	Interval selected to obtain sample from aggregate base layer below asphalt. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
D-7	0.0-13.8 (0.0-5.5)	23S-94-072-CH	Alluvium/ Colluvium	Interval selected to obtain sufficient volume of sample.
	15.0-35.0 (6.0-14.0)	23S-94-073-CH	Siltstone	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
D-8	0.0-5.0 (0.0-2.0)	23BL-94-019-CH	Asphalt	Interval selected based on thickness of asphalt.
	5.0-21.2 (2.0-8.5)	23S-94-062-CH	Aggregate Base	Interval selected to obtain sample from aggregate base layer below asphalt. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
D-9	0.0-5.0 (0.0-2.0)	23BL-94-018-CH	Asphalt	Interval selected based on thickness of asphalt.
	5.0-17.5 (2.0-7.0)	23S-94-061-CH	Aggregate Base	Interval selected to obtain sample from aggregate base layer below asphalt. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
D-10	0.0-5.0 (0.0-2.0)	23S-94-027-CH	Alluvium	—
	10.0-30.0 (4.0-12.0)	23S-94-028-CH	Alluvium	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
E-1	0.0-16.2 (0.0-6.5)	23BL-94-003-CH	Asphalt	Interval selected based on thickness of asphalt.
	16.2-32.5 (6.5-13.0)	23S-94-029-CH	Fill	—

Table 6-2—Summary of Sample Interval Selection Criteria

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	Sample Interval Selection Criteria[1]
E-2	0.0-13.8 (0.0-5.5)	23BL-94-001-CH	Asphalt	Interval selected based on thickness of asphalt.
	13.8-30.0 (5.5-12.0)	23S-94-006-CH	Fill	—
	52.5-65.0 (21.0-26.0)	23S-94-007-CH	Fill	Sample collected for subsurface lithologic characterization.
	65.0-72.5 (26.0-29.0)	23S-94-008-CH	Fill	Sample collected for subsurface lithologic characterization.
	75.0-82.5 (30.0-33.0)	23S-94-009-CH	Fill	Sample collected for subsurface lithologic characterization.
	90.0-100.0 (36.0-40.0)	23S-94-010-CH	Fill	Sample collected for subsurface lithologic characterization.
E-3	0.0-13.8 (0.0-5.5)	23BL-94-006-CH	Asphalt	Interval selected based on thickness of asphalt.
	13.8-25.0 (5.5-10.0)	23S-94-034-CH	Conglom.	—
E-4	0.0-11.2 (0.0-4.5)	23C-94-055-CH	Concrete	Interval selected based on thickness of concrete.
	13.8-35.0 (5.5-14.0)	23S-94-032-CH	Weathered Conglom.	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
E-5	0.0-7.5 (0.0-3.0)	23BL-94-008-CH	Asphalt	Interval selected based on thickness of asphalt.
	11.2-37.5 (4.5-15.0)	23S-94-033-CH	Soil	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
E-6	0.0-15.0 (0.0-6.0)	23C-94-056-CH	Concrete	Interval selected based on maximum penetrable depth during sampling event.
	0.0-30.0 (0.0-12.0)	23C-94-091-CH	Concrete	Sample collected from collocated boring to address upper section of concrete.
	30.0-55.0 (12.0-22.0)	23C-94-092-CH	Concrete	Sample collected from collocated boring to address upper section of concrete.
	55.0-87.5 (22.0-35.0)	23S-94-099-CH	Siltstone	Sample collected from collocated boring. Interval selected to obtain sufficient volume of sample.
E-7	0.0-7.5 (0.0-3.0)	23BL-94-007-CH	Asphalt	Interval selected based on thickness of asphalt.
	7.5-27.5 (3.0-11.0)	23S-94-035-CH	Weathered Lindavista	Interval selected to obtain sufficient volume of sample. Presence of very hard subsurface material precluded penetration of boring to initially targeted depth interval [up to 3.3 ft. (1 m)].
E-8	Not Sampled - Elevated Dose Rate			
E-9	0.0-5.0 (0.0-2.0)	23S-94-023-CH	Weathered Conglom.	—
	22.5-37.5 (9.0-15.0)	23S-94-024-CH	Weathered Conglom.	Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
E-10	0.0-5.0 (0.0-2.0)	23S-94-025-CH	Alluvium	—
	10.0-30.0 (4.0-12.0)	23S-94-026-CH	Alluvium	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
F-2	0.0-11.2 (0.0-4.5)	23BL-94-004-CH	Asphalt	Interval selected based on thickness of asphalt.
	11.2-30.0 (4.5-12.0)	23S-94-030-CH	Fill	Interval selected to obtain sufficient volume of sample.
F-3	0.0-8.8 (0.0-3.5)	23BL-94-005-CH	Asphalt	Interval selected based on thickness of asphalt.
	8.8-37.5 (3.5-15.0)	23S-94-031-CH	Soil/Fill[2]	Interval selected to obtain sufficient volume of sample.
F-4	0.0-5.0 (0.0-2.0)	23S-94-011-CH	Topsoil	—
	5.0-15.0 (2.0-6.0)	23S-94-012-CH	Topsoil	Interval selected to obtain sufficient volume of sample.

Table 6-2—Summary of Sample Interval Selection Criteria

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	Sample Interval Selection Criteria[1]
F-5	0.0-5.0 (0.0-2.0)	23S-94-013-CH	Topsoil	—
	15.0-22.5 (6.0-9.0)	23S-94-014-CH	Topsoil	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
F-6	0.0-5.0 (0.0-2.0)	23S-94-015-CH	Weathered Conglom.	—
	10.0-22.5 (4.0-9.0)	23S-94-016-CH	Weathered Conglom.	Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
F-7	0.0-5.0 (0.0-2.0)	23S-94-017-CH	Weathered Conglom.	—
	5.0-17.5 (2.0-7.0)	23S-94-018-CH	Conglom.	—
F-8	0.0-5.0 (0.0-2.0)	23S-94-019-CH	Alluvium	—
	7.5-27.5 (3.0-11.0)	23S-94-020-CH	Lindavista	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
F-9	0.0-5.0 (0.0-2.0)	23S-94-021-CH	Alluvium	—
	22.5-30.0 (9.0-12.0)	23S-94-022-CH	Soil	Interval selected to obtain sufficient volume of sample. Interval selected to preclude incorporation of loosened surface materials in subsurface samples.
F-10	0.0-15.0 (0.0-6.0)	23S-94-001-CH	Alluvium	Interval selected to obtain sufficient volume of sample.
	15.0-30.0 (6.0-12.0)	23S-94-002-CH	Soil	Sample collected for subsurface lithologic characterization.
	30.0-45.0 (12.0-18.0)	23S-94-003-CH	Conglom.	Sample collected for subsurface lithologic characterization.
	75.0-90.0 (30.0-36.0)	23S-94-004-CH	Conglom.	Sample collected for subsurface lithologic characterization.
General Trestle Area R-11A	0.0-10.0 (0.0-4.0)	23BL-94-023-CH	Asphalt	Interval selected based on thickness of asphalt. [Note: this is a judgement sampling location.]
	10.0-22.5 (4.0-9.0)	23S-94-089-CH	Conglom.	—
	45.0-60.0 (18.0-24.0)	23S-94-090-CH	Conglom.	—
	65.0-90.0 (26.0-36.0)	23S-94-091-CH	Siltstone	—
	90.0-105.0 (36.0-42.0)	23S-94-092-CH	Siltstone	—
General Trestle Area R-11B	0.0-6.2 (0.0-2.5)	23BL-94-024-CH	Asphalt	Interval selected based on thickness of asphalt. [Note: this is a judgement sampling location.]
	6.2-18.8 (2.5-7.5)	23S-94-093-CH	Ag. Base/ Fill[2]	Interval selected to obtain sample from aggregate base layer below asphalt.
	41.2-50.0 (16.5-20.0)	23S-94-094-CH	Conglom.	—
	67.5-80.0 (27.0-32.0)	23S-94-095-CH	Conglom.	—
General Trestle Area R-11C	0.0-5.0 (0.0-2.0)	23BL-94-025-CH	Asphalt	Interval selected based on thickness of asphalt. [Note: this is a judgement sampling location.]
	6.2-22.5 (2.5-9.0)	23S-94-096-CH	Ag. Base/ Fill[2]	Interval selected to obtain sample from aggregate base layer below asphalt.
	60.0-67.5 (24.0-27.0)	23S-94-097-CH	Fill	—
	75.0-82.5 (30.0-33.0)	23S-94-098-CH	Fill	—
Liquid Waste Tanks Area R13	0.0-17.5 (0.0-7.0)	23S-94-055-CH	Alluvium	[Note: this is a judgement sampling location.]
	35.0-50.0 (14.0-20.0)	23S-94-056-CH	Siltstone	—
	55.0-97.5 (22.0-39.0)	23S-94-057-CH	Siltstone	—

Table 6-2—Summary of Sample Interval Selection Criteria

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	Sample Interval Selection Criteria[1]
Liquid Waste Tanks Area R16	0.0-20.0 (0.0-8.0)	23S-94-058-CH	Alluvium	[Note: this is a judgement sampling location.]
	45.0-57.5 (18.0-23.0)	23S-94-059-CH	Siltstone	—
	65.0-100.0 (26.0-40.0)	23S-94-060-CH	Siltstone	—
Liquid Waste Tanks Area R35	0.0-17.5 (0.0-7.0)	23S-94-063-CH	Alluvium	[Note: this is a judgement sampling location.]
	35.0-60.0 (14.0-24.0)	23S-94-064-CH	Siltstone	—
	62.5-100.0 (25.0-40.0)	23S-94-065-CH	Siltstone	—
Drainage Path from Liquid Waste Tanks Area S06A	0.0-7.5 (0.0-3.0)	23S-94-045-CH	Alluvium	[Note: this is a judgement sampling location.]
	7.5-22.5 (3.0-9.0)	23S-94-046-CH	Alluvium	—
	35.0-60.0 (14.0-24.0)	23S-94-047-CH	Alluvium	—
	82.5-100.0 (33.0-40.0)	23S-94-048-CH	Alluvium	—
Drainage Path from Liquid Waste Tanks Area S06B	0.0-18.8 (0.0-7.5)	23S-94-049-CH	Alluvium	[Note: this is a judgement sampling location.]
	30.0-50.0 (12.0-20.0)	23S-94-050-CH	Alluvium	—
	50.0-90.0 (20.0-36.0)	23S-94-051-CH	Siltstone	—
Drainage Path from Liquid Waste Tanks Area S06C	0.0-25.0 (0.0-10.0)	23S-94-052-CH	Alluvium	[Note: this is a judgement sampling location.]
	25.0-50.0 (10.0-20.0)	23S-94-053-CH	Alluvium	—
	57.5-97.5 (23.0-39.0)	23S-94-054-CH	Siltstone	—

[1]Where no criteria are specified, sample intervals were generally consistent with targeted intervals [+/- 2.5 cm (1 in.)]
[2]Reflect uncertainty in the field identification of sample matrix as presented on the hand auger logs (see Appendix C)

6.6. Instrumentation

Field screening for the presence of radioactive materials was completed for health and safety purposes, to assist in the selection of sampling locations, and to identify samples to be submitted for laboratory analysis. Field screening was performed using instruments appropriate for detection of the radiation types associated with the anticipated contaminants (see Table 6-3).

The instruments were maintained and calibrated in accordance with manufacturer recommendations and established HCF GA Health Physics procedures, as described in Section 3.6. Established HCF procedures were used in completing field scanning measurements.

Table 6-3—Field Instruments Used

Detector Model (abbreviation)	Detector Type	Application
Eberline-RO-2 (RO-2A)	ionization chamber	beta/gamma exposure rate measurements
Ludlum-3/44-9 probe	GM tube	beta/gamma surface contamination measurements
Eberline-RM14, 14SA/HP260 probe	GM tube	beta/gamma surface contamination measurements
Technical Associates TBM-15 (TA TBM-28, TBM-15/28)	GM tube	beta/gamma surface contamination measurements

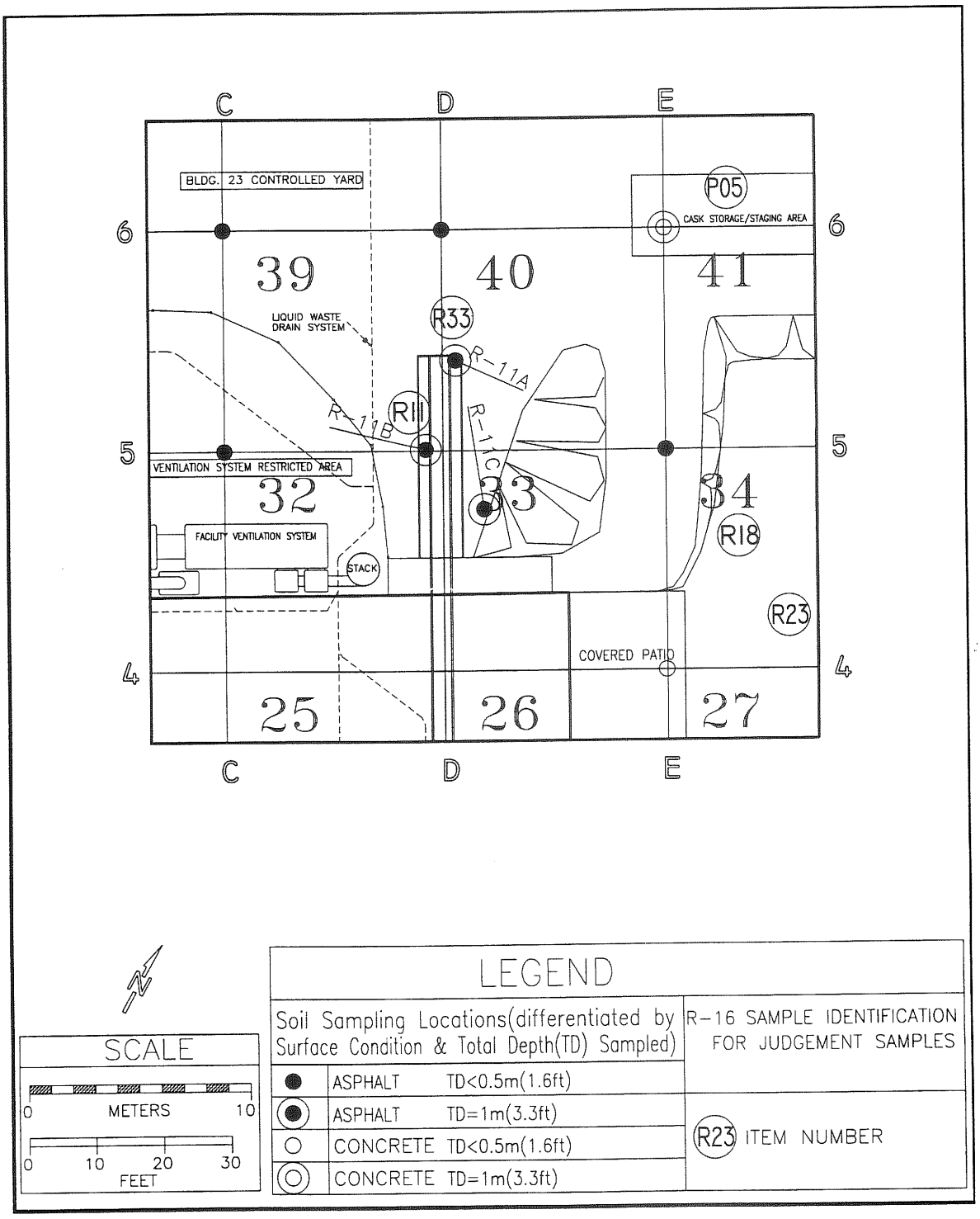


Fig. 6-2—Details of Soil Sampling Locations Near Trestle Area Within Fenced Yard

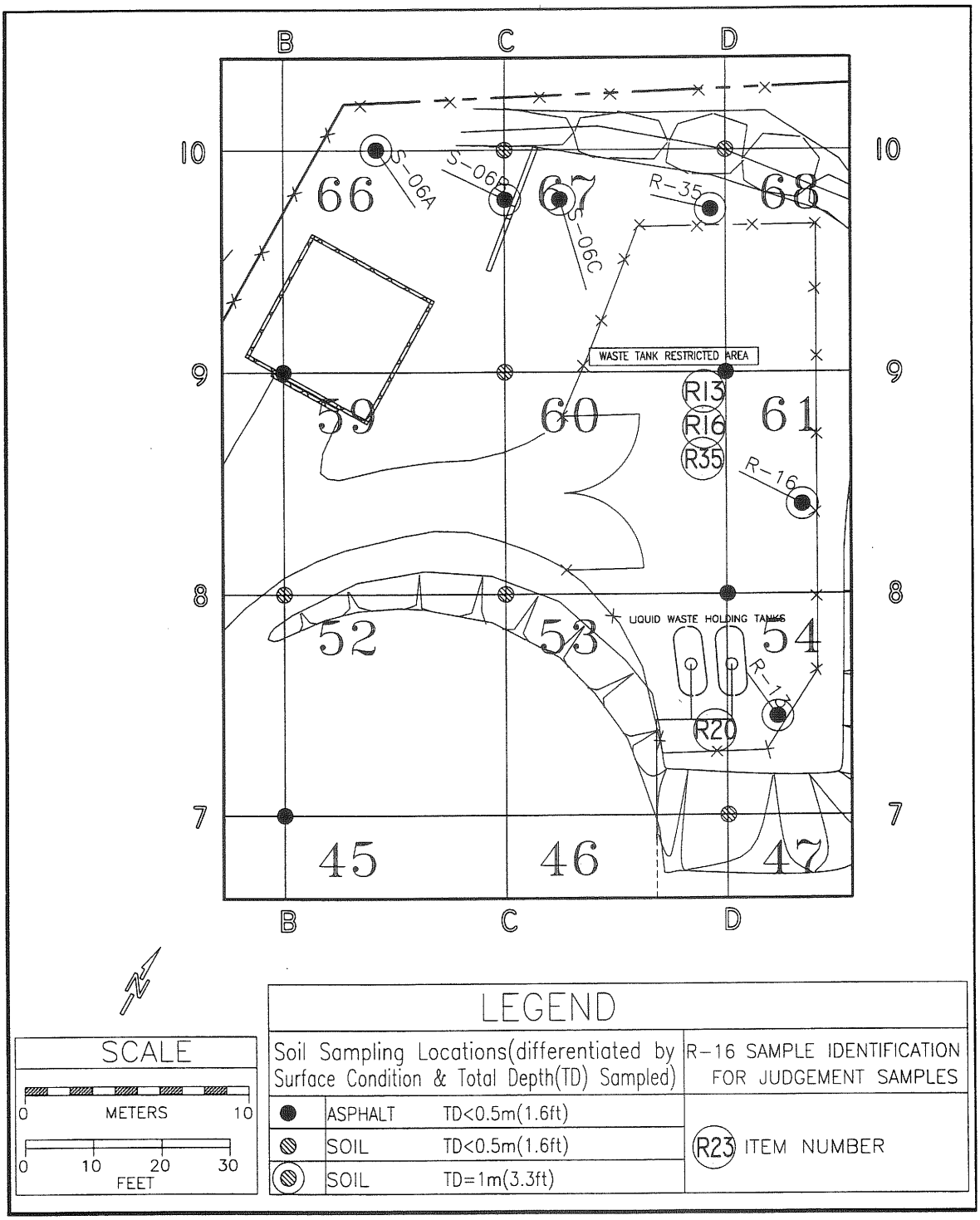


Fig. 6-3—Details of Soil Sampling Locations Near Northwest Corner of the Fenced Yard

6.7. Field Procedures

Procedures implemented during the HCF characterization followed established GA procedures (as cited under appropriate sections) which are generally consistent with the procedures described in the EML Procedures Manual (HASL-300) (Ref. 6-1). These procedures were consistent with data quality requirements anticipated for a final status survey. Equipment decontamination, waste handling, field scanning, sample collection, sample handling and record keeping, sample descriptions, and sample location elevation surveying are described in Section 6.7.1 through 6.7.7.

6.7.1. Equipment Decontamination

All sampling equipment was decontaminated prior to use to prevent possible cross contamination of samples. Sampling equipment decontamination was accomplished by wiping loose soil and debris off with unused paper towels and Masslin^{R} oil impregnated cloths. Following the initial cleaning, the sampling equipment was wiped again with an unused piece of Masslin^{R} cloth. To confirm that decontamination was successful, this piece of Masslin^{R} cloth was scanned with field survey instrumentation by the General Atomics' health physics technician.

6.7.2. Waste Handling

Waste handling was consistent with the approved procedures.

Waste pieces of Masslin^{R} cloth were collected and disposed of as low-level radioactive paper waste by the health physics technician. Disposable personal protection items (e.g., gloves, cotton glove liners, and masking tape) were collected, segregated by type and disposed of as low-level radioactive waste by the health physics technician.

6.7.3. Field Scanning

Field scanning for the presence of radioactive materials was completed as described in Section 6.6. Established HCF procedures were used in completing field scanning measurements. Specific instruments used, and the results of the field scanning are noted on the soil hand auger logs (see Appendix C).

6.7.4. Sample Collection

Samples were collected from surface paving materials, surface soils, and subsurface soils. All samples are discrete samples (i.e., not composites) that can be identified with a particular location within a particular area. Sampling methods used for the different media are described in Sections 6.7.4.1 and 6.7.4.2.

6.7.4.1. Surface Materials–Paving Materials and Soils

The majority of the samples of surface paving materials (asphaltic concrete and concrete) were collected by coring with a concrete cutter and, as necessary, dislodging materials with a chisel. The asphaltic concrete samples at judgement sampling locations E-2, R-11A, R-11B and R-11C were collected by using an electric jack hammer. The samples were placed into clean resealable plastic freezer bags, labeled, and recorded following standard procedures. A minimum of 1 kg of paving materials was placed in each bag. A description of the paving materials (including depth and composition) was recorded on the soil hand auger log (see Appendix C). The samples were relinquished to the health physics technicians following chain of custody procedures.

Surface soils were collected using a shovel, trowel or scoop. The samples were placed into clean stainless steel pans. Vegetation, rocks, sticks, and foreign objects were removed from the soil sample to the degree practical at the time of sampling, packaged, labeled and retained with the soil sample. Vegetation (if any) were packaged separately from rocks, sticks and foreign debris. The samples were spread out in the pan and scanned with the field scanning instrument before sealing the sample in clean resealable plastic freezer bags. A minimum of 1 kg of useable materials (i.e., excluding rocks and other debris) were placed in each bag. Bags were labeled, and recorded following standard procedures. A lithologic description (see Section 6.7.6) was completed and recorded on the Soil Hand Auger Log (see Appendix C). The samples were relinquished to the health physics technicians following chain of custody procedures.

6.7.4.2. Subsurface Materials

Where possible, subsurface materials were collected using hand auger boring methods. A clean steel hand auger was advanced to the top of the desired depth interval. Clean stainless steel scoops and a clean planer auger were used to remove any loose materials from the bore hole. A second clean hand auger was used to collect the sample from the desired depth interval.

Subsurface samples were collected by scooping or pouring soil materials from the auger bucket or shovel into clean stainless steel pans. The sample was spread out in the pan and scanned with the field screening instrument before sealing the sample in clean resealable plastic freezer bags. A minimum of 1 kg of useable materials (i.e., excluding rocks and other debris) was placed in each bag. Bags were labeled, and recorded following standard record keeping procedures. A lithologic description (see Section 6.7.6) was completed and recorded on the soil hand auger log (see Appendix B). The samples were relinquished to the health physics technicians following chain of custody procedures.

If the desired depth interval was not specifically targeted, each full auger bucket was treated as a potential sample and held in a stainless steel pan or labeled sample bag pending completion of the auger hole. After the auger hole was completed, and if practical, subsurface materials not retained for analysis and showing activity levels consistent with background values were returned to the hole. Subsurface materials with elevated activity levels were retained for possible future laboratory analysis.

If hand augers were unable to penetrate shallow soils due to gravels, cobbles or soil compaction, a single subsurface sample was collected from a minimum of 12 in. (30 cm) below the surface or at the maximum penetrable depth. Gravels, cobbles or the compacted soil were loosened and cleaned out of the hole using electric jackhammers, shovels and/or stainless steel scoops to attain the targeted depth interval. Care was taken to clean all loose materials out of the hole before the sample was collected. The sample was collected using either a clean hand auger or clean stainless steel scoops and processed as previously described.

6.7.5. Sample Handling and Record Keeping

Samples were handled in accordance with established HCF procedures. Record keeping remained consistent with existing procedures with the addition of the Soil Hand Auger Log form (see Appendix C).

6.7.6. Sample Descriptions

Sample locations were described relative to the grid system shown on Figure 6-1. Depth intervals for all samples were recorded using the top of the surface paving (if present) as the zero reference point. In the absence of surface paving, ground surface were used as the zero reference point. Depth intervals were recorded in both centimeters and inches below the zero reference point.

Soils were described in accordance with Chapter 3 of the 1991 Soil Survey Manual (Ref. 6-2) At a minimum, materials from each sampled interval were used in completing field observations. Materials were inspected for discoloration relative to surrounding soil conditions. Discolorations were described using Munsell color designations. Vegetation, rocks, sticks and/or foreign objects removed from the sample were described, and amounts removed were estimated as a percentage of the total mass of the sampled interval. Soil lithology were compared to the descriptions for soil series mapped at and immediately adjacent to the HCF presented in the Work Plan and evaluated in accordance with the Unified Soil Classification System and USDA textural classifications. All observations (e.g., field scanning data, sample numbers, sample intervals, and sample date and time, etc.) were recorded in a field log book and/or the appropriate sampling form (see Appendix C).

6.7.7. Sample Location Elevation Surveying

The elevations of the HCF characterization systematic and judgement soil sample locations were determined by Barrett Consulting Group on November 22, 1994. The differential leveling method was employed by BCG to determine the elevation of each of the soil sample locations. The differential leveling method is described in many surveying text books including "Surveying Theory and Practice" (Davis, Foote, and Kelly, 1963, published by McGraw and Hill, pp. 185-191). An assumed benchmark of 340 feet at the finished floor of the HCF building was utilized to establish the elevations of the sampling locations. This assumed benchmark was chosen so that the elevations of the sampling locations would correspond to the available topographic map of the HCF (Bechtel Corporation, 1958). The elevations the soil sample locations were calculated to within 0.01 ft. (0.03 m) relative to an assumed bench mark of 340 ft. (104 m) at the finished floor of the HCF building. The elevation of the systematic and judgement sampling locations are indicated on the soil logs (see Appendix C).

6.8. Analytical Procedures

Laboratory analyses were completed by state-certified analytical laboratories licensed for handling radioactive materials. The analytical methods used for radioactive analysis were consistent with the requirements presented in 10 CFR 61.

6.9. Sampling Data

The results of the data collected during the HCF characterization, including Evaluation of Shallow Geologic Conditions, and Radiological and Hazardous Constituent Assessment, are presented in Section 6.9.1 through 6.9.3.

6.9.1. Evaluation of Shallow Geologic Conditions

Data gathered during the HCF characterization regarding the subsurface geological conditions at the HCF were compared and correlated with data available from geologic literature and the three deep bore holes installed in conjunction with the design of the HCF

in 1958. Summaries of the Regional Geology, Ground Surface Elevations, Geologic units, Hydrology and Geochemistry are detailed in Sections 6.9.1.1 through 6.9.1.5.

6.9.1.1. Regional Geology

The HCF is situated on top of a northeasterly trending ridge within the Torrey Pines Mesa and immediately south and above an unnamed tributary canyon of Soledad Valley (Ref. 6-3). Outcroppings of the Lindavista sedimentary unit are observed in the upper portions of the cut slopes at the HCF. Subsurface geologic units mapped in the HCF area include the Ardath Shale deposit which is approximately 300 ft (90 m) thick and is underlain by approximately 500 ft. (150 m) of Torrey Sandstone over approximately 250 ft. (76 m) of Delmar Formation. The westernmost occurrence of an unnamed fault is located approximately 450 ft. (140 m) north of the HCF (Ref. 6-4). The fault is not known to displace the Pleistocene-aged Lindavista Formation or other Quaternary-aged deposits in the vicinity of the facility and is classified as inactive in the City of San Diego Seismic Safety Element (Ref. 6-5).

6.9.1.2. Historical and Current Ground Surface Elevations

The calculated elevations of the HCF characterization soil sample locations indicated that current elevations at the HCF range from an assumed bench mark of 340 ft. (104 m) at the finished floor of the HCF building to approximately 327.6 ft. (99.8 m) at sample location S06B in the northwestern corner of the facility. Comparison of the pre-construction elevations described in the Work Plan with the current facility elevations indicates that development of the HCF included the placement of fill soils to a maximum depth of approximately 3 ft. (0.9 m) in the southern portion of the facility and excavation of native materials to a maximum of 7 ft. (2 m) below ground surface in the northern portion of the facility. Cross Sections A-A' and B-B' illustrate the pre-construction and existing ground profiles (see Figure 6-4 and Figure 6-5).

6.9.1.3. Surface and Subsurface Materials Encountered

Based on review of the readily available geologic literature and the results of the subsurface exploration program, the bedrock units on the HCF facility consist of the Pleistocene-aged Lindavista Formation underlain by the Eocene-aged Ardath Shale. These bedrock units are mantled by recent alluvium and colluvium, fill soils, and a localized topsoil horizon developed on the Lindavista Formation. Surface paving materials encountered at the HCF include asphalt (locally underlain by aggregate base) and concrete. Descriptions of the geologic units, soil and other unconsolidated materials and paved surface materials identified at the HCF are presented in Sections 6.9.1.3.1 through 6.9.1.1.3

6.9.1.3.1. Geologic Unit Ardath Shale (Map Symbol–Ta)

The Ardath Shale was encountered at sampling nodes A-6, B-9, C-8, D-7, and E-6, and judgement sample locations S06B, S06C, R-11A, R-13, R-16, and R-35. The Ardath Shale observed at the soil sample locations is consistent with the description given in Bulletin 200 (Ref. 6-4) and with the description provided in the three 1958 soil borings installed at the HCF. The Ardath Shale was encountered below an approximate elevation of 335 to 332 ft. (102 to 101 m) msl in the three 1958 soil borings.

The Ardath Shale, a member of the La Jolla Group of Eocene Deposits "is predominantly weakly fissile [not in nuclear sense, but in the geologic sense, i.e., easily split along closely spaced planes], olive-gray shale" (Ref. 6-4). The Ardath Shale encountered in certain soil sampling locations in the northern portion of the HCF was observed to

predominantly consist of a pale brown to light gray, damp to moist, well indurated, locally cemented, siltstone shale. Locally, yellow and red-brown staining was observed along apparent bedding planes.

The hydraulic conductivity of the fine-grained siltstone of the Ardath Shale is anticipated to be relatively low, allowing this unit to act as an aquiclude to the vertical migration of groundwater. However, interconnected cracks and fractures may exist which may possess a hydraulic conductivity several orders of magnitude greater than the intrinsic hydraulic conductivity of the formation itself. No evidence of recent or historic ground water flow (e.g., gypsum crystallization, mottling, etc.) was observed in the samples collected.

6.9.1.3.2. Geologic Unit–Lindavista Formation (Map Symbol–Qln)

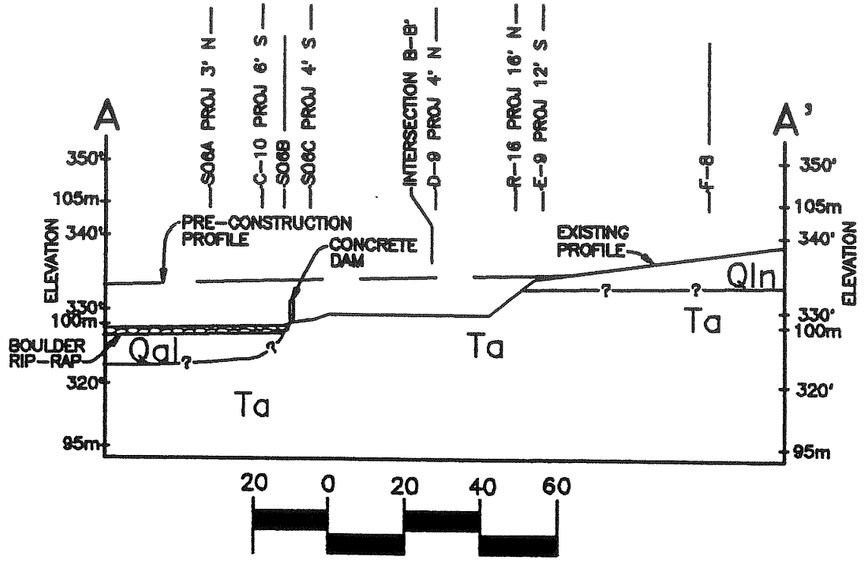
The Lindavista formation was encountered at node sample locations B-3, B-4, E-3, E-4, E-7, E-9, F-6 through F-8 and F-10, and in judgement sampling locations R-11A and R-11B. The near-surface sand, gravel, and cobble unit encountered in the three 1958 soil borings is consistent with the description of the Pleistocene-aged Lindavista Formation mapped in the Torrey Pines Mesa area.

At the HCF, the Lindavista Formation lies unconformable above the Ardath Shale above an elevation of 335 to 332 ft. (102 to 101 m) msl and mantles the majority of the HCF. This deposit represents an ancient wave-cut platform and associated near-shore deposits which have been uplifted in relation to the current sea level. As encountered in the HCF characterization soil sampling program, the Lindavista Formation consists predominantly of a red-brown mottled brown-gray, dry to moist, dense to very dense, gravel and cobble conglomerate in a silty sandstone matrix. To a lesser extent, this unit consists of a silty sandstone with gravel and cobbles. Typically, the percentage of gravel and cobbles in the Lindavista Formation was generally estimated to range from 60 to 70 percent by weight. This unit was observed to be locally cemented and difficult to excavate.

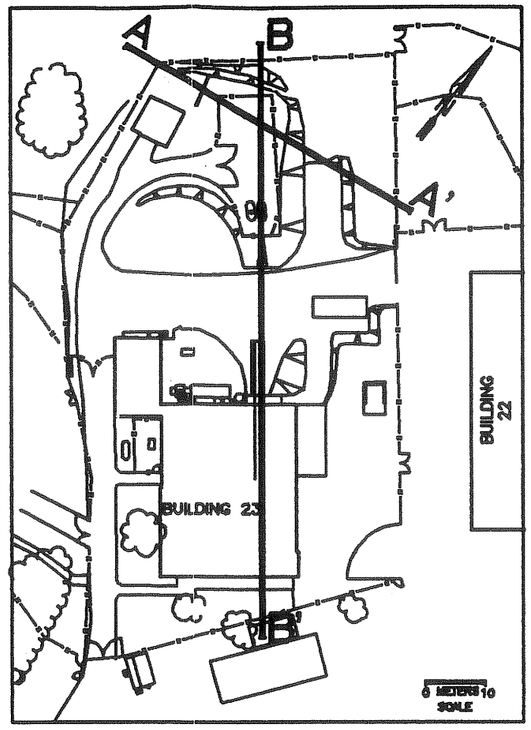
Based on its granular and fractured nature, the Lindavista Formation is anticipated to posses a relatively moderate to high hydraulic conductivity. Evidence of staining and mottling suggests that ground water may have migrated through this formation in the past. At the time of the HCF characterization soil sampling, no evidence of ground water was observed in the Lindavista Formation.

LEGEND

Fill	FILL SOILS
Qal	RECENT ALLUVIUM (UNCONSOLIDATED CLAYS AND SILTS AND TO A LESSER EXTENT SAND WITH GRAVEL)
Qln	PLEISTOCENE LINDAVISTA FORMATION (GRAVEL AND COBBLE CONGLOMERATE WITH A SAND MATRIX AND TO A LESSER EXTENT SILTY SANDSTONE WITH GRAVEL AND COBBLES)
Ta	EOCENE ARDATH SHALE (SILTSTONE SHALE)
——?——	GEOLOGIC CONTACT; QUERIED WHERE UNCERTAIN



HORIZONTAL GRAPHIC SCALE
1 inch = 40 ft.



Pre-construction profile was interpeted from original ground contours depicted on Bechtel Corporation's 1958 site plan. Existing profile was determined by BCG's November 1994 field survey. Per the 1958 site plan, a finished floor elevation of 340.0 for Building 23 was assumed as a benchmark for the 1994 field survey.

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JOB NUMBER 22602401	Barrett Consulting Group 9675 Business Park Avenue San Diego, California 92131-1643 619 536-5610 Fax: 619 536-5620 Civil / Environmental Engineers	GENERAL ATOMICS HOT CELL D AND D PROJECT GEOLOGIC CROSS SECTION A-A'	DATE: DECEMBER 1994
FILE No. 22602401			DRAWING No. 1
DESIGNED: RLW / DRAWN: RWW			
APPROVED DDH			
SCALE: H.:1"=40',V.:1"=20'			

Fig. 6-4—Geologic Cross Section A-A'

PC-000456/0

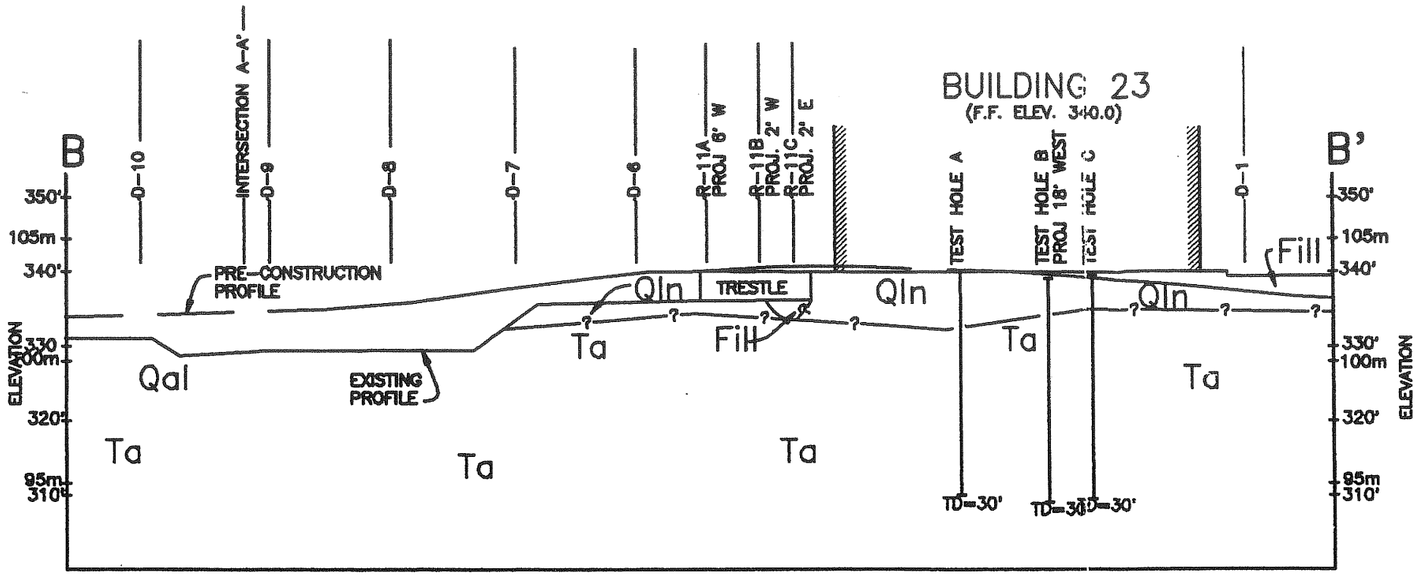
LEGEND

Fill	FILL SOILS
Qal	RECENT ALLUVIUM (UNCONSOLIDATED CLAYS AND SILTS AND TO A LESSER EXTENT SAND WITH GRAVEL)
Qln	PLEISTOCENE LINDAVISTA FORMATION (GRAVEL AND COBBLE CONGLOMERATE WITH A SAND MATRIX AND TO A LESSER EXTENT SILTY SANDSTONE WITH GRAVEL AND COBBLES)
Ta	EOCENE ARDATH SHALE (SILTSTONE SHALE)

F-8 — APPROXIMATE LOCATION OF SOIL SAMPLE COLLECTED BY BARRETT CONSULTING GROUP

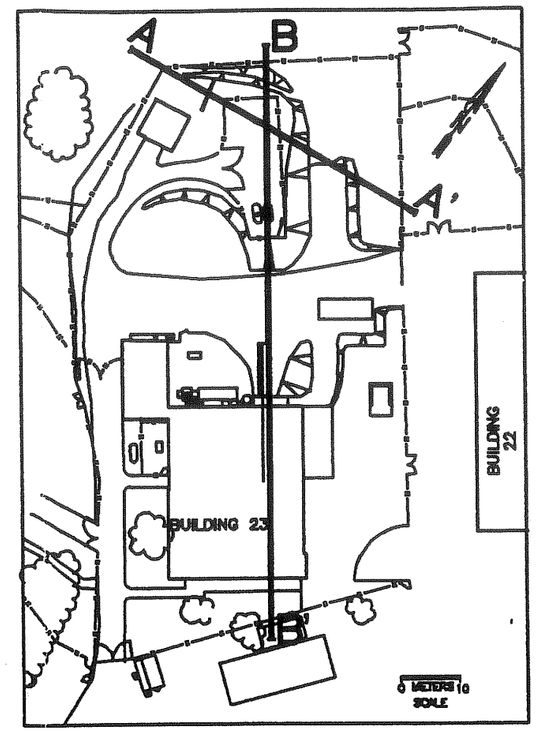
TEST HOLE C
TD=30' — APPROXIMATE LOCATION AND TOTAL DEPTH OF 1958 BORING PERFORMED BY L.T. EVENS

——?—— GEOLOGIC CONTACT; QUERIED WHERE UNCERTAIN



20 0 20 40 60

HORIZONTAL GRAPHIC SCALE
1 inch = 40 ft.



Pre-construction profile was interpeted from original ground contours depicted on Bechtel Corporation's 1958 site plan. Existing profile was determined by BCG's November 1994 field survey. Per the 1958 site plan, a finished floor elevation of 340.0 for Building 23 was assumed as a benchmark for the 1994 field survey.

JOB NUMBER 22602401	Barrett Consulting Group 9675 Business Park Avenue San Diego, California 92131-1643 619 536-5610 Fax: 619 536-5620 Civil / Environmental Engineers	DATE: DECEMBER 1994
FILE No. 22602401	GENERAL ATOMICS HOT CELL D AND D PROJECT GEOLOGIC CROSS SECTION B-B'	DRAWING No. 2
DESIGNED: RLW / DRAWN: RWW		
APPROVED DDH		
SCALE: H.:1"=40',V.:1"=20'		

Fig. 6-5—Geologic Cross Section B-B'

6.9.1.3.3. Soil and Other Unconsolidated Materials–Fill Soils (Map Symbol–Fill)

As noted in section 6.9.1.2, comparison of the pre-construction and current ground surface elevations at the HCF indicate that development of the HCF included the construction of fill soils to a depth of approximately 3 ft. (0.9 m) in the southern portion of the facility. Fill soils were encountered at sampling nodes B-8, E-1, E-2, F-2, and B-9 and at judgement sampling location R-11C. Aggregate base was encountered below the asphaltic concrete paving at sampling locations A-6, C-6, D-6, D-8, D-9, R-11B, and R-11C.

The fill soils consist of brown and gray-brown, damp to moist, loose to dense, silty sand with few to very abundant gravels and cobbles. The fill soils were presumed to be predominantly derived from excavations of the Lindavista Formation. The aggregate base predominantly consisted of a brown and gray, moist to very moist, dense gravel with a silty to clayey sand matrix.

Based on its varied composition, the relative hydraulic conductivity of the fill soils on the site is anticipated to range from low in the clayey fill soils to high in the more granular fill soils. At the time of soil sampling, no evidence of past or current ground water flow was observed in the fill soils.

6.9.1.3.4. Soil and Other Unconsolidated Materials–Alluvium and Colluvium (Map Symbol–Qal)

Recent alluvium and colluvium were observed in several of the soil sampling locations in the low-lying areas of the northern portion of the facility. More specifically, these soils were encountered at sampling nodes C-8 through C-10, D-7, D-10, E-10, F-9 through F-10, and judgement sample locations S06A, S06B, S06C, R-13, R-16, and R-35.

In the Liquid Waste Tanks Area and adjacent depressed area in the vicinity of the concrete dam (sample locations S06A, S06B, S06C, R-13, R-16, and R-35), the upper alluvial soils, to a depth of approximately 8 to 10 in. (20 to 25 cm), consisted primarily of a brown, dry to damp, loose to very loose, porous, silty sand and silt with roots and scattered gravel. At sample locations S06A and S06B, located on the down stream side of the concrete dam, a brown, damp to moist, plastic clay was encountered at depths of 14 and 8 in. (46 and 20 cm) below the ground surface, respectively. At sampling nodes C-8 through C-10, D-7, D-10, E-10, F-9, and F-10, the alluvium and colluvium were noted to a depth of 5 to 9 in. (13 to 23 cm) and consisted primarily of a brown, dry to damp, loose, silty sand with few to abundant gravels.

Based on its porous nature, the silty and sandy alluvial and colluvial deposits at the facility are anticipated to posses a relatively moderate to high hydraulic conductivity. The clayey alluvium is anticipated to posses a relatively low hydraulic conductivity. These recent soils were deposited as a result of recent ground water flow, erosion, and to a lesser extent, gravity. No evidence of current ground water flow was observed in the these deposits.

6.9.1.3.5. Soil and Other Unconsolidated Materials–Topsoil (Unmapped)

A soil horizon was noted atop the Lindavista Formation in areas which were not extensively excavated during previous grading activities. Topsoil was noted at sampling locations B-1, B-2, C-5, E-5, F-3, F-4, F-5, F-9, and F-10 to depths ranging from 7 to 14 in. (18 to 38 cm) below ground surface.

The soil profile observed at sampling locations B-1, B-2, C-5, F-3, F-4, the upper 6 in. (15 cm) of F-5 and F-10 appears to correlate with the loam surface layer of the Huerhuero Loam described in the Work Plan. Additionally, the clay soil profile noted at nodes E-5, F-

5 at depths between 6 in to 9 in. (15.0 to 22.5 cm), and F-9 appears to correlate with the clay subsurface layer of the Huerhuero Loam described in the Work Plan. No other soil profiles, including the Altamont Clay, were observed during soil sampling activities.

The predominant soil horizon encountered at the HCF sampling locations (correlated with the loam surface layer of the HuerHuero Loam) consisted of a brown and red-brown, dry to moist, loose, silty and clayey sand with no to approximately 40 percent gravels by weight. At sample nodes E-5 and F-9, the soil was observed to consist of a moist, dark brown and brown, plastic clay with gravel and cobbles. At node F-5 at a depth of 6 in. (13 cm), the soil consist of a damp to moist, plastic clay with trace sand. At sample node F-10, the soil was observed to consist of dry, dense, grayish brown gravel and cobbles in a silty sand matrix.

The sandy topsoil at the facility is anticipated to posses a relatively moderate to high hydraulic conductivity. The clayey topsoil is anticipated to posses a relatively low hydraulic conductivity. No evidence of historic or recent ground water flow was not observed in the topsoil.

6.9.1.3.6. Paving Surface Materials (Unmapped)–Asphaltic Concrete

Asphaltic concrete pavement was observed at sampling locations A-4 through A-7, B-3, B-6, B-7, B-9, C-5, D-6, D-8, D-9, E-1 through E-3, E-5, E-7, F-2, F-3, R-11A, R-11B, and R-11C. As previously mentioned, the asphaltic concrete pavement at the facility is locally underlain by aggregate base. Asphaltic concrete pavement at the sample locations was observed to consist of a black to very dark gray, gravel within a solid to semi-solid bituminous matrix and ranged in thickness from 2 to 5.5 in. (5 to 14 cm). The condition of the asphaltic concrete pavement ranged from uniform areas with no apparent cracks to broken and weathered areas with numerous cracks.

Areas of broken and cracked asphaltic concrete pavement at the HCF may have facilitated the migration of surface waters into the underlying soils and geologic formations. Soil filled cracks in the area of the trestle suggests that this has occurred in the past. The more uniform and uncracked asphalt areas are not anticipated to be conducive to ground water flow.

6.9.1.3.7. Paving Surface Materials (Unmapped)–Concrete

Concrete pavement was observed at sampling locations B-1, E-4, and E-6. The concrete pavement at the sample locations ranged in thickness from 5.5 to 22 in. (14 to 56 cm). The concrete consists of a gray, very hard, sand and gravel mixture held together by hydrated cement. No apparent cracks or visible voids were observed in the concrete areas sampled. The concrete sampled are not anticipated to be conducive to ground water flow.

6.9.1.4. Hydrology

The HCF is located within the southwestern portion of the Soledad basin, which constitutes the northwestern part of the Los Penasquitos hydrographic subunit. The California Regional Water Quality Control Board, San Diego Region, published the Final Draft of the Water Quality Control Plan for the San Diego Basin on September 8, 1994 (Ref. 6-6). The Water Quality Control Plan indicates that the HCF facility is located in the Miramar reservoir Hydrologic Area (Basin No. 6.10) of the Penasquitos Hydrologic Unit.

The Penasquitos Hydrologic Unit consists of a triangular-shaped area of approximately 170 square miles. No major streams are located in this hydrologic unit, although it is drained by

numerous creeks. The ground water in that portion of the Miramar Hydrologic Area in which the HCF is located ["westerly of the easterly boundary of the right-of-way of Interstate 5" (Ref. 6-6)] has been designated to have no beneficial uses.

No wells are present at or immediately adjacent to the HCF. No ground water was encountered during drilling of the three 30 ft. (9.1 m) deep borings completed in conjunction with the design of the HCF in 1958 (see Appendix A). In addition, no ground water was observed in the shallow soil sampling excavations performed as part of the HCF characterization.

6.9.1.5. Geochemistry

Background surface [0.0 to 6.0 in. (0.0 to 15.0 cm) depth interval] soil samples collected during the HCF characterization investigation contained ^{137}Cs, ^{238}U and ^{232}Th (see Section 3.11.39 and Table 6-6). Background subsurface [6.0 to 12.0 in. (15.0 to 30.0 cm) soil samples collected contained only ^{238}U and ^{232}Th. In surface and subsurface background soil samples, ^{134}Cs, ^{60}Co and ^{241}Am and ^{154}Eu were not detected. The upper range in concentrations of naturally occurring ^{137}Cs expected to be found in background surface soil is defined as the mean of the ^{137}Cs concentration in background samples plus two-times the standard deviation. This value was calculated to be 0.41 pCi/g.

6.9.2. Radioisotope Analyses

The conclusions presented in this section are based on review of the results of laboratory analyses performed on surface and subsurface samples collected from node sample locations and judgement sample locations. Data have been tabulated for each sampling location (see Table 6-6), summarized by sampling strategy (judgement and grid sampling) across the HCF (see Table 6-7 and Table 6-8), and plotted for surface and subsurface materials. Data have also been summarized for sampling locations that appear to be associated with areas of potential contamination (see Table 6-9 and Table 6-10) and for sampling locations that appear not to be associated with areas of potential contamination (see Table 6-11). The results are further discussed in Sections 6.9.2.1 and 6.9.2.2.

Background radioactivity levels are composed of naturally occurring materials (i.e., ^{238}U and ^{232}Th) and global fallout (i.e., ^{137}Cs) from the testing of nuclear weapons or nuclear reactor accidents. Background levels vary considerably throughout the world and must be determined for the General Atomics/La Jolla area. Therefore, it was necessary to obtain original and undisturbed soil, concrete, and asphalt samples on and near the GA site to determine the area background baseline levels.

Characterization samples with positive results will be compared to the background baseline and to the projected D&D radiological release levels for unrestricted use. At this time, only projected release criteria values can be used since the release levels must receive NRC/state approval as part of the formal Decommissioning Plan and will be presented to the NRC/ state for their approval in the Decommissioning Plan. The HCF projected release criteria values were determined based upon values previously approved for GA Decommissioning Projects by the NRC and CAL-DHS.

The minimum number of background samples was determined in accordance with the recommendations of NUREG/CR-5849, Section 8.6, "Identifying Additional Measurement/Sampling Needs" (Ref. 1-1). Although six to ten measurements are recommended as a minimum, a minimum of ten samples was obtained for each of the three sample media.

The background concentrations of beryllium, cadmium and lead were determined by evaluating those samples where no radioisotopes were present above background concentrations (i.e., ^{137}Cs was below 0.41 pCi/g, and no other detectable radioisotopes were present) (see Table 6-5). Samples of paving material matrices were excluded from this evaluation since materials would clearly have originated from off-site sources.

Table 6-4—Radioisotopes Measured in Background Surface Soils

	γ-Scan Results (pCi/g)		
Sample ID	^{137}Cs	^{238}U	^{232}Th
23S-94-153-CH	0.22	1.88	2.26
23S-94-154-CH	0.16	1.89	2.60
23S-94-155-CH	0.21	1.52	2.14
23S-94-156-CH	0.16	2.04	2.60
23S-94-157-CH	0.20	1.66	2.51
23S-94-158-CH	0.15	1.36	1.44
23S-94-160-CH	0.25	1.68	1.80
23S-94-162-CH	0.12	1.71	1.96
23S-94-164-CH	0.19	1.10	1.36
23S-94-166-CH	0.48	1.32	1.80
23S-94-168-CH	0.14	1.90	1.84
23S-94-170-CH	0.10	1.91	1.67
23S-95-184-CH	0.11	1.58	1.58
23S-95-186-CH	0.36	0.98	2.09
23S-95-187-CH	0.20	1.82	1.69
23S-95-189-CH	0.25	0.89	1.61
23S-95-190-CH	0.35	0.88	2.57
Mean	0.21	1.54	1.97
Standard Deviation	0.10	0.38	0.41

Table 6-5—Concentrations of Beryllium (Be), Cadmium (Cd), and Lead (Pb) in Samples Associated with Background Conditions

Matrix	Beryllium		Cadmium		Lead	
	Detected #/ Total # Samples	Range (mg/kg)	Detected #/ Total # Samples	Range (mg/kg)	Detected #/ Total # Samples	Range (mg/kg)
Fill	1/5	0.49/0.52[1]	0/5	—	0/5	—
Fill and Fill/Soil	0/4	—	0/4	—	1/4	4.81/13.80[1]
Topsoil	0/3	—	0/3	—	3/3	5.40 - 6.00
Conglomerate	1/4	0.92	0/2	—	1/3	4.70
Siltstone	2/4	0.59 - 0.85	0/3	—	5/5	5.62 - 22.40
Lindavista	0/2	—	0/1	—	1/2	6.50
Alluvium	0/2	—	0/1	—	1/1	4.80

[1]Denotes duplicate sample

Beryllium was present at background concentrations between 0.49 and 0.92 mg/kg in 4 of the 24 samples collected. Cadmium was not detected in any of the 19 samples collected. Lead was detected in 12 of the 23 background samples. Lead concentrations ranged from 5.62 to 22.4 mg/kg.

This evaluation indicates that cadmium is not a naturally occurring background element. Beryllium may be a naturally occurring background element at concentrations below approximately 1 mg/kg. Lead appears to be present in native materials at background concentrations up to approximately 20 mg/kg. The matrix did not have a discernible difference in the distribution of background concentrations of these elements.

6.9.2.1. Sampling Locations Associated with Areas of Potential Contamination

Evaluation of all sampling locations associated with areas of potential contamination was performed and is summarized on Table 6-9 and Table 6-10. All judgement sampling locations and grid sampling locations potentially associated with each area were listed and summarized. Associations of grid sampling locations were based on general proximity and topography. The areas were separated into two categories based on the concentrations of the analytes measured in the samples.

Twenty-six of the 42 surface samples collected from node sampling locations had ^{137}Cs levels greater than 0.41 pCi/g. All surface samples collected from judgement sampling locations had ^{137}Cs levels greater than 0.41 pCi/g.

Subsurface materials collected from the HCF showed detectable radioisotope levels. However, background soil samples showed no detectable radioisotopes. Although the depth interval of the subsurface soil samples collected during the HCF characterization investigation do not directly correlate with the depth intervals of the background subsurface samples, ^{137}Cs levels were compared to HCF subsurface materials since many of the materials may have been disturbed during the construction and operation of the HCF. That comparison showed that ^{137}Cs was detected above 0.41 pCi/g in subsurface samples collected from 8 node sampling locations and all judgement sampling locations.

The distribution of radioisotope constituents fall into discernible patterns. At every location where ^{134}Cs is present, ^{60}Co is also present above 0.75 pCi/g and ^{137}Cs is present above 2.0 pCi/g.

6.9.2.2. Sampling Locations not Associated with Areas of Potential Contamination

In general, the radioisotope values detected in node samples above the upper background level (0.41 pCi/g) can be associated with identified areas of potential contamination with the exception of node sample locations B-8, and, to a lesser extent, B-7 and the locations summarized on Table 6-11.

6.9.3. Hazardous Constituent Analyses

Beryllium, cadmium, and lead are the hazardous constituents associated with the areas of interest in the HCF Controlled Yard. All three hazardous constituents are elements that can occur naturally at "background" levels in soils. Hence, evaluation of the levels of Be, Cd, and Pb measured at sampling locations required resolution of naturally occurring levels from levels potentially resulting from HCF activities.

Because HCF surface and near-surface materials appear to be largely imported or disturbed materials, the identification of background levels could not be done by simply identifying a background area (i.e., the same soil series at a location beyond the zone of influence of the HCF) and collecting and analyzing soils from the background area. However, because radioisotopes are associated with potential occurrences of the hazardous constituents, radioisotope occurrence above expected background levels (i.e., above 0.41 pCi/g) can act as an indicator of soils potentially impacted by HCF activities. Because the potential occurrences of hazardous constituents and radioisotopes are consistently linked and because the hazardous constituents and the radioisotopes show similar expected solubilities in a soil environment, it can be inferred that the absence of radioisotopes above the expected background range indicates that materials have not been influenced by HCF activities and that the measured levels of Be, Cd, and Pb in those same materials represent naturally occurring or "background" levels (see Section 6.9.1.5). This approach indicated that the naturally occurring range in the encountered "uninfluenced" or "background" materials ranged from 0.49 to 0.92 mg/kg for Be and from 4.7 to 22.4 mg/kg for Pb (see Section 6.9.1.5). Cd was not detected in any of the "uninfluenced" or "background"

materials. **NOTE**: The link between radioactive and hazardous contaminants is presented in Table 6-1 and is related to historical contaminant occurrence.

An evaluation of the hazardous constituent data was made by associating applicable node and judgement sample locations with specifically identified areas of interest and then comparing the measured levels of hazardous constituents to the naturally occurring range in the "uninfluenced" or "background" materials. The selection of applicable node and judgement sample locations was based on two criteria: proximity of the sample location to the area of interest and topography (e.g., if the sampling location was situated downstream from obvious surface runoff pathways from the area of interest, then the sampling location was considered possibly influenced by the area of interest). The results of the hazardous constituent analyses are summarized on Table 6-9 and Table 6-10. The following general conclusions were drawn from the evaluation:

- Beryllium was not detected in any of the surface samples collected from the sampling locations. Beryllium was detected in subsurface samples collected from five of the 34 grid sampling locations at concentrations within the range associated with background conditions.

- Beryllium was detected in samples from four of the nine judgement sampling locations. Only two of the four locations (R13 and R16) showed concentrations above the range associated with background conditions.

- Cadmium was not detected in any of the surface or subsurface samples collected from the grid sampling locations. The absence of detectable Cd levels was consistent with background conditions.

- Cadmium was detected in only the surface samples collected from five of the nine judgement sampling locations. The five surface samples also showed ^{137}Cs levels well above the upper range (0.41 pCi/g) associated with background conditions. The detection of Cd and occurrence of elevated ^{137}Cs levels in the five judgement sampling locations suggests that soils have been impacted from former HCF activities.

- Lead was present in 10 of the 16 surface samples and 11 of the 16 subsurface samples collected from grid sampling locations. The Pb concentrations measured at the grid sampling locations were within the range associated with background conditions with the exception of location R-11B. In general, Pb was present at elevated levels in those samples which had elevated values for ^{137}Cs.

6.9.4. Underground Diesel Fuel Tank

There is a slurry-filled underground diesel fuel storage tank on the east side of the HCF building 23. The tank is of steel construction and is 1100 gallon capacity. Facility records indicate that the tank was used previously for storage of diesel fuel associated with emergency power generator equipment and was backfilled with slurry in 1978. Core samples were taken at various depths (49" to 67" and 67" to 84") to determine if residual hazardous constituents were present. The results of all the analyses performed is listed in Table 4-4. Semi-volatiles and TICs were identified in low ppb levels. TCLP analysis for metals was performed and all results, including lead, were below detection limits. Extractable Fuel Hydrocarbon analysis (EPA method 8015, modified) were non-detectable indicating that for the cores taken there was no evidence of hydrocarbon contamination present near the tank. In accordance with County of San Diego Tank Removal Regulations, additional sampling will not be required until the tank is removed during D&D, as there is no efficient way to sample the area until it can be excavated, and a permit for tank removal is obtained.

Table 6-6—Summary of Analytical Results

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	γ-Scan Results[1] (pCi/g)					Other Analyses[2] (mg/kg)			
				^{134}Cs	^{137}Cs	^{60}Co	^{154}Eu	^{241}Am	Be	Cd	Pb	B
A-4	0.0-5.0 (0.0-2.0)	23BL-94-022-CH	Asphalt	<0.10	1.80	<0.10	<0.30	<0.30	<0.50	<0.50	42.10	2.60
	5.0-30.0 (2.0-12.0)	23S-94-087-CH	Fill[3]	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	5.70	NR
	60.0-87.5 (24.0-35.0)	23S-94-088-CH	Soil/Fill[3]	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	6.00	5.00
A-5	0.0-7.5 (0.0-3.0)	23BL-94-013-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	7.5-27.5 (3.0-11.0)	23S-94-044-CH	Fill	<0.10	4.60	0.56	<0.30	<0.30	<0.50	NR	NR	NR
A-6	0.0-7.5 (0.0-3.0)	23BL-94-012-CH	Asphalt	<0.10	1.52	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	7.5-32.5 (3.0-13.0)	23S-94-040-CH	Ag. Base/ Fill[3]	<0.10	0.62	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	32.5-40.0 (13.0-16.0)	23S-94-039-CH	Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
A-7	0.0-6.2 (0.0-2.5)	23BL-94-014-CH	Asphalt	<0.10	0.34	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	6.2-23.8 (2.5-9.5)	23S-94-043-CH	Fill[3]	<0.10	0.37	0.25	<0.30	<0.30	<0.50	NR	NR	NR
B-1	0.0-15.0 (0.0-6.0)	23C-94-063-CH	Concrete	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	13.70 13.70	2.80 2.90
	15.0-42.5 (6.0-17.0)	23S-94-077-CH	Topsoil	<0.10	<0.10	0.29	<0.30	<0.30	<0.50	<0.50	<4.00	4.10
B-2	1.2-23.8 (0.5-9.5)	23S-94-085-CH	Topsoil	<0.10	0.68	0.53	<0.30	<0.30	<0.50	<0.50	11.60	10.20
	23.8-35.0 (9.5-14.0)	23S-94-086-CH	Topsoil	<0.10	0.22	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
B-3	0.0-7.5 (0.0-3.0)	23BL-94-021-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	7.5-23.8 (3.0-9.5)	23S-94-078-CH	Weathered Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
B-4	0.0-15.0 (0.0-6.0)	23S-94-079-CH	Weathered Conglom.	<0.10	0.22	1.26	<0.30	<0.30	<0.50	NR	NR	NR
	15.0-30.0 (6.0-12.0)	23S-94-080-CH	Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
B-6	0.0-5.0 (0.0-2.0)	23BL-94-011-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	5.0-22.5 (2.0-9.0)	23S-94-038-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
B-7	0.0-3.8 (0.0-1.5)	23BL-94-015-CH	Asphalt	<0.10	2.97	1.44	<0.30	<0.30	<0.50	NR	NR	NR
	5.0-25.0 (2.0-10.0)	23S-94-041-CH	Gravel Conglom.	<0.10	0.77	0.57	<0.30	<0.30	<0.50	NR	NR	NR
B-8	0.0-12.5 (0.0-5.0)	23S-94-075-CH	Fill	0.24	38.30	21.00	<0.30	<0.30	<0.50	NR	NR	NR
	12.5-30.0 (5.0-12.0)	23S-94-076-CH	Topsoil	<0.10	0.43	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
B-9	0.0-12.5 (0.0-5.0)	23BL-94-020-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	12.5-30.0 (5.0-12.0)	23S-94-074-CH	Fill/Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
C-1	2.5-13.8 (1.0-5.5)	23S-94-081-CH	Fill	<0.10	0.81	1.75	<0.30	<0.30	<0.50	NR	NR	NR
	13.8-30.0 (5.5-12.0)	23S-94-082-CH	Fill	<0.10	0.07	<0.10	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	4.81 13.80	3.50 3.60
C-5	0.0-3.8 (0.0-1.5)	23BL-94-017-CH	Asphalt	<0.10	2.92	0.92	<0.30	<0.30	<0.50	NR	NR	NR
	3.8-17.5 (1.5-7.0)	23S-94-042-CH	Soil	<0.10	3.47	4.03	<0.30	<0.30	0.75	NR	NR	NR
C-6	0.0-13.8 (0.0-5.5)	23BL-94-016-CH	Asphalt	<0.10	0.62	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	4.10
	13.8-28.2 (5.5-11.5)	23S-94-037-CH	Aggregate Base	<0.10	0.38	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	2.80
C-7	Not Sampled - Stored Materials Prevented Access to Sampling Location											
C-8	0.0-15.0 (0.0-6.0)	23S-94-070-CH	Alluvium/ Colluvium	<0.10	0.46	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	21.2-42.5 (8.5-17.0)	23S-94-071-CH	Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR

Table 6-6—Summary of Analytical Results

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	γ-Scan Results[1] (pCi/g)					Other Analyses[2] (mg/kg)			
				^{134}Cs	^{137}Cs	^{60}Co	^{154}Eu	^{241}Am	Be	Cd	Pb	B
C-9	0.0-12.5 (0.0-5.0)	23S-94-068-CH	Alluvium	<0.10	0.28	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	15.0-40.0 (6.0-16.0)	23S-94-069-CH	Alluvium	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
C-10	0.0-20.0 (0.0-8.0)	23S-94-066-CH	Alluvium	<0.10	0.17	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	20.0-40.0 (8.0-16.0)	23S-94-067-CH	Alluvium	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
D-1	1.2-18.8 (0.5-7.5)	23S-94-083-CH	Fill[3]	<0.10	0.67	<0.10	<0.30	<0.30	<0.50	<0.50	6.80	6.90
	18.8-45.0 (7.5-18.0)	23S-94-084-CH	Fill[3]	<0.10	0.26	<0.10	<0.30	<0.30	<0.50	<0.50	5.40	NR
D-5	Not Sampled - Trestle Prohibited Access with Sampling Equipment											
D-6	0.0-7.5 (0.0-3.0)	23BL-94-009-CH	Asphalt	<0.10	8.40	<0.10	<0.30	<0.30	NR	NR	<4.00	NR
	7.5-20.0 (3.0-8.0)	23S-94-036-CH	Aggregate Base	<0.10	2.22	<0.10	<0.30	<0.30	<0.50	NR	<4.00	NR
D-7	0.0-13.8 (0.0-5.5)	23S-94-072-CH	Alluvium/ Colluvium	<0.10	4.53	0.44	<0.30	<0.30	<0.50	NR	NR	NR
	15.0-35.0 (6.0-14.0)	23S-94-073-CH	Siltstone	<0.10	0.12	<0.10	<0.30	<0.30	0.61 0.59	NR NR	6.2 NR	NR NR
D-8	0.0-5.0 (0.0-2.0)	23BL-94-019-CH	Asphalt	<0.10	2.71	0.52	<0.30	<0.30	<0.50	NR	NR	NR
	5.0-21.2 (2.0-8.5)	23S-94-062-CH	Aggregate Base	<0.10	0.11	0.27	<0.30	<0.30	0.57	NR	NR	NR
D-9	0.0-5.0 (0.0-2.0)	23BL-94-018-CH	Asphalt	0.65	7.11	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	5.0-17.5 (2.0-7.0)	23S-94-061-CH	Aggregate Base	<0.10	0.23	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
D-10	0.0-5.0 (0.0-2.0)	23S-94-027-CH	Alluvium	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	10.0-30.0 (4.0-12.0)	23S-94-028-CH	Alluvium	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
E-1	0.0-16.2 (0.0-6.5)	23BL-94-003-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
	16.2-32.5 (6.5-13.0)	23S-94-029-CH	Fill	<0.10	1.89	1.47	<0.30	<0.30	NR	NR	NR	NR
E-2	0.0-13.8 (0.0-5.5)	23BL-94-001-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	2.10
	13.8-30.0 (5.5-12.0)	23S-94-006-CH	Fill	<0.10	0.79	0.22	<0.30	<0.30	<0.50	<0.50	12.70	7.60
	52.5-65.0 (21.0-26.0)	23S-94-007-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	5.20
	65.0-72.5 (26.0-29.0)	23S-94-008-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	<4.00 <4.00	6.90 6.50
	75.0-82.5 (30.0-33.0)	23S-94-009-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	10.10
	90.0-100.0 (36.0-40.0)	23S-94-010-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	11.60
E-3	0.0-13.8 (0.0-5.5)	23BL-94-006-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
	13.8-25.0 (5.5-10.0)	23S-94-034-CH	Conglom.	<0.10	0.20	<0.10	<0.30	<0.30	NR	NR	NR	NR
E-4	0.0-11.2 (0.0-4.5)	23C-94-055-CH	Concrete	<0.10	<0.10	0.76	<0.30	<0.30	<0.50	<0.50	NR	3.80
	13.8-35.0 (5.5-14.0)	23S-94-032-CH	Weathered Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	0.92	<0.50	NR	8.70
E-5	0.0-7.5 (0.0-3.0)	23BL-94-008-CH	Asphalt	0.28	2.28	<0.10	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	<4.00 <4.00	1.20 1.40
	11.2-37.5 (4.5-15.0)	23S-94-033-CH	Soil	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
E-6	0.0-15.0 (0.0-6.0)	23C-94-056-CH	Concrete	<0.10	0.54	<0.10	<0.30	<0.30	NR	NR	<4.00	NR
	0.0-30.0 (0.0-12.0)	23C-94-091-CH	Concrete	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
	30.0-55.0 (12.0-22.0)	23C-94-092-CH	Concrete	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
	55.0-87.5 (22.0-35.0)	23S-94-099-CH	Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	8.56	NR

Table 6-6—Summary of Analytical Results

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	γ-Scan Results[1] (pCi/g)					Other Analyses[2] (mg/kg)			
				^{134}Cs	^{137}Cs	^{60}Co	^{154}Eu	^{241}Am	Be	Cd	Pb	B
E-7	0.0-7.5 (0.0-3.0)	23BL-94-007-CH	Asphalt	<0.10	1.58	<0.10	<0.30	<0.30	<0.50	NR	4.60	NR
	7.5-27.5 (3.0-11.0)	23S-94-035-CH	Weathered Lindavista	<0.10	0.21	<0.10	<0.30	<0.30	<0.50	NR	<4.00	NR
E-8	Not Sampled - Elevated Dose Rate											
E-9	0.0-5.0 (0.0-2.0)	23S-94-023-CH	Weathered Conglom.	<0.10	0.19	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
	22.5-37.5 (9.0-15.0)	23S-94-024-CH	Weathered Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	NR	NR	NR
E-10	0.0-5.0 (0.0-2.0)	23S-94-025-CH	Alluvium	<0.10	0.64	<0.10	<0.30	<0.30	<0.50	<0.50	12.10	9.10
	10.0-30.0 (4.0-12.0)	23S-94-026-CH	Alluvium	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	4.80	6.30
F-2	0.0-11.2 (0.0-4.5)	23BL-94-004-CH	Asphalt	<0.10	0.65	<0.10	<0.30	<0.30	NR	NR	NR	NR
	11.2-30.0 (4.5-12.0)	23S-94-030-CH	Fill	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
F-3	0.0-8.8 (0.0-3.5)	23BL-94-005-CH	Asphalt	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
	8.8-37.5 (3.5-15.0)	23S-94-031-CH	Soil/Fill[3]	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	NR	NR
F-4	0.0-5.0 (0.0-2.0)	23S-94-011-CH	Topsoil	<0.10	0.60	0.19	<0.30	<0.30	<0.50	<0.50	NR	8.50
	5.0-15.0 (2.0-6.0)	23S-94-012-CH	Topsoil	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	NR	5.90
F-5	0.0-5.0 (0.0-2.0)	23S-94-013-CH	Topsoil	<0.10	2.10	1.50	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	16.10 12.20	7.50 7.30
	15.0-22.5 (6.0-9.0)	23S-94-014-CH	Topsoil	<0.10	<0.10	<0.10	<0.30	<0.30	0.52 0.49	<0.50 <0.50	<4.00 <4.00	9.40 8.10
F-6	0.0-5.0 (0.0-2.0)	23S-94-015-CH	Weathered Conglom.	<0.10	2.90	2.40	<0.30	<0.30	NR	NR	<4.00	NR
	10.0-22.5 (4.0-9.0)	23S-94-016-CH	Weathered Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	NR	NR	<4.00	NR
F-7	0.0-5.0 (0.0-2.0)	23S-94-017-CH	Weathered Conglom.	<0.10	1.10	0.35	<0.30	<0.30	NR	NR	7.00	NR
	5.0-17.5 (2.0-7.0)	23S-94-018-CH	Conglom.	<0.10	0.60	0.12	<0.30	<0.30	NR	NR	4.70	NR
F-8	0.0-5.0 (0.0-2.0)	23S-94-019-CH	Alluvium	<0.10	0.70	0.25	<0.30	<0.30	<0.50	<0.50	16.50	9.80
	7.5-27.5 (3.0-11.0)	23S-94-020-CH	Lindavista	<0.10	0.08	<0.10	<0.30	<0.30	<0.50	<0.50	6.50	5.90
F-9	0.0-5.0 (0.0-2.0)	23S-94-021-CH	Alluvium	<0.10	0.45	<0.10	<0.30	<0.30	<0.50	<0.50	12.50	7.30
	22.5-30.0 (9.0-12.0)	23S-94-022-CH	Soil	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	4.70	9.60
F-10	0.0-15.0 (0.0-6.0)	23S-94-001-CH	Alluvium	<0.10	2.10	0.58	<0.30	<0.30	<0.50	<0.50	12.30	5.10
	15.0-30.0 (6.0-12.0)	23S-94-002-CH	Soil	<0.10	0.07	<0.10	<0.30	<0.30	<0.50	<0.50	4.20	5.10
	30.0-45.0 (12.0-18.0)	23S-94-003-CH	Conglom.	<0.10	0.47	<0.10	<0.30	<0.30	<0.50	<0.50	4.34	3.50
	75.0-90.0 (30.0-36.0)	23S-94-004-CH	Conglom.	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	6.00
General Trestle Area R-11A	0.0-10.0 (0.0-4.0)	23BL-94-023-CH	Asphalt	158.00	217.00	9.38	<0.30	<0.30	<0.50	<0.50	<4.00	1.80
	10.0-22.5 (4.0-9.0)	23S-94-089-CH	Conglom.	6.71	28.40	4.62	<0.30	<0.30	<0.50	<0.50	103.00	3.10
	45.0-60.0 (18.0-24.0)	23S-94-090-CH	Conglom.	0.26	0.69	<0.10	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	<4.00 <4.00	4.60 4.60
	65.0-90.0 (26.0-36.0)	23S-94-091-CH	Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	<0.50	<0.50	22.40	5.30
	90.0-105.0 (36.0-42.0)	23S-94-092-CH	Siltstone	<0.10	<0.10	<0.10	<0.30	<0.30	0.85	<0.50	5.62	8.50

Table 6-6—Summary of Analytical Results

Sample Location	Depth Interval cm (in.)	Sample ID #	Matrix	γ-Scan Results[1] (pCi/g)					Other Analyses[2] (mg/kg)			
				^{134}Cs	^{137}Cs	^{60}Co	^{154}Eu	^{241}Am	Be	Cd	Pb	B
General Trestle Area R-11B	0.0-6.2 (0.0-2.5)	23BL-94-024-CH	Asphalt	<0.10	41.20	5.38	<0.30	<0.30	<0.50	<0.50	<4.00	1.90
	6.2-18.8 (2.5-7.5)	23S-94-093-CH	Ag. Base/ Fill[3]	0.66	25.80	9.90	<0.30	<0.30	<0.50	<0.50	6.59	2.30
	41.2-50.0 (16.5-20.0)	23S-94-094-CH	Conglom.	<0.10	0.84	0.19	<0.30	<0.30	<0.50	<0.50	<4.00	3.00
	67.5-80.0 (27.0-32.0)	23S-94-095-CH	Conglom.	<0.10	0.79	0.20	<0.30	<0.30	<0.50	<0.50	<4.00	5.20
General Trestle Area R-11C	0.0-5.0 (0.0-2.0)	23BL-94-025-CH	Asphalt	6.56	163.00	23.20	<0.30	<0.30	<0.50	3.83	115.00	2.50
	6.2-22.5 (2.5-9.0)	23S-94-096-CH	Ag. Base/ Fill[3]	0.39	5.88	1.18	<0.30	<0.30	<0.50	<0.50	9.79	2.30
	60.0-67.5 (24.0-27.0)	23S-94-097-CH	Fill	<0.10	0.23	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	4.20
	75.0-82.5 (30.0-33.0)	23S-94-098-CH	Fill	<0.10	0.18	<0.10	<0.30	<0.30	<0.50	<0.50	<4.00	<0.50
Liquid Waste Tanks Area R13:	0.0-17.5 (0.0-7.0)	23S-94-055-CH	Alluvium	2.49	84.00	18.40	<0.30	<0.30	<0.50 <0.50	0.58 0.63	56.60 55.60	3.50 3.80
	35.0-50.0 (14.0-20.0)	23S-94-056-CH	Siltstone	0.88	7.81	2.58	<0.30	<0.30	0.96	<0.50	8.30	11.10
	55.0-97.5 (22.0-39.0)	23S-94-057-CH	Siltstone	<0.10	0.58	0.16	<0.30	<0.30	2.28	<0.50	19.50	8.40
Liquid Waste Tanks Area R16:	0.0-20.0 (0.0-8.0)	23S-94-058-CH	Alluvium	<0.10	126.80	107.30	<0.30	<0.30	0.64	0.89	140.00	5.20
	45.0-57.5 (18.0-23.0)	23S-94-059-CH	Siltstone	<0.10	0.78	1.16	<0.30	<0.30	1.26	<0.50	6.10	5.40
	65.0-100.0 (26.0-40.0)	23S-94-060-CH	Siltstone	<0.10	0.70	0.92	<0.30	<0.30	1.19	<0.50	12.10	5.10
Liquid Waste Tanks Area R35	0.0-17.5 (0.0-7.0)	23S-94-063-CH	Alluvium	1.32	110.40	10.90	<0.30	<0.30	<0.50	1.30	94.30	5.20
	35.0-60.0 (14.0-24.0)	23S-94-064-CH	Siltstone	<0.10	2.36	0.60	<0.30	<0.30	<0.50	<0.50	23.30	6.00
	62.5-100.0 (25.0-40.0)	23S-94-065-CH	Siltstone	<0.10	0.31	<0.10	<0.30	<0.30	<0.50	<0.50	8.01	NR
Drainage Path from Liquid Waste Tanks Area S06A	0.0-7.5 (0.0-3.0)	23S-94-045-CH	Alluvium	0.15	17.10	4.30	<0.30	<0.30	NR	NR	NR	NR
	7.5-22.5 (3.0-9.0)	23S-94-046-CH	Alluvium	<0.10	107.20	14.00	0.82	0.44	NR	NR	NR	NR
	35.0-60.0 (14.0-24.0)	23S-94-047-CH	Alluvium	<0.10	4.07	0.92	<0.30	<0.30	<0.50 <0.50	<0.50 <0.50	10.80 11.00	5.60 2.70
	82.5-100.0 (33.0-40.0)	23S-94-048-CH	Alluvium	<0.10	1.47	0.45	<0.30	<0.30	<0.50	<0.50	19.80	5.20
Drainage Path from Liquid Waste Tanks Area S06B	0.0-18.8 (0.0-7.5)	23S-94-049-CH	Alluvium	<0.10	73.50	13.30	<0.30	<0.30	<0.50	<0.50	406.00	4.40
	30.0-50.0 (12.0-20.0)	23S-94-050-CH	Alluvium	<0.10	5.60	1.53	<0.30	<0.30	<0.50	<0.50	14.30	5.60
	50.0-90.0 (20.0-36.0)	23S-94-051-CH	Siltstone	<0.10	1.59	0.58	<0.30	<0.30	0.58	<0.50	12.10	5.90
Drainage Path from Liquid Waste Tanks Area S06C	0.0-25.0 (0.0-10.0)	23S-94-052-CH	Alluvium	6.29	34.50	4.77	<0.30	<0.30	0.54	0.51	26.50	7.30
	25.0-50.0 (10.0-20.0)	23S-94-053-CH	Alluvium	0.69	5.59	1.60	<0.30	<0.30	<0.50	<0.50	14.10	3.50
	57.5-97.5 (23.0-39.0)	23S-94-054-CH	Siltstone	<0.10	0.60	<0.10	<0.30	<0.30	<0.50	<0.50	17.70	3.00

[1] Estimated values shown for analytes identified below detection limit.

[2] "NR" indicates that an analysis was not requested.

[3] Reflects uncertainty in the field identification of sample matrix as presented on the hand auger logs (see Appendix C).

Table 6-7—Summary of Results from Judgement Sampling Locations

Analyte	Occurrence in Surface Samples		Occurrence in Subsurface Samples		Comments
	Detected #/ Total # Locations	Maximum Value (pCi/g)	Detected #/ Total # Locations	Maximum Value (pCi/g)	
^{134}Cs	6/9	158	5/9	6.71	Maximum value in surface samples excluding R-11A: 6.56 pCi/g. Maximum value in subsurface samples excluding R-11A: 0.61 pCi/g. Present in subsurface at 1 location where not present in surface sample.
^{137}Cs	9/9	217	9/9	107.2	Present in every subsurface sample collected from each location except sample location R-11A.
^{60}Co	9/9	107.3	9/9	14	
^{152}Eu	0/9	—	1/9	0.92	Present in subsurface sample which also had highest value for ^{137}Cs and ^{60}Co.
^{241}Am	0/9	—	1/9	0.44	Present in subsurface sample which also had highest value for ^{137}Cs and ^{60}Co.
Be	2/9	0.64 mg/kg	4/9	2.28 mg/kg	Presence may be due to siltstone.
Cd	5/9	3.83 mg/kg	0/9	<0.5 mg/kg	
Pb	7/9	140 mg/kg	9/9	103 mg/kg	
B	9/9	7.3 mg/kg	9/9	11.1 mg/kg	Values appear to be due to Pyrex glassware in lab.

Table 6-8—Summary of Results for Grid Sampling Locations

Analyte	Occurrence in Surface Samples		Occurrence in Subsurface Samples		Comments
	Detected #/ Total # Locations	Maximum Value (pCi/g)	Detected #/ Total # Locations	Maximum Value (pCi/g)	
^{134}Cs	3/42	0.65	0/42	—	
^{137}Cs	32/42	38.3	18/42	4.6	Concentration increased with depth at 2 locations where detected in surface sample. Present at depth at 4 locations where not detected in surface sample. Maximum value in surface samples excluding B-8 = 8.4 pCi/g.
^{60}Co	15/42	21	9/42	4.03	Concentration increased with depth at 1 locations where detected in surface sample. Present at in subsurface at 4 locations where not detected in surface sample. Maximum value in surface samples excluding B-8 = 2.4 pCi/g.
Be	0/34	<0.5 mg/kg	5/34	0.92 mg/kg	One location where surface sample analyzed and subsurface sample not analyzed. One location where surface sample not analyzed and subsurface sample analyzed. All locations where detected at depth not detected at surface.
Cd	0/14	<0.5 mg/kg	0/13	<0.5 mg/kg	Two locations where surface sample analyzed and subsurface sample not analyzed. One location where surface sample not analyzed and subsurface sample analyzed.
Pb	10/17	42.1 mg/kg	11/17	13.8 mg/kg	Two locations where surface sample analyzed and subsurface sample not analyzed. Two locations where surface sample not analyzed and subsurface sample analyzed.
B	14/14	10.2 mg/kg	12/12	11.6 mg/kg	Values appear to be due to Pyrex glassware in lab.

Table 6-9—Category 1 Areas with Notable Elevated Radioisotope Levels Associated with Areas of Potential Contamination

Item No.	Designation	Associated Sampling Locations	Evaluation of Analytical Results/Comments
R11	General Trestle Area	C-5 C-6 D-6 R-11A R-11B R-11C	γ-Scan Results: • ^{134}Cs <0.3 to 158 pCi/g in surface materials • ^{137}Cs <0.3 to 217 pCi/g in surface materials • ^{60}Co <0.3 to 9.38 pCi/g in surface materials • ^{134}Cs 0.26 to 6.71 pCi/g in subsurface materials • ^{137}Cs <0.3 to 28.4 pCi/g in subsurface materials • ^{60}Co <0.3 to 9.9 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 to 3.83 mg/kg in surface materials • Pb <4.0 to 115 mg/kg in surface materials • B 1.8 to 4.1 mg/kg in surface materials • Be <0.5 to 0.85 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb <4.0 to 103 mg/kg in subsurface materials • B <0.5 to 8.5 mg/kg in subsurface materials Comments: • Ground surface was asphalt. • Subsurface materials consisted of soil, aggregate base, conglomerate & fill.
R12	BEO Storage Shed	B-8 B-9 C-8 C-9 C-10 R-35 S-06A S-06B S-06C	γ-Scan Results: • ^{134}Cs <0.3 to 6.29 pCi/g in surface materials • ^{137}Cs 0.17 to 110.4 pCi/g in surface materials • ^{60}Co <0.3 to 21 pCi/g in surface materials • ^{134}Cs <0.3 to 0.69 pCi/g in subsurface materials • ^{137}Cs <0.3 to 107.2 pCi/g in subsurface materials • ^{60}Co <0.3 to 14 pCi/g in subsurface materials • Eu <0.3 to 0.82 pCi/g in subsurface materials • Am <0.3 to 0.44 pCi/g in subsurface materials Other Analyses: • Be <0.5 to 0.54 mg/kg in surface materials • Cd <0.5 to 1.3 mg/kg in surface materials • Pb 11 to 94.3 mg/kg in surface materials • B 4.4 to 7.3 mg/kg in surface materials • Be <0.5 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb 8 to 23 mg/kg in subsurface materials • B 3.0 to 6.0 mg/kg in subsurface materials Comments: • Ground surface was alluvium @ 7 locations, fill @ 1, asphalt @ 1.

Table 6-9—Category 1 Areas with Notable Elevated Radioisotope Levels Associated with Areas of Potential Contamination

Item No.	Designation	Associated Sampling Locations	Evaluation of Analytical Results/Comments
R33	Approximately 2 m North of Trestle Terminus	C-5 C-6 D-6 D-7 R-11A R-11B R-11C	γ-Scan Results: • ^{134}Cs <0.3 to 158 pCi/g in surface materials • ^{137}Cs 0.64 to 257 pCi/g in surface materials • ^{60}Co <0.3 to 23.2 pCi/g in surface materials • ^{134}Cs <0.3 to 6.71 pCi/g in subsurface materials • ^{137}Cs <0.3 to 28.21 pCi/g in subsurface materials • ^{60}Co <0.3 to 9.9 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials* • Cd <0.5 to 3.83 mg/kg in surface materials* • Pb <4.0 to 115 mg/kg in surface materials* • B <0.5 to 2.5 mg/kg in surface materials* • Be <0.5 to 0.85 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb <4.0 to 103 mg/kg in subsurface materials • B <0.5 to 8.5 mg/kg in subsurface materials Comments: • Ground surface was asphalt. • Subsurface materials consisted of: soil, aggregate base, conglomerate, siltstone. * without R-11C: only Be @ 1.8 mg/kg.
R13 R16 R35	Liquid Waste Tanks Area	C-8 C-9 C-10 D-7 D-8 D-9 D-10 R-13 R-16 R-35 S-06A S-06B S-06C	γ-Scan Results: • ^{134}Cs <0.3 to 6.29 pCi/g in surface materials • ^{137}Cs <0.3 to 126.8 pCi/g in surface materials • ^{60}Co <0.3 to 107.3 pCi/g in surface materials • ^{134}Cs <0.3 to 0.88 pCi/g in subsurface materials • ^{137}Cs <0.3 to 107.2 pCi/g in subsurface materials • ^{60}Co <0.3 to 14.0 pCi/g in subsurface materials • Eu <0.3 to 0.82 pCi/g in subsurface materials • Am <0.3 to 0.44 pCi/g in subsurface materials Other Analyses: • Be <0.5 to 0.64 mg/kg in surface materials • Cd <0.5 to 0.89 mg/kg in surface materials • Pb <4.0 to 140 mg/kg in surface materials • B <0.5 to 5.2 mg/kg in surface materials • Be <0.5 to 2.28 mg/kg in subsurface materials • Cd <0.5 to 23.3 mg/kg in subsurface materials • Pb <4.0 to 11.1 mg/kg in subsurface materials • B <0.5 mg/kg in subsurface materials

Table 6-10—Category 2 Areas with Notable Elevated Radioisotope Levels Associated with Areas of Potential Contamination

Item No.	Designation	Associated Sampling Locations	Evaluation of Analytical Results/Comments
R09	EBOR Laboratory Perimeter Moat	A-7 B-6 B-7 C-6	γ-Scan Results: • ^{134}Cs <0.3 pCi/g in surface materials • ^{137}Cs <0.3 to 2.97 pCi/g in surface materials • ^{60}Co <0.3 to 1.44 pCi/g in surface materials • ^{137}Cs <0.3 to 0.77 pCi/g in subsurface materials • ^{60}Co 0.25 to 0.57 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 mg/kg in surface materials • Pb <4.0 mg/kg in surface materials • B 4.1 mg/kg in surface materials • Be <0.5 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb <4.0 mg/kg in subsurface materials • B 2.8 mg/kg in subsurface materials Comments: • Ground surface was asphalt @ 5 locations, fill @ 1.
R10	Traffic Pattern from Double Door Installed through South Bulkhead of Rm. 23/108	A-4 A-5 B-3 B-4	γ-Scan Results: • ^{137}Cs 0.22 to 1.8 pCi/g in surface materials • ^{60}Co <0.3 to 1.26 pCi/g in surface materials • ^{137}Cs <0.3 to 4.60 pCi/g in subsurface materials • ^{60}Co <0.3 to 0.56 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 mg/kg in surface materials • Pb 42.1 mg/kg in surface materials • B 2.6 mg/kg in surface materials • Be <0.5 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb 6.0 mg/kg in subsurface materials • B 5.0 mg/kg in subsurface materials Comments: • Ground surface was asphalt @ 3 locations, weathered conglomerate @ 1. • Subsurface materials consisted of fill, weathered conglomerate and conglomerate.

Table 6-10—Category 2 Areas with Notable Elevated Radioisotope Levels Associated with Areas of Potential Contamination

Item No.	Designation	Associated Sampling Locations	Evaluation of Analytical Results/Comments
R18	Former Shed Location	E-4 E-5 F-4 F-5	γ-Scan Results: • ^{134}Cs 0.28 to <0.30 pCi/g in surface materials • ^{137}Cs <0.3 to 2.28 pCi/g in surface materials • ^{60}Co <0.3 to 1.5 pCi/g in surface materials
R23	Loaded Low-Level Rad Waste bbls. Storage Area		• none subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 mg/kg in surface materials • Pb <4.0 to 16.1 mg/kg in surface materials • B 1.2 to 9.4 mg/kg in surface materials • Be <0.5 to 0.92 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb <4.0 mg/kg in subsurface materials • B <0.5 to 8.7 mg/kg in subsurface materials Comments: • Ground surface was concrete, asphalt, soil. • Subsurface materials consisted of conglomerate & soil. Radionuclides were: not present in subsurface materials.
S02	Hot Particles found in Yard Areas	A-4 A-5 B-1 B-2 B-3 B-4 C-1	γ-Scan Results: • ^{137}Cs <0.3 to 1.8 pCi/g in surface materials • ^{60}Co <0.3 to 1.75 pCi/g in surface materials • ^{137}Cs <0.3 to 4.6 pCi/g in subsurface materials • ^{60}Co 0.22 to 0.29 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 mg/kg in surface materials • Pb <4.0 to 42.1 mg/kg in surface materials • B 2.6 to 10.2 mg/kg in surface materials • Be <0.5 mg/kg in subsurface materials • Cd <0.5 mg/kg in subsurface materials • Pb <4.0 to 13.8 mg/kg in subsurface materials • B 3.6 to 5.0 mg/kg in subsurface materials Comments: • Ground surface was 3 asphalt, 1 concrete, soil. • Subsurface materials consisted of fill, soil & conglomerate.
P05	Shipping Cask Storage/Staging Area	D-6 E-5 E-6 E-7	γ-Scan Results: • ^{134}Cs 0.28 to <0.3 pCi/g in surface materials • ^{137}Cs 0.54 to 8.4 pCi/g in surface materials • ^{137}Cs 0.22 to 2.22 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Cd <0.5 mg/kg in surface materials • Pb <4.0 to 4.6 mg/kg in surface materials • B <0.5 mg/kg in surface materials • Be <0.5 mg/kg in subsurface materials • Pb <0.5 to 8.56 mg/kg in subsurface materials Comments: • Ground surface was asphalt @ 3 locations, concrete @ 1. • Subsurface materials consisted of aggregate base, soil, siltstone, lindavista.

Table 6-10—Category 2 Areas with Notable Elevated Radioisotope Levels Associated with Areas of Potential Contamination

Item No.	Designation	Associated Sampling Locations	Evaluation of Analytical Results/Comments
R01	Approximately 15 m East of Liquid Waste Tanks Area	D-8 E-7	γ-Scan Results: • ^{137}Cs 1.58 to 2.71 pCi/g in surface materials • ^{60}Co <0.3 to 0.52 pCi/g in surface materials • ^{137}Cs 0.11 to 0.21 pCi/g in subsurface materials • ^{60}Co 0.27 to <0.3 pCi/g in subsurface materials Other Analyses: • Be <0.5 mg/kg in surface materials • Pb 4.6 mg/kg in surface materials • Be <0.5 to 0.57 mg/kg in subsurface materials • Pb <4.0 mg/kg in subsurface materials Comments: • Ground surface was asphalt. • Subsurface materials consisted of aggregate base and weathered lindavista.

Table 6-11—Summary of Analytical Results for Locations not Associated with Identified Areas of Interest
(Locations A–6, D–1, E–1, E–2, E–3, E–9, E–10, F–2, F–3, F–6, F–7, F–8, F–9, and F–10)

Analyte (units for data values)	Interval Description	Numbers of Samples		Range[a]	Median	Mean[b]	Standard Deviation[b]	95% Confidence Level[b]
		Analyzed	With Analyte not Detected					
^{134}Cs (pCi/g)	All Materials	35	35	Not Determined[c]				
^{137}Cs (pCi/g)	Surface Materials – Paved	6	4	<0.3 – 1.52	—	—	—	—
	Surface Materials – Unpaved	8	0	0.19 – 2.9	.685	1.0938	0.9294	3.317
	Subsurface Materials – Disturbed	10	6	0.26 – 1.89	—	—	—	—
	Subsurface Materials – Undisturbed	11	6	0.07 – 0.60	—	—	—	—
^{60}Co (pCi/g)	Surface Materials – Paved	6	6	Not Determined[c]				
	Surface Materials – Unpaved	8	4	0.25 – 2.4	—	—	—	—
	Subsurface Materials – Disturbed	10	8	0.22 – 1.47	—	—	—	—
	Subsurface Materials – Undisturbed	11	10	0.12 – <0.3	Not Determined[c]			
^{152}Eu (pCi/g)	All Materials	35	35	Not Determined[c]				
^{241}Am (pCi/g)	All Materials	35	35	Not Determined[c]				
Be (mg/kg)	All Materials	24[d]	24	Not Determined[c]				
Cd (mg/kg)	All Materials	19[d]	19	Not Determined[c]				
Pb (mg/kg)	Surface Materials – Paved	1	1	Not Determined[c]				
	Surface Materials – Unpaved	7	1	<4.0 – 16.5	12.1	9.886	4.854	13.451
	Subsurface Materials – Disturbed	6[d]	4	<4.0 – 12.7	—	—	—	—
	Subsurface Materials – Undisturbed	8	2	<4.0 – 6.5	4.5	4.155	1.504	5.163
B (mg/kg)	Surface Materials – Paved	1	0	2.1	Not Determined[c]			
	Surface Materials – Unpaved	5	0	5.1 – 9.8	7.3	7.64	1.865	9.418
	Subsurface Materials – Disturbed	5[d,e]	0	5.2 – 11.6	7.6	8.28	2.559	10.720
	Subsurface Materials – Undisturbed	7	0	3.5 – 9.8	5.9	5.771	2.085	7.303

[a] Upper and lower values shown only if more than one value is reported in the data set.

[b] In completing calculations using data reported as < Limit of Detection, values of 1/2 the Limit of Detection were used. Not calculated if more than 25% of the data were not detected values.

[c] Only one or no reported levels above the Limit of Detection.

[d] Does not include duplicate analysis of sample ID # 23S–94–008–CH (Location E–2) which showed no detectable Be, Cd or Pb and B at 6.5 mg/kg.

[e] Does not include pending analysis of sample ID # 23S–94–084–CH (Location D–1).

7. SUMMARY AND CONCLUSIONS

This section of the HCF Characterization Report was designed to provide an overview and summary of the radiological and hazardous characterization data presented in the previous chapters. Table 7-1 is a simplified summary of the survey results for each room and area of the Hot Cell Facility. The table lists the results for floors and walls separately and provides information on asbestos, lead and PCB items associated with each area. A summary of the radiological soil results is also included in this section, and presented in Figure 7-1 and Table 7-2.

7.1. Summary of Facility Results (Refer to Table 7-1)

The summary of the radiological and hazardous results for the Facility are presented by grouping rooms according to similar conditions and proximity to each other. The specific findings for each room may be found in Section 3.11 for radiological, 4.8 for hazardous, 5.3 for asbestos and 6.9 for the surrounding soils (hazardous and radiological).The results presented in this section have been evaluated with regard to the level and types of contamination present for each room to determine areas that will have potential for generating mixed wastes during D&D. In addition, this review includes an evaluation of the potential for subsurface contamination.

Many floor areas within the non-contaminated areas had no positive results and may be free released based on evaluation at the time of removal. Minimal surveys and hazardous sampling were performed on the steel deck above the suspended ceiling. These areas will also require more detailed evaluation during D&D activities.

The Offices (Rooms 103, 102, 100) Lobby (104),and Bathrooms have some isolated areas on the floor and walls which showed positive results and may require minor scabbling to remove the contamination. In general, the rooms do not contain radioactive or hazardous contaminants. The rooms contain removable quantities of lead, asbestos and PCB ballasts.

The Change Room (106), Dark Room (105A), Coffee Room, Operating Gallery (105) and Boiler Room (121) will require that all asbestos floor tile and baseboards be removed. The top 0.25" of the floor and 1 - 4" of the lower walls have contamination. Many hot particles were found and a potential exits for hot particles to have been shielded beneath floor tiles and along the floor/wall junctions. The cell penetrations are contaminated and the extent is unknown. The floor drain in the Change Room (106) and Operating Gallery (105) suggests the potential for minor contamination inside the "clean" drains. Floor materials removed from the Dark Room (105A) and the Boiler Room (121) may contain both radiological and chemical contaminants in the floor. The presence of alcohols and hydrocarbon contaminants (in mg/kg quantities) on the floors in both of these rooms will require additional sampling during D&D to insure that chemicals did not penetrate the subsurfaces. Note that the majority of these rooms contain removable lead, asbestos, and PCB items.

In the Tool Room (117), X-Ray Room (116), Hallway and Mezzanines (116A, 117A) survey results confirmed that the top 1 - 1.5" of the concrete floor, lower portions of the walls and isolated areas on the upper portions of the walls are contaminated. The Mezzanine above Tool Room (117A) appears to have no contamination but seams of corrugated steel floor will need further surveying during dismantlement. The mezzanine above X-Ray Room (116A) has some isolated wall contamination and hot spots around penetrations. Paint will need to be removed from the walls with steel plates. No hazardous contaminants were found in these rooms that exceed the regulatory limits for disposal, however, the lead content of the paint in all of these rooms tested high (TTLC 130 mg/l) which will require that industrial hygiene requirements be implemented for the removal of paint in these rooms. All of these rooms contain removable lead, asbestos, and PCB items.

Table 7-1—Summary of HCF Characterization

Room No.	Hazardous Walls	Hazardous Floors	Rad Walls	Rad Floors	Asbestos	Lead Hardware	PCB Items
103 Office	N	N	N	N	Y	Y	Y
102 Office	N	N	N	N	Y	Y	Y
100 Office	N	N	N	Y	Y	Y	Y
104 Lobby	N	N	N	Y	Y	Y	Y
Ladies Bathroom	N	N	N	N	Y	Y	N
Men's Bathroom	N	N	N	N	Y	Y	N
Coffee Room	N	N	N	Y	Y	Y	N
105 Operating Gallery	Y	N	N	Y	Y	Y	Y
105A Dark Room	N	Y	N	Y	Y	Y	N
106 Change Room	N	N	N	N	Y	Y	Y
107 Warm Metallography	N	Y	Y	Y	Y	Y	Y
108 Be Ox Lab & Machine Shop	Y	Y	Y	Y	Y	Y	Y
108A Machine Shop Weld Area	Y	Y	Y	Y	Y	Y	Y
109 Phys Test Lab/ESTES Lab	N	Y	N	Y	N	Y	Y
111 Service Gallery	N	N	Y	Y	Y	Y	Y
112 Metallography Cell	E	E	Y	Y	E	Y	N
113 Low-Level Cell	E	E	Y	Y	E	Y	N
115 High-Level Cell	E	E	Y	Y	E	Y	N
114 Hydraulic Pump Room	Y	Y	Y	Y	N	Y	Y
116 Pu Lab/X-Ray Room	Y	N	N	Y	Y	Y	Y
116A Pu Lab/X-Ray Mezzanine	Y	N	Y	Y	Y	Y	Y
Hallway	N	N	N	Y	Y	Y	N
117 Tool Room	N	N	N	N	Y	Y	Y
117A Tool Room Mezzanine	N	N	N	N	N	Y	Y
118 Decon Room	E	E	Y	Y	N	Y	Y
119 ESTES Effluent System	Y	N	Y	Y	Y	Y	Y
120 ESTES Sample Preparation	N	N	Y	Y	Y	Y	Y
Corridor/Ladies Change Room	N	N	Y	Y	Y	Y	Y
121 Boiler/Utility Room	N	Y	N	Y	Y	Y	Y
122 Manipulator Repair	Y	Y	Y	Y	Y	Y	Y
Storage Shed	N	N	N	Y	N	N	Y
Roof	N	N	N	Y	Y	N	N
Exterior	N	N	Y	N	Y	Y	Y
108 Roof And Exterior	N	N	Y	Y	N	N	N
Outside HEPA Unit	N	N	Y	Y	Y	Y	N
Stack Sampling Pit	N	N	N	Y	Y	Y	N
Ventilation Exhaust Pit	N	N	Y	Y	Y	N	N
Liquid Waste Vault	Y	Y	Y	Y	N	N	N

N = No contaminants present
Y = Contaminants present
E = Exception Area

For the Corridor, ESTES Effluent System Room (119), ESTES Sample Preparation Room (120), and Physical Test Lab/ESTES (109), most of the concrete floors and walls are contaminated. Hot particles are in the overhead utilities and in the case of the corridor, fixed within the floor paint. If any cracks exist in the floor, concrete contamination will be more extensive. Based upon the core drilling results, subsurface soil contamination beneath portions of the ESTES lab is identified certain. Room 109 has confirmed PCB and lead contamination in the floor. The walls of all of these rooms had a high lead content in the paint (TTLC 130 mg/l) that is below regulatory concern for mixed waste, but will have to be considered for industrial hygiene protection during D&D. All of these rooms contain removable lead, asbestos (not 109) and PCB items.

In the Pump Room (114), Decon Room (118), Service Gallery (111) and Manipulator Repair Room (122), floor contamination may be up to 1.5" deep in many areas and wall contamination is extensive. The ceiling was not surveyed and based upon room results, known instances of airborne radioactivity, contamination of the ceiling is likely. Core results demonstrate that subsurface soil contamination is identified. Soil contamination with SNM is evident in yard areas immediately adjacent to the X-Ray Room wall/doors from the Pu sump tank area. Subsurface soil contamination was also identified below the Decon Room, Pump Room, Service Gallery, and Manipulator Repair Rooms. In addition, the floor of the Pump Room has subsurface contamination in the form of various tentatively identified semi-volatile compounds in mg/kg quantities including alcohols and hydrocarbons. PCBs and lead are also present in the Pump Room and the Manipulator Repair Room. All of these rooms contain removable lead, asbestos, and PCB items.

In the Warm Metallography Room (107), floor contamination in concrete exists up to 1.5" depth, and several locations of contamination were identified in lower portions of drywall and plaster walls. Extensive contamination in abandoned fume hood ventilation exhaust ducts is likely. Subsurface soils may have been affected by source of subsurface soil contamination in adjacent Room 122, Manipulator Repair. Hazardous contamination was also confirmed in Room 107 in the form of semi-volatile compounds including phenols, hydrocarbons, alcohols, and other organics. PCBs were also detected in µg/kg quantities which may be below regulatory concern. Materials removed from this room during D&D will need to be segregated and evaluated for mixed waste analysis. Room 107 contains removable lead, asbestos, and PCB items.

The results obtained for the Machine Shop (108) and Machine Shop Weld Area (108A) indicate that the entire floor and large portions of the walls are contaminated with hazardous and radioactive materials. Many hot particles were found in the overhead utilities. Uranium-235 was found in the NE corner and the ventilation system must be sampled for SNM prior to dismantlement. Even though core results showed limited subsurface contamination only in the machine shop weld area, process knowledge indicates that the subsurface trench area should have additional samples taken during D&D. Core and floor samples analyzed for hazardous constituents confirmed the presence of hydrocarbon and other organics known to be used in machining oils. The oils from the machines will be handled as hazardous or mixed waste, some of which contain PCBs. Both these rooms contain removable lead, asbestos, and PCB items.

The exterior, entire roof, and associated material and north wall is radiologically contaminated. Room 108 east wall appears to be contaminated extensively. The remaining walls appear to have some minor isolated areas of contamination. The outside ventilation unit is contaminated and should be disposed as radioactive waste by compaction or similar volume reduction process after evaluation for SNM. There were no hazardous contaminants identified for these areas with the exception of asbestos on the roof and exterior. There are small amounts of lead and removable PCB items present.

The heart of the HCF contains three shielded cells, which includes the High-Level Cell, the Low-Level Cell and the Metallography Cell. The High-Level Cell was used to perform destructive post-irradiation examinations on fuels and structural materials. The Low-Level Cell served as the staging area for samples being transferred into and out of the High-Level Cell. The Metallography Cell was used to prepare irradiated fuel and metal samples (i.e., grinding) for use with the metallograph. Because of the nature of work performed in these cells, they are highly contaminated and have relatively high general area dose rates. Concrete and subsurface soil core samples taken around the cells indicate a high probability of subsurface contamination under the north end of the Metallography Cell and under much of the Low-Level Cell. Process knowledge indicates that the subsurface contamination does exist under the wells in the High-Level Cell.

A total of forty-one (41) samples were collected and analyzed for the presence asbestos. Twenty-one (21) of the samples analyzed tested positive for asbestos. Samples taken from both the radiologically controlled and non-controlled regions of the HCF tested positive for asbestos. Inaccessible portions of the HCF deemed excepted areas, will have to examined for asbestos construction materials and components during decontamination and decommissioning. Prior to dismantlement of the HCF, the asbestos containing material should be removed from the HCF to preclude disturbance and eliminate potential airborne hazards.

The majority of the rooms have several types of lead and brass (which leaches lead) in the form of bricks, hardware on doors, sprinkler systems, pipe and drain fittings and other fixtures. Larger brass and lead items that are easily removed from the facility should be surveyed and released (if possible) prior to the start of large scale D&D efforts (such as wall scabbling, etc.) to minimize the amounts of contaminated lead which would be generated as potential mixed waste.

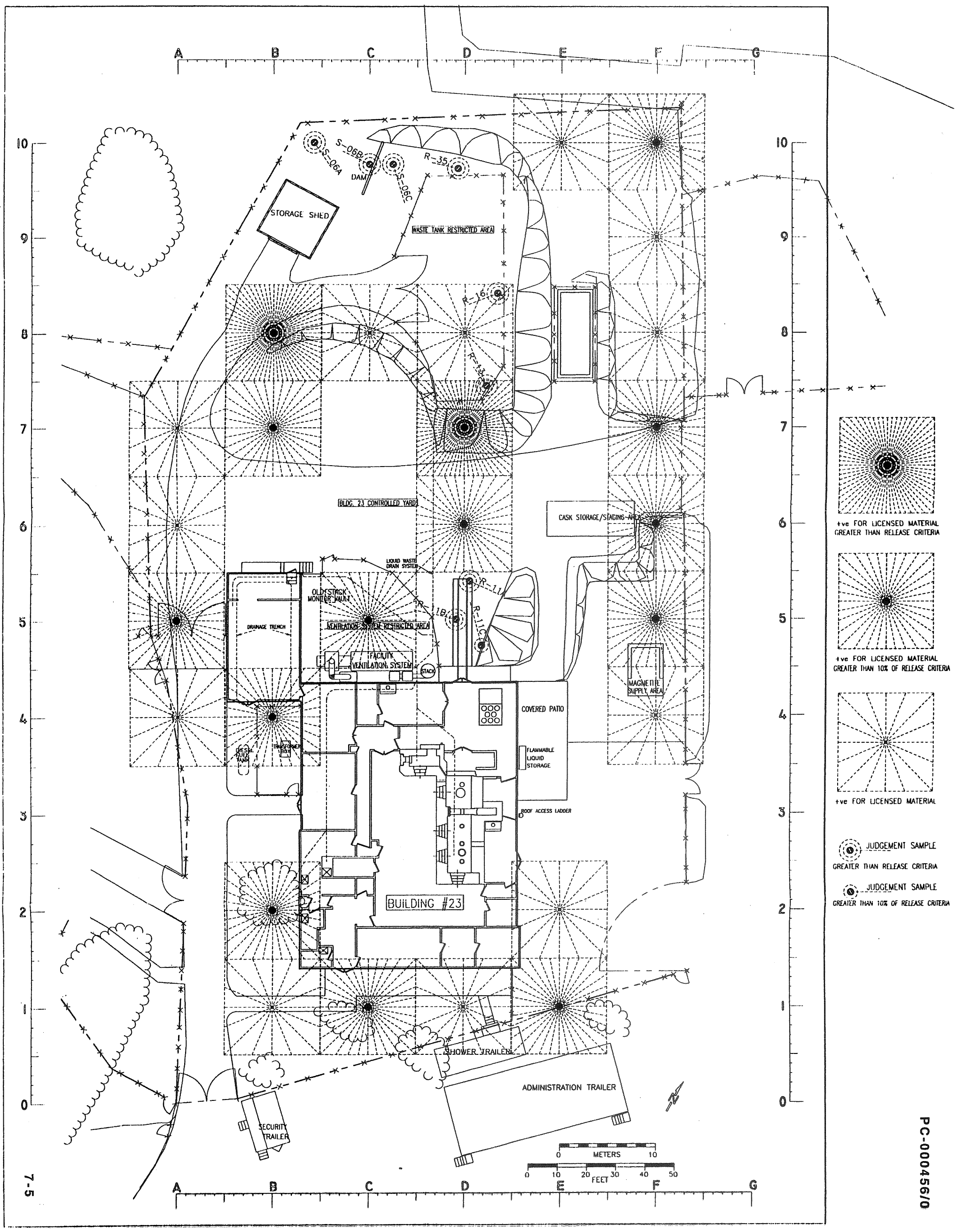
7.2. Summary of Soil Results

7.2.1. Radioisotope Analyses

The conclusions presented in this section are based on review of the results of laboratory analyses performed on surface and subsurface samples collected from node sample locations and judgement sample locations. Data have been tabulated for each sampling location, summarized by sampling strategy (judgement and grid sampling) across the HCF (see 2), and plotted for surface and subsurface materials (see Figure 7-1). Data have also been summarized for sampling locations that appear to be associated with areas of potential contamination and for sampling locations that appear not to be associated with areas of potential contamination. The results were previously discussed in Sections 6.9.2.1 and 6.9.2.2.

The background concentrations of beryllium, cadmium and lead were determined by evaluating those samples where no radioisotopes were present above background concentrations (i.e., ^{137}Cs was below 0.41 pCi/g, and no other detectable radioisotopes were present). Samples of paving material matrices were excluded from this evaluation since materials would clearly have originated from off-site sources.

Beryllium was present at background concentrations between 0.49 and 0.92 mg/kg in 4 of the 24 samples collected. Cadmium was not detected in any of the 19 samples collected. Lead was detected in 12 of the 23 background samples. Lead concentrations ranged from 5.62 to 22.4 mg/kg.



PC-000456/0

Fig. 7-1—Summary of Radiological Soil Results

Table 7-2—Summary of Soils, Concrete and Asphalt Analytical Results, Radiological

Sample Location	Depth Interval cm (in)	^{137}Cs (pCi/g)	^{134}Cs (pCi/g)	^{60}Co (pCi/g)	Sample ID #	Sum C_n/G_n
A-4 (#)	0.0-5.0(0.0-2.0)	1.8	< LLD	< LLD	23BL-94-022-CH	0.120
	5.0-30.0(2.0-12.0)	< LLD	< LLD	< LLD	23S-94-087-CH	0.000
	60.0-87.5(24.0-35.0)	< LLD	< LLD	< LLD	23S-94-088-CH	0.000
A-5 (##)	0.0-7.5(0.0-3.0)	< LLD	< LLD	< LLD	23BL-94-013-CH	0.000
	7.5-27.5(3.0-11.0)	4.6	< LLD	0.56	23S-94-044-CH	0.377
A-6 (#)	0.0-7.5(0.0-3.0)	1.52	< LLD	< LLD	23BL-94-012-CH	0.101
	7.5-32.5 (3.0-13.0)	0.62	< LLD	< LLD	23S-94-040-CH	0.041
	32.5-40.0 (13.0-16.0)	< LLD	< LLD	< LLD	23S-94-039-CH	0.000
A-7 (#)	0.0-6.2 (0.0-2.5)	0.34	< LLD	< LLD	23BL-94-014-CH	0.023
	6.2-23.8(2.5-9.5)	0.37	< LLD	0.25	23S-94-043-CH	0.056
B-1 (#)	0.0-15.0(0.0-6.0)	< LLD	< LLD	< LLD	23C-94-063-CH	0.000
	15.0-42.5(6.0-17.0)	< LLD	< LLD	0.29	23S-94-077-CH	0.036
B-2 (##)	1.2-23.8(0.5-9.5)	0.68	< LLD	0.53	23S-94-085-CH	0.112
	23.8-35.0(9.5-14.0)	0.22	< LLD	< LLD	23S-94-086-CH	0.015
B-3	0.0-7.5(0.0-3.0)	< LLD	< LLD	< LLD	23BL-94-021-CH	0.000
	7.5-23.8(3.0-9.5)	< LLD	< LLD	< LLD	23S-94-078-CH	0.000
B-4 (##)	0.0-15.0(0.0-6.0)	0.22	< LLD	1.26	23S-94-079-CH	0.172
	15.0-30.0(6.0-12.0)	< LLD	< LLD	< LLD	23S-94-080-CH	0.000
B-6	0.0-5.0(0.0-2.0)	< LLD	< LLD	< LLD	23BL-94-011-CH	0.000
	5.0-22.5(2.0-9.0)	< LLD	< LLD	< LLD	23S-94-038-CH	0.000
B-7 (##)	0.0-3.8(0.0-1.5)	2.97	< LLD	1.44	23BL-94-015-CH	0.378
	5.0-25.0(2.0-10.0)	0.77	< LLD	0.57	23S-94-041-CH	0.123
B-8 (###)	0.0-12.5(0.0-5.0)	38.3	0.24	21	23S-94-075-CH	5.202
	12.5-30.0(5.0-12.0)	0.43	< LLD	< LLD	23S-94-076-CH	0.029
B-9	0.0-12.5(0.0-5.0)	< LLD	< LLD	< LLD	23BL-94-020-CH	0.000
	12.5-30.0(5.0-12.0)	< LLD	< LLD	< LLD	23S-94-074-CH	0.000
C-1 (##)	2.5-13.8(1.0-5.5)	0.81	< LLD	1.75	23S-94-081-CH	0.273
	13.8-30.0(5.5-12.0)	0.07	< LLD	< LLD	23S-94-082-CH	0.005
C-5 (##)	0.0-3.8(0.0-1.5)	2.92	< LLD	0.92	23BL-94-017-CH	0.310
	3.8-17.5(1.5-7.0)	3.47	< LLD	4.03	23S-94-042-CH	0.735
C-6	0.0-13.8(0.0-5.5)	0.62	< LLD	< LLD	23BL-94-016-CH	0.041
	13.8-28.2(5.5-11.5)	0.38	< LLD	< LLD	23S-94-037-CH	0.025
C-7	N/A - Not Sampled					
C-8 (#)	0.0-15.0(0.0-6.0)	0.46	< LLD	< LLD	23S-94-070-CH	0.031
	21.2-42.5(8.5-17.0)	< LLD	< LLD	< LLD	23S-94-071-CH	0.000
C-9	0.0-12.5(0.0-5.0)	0.28	< LLD	< LLD	23S-94-068-CH	0.019
	15.0-40.0(6.0-16.0)	< LLD	< LLD	< LLD	23S-94-069-CH	0.000
C-10	0.0-20.0(0.0-8.0)	0.17	< LLD	< LLD	23S-94-066-CH	0.011
	20.0-40.0(8.0-16.0)	< LLD	< LLD	< LLD	23S-94-067-CH	0.000
D-1 (#)	1.2-18.8(0.5-7.5)	0.67	< LLD	< LLD	23S-94-083-CH	0.045
	18.8-45.0(7.5-18.0)	0.26	< LLD	< LLD	23S-94-084-CH	0.017
D-5	N/A - Not Sampled					
D-6 (##)	0.0-7.5(0.0-3.0)	8.4	< LLD	< LLD	23BL-94-009-CH	0.560
	7.5-20.0(3.0-8.0)	2.22	< LLD	< LLD	23S-94-036-CH	0.148
D-7 (###)	0.0-13.8(0.0-5.5)	4.53	< LLD	0.44	23S-94-072-CH	0.357
	15.0-35.0(6.0-14.0)	0.12	< LLD	< LLD	23S-94-073-CH	0.008

Table 7-2—Summary of Soils, Concrete and Asphalt Analytical Results, Radiological

Sample Location	Depth Interval cm (in)	^{137}Cs (pCi/g)	^{134}Cs (pCi/g)	^{60}Co (pCi/g)	Sample ID #	Sum C_n/G_n
D-8 (#)	0.0-5.0(0.0-2.0)	2.71	< LLD	0.52	23BL-94-019-CH	0.246
	5.0-21.2(2.0-8.5)	0.11	< LLD	0.27	23S-94-062-CH	0.041
D-9	0.0-5.0(0.0-2.0)	7.11	0.65	< LLD	23BL-94-018-CH	0.539
	5.0-17.5(2.0-7.0)	0.23	< LLD	< LLD	23S-94-061-CH	0.015
D-10	0.0-5.0(0.0-2.0)	< LLD	< LLD	< LLD	23S-94-027-CH	0.000
	10.0-30.0(4.0-12.0)	< LLD	< LLD	< LLD	23S-94-028-CH	0.000
E-1 (##)	0.0-16.2(0.0-6.5)	< LLD	< LLD	< LLD	23BL-94-003-CH	0.000
	16.2-32.5(6.5-13.0)	1.89	< LLD	1.47	23S-94-029-CH	0.310
E-2 (#)	0.0-13.8(0.0-5.5)	< LLD	< LLD	< LLD	23BL-94-001-CH	0.000
	13.8-30.0(5.5-12.0)	0.79	< LLD	0.22	23S-94-006-CH	0.080
	52.5-65.0(21.0-26.0)	< LLD	< LLD	< LLD	23S-94-007-CH	0.000
	65.0-72.5(26.0-29.0)	< LLD	< LLD	< LLD	23S-94-008-CH	0.000
	75.0-82.5(30.0-33.0)	< LLD	< LLD	< LLD	23S-94-009-CH	0.000
	90.0-100.0(36.0-40.0)	< LLD	< LLD	< LLD	23S-94-010-CH	0.000
E-3	0.0-13.8(0.0-5.5)	< LLD	< LLD	< LLD	23BL-94-006-CH	0.000
	13.8-25.0(5.5-10.0)	0.2	< LLD	< LLD	23S-94-034-CH	0.013
E-4	0.0-11.2(0.0-4.5)	< LLD	< LLD	0.76	23C-94-055-CH	0.095
	13.8-35.0(5.5-14.0)	< LLD	< LLD	< LLD	23S-94-032-CH	0.000
E-5	0.0-7.5(0.0-3.0)	2.28	0.28	< LLD	23BL-94-008-CH	0.180
	11.2-37.5(4.5-15.0)	< LLD	< LLD	< LLD	23S-94-033-CH	0.000
E-6	0.0-15.0(0.0-6.0)	0.54	< LLD	< LLD	23C-94-056-CH	0.036
	0.0-30.0(0.0-12.0)	< LLD	< LLD	< LLD	23C-94-091-CH	0.000
	30.0-55.0(12.0-22.0)	< LLD	< LLD	< LLD	23C-94-092-CH	0.000
	55.0-87.5(22.0-35.0)	< LLD	< LLD	< LLD	23S-94-099-CH	0.000
E-7	0.0-7.5(0.0-3.0)	1.58	< LLD	< LLD	23BL-94-007-CH	0.105
	7.5-27.5(3.0-11.0)	0.21	< LLD	< LLD	23S-94-035-CH	0.014
E-8	N/A - Not Sampled					
E-9	0.0-5.0(0.0-2.0)	0.19	< LLD	< LLD	23S-94-023-CH	0.013
	22.5-37.5(9.0-15.0)	< LLD	< LLD	< LLD	23S-94-024-CH	0.000
E-10 (#)	0.0-5.0(0.0-2.0)	0.64	< LLD	< LLD	23S-94-025-CH	0.043
	10.0-30.0(4.0-12.0)	< LLD	< LLD	< LLD	23S-94-026-CH	0.000
F-2	0.0-11.2(0.0-4.5)	0.65	< LLD	< LLD	23BL-94-004-CH	0.043
	11.2-30.0(4.5-12.0)	< LLD	< LLD	< LLD	23S-94-030-CH	0.000
F-3	0.0-8.8(0.0-3.5)	< LLD	< LLD	< LLD	23BL-94-005-CH	0.000
	8.8-37.5(3.5-15.0)	< LLD	< LLD	< LLD	23S-94-031-CH	0.000
F-4 (#)	0.0-5.0(0.0-2.0)	0.6	< LLD	0.19	23S-94-011-CH	0.064
	5.0-15.0(2.0-6.0)	< LLD	< LLD	< LLD	23S-94-012-CH	0.000
F-5 (##)	0.0-5.0(0.0-2.0)	2.1	< LLD	1.5	23S-94-013-CH	0.327
	15.0-22.5(6.0-9.0)	< LLD	< LLD	< LLD	23S-94-014-CH	0.000
F-6 (##)	0.0-5.0(0.0-2.0)	2.9	< LLD	2.4	23S-94-015-CH	0.493
	10.0-22.5(4.0-9.0)	< LLD	< LLD	< LLD	23S-94-016-CH	0.000
F-7 (##)	0.0-5.0(0.0-2.0)	1.1	< LLD	0.35	23S-94-017-CH	0.117
	5.0-17.5(2.0-7.0)	0.6	< LLD	0.12	23S-94-018-CH	0.055
F-8 (#)	0.0-5.0(0.0-2.0)	0.7	< LLD	0.25	23S-94-019-CH	0.078
	7.5-27.5(3.0-11.0)	0.08	< LLD	< LLD	23S-94-020-CH	0.005
F-9 (#)	0.0-5.0(0.0-2.0)	0.45	< LLD	< LLD	23S-94-021-CH	0.030
	22.5-30.0(9.0-12.0)	< LLD	< LLD	< LLD	23S-94-022-CH	0.000

Table 7-2—Summary of Soils, Concrete and Asphalt Analytical Results, Radiological

Sample Location	Depth Interval cm (in)	^{137}Cs (pCi/g)	^{134}Cs (pCi/g)	^{60}Co (pCi/g)	Sample ID #	Sum C_n/G_n
F-10 (##)	0.0-15.0(0.0-6.0)	2.1	< LLD	0.58	23S-94-001-CH	0.212
	15.0-30.0(6.0-12.0)	0.07	< LLD	< LLD	23S-94-002-CH	0.005
	30.0-45.0(12.0-18.0)	0.47	< LLD	< LLD	23S-94-003-CH	0.031
	75.0-90.0(30.0-36.0)	< LLD	< LLD	< LLD	23S-94-004-CH	0.000
Judgement Locations						
General Trestle Area	0.0-10.0(0.0-4.0)	217	158	9.38	23BL-94-023-CH	31.439
R-11A (###)	10.0-22.5(4.0-9.0)	28.4	6.71	4.62	23S-94-089-CH	3.142
	45.0-60.0(18.0-24.0)	0.69	0.26	< LLD	23S-94-090-CH	0.072
	65.0-90.0(26.0-36.0)	< LLD	< LLD	< LLD	23S-94-091-CH	0.000
	90.0-105.0(36.0-42.0)	< LLD	< LLD	< LLD	23S-94-092-CH	0.000
General Trestle Area	0.0-6.2(0.0-2.5)	41.2	< LLD	5.38	23BL-94-024-CH	3.419
R-11B (###)	6.2-18.8(2.5-7.5)	25.8	0.66	9.9	23S-94-093-CH	3.023
	41.2-50.0(16.5-20.0)	0.84	< LLD	0.19	23S-94-094-CH	0.080
	67.5-80.0(27.0-32.0)	0.79	< LLD	0.2	23S-94-095-CH	0.078
General Trestle Area	0.0-5.0(0.0-2.0)	163	6.56	23.2	23BL-94-025-CH	14.423
R-11C (##)	6.2-22.5(2.5-9.0)	5.88	0.39	1.18	23S-94-096-CH	0.578
	60.0-67.5(24.0-27.0)	0.23	< LLD	< LLD	23S-94-097-CH	0.015
	75.0-82.5(30.0-33.0)	0.18	< LLD	< LLD	23S-94-098-CH	0.012
Liquid Waste Tanks	0.0-17.5(0.0-7.0)	84	2.49	18.4	23S-94-055-CH	8.149
Area R13 (###)	35.0-50.0(14.0-20.0)	7.81	0.88	2.58	23S-94-056-CH	0.931
	55.0-97.5(22.0-39.0)	0.58	< LLD	0.16	23S-94-057-CH	0.059
Liquid Waste Tanks	0.0-20.0(0.0-8.0)	126.8	< LLD	107.3	23S-94-058-CH	21.866
Area R16 (###)	45.0-57.5(18.0-23.0)	0.78	< LLD	1.16	23S-94-059-CH	0.197
	65.0-100.0(26.0-40.0)	0.7	< LLD	0.92	23S-94-060-CH	0.162
Liquid Waste Tanks	0.0-17.5(0.0-7.0)	110.4	1.32	10.9	23S-94-063-CH	8.854
Area R35 (###)	35.0-60.0(14.0-24.0)	2.36	< LLD	0.6	23S-94-064-CH	0.232
	62.5-100.0(25.0-40.0)	0.31	< LLD	< LLD	23S-94-065-CH	0.021
Drainage Path from	0.0-7.5(0.0-3.0)	17.1	0.15	4.3	23S-94-045-CH	1.692
Liquid Waste Tanks	7.5-22.5(3.0-9.0)	107.2	< LLD	14	23S-94-046-CH	8.897
Area S06A (###)	35.0-60.0(14.0-24.0)	4.07	< LLD	0.92	23S-94-047-CH	0.386
	82.5-100.0(33.0-40.0)	1.47	< LLD	0.45	23S-94-048-CH	0.154
Drainage Path from	0.0-18.8(0.0-7.5)	73.5	< LLD	13.3	23S-94-049-CH	6.562
Liquid Waste Tanks	30.0-50.0(12.0-20.0)	5.6	< LLD	1.53	23S-94-050-CH	0.565
Area S06B (###)	50.0-90.0(20.0-36.0)	1.59	< LLD	0.58	23S-94-051-CH	0.178
Drainage Path from	0.0-25.0(0.0-10.0)	34.5	6.29	4.77	23S-94-052-CH	3.525
Liquid Waste Tanks	25.0-50.0(10.0-20.0)	5.59	0.69	1.6	23S-94-053-CH	0.642
Area S06C (###)	57.5-97.5(23.0-39.0)	0.6	< LLD	< LLD	23S-94-054-CH	0.040

NOTE: Sample numbers contain information regarding the type of sample media. For example, samples with an "S" following the number 23 are soil media, and samples with a "BL" following the number 23 are blacktop or asphalt, and samples with a "C" following the number 23 are concrete media.

NOTE: Soil sample numbers are blocked and shaded if their result exceeds proposed release criteria, and blocked if their result was greater than or equal to 10% of proposed release criteria. Asphalt concrete results are not applicable to the final release survey.

Legend:

(#) The location soil was positive for licensed material in excess of background values.

(##) The location soil was positive for licensed material and exceeded 10% of proposed release criteria.

(###) The location soil was positive for licensed material and exceeded proposed release criteria.

<LLD means that measured concentration was less than the lower limits of detection for the isotope.

Sum C_n/G_n is the sum of the ratios of isotope concentrations to respective guideline limits for indicated nuclides. The Sum C_n/G_n must be less than unity (i.e., 1) to comply with proposed release criteria.

This evaluation indicates that cadmium is not a naturally occurring background element. Beryllium may be a naturally occurring background element at concentrations below approximately 1 mg/kg. Lead appears to be present in native materials at background concentrations up to approximately 20 mg/kg. The matrix did not have a discernible difference in the distribution of background concentrations of these elements.

7.2.1.1. Sampling Locations Associated with Areas of Potential Contamination

Evaluation of all sampling locations associated with areas of potential contamination was performed and is summarized on 2. All judgement sampling locations and grid sampling locations potentially associated with each area were listed and summarized. Associations of grid sampling locations were based on general proximity and topography. The highest activities at a specific sampling location were generally encountered in surface soils, with the exception of a single location that was denoted as "Drainage Path from Liquid Waste Tanks Area S06A," where the 3-9 in. sample was approximately five times greater concentration than the surface sample for the same location. This particular location is believed to have been biased against surface activity peaking due to deposition of silts and soil disturbance by runoff control measures that had been employed to prevent inadvertent release of activity from the Facility yard. The radiological characterization results showed a general area that was more significantly affected by residual radioactivity in the soil than most of the yard, and is the most likely area to review for soil remediation efforts. Soil concentrations discovered underneath the Facility during core sampling were generally much lower than the more elevated samples taken in the general yard area, and are not expected to require extensive remediation efforts. In general, soil concentrations in the majority of the yard will require only a moderate amount of soil remediation involving surface soils only.

Subsurface materials collected from the HCF showed detectable radioisotope levels. However, background soil samples showed no detectable radioisotopes. Although the depth interval of the subsurface soil samples collected during the HCF characterization investigation do not directly correlate with the depth intervals of the background subsurface samples, ^{137}Cs levels were compared to HCF subsurface materials since many of the materials may have been disturbed during the construction and operation of the HCF. That comparison showed that ^{137}Cs was detected above 0.41 pCi/g in subsurface samples collected from 8 node sampling locations and all judgement sampling locations.

The distribution of radioisotope constituents fall into discernible patterns. At every location where ^{134}Cs is present, ^{60}Co is also present above 0.75 and ^{137}Cs is present above 2.0

7.2.1.2. Sampling Locations not Associated with Areas of Potential Contamination

In general, the radioisotope values detected in node samples above the upper background level (0.41 pCi/g) can be associated with identified areas of potential contamination with the exception of node sample locations B-8, and, to a lesser extent, B-7 and the locations summarized on 2.

7.2.2. Hazardous Constituent Analyses

Beryllium, cadmium, and lead are the hazardous constituents associated with the areas of interest in the HCF Controlled Yard. (Boron, while not a hazardous constituent, was considered a possible indicator or tracer chemical because it was commonly associated with potential occurrences of the hazardous constituents.) All three hazardous constituents are elements that can occur naturally at "background" levels in soils. Hence, evaluation of the

levels of Be, Cd, and Pb measured at sampling locations required resolution of naturally occurring levels from levels potentially resulting from HCF activities.

Because HCF surface and near-surface materials appear to be largely imported (fill material) or disturbed (graded, excavated) materials, the identification of true area background levels could not be done by simply identifying a background area (i.e., the same soil series at a location beyond the zone of influence of the HCF) and collecting and analyzing soils from the background area. However, because radioisotopes are associated with potential occurrences of the hazardous constituents, radioisotope occurrence above expected background levels (i.e., above 0.41 pCi/g) can act as an indicator of soils potentially impacted by HCF activities. Because the potential occurrences of hazardous constituents and radioisotopes are consistently linked and because the hazardous constituents and the radioisotopes show similar expected solubilities in a soil environment, it can be inferred that the absence of radioisotopes above the expected background range indicates that materials have not been influenced by HCF activities and that the measure levels of Be, Cd, and Pb in those same materials represent naturally occurring or "background" levels (see Section 6.9.1.6). This approach indicated that the naturally occurring range in the encountered "uninfluenced" or "background" materials ranged from 0.49 to 0.92 mg/kg for Be and from 4.7 to 22.4 mg/kg for Pb (see Section 6.9.1.6). Cd was not detected in any of the "uninfluenced" or "background" materials.

An evaluation of the hazardous constituent data was made by associating applicable node and judgement sample locations with specifically identified areas of interest and then comparing the measured levels of hazardous constituents to the naturally occurring range in the "uninfluenced" or "background" materials. The selection of applicable node and judgement sample locations was based on two criteria: proximity of the sample location to the area of interest and topography (e.g., if the sampling location was situated downstream from obvious surface runoff pathways from the area of interest, then the sampling location was considered possibly influenced by the area of interest). The results of the hazardous constituent analyses were previously summarized on Tables 6-9 and 6-10. The following general conclusions were drawn from the evaluation:

- Beryllium was not detected in any of the surface samples collected from the sampling locations. Beryllium was detected in subsurface samples collected from five of the 34 grid sampling locations at concentrations within the range associated with background conditions.

- Beryllium was detected in samples from four of the nine judgement sampling locations. Only two of the four locations (R13 and R16) showed concentrations above the range associated with background conditions.

- Cadmium was not detected in any of the surface or subsurface samples collected from the grid sampling locations. The absence of detectable Cd levels was consistent with background conditions.

- Cadmium was detected in only the surface samples collected from five of the nine judgement sampling locations. The five surface samples also showed ^{137}Cs levels well above the upper range (0.41 pCi/g) associated with background conditions. The detection of Cd and occurrence of elevated ^{137}Cs levels in the five judgement sampling locations suggests that soils have been impacted from former HCF activities.

- Lead was present in 10 of the 16 surface samples and 11 of the 16 subsurface samples collected from grid sampling locations. The Pb concentrations measured at the grid sampling locations were within the range associated with background conditions with

the exception of location R-11B. In general, Pb was present at elevated levels in those samples which had elevated values for ^{137}Cs.

- Use of the boron results as a tracer for contaminant release was impaired due to interferences from the Pyrex® glassware (borosilicate glass) used in the digestion.

8. DEFINITIONS

Activity (MDA)—the background for a specific counting time that will yield the true count rate within a predetermined degree of accuracy.

Affected Area—Areas that have a potential for radioactive contamination (based upon process knowledge) or known radioactive contamination (based upon past radiological surveillance).

After-Built—Wall, floor, ceiling or other facility structure that was built or added to the facility after the original construction and after initial operation.

Background Radiation—Radiation from cosmic sources; naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material) and global fallout as it exists in the environment from the testing of nuclear explosion devices.

Check Source—A source (e.g., radioactive source) not necessarily calibrated that is used to confirm the continuing satisfactory operation of an instrument (also termed "Reference Source").

Control Chart—A graphic chart with statistical control limits and plotted values (usually in chronological order) of some measured parameter for a series of samples. Use of the charts provides a visual display of the pattern of the data, enabling early detection of time trends and shifts in level.

Direct (scanning) Survey—An evaluation technique performed by moving a detection device over the surface at some consistent speed and distance above the surface to detect elevated levels of radiation. Scanning provides qualitative or semi-quantitative, rather than quantitative, data.

Exceptions List—Areas or locations that are not feasible to sample yet contaminants are suspected.

Guideline Level—Reference value for measurement comparison to a target levels or concentrations that are presumed to be lower (conservative) estimates of release criteria that will be established in the D&D Plan.

Indirect Survey—Obtaining the smearable radioactivity found on building or equipment surfaces and expressed in units of activity per surface area (typically disintegrations per minute per $100cm^2$ (dpm/100 cm^2).

Lower Limit of Detection (LLD)—The smallest amount of sample activity that will yield a net count sufficiently large to imply its presence.

Method Detection Limit (MDL)—Defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the value is above zero.

Measurement—Either a direct or indirect survey or the collection of sample media.

Media Sample—The collection of a particular building construction material (i.e., floor tile, ceiling tile, drywall, paint pieces, etc.) that will be analyzed or counted on radiation detection instrumentation.

Minimum Detectable—The minimum activity which will produce counts above

Quality Assurance (QA)—Planned and systematic actions necessary to provide adequate confidence that a facility, structure, system, or component will perform satisfactorily and safely in service. Quality assurance includes quality control (QC), which comprises all those actions necessary to control and verify the features and characteristics of a material, process, product, or service to specified requirements.

Quality Control (QC)—Refers to those actions necessary to control and verify the features and characteristics of a material, process, product, service, or activity to specified requirements. The aim of quality control is to provide quality that is satisfactory, adequate, dependable, and economic.

Representative Sample—A sample taken to depict the characteristics of a lot or population as accurately and precisely as possible. A representative sample may be a "random sample" or a "stratified sample" depending upon the objective of the sampling and the characteristics of the conceptual population.

Sample Two definitions: (1) A subset or group of objects selected from a larger set, called the "lot" or "population"; and (2) an extracted portion or subset of an effluent stream or environmental media.

Smearable—Surface activity that can be removed and collected for measurement by wiping the surface with moderate pressure.

Special Nuclear Material—Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235.

Standard—A material having a known property that can be accurately established based on its physical or chemical characteristics.

Unaffected Area—All areas not classified as affected areas. These areas are not expected to contain residual radioactivity, based upon a knowledge of the site history and previous survey information.

9. REFERENCES

1-1 NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination," Draft report for comment, June 1992

1-2 Branch Technical Position on "Site Characterization for Decommissioning Sites," draft July 1992

1-3 U.S. Nuclear Regulatory Commission Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operations)-Effluent Streams and the Environment," Rev. 1, February 1979

1-4 EPA-600/7-77-144,"Quality Control for Environmental Measurements using Gamma Ray Spectrometry, " December 1977

1-5 QAMS 005/80, "Interim Guidelines and Specifications for preparing Quality Assurance Project Plans

1-6 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA SW-846, 1986, Third Edition

1-7 EPA 600/2-80-018, "Samples and Sampling Procedures for Hazardous Waste Streams," 1980

2-1 Kennedy, "Geology of the San Diego Metropolitan Area, California" Bulletin 200A, 1975

2-2 USDA Soils Conservation Service, "Soil Survey San Diego Area, California," 1973

2-3 San Diego Air Pollution Control District, 1993 Annual Report

2-4 Evenson, "Water Resources Investigations Report 88-4030," 1989

2-5 City of San Diego Planning Department, Environmental Quality Division, Environmental Impact Report: Torrey Pines Science Center Planning Industrial Development, EDQ No. 86-08845, 1986

2-6 Source Point - 1990 Census Total Population and Housing Units, San Diego Association of Governments, April 1991

6-1 United States Department of Energy, EML Procedures Manual, HASL-300, 27th Edition, Available from NTIS, Springfield, VA, 1992

6-2 Soil Survey Staff, "Examination and Description of Soils," Chapter 3, Soil Survey Manual, Agricultural Handbook 18, Soil Conservation Service, Washington, D. C., 1991

6-3 Leighton and Associates, Seismic Safety Study for the City of San Diego, 1983

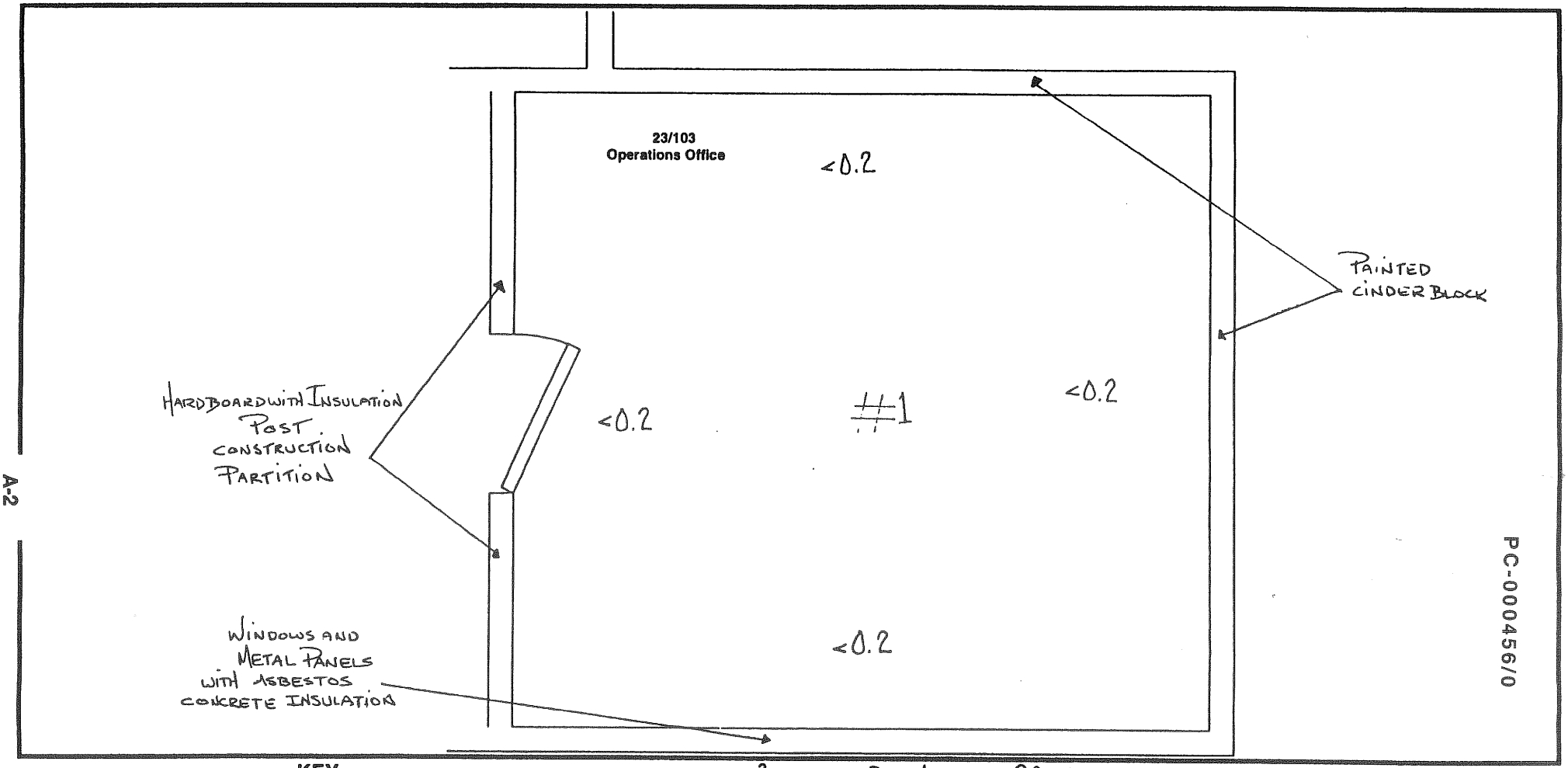
6-4 Kennedy, M. P., Geology of the San Diego Metropolitan Area, California, Section A: Western San Diego Metropolitan Area—Del Mar, La Jolla, and Point Loma 7-1/2 minute quadrangles, Bulletin 200A, California Division of Mines and Geology, Sacramento, California, 1975

6-5 City of San Diego Engineering and Development Department, Map Book, Scale: 1" = 400', 1983

6-6 California Regional Water Quality Control Board, San Diego Region, Water Quality Control Plan, San Diego Basin, Final Draft, September 8, 1994

APPENDIX A—RADIOLOGICAL CHARACTERIZATION DATA

MAP#: 23-103	LOCATION: Operations Office	DATE: 09-06-94	TIME 1200	SURVEY # 23-94-0-0-4-1-1-CH



A-2

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/PROBE AREA	90 Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR			#1	<1000	A TOTAL OF 84 SMEARS TAKEN IN ROOM 103 FOR
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY		N / A			CHARACTERIZATION PURPOSES. ALL SMEARS WERE
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)				N	A	< 1000 dpm/100cm². DIRECT FRISK SURVEY RESULTS
✳	CONTACT DOSE RATE	+	12" DOSE RATE		N	A		WERE < 1000 dpm/PROBE AREA. THE 5% OF SMEARS
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					COUNTED FOR ALPHA WERE < 200 dpm/100cm².
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				N / A	#1 LARGE AREA MASSLIN SMEAR. NO HOT PARTICLES FOUND.

SURVEYOR: P. BUTLER / B. HUNTER	REVIEWED BY: Douglas A. Warren	DATE: 10/6/94	JOB RWP# 3-028	INST. TYPE:	RO2	L-2221	LUDLUM 3
				SERIAL NUMBER	2938	97269	74305
				CAL DUE DATE:	11-30-94	09-22-94	02-17-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: REMARKS AND 23- 103 EXCEPTIONS	LOCATION: HOT CELL OFFICE AREA	DATE: 09-06-94	TIME 1200	SURVEY # 23-94- 0-0-4-1-1-CH

R1 DROPPED CEILING IS STEEL STUDS WITH DRYWALL AND ACOUSTICAL TILES GLUED TO UNDERSIDE. APPX. 4' VOID SPACE ABOVE TO STEEL DECK

R2 FOUR SMEARS TAKEN ON TOP SIDE OF DROPPED CEILING. ACCESSED VOID SPACE THROUGH 2 FT. HATCH ABOVE DOORWAY.

R3 AIR VENT DUCT COVER WAS REMOVED AND SURVEYED INTERNALLY 6IN. - 12IN.. RESULTS WERE <1000 dpm/100CM² AND <1000 dpm/PROBE AREA.

R4 HARDBOARD WALL COVERING AND INSULATION WAS REMOVED EXPOSING BACKSIDE OF RM. 102 S EAST WALL. WOOD STUDS AND INSULATION WAS SURVEYED. RESULTS WERE <1000 dpm/100CM² AND <1000 dpm/P.A.. HARDBOARD AND INSULATION REPLACED

R5 WALL IS METAL PANELS WITH ASBESTOS CONCRETE INSULATION HENCE NO SAMPLE MEDIA COLLECTED BY H.P..

E11 STEEL PLATE CEILING AND WALLS AND TOPSIDE OF DROP CEILING ABOVE DROP CEILING.

E32 AREA BETWEEN WALL STUD FRAME WORK AND FLOOR

E33 ~~DU~~ VENTILATION DUCT WORK ABOVE DROPPED CEILING. } Added to E11 DU 12/13/94

☐ DIRECT FRISK SURVEYS WERE ~~PERMOI~~ BUMS-6-94 PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD AND MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

SURVEYOR: B HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/6/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

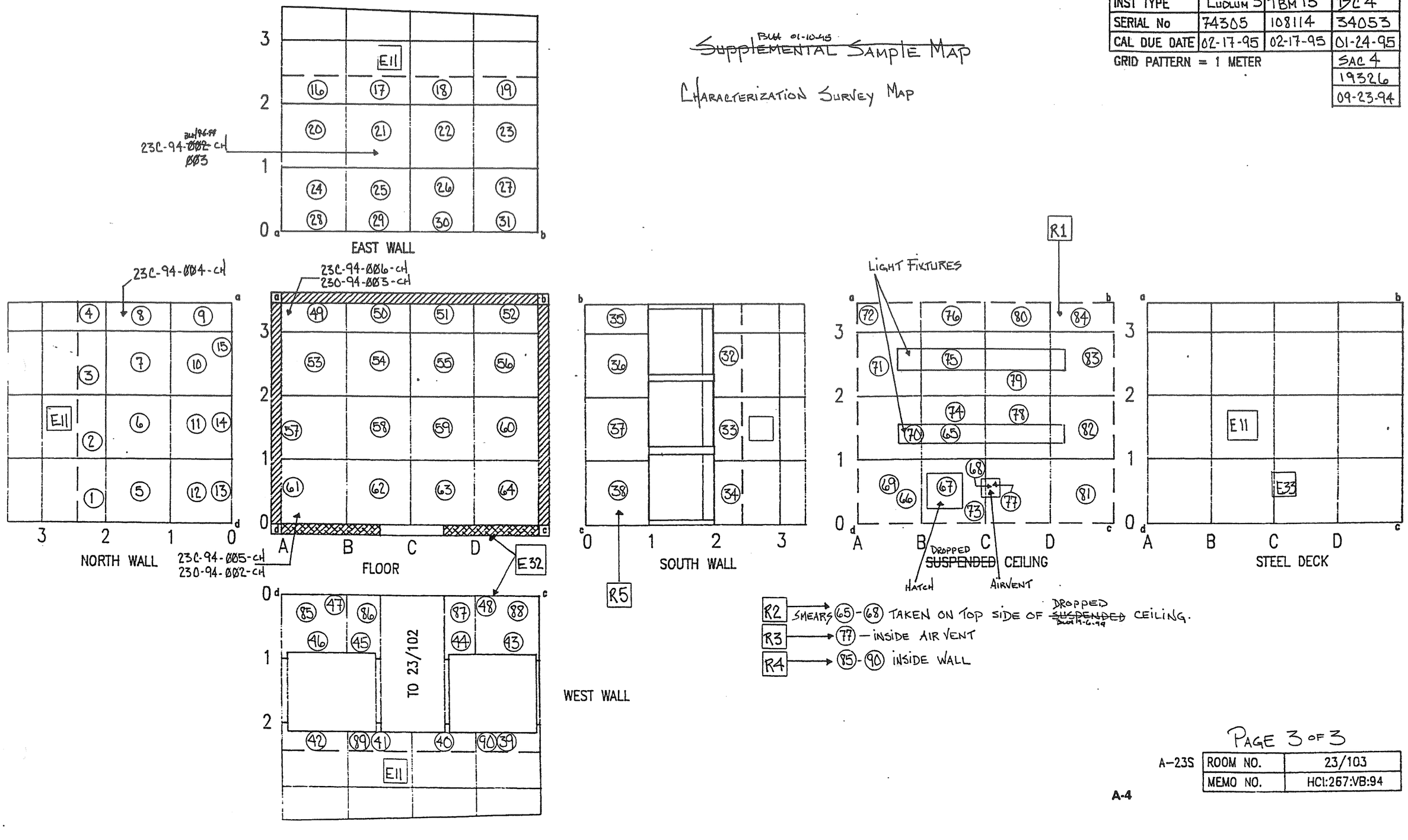
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP

SURVEY No: 23-94-411-CH
SURVEY BY: B HUNTER

INST TYPE	LUDLUM 3	TBM 15	BC 4
SERIAL No	74305	108114	34053
CAL DUE DATE	02-17-95	02-17-95	01-24-95
GRID PATTERN = 1 METER			SAC 4
			19326
			09-23-94

BUH 01-10-95
~~SUPPLEMENTAL~~ SAMPLE MAP

CHARACTERIZATION SURVEY MAP

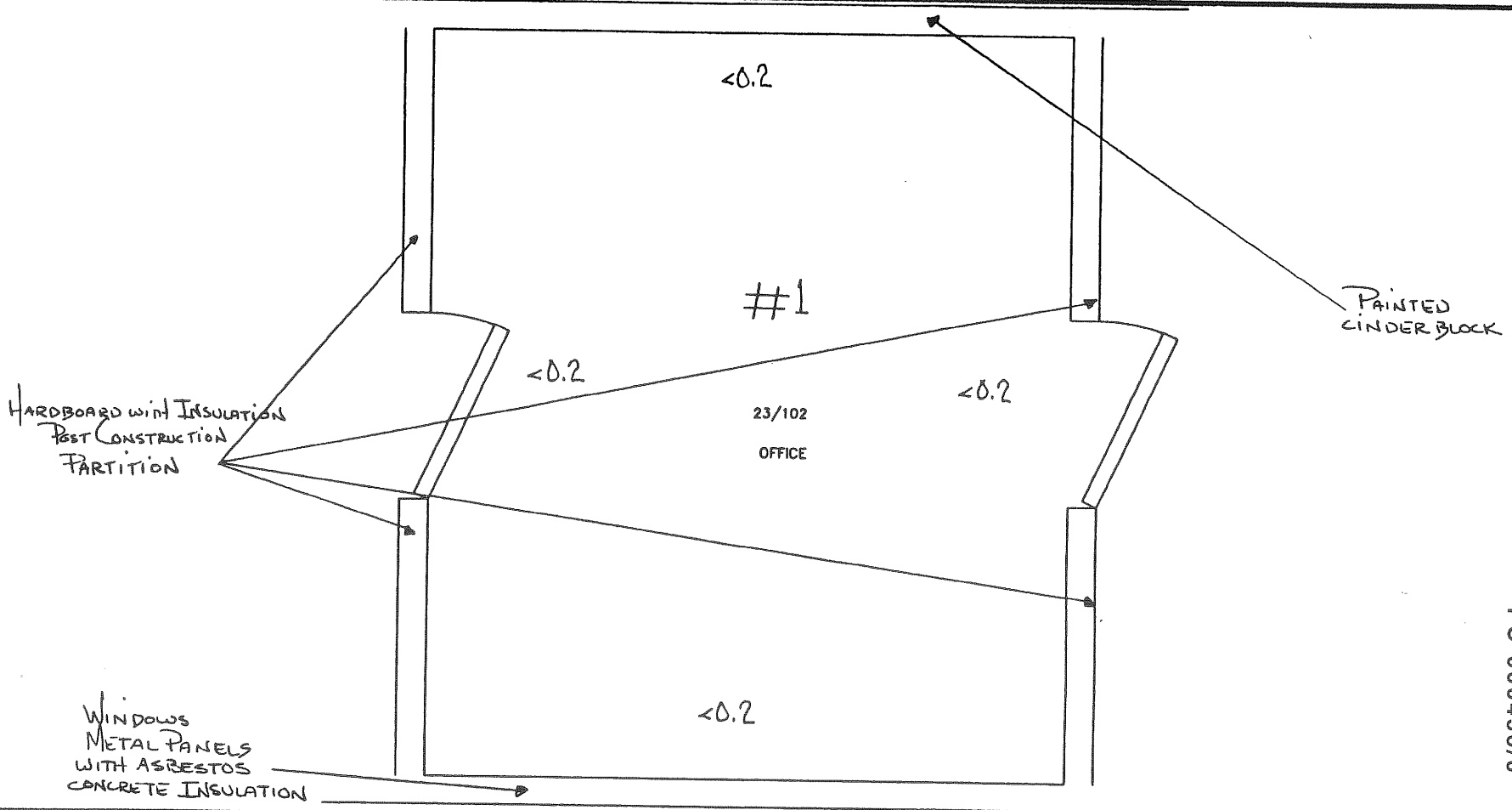


PAGE 3 OF 3

A-23S

ROOM NO.	23/103
MEMO NO.	HCI:267:VB:94

MAP#: 23-102	LOCATION: HP/Operations Office Area	DATE: 09-07-94	TIME 1300	SURVEY # 23-94-0-0-4-1-2-CH



PC-000456/0

A-5

KEY				No.	dpm/100 cm² No.	dpm/PROBE AREA	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR			#1 <1000	A TOTAL OF 86 SMEARS TAKEN FOR CHARACTERIZATION
#	LARGE AREA SMEAR	***	BOUNDARY		N A		PURPOSES. ALL SMEARS WERE <1000 dpm/100cm² B'g. 5% OF
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)				N A	SMEARS WERE COUNTED FOR ALPHA CONTAMINATION. RESULTS
*	CONTACT DOSE RATE	+	12" DOSE RATE				WERE <200 dpm/100cm² ∝. ALL DIRECT FRISK SURVEY RESULTS
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				WERE <1000 dpm/PROBE AREA.
HS	HOT SPOT	Δ	NEUTRON DOSE RATE			N A	#1 LARGE AREA MASSLIN SMEAR. NO HOT PARTICLES FOUND.

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
B. HUNTER P. BUTLER	Douglas A. Warner	10/6/94	3-028		RO2 2938 11-30-94	L-2221 97269 09-22-94	N A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: REMARKS AND 23-102 EXCEPTIONS	LOCATION: OFFICE AREA	DATE: 09-07-94	TIME 1300	SURVEY # 23-94-0-0-4-1-2-CH

R1 DROPPED CEILING IS STEEL STUDS WITH DRYWALL AND ACOUSTICAL TILES GLUED TO UNDERSIDE. APPRX. 4' VOID SPACE ABOVE.

R2 POST CONSTRUCTION HARDBOARD PARTITION WAS REMOVED TO FROM RM.103 AND WALL SURVEYED INTERNALLY. NO LOOSE OR FIXED CONTAMINATION FOUND. (SEE REMARK#4 ON SURVEY 23-94-411-CH.)

R3 WALL IS METAL PANELS WITH ASBESTOS CONCRETE INSULATION HENCE NO SAMPLE MEDIA COLLECTED BY H.P.

12E STEEL DECK AND WALLS ABOVE DROPPED CEILING AND TOPSIDE OF DROP CEILING.

27E VENTILATION DUCT WORK ABOVE DROPPED CEILING.

28E AREA BETWEEN WALL AND FLOOR

29E POST CONSTRUCTION HARDBOARD WITH INSULATION PARTITION TO BE SURVEYED INTERNALLY AND BETWEEN FLOOR AND WALL JUNCTION.

R4 VENT DUCT COVER WAS REMOVED AND SURVEYED INTERNALLY 6"-12". RESULTS WERE <1000 dpm/100cm AND <1000 dpm/PA.

☐ DIRECT FRISK SURVEYS WERE PERFORM AT A MINIMUM OF ALL GRID INTERSECTION, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD AND MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

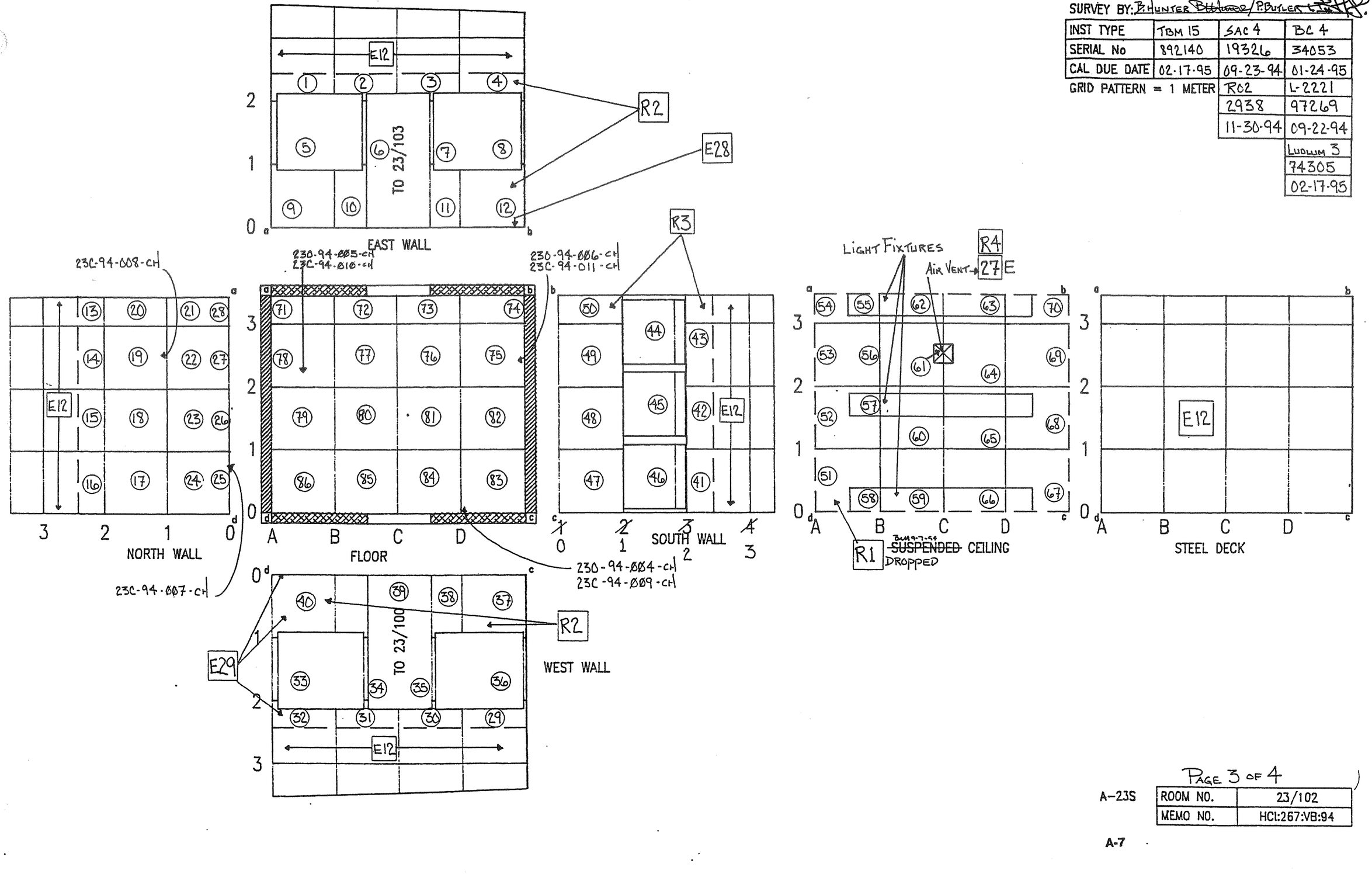
SURVEYOR: T. HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/6/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are ~~in mR/hr~~ unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-412-CH

SURVEY BY: P. HUNTER ~~BUTLER~~ / P. BUTLER

INST TYPE	TBM 15	SAC 4	BC 4
SERIAL No	892140	19326	34053
CAL DUE DATE	02-17-95	09-23-94	01-24-95
GRID PATTERN = 1 METER		R02	L-2221
		2938	97269
		11-30-94	09-22-94
			LUDLUM 3
			74305
			02-17-95



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A-23S

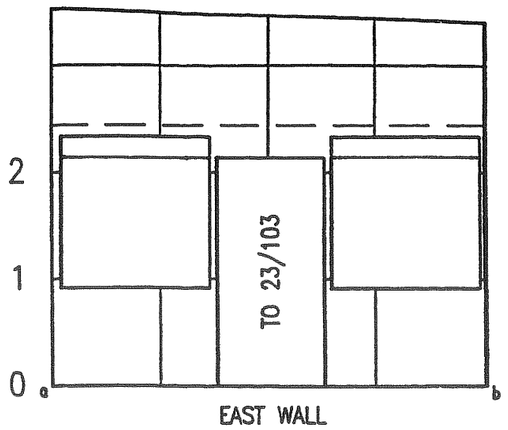
ROOM NO.	23/102
MEMO NO.	HCI:267:VB:94

Supplemental Sample Map

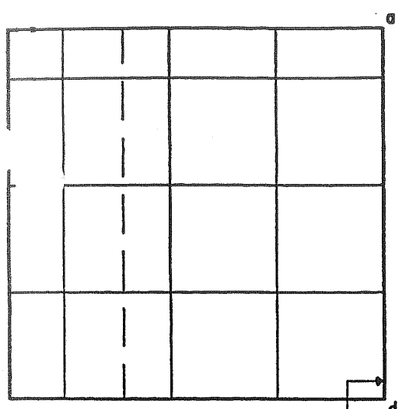
SURVEY No: 23-94-412-CH
SURVEY BY: P. Hunter Bolland / P. Butler

INST TYPE	Ludlum 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

GRID PATTERN = 1 METER

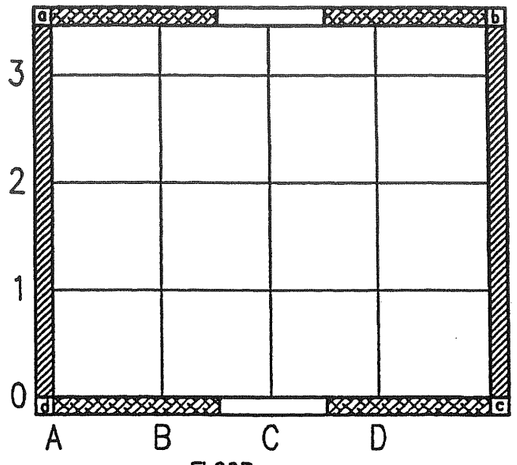


EAST WALL

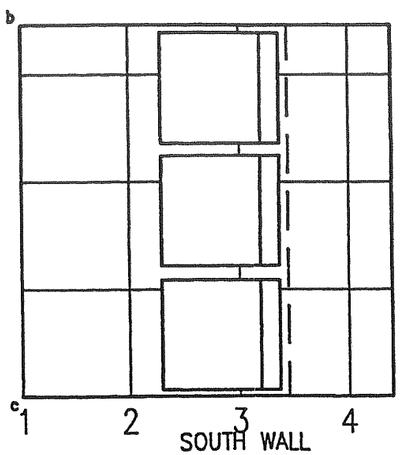


NORTH WALL

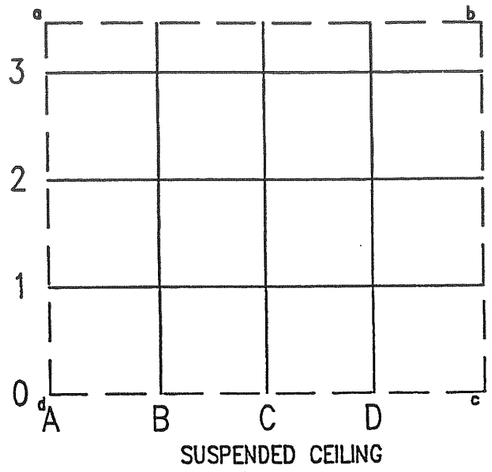
23L-95-318-CH
<1000dpm/probe area



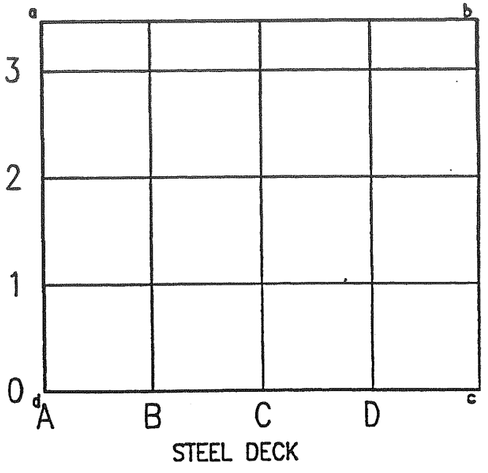
FLOOR



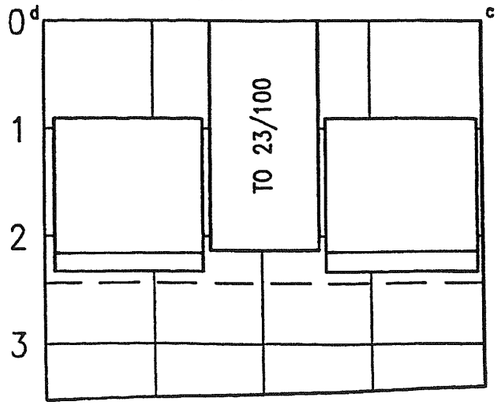
SOUTH WALL



SUSPENDED CEILING



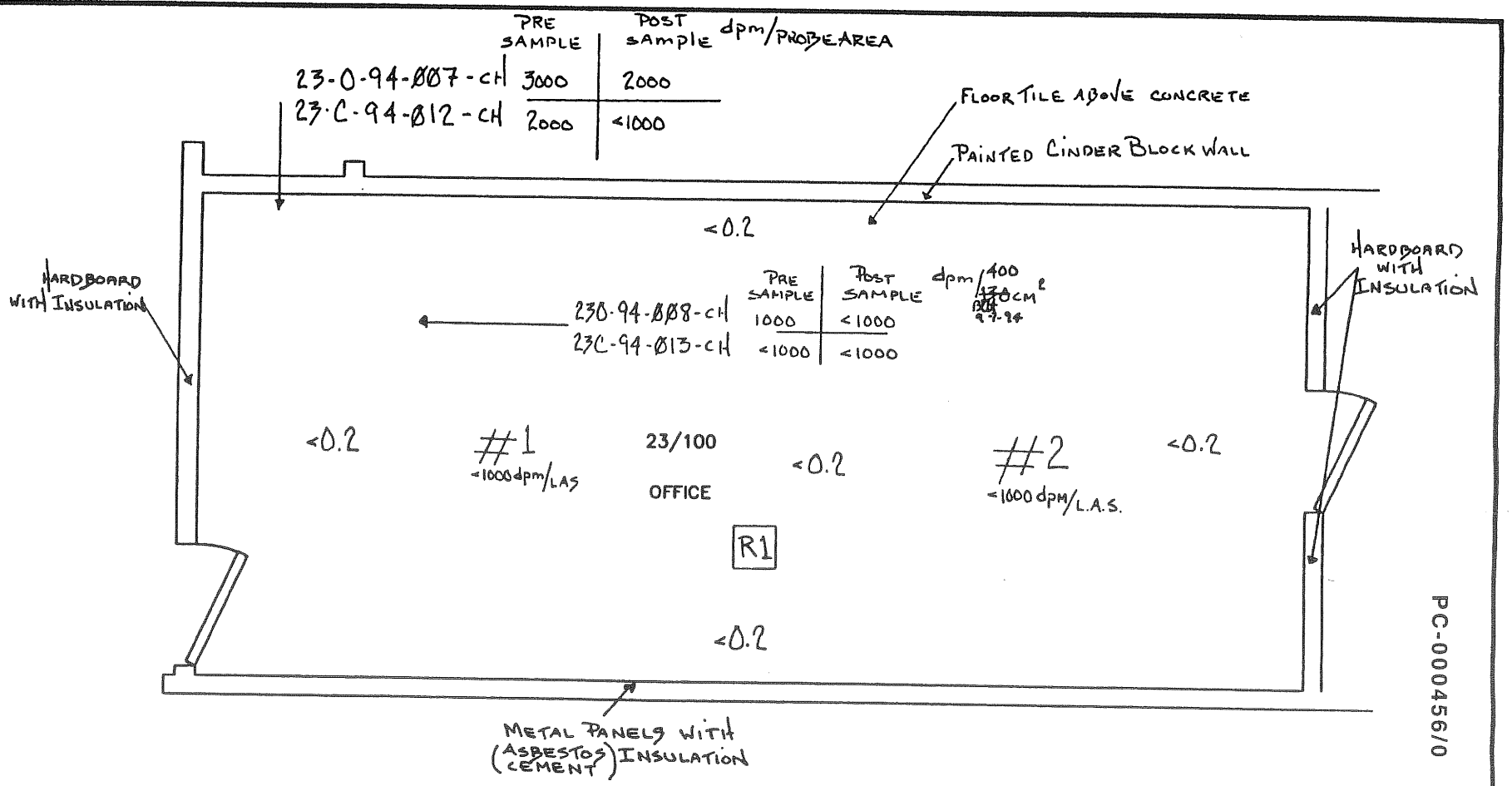
STEEL DECK



WEST WALL

ROOM NO.	23/102
MEMO NO.	HCI:267:VB:94

MAP#: 23-100	LOCATION: Hot Cell HP Office Area	DATE: 09-7-94	TIME 1400	SURVEY # 23-94-0-0-4-1-3-CH



A-9

KEY

				No.	dpm/100 cm²	No.	dpm/_____
O	SMEAR	◆	H^3 SMEAR				
#	LARGE AREA SMEAR	***	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)			N	A	
*	CONTACT DOSE RATE	+	12" DOSE RATE				
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

ALL SMEARS TAKEN, INCLUDING AIR VENTS, JUNCTION BOXES AND LIGHT FIXTURES WERE <1,000 dpm/100cm². ALL SMEARS, 5%, COUNTED FOR ALPHA WERE < 200 dpm/100cm². DIRECT FRISK SURVEY RESULTS WERE <1000 dpm EXCEPT WHERE NOTED ON ABOVE MAP PRIOR TO SAMPLE EXTRACTION.

SURVEYOR: B. Hunter / P. Butler	REVIEWED BY: Douglas A. Warren	DATE: 10-5-94	JOB RWP# 3-028	INST. TYPE:	Ro2	Ludlum 3	L-2221
				SERIAL NUMBER	2938	74305	97269
				CAL DUE DATE:	11-30-94	02-17-95	09-22-94

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

COPY

MAP#: REMARKS AND 23- 100 EXCEPTIONS	LOCATION: HOT CELL H.P. OFFICE AREA	DATE: 09-07-94	TIME 1400	SURVEY # 23-94- 0-0-4-1-3-CH

R1 TWO LARGE AREA MASSLIN SMEARS TAKEN ON FLOOR WERE BOTH <1000 dpm/PROBE AREA WITH NO LOOSE HOT PARTICLES FOUND.

R2 DROPPED CEILING IS STEEL STUDS WITH DRYWALL AND ACOUSTICAL TILES GLUED TO UNDERSIDE. APPX. 4' VOID SPACE ABOVE TO STEEL DECK

R3 SOUTH WALL IS METAL PANELS WITH ASBESTOS CONCRETE INSULATION HENCE NOT SAMPLED INTERNALLY BY H.P. (NO SAMPLE MEDIA EXTRACTED)

R4 THE FOUR AIR VENTS COVERS IN DROPPED CEILING WERE REMOVED AND (6"-12" INTERNALLY) SURVEYED FOR LOOSE AND FIXED CONTAMINATION. ALL VENTS <1000 dpm/PA. <1000 dpm/100 cm²

R5 PRE-SAMPLE COLLECTION SURVEY RESULTS SHOWED 1000 dpm/400 cm² ON TOPSIDE OF FLOOR TILE FOR SAMPLE 230-94-008-CH (POST SAMPLE <1000 dpm)

R6 PRE-SAMPLE COLLECTION SURVEY RESULTS SHOWED 3000 dpm/PROBE AREA ON TOPSIDE OF FLOOR TILE FOR SAMPLE 230-94-007-CH. (POST SAMPLE <1000 dpm)

19E WALLS AND STEEL DECK CEILING ABOVE DROP CEILING AND TOP SIDE OF DROP CEILING.

23E EAST AND WEST WALLS ARE POST CONSTRUCTION PARTITIONS OF HARDBOARD AND INSULATION. (H.P. TO SURVEY INTERNAL WALLS AND BENEATH WALLS BETWEEN FLOOR & WALL.)

24E JUNCTION BOXES AND ASSOCIATED CABLE TRAYS BENEATH FLOOR.

25E WINDOW FRAME BETWEEN WINDOW AND WALL.

26E VENTILATION DUCT WORK

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES FROM BASEBOARD AND MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING SUSPECT DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

SURVEYOR: B. HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10-5-94	JOB RWP# 3-28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

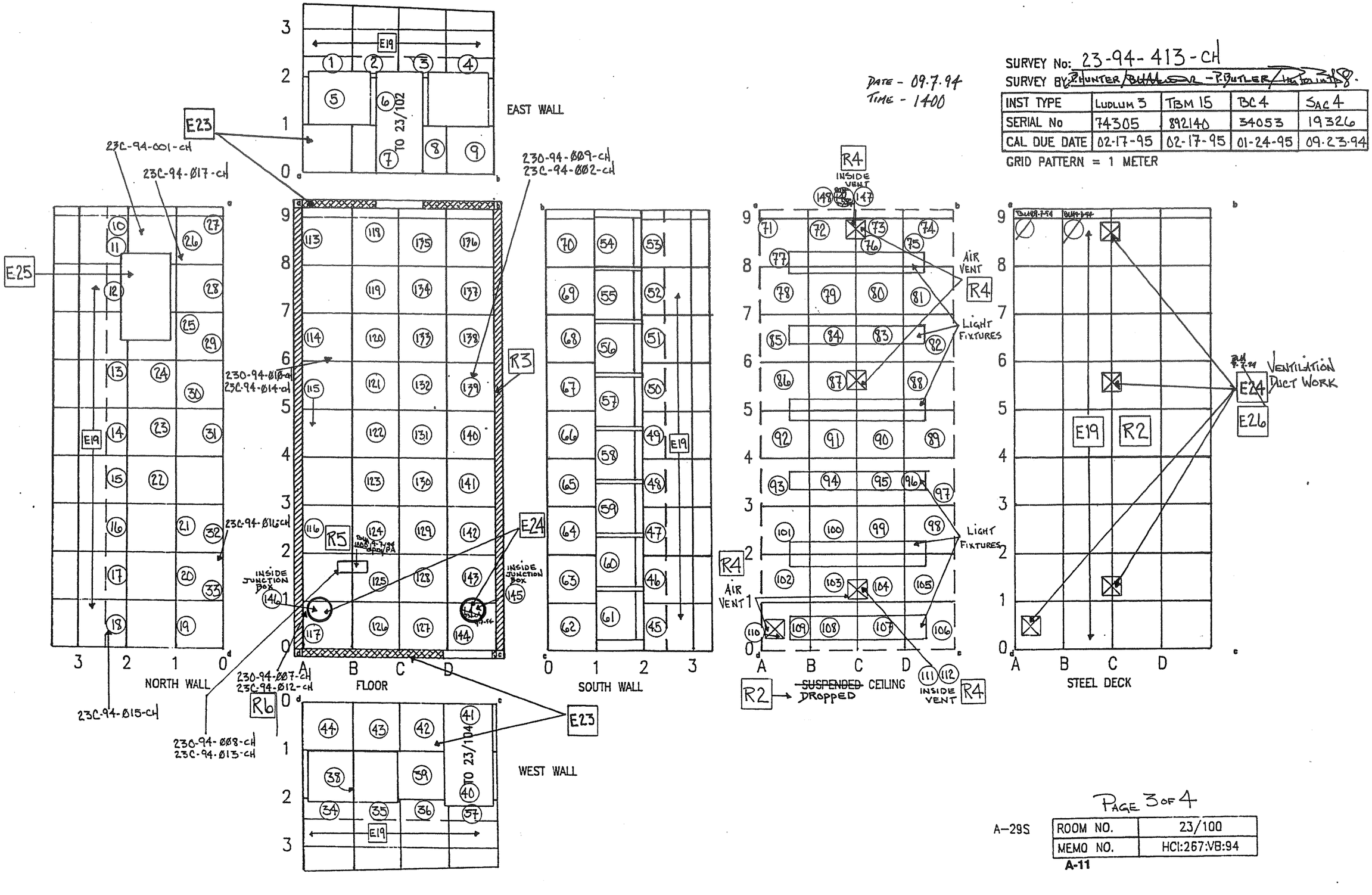
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-413-CH
SURVEY BY: P. HUNTER / ~~BUHLER~~ - P. BUTLER / ~~HUNTER~~

INST TYPE	LUDLUM 3	TBM 15	BC 4	SAC 4
SERIAL No	74305	892140	34053	19326
CAL DUE DATE	02-17-95	02-17-95	01-24-95	09-23-94

GRID PATTERN = 1 METER

DATE - 09.7.94
TIME - 1400



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A-29S

ROOM NO.	23/100
MEMO NO.	HCI:267:VB:94

A-11

Supplemental Sample Map

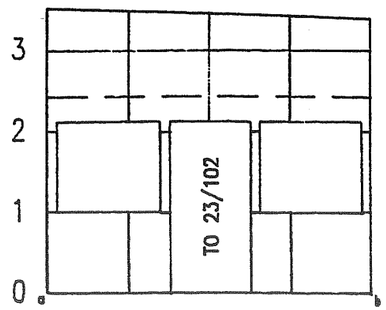
SURVEY No: 23-94-413-CH

SURVEY BY: B. Hunter, P. Butler

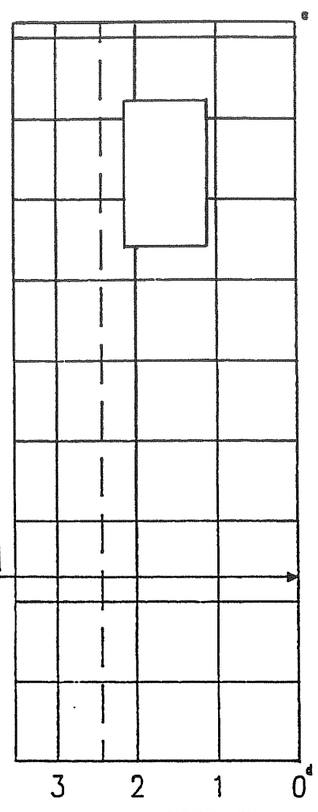
INST TYPE	Ludlum 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

GRID PATTERN = 1 METER

dpm/PA = Probe Area

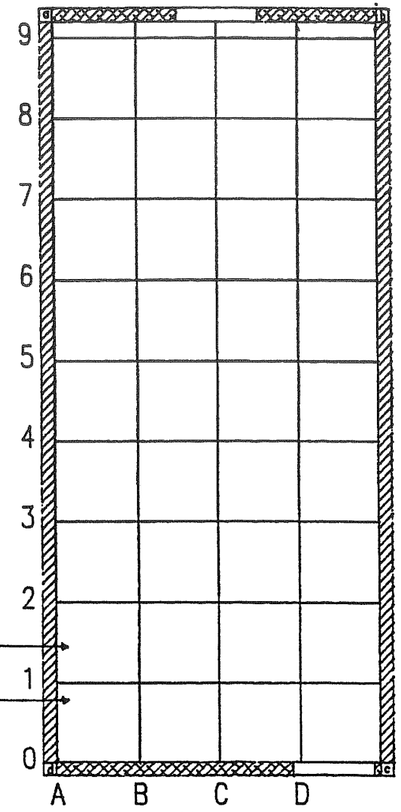


EAST WALL



NORTH WALL

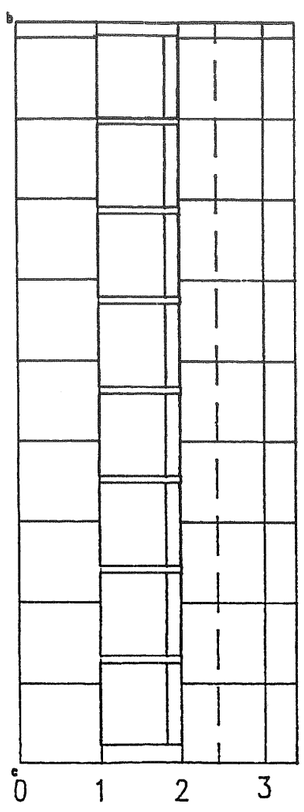
23L-95-321-CH
<1,000 dpm/PA



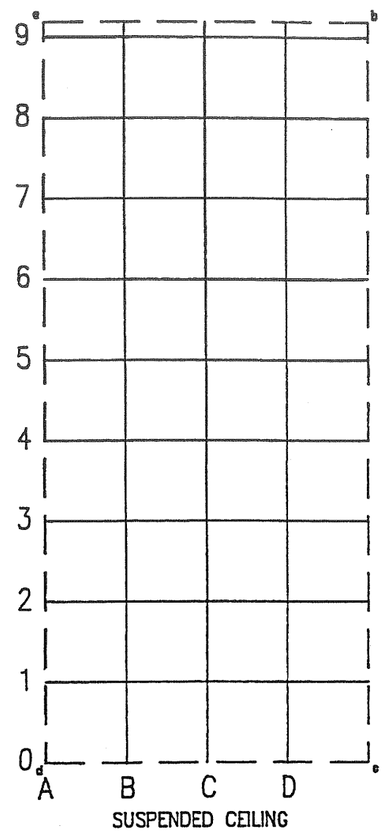
FLOOR

23L-95-320-CH
<1,000 dpm/PA.

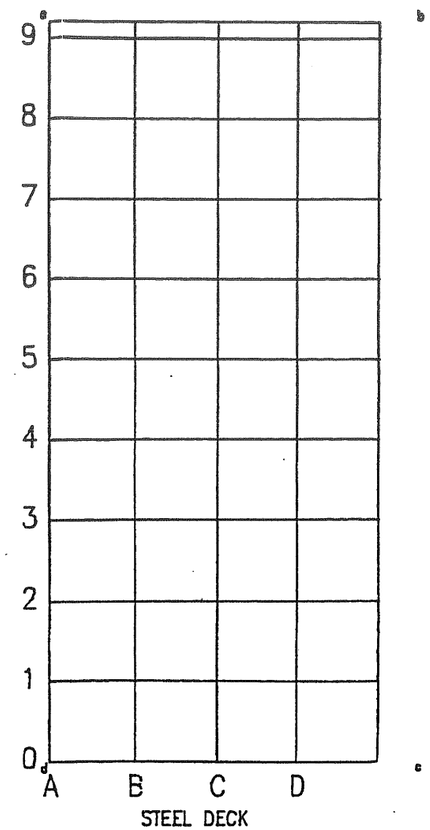
23L-95-319-CH
<1,000 dpm/PA



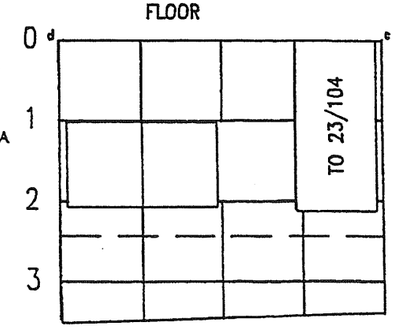
SOUTH WALL



SUSPENDED CEILING



STEEL DECK



WEST WALL

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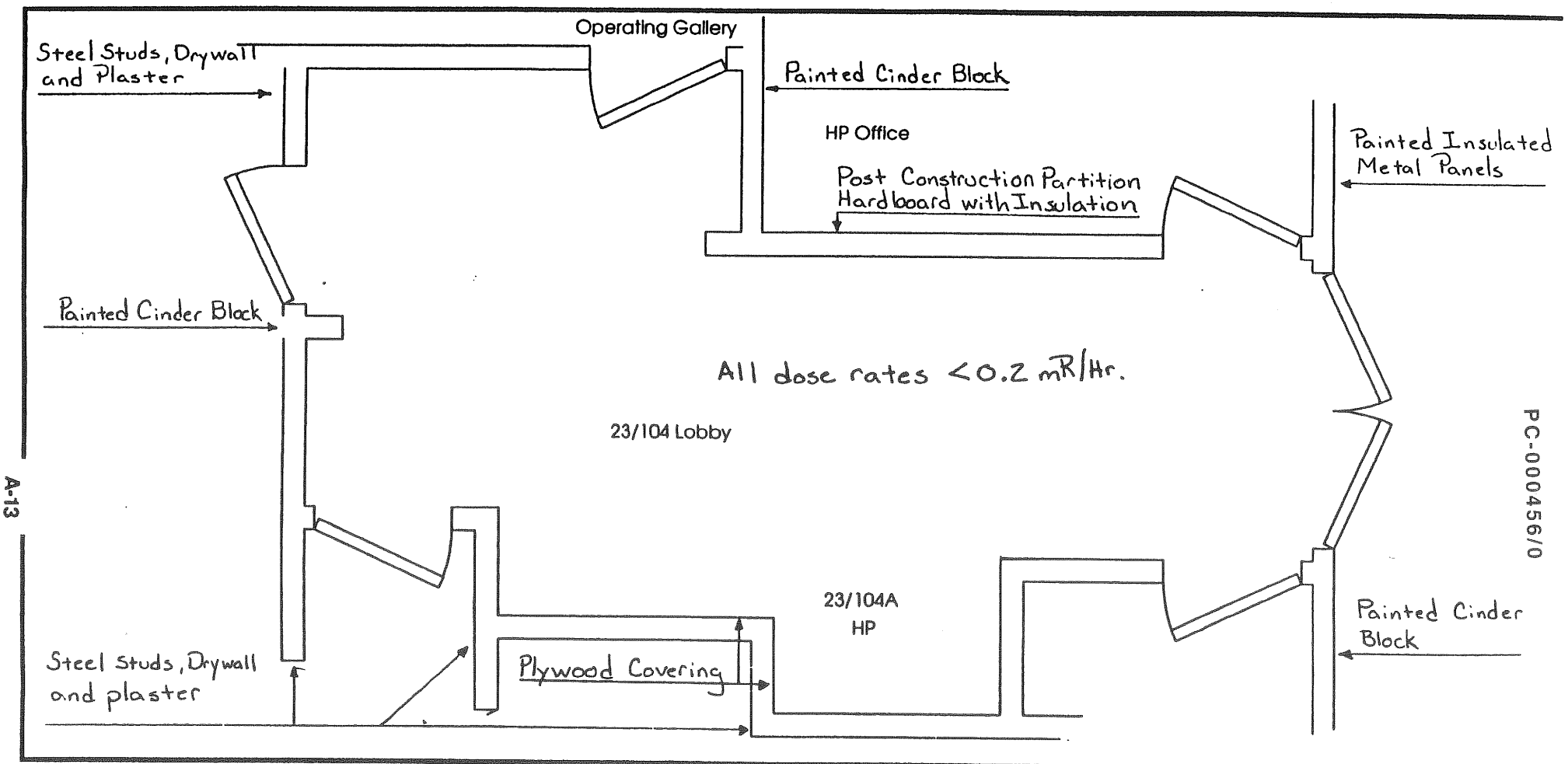
A-29S

ROOM NO.	23/100
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-104	Building 23 Lobby	9-14-94	1500	23-94-0-0-4-2-1-CH



A-13

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/____	Remarks (see Note 4 below)
⊙	SMEAR	◆	H^3 SMEAR	84	8K			Smears 1 thru 175 <LLD Except #84
#	LARGE AREA SMEAR	×××	BOUNDARY					Air sample pulled during sample removal
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						23A-94-417 6.15 E-13 uCi/cc
*	CONTACT DOSE RATE	+	12" DOSE RATE					10% of smears counted for α. All <LLD MDA MDC
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					

SAC-4
19326
3-18-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	HD29A	BC-4	RO-2
J. Rowsell / Thomas Rowsell	Douglas B. Warren	10/6/94	28	SERIAL NUMBER	5133	30362	5865
W. Berrett / Wesley Berrett				CAL DUE DATE:	3-14-95	1-24-95	11-1-94

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-104	LOCATION: Building 23 Lobby	DATE: 9-14-94	TIME 1500	SURVEY # 23-94-0-0-4-2-1-CH

R1 Vent removed and put into a rad bag. Area around vent checked. No fixed or loose detected.

R2 Wooden wall removed from mens bathroom side into old doorway. Area checked. No fixed or loose detected.

R3 50K dpm/pa removed with sample 23C-94-018-CH.

R4 3K dpm/pa removed with sample 23C-94-019-CH.

R5 Smear #174 taken on top of dropped ceiling through a hole. Small area direct frisked. No fixed or loose detected.

R6 Smear #175 taken on top of dropped ceiling through a hole. Small area direct frisked. No fixed or loose detected.

R7 No access to the top of the dropped ceiling, walls above dropped ceiling, steel deck ceiling and other items in this area. Area will be listed as an exception.

R8 All vents in ceiling removed and checked. No fixed or loose detected.

R9 Two pieces of baseboard were found to be contaminated in room 104. [6K & 8K] dpm/pa

R10 Unable to find floor sink at B1. Removed some of off color floor tile. Floor looks like it has been patched over.

R11 Ceiling is steel supports, drywall with one part covered by painted plaster the other glued on acoustical ceiling tile.

15E Area behind plywood covering old doorway to mens bathroom and part of west wall

15E Area behind phone box and security control system panel

18E Top of dropped ceiling, walls above dropped ceiling steel deck ceiling and other items in this area except the ventilation duct work. Ventilation duct work is a seperate exception.

20E Added hard board wall and floor that it is covering

See next Page.

SURVEYOR: J. Rowsell, W. Berrett	REVIEWED BY: Douglas A. Warren	DATE: 10/6/94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-0004560

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-104	Building 23 lobby	9-14-94	1500	23-94-0-0-4-2-1-CH

30E Electrical panel breaker box

31E All ceiling vents and ventilation duct work above dropped ceiling

33E Area behind display cases.

34E Area covered by shelves

35E Misc. electrical outlets, boxes, conduit, lights, controls and sensors on walls and ceiling have inaccessible surfaces and are covering other surfaces.

North walls (3) Electrical outlets and conduit (1) light switch and conduit.

East walls (1) Electrical box

South walls (2) Electrical outlets and conduit (2) Control boxes and conduit

West walls (1) Electrical outlet (1) Phone box (1) Horn (1) Emergency light (2) Electrical boxes and conduit

Ceiling (4) lights (1) Exit light (2) Fire sensors (1) Electrical outlet and conduit

36E Drain cleanout in wall

General Remarks

Direct readings and smears taken at grid points or an area of higher potential for contamination within the grid. (Wall-Floor intersection, behind fixtures, area behind baseboards etc...)

All surfaces smeared with large area smears. No detectable found.

Any areas of detectable fixed or loose contamination documented on map or in remarks.

PC-000456/0

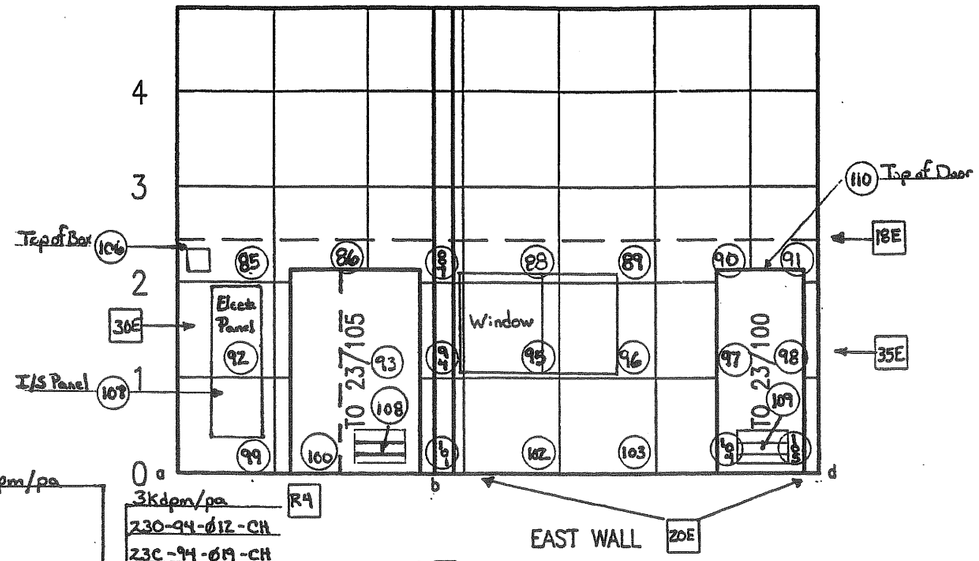
SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:			
S. Rowsell W. Berrett	Douglas R. Warren	10/6/94	28		N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-421-CH
SURVEY BY: J. Rowsell / W. Berrett

INST TYPE	Model-3	BC-4	2221
SERIAL No	74305	30362	97265
CAL DUE DATE	2-17-95	1-24-95	9-21-94

GRID PATTERN = 1 METER



Vent
Light
⊗ Fire Sprinkler
x Fire Sensor
Drain cleanout

ROOM NO.	23/104
MEMO NO.	HCI:267:VB:94

PC-000456/0

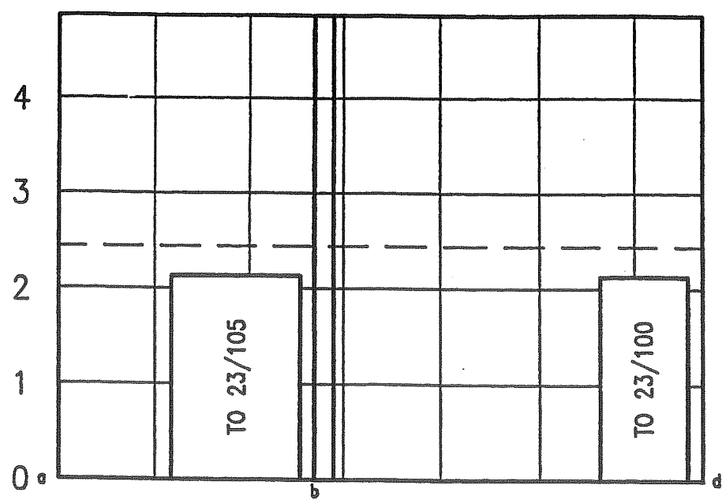
Supplemental Sample Map

SURVEY No: 23-94-421-CH
SURVEY BY: P.L. HUNTER/P. BUTLER

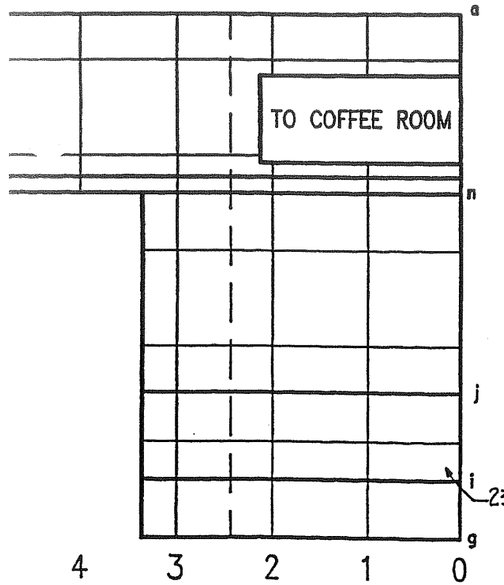
INST TYPE	LUDUM 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

GRID PATTERN = 1 METER

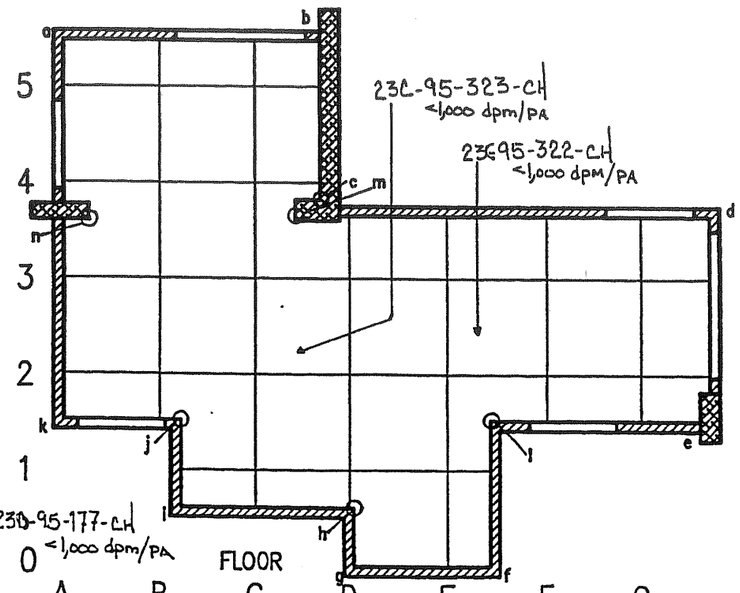
dpm/PA = PROBE AREA

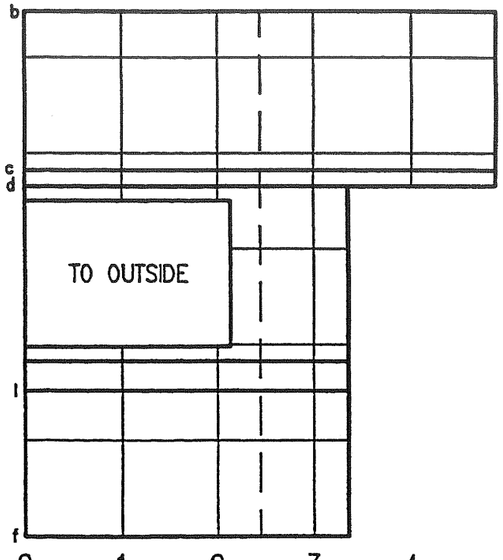


EAST WALL

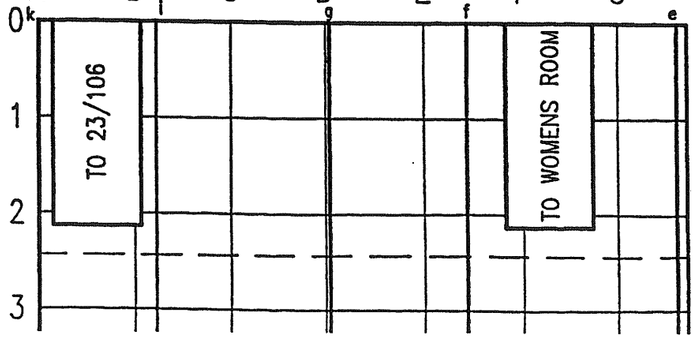


NORTH WALL

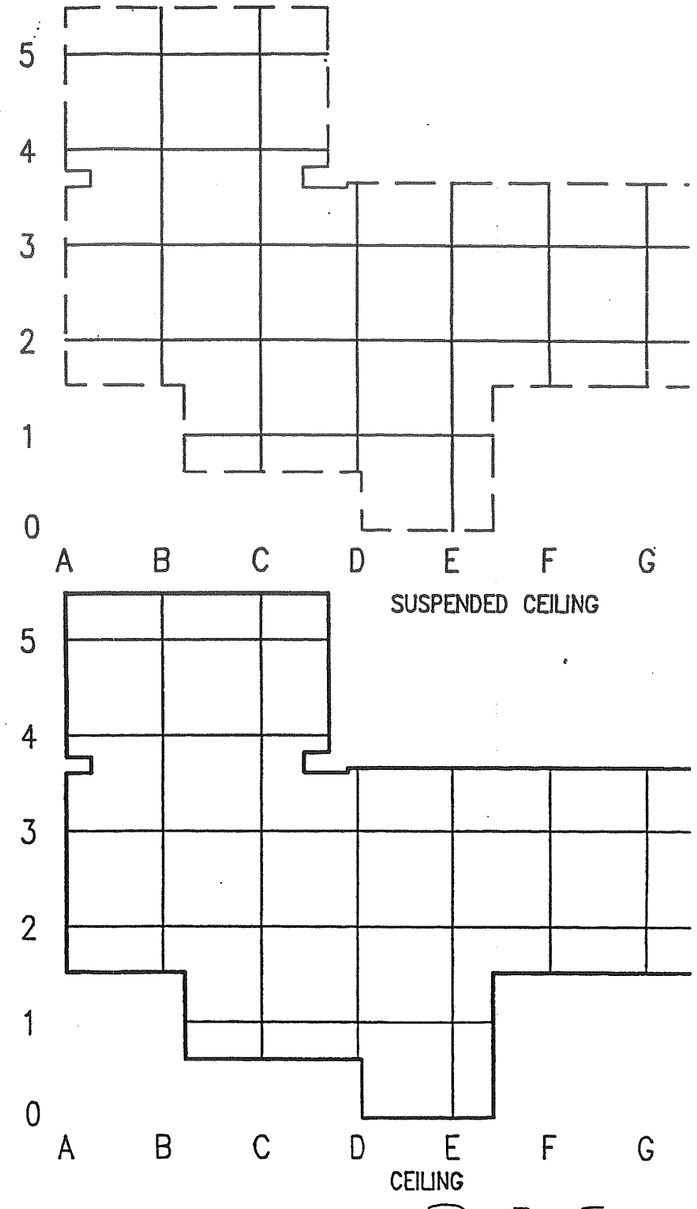




SOUTH WALL



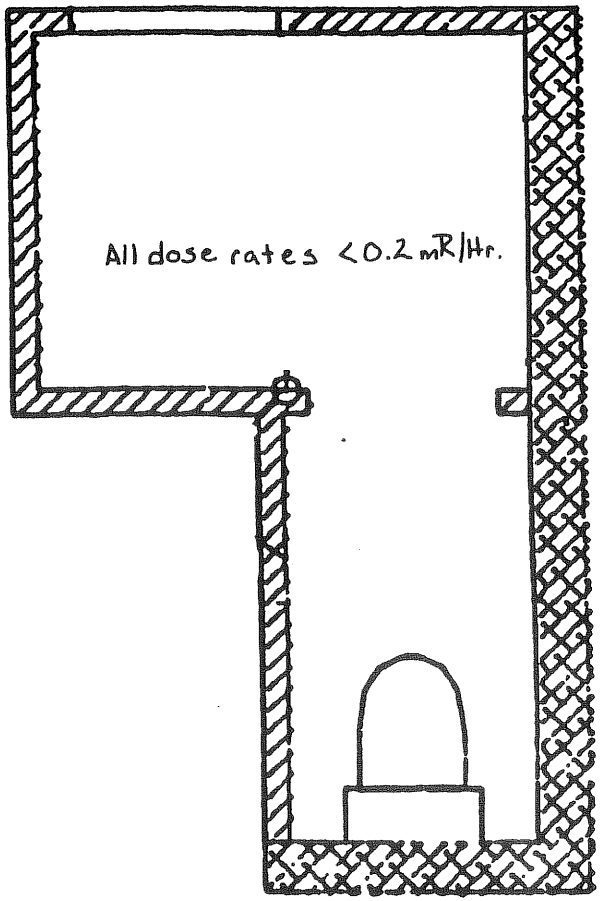
WEST WALL



A-17

ROOM NO.	23/104
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-104C	Ladies Room	9-19-94	1600	23-94-0-0-4-3-1-CH



XXX Inside walls - Painted Cinder Block

// Walls - Steel Studs, Drywall & Painted Plaster

Floor - Concrete covered with 9"x9" asphalt tile / ceramic tile and grout.

Ceiling - Steel supports, drywall & painted plaster

A-18

PC-000456/0

COPY

KEY				No.	dpm/100 cm²	No.	dpm/	Remarks (see Note 4 below)	
○	SMEAR	◆	H^3 SMEAR					Smears 1 thru 68 <LLD	
#	LARGE AREA SMEAR	XXX	BOUNDARY					Air sample pulled during sample removal	
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						23A-94-421 3.89 E-12 uCi/cc	
*	CONTACT DOSE RATE	+	12" DOSE RATE					10% of smears counted for α All <LLD MDA	SAC-4
β	BETA DOSE RATE ONLY	α	ALPHA ONLY						19326
HS	HOT SPOT	Δ	NEUTRON DOSE RATE						3-18-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	HD-29-A	BC-4	RO-2
J. Rowsell / W. Berrett / Wray Berrett	Douglas A. Warner	10/7/94	28	SERIAL NUMBER	5133	30362	5865
				CAL DUE DATE:	3-14-95	1-24-95	11-1-94

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-104C	Ladies Room	9-19-94	1600	23-94-0-0-4-3-1-CH

R1 Vent removed and surveyed. No fixed or loose contamination detected.

R2 Area not accessed, top of dropped ceiling, walls above the dropped ceiling, steel deck ceiling and other items in this area. Area will be listed as an exception with the vents and ventilation ducts being a seperate exception.

R3 Areas behind the mirror, sink, toilet and paper towel dispenser are inaccessible at this time and were not surveyed. Possibility of contamination in these areas is minimal, but will all be listed as exceptions.

R4 Baseboard in toilet room is ceramic tile

1E Drain clean out in north wall by toilet

2E Top of dropped ceiling, walls above the dropped ceiling, steel deck ceiling and other items in this area except ventilation duct work. Ceiling vents and ventilation duct work will be a seperate exception

4,5E Ceiling vents and ventilation duct work ~~will~~ above dropped ceiling

4,6E Area behind toilet, toilet seat protector halder, sink, mirror & coat hooks & paper towel dispensor

4,7E Sink & toilet drains

4,8E Misc. elect. outlets, boxes, switches, lights and sensors on walls and ceiling

North wall - (1) Elect outlet, (1) Elect switch

Ceiling - (2) Lights (2) Fire sensors

General Remarks. Direct readings and smears taken at areas with highest potential for contamination within the grid. (Wall-floor intersections, behind fixtures, area behind baseboards etc..) All surfaces covered with large area smears. No detectable found. Any areas of detectable fixed or loose contamination were documented on map or in remarks.

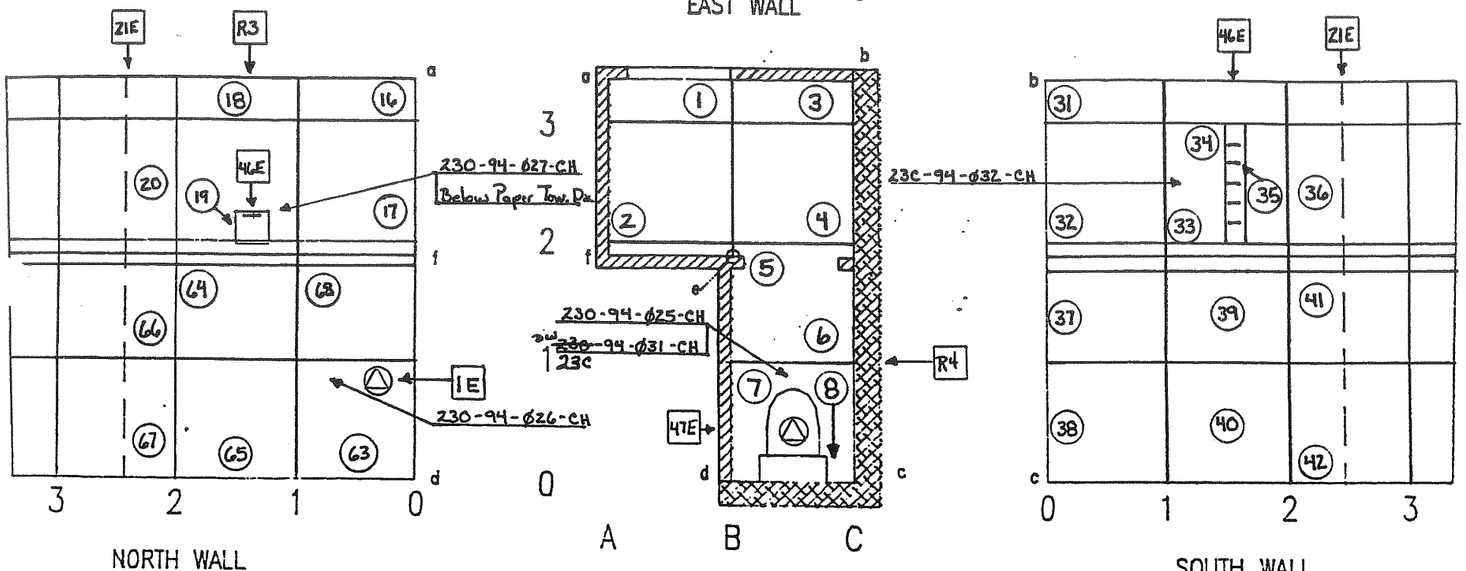
SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Boswell James Boswell W. Bassett Wray Bassett	Douglas A. Warren	10/7/94	28		N. A	N. A	N. A

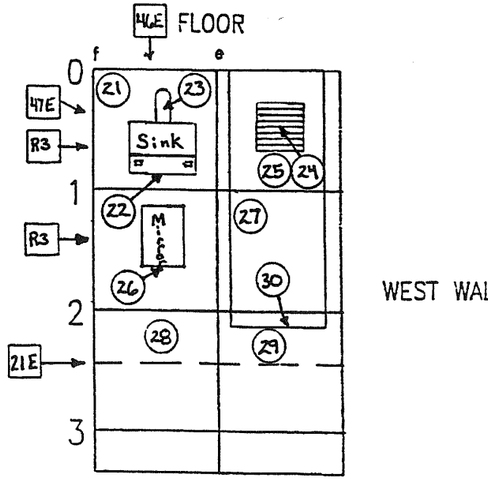
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

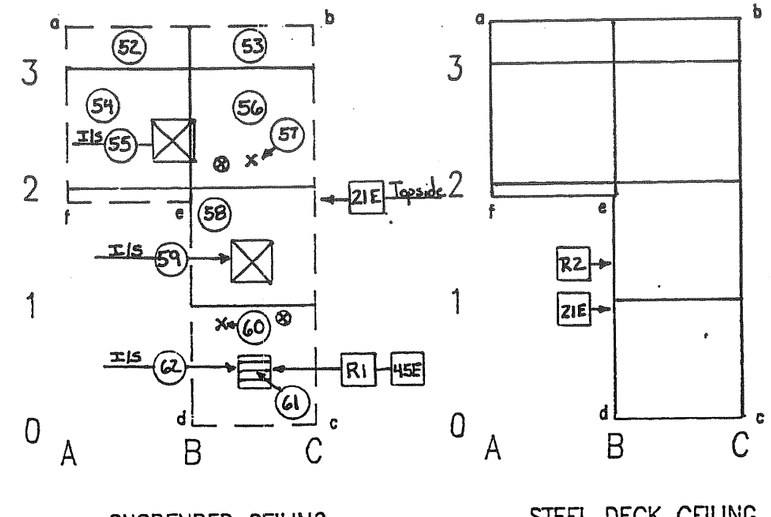
SURVEY No: 23-94-431-CH
SURVEY BY: J. Bowsell James Rowell / W. Berrett Wm Berrett

INST TYPE	Model-3	BC-4	2221
SERIAL No	74305	34053	97265
CAL DUE DATE	2-17-95	1-24-95	9-21-94

GRID PATTERN = 1 METER







⊠ Light ▤ Vent
⊗ Fire Sprinkler
× Fire Sensor
Ⓓ Drain Cleanout
Paper Towel Dispensor

A-29S
A-20

ROOM NO.	23–LADIES
MEMO NO.	HCI:267:VB:94

P. 3 of 34

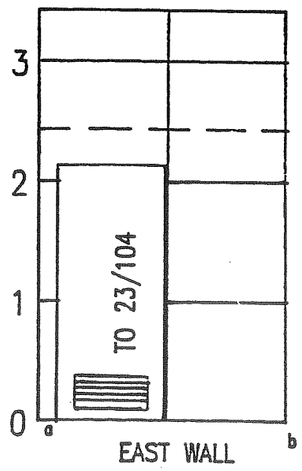
Supplemental Sample Map.

SURVEY No: 23-94-431-CH
SURVEY BY: B. HUNTER / P. BUTLER

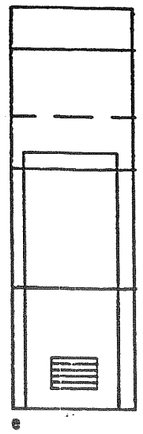
INST TYPE	LUDLUM 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

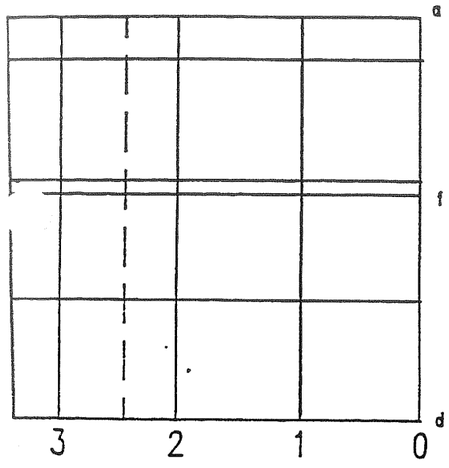
GRID PATTERN = 1 METER

dpm/PA = PROBE AREA

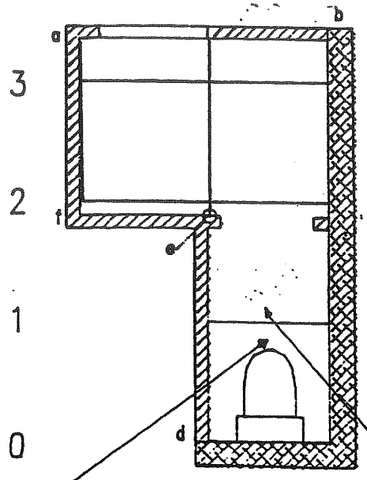


EAST WALL





NORTH WALL

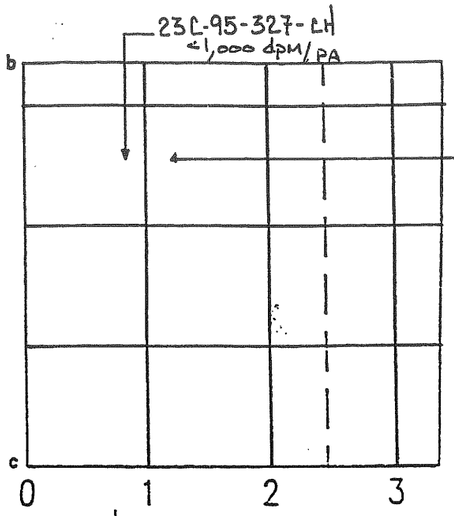


23C-95-324-CH
<1,000 dpm/PA

FLOOR

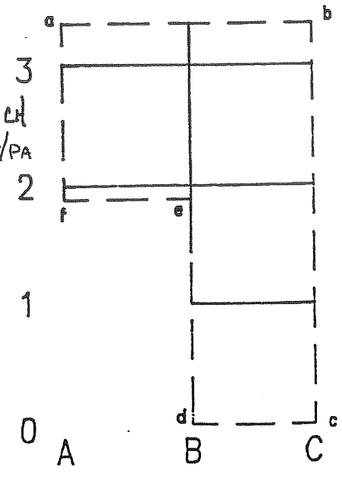
23C-95-327-CH
<1,000 dpm/PA

23C-95-326-CH
<1,000 dpm/PA

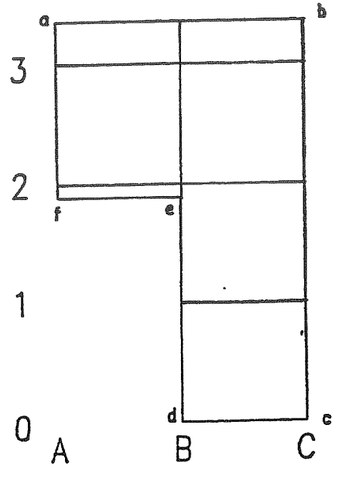


23C-95-325-CH
<1,000 dpm/PA

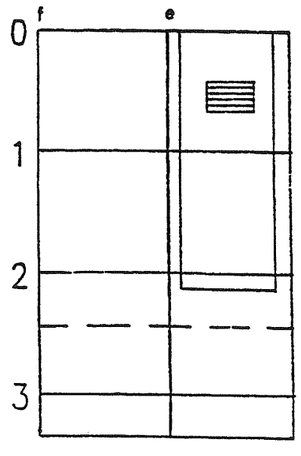
SOUTH WALL



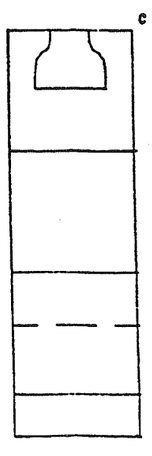
SUSPENDED CEILING



STEEL DECK CEILING



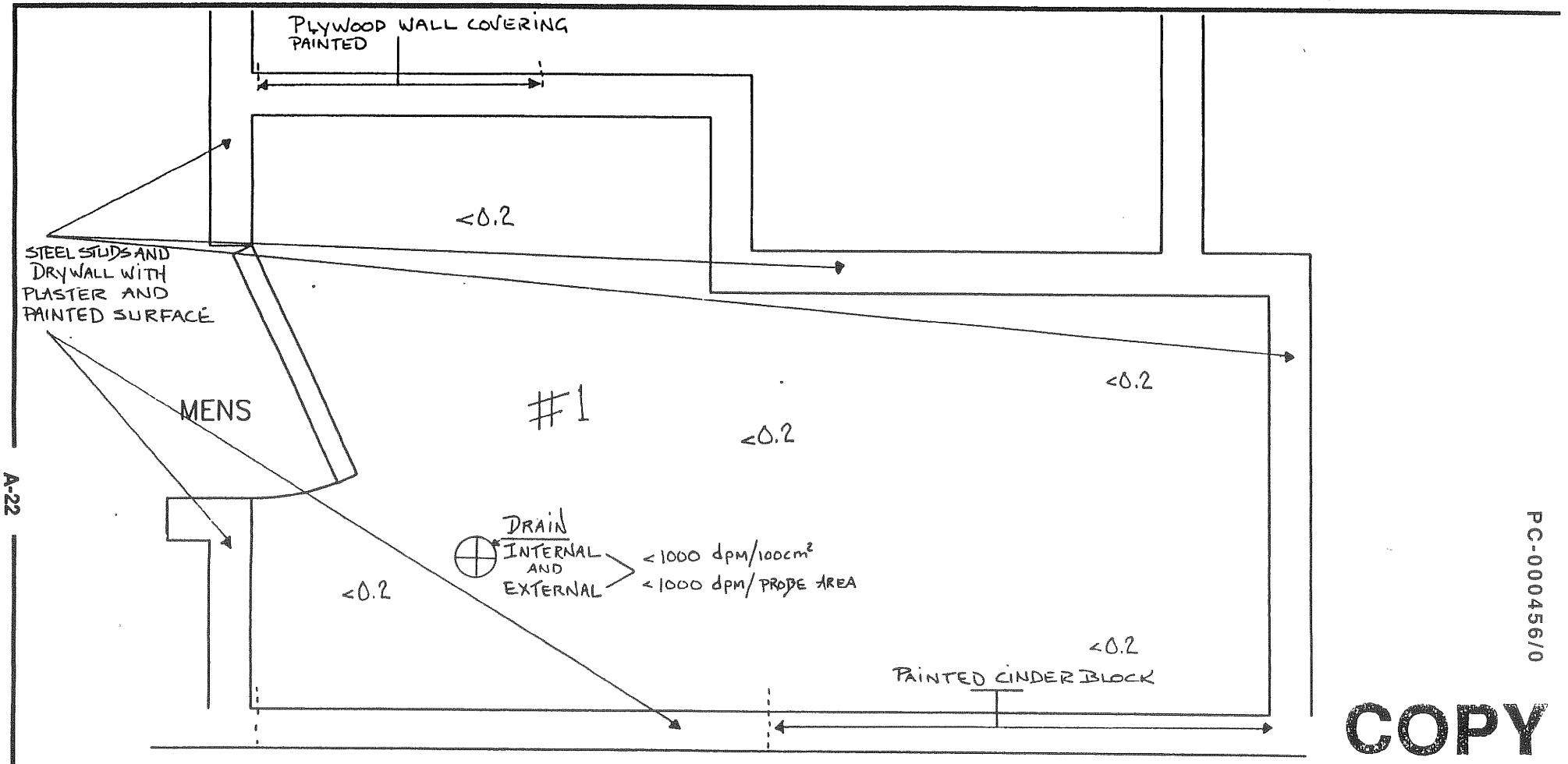
WEST WALL



A-29S
A-21

ROOM NO.	23-LADIES
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-106A	Men's Room	9-14-94	1500	23-94-0-0-4-3-2 CH



A-22

PC-000456/0

COPY

KEY				No.	dpm/100 cm²	No.	dpm/PROBE AREA	Remarks (see Note 4 below)
O	SMEAR	◆	H³ SMEAR			#1	<1000	A TOTAL OF 76 SMEARS WERE TAKEN FOR CHARACTERIZATION
#	LARGE AREA SMEAR	***	BOUNDARY		N A			PURPOSES. ALL SMEARS WERE <1000 dpm/100cm² B'Y. 5% OF
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						THE SMEARS WERE COUNTED FOR ALPHA CONTAMINATION.
*	CONTACT DOSE RATE	+	12" DOSE RATE					ALL RESULTS WERE <208 dpm/100cm² ALL DIRECT FRISK SURVEY
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					RESULTS INCLUDING DRAIN AND AIR VENT WERE <1000 dpm/PROBE AREA.
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				N A	#1 LARGE AREA MASSLIN SMEAR. NO HOT PARTICLES FOUND.

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	RO6	RM 14	LUDLUM 3
B. HUNTER P. BUTLER	Douglas A. Warner	10/6/94	3-028	SERIAL NUMBER	2938	33100	74305
				CAL DUE DATE:	11-30-94	09-22-94	02-17-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP I Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23- 106A	MEN'S ROOM	09-14-94	1500	23-94-0-0-4-3-2-CH

R1 DROPPED CEILING IS STEEL STUDS WITH DRYWALL, A LAYER OF PLASTER AND PAINTED. (APPRX. 4 FT. VOID SPACE ABOVE TO STEEL DECK. THERE IS NO VISUAL OR PHYSICAL ACCESS FROM RM.)

R2 VENTILATION DUCT COVER WAS REMOVED AND SURVEYED INTERNALLY 6in.-12in.. RESULTS WERE <1000 dpm/100cm2 AND <1000 dpm/PROBE AREA

R3 ENTIRE FLOOR SURFACE AND BASEBOARDS AND THE FIRST 1.2 METERS OF WALL BEHIND SINK AND URINAL HAS CERAMIC TILE AND GROUT.

R4 POST CONSTRUCTION WALL MADE OF WOOD STUDS AND PAINTED PLYWOOD WAS REMOVED AND SURVEYED INTERNALLY. RESULTS WERE: <1000 dpm/100cm² & <1000 dpm P.A.

R5 FLOOR DRAIN COVER WAS REMOVED AND SURVEYED. DIRECT FRISK SURVEY ON SURFACE AND WITHIN 2in. INTERNAL <1000 dpm/PROBE AREA, SMEAR SURVEY OF DRAIN AT SURFACE AND APPROX 1.5 FT. INTERNALLY WITH PLUMMERS SNAKE <1000 dpm/100cm².

39E 5 DRAIN LINES IN ROOM: 1 FLOOR DRAIN, 1 SINK DRAIN, 1 URINAL DRAIN, 2 TOILET DRAINS.

39E WALLS, STEEL DECK ABOVE DROPPED CEILING AND TOP SIDE OF DROPPED CEILING.

39E VENTILATION DUCT WORK ABOVE DROPPED CEILING.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD OR MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITH GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

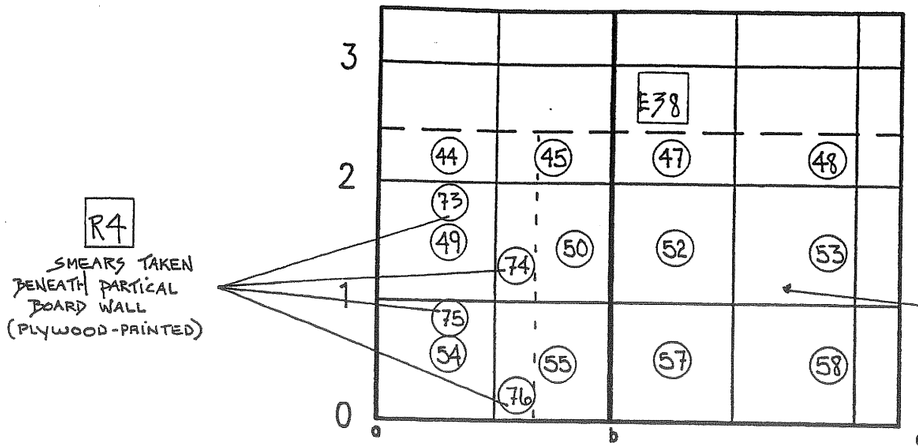
SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
B. HUNTER P. BUTLER	Douglas A. Warren	10/6/94	3-028		N/A	N/A	N/A

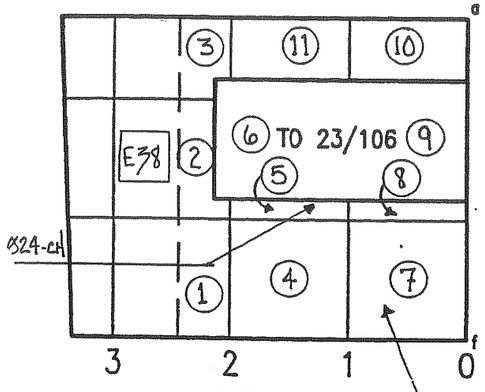
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

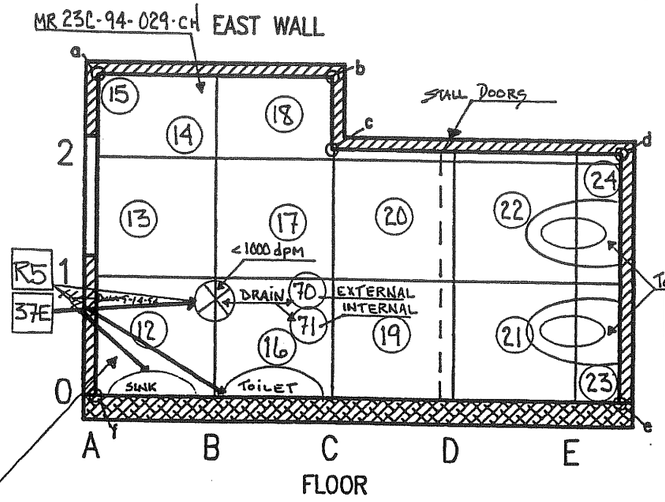
PC-000456/0

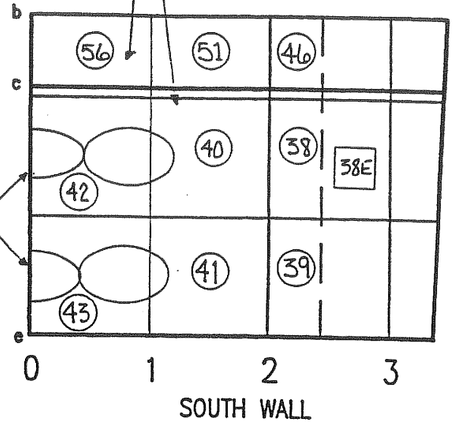
SURVEY No: 23-94-00432 CH
SURVEY BY: P.BUTLER / B.HUNTER

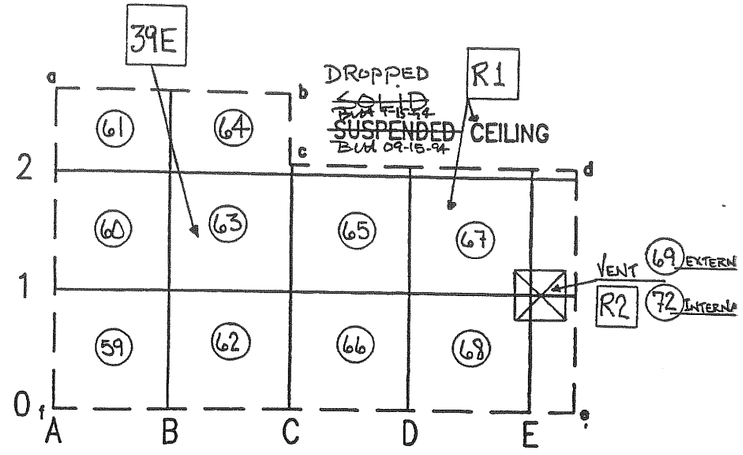
INST TYPE	RO2	RM 14	BC 4
SERIAL No	2938	33100	34053
CAL DUE DATE	11-30-94	09/22/94	01-24-95
GRID PATTERN = 1 METER		SAC 4	L-3
		19326	74305
		03-18-95	02-17-95
		COUNTED ON 09-15-94	

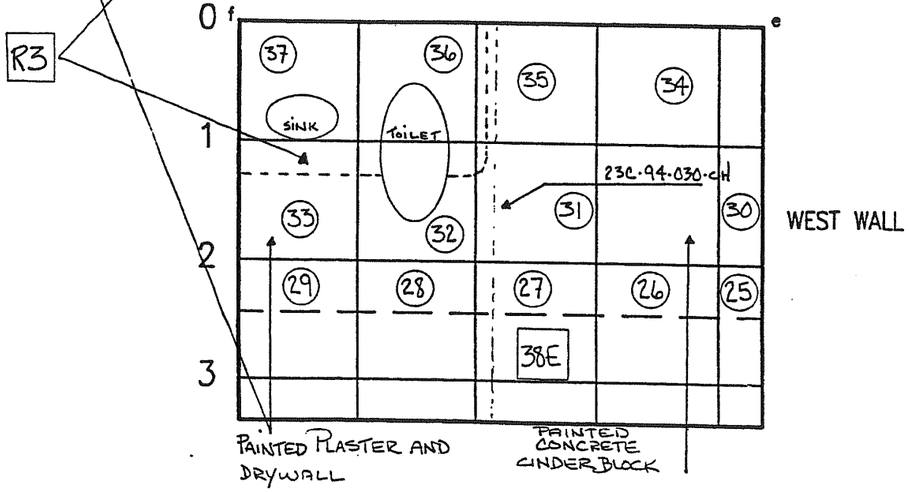


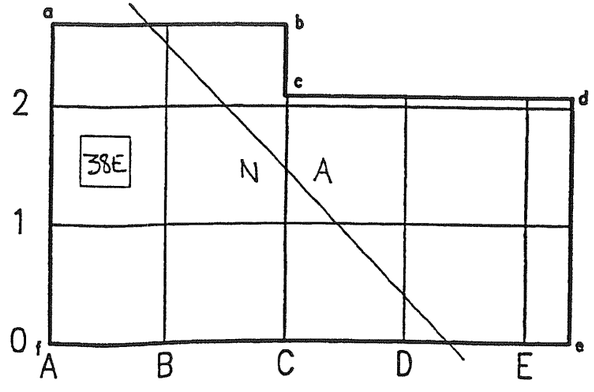












PAGE 3 OF 4

ROOM NO.	23/MENS
MEMO NO.	HCI:267:VB:94

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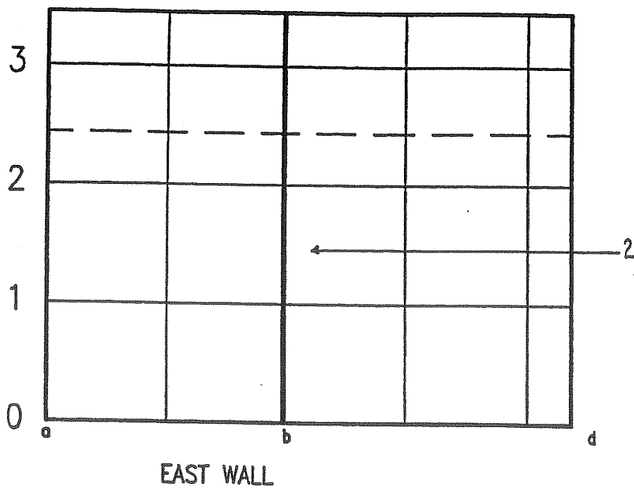
SUPPLEMENTAL SAMPLE MAP

SURVEY No: 23-94-432-CH
SURVEY BY: P.L. HUNTER B. [illegible] P. BUTLER T. [illegible]

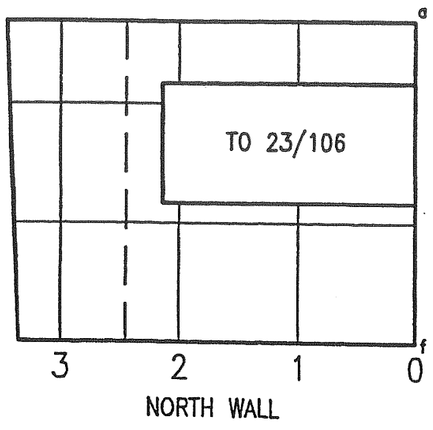
INST TYPE	LUDLUM 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

GRID PATTERN = 1 METER

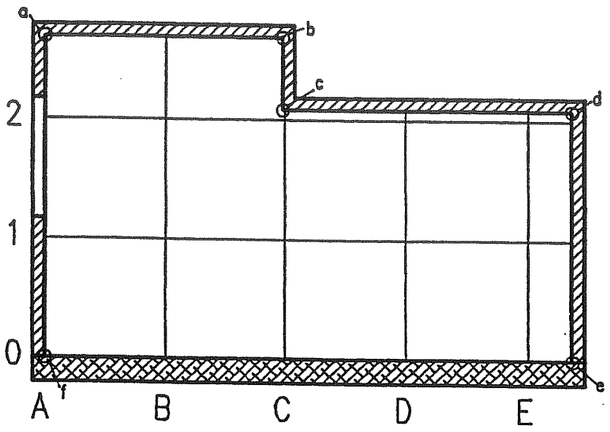


EAST WALL

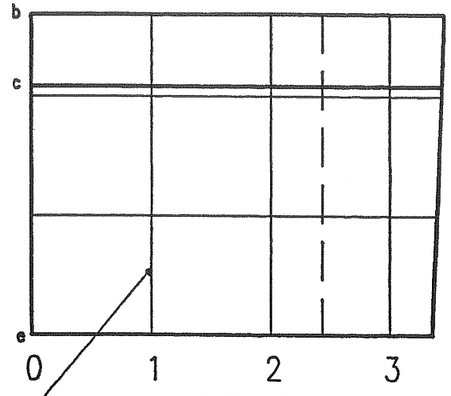
dpm/PA = PROBE AREA



NORTH WALL

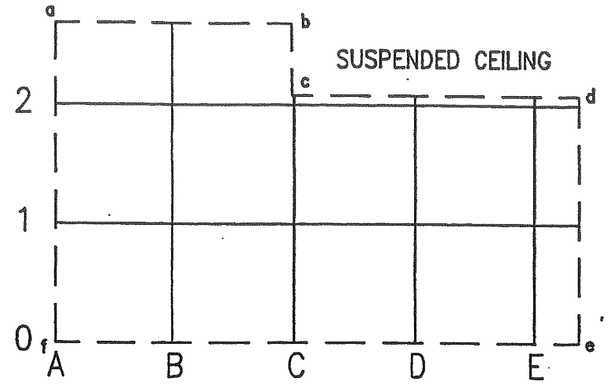


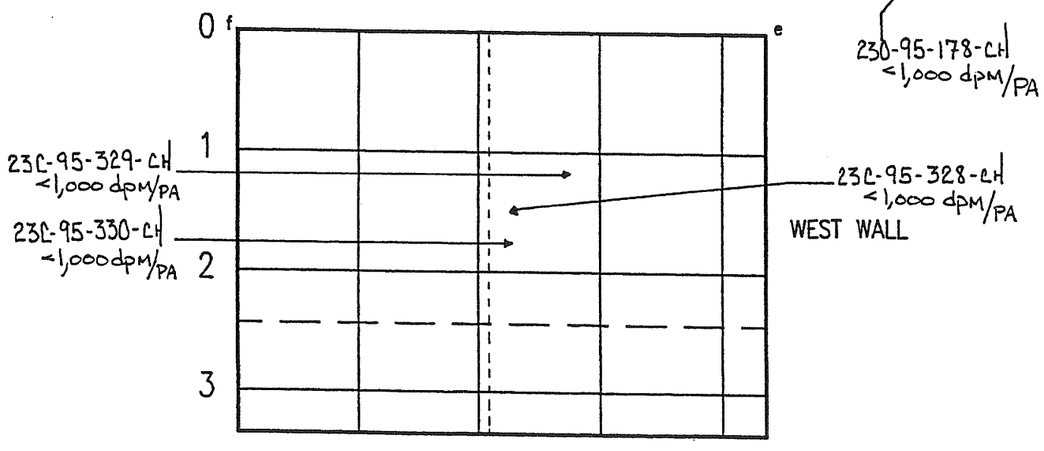
FLOOR



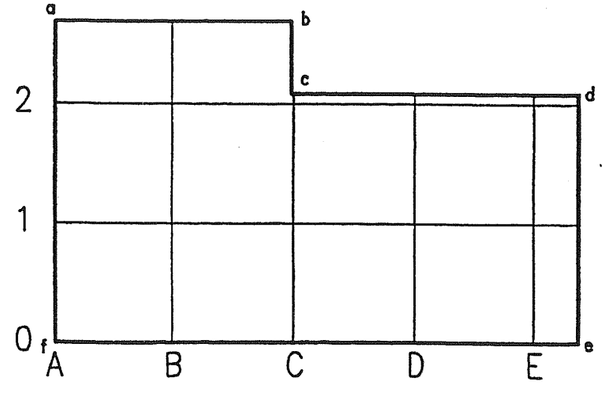
SOUTH WALL

230-95-178-CH
<1,000 dpm/PA





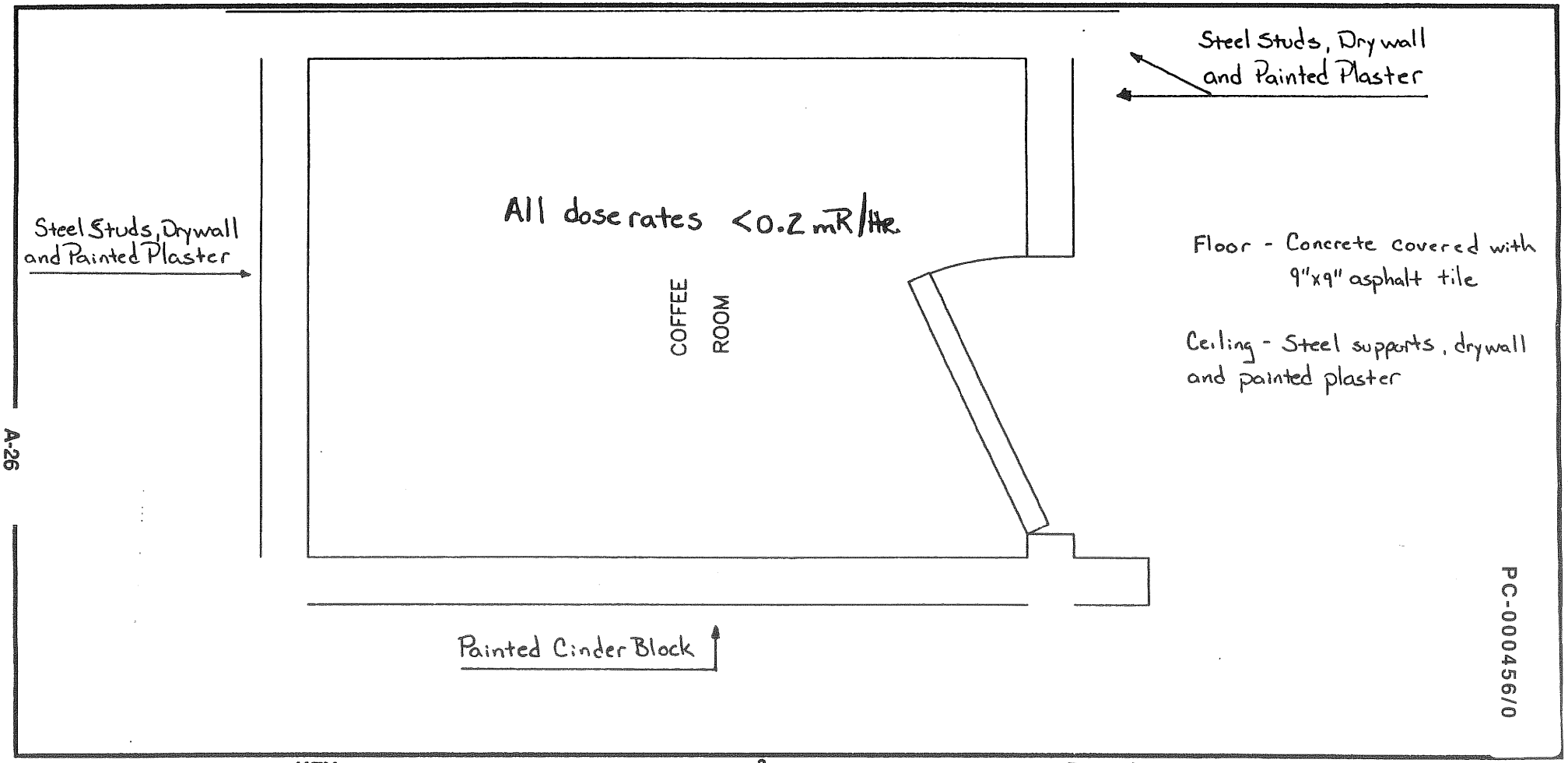
WEST WALL



STEEL DECK CEILING

ROOM NO.	23/MENS
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-104B	Coffee Room	9-14-94	1500	23-94-0-0-4-3-0-CH



A-26

KEY				No.	dpm/100 cm²	No.	dpm/____	Remarks (see Note 4 below)	
○	SMEAR	◆	H^3 SMEAR					Smears 1 thru 50 < LLD	
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY					Air sample pulled during removal of characterization sample	
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						23A-94-420 8.19×10^{-12} µCi/cc	
✱	CONTACT DOSE RATE	+	12" DOSE RATE					10% of smears counted for α. All < LLD (MDA) DAS	SAC-4
β	BETA DOSE RATE ONLY	α	ALPHA ONLY						19326
HS	HOT SPOT	Δ	NEUTRON DOSE RATE						3-18-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	HD29A	BC-4	RO-2
Wray Barrett/Wm Bennett James Rowe/Wm Bennett	Douglas A. Warn	10/7/94 09-15-94	28	SERIAL NUMBER	5133	30362	5865
				CAL DUE DATE:	3-14-95	1-24-95	11-1-94

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² (low energy) or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-104B	LOCATION: Coffee Room	DATE: 9-14-94	TIME 1500	SURVEY # 23-94-0-0-4-3-0-CH

R1 5Kdpm/pa removed with sample 23C-94-Ø27-CH

R2 15Kdpm/pa removed with masslinn from wall floor intersection. Saved for gamma spec. 23HP-94-ØØ1-CH

R3 10Kdpm/pa removed with masslinn from wall floor intersection. Saved for gamma spec. 23HP-94-ØØ2-CH

R4 8Kdpm/pa removed with masslinn from wall floor intersection. Saved for gamma spec. 23HP-94-ØØ3-CH

R5 6Kdpm/pa removed with masslinn

R6 2Kdpm/pa removed with sample 23C-94-Ø25-CH

R7 2Kdpm/pa removed with sample 23C-94-Ø28 (4 DW)-CH

R8 Area around ceiling access on topside of dropped ceiling smeared and direct frisked. No detectable found.

R9 Vent removed, smeared and direct frisked. No detectable found

R10 No access to the area and items above the dropped ceiling. Will be listed as exceptions.

R11 Drain line from drinking fountain has been removed

16E Area behind sink that is inaccessible

17E Floor and sink drains.

22E Top of dropped ceiling, walls above dropped ceiling and steel deck ceiling. All other items in this area included except for ventilation duct work. Duct work will be a seperate exception

41E Ceiling vents and ventilation duct work above ceiling

Next page

PC-000456/0

SURVEYOR: J. Rowsell / W. Berrett	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-104B	LOCATION: Coffee Room	DATE: 9-14-94	TIME 1500	SURVEY # 23-94-0-0-4-3-0-CH

43E Area behind paper towel dispensor

44E Inside and behind misc. elect. outlets, boxes, conduit, lights, controls & sensors on walls and ceiling

North wall (1) Elect. outlet and conduit.

East wall (1) Elect. outlet and conduit (2) Elect. boxes and conduit.

South wall (1) light switch (2) Control boxes

Ceiling (1) Light and conduit (1) Fire sensor

A-28

General Remarks

Direct readings and smears taken at areas with highest potential for contamination within the grid. (Wall-floor intersections, behind fixtures, area behind baseboards etc.)

All surfaces covered with large area smears. No detectable found

Any areas of detectable fixed or loose contamination were documented on map or in remarks

PC-000456/0

SURVEYOR: J. Rowsell / W. Berrett	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

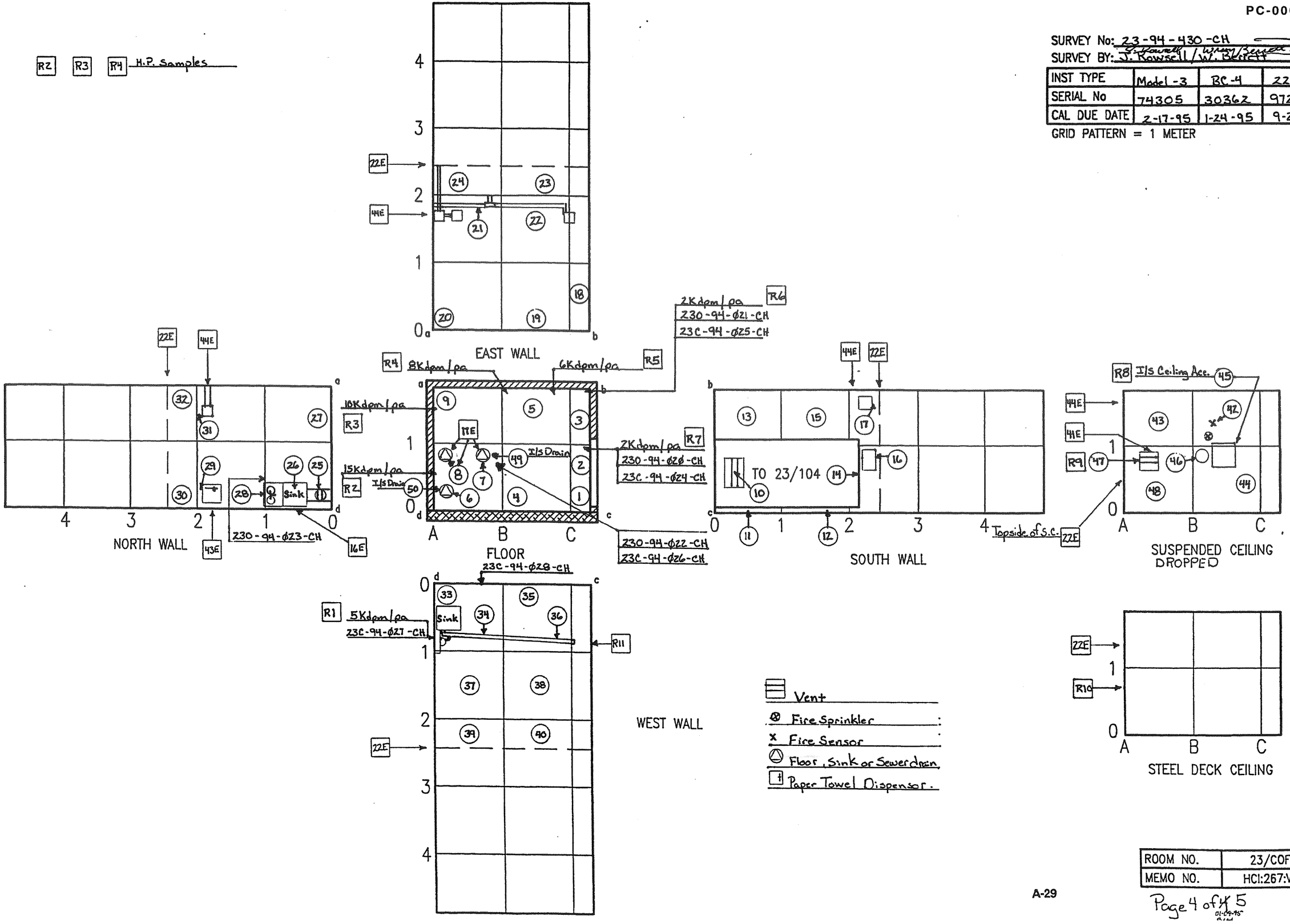
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP to Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-430-CH
SURVEY BY: J. Rowsell / W. Bennett

INST TYPE	Model-3	BC-4	2221
SERIAL No	74305	30362	97265
CAL DUE DATE	2-17-95	1-24-95	9-21-94

GRID PATTERN = 1 METER

R2 R3 R4 H.P. Samples



Vent
Fire Sprinkler
Fire Sensor
Floor, Sink or Sewer drain
Paper Towel Dispensor.

ROOM NO.	23/COFFEE
MEMO NO.	HCI:267:VB:94

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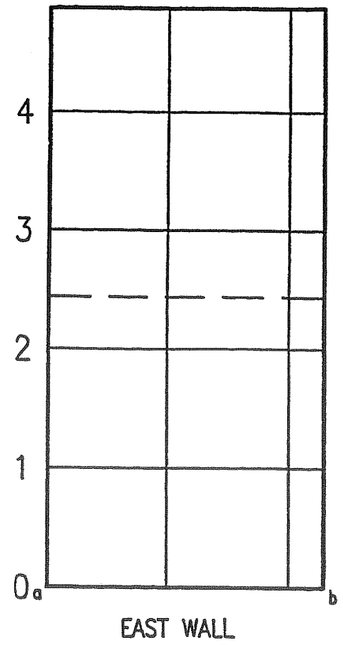
SURVEY No: 23-94-430-CH
SURVEY BY: B.HUNTER B.MOORE/P.BUTLER

INST TYPE	LUDLUM 3		
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95		

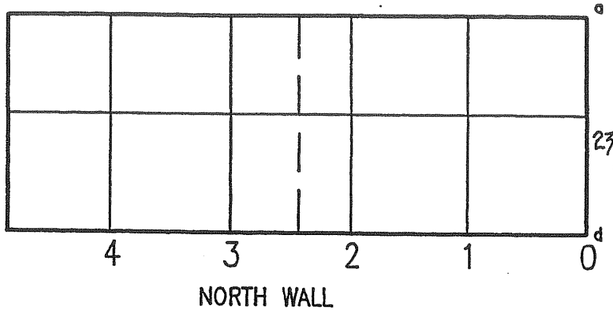
GRID PATTERN = 1 METER

SUPPLEMENTAL SAMPLE MAP

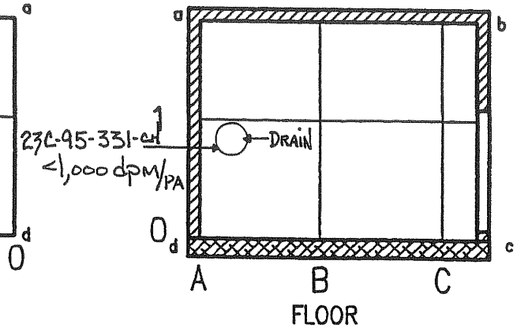
dpm/PA = PROBE AREA



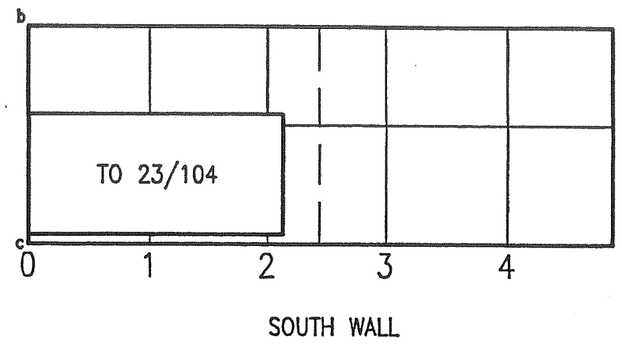
EAST WALL



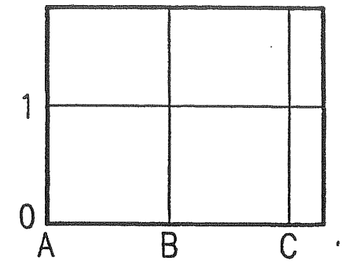
NORTH WALL



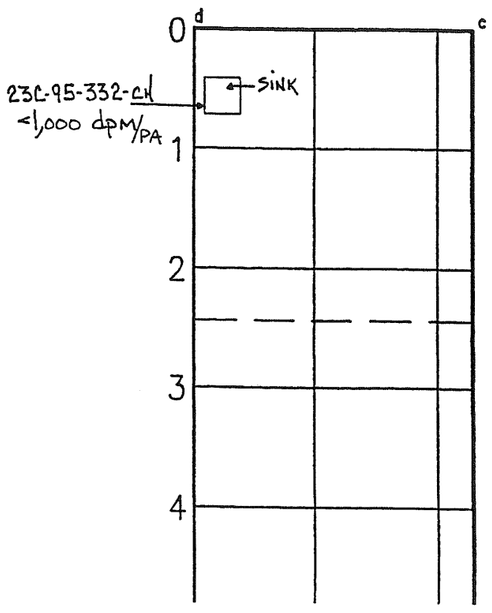
FLOOR



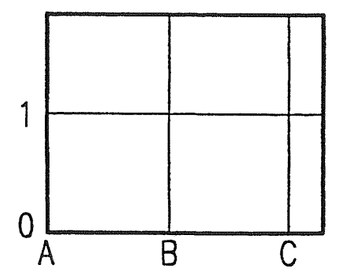
SOUTH WALL



SUSPENDED CEILING



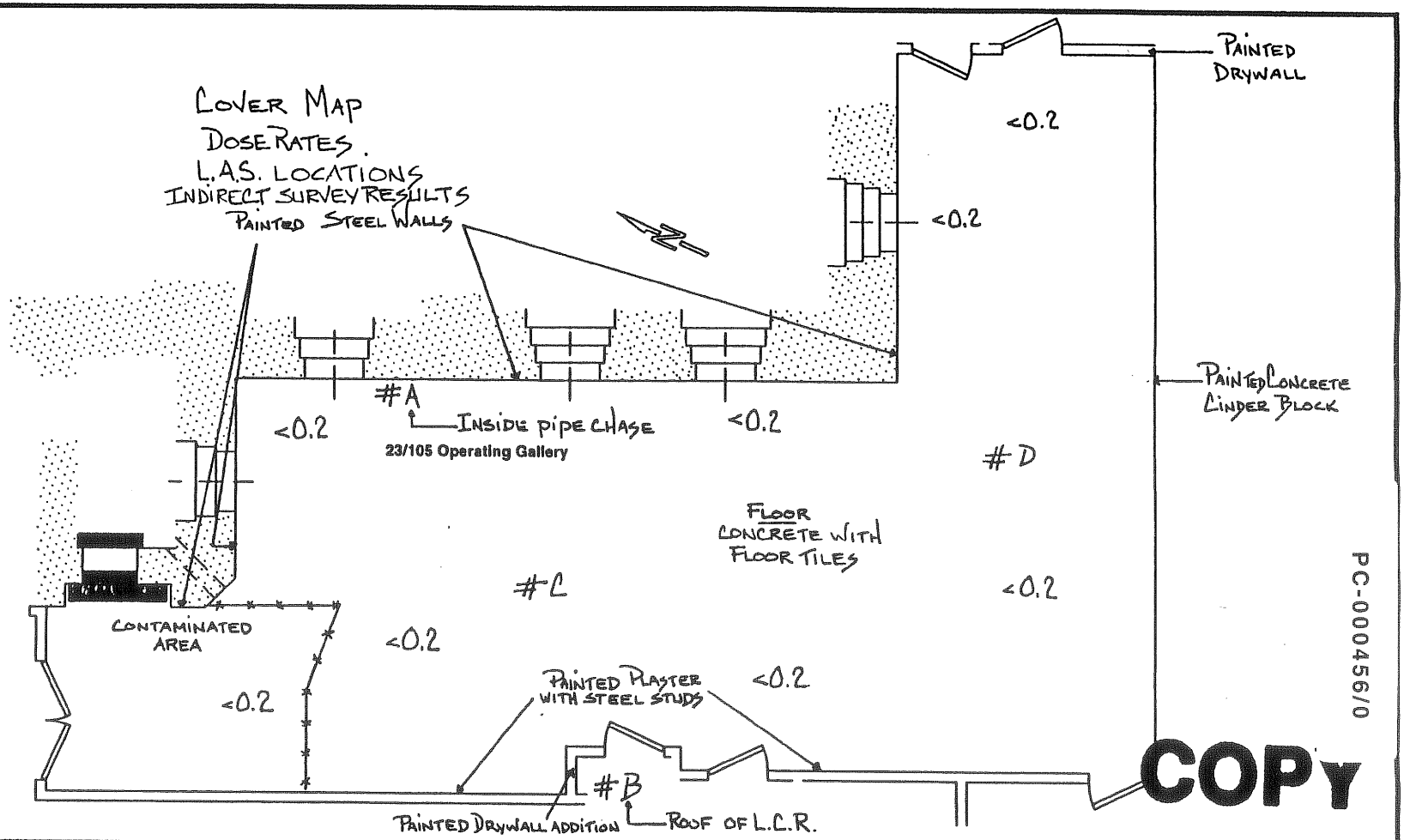
WEST WALL



STEEL DECK CEILING

ROOM NO.	23/COFFEE
MEMO NO.	HCI:267:VB:94

MAP#: 23-105	LOCATION: Operating Gallery	DATE: 12-19-94	TIME 0600	SURVEY # 23-94-0-0-6-6-1-CH



A-31

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/____
O	SMEAR	◆	H³ SMEAR	(111)	6,000		
#	LARGE AREA SMEAR	✕✕✕	BOUNDARY	(119)	3,000	N	A
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		#A	5,000 dpm/L.A.S.		
*	CONTACT DOSE RATE	+	12" DOSE RATE	#B	<1,000 dpm/L.A.S.		
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	#C	<1,000 dpm/L.A.S.	N	A
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	#D	<1,000 dpm/L.A.S.		

Remarks (see Note 4 below) CELL WALLS

☐ 5% OF ALL SMEARS COUNTED FOR ALPHA CONTAMINATION, <20 dpm/100cm²

SUPPLEMENTAL MAP SURVEY RESULTS dpm/100cm²

(19)	7,000	(38)	15,000
(28)	12,000	(43)	5,000
(29)	9,000	(47)	30,000
(30)	3,000	(48)	12,000

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	SAC 4	BC4	RO2
BARBARA HUNTER / PRESTON BAKER	Douglas A. Warren	1/3/95	4-028	SERIAL NUMBER	19326	34053	2938
				CAL DUE DATE:	05-31-95	03-20-95	01-11-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-105	LOCATION: OPERATING GALLERY	DATE: 12-19-94	TIME 0600	SURVEY # 23-94-0-0-6-6-1-CH

R1 THE HIGH, LOW AND METALLURGY CELL EXTERIOR WALLS AND INTERIOR ROOMS ARE LISTED AS EXCEPTION 140 IN THE "EXCEPTIONS LIST LOG BOOK. A SUPPLEMENTAL SURVEY HAS BEEN INCLUDED IN THE RM.105 SURVEY OF THE EXTERIOR CELL WALLS WITH SPECIAL ATTENTION GIVEN TO PENETRATIONS AND FREQUENTLY HANDLED EQUIPMENT. SEE "SUPPLEMENTAL SURVEY" FOR RESULTS.

136E INACCESSIBLE AREAS IN OVERHEAD INCLUDING WALLS, ACOUSTICAL CEILING PANELS, VENTILATION DUCT WORK, UPPER STEEL DECK, CONDUIT, FIRE SPRINKLER SYSTEM AND OTHER MISC. EQUIPMENT.

137E REMAINING UNSURVEYED PORTION OF PIPE CHASE (APPRX. 95%) RUNNING 1½ FT. BELOW FLOOR WITH MISC. INSTRUMENT CABLES, ELECTRICAL CONDUIT AND PIPING AND, ACCORDING TO BLUE PRINTS, THREE DRAINS.

138E AREA BEHIND AND UNDER PING 1A

139E MISC. PIECES OF EQUIPMENT, ELECTRIC PANELS, AND ALARM PANELS, CONDUIT LINES, AND AREAS WHERE BASEBOARDS COULD NOT BE REMOVED ON WALLS.

140E HOT CELL WALLS AND PENETRATIONS AND ALL ASSOCIATED EQUIPMENT. INTERIOR AND EXTERIOR HIGH LEVEL, LOW LEVEL AND METALLURGY CELLS.

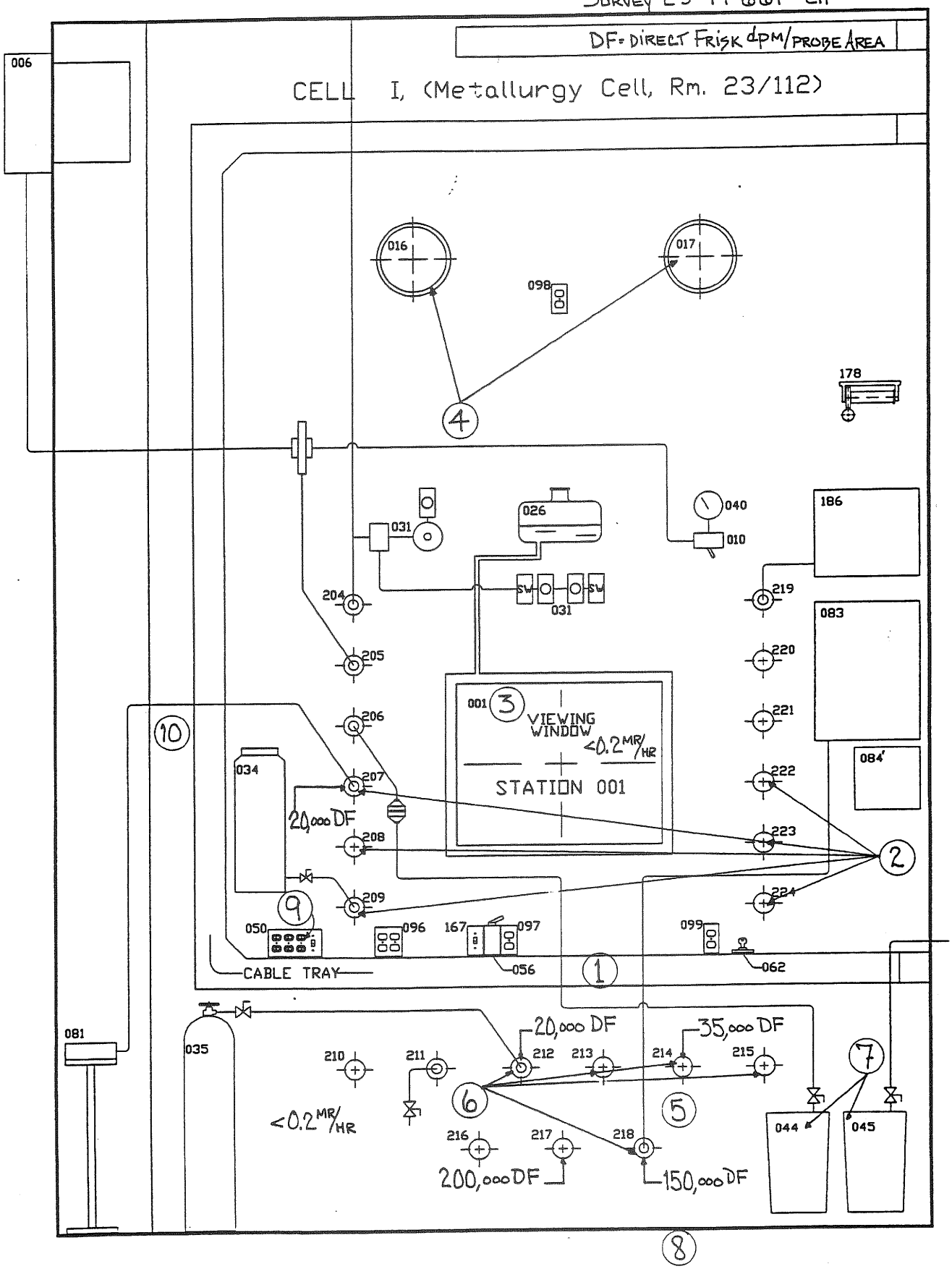
☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF GRID INTERSECTIONS, FLOOR/WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD REMOVAL AND MISC. EQUIPMENT REMOVAL AND ANY AREAS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

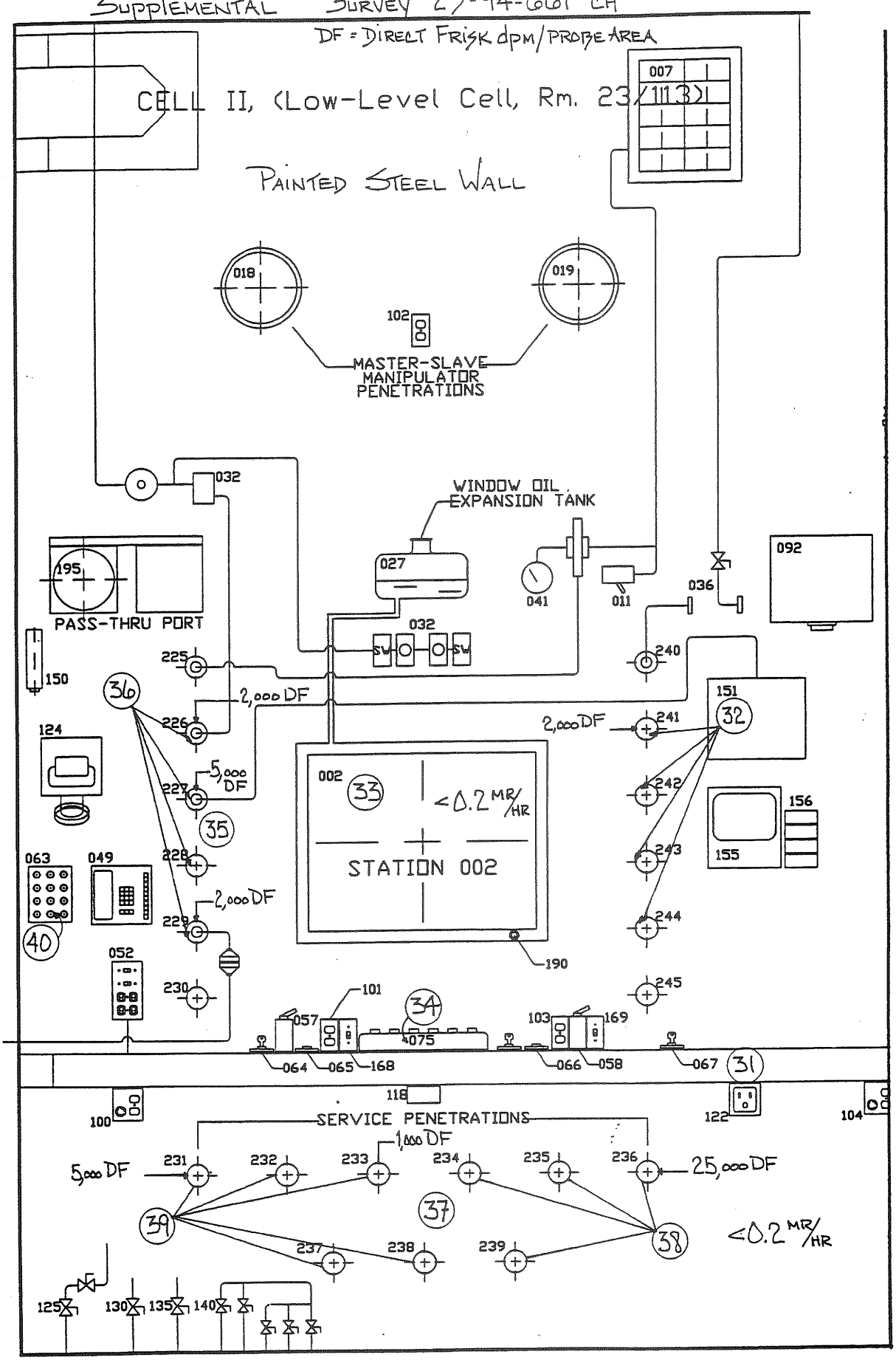
SURVEYOR: BARBARA HUNTER PRESTON BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 1/3/95	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo
Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SUPPLEMENTAL
SURVEY 23-94-6661-CH

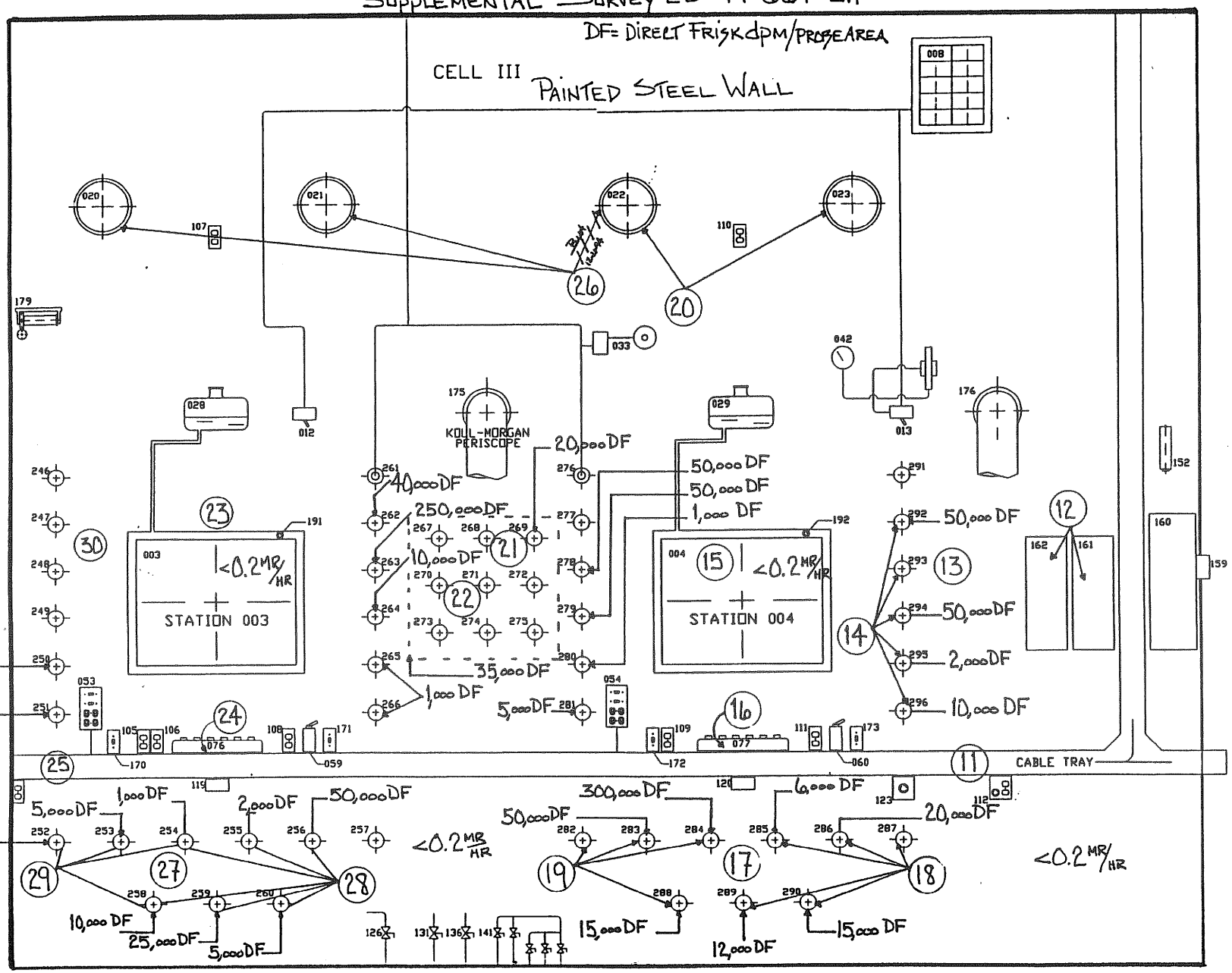


SUPPLEMENTAL SURVEY 23-94-661-CH



SUPPLEMENTAL SURVEY 23-94-661-CH

DF= DIRECT FRISK dpm/PROBE AREA



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PC-000456/0

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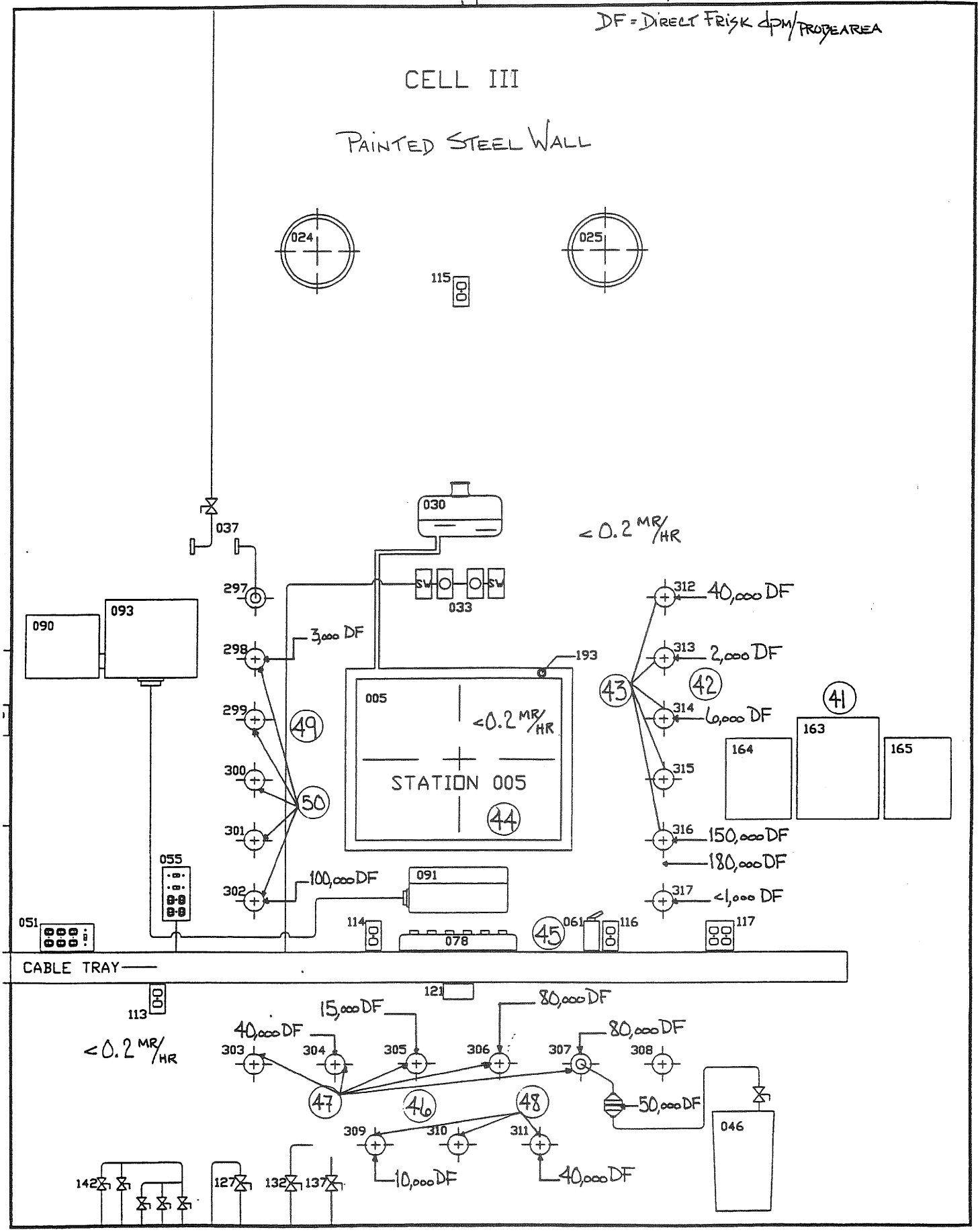
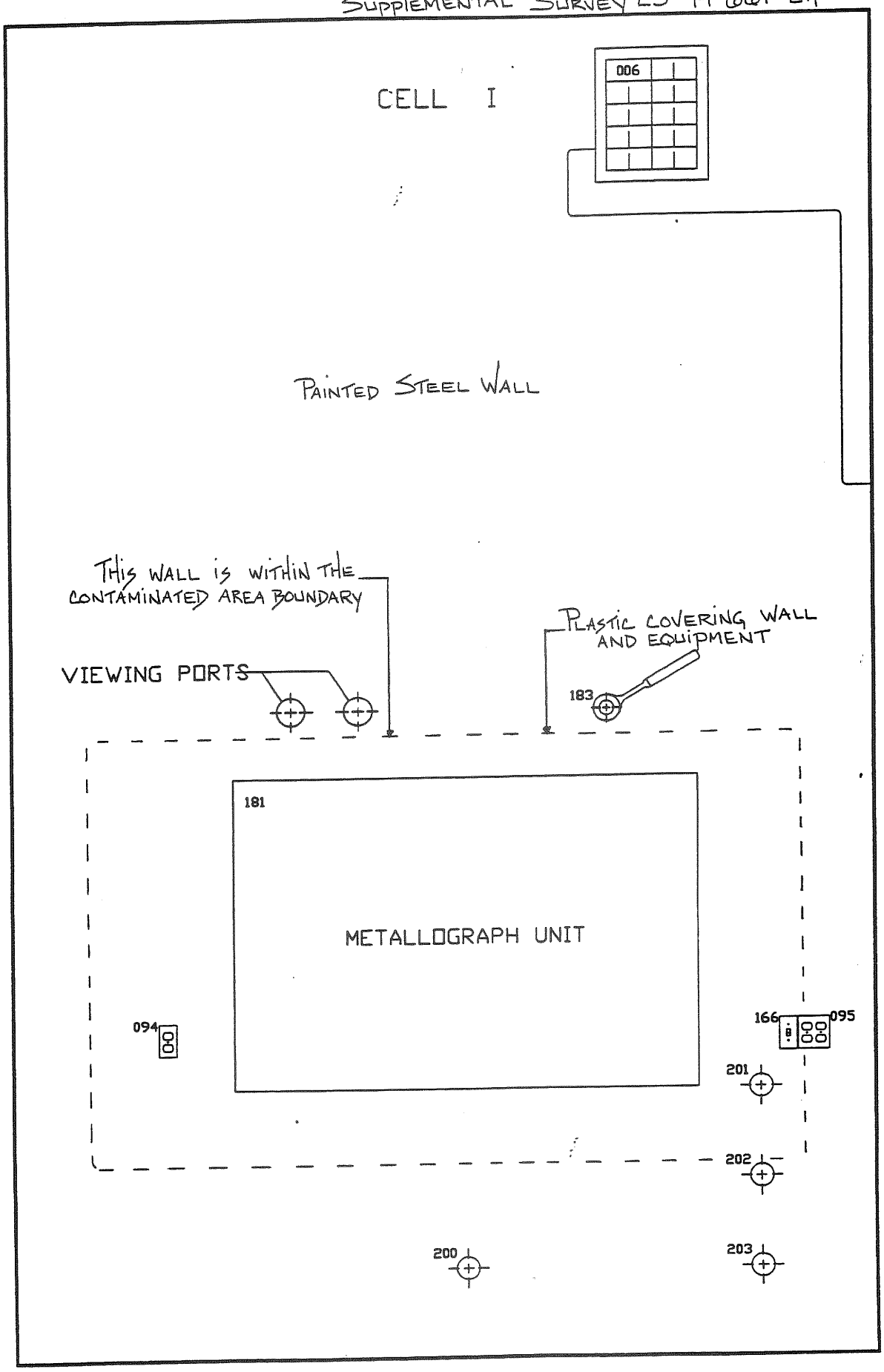
SUPPLEMENTAL SURVEY 23-94-661-CH

DF = DIRECT FRISK dpm/PROBE AREA



SUPPLEMENTAL SURVEY 23-94-6661-CH

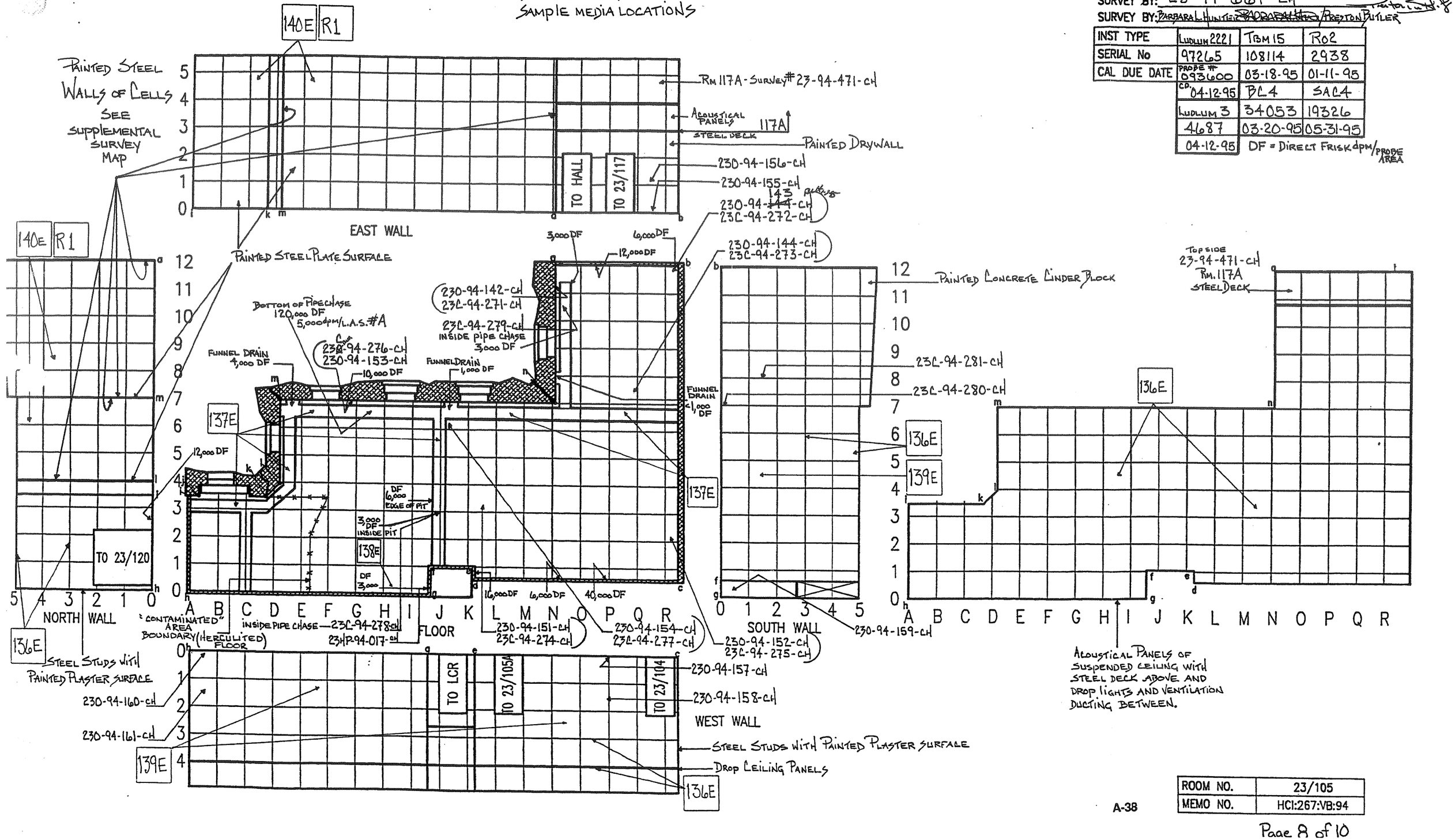


MAP #1

EXCEPTIONS
DIRECT SURVEY RESULTS
SAMPLE MEDIA LOCATIONS

SURVEY NO: 23-94-6661-CH
SURVEY BY: BARBARA L. HUNTER / PRESTON BUTLER

INST TYPE	LUDLUM 2221	TBM 15	RO2
SERIAL No	97265	108114	2938
CAL DUE DATE	PROBE # 093600	03-18-95	01-11-95
	CO. 04-12-95	BC4	SAC4
	LUDLUM 3	34053	19326
	4687	03-20-95	05-31-95
	04-12-95	DF = DIRECT FRISK dpm/PROBE AREA	



ROOM NO.	23/105
MEMO NO.	HCI:267:VB:94

Map #2
Indirect Survey Locations

SURVEY NO. 23-94-661-CH
SURVEY BY: ~~Barbara Hunter~~ ~~Bradley~~ Preston Buthers

INST TYPE	Ludlum 2221	TBM 15	Ro2
SERIAL No	97265	108114	2938
CAL DUE DATE	04-12-95	03-18-95	01-11-95
PROBE NO. 093600	Ludlum 3	BL4	S1L4
	4687	34053	19326
	04-12-95	03-20-95	05-31-95

Painted Steel Walls of Cells See Supplemental Survey Map

Rm 117A - Survey #23-94-471-CH

Acoustical Panels

117A

Steel Deck

Painted Drywall

EAST WALL

Painted Steel Plate Surface

Painted Concrete Cinder Block

Rm. 117A Steel Deck

Underside Pipechase Cover 205

Bottom of Pipe Chase 206

Funnel Drain 234

Floor #C

Inside Pipechase 209 #A

Funnel Drain 210 235

Floor #D

#B Roof

"Contaminated Area" Boundary Herculited Floor

@ Drain inside pipe chase 208

Floor

207 Inside pipe chase

TO HALL

TO 23/117

TO 23/120

TO LCR

TO 23/105A

TO 23/104

NORTH WALL

SOUTH WALL

WEST WALL

Steel Studs with Painted Plaster Surface

Steel Studs with Painted Plaster Surface

Drop Ceiling Panels

Acoustical Panels of suspended ceiling with steel deck above and drop lights and ventilation ducting between.

ROOM NO.	23/105
MEMO NO.	HCI:267:VB:94

Supplemental Sample Map

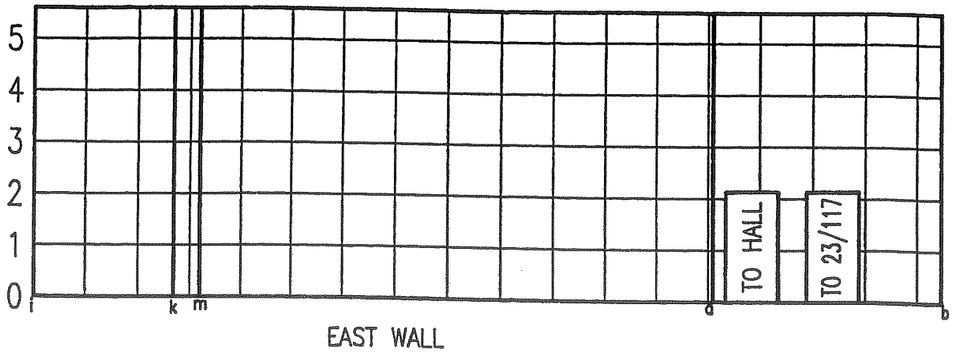
PC-000456/0

NO:

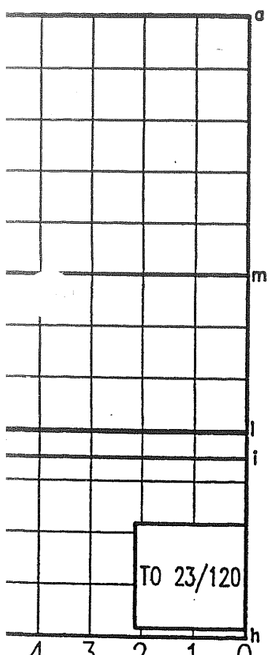
SURVEY BY: 23-94-661-CH

SURVEY BY: J. Rowsell J. Rowsell T. Butterly T. Butterly

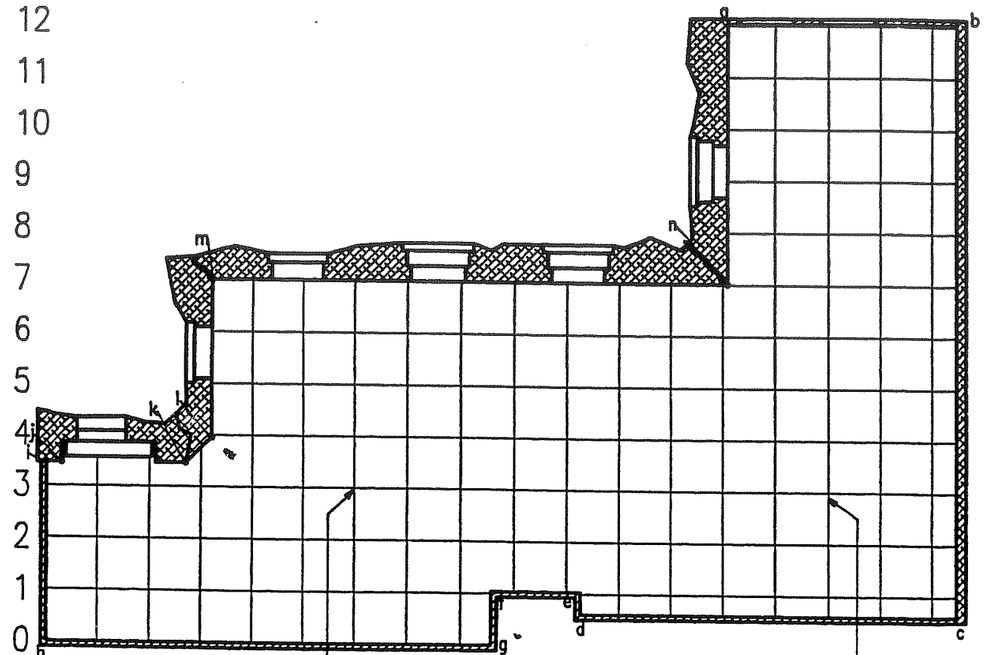
INST TYPE					
SERIAL No	N.	A	N.	A.	N.	A.
CAL DUE DATE					



EAST WALL



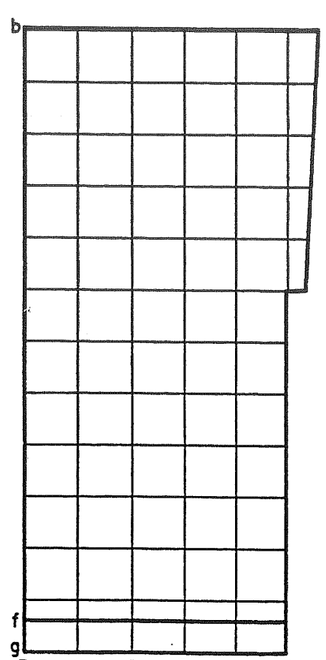
NORTH WALL



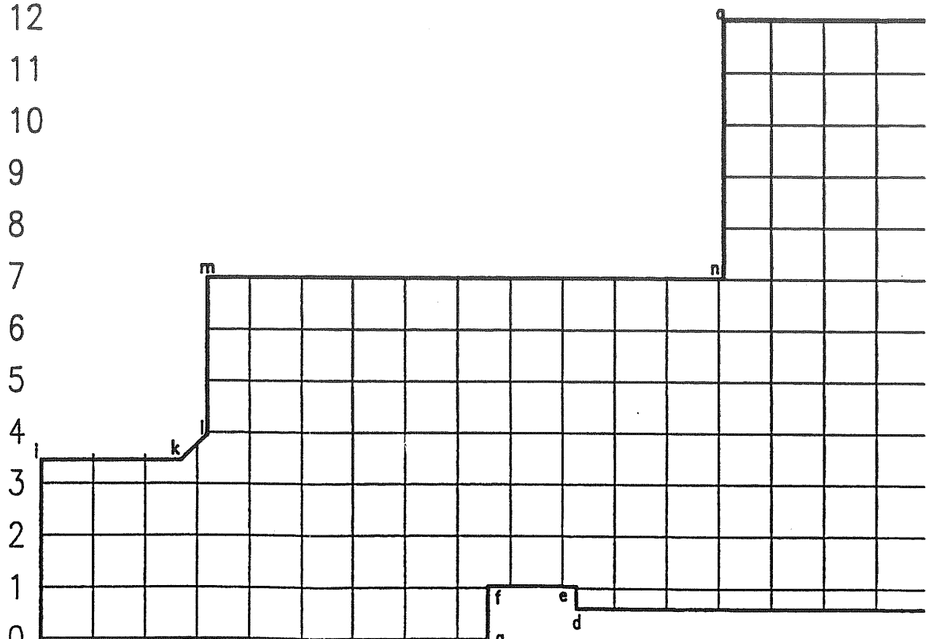
23C-95-354-CH

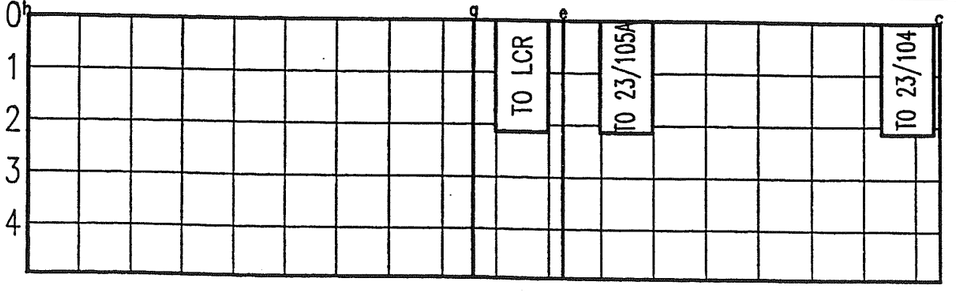
FLOOR

23C-95-355-CH



SOUTH WALL



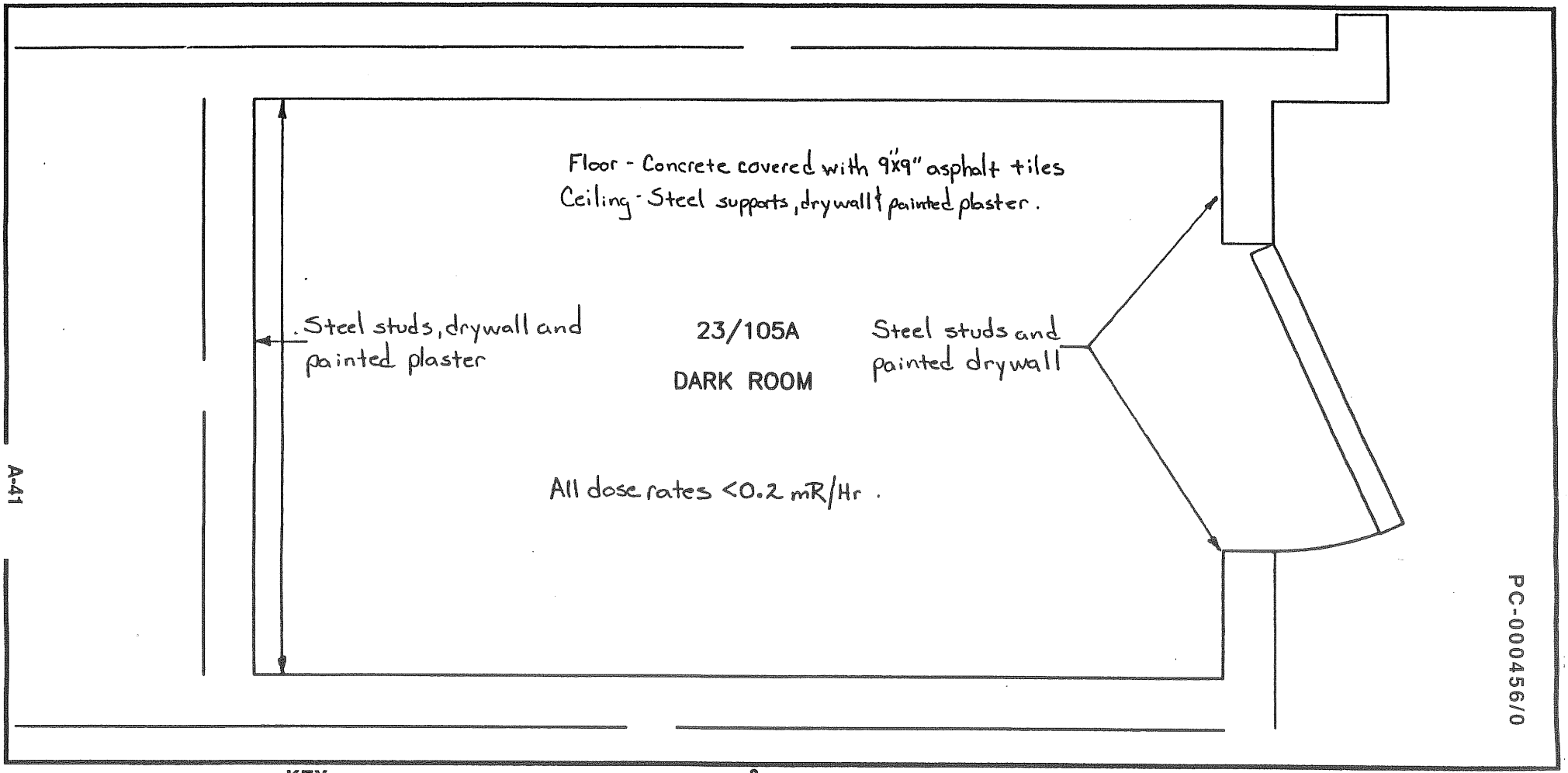


WEST WALL

A-40

ROOM NO.	23/105
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-105A	Darkroom	11-16-94	0830	23-94-0-0-4-4-2-CH



A-41

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/____	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR					Smears (1) thru (72) < MDCR
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY					Airsamples pulled during sample removal
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						10% of smears counted for α. All < MDCR
✱	CONTACT DOSE RATE	+	12" DOSE RATE					RO-2
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					5865
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					1-31-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	HD-29A	BC-4	SAC-4
J. Rewell Kenna Rewell	Douglas A. Warren	11-22-94	28	SERIAL NUMBER	5139	34053	19326
W. Berrett Nancy Berrett				CAL DUE DATE:	4-4-95	3-2095	4-25-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/[illegible] (3)Indicate RWP to Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-105A	LOCATION: Dark Room	DATE: 11-16-94	TIME 0830	SURVEY # 23-94-0-0-4-4-2-CH

R1 Vent and covered removed, Smeared and frisked. No detectable found. Inaccessible surfaces. Will be listed as an exception

R2 Numerous hot particles (loose) were found on sink cabinet and floor and walls that it covered. Area and cabinet wiped down with masslinn until no loose particles were found. Cabinet could still have loose particles on inaccessible surfaces. Cabinet was moved away from wall. Cabinet still in room.

R3 Door threshold was not removed and checked because of door jams sitting on threshold.

R4 Pit was filled with sand and covered with a concrete cap. Concrete cap was removed along with sand. Pit and duct are all lined with ~~stellite~~ steel. Duct was covered with a piece of aluminium plate. Area frisked and smeared. One spot of 5Kdpm/100cm^2 found. No other detectable fixed or loose found. Duct covered and sand placed back in pit. Broken concrete cap placed on top. A sample of the concrete along with two different depths of sand samples were taken when removing the concrete and sand.

R5 110Kdpm/P.A. Removed with masslinn. Saved for isotopic. Sample 23H.P.-94-006-CH

R6 4 Hot particles 80K and less removed with masslinn Saved for isotopic. Sample 23H.P.-94-007-CH.

83E Ceiling vents and associated duct work above ceiling

84E Area above dropped ceiling to steel deck ceiling

Next Page

PC-000456/0

SURVEYOR: W. BERRETT / James Rowell / Wray Bennett	REVIEWED BY: Douglas A. Warren	DATE: 11-22-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N A	N A	N A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP lo Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-105A	Dark Room	11-16-94	0830	23-94-0-0-4-4-Z-CH

85E Misc. electrical outlets, boxes, conduit, lights, controls, sensors, etc on walls and ceiling. Inaccessible surfaces and behind.

North wall (1) Electrical conduit and outlets

East wall (1) Light switch (1) Small copper pipe

South wall (1) Electrical conduit and outlets (2) Electrical boxes and outlets (1) Electrical box

West wall (1) Electrical conduit and outlets (1) Electrical switch (1) Electrical box and outlet

Ceiling (2) Lights (1) Fire Sprinkler (1) Fire sensor

86E Old sink drain in south wall

87E Sink cabinet. Numerous loose hot particles were found on cabinet

88E Vent in door. 15Kdpm/P.A.

89E Door threshold and area underneath

90E Duct in pit

General Remarks

Numerous hot particles, both loose and fixed were detected on assorted pieces of equipment that were removed from the room

Direct readings and smears taken at areas with highest potential for contamination within the grid

(wall-floor intersections, behind fixtures, area behind base boards etc.)

All surfaces covered with large area smears. Detectable listed in remarks.

Any areas of detectable fixed or loose contamination were documented on map or in remarks.

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	N/A	N/A	N/A
J. Rowell James Rowell W. Berrett Wm Berrett	Douglas A. Warren	11-22-94	28				

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please Indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-442-CH
SURVEY BY: J. Rowsell James Rowell / W. Berrett / W. Berrett

INST TYPE	RM-14	TBM 15/28	Model -3
SERIAL No	9162	108114	74305
CAL DUE DATE	2-17-95	3-18-95	2-17-95

GRID PATTERN = 1 METER

Light
Vent ◇ Reference Marker
⊗ Fire Sprinkler × Fire Sensor

R4 23C-94-178-CH
23S-94-143-CH
23S-94-144-CH
5Kdpm/100cm²
90E
PIT
23H.P.-94-ØØ7-CH 80Kdpm/P.A. R6
84E
85E
230-94-Ø7Ø-CH
TO 23/105
15Kdpm/P.A. 88E
EAST WALL
20Kdpm/P.A. 89E R3
BENCH (SINK CABINET 87E
230-94-Ø71-CH
230-94-Ø73-CH
10Kdpm/P.A.
1K to 2Kdpm/cm²
23C-94-177-CH
5Kdpm/P.A.
23C-94-176-CH
4Kdpm/P.A.
8Kdpm/P.A.
4Kdpm/P.A.
10Kdpm/P.A
30Kdpm/P.A
10Kdpm/P.A.
R2
NORTH WALL
Elect. Cond. & Outlets 85E
R5 23HP-94-ØØ6-CH 110Kdpm
23C-94-175-CH
Removed 10K & all but 3K of 36K
230-94-Ø72-CH
FLOOR
WEST WALL
Elect. Cond. & Outlets 85E
SOUTH WALL
Old Sink Drain 86E
Elect. Cond. & Outlets 85E
R1 83E
(DROPPED) SUSPENDED CEILING
STEEL DECK

A-44

ROOM NO.	23/105A
MEMO NO.	HCI:267:VB:94

PC-000456/0

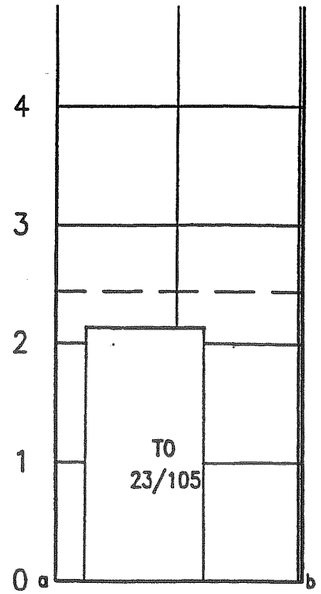
SURVEY No: 23-94-442-CH

SURVEY BY: J. Rowsell/T. Rowell T. Butler/T. Tuthill

INST TYPE						
SERIAL No	N.	A	N.	A.	N.	A.
CAL DUE DATE						

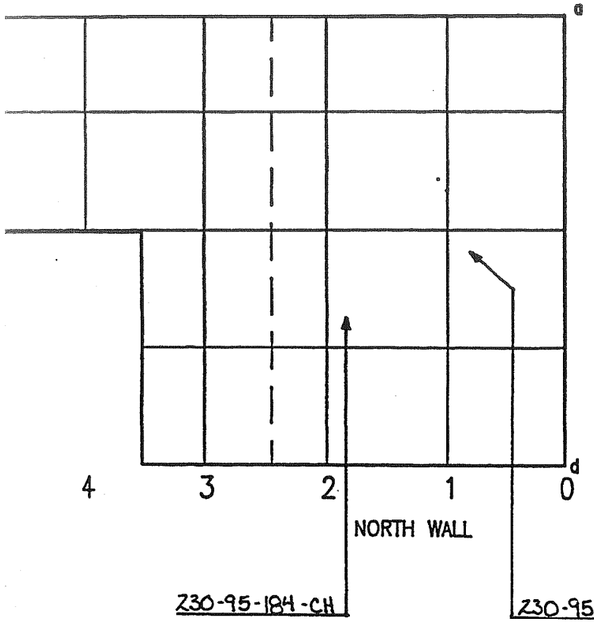
GRID PATTERN = 1 METER

Supplemental Sample Map



EAST WALL

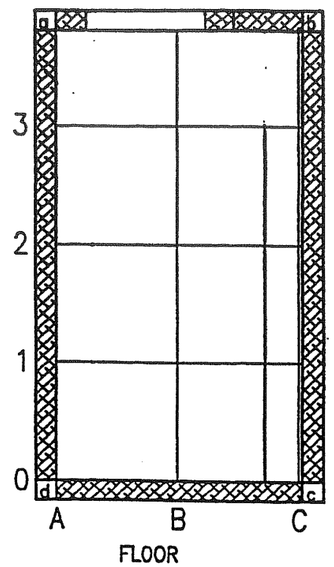
BENCH



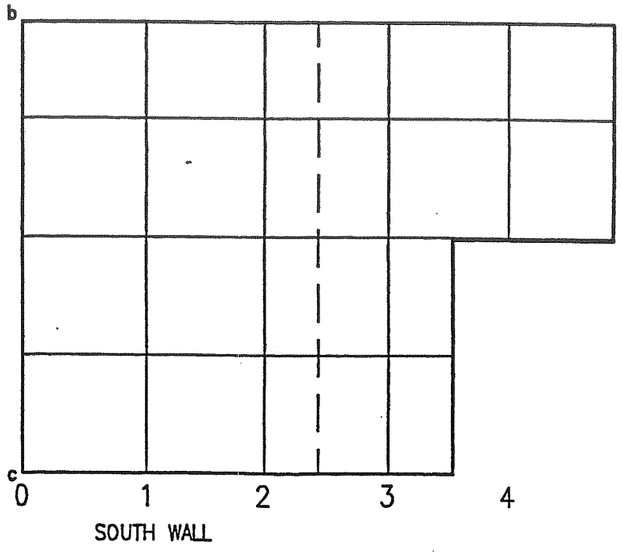
NORTH WALL

Z30-95-184-CH

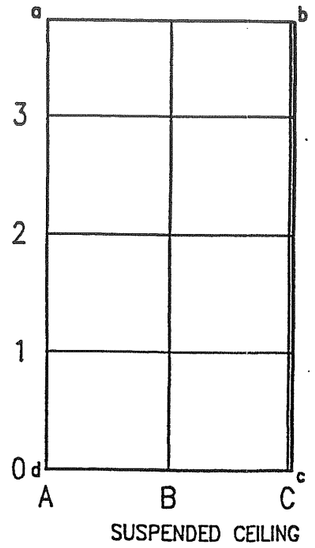
Z30-95-183-CH



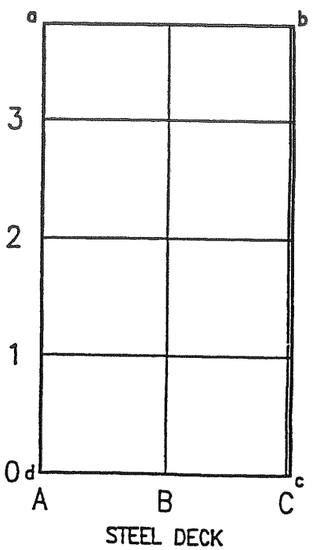
FLOOR



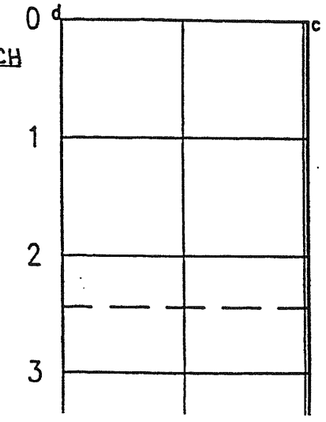
SOUTH WALL



SUSPENDED CEILING



STEEL DECK

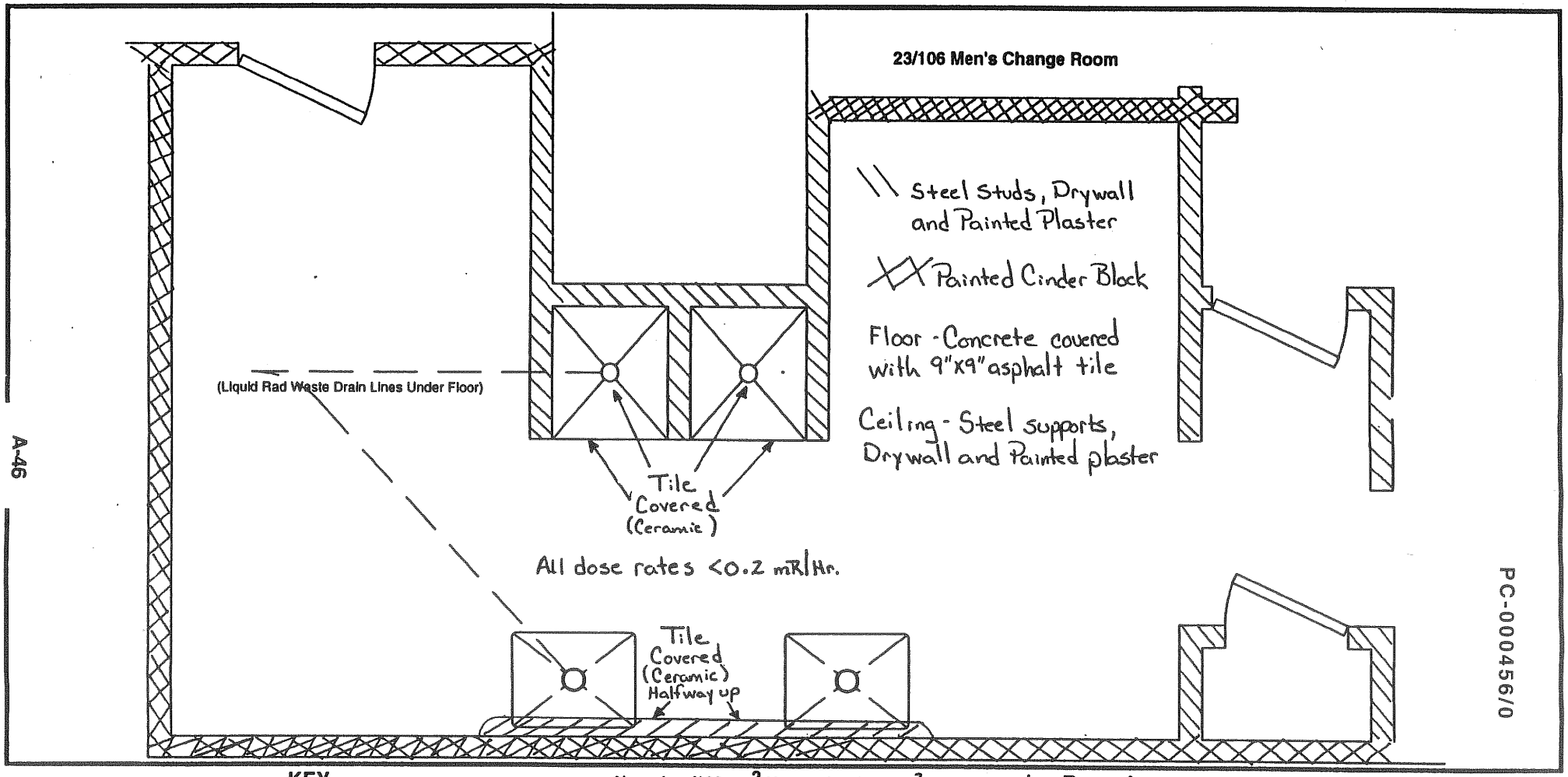


WEST WALL

A-45

ROOM NO.	23/105A
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-106	Men's Change Room	10-31-94	1600	23-94-0-0-4-5-0-CH



KEY

				No.	dpm/100 cm²	No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	(17)	490	(108)	60	(205)	20 α	Smears (1) thru (286) < MDCR except those listed.
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY	(66)	560	(109)	70	(267)	52	Airsamples pulled during sample removal.
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(82)	80	(157)	80	(271)	52	10% of smears counted for α All <MDCR
✱	CONTACT DOSE RATE	+	12" DOSE RATE	(87)	102	(166)	494	(274)	94	except those listed.
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(88)	80	(200)	20 α	(277)	31	
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(105)	213	(203)	20 α	(278)	500	

RO:2
5865
11-1-94

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	HD-29A	BC-4	SAC-4
J. Roussell J. Roussell W. Barrett / W. Benoit	Douglas A. Warren	11-7-94	28	SERIAL NUMBER	5139	34053	1015
				CAL DUE DATE:	4-4-95	3-20-95	3-28-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-106	Room 106	10-31-94	1600	23-94-0-0-4-5-0-CH

R1 2K dpm/PA removed with surface sample 23C-94-085-CH

R2 2K dpm/PA removed with surface sample 23C-94-087-CH

R3 3K dpm/PA removed with sample 23C-94-089-CH

R4 Large area smears of pit bottom 2K to 3K dpm with hot particles 20K to 80K dpm/PA. Bottom of pit was wiped down and cleaned up. Area resmeared with disk smears and masslinn (LAS). LAS <1K dpm/smear Disks <100 dpm/100cm². Fixed readings of 2K to 8K dpm/PA along wall/floor intersections. No room to list on map.

R5 The two 2K dpm/PA are inside pipe openings

R6 Sample taken behind lockers. Lockers removed from area and area checked. Smear (17) 490 dpm/100cm². LAS of area showed no detectable. Frisk of area showed no detectable.

R7 Steel deck ceiling only checked in area around access in dropped ceiling. Steel deck ceiling will be listed as an exception. Area of steel deck ceiling checked had no detectable fixed or loose.

R8 Access in dropped ceiling opened. Area around access on top side of dropped ceiling checked. No detectable fixed or loose.

R9 Vent had 12K dpm/PA in one spot, 1K to 6K dpm/100cm² on about half of ~~vent~~. Heavy build up of dust. Vent removed and put into a rad. bag.

R10 10K to 60K dpm/PA with one of 110K
15 hot particles (8 fixed, 7 loose). Loose particles removed with masslinn. The hottest of 110K dpm/PA saved for isotopic. 23HP-94-004-CH
Tile was removed to get the other 8 removed. They were all stuck on tile

R11 12K dpm/PA removed with sample 230-94-062-CH

R12 Samples taken where tile had been patched

Next Page.

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.
J. Rowsell J. Rowsell W. Berrett / W. Berrett	Douglas A. Warren	11-14-94	28				

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-106	Room 106	10-31-94	1600	23-94-0-0-4-5-0-CH

R13 20K & 160K dpm/PA along door threshold. 2K, 5K, 10K, 110K dpm/P.A. along the crack for the pit cover. No room to list on map.

R14 Smear (166) 494 dpm/100 cm² large area smears picked up one 110K dpm/P.A. hot particle at top of loose board line. Saved for isotope. 23HP-94-005-CH Area smeared again with LAS. No detectable loose or fixed.

R15 Smears (200) (203) (205) 20 dpm/100 cm² α. Storage closet checked for fixed alpha. No detectable found

R16 Vents in ceiling removed and checked. No detectable loose or fixed.

R17 Sample 23C-94-106-CH taken on wall where roof has leaked.

R18 Drains with * had covers removed. Direct frisked as much as possible inside. Smears stuck on pole and taken down inside of pipe. No detectable fixed or loose.

68E (2) Ceiling vents and associated duct work above dropped ceiling

69E Area above dropped ceiling to steel deck ceiling

70E Area under and behind dishwasher

71E Area behind contaminated sink, soap dispensor & towel rack

72E Area behind sink, soap dispensor & towel rack

73E (9) Sink drains, floor drains and clean outs

74E Bench in mens change area. Fixed activity

PC-000456/0

Next Page

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A	N. A
S. Rawsell J. Rawsell W. BERRETT / W. Berrett	Douglas A. Warren	11-14-94	28				

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-94-~~450-CH~~ JR 106	Room 106	10-31-94	1600	23-94-0-0-4-5-0-CH

75E Misc. electrical outlets, boxes, conduit, lights, controls, sensors, etc on walls and ceiling. Inside and behind.

North walls (2) Electrical outlets and conduit (1) Coat hooks rack

East walls (1) Light switch (1) Coat hooks rack (1) Electrical outlet

South walls (1) Electrical outlet (1) Light switch (1) Coat hooks rack

West walls (4) Electrical outlets (1) Emergency Light

Ceiling (116) Lights (9) Fire sprinklers (4) Fire sensors.

76E Pipes in walls of pits and electrical outlet

A-49

General Remarks

Direct readings and smears taken at areas with highest potential for contamination within the grid (wall-floor intersections, behind fixtures, area behind baseboards etc.)

All surfaces covered with large area smears. Detectable listed in remarks.

Any areas of detectable fixed or loose contamination were documented on map or in remarks

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowell J. Rowell W. Benett / W. Benett	Douglas A. Warren	11-14-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

SURVEY No: 23-94-450-CH

SURVEY BY: J. Bowsell / T. Rassell W. BERRETT / W. Bennett

INST TYPE	Model-3	TBM-15	177
SERIAL No	743Ø5	892140	73599
CAL DUE DATE	2-17-95	4-12-95	3-18-95

GRID PATTERN = 1 METER

⊗ Fire Sprinkler x Fire Sensor

▨ Light ▤ Vent

R18 73E → ● Drain or Drain Cover ◇ Reference marker

STEEL DECK CEILING

(Dropped) SUSPENDED CEILING

R7 69E

R8 Topside of dropped C. 259 thru 264

230-94-Ø65-CH

75E 69E R16 68E

R1 2K dpm/PA Surface 23C-94-Ø85-CH

R2 2K dpm/PA Surface 23C-94-Ø87-CH

0"-1" 23C-94-Ø86-CH

0"-1" 23C-94-Ø88-CH

265 266 Wall 267 T/S Pipe

R3 23C-94-Ø84-CH

3K dpm/PA 23C-94-Ø89-CH

R4 76E

270 271 272 273 274 275 276 277 Backside of lid

R5 2K dpm/PA 2K dpm/PA Walls & T/S Pipes 278 thru 279

76E

R9 12K dpm/PA

R13 23C-94-Ø96-CH

R6 230-94-Ø32-CH

23C-94-1Ø8-CH

R12 100K dpm/P.A. 230-94-Ø64-CH 23C-94-1Ø5-CH

R17 23C-94-1Ø6-CH

6K dpm/PA 230-94-Ø66-CH 23C-94-1Ø7-CH

230-94-Ø60-CH

230-94-Ø61-CH

NORTH FLOOR

EAST

TO CORRIDOR

TO 23/104

23C-94-Ø45-CH R6

23C-94-Ø46-CH

23C-94-Ø47-CH 74E

230-94-Ø38-CH

2K dpm/PA 23C-94-Ø53-CH

1K dpm/PA 23C-94-Ø48-CH

10K dpm/PA

TOILMENS RM

70E 71E 72E

SOUTH

110K dpm/PA R10

1K to 2K dpm/100cm² R11

12K dpm/PA 230-94-Ø62-CH

23C-94-1Ø2-CH

23C-94-1Ø1-CH

TO STORAGE

WEST

75E 69E

R14 110K dpm/PA

230-94-Ø67-CH

75E 69E R15

EAST WALL

230-94-Ø63-CH

NORTH WALL

1K to 5K dpm/100cm² On Shelfs

SOUTH WALL

23C-94-1Ø3-CH

STORAGE

WEST WALL

23C-94-1Ø4-CH

ROOM NO.	23/106
MEMO NO.	HCI:267:VB:94

A-50

PC-000456/0

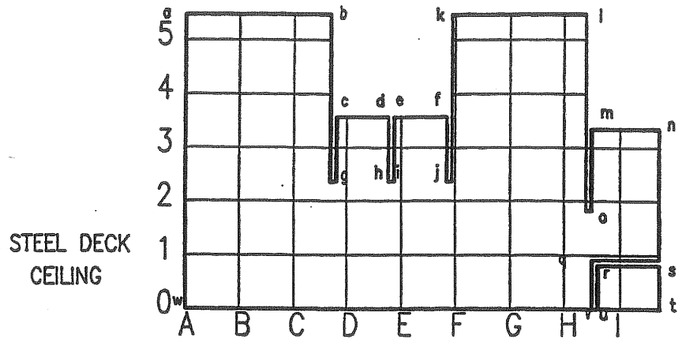
SURVEY No: 23-94-650-CH
SURVEY BY: J. Rowell K. Rowell P. Burkholder

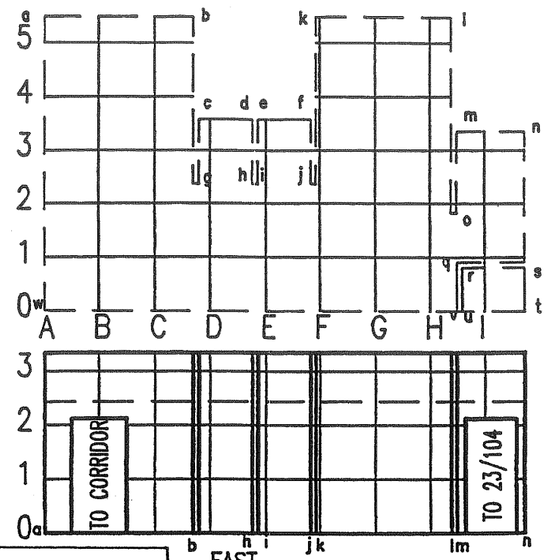
INST TYPE					
SERIAL No	N/A		N/A		N/A
CAL DUE DATE					

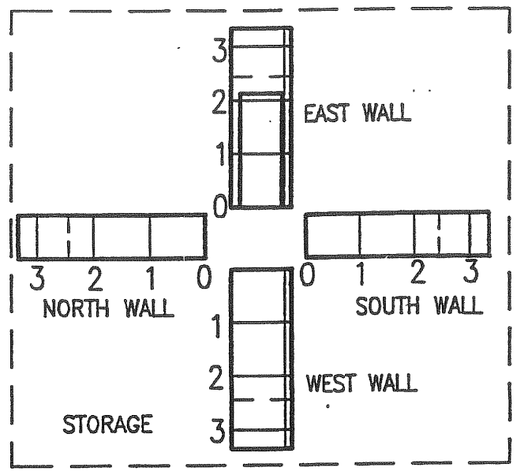
GRID PATTERN = 1 METER

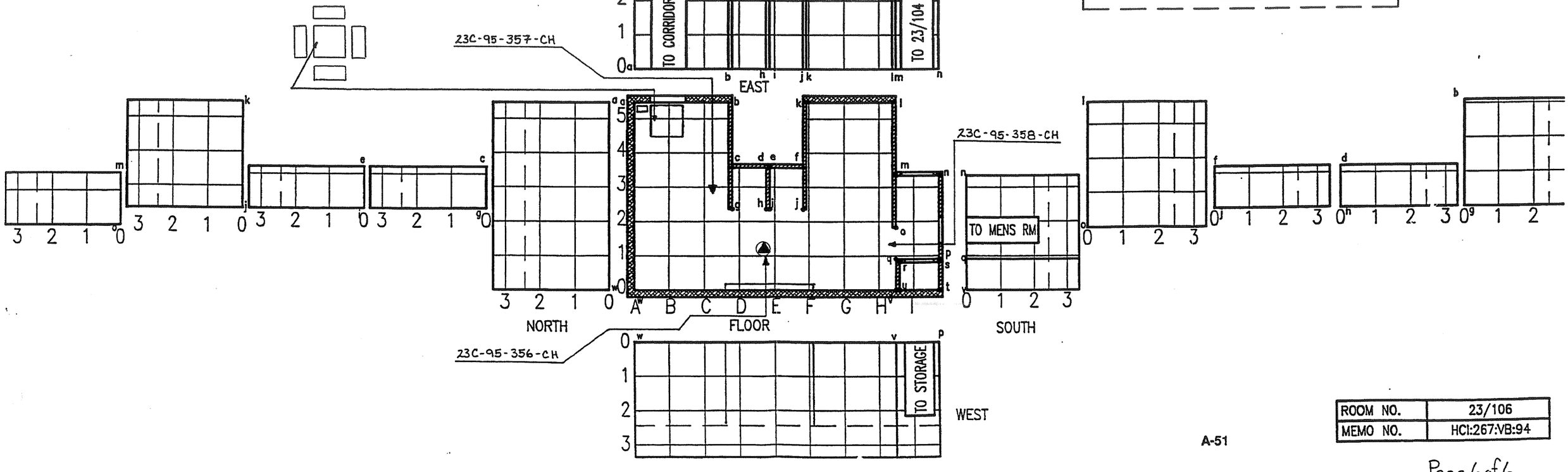
Drain

Supplemental Sample Map





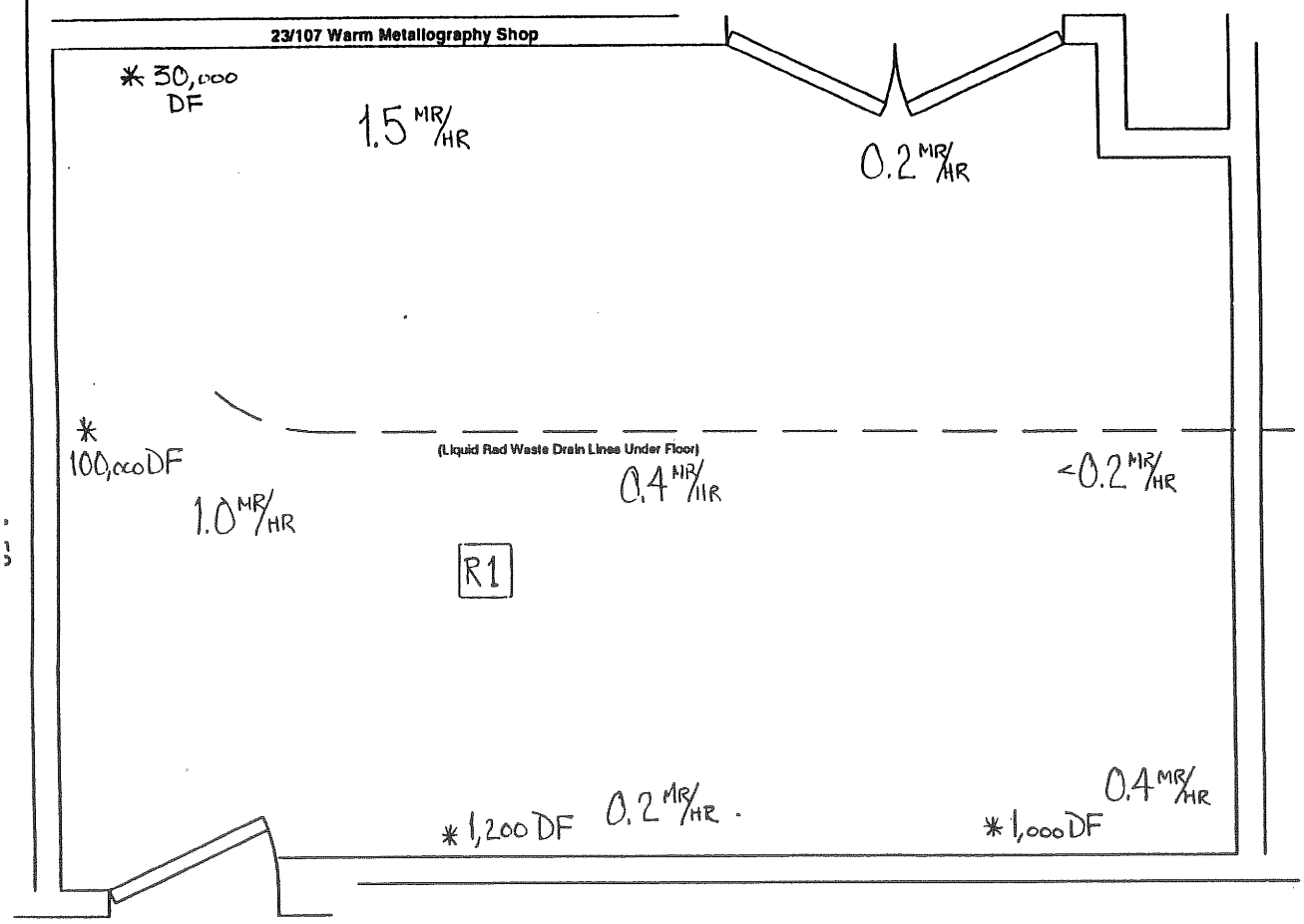




ROOM NO.	23/106
MEMO NO.	HCI:267:VB:94

A-51

MAP#: 23-107	LOCATION: Warm Metallography Shop	DATE: 12-21-94	TIME 0700	SURVEY # 23-94-0-0-6-6-9-CH



No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
		N	A

No.	dpm\100cm2	No.	dpm\100cm2
			N A

Additional Remarks:

N A

KEY				No.	dpm/100 cm²	No.	dpm/
O	SMEAR	◆	H^3 SMEAR			# A	10,000
#	LARGE AREA SMEAR	***	BOUNDARY	N	A	# B	5,000
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)				# C	5,000
*	CONTACT DOSE RATE	+	12" DOSE RATE			# D	3,000
β	BETA DOSE RATE ONLY	α	ALPHA ONLY		N A		
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

FOR SMEAR RESULTS SEE SUPPLEMENT TO SURVEY SMEAR CONTINUATION SHEET.

COPY

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA TUNNER Barbara Tunner Teston Butler II	Douglas A. Warren	1-5-95	4-028		RO2 2938 01-11-95	Ludlum 3 74305 05-08-95	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please Indicate any additional "Remarks" on survey map.

D 1 5

MAP#: 23-107	LOCATION: Warm Metallography Shop	DATE: 12-21-44	TIME 0700	SURVEY # 23-94-0-0-6-6-9-CH

R1 Numerous areas on floor with direct frisk survey results ranging from 2,000 to 100,000 dpm/~~probe area~~

145E Hydraulic Power Lift Unit and area beneath unit

146E Ventilation Duct Work on both North and South walls

147E Area beneath and inside flammable locker

148E Misc. equipment, piping, manipulator arm penetrations and intricacies

R2 Smears (157) through (165) taken on Hydraulic Lift

☐ Direct frisk surveys were performed at a minimum of all grid intersections, penetrations, discolorations and any other suspect locations

☐ 5% of smears counted for Alpha contamination. No Alpha detected, < 20 dpm/100cm².

A-53

PC-000456/0

SURVEYOR: Barbara Hunter, Preston Butler	REVIEWED BY: Douglas A. Warren	DATE: 1-5-95	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP I
Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-107	LOCATION: WARM METALLOGRAPHY SHOP	DATE: 12-21-94	TIME 0700	SUPPLEMENT TO SURVEY # 23-94-0-0-6-6-9-CH

Smear Continuation Sheet

REMARKS:	No.	dpm/100 cm²	Description	No.	dpm/100 cm²	Description	No.	dpm/_____	Description
5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION. NO ALPHA DETECTED, <20dpm/100cm².	(1)	1,000		(103)	3,000				
	(2)	1,000		(104)-(121)	< 1,000				
	(3)	1,000		(122)-(143)	1,000				
	(4)	1,000		(144)-(155)	< 1,000				
	(5)	1,000		(156)-(170)	1,000	(170) OVERHEAD VENTILATION			
	(6)	6,000		(171)	3,000	OVERHEAD VENTILATION			
	(7)	5,000		(172)	3,000				
	(8)	3,000		(173)	3,000				
	(9)-(12)	< 1,000		(174)	4,000				
	(13)	7,000		(175)	2,000				
	(14)	10,000		(176)	10,000				
	(15)	8,000							
	(16)	2,000							
	(17)-(39)	< 1,000							
	(40)-(46)	1,000						N A	
	(47)	2,000							
	(48)-(50)	< 1,000							
	(51)	2,000							
	(52)-(59)	1,000							
	(60)	2,000			N A				
	(61)	< 1,000							
	(62)	1,000							
	(63)-(66)	< 1,000							
	(67)-(72)	3,000							
	(73)-(83)	< 1,000							
	(84)	2,000							
	(85)-(94)	< 1,000							
	(95)-(97)	2,000							
	(98)	20,000							
	(99)-(101)	< 1,000							
	(102)	2,000							

A-54

PC-000456/0

SURVEYOR: [illegible]	REVIEWED BY: Douglas R. Warren	DATE: 1-5-95	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	BC4 822 06-05-95	BC4 34053 03-20-95	SAC 4 19326 05-31-95

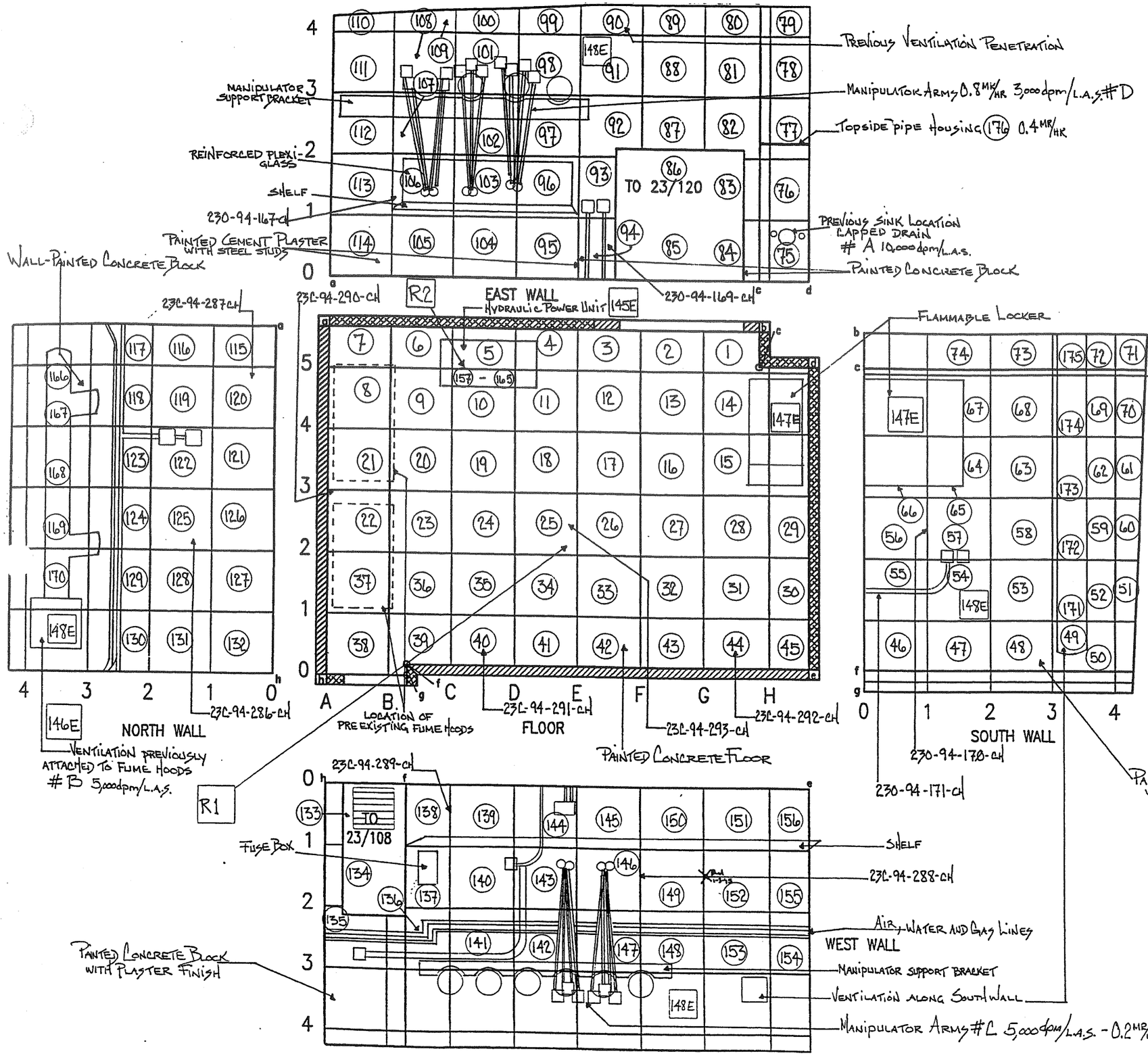
1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

PC-000456/0

SURVEY No: 23-94-669-CH

SURVEY BY: BL HUNTER [illegible]

INST TYPE	R02	LUDLUM 3	BL4
SERIAL No	2938	74305	822
CAL DUE DATE	01-11-95	05-08-95	06-08-95
GRID PATTERN = 1 METER		BL4	SAL4
		34053	19326
		03-20-95	05-31-95



ROOM NO.	23/107
MEMO NO.	HCI:267:VB:94

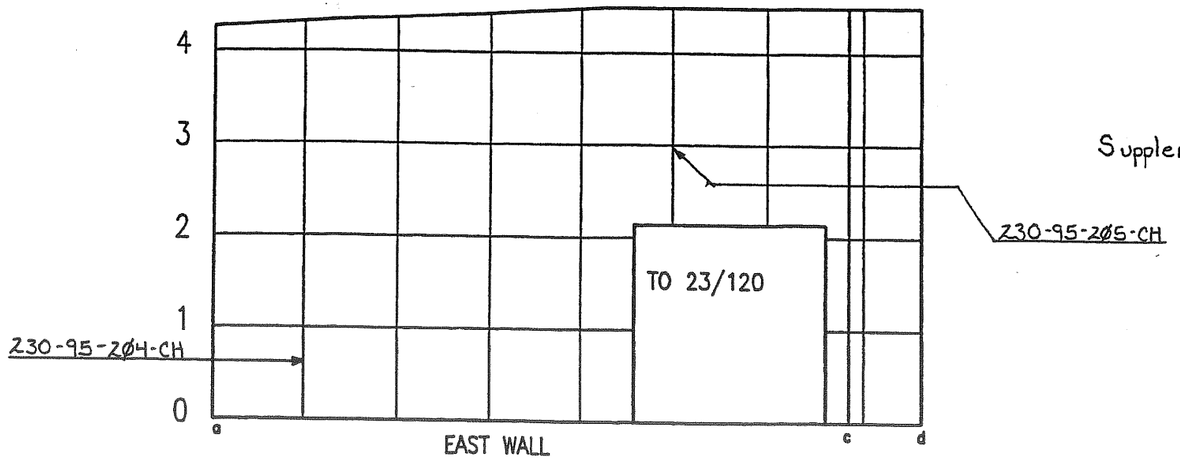
A-55

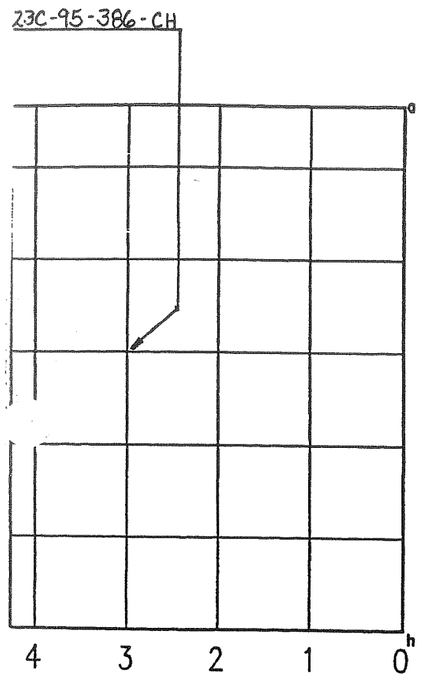
SURVEY No: 23-94-669-CH
SURVEY BY: J.Bowsell/K.Bowsell P.Roth/S.Bates

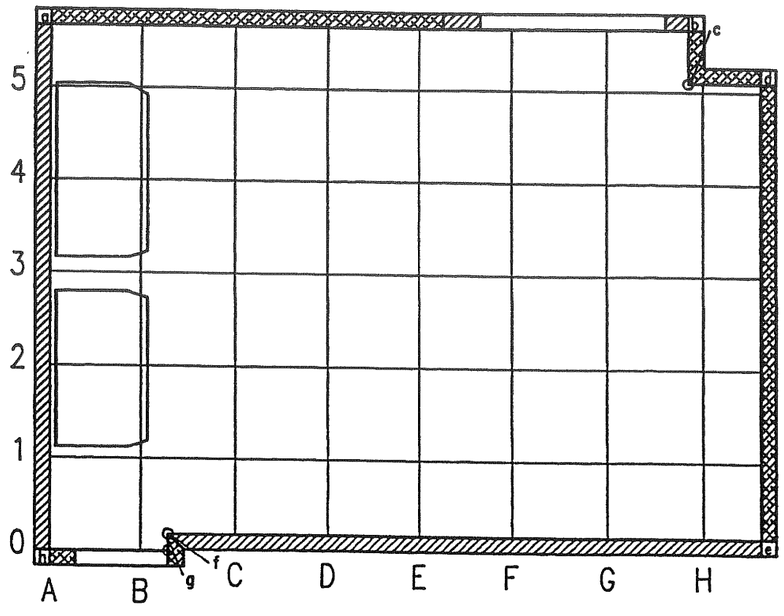
INST TYPE					
SERIAL No	N.	A.	N.	A	N.	A
CAL DUE DATE					

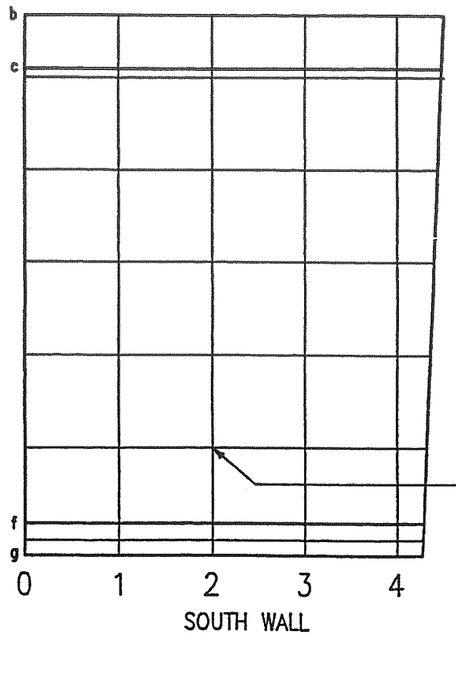
GRID PATTERN = 1 METER

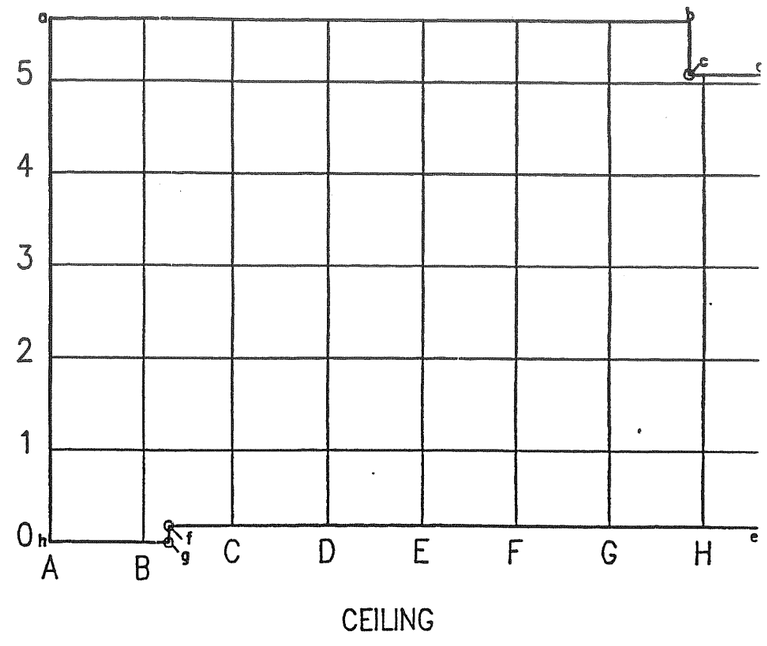
Supplemental Sample Map

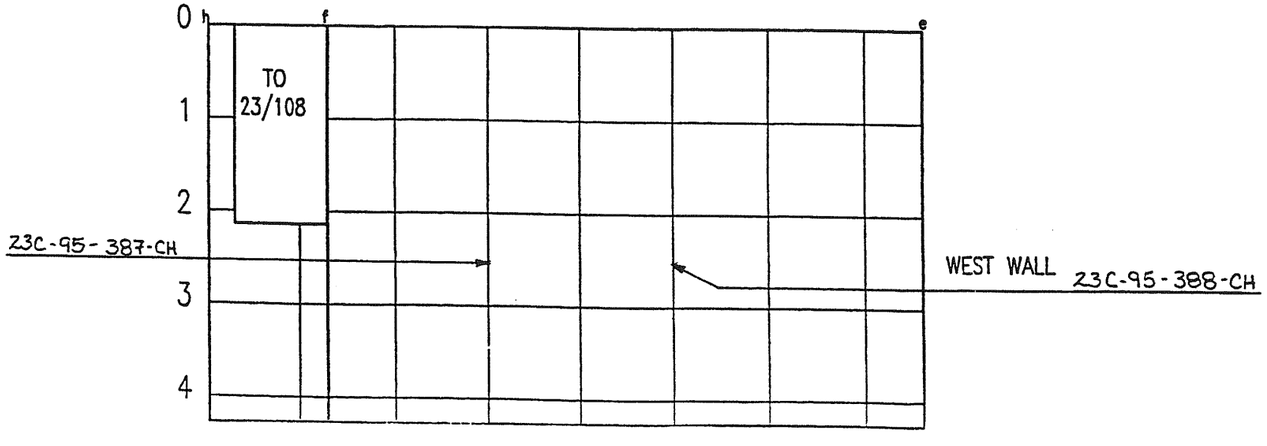






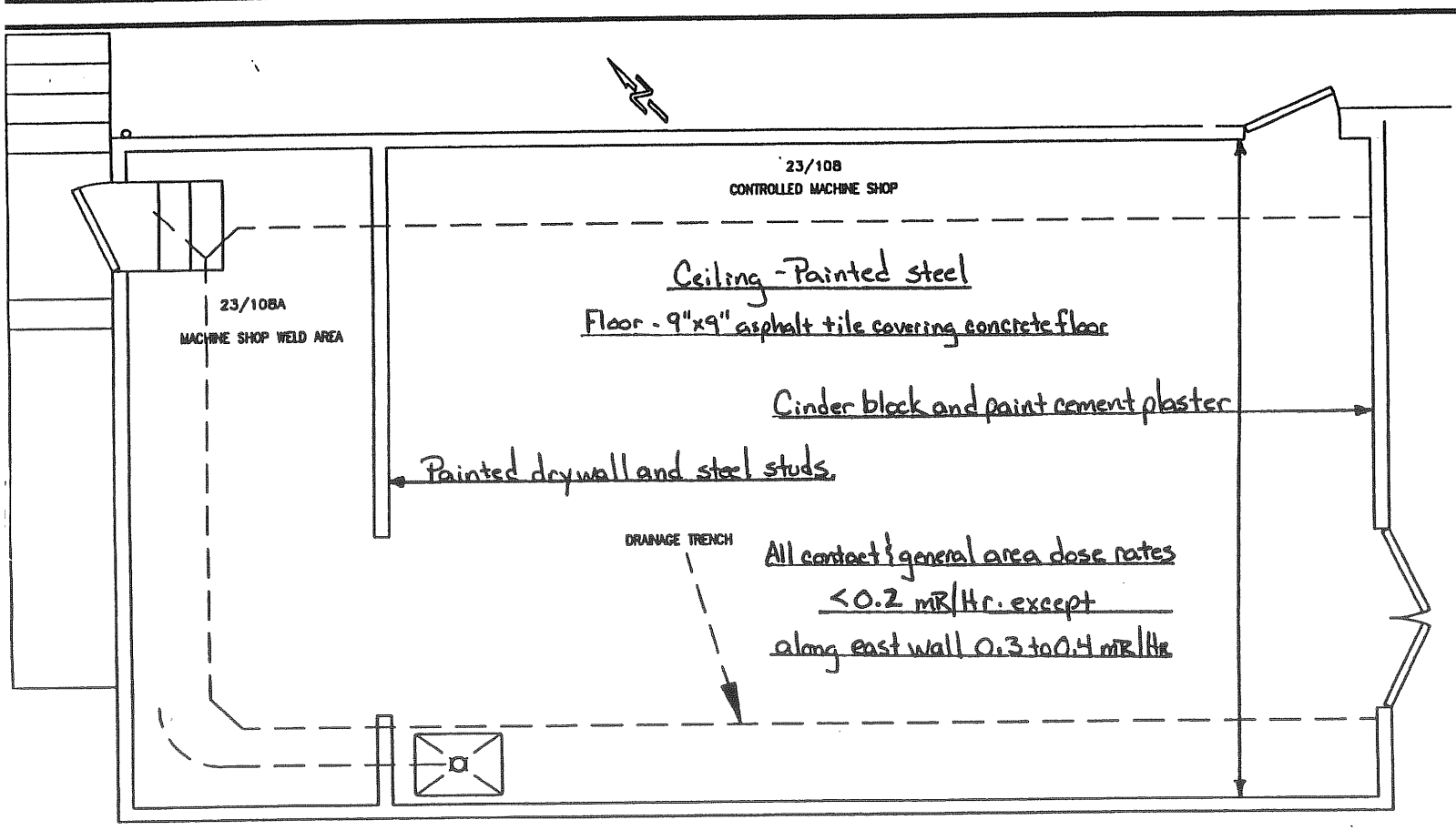






ROOM NO.	23/107
MEMO NO.	HCI:267:VB:94

MAP#: 23-108	LOCATION: Controlled Machine Shop	DATE: 12-21-94	TIME 1600	SURVEY # 23-94-0-0-6-3-3-CH



No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)
O	SMEAR	◆	H³ SMEAR	61	3035	2	11 α	Smears 1 thru 350 taken. Only those above 1K dpm/100cm²
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY	106	1641	61	18 α	BR are listed. < MDCR = 225 smears
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		110	1589	71	18 α	MDCR to 1K dpm/100cm² BR = 124 smears, >1K dpm/100cm² BR = 5 smears
✳	CONTACT DOSE RATE	+	12" DOSE RATE	291	1216			10% of smears counted for α. 3 smears > MDCR α
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	329	1010			are listed
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					Airsample pulled during sample removal

RO-2
5147
3-7-95

SURVEYOR: James Rowsell / Wray Berrett	REVIEWED BY: Douglas A. Warren	DATE: 12-22-94	JOB RWP# 28	INST. TYPE:	BC-4	SAC-4	AMS-28A
				SERIAL NUMBER	34053	19326	5323
				CAL DUE DATE:	3-20-95	5-31-95	4-5-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for

Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

COPY

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	16.00	23-94-0-0-6-3-3-CH

R1 2K dpm/P.A. Removed with sample 230-94-136-CH

R2 3K dpm/P.A. Removed with sample 230-94-132-CH

R3 18Kdpm/P.A. Removed from tile before sampling

R4 15Kdpm/100cm^2 in joints of floor tile. Removed with sample 230-94-149-CH

R5 14Kdpm/P.A. Removed from tile before sampling

R6 Numerous high contamination particles and a few hot particles detected on the floor. Most of the particles are found in the joints where the tile meet. Most are fixed. Range

R7 Numerous high contamination particles and a few hot particles detected in the overhead. Most of the particles are loose. Range from 150K dpm/P.A. and less. General area on large are smears is 1K dpm to 2K dpm

R8 Drain was opened, direct frisk and smeared. 3Kdpm/100cm^2 loose in pipe. No detectable direct in drain.

R9 Drain in sink was direct frisk and smeared. 3Kdpm/100cm^2 loose in pipe. No detectable direct in sink Floor around sink 1K to 10K dpm/P.A. in joints of floor tile. Small spot of 30Kdpm/100cm^2

R10 Background in high along east wall, so not to much frisking was done in that area.

R11 Sample taken under penetration

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
James Rowsell James Rowsell WRAY BERRETT Wray Berrett	Douglas A. Warren	12-22-94	28		N A	N A	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-CH

126E Filled in shoe scrubber pit

127E Patched penetrations

128E North wall. Internally and area that is covers. Wall added later.

129E Sink and floor drain on west wall/floor intersection

130E Misc. pipes, elect conduit & boxes, controls, lights etc on the walls and in the overhead. Internally and the area that they cover.

131E Machine ventilation ducts and air conditioner ducts. Inaccessible surfaces.

132E Moat around perimeter of the room that has been filled with concrete.

133E Doors added later. Area that the door jams cover - inaccessible surface. (south wall)

134E Misc equipment left in room and area that they cover.

135E Inaccessible surfaces behind cabinet and sink. (West and East walls)

A-50

General Remarks

Direct readings and smears taken at grid points or in an area of higher potential for contamination within the grid

Most surfaces had large area smears taken on them

Any areas of detectable fixed or loose contamination ~~where~~ were documented on map or in remarks.

Extra smears taken on lights, pipes, conduit, etc. Most are pointed to area with a arrow.

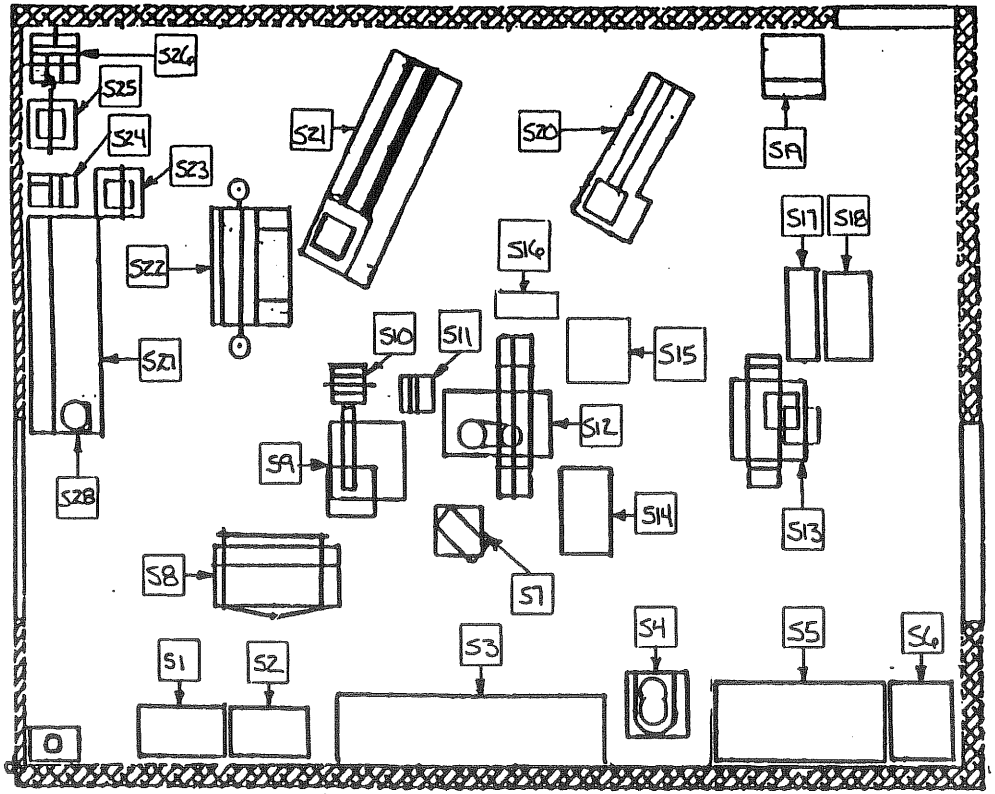
PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / James Rowsell Wes Bennett / Wes Bennett	Dr. Douglas A. Auburn	12-22-94	28		N A	N A	N A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-CH

Equipment Survey



A-60

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/_____	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	See	next	page		See next page for direct readings and smear results.
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY					10% of smears counted for α. <MDCR unless listed.
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						
✱	CONTACT DOSE RATE	+	12" DOSE RATE					
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / Kerry Bezzett / Wray Bennett	Douglas A. Warren	12-22-94	28%		Model-3 74305 5-8-95	BC-4 34053 3-20-95	SAC-4 19326 5-31-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-CH

S1 Storage cabinet for man. slaves. Smears (1) <MDCR (3) MDCR to 1K dpm/100cm² (1) 2728 dpm/100cm². (1) 22 dpm/100 cm² α Large area smears 3K dpm. Direct two items 10K & 5K dpm/100cm². Large item could be surveyed. Small items are proably radioactive waste.

S2 Storage cabinet. Smears (1) <MDCR (2) MDCR to 1K dpm/100cm² (2) 1603 & 1296 dpm/100cm². Large area smears 4K dpm & 40K dpm/P.A. No detectable direct. Large item could be surveyed. Small items are proably radioactive waste.

S3 Cabinet. Smears (10) <MDCR (4) MDCR to 1K dpm/100cm² (1) 1035 dpm/100cm². Large area smears 1K to 10K dpm. Direct (3) items 8K, 10K & 250 K dpm/100cm². Survey large tools & cabinet. Small items are proably radioactive waste.

S4 Drill press. Smears (3) <MDCR (3) MDCR to 1K. Large area smears 4K dpm Direct 6K & 10K dpm/100cm² with 20K dpm/P.A. Most could be surveyed out clean. Some part will be rad waste.

S5 Work bench & tools. Smears (16) <MDCR (7) MDCR to 1K. Large area smears 1K-2K dpm. Direct. Numerous high contamination and a few hot particles on flat surfaces. Item is radioactive waste.

S6 Desk. Smears (4) <MDCR (1) MDCR to 1K. Large area smears and direct frisk No detectable. Item could be surveyed out clean.

S7 Promacut metal saw. Smears (4) <MDCR Large area smears 10K dpm/P.A. Direct 100K dpm/P.A. 5K & 10K dpm/PA. Most of this item should be free releasable.

Next page

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / Wray Bennett	Douglas A. Warren	12-22-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-C#

S8 Sheet metal shear. Smears (1) <MDCR (2) MDCR to 1K (1) 2118 dpm/100cm². LAS. 3K-6K dpm / 10K & 30K & 60K dpm/P.A. Direct 100K & 30K dpm/P.A. Item is proably deconable except for some small parts.

S9 DoAll band saw. Smears (5) <MDCR (2) MDCR to 1K. LAS 20K & 30K dpm/P.A. No detectable direct. Depending on how much of the insides are inaccessible. Item should be releasable.

S10 Craftsman Grinder. Smears (1) <MDCR (2) MDCR to 1K. LAS. 1K dpm. Direct 100 dpm/P.A. on base. Item should be releasable

S11 Hammond chop saw. Smears (1) <MDCR (2) MDCR to 1K. LAS 2K to 10K dpm. Direct 60K to 120K dpm/100cm² Item is radioactive waste.

S12 Bridgeport milling machine. Smears (3) <MDCR (3) MDCR to 1K LAS. 1K dpm Direct (2) 3K dpm/100 cm² spots. Depending on accessiblity to internals, item should be releasable. Motor maybe rad waste

S13 Van Norman milling machine. Smears (5) <MDCR LAS. No detectable. Direct few spots of 1K to 20K dpm/P.A. Depending on accessiblity to oil sump and internals, most of the item should be releasable. Motor maybe rad waste.

S14 White Tool Cabinet. Smears (3) <MDCR (3) MDCR to 1K. LAS 2K dpm Direct 2K & 100K dpm/P.A. Tools have loose high contamination particles and a few hot particles. Survey and release clean tools. Part of cabinet is radioactive waste.

S15 Cart with tools. Smears (3) MDCR to 1K. LAS & Direct No detectable. Most item should be releasable. Some items have inaccessible surfaces.

Next page

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:			
J. Rawsell / Wm Bennett	Douglas A. Warren	12-22-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-CH

S16 Small green cabinet. (Empty) Smears. (1) <MDCR (1) MDCR to 1K - LAS & Direct. No detectable. Item should be releasable

S17 Green tool cabinet & tools. Smears (5) <MDCR (2) MDCR to 1K LAS. 1K dpm. No detectable direct. Cabinet and most items should be releasable. Some items have inaccessible surfaces.

S18 Grey tool cabinet and tools. Smears (3) <MDCR LAS. 1K to 2K dpm / 4K & 15K dpm/P.A. Direct 2K & 10K dpm/P.A. Black dust in drawers. Most items and cabinet should be releasable.

S19 Grey Lathe tool cabinet and tools. Smears (4) <MDCR (2) MDCR to 1K LAS. 1K dpm Direct 40K dpm/P.A. inside drawer. Most of the cabinet and tools should be free releasable. Some items have inaccessible surfaces

S20 Monarch Lathe. Smears (4) <MDCR (2) MDCR to 1K LAS. No detectable. Direct 70K dpm/P.A. Depending on accessibility to internals, item should be free releasable.

S21 Clausing Lathe. Smears (5) <MDCR (2) MDCR to 1K LAS. 50K dpm/P.A. Direct 50K & 150K dpm/P.A. Depending on accessibility to internals. most of the lathe should be free releasable.

S22 Chicago Steel bender. Smears (2) MDCR to 1K (1) 1334 dpm/100cm^2 LAS 2K to 4K dpm Direct 100K and 30K dpm/P.A. Most of machine is proably releasable. Some surfaces are inaccessible.

S23 Baldor grinder & stand. Smears (1) <MDCR (2) MDCR to 1K LAS. No detectable. Direct 1K & 5K dpm/100cm^2 on base. Has inaccessible surfaces but should be releasable.

S24 Delta Sander. Smears (1) <MDCR (3) MDCR to 1K LAS. 1K dpm No detectable direct. Item should be releasable

S25 Craftsman Grinder. Smears (3) MDCR to 1K. LAS. 20K dpm Direct 80K dpm/P.A. Grinder 160K dpm/P.A. on base. Part is releasable, part is radioactive waste.

☐ Next page.

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / J. Rowsell / Wm Bennett / Wm Bennett	Douglas R. Warren	12-22-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108	Controlled Machine Shop	12-21-94	1600	23-94-0-0-6-3-3-CH

S26 Di-Arco metal shear Smears. (2) MDCR to 1K LAS. 25K & 50Kdpm/P.A. Direct spots of 6Kdpm/100cm^2
Item is proably radioactive waste

S27 Pratt & Whitney drilling machine. Smears (2) MDCR to 1K LAS & Direct no detectable. Alot of inaccessible surfaces but could be releasable.

S28 Work bench. Smears (2) <MDCR (3) MDCR to 1K LAS. 70Kdpm/ 20 & 30Kdpm/P.A. Direct 50K-80K dpm/P.A.
Item is radioactive waste.

General remarks

A-64

All items only spot checked
All items will proably need some dismantlement and decontamination.
Fluid samples will need to be taken on some items.
Some parts of items may not be accessible. (Motors, gearboxs etc)

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:			
J. Rowsell T. Rowsell Wray Bezrett / Wray Bezrett	Douglas A. Warren	12-22-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-633-CH
SURVEY BY: J. Rowsell / J. Rowsell / Larry Bennett / Larry Bennett

INST TYPE	Model-3	Model-3	177
SERIAL No	74305	1055	73599
CAL DUE DATE	5-8-95	5-29-95	3-18-95

GRID PATTERN = 1 METER

Sink
Floor Drain
Ducts
Smears MDCR to 1K dpm/100cm² BK
Patched Penetration
Light

23C-94-262-CH
23C-94-264-CH
23C-94-263-CH
100Kdpm/P.A.
23HP-94-015-CH
23C-94-26F-CH
23C-94-260-CH
230-94-137-CH
23C-94-249-CH
230-94-139-CH
2Kdpm/P.A.
230-94-141-CH
3Kdpm/P.A. RZ
230-94-132-CH
23C-94-244-CH
2mR/hr/120mrad/hr H.P. Fixed.
2Kdpm/P.A. R1
230-94-130-CH
23C-94-242-CH
230-94-131-CH
23C-94-243-CH
320Kdpm/P.A. 23HP-94-016-CH
230-94-138-CH
23C-94-250-CH
230-94-150-CH
23C-94-270-CH
EAST WALL
TO 23/197
TO 23/108A
TO OUTSIDE
NORTH WALL
5Kdpm/100cm² / foot square area
230-94-140-CH
SOUTH WALL
23C-94-259-CH
23C-94-257-CH
23C-94-258-CH
CEILING
Duct 337* thru 350*
Light 328* thru 330*
331* thru 333* Light
FLOOR
23C-94-253-CH
23C-94-255-CH
230-94-133-CH
23C-94-245-CH
WEST WALL
23C-94-254-CH
23C-94-252-CH
23C-94-256-CH
R5 14Kdpm/P.A.
230-94-135-CH
23C-94-247-CH
230-94-136-CH
23C-94-248-CH
23C-94-251-CH
NOTE: FLOOR & CEILING HEIGHT UNEVEN
18Kdpm/P.A. R3
230-94-134-CH
23C-94-246-CH
15Kdpm/100cm² R4 R8
230-94-149-CH
23C-94-269-CH

A-13D

ROOM NO.	23/108
MEMO NO.	HCI:267:VB:94

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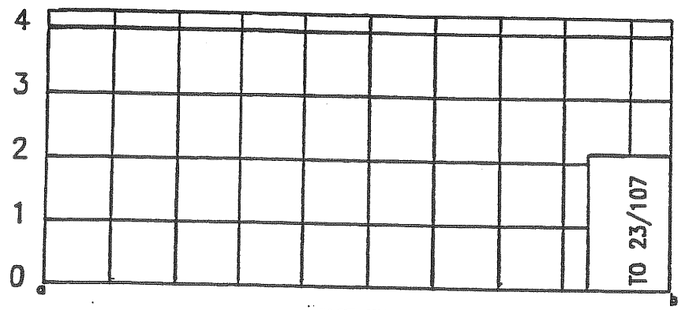
Supplemental Sample Map

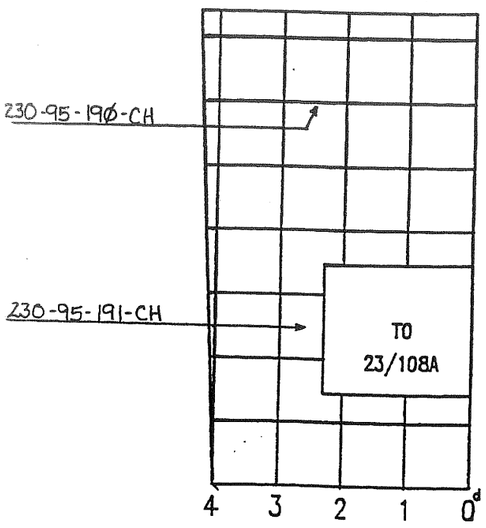
SURVEY No: 23-94-633-CH
SURVEY BY: J. Rowsell, A. Rowsell, A. Butler, D. Ritter

INST TYPE			
SERIAL No	N. A.	N. A.	N. A.
CAL DUE DATE			

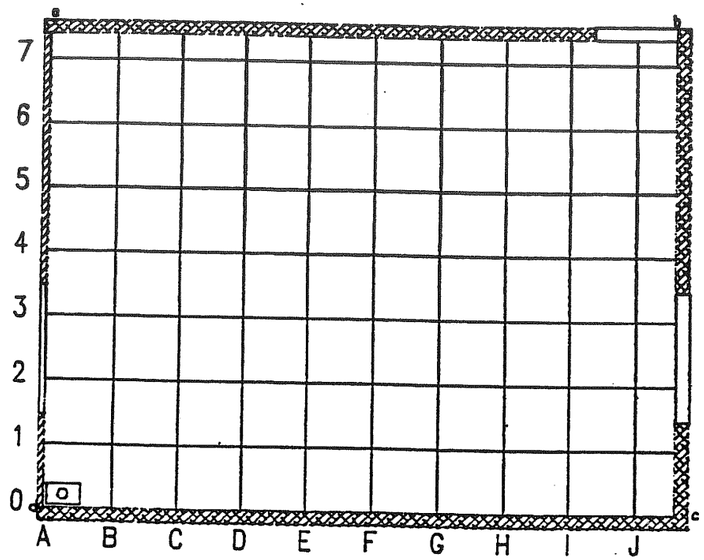
GRID PATTERN = 1 METER



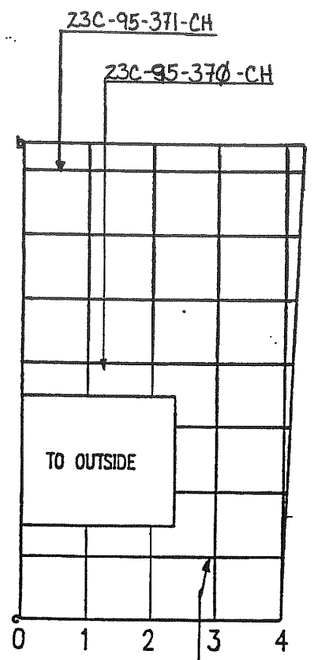
EAST WALL



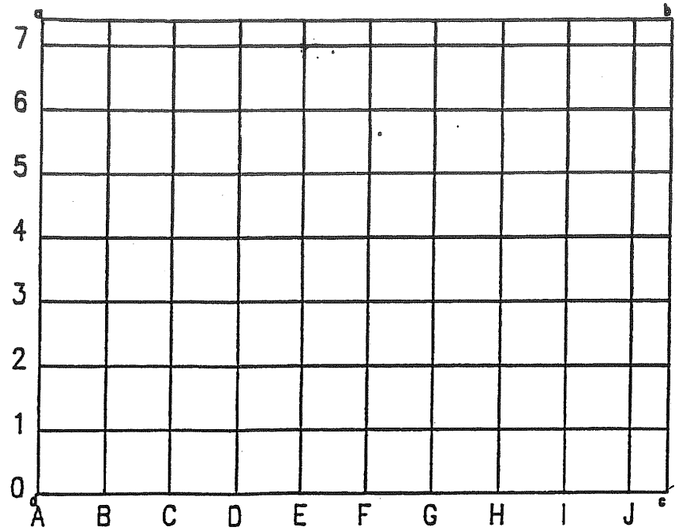
NORTH WALL



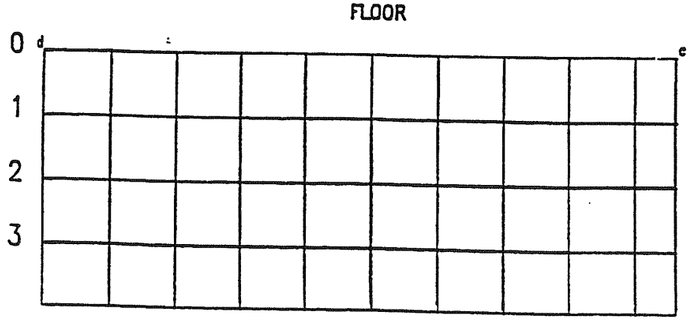
FLOOR



SOUTH WALL



CEILING



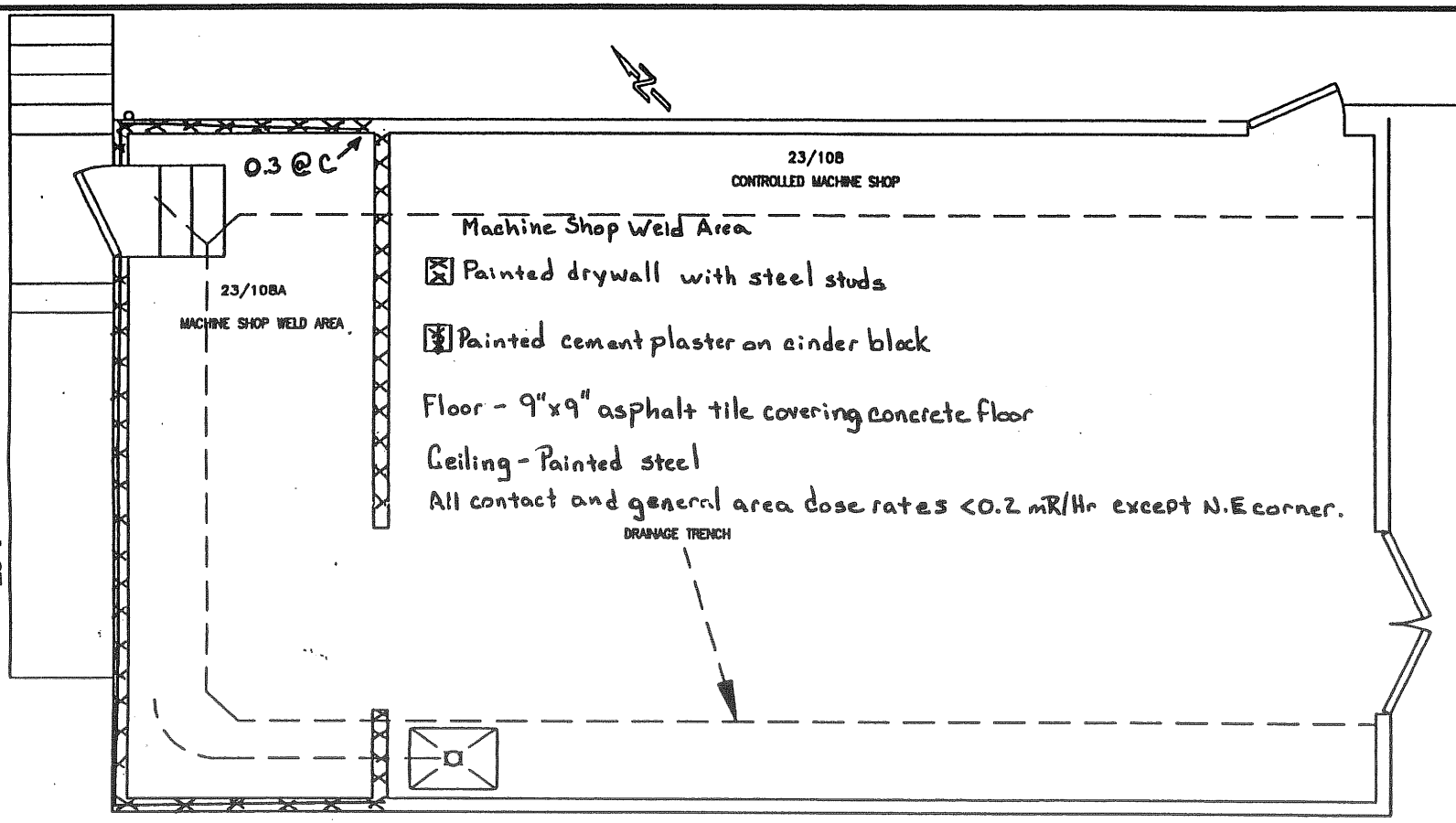
WEST WALL

NOTE: FLOOR & CEILING HEIGHT UNEVEN

A-13D

ROOM NO.	23/108
MEMO NO.	HC1:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108A	Controlled Machine Shop	12-21-94	0945	23-94-0-0-6-5-2-CH



No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

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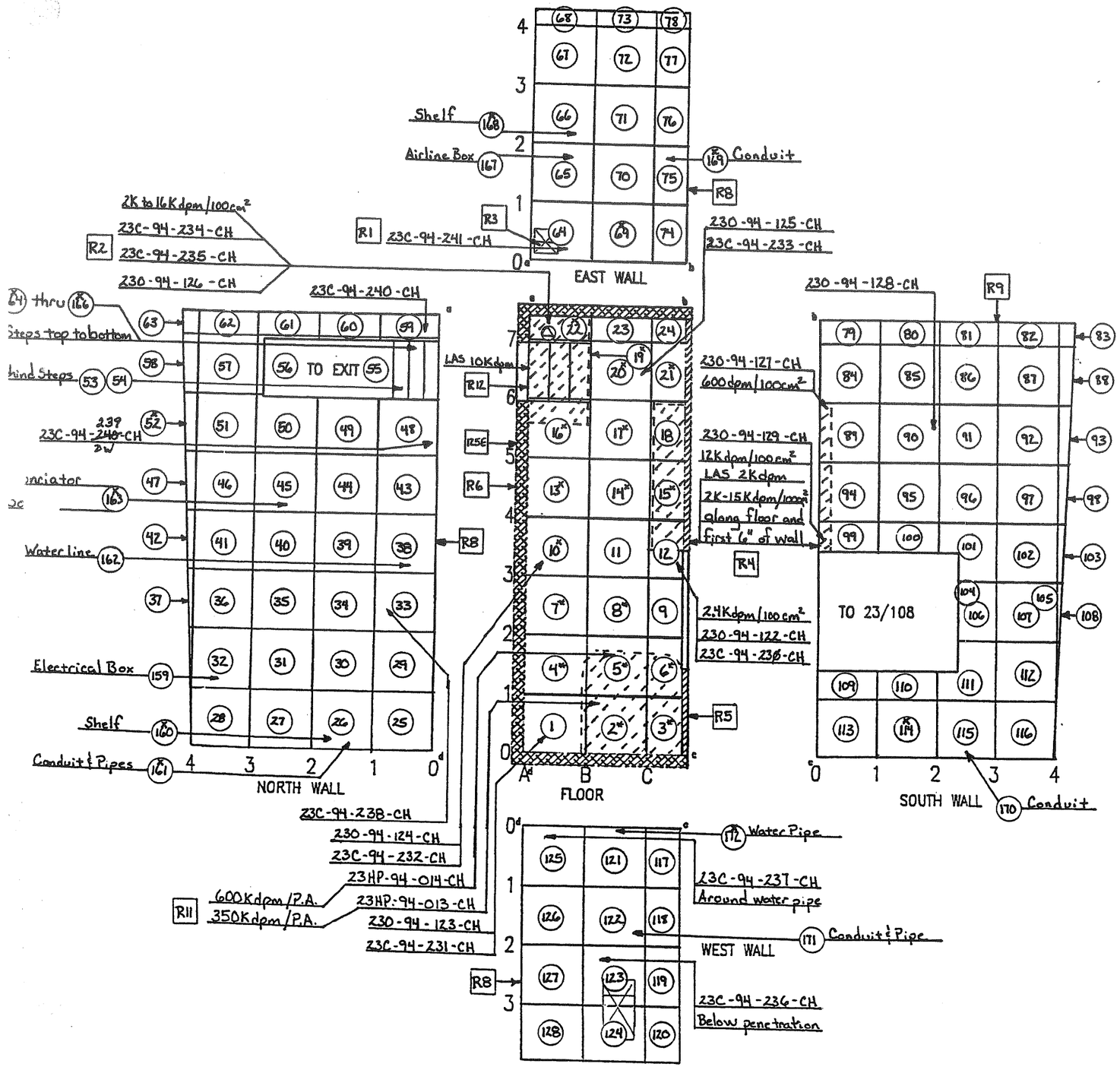
PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	(23)	1369 BK	(114)	17 α	Smears 1 thru 172 taken. Only those above 1Kdpm/100cm² BK listed
#	LARGE AREA SMEAR	XXX	BOUNDARY	(24)	1059 BK	(132)	1990 BK	<MDCR BK = 137 smears MDCR to 1Kdpm/100cm² BK = 32 smears
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(16)	11 α			>1Kdpm/100cm² BK = 3 smears
*	CONTACT DOSE RATE	+	12" DOSE RATE	(19)	45 α			10% of smears counted for α. 5 smears >MDCR α listed
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(20)	28 α			Airsample pulled during sample removal
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(22)	220 α			

RO-2
5147
3-7-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	BC-4	SAC-4	AVS-28A
W. BERRETT / W. Berrett	Douglas A. Warren	12-22-94	28	SERIAL NUMBER	34053	19326	5323
J. Rawsell / J. Rawsell				CAL DUE DATE:	3-20-95	5-31-95	4-5-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.



SURVEY No: 23-94-652-CH

SURVEY BY: W. BERRETT / W. Bessett J. Rowell J. Rowell

INST TYPE	Model-3	Model-3	177
SERIAL No	74305	1055	73599
CAL DUE DATE	5-8-95	5-29-95	3-18-95

GRID PATTERN = 1 METER

Drain Light (Suspended)

Affected area Patched Penetration

* Smears MDCR to 1K dpm/100cm² BY

A-13D

ROOM NO.	23/108A
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108A	Machine Shop Weld Area	12-21-94	0945	23-94-0-0-6-5-2-CH

R1 Sample taken on and around partially open penetration to outside

R2 First sample taken in an area of 2K to 16Kdpm/100cm² around drain and a depth of approximately 1/8 inch. (23C-94-234-CH) Second sample (23C-94-235-CH) taken in the same location at a depth of approximately 1/8 inch to 1/4 inch. Drain seems to overflow when the hot sink is used in room 108. Drain has standing water in it

R3 Open pipe with standing water

R4 Floor and the bottom six inches of south wall has a general direct reading of 2Kdpm/100cm² with areas up to 15Kdpm/100 cm² especially along the south wall floor intersection. Large area smears of this area showed 2Kdpm Floor is covered with an oily substance in this area. Looks like floor has been flooded at some time.

R5 Joints in floor tile in this area are generally 6K dpm/100 cm² in this area.

R6 Numerous high contamination particles and a few hot particles detected on the floor. Most of the particles are found in the joints where the tiles meet.

R7 Numerous high contamination particles found on top of light by direct frisk and large area smears. All particles found by direct frisk were removed with mass linn.

R8 Four high contamination particles (30K - 80Kdpm/P.A.), one hot particle (110Kdpm/P.A.) found on large area smears or direct frisk of conduit, pipes and electrical boxes on north, west and east walls. All particles found by direct frisk were loose.

R9 Wall added at some time after machine shop was built.

R11 Loose H.P. saved for sample

R12 5K to 35K dpm/100cm² ∝ direct on tile, 0-5K dpm/100cm² ∝ direct on concrete under floor tile.

See next page

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PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
W. BERZETT / W. Berzett J. Rowsell / J. Rowsell	Douglas A. Warren	12-22-94	28		N A	N A	N A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Ic Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-108A	LOCATION: Machine Shop Weld Area	DATE: 12-21-94	TIME 0945	SURVEY # 23-94-0-0-6-5-2-CH

120E Drainage trench in floor that was filled and covered

121E Patched penetrations in east wall and west wall

122E Floor drain in northeast corner

123E Southwall internals and the area that it covers on floor, walls and ceiling

124E Miscellaneous pipes, electrical conduit, boxes, controls, lights, sprinkler lines, etc in the overhead and walls. Internally, area that is blocked and area that is covered.

125E Miscellaneous equipment left in room. Four items. Supplementary survey shows items.

General Remarks

Direct readings and smears taken at grid points or an area of higher potential for contamination within the grid. (Wall-floor intersection, behind fixtures, discolored areas, area behind baseboards etc)

All surfaces had large area smears taken on them

Any areas of detectable fixed or loose contamination were documented on map or in remarks.

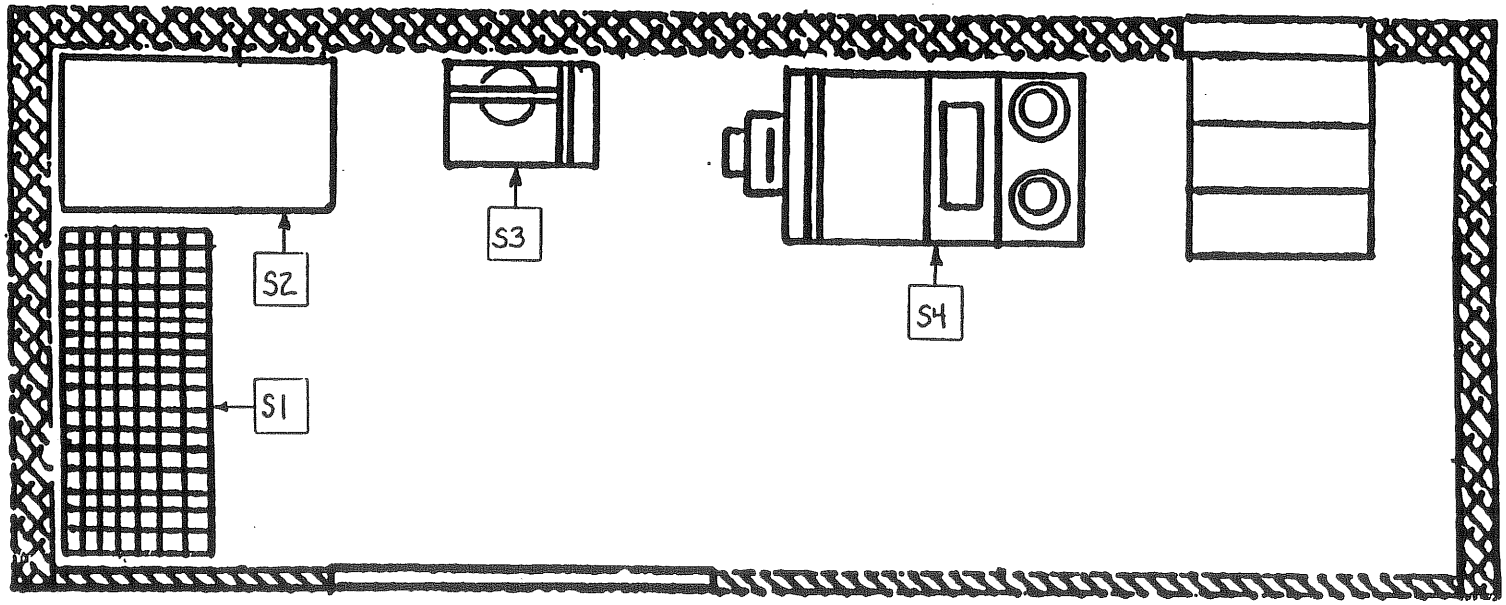
PC-000456/0

SURVEYOR: W. BERRETT/W. Berrett J. Rowell J. Rowell	REVIEWED BY: Douglas A. Warren	DATE: 12-22-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-108A	Machine Shop Weld Area	12-2-94	0945	23-94-0-0-6-__-2-CH

Equipment Survey



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PC-000456/0

KEY				No.	dpm/100 cm² No.	dpm/_____		Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	See	next	page		See next page for direct readings and smear results.
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY					10% of smears counted for α. All < MDCR
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						
✱	CONTACT DOSE RATE	+	12" DOSE RATE					
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	Model-3	BC-4	SAC-4
W. BERZETT / W. Berzett	Douglas A. Warren	12-22-94	28	SERIAL NUMBER	74305	34053	19326
J. Rawell / K. Rawell				CAL DUE DATE:	5-8-95	3-20-95	5-31-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-108A	LOCATION: Machine Shop Weld Area	DATE: 12-21-94	TIME 0945	SURVEY # 23-94-0-0-6-5-2-CH

S1 Acorn welding table. Smears (3) <MDCR, (1) 100 dpm/100 cm². Large area smears 1K dpm & 80K dpm/P.A. No detectable direct. Welding table top should be able to be free released. Stand is made from open pipe and could not be surveyed inside.

S2 Welding table. Smears (2) <MDCR, (1) 100 dpm/100 cm². Large area smears 2K dpm. Vise on welding table top 6K dpm/P.A. fixed. No other detectable direct found. Vise is probably radioactive waste. Table should be able to be free released.

S3 Press. Smears (3) <MDCR, (1) 188 dpm/100 cm². Large area smears had no detectable activity. Direct 20K and 80K dpm/P.A. Parts of press should be able to be free releasable.

S4 Miller welder and cart. Smears (6) <MDCR, (5) >MDCR to 323 dpm/100 cm². Large area smears 10K dpm & 40K dpm/P.A. Direct 1K-2K dpm/100 cm² & 120K dpm/P.A. Internals of welder inaccessible. Depending on a survey of the internals of the welder, the majority of the welder should be free releasable. The cables and some other small items are probably radioactive waste.

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General Remarks for equipment survey

All items where only spot checked.

All items will probably need some decontamination

Some items will need to be dismantled.

PC-000456/0

SURVEYOR: W. Berrett / W. Berrett J. Rowsell / K. Rowsell	REVIEWED BY: Douglas G. Warren	DATE: 12-22-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

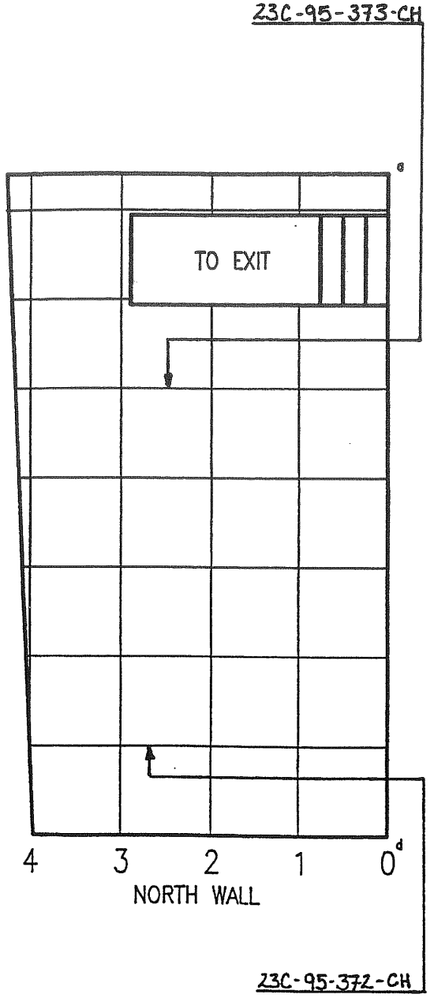
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

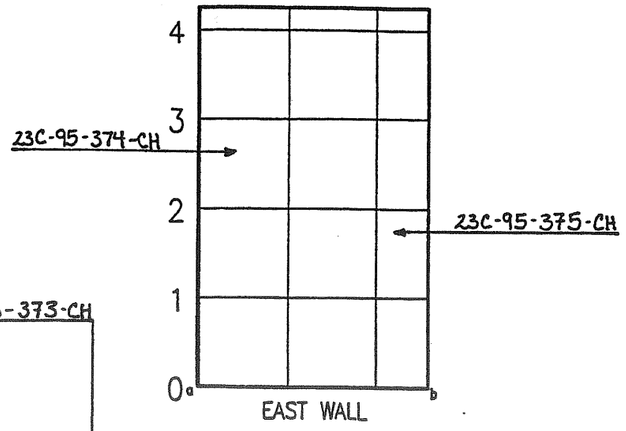
SURVEY No: 23-94-652-CH
SURVEY BY: J.Bowsell / Bonnie Powell P. Porter V. Pyle

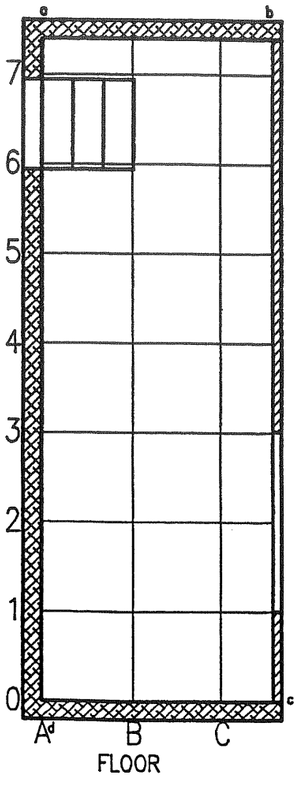
INST TYPE			
SERIAL No	N. A	N. A.	N. A.
CAL DUE DATE			

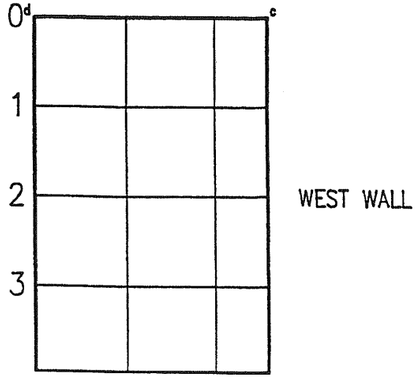
GRID PATTERN = 1 METER

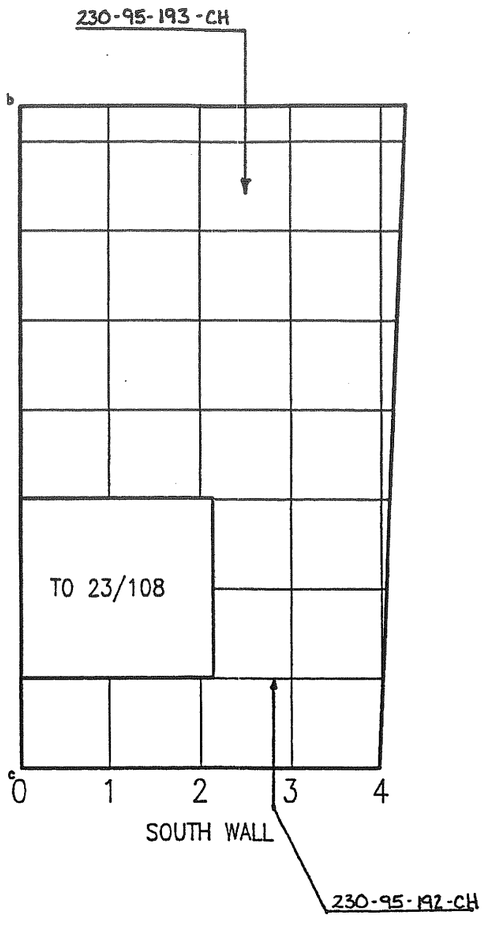
Supplemental Sample Map

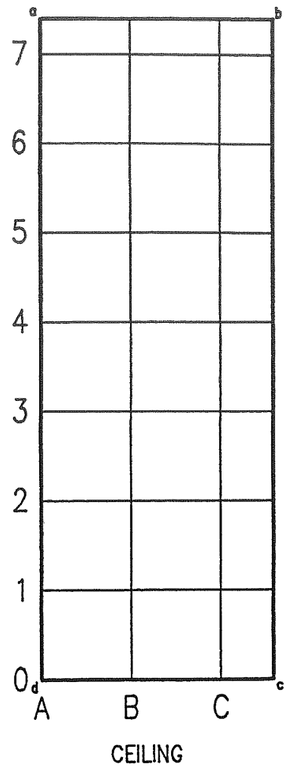






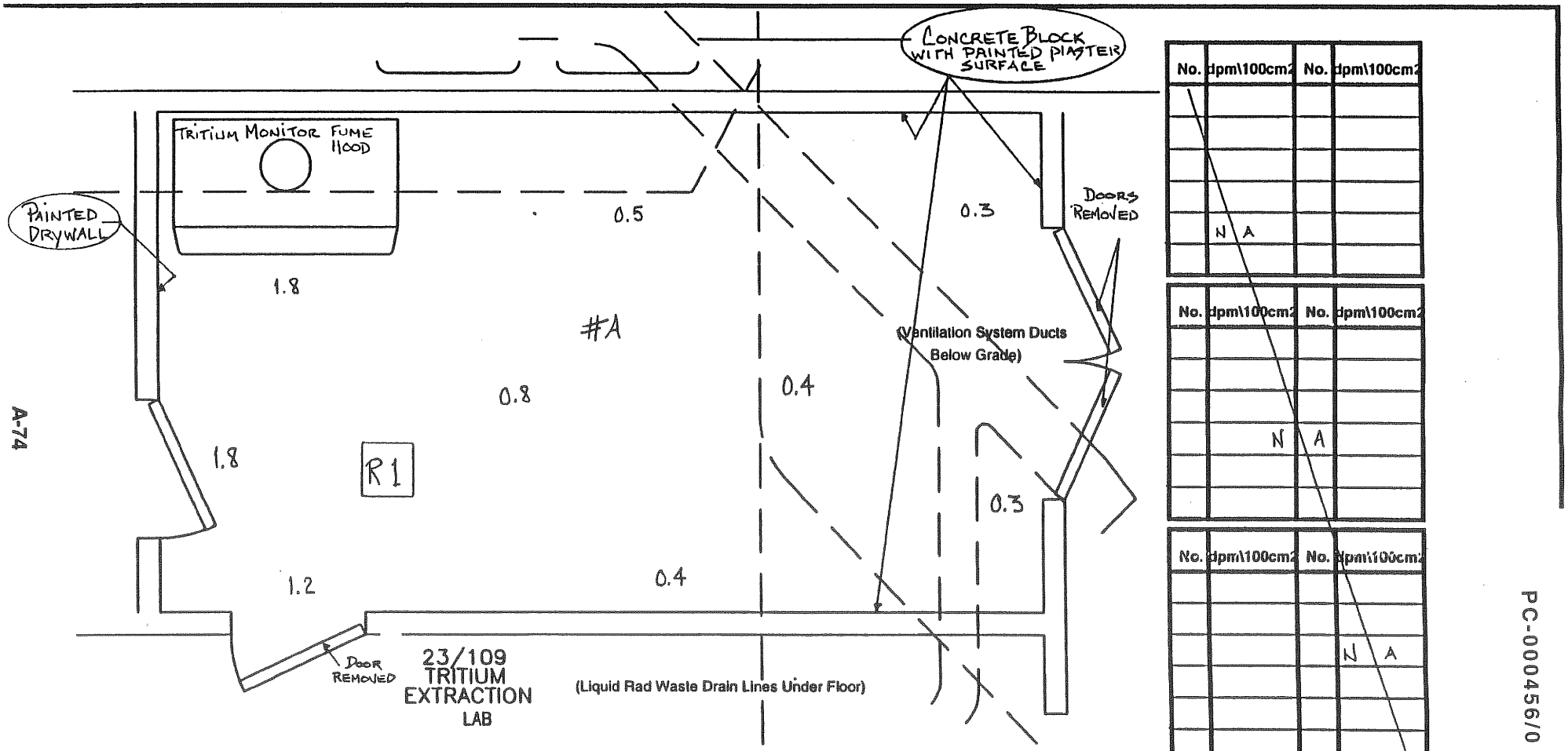






ROOM NO.	23/108A
MEMO NO.	HCI:267:VB:94

MAP#: 23-109	LOCATION: Tritium Extraction Lab	DATE: 11-30-94	TIME 1000	SURVEY # 23-94-0-0-6-2-0-CH



No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
			N A

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/L.A.S.	Remarks (see Note 4 below)
O	SMEAR	◆	H³ SMEAR	(1)	1,000	#A	5,000	100E BEHIND & INSIDE TRITIUM MONITOR FUME HOOD AND ASSOC. VENT. DUCTING.
#	LARGE AREA SMEAR	***	BOUNDARY	(2)	2,000			101E MISC. EQUIP., GAUGES, CONDUIT, ELECTRIC PANELS & SWITCHES & DOOR FRAMES.
]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(6)	2,000			107E INACCESSIBLE AREAS IN OVERHEAD - WALL & STEEL DECK PAINTED CEILING.
*	CONTACT DOSE RATE	+	12" DOSE RATE	(8)	1,000			☐ SMEARS NOT LISTED <1000dpm/100cm², 5% COUNTED FOR ALPHA <20 dpm/100cm²
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(11)	1,000			#A NO HOT PARTICLES FOUND.
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(16)	18,000			

SURVEYOR: S.L. HUNTER / R. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 12-6-94	JOB RWP# 4-028	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	RO2 / 2938 / 01-11-95	LUDLUM 3 / 46087 / 04-12-95	SAC 4 / 1015 / 05-20-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for

COPY

RAP#: 3-109	LOCATION: TRITIUM EXTRACTION LAB	DATE: 11-30-14	TIME 1000	SURVEY # 23-94-0-0-6-K-0-CH

1 DIRECT FRISK SURVEYS FOR FIXED CONTAMINATION WERE PERFORMED AT A MINIMUM OF ALL GRID LOCATIONS, PENETRATIONS, DISCOLORATIONS AND ANY SUSPECT AREAS. DIRECT SURVEY RESULTS OF WALLS FOUND NO FIXED CONTAMINATION ~~LEVELS~~ BUH 12-6-94 ABOVE BACKGROUND RADIATION LEVELS. DIRECT SURVEY RESULTS OF FLOOR FOUND VARIOUS LOCATIONS OF FIXED CONTAMINATION ABOVE BACKGROUND RADIATION LEVELS. SEE SAMPLE LOCATION 23C-94-215-CH = 10,000 dpm/PA AND 23C-94-216-CH = 49000 dpm/PA. BACKGROUND RADIATION LEVELS RANGED FROM 2,000 cpm THROUGH 1.8 MR/HR.

OE BEHIND AND INSIDE TRITIUM MONITOR FUME HOOD AND ASSOCIATED VENTILATION DUCTING.

IE MISC. EQUIPMENT, GAUGES, CONDUIT, ELECTRIC PANELS AND SWITCHES AND DOOR FRAMES.

7E IN ~~ASS~~ ACCESSIBLE BUH 12-6-94 AREAS IN OVERHEAD WALLS AND STEEL DECK CEILING.

A-75

PC-000456/0

SURVEYOR: HUNTER / BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 12-6-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

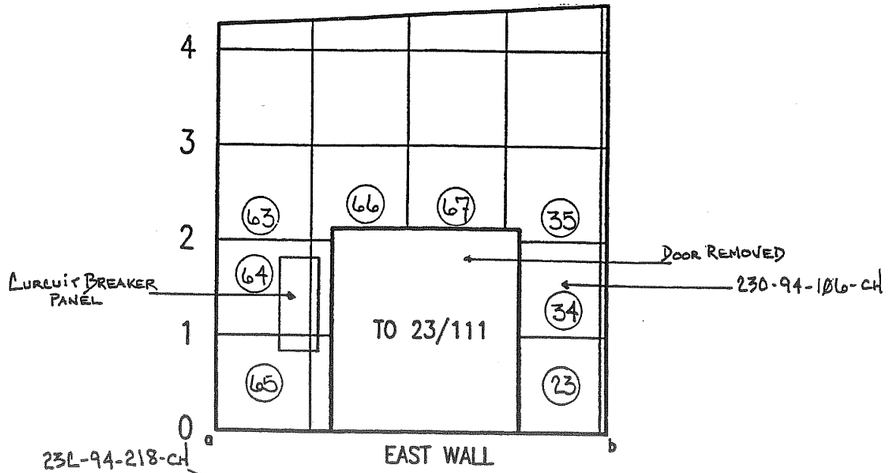
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

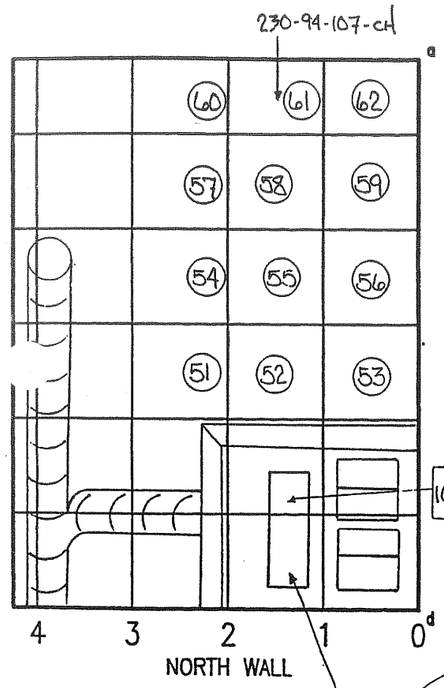
PC-000456/0

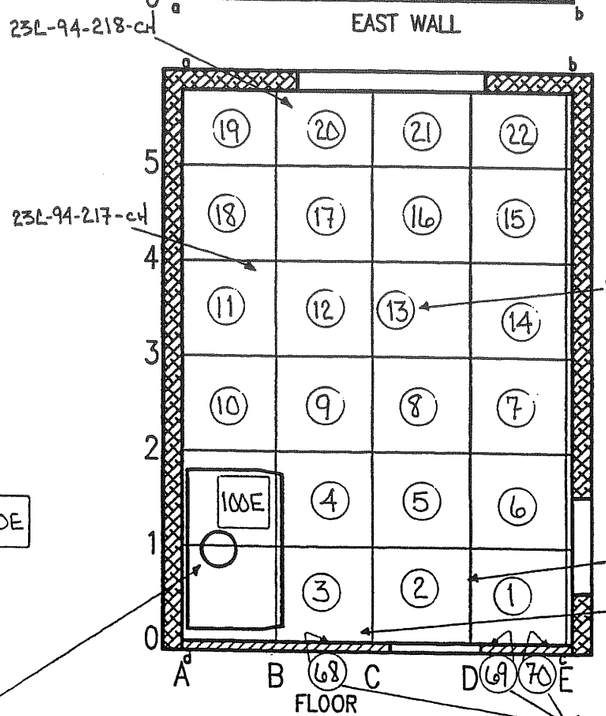
SURVEY No: 23-94-620-CH

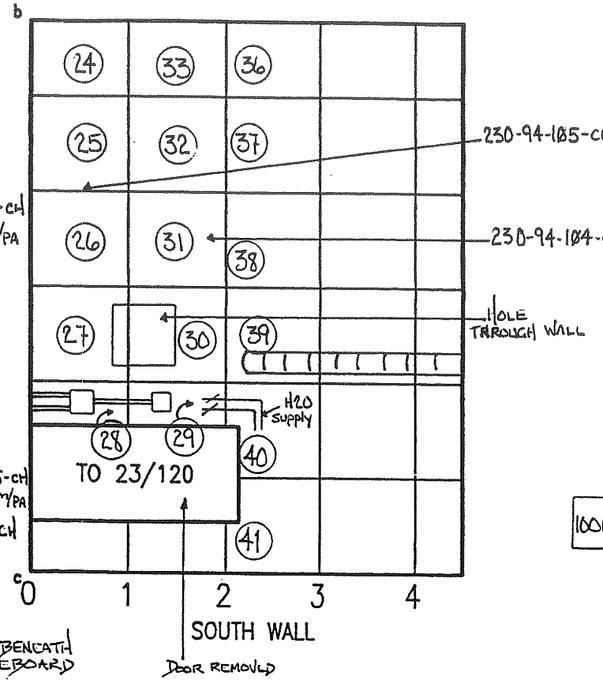
SURVEY BY: P. HUNTER BHPA/NRR/P. BUTLER

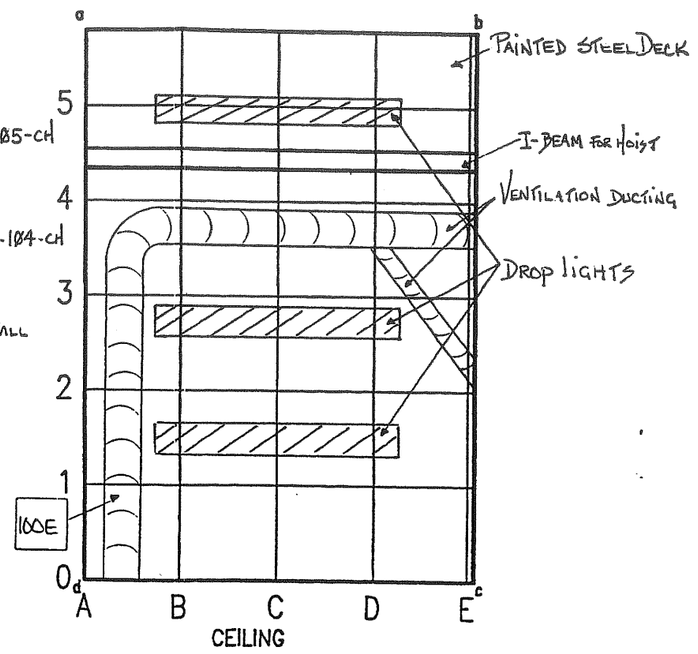
INST TYPE	RO2	LUDLUM 3	TBM 15
SERIAL No	2938	4687	892140
CAL DUE DATE	01-11-95	04-12-95	04-12-95
GRID PATTERN = 1 METER		BL 4	RM 14
		34053	30357-04
		03-20-95	12-15-94

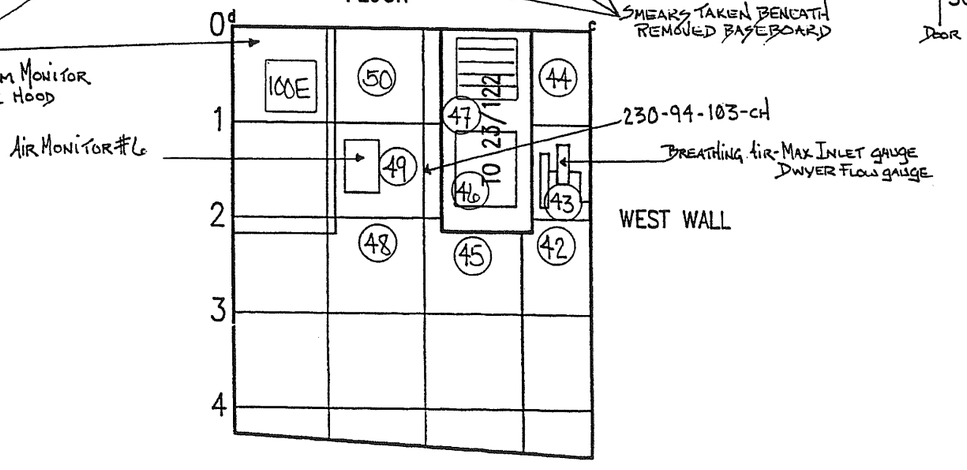












ROOM NO.	23/109
MEMO NO.	HCI:267:VB:94

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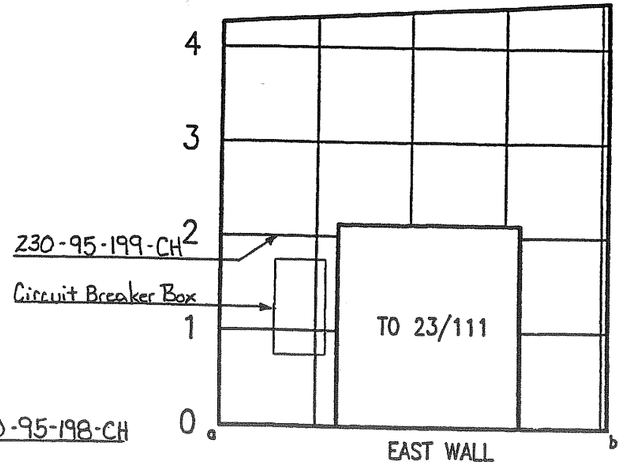
PC-000456/0

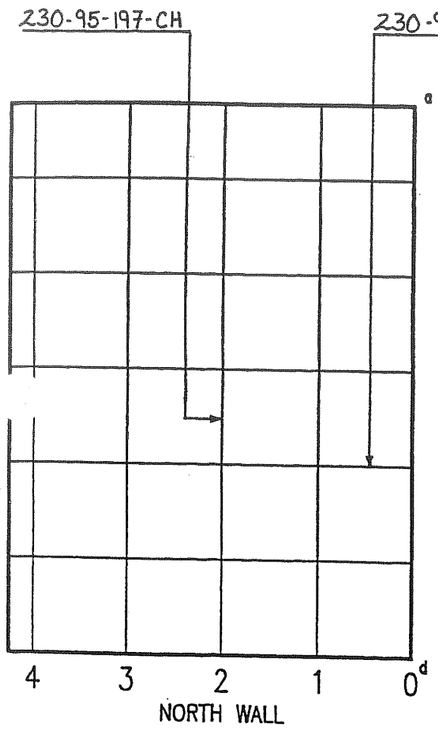
SURVEY No: 23-94-620-CH
SURVEY BY: J. Rowsell, R. Rowsell, T. Bethel, J. Rowsell

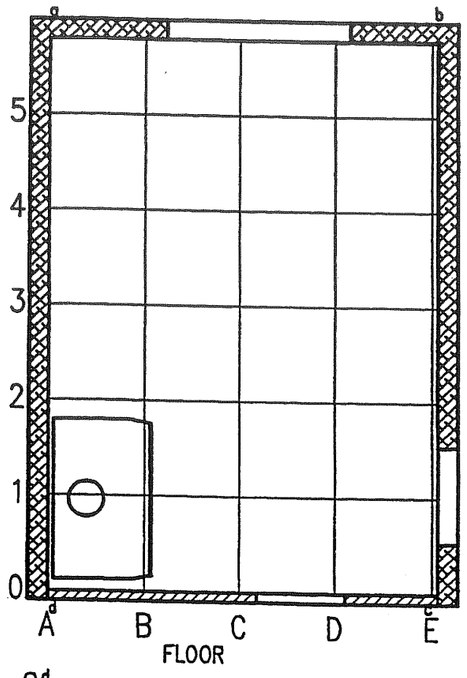
INST TYPE					
SERIAL No	N.	A	N.	A	N.	A.
CAL DUE DATE					

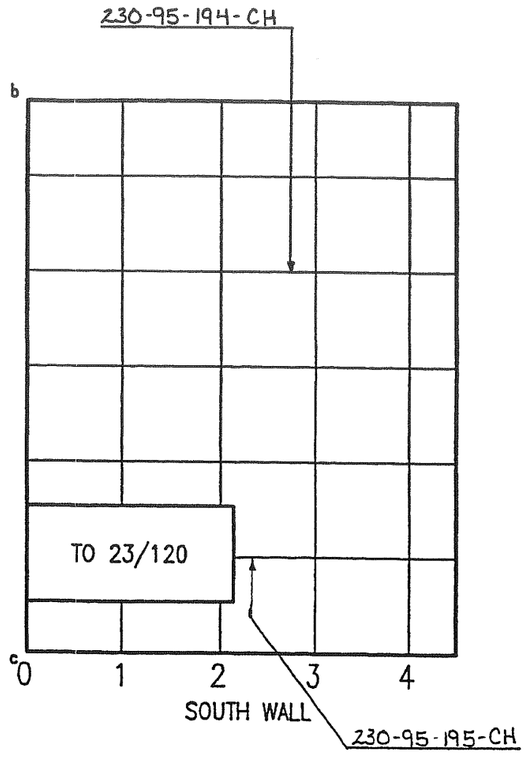
GRID PATTERN = 1 METER

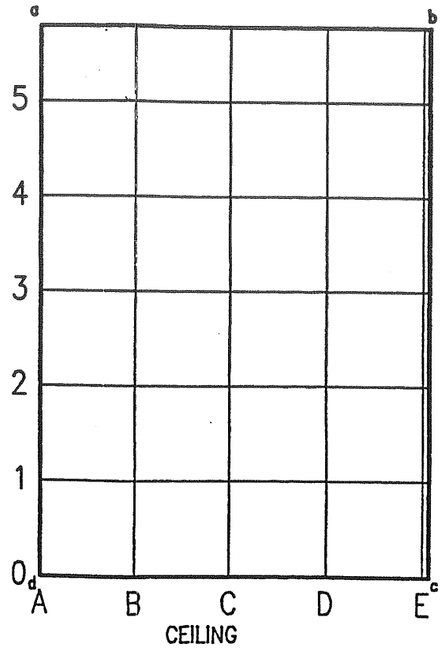
Supplemental Sample Map

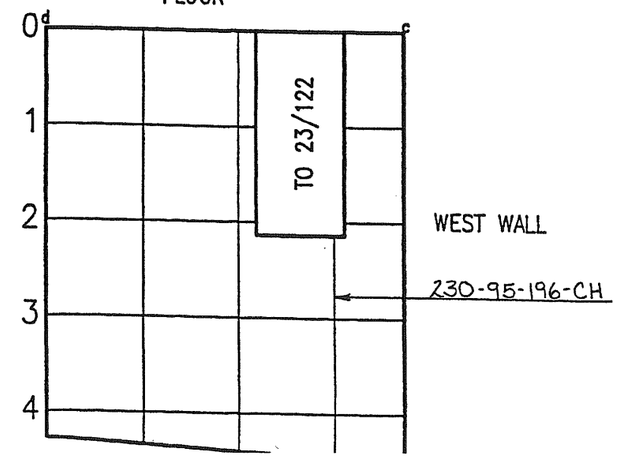






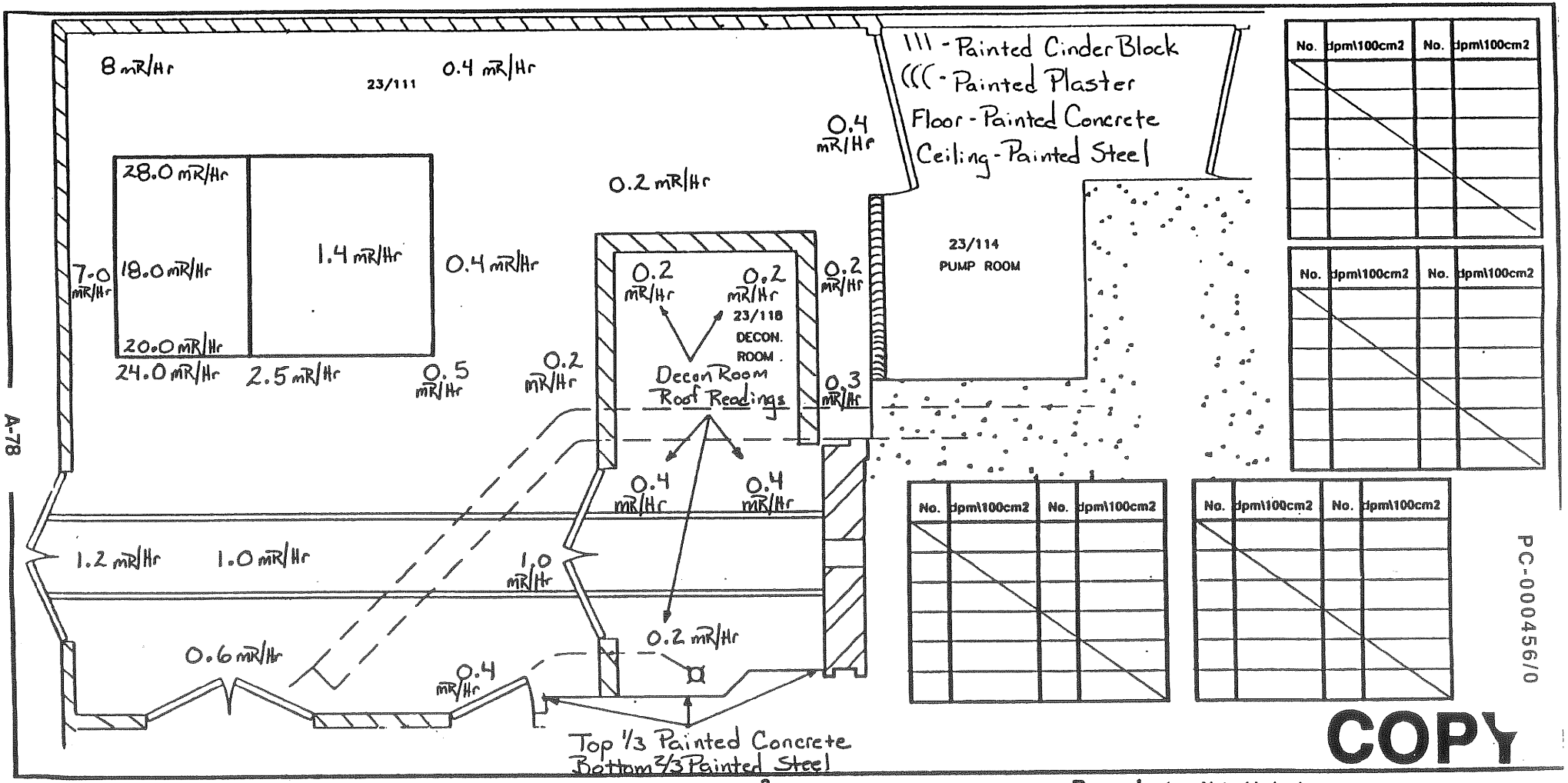






ROOM NO.	23/109
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-111	Service Gallery General Area	1-10-95	1600	23-95R-0-0-0-9-CH



COPY

KEY				No.	dpm/100 cm²	No.	dpm/
O	SMEAR	◆	H³ SMEAR	See	supplement	Sheet	
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE		N	A	
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

Smears (1) thru (39) taken.
Only those smears 1Kdpm/100cm² or greater listed.
10% of smears counted for α. All <MDCR
Airsample pulled during sample removal

RO-2
5147
3-7-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	RM-14	SAC-4	HD-29A
S. Rowsell / K. Rowell W. Berrett / W. Berrett	Douglas A. Warner	1-12-95	28129	SERIAL NUMBER CAL DUE DATE:	9158 3-25-95	19326 5-31-95	5137 3-14-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SUPPLEMENT TO SURVEY #
23-111	Service Gallery General Area	1-10-95	1600	23-95-0-0-0-0-9-CH

Smear Continuation Sheet

REMARKS:

Smears counted for BB with frisker

See front pages for instruments

No.	dpm/100 cm²	Description
4	1K	Floor
5	6K	
6	6K	
8	18K	
10	1K	
12	2K	
13	2K	
14	2K	
15	1K	
16	1K	
17	2K	
18	1K	
19	1K	
20	2K	
21	1K	
22	2K	
25	3K	
26	2K	
27	1K	
28	3K	
29	3K	
30	14K	
31	8K	
32	34K	
33	14K	
36	1K	
37	16K	
38	42K	
39	1K	
40	1K	
41	6K	
42	2K	Floor
43	2K	
44	2K	
45	2K	
46	52K	
47	6K	
48	2K	
50	7K	
51	12K	
52	14K	
53	280K	
54	5K	
55	1K	
56	7K	
57	12K	
58	5K	
59	4K	
60	8K	
61	5K	
62	3K	
63	6K	
64	16K	
65	22K	Decon Room Roof
66	1K	
67	44K	
68	20K	
69	3K	
70	16K	
71	15K	
72	58K	
73	9K	
74	80K	Decon Room Roof
75	8K	
76	6K	
77	95K	
78	9K	
79	8K	
80	9K	
83	1K	Decon Room S. Wall
85	1K	
86	1K	
90	1K	
91	23K	
92	1K	
94	1K	
95	3K	
96	1K	
97	4K	
98	3K	
100	1K	South Wall
102	4K	
103	1K	
104	1K	
105	2K	
108	2K	
112	1K	
116	2K	
122	2K	
131	3K	
132	2K	
133	8K	
138	10K	Decon Room W. Wall

A-79

PC-000456/0

SUBVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Powell / W. Berrett	Douglas Q. Warner	1-12-95	28&29				RM-14 9158 3-25-95

(1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

MAP#:	LOCATION:	DATE:	TIME	SUPPLEMENT TO SURVEY #
23-111	Service Gallery General Area	1-10-95	1600	23-95-0-0-0-0-9-CH

Smear Continuation Sheet

REMARKS:	No.	dpm/100 cm²	Description	No.	dpm/100 cm²	Description	No.	dpm/____	Description
Smears counted for βγ with frisker. See front page for instruments	142	1K	Decon Room W. Wall	251	3K	Decon Room N. Wall			
	143	5K		256	3K	East Wall			
	144	4K		258	3K				
	145	3K		259	3K				
	147	1K	West Wall	263	3K				
	150	5K		270	1K				
	152	5K		281	10K				
	153	1K		300	3K				
	154	6K		314	1K				
	155	3K							
	156	3K							
	157	12K							
	162	10K							
	164	4K							
	165	5K							
	166	1K						N. A.	
	167	1K							
	198	1K	North Wall						
	199	11K			N. A.				
	200	1K							
	201	3K							
	202	3K							
	203	1K							
	209	2K							
	215	1K							
	225	6K							
	226	2K							
	231	1K							
	232	1K							
	234	9K							
	245	6K	Decon Room N. Wall						

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowell / W. Barrett / W. Barrett	Douglas A. Warner	1-12-95	28 & 29		N. A.	N. A.	N. A.

(1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² βγ or <1000 dpm/smear βγ (LAS)(2)Indicate RWP for Job/Coverage surveys.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-111	Service Gallery General Area	1-10-95	1600	23-95-0-0-0-0-9-CH

R1 Herculite left on floor and smears taken in most accessible portion of grid, or a cut was made at the grid mark and four grids were smeared. Herculite was cut, floor samples removed and herculite taped back up

R2 Area enclosed by decon room walls is decon room roof. Roof is welded steel.

R3 Sample 23HP-95-0021-CH saved and logged in book. Because of dose rates it will not be sent lab at this time. Cable reels for in cell equipment are on wall at this location. Sample picked up with masslinn on catch tray.

152E Decon room HEPA system duct work and return vents

153E Storage pits. (Added later into existing pool)

154E Ceiling. Not accessed during survey, including crane

155E Tracks in floor. Inaccessible cracks and other areas

156E Decon room walls added later. Material & covered areas

157E East wall going into room 119 added later. Material and covered areas

158E Misc. equipment, piping, electrical conduit, boxes, controls etc. on walls

PC-000456/0

Next Page

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:			
J. Rowsell P. Russell W. Berrett W. Berrett	Douglas A. Warren	1-12-95	2828		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo
Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-111	Service Gallery General Area	1-10-95	1600	23-95-0-0-0-0-9-CH

General Remarks

Smears taken in most accessible portion of grid, or a cut was made at the grid mark and four grids were smeared and herculite left in place on floor. Wall smears taken at areas with highest potential for contamination with in the grid (Wall/floor intersection, behind fixtures, etc.)

All surfaces covered with large area smears. Detectable listed in remarks or on map.

Areas where sample media was removed had any loose contamination removed and floor samples had contaminated paint with 1/2" of concrete removed before samples were removed.

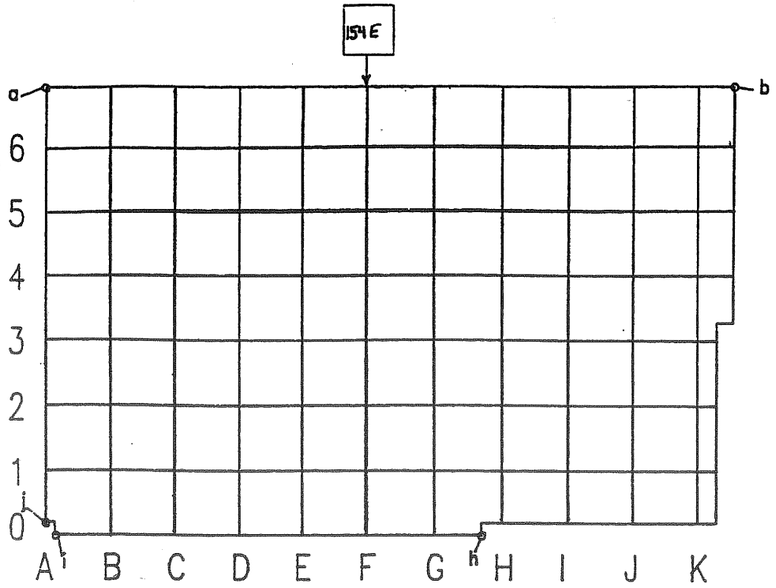
No direct readings taken due to high background.

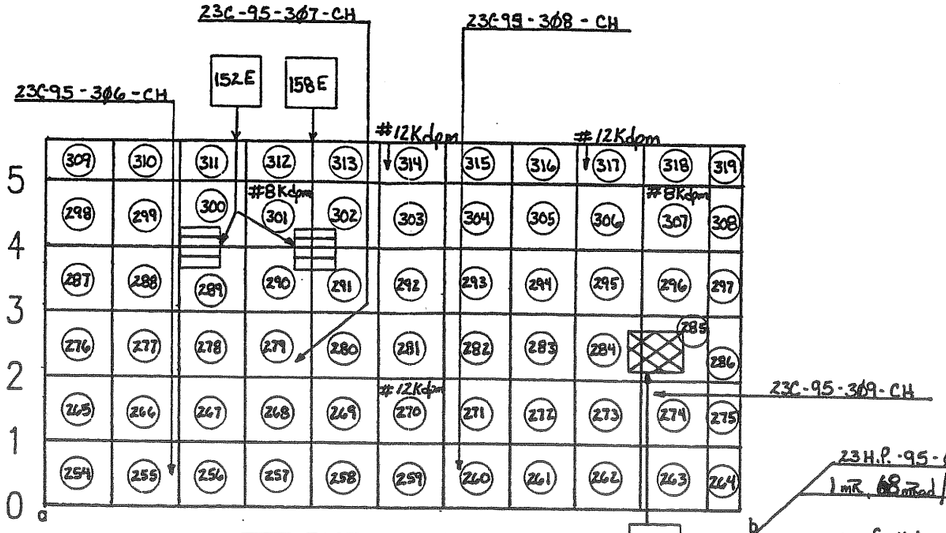
A-82

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: SERIAL NUMBER CAL DUE DATE:			
J. Rowsell J. Rowsell W. Berrett W. Berrett	Douglas A. Warren	1-12-95	28 & 29				

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.





SURVEY No: 23-95-009-CH

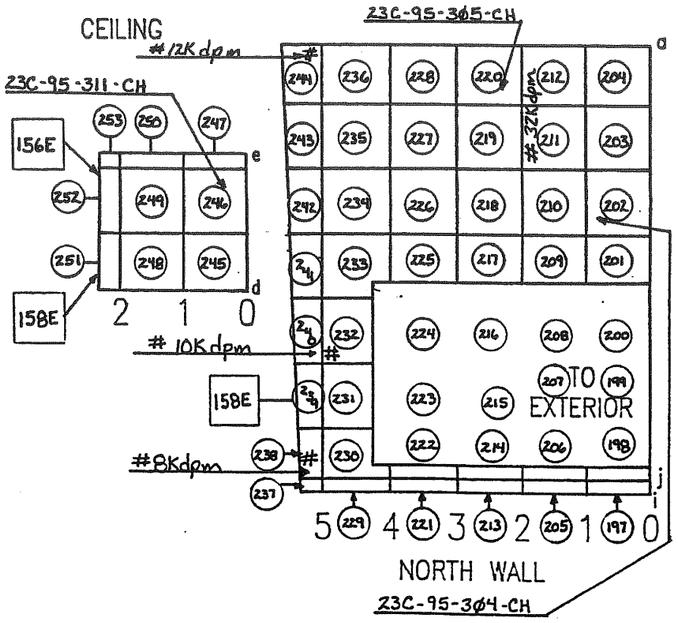
SURVEY BY: J. Rowsell/K. Rowell W. Berrett/W. Berrett

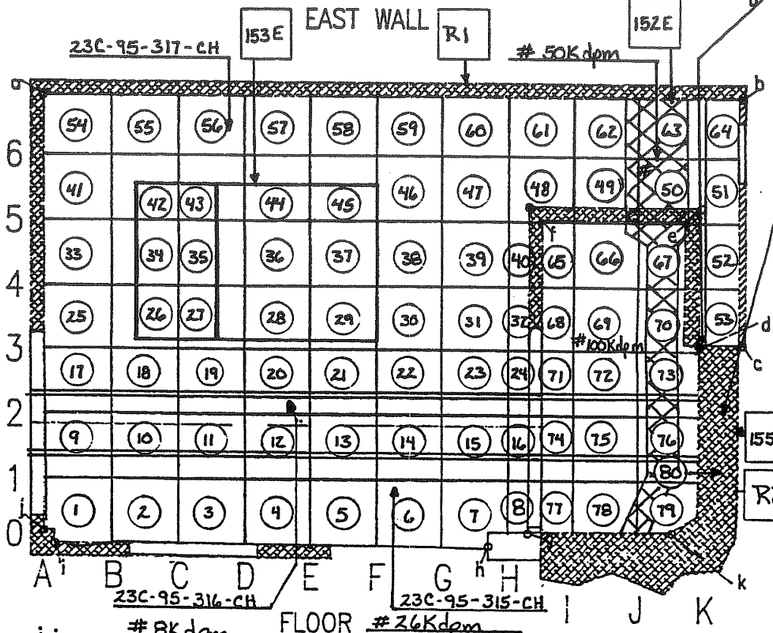
INST TYPE	Model-3	SAC-4	RM-14
SERIAL No	74173	19326	915
CAL DUE DATE	5-8-95	5-31-95	6-14-95

GRID PATTERN = 1 METER

Vent Duct Work

// Area in Decon Room



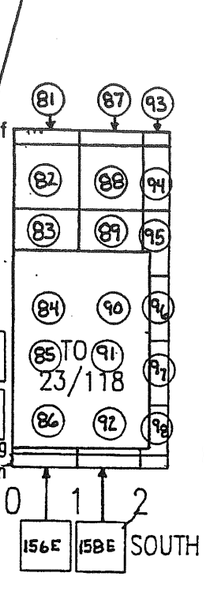


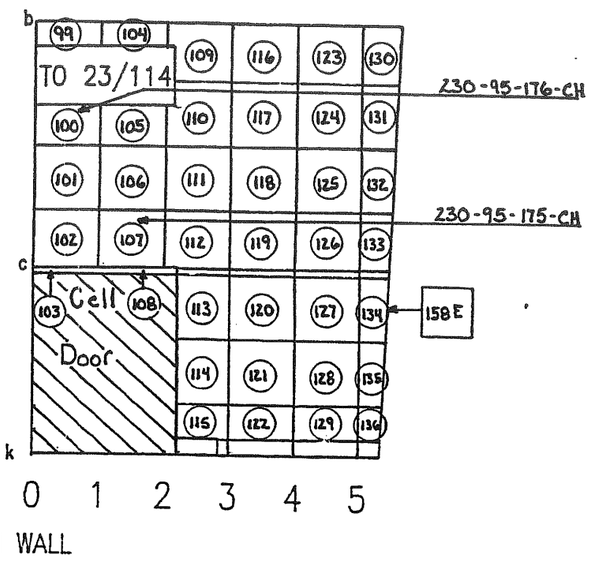
23H.P.-95-021-CH (K,3,3.8)

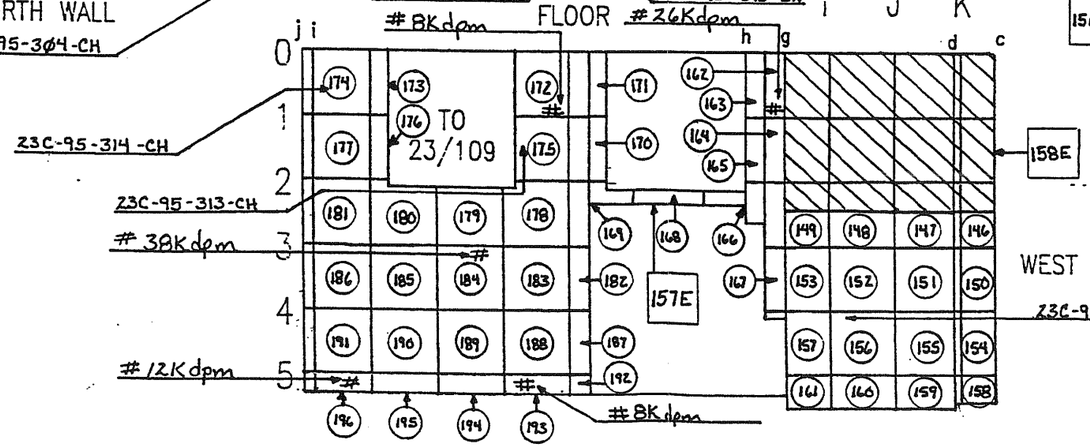
1mR, 68mrad/Hr @ C (Cable Reel) R3

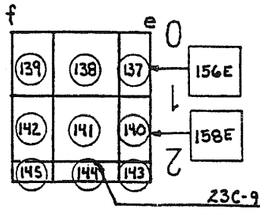
Top of cell door, motor, controls etc on walls

#60K dpm to 150K dpm







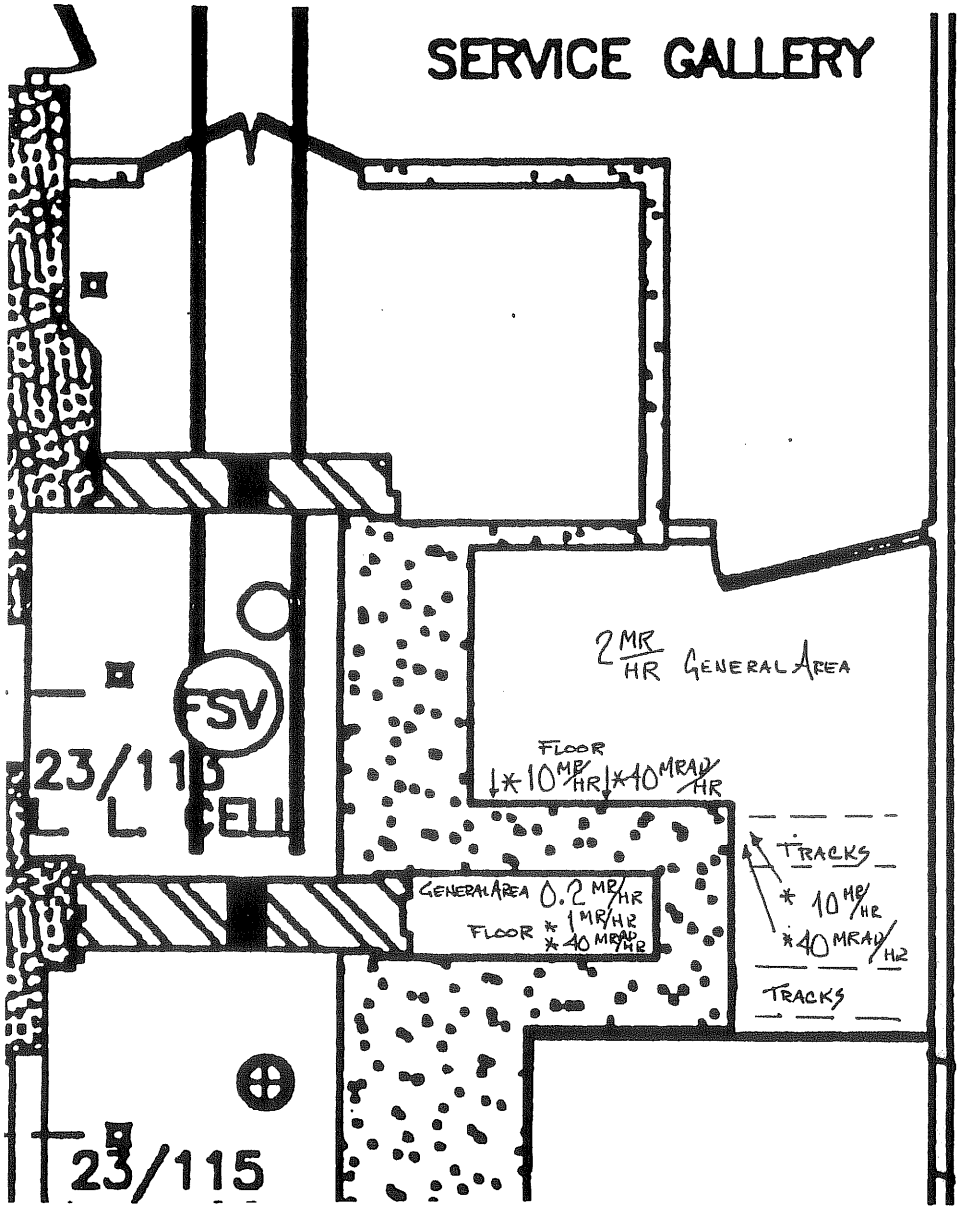


COPY DW 11/12/98

C-06J

ROOM NO.	23/111
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-114	Pump	11-16-94	0800	23-94-0-0-5-8-9-CH



A-84

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
Barbara Hunter, Preston Butler	Douglas A. Warren	11-22-94	A-028		R02 5865 01-31-95	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm smear (α-γ LSC)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-114	LOCATION: PUMP ROOM	DATE: 11-16-94	TIME 0800	SURVEY # 23-94-0-0-5-8-9-CH

R1 SOUTH WALL - MULTIPLE LAYERS OF PAINT OVER HIGH DENSITY CONCRETE WITH ROCK. WALL HAS STEEL SUPPORT PLATES AND SEALANT COMPOUND ALONG JUNCTIONS.

R2 CEILING IS A PAINTED STEEL DECK WITH A SUPPORT BEAM, LIGHT FIXTURE AND FIRE SYSTEM

R3 FLOOR ALONG SOUTH WALL AND STEEL TRACKS FOR SHIELD DOOR HAS MULTIPLE LAYERS OF PAINT OVER CONCRETE. CONTAMINATION LEVELS RANGE FROM 20,000 $^{dpm}/_{100cm^2}$ TO 60,000 $^{dpm}/_{100cm^2}$ AND RADIATION LEVELS ON FLOOR CONTACT ARE UP TO 10 $^{MR}/_{HR}$ γ AND 40 $^{MRAD}/_{HR}$ β'.

R4 TOPSIDE OF HIGH LEVEL SHIELD DOOR CAVITY #2454 AT APPX. 4.5 METERS IN OVERHEAD ACCESSED THROUGH RM 116A. FLOOR IS SLAB CONCRETE - NO PAINT. ONE HOT PARTICLE FOUND ON #A 23HP-94-008-CH. FIXED CONTAMINATION UP TO 1 $^{MR}/_{HR}$ γ AND 40 $^{MRAD}/_{HR}$ β'.

R5 MULTIPLE LAYERS OF PAINT OVER HIGH DENSITY CONCRETE BLOCK WITH SEALANT COMPOUND ALONG WALL JUNCTIONS.

R6 MULTIPLE LAYERS OF PAINT OVER STEEL PLATE WALL.

R7 TOOL AND EQUIPMENT CHUTE TO LOW LEVEL CELL

R8 NORTH WALL - STEEL STUD WITH CEMENT PLASTER - PAINTED SURFACE

R9 EAST WALL - PAINTED CONCRETE CINDER BLOCK

92E MISC. EQUIPMENT, PIPING, ELECTRICAL BOXES AND ASSOC. CONDUIT ON WALLS AND FLOOR

☐ DIRECT SURVEYS WERE PERFORMED AT A MINIMUM ON GRID INTERSECTIONS, FLOOR-WALL JUNCTION, DISCOLORATIONS, MISC. EQUIP. AND ANY OTHER SUSPECT LOCATIONS. GENERAL AREA BACKGROUND RADIATION LEVELS WERE 1 $^{MR}/_{HR}$ TO 2 $^{MR}/_{HR}$. NO AREAS GREATER THAN BACKGROUND WERE FOUND ALONG WALL SURFACES ABOVE FLOOR. AVERAGE CONTACT RADIATION LEVELS ALONG FLOOR SURFACE ARE 2 $^{MR}/_{HR}$ TO 10 $^{MR}/_{HR}$ γ AND UP TO 40 $^{MRAD}/_{HR}$ β'

☐ 5% ~~OF SMEARS COUNTED~~ But 11-21-94

SURVEYOR: ~~BARBARA HUNTER~~ PRESTON BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-22-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

MAP#:	LOCATION:	DATE:	TIME	SUPPLEMENT TO SURVEY #
23-114	PUMP RM.	11-16-94	0800	23-94-0-0-5-8-9-CH

Smear Continuation Sheet

REMARKS:

N A

No.	dpm/100 cm²	Description
(1)	6,000	FLOOR
(2)	18,000	CLEVELAND WORM GEAR
(3)	8,000	FLOOR
(4)	8,000	HYDRAULIC PUMP
(5)	2,000	FLOOR
(6)	5,000	
(7)	35,000	
(8)	3,000	
(9)	3,000	
(10)	20,000	
(11)	20,000	
(12)	8,000	
(13)	6,000	
(14)	60,000	
(15)	40,000	
(16)	2,000	NORTH WALL
(17)	3,000	
(18)	2,000	
(19)	< 1,000	
(20)	< 1,000	
(21)	1,000	
(22)	8,000	
(23)	2,000	
(24)	1,000	
(25)	1,000	
(26)	< 1,000	
(27)	1,000	
(28)	1,000	EAST WALL
(29)		
(30)		
(31)		

No.	dpm/100 cm²	Description
(32)	1,000	EAST WALL
(33)		
(34)		
(35)		
(36)		
(37)	2,000	
(38)	1,000	
(39)	1,000	
(40)	1,000	SOUTH WALL
(41)		
(42)		
(43)		
(44)		
(45)	3,000	
(46)	1,000	
(47)		
(48)		
(49)		
(50)	3,000	
(51)	1,000	
(52)		
(53)		
(54)		
(55)	1,000	WEST WALL
(56)		
(57)		
(58)		
(59)		
(60)		
(61)		
(62)		

No.	dpm/100 cm²	Description
(63)	1,000	WEST WALL
(64)		
(65)		
(66)		
(67)	1,000	ELECTRICAL
(68)	2,000	CHUTE FOR TOOL & EQUIP. FLOOR
(69)	< 1,000	CEILING BEAM
(70)		CEILING
(71)		CEILING
(72)	5,000	CONCRETE FLOOR
(73)	20,000	
#A	25,000 CPM/PROBE AREA	TOPSIDE SHIELD DOOR CAVITY
	20 MRAD/HR B' HOT PARTICLE	23HP-94-008-CH

A-86

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	RM14	R02	
~~BARA HUNTER~~ ~~BUTLER~~	Douglas A. Warren	11-22-94	4-028	SERIAL NUMBER	30357-04	5865	N/A
EXTON BUTLER				CAL DUE DATE:	12-15-94	01-31-95	

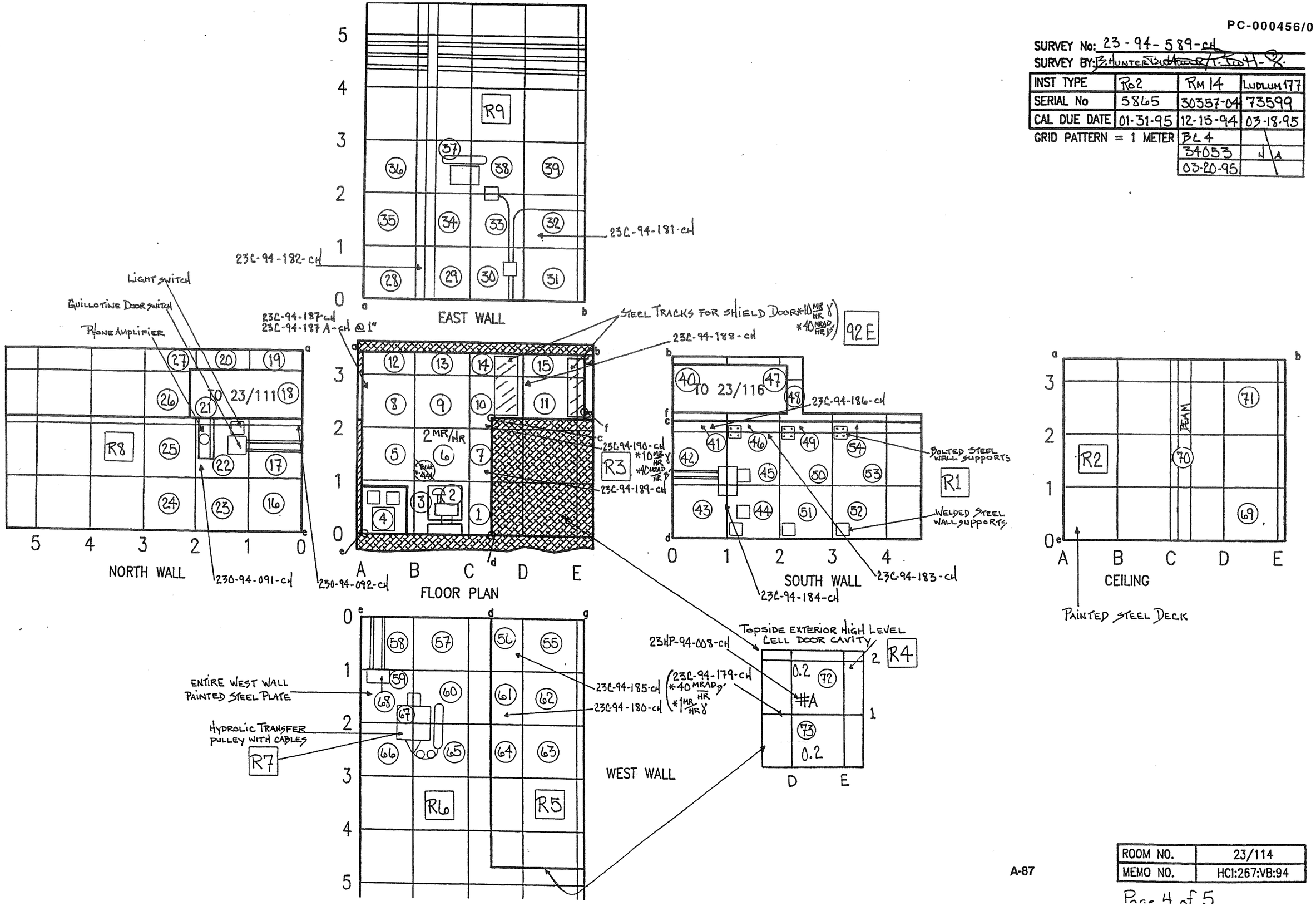
1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

P 2 of 5

PC-000456/0

SURVEY No: 23-94-589-CH
SURVEY BY: B. HUNTER ~~T. BOOTH~~ T. BOOTH-S.

INST TYPE	RO2	RM 14	LUDLUM 177
SERIAL No	5865	30357-04	73599
CAL DUE DATE	01-31-95	12-15-94	03-18-95
GRID PATTERN = 1 METER	BL 4		
	34053	N/A	
	03-20-95		



ROOM NO.	23/114
MEMO NO.	HCI:267:VB:94

A-87

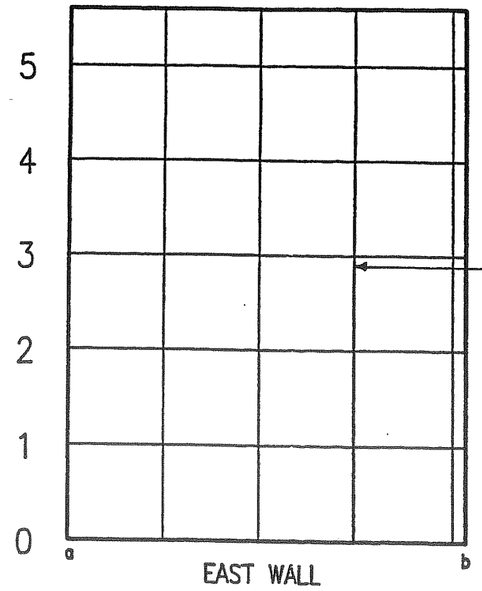
PC-000456/0

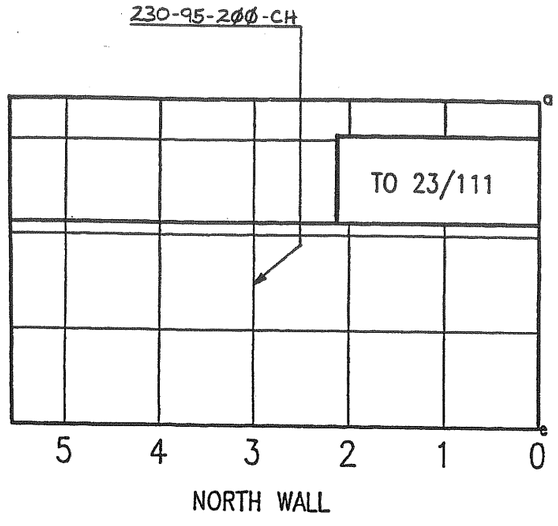
SURVEY No: 23-94-589-CH
SURVEY BY: J. Rowsell K. Rowsell T. Patrick

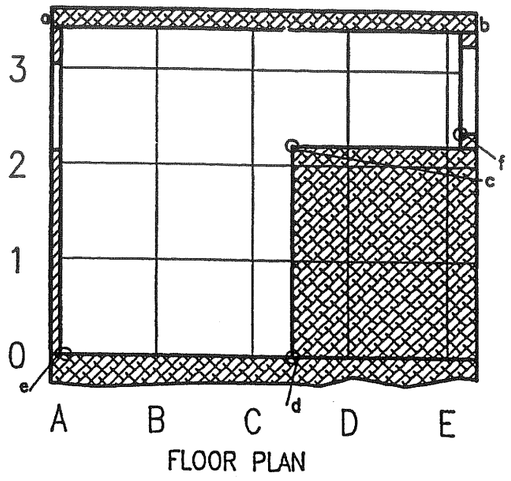
INST TYPE			
SERIAL No	N. A	N. A	N. A.
CAL DUE DATE			

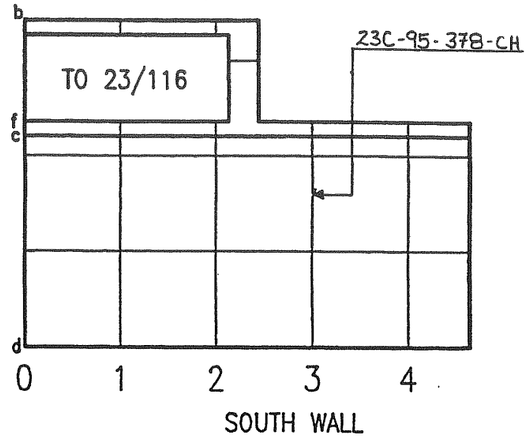
GRID PATTERN = 1 METER

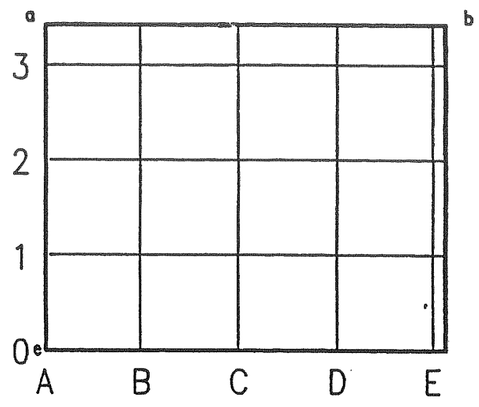
Supplemental Sample Map

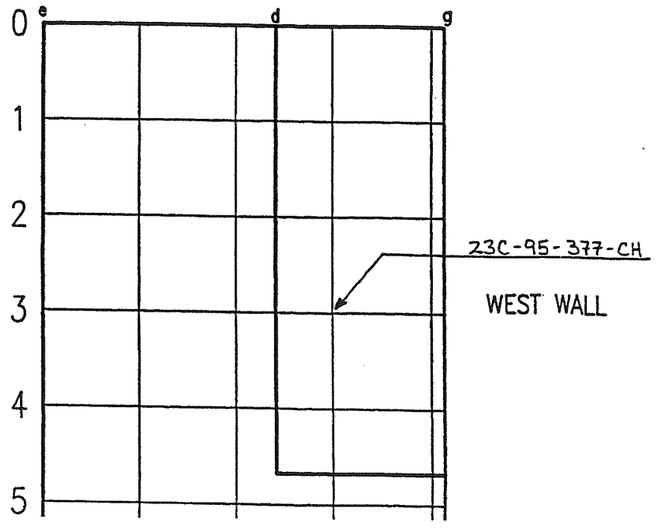










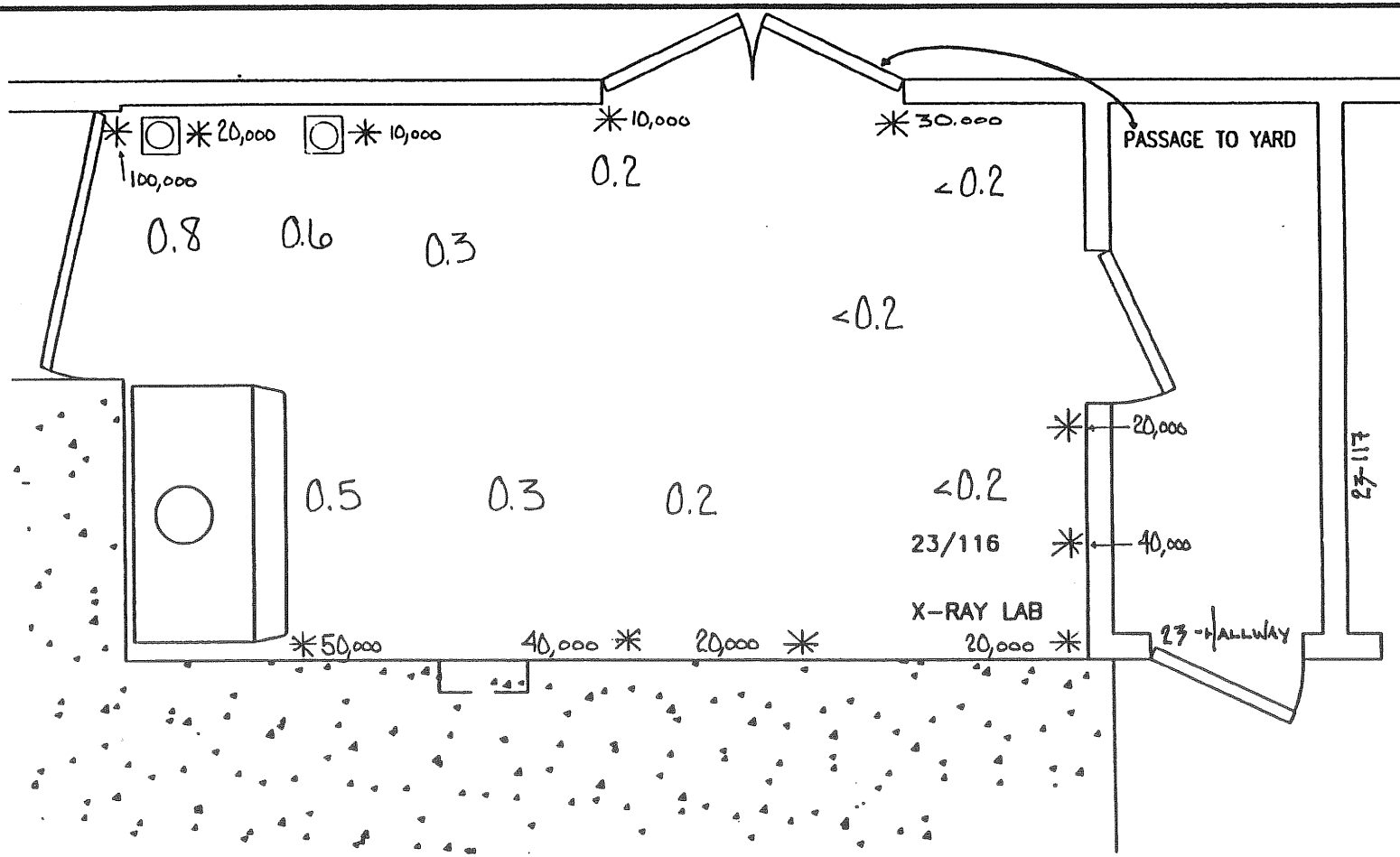


A-88

ROOM NO.	23/114
MEMO NO.	HCI:267:VB:94

Page 5 of 5

MAP#: 23-116	LOCATION: X-Ray Laboratory	DATE: 12-01-.4	TIME 1500	SURVEY # 23-94-0-0-6-L-6-CH



No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

No.	dpm\100cm2	No.	dpm\100cm2

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/_____	Remarks (see Note 4 below)
○	SMEAR	◆	H^3 SMEAR	(42)	1,000	(51)	1,000	✳ DIRECT FRISK SURVEY RESULTS IN dpm/PA (PROBE AREA) TAKEN
#	LARGE AREA SMEAR	✳✳✳	BOUNDARY	(43)	1,000	(52)	2,000	ALONG BASE BOARDS. dpm/PA > BACKGROUND RADIATION
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(44)	3,000	(53)	3,000	LEVELS
✳	CONTACT DOSE RATE	+	12" DOSE RATE	(45)	1,000	(54)	2,000	[R] 10% OF SMEARS COUNTED FOR ALPHA CONTAMINATION. NO
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(46)	1,000	(55)	2,000	ALPHA DETECTED - <20 dpm/100cm² SAC 41015 CD 05-20-95
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(50)	2,000			

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
B. HUNTER P. BUTLER	Douglas A. Warren	12-12-94	4-028	TBM 15 079061 05-31-95	RO2 2938 01-11-95	N/A	

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-116	LOCATION: X-RAY LAB & FUME HOOD	DATE: 12-01-94	TIME 1500	SURVEY # 23-94-0-0-16-2-16-C1

R1 SEE SUPPLEMENTAL MAP 23-116 FOR SPECIFIC RADIOLOGICAL CONDITIONS OF FUME HOOD. NO SAMPLE MEDIA COLLECTED FROM WALL OR FLOOR BEHIND FUME HOOD DUE TO THE UNKNOWN ORIGIN OF EXISTING DOSERATES AROUND FLOOR AREA ALONG WITH ELEVATED LOOSE CONTAMINATION LEVELS. THERE EXISTS A HIGH POTENTIAL FOR HOT PARTICLES BENEATH FUME HOOD AND BEHIND BASEBOARDS DUE TO PREVIOUS WATER OVERFLOW FROM HIGH LEVEL CELL.

R2 BECAUSE OF WATER HAVING OVERFLOWED ~~FROM~~ INTO THE HIGH LEVEL CELL, ~~IN~~ ROOMS 23/116, 23/117 AND ADJOINING 23/HALL THE BASEBOARDS ON ALL FOUR WALLS OF RM 23/117 WERE NOT REMOVED DUE TO THE LIKELIHOOD OF EXPOSING HOT PARTICLES AND HIGH CONTAMINATION. THIS IS EVIDENCED BY THE CONTAMINATION LEVELS BENEATH FUME HOOD WHERE DECONTAMINATION WAS NOT POSSIBLE AND CONTAMINATION LEVELS ALONG NORTH WALL AND PREVIOUSLY REMOVED BASEBOARDS FROM 23-117 AND DIRECT FRISK SURVEY RESULTS ALONG BASEBOARDS OF RM 23-116 - X-RAY LAB.

R3 THE FLOOR TILE HAS BOTH LOOSE AND FIXED CONTAMINATION THROUGHOUT ROOM. DECONTAMINATION IS NOT POSSIBLE SO THE ENTIRE ROOM HAS BEEN COVERED WITH HERCULITE IN ORDER TO MAINTAIN ACCESS TO HOT CELL YARD. HENCE THE RADIOLOGICAL SURVEY OF FLOOR IS LIMITED TO THE FOUR SAMPLE LOCATIONS AND TWO OTHER RANDOM LOCATIONS.

108E FUME HOOD (UNDER, INSIDE AND BEHIND) - WALL AND FLOOR BEHIND AND UNDER FUME HOOD.

109E STEEL DOOR FRAME, WALL AND THRESHOLD TO RM 114 - DOOR FRAME OF DOUBLE DOORS TO OUTSIDE YARD - DOOR FRAME OF SINGLE DOOR TO 23-H

110E HIGH LEVEL CELL PENETRATION PLUG (SPACE BETWEEN PLUG AND WALL)

111E AIRFLOW VENT BETWEEN RM 116 AND HALLWAY (AROUND FRAME AND INSIDE WALL)

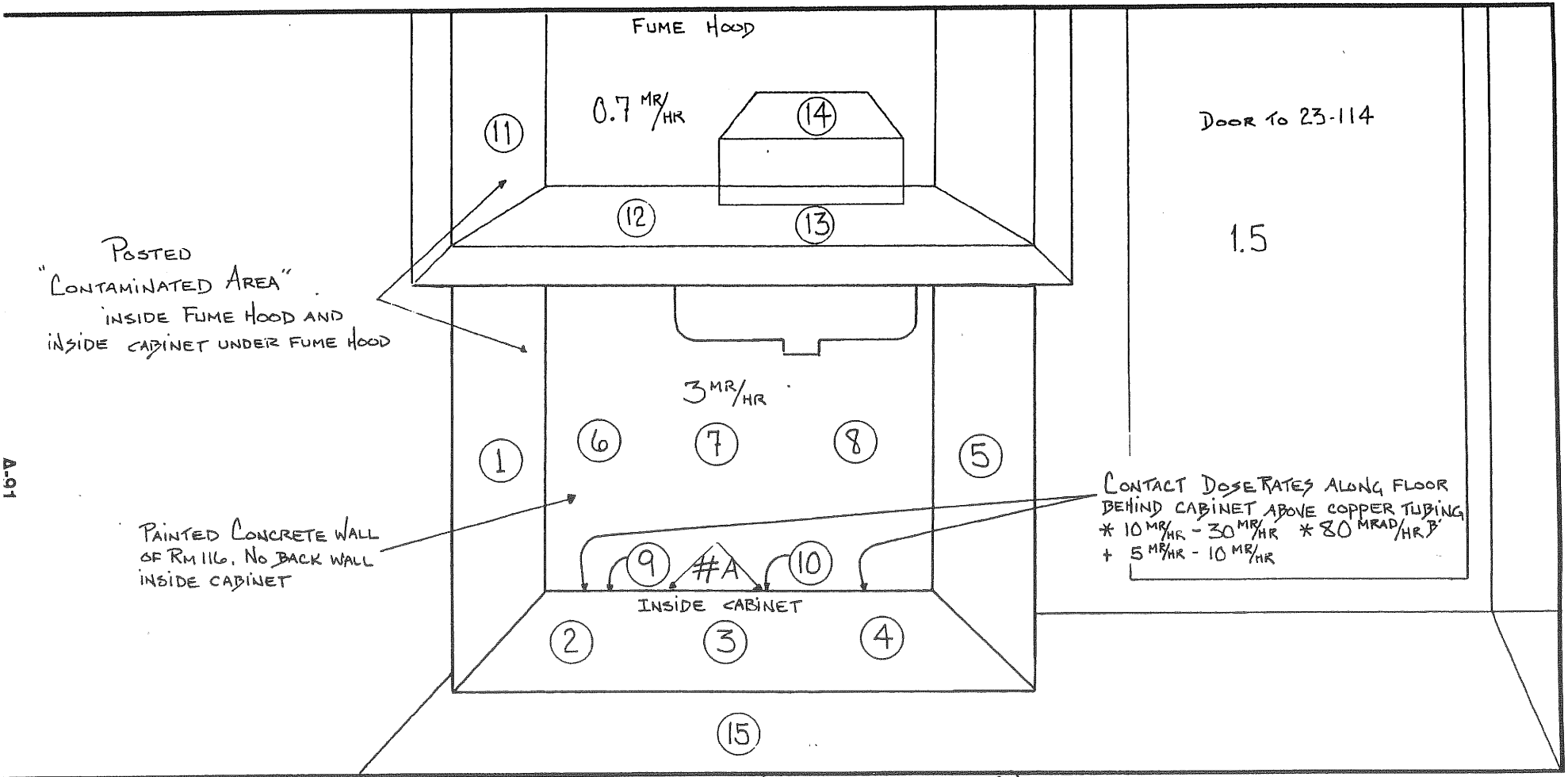
☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, PENETRATIONS, DISCOLORATIONS AND ANY OTHER SUSPECT LOCATIONS. EXCEPT WHERE DENOTED ON MAP ALL DIRECT FRISK RESULTS WERE ≤ BACKGROUND RADIATION LEVELS.

PC-000456/0

SURVEYOR: B. HUNTER, P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 12-12-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RW Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-116	LOCATION: FUME HOOD	DATE: 12-5-94/12-6-94	TIME 0800	SURVEY # 23-94-0-0-6-2-6-CH



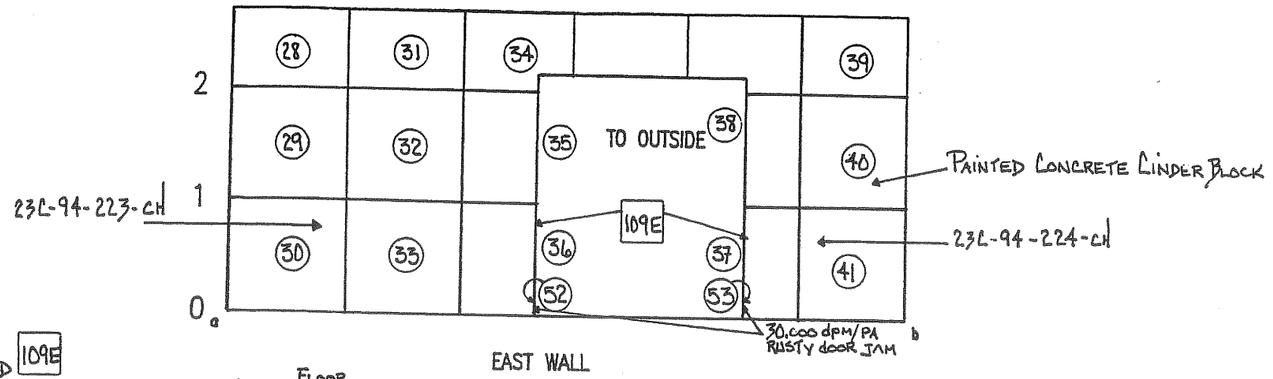
A-91

KEY				No.	dpm/100 cm² (No #A dpm/L.A.S. #A,B,C)				Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	(1)	<1,000	(7)	2,000	(13)	1,000	
#	LARGE AREA SMEAR	***	BOUNDARY	(2)	<1,000	(8)	2,000	(14)	2,000	
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(3)	<1,000	(9)	300,000	(15)	<1,000	
*	CONTACT DOSE RATE	+	12" DOSE RATE	(4)	<1,000	(10)	60,000	#A	300,000 NO HOT PARTICLE	
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(5)	<1,000	(11)	<1,000	#B	<100 cpm/PA	
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(6)	1,000	(12)	<1,000	#C	<100 cpm/PA	

PC-000456/0

SURVEYOR: P. HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 12-12-94	JOB RWP# 4-028	INST. TYPE: RM 14	RO2
				SERIAL NUMBER 33100	2938
				CAL DUE DATE: 04-18-95	01-11-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

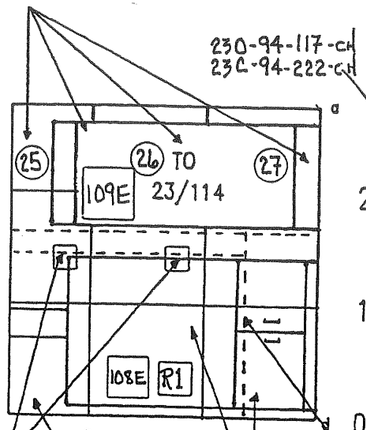


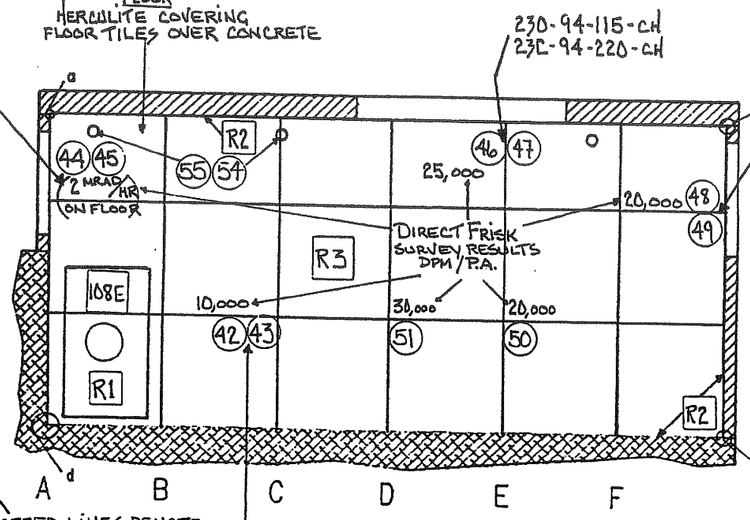
SURVEY No: 23-94-626-CH

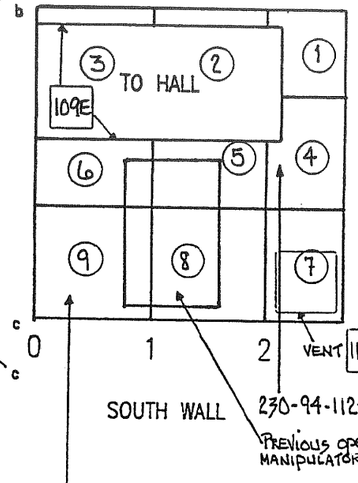
SURVEY BY: B.L. HUNTER S. BARTHOLOW / P. BUTLER T. [illegible]

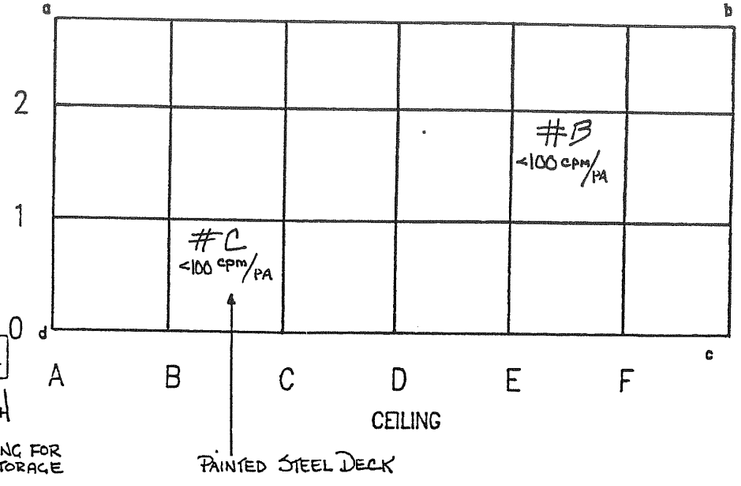
INST TYPE	RO2	LUDLUM 3	TBM 15
SERIAL No	2938	74305	079061
CAL DUE DATE	01-11-95	05-08-95	05-31-95
GRID PATTERN = 1 METER		BC 4	SAC 4
		34053	1015
		03-20-95	05-20-95

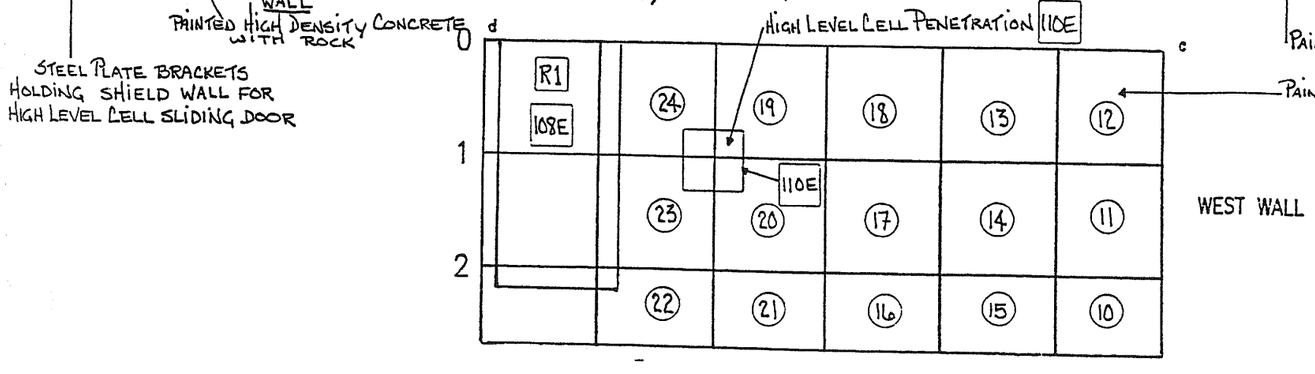
PAINTED STEEL WALL, DOOR, DOOR FRAME AND THRESHOLD 109E





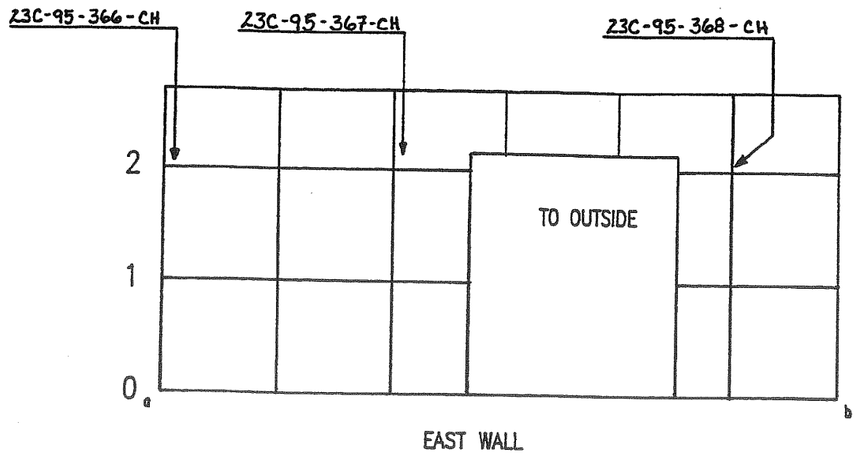






B-06D

ROOM NO.	23/116
MEMO NO.	HCI:267:VB:94



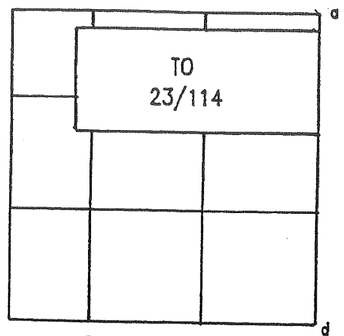
EAST WALL

Supplemental Sample Map

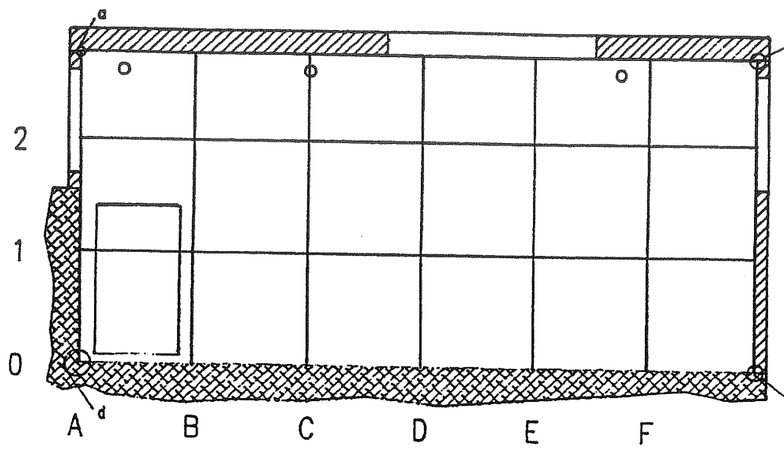
SURVEY No: 23-94-626-CH
SURVEY BY: J. Rowsell, T. Rowsell + Du Te VR + VG

INST TYPE				
SERIAL No	N. A.	N. A.	N. A.	
CAL DUE DATE				

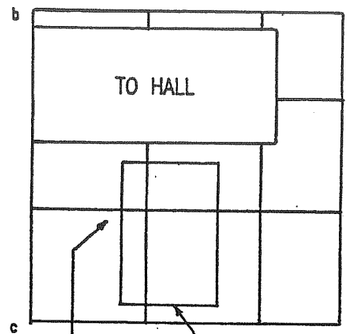
GRID PATTERN = 1 METER



NORTH WALL



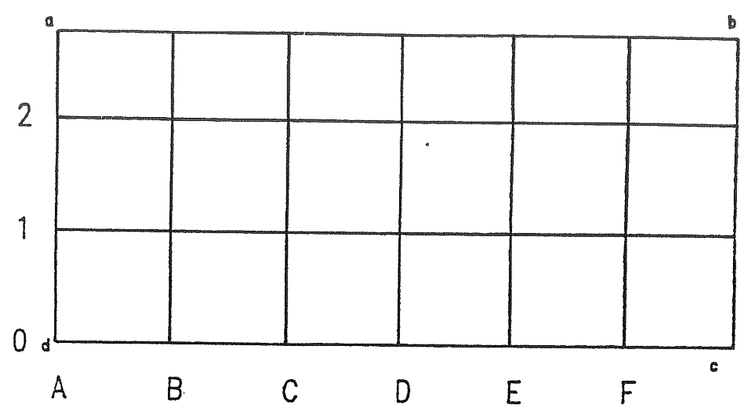
FLOOR



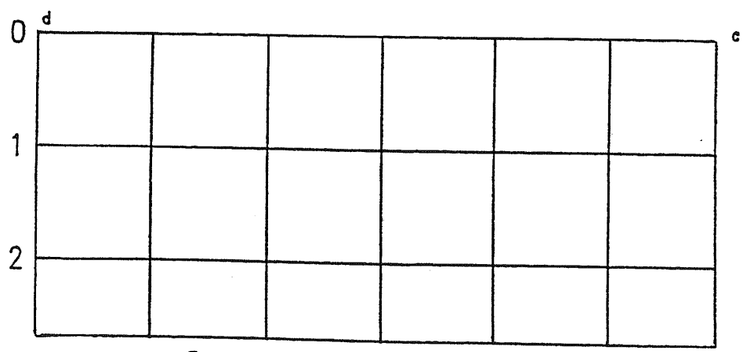
SOUTH WALL

Previous Opening

230-95-189-CH



CEILING

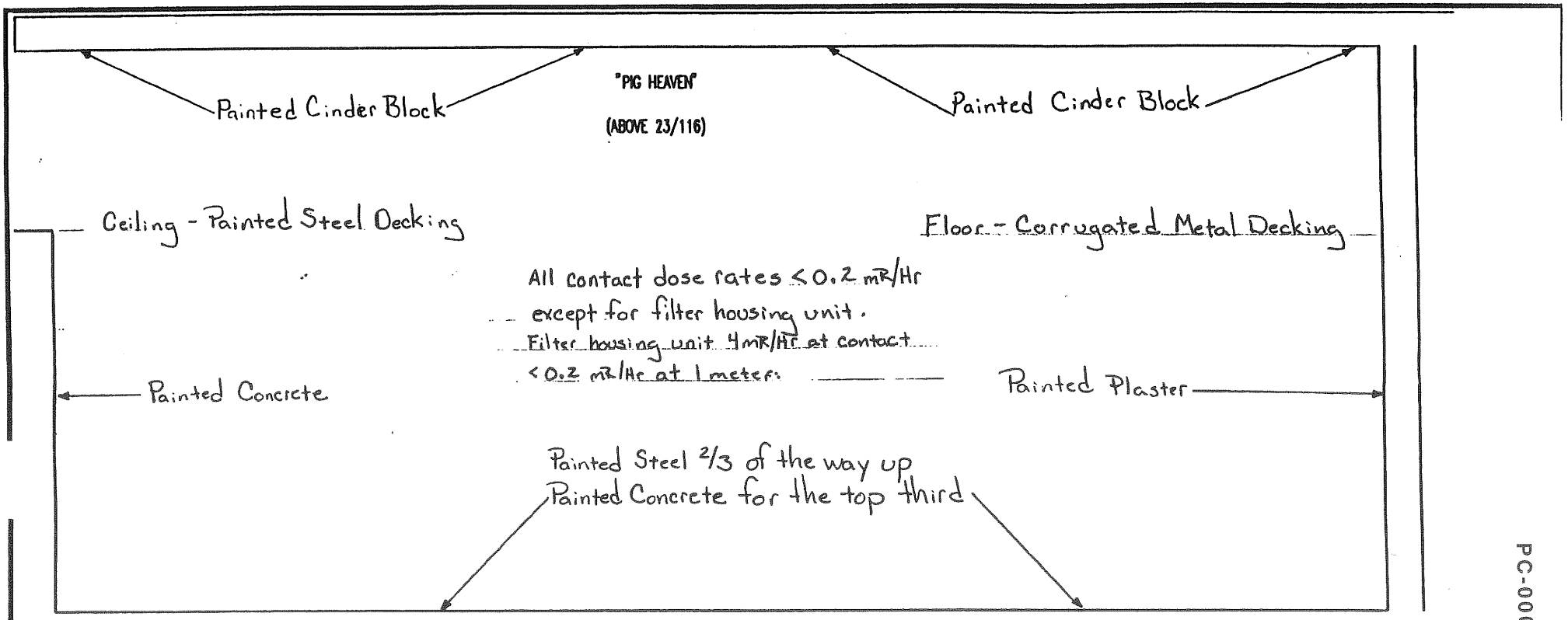


WEST WALL

B-06D

ROOM NO.	23/116
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-116A	Overhead above 116	11-28-94	0800	23-94-0-0-6-0-0-CH



A-04

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)		
○	SMEAR	◆	H^3 SMEAR	(1)	49	(8)	308	SMEARS (1) → (120) TAKEN. THOSE NOT LISTED < MDC		
#	LARGE AREA SMEAR	×××	BOUNDARY	(2)	182	(9)	74	AIR SAMPLES TAKEN DURING SAMPLE REMOVAL		
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		(4)	38	(10)	88	SMEARS (1) → (15) TAKEN ON EAST WALL		
✳	CONTACT DOSE RATE	+	12" DOSE RATE	(5)	212	(11)	364	10% OF ALL SMEARS COUNTED FOR	SAC-4	RO 2
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	(6)	21	(14)	126	ALPHA. ALL < MDCR.	1015	2938
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	(7)	35	(15)	25		5-20-95	1-11-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	BC-4	~~HP-29A~~	MOD. 3
WRAY BERRETT / Wray Berrett	Douglas A. Warren	11-29-94	28	SERIAL NUMBER	34053	5137	74173
J. Rowsell / J. Rowsell				CAL DUE DATE:	3-20-95	3-14-95	5-8-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SUPPLEMENT TO SURVEY #
23-116A	OVERHEAD ABOVE 116	11-28-94	0800	23-94-0-0-6-0-0-CH

Smear Continuation Sheet

REMARKS:

LARGE ARE SMEARS TAKEN ON FLOOR, WALLS, CEILING. ONLY THOSE WITH DETECTIBLE ACTIVITY ARE SHOWN ON MAP.

SMEAR (81) WAS TAKEN FROM A GREASY AREA ON THE DECK OF ~ 2 SQ. FT. THE AREA WAS WIPED DOWN AND RE-SMEARED. POST WIPEDOWN RESULTS WERE 20 K dpm / 100 cm².

No.	dpm/100 cm²	Description
(16)	39	EAST WALL
(17)	298	EAST WALL
(18)	91	EAST WALL
(22)	49	SOUTH WALL
(25)	63	"
(26)	95	"
(27)	53	"
(31)	39	WEST WALL
(37)	49	"
(38)	53	"
(39)	21	"
(40)	56	"
(43)	70	"
(45)	28	"
(46)	49	CEILING
(47)	42	"
(48)	536	"
(50)	28	"
(56)	32	"
(59)	21	"
(60)	42	"
(62)	56	"
(64)	424	FLOOR
(65)	266	"
(66)	224	"
(67)	2125	"
(68)	690	"
(69)	392	"
(70)	739	"
(71)	602	"
(72)	2401	"
(73)	2006	FLOOR
(74)	1467	"
(75)	5201	"
(76)	81	"
(77)	1113	"
(78)	1428	"
(79)	432	"
(80)	1005	"
(81)	500 K	"
(82)	340	NORTH WALL
(83)	270	"
(84)	28	"
(85)	70	"
(86)	592	DUCT WORK
(87)	144	"
(88)	200	FILTER HOUSING
(89)	273	"
(90)	994	"
(91)	2965	"
(92)	91	"
(93)	60	"
(94)	46	"
(95)	123	"
(96)	53	"
(98)	28	I-BEAM
(99)	70	"
(100)	193	ANGLE IRON
(102)	112	STACK DUCT
(104)	42	I BEAM
(105)	74	FIRE SENSOR
(106)	32	I-BEAM
(107)	154	SPRINKLER LINE
(108)	53	CONDUIT
(109)	77	LIGHT
(110)	112	LIGHT
(111)	25	SPRINKLER LINE
(112)	25	CONDUIT
(113)	238	I-BEAM
(114)	53	LIGHT
(115)	42	LIGHT
(117)	95	SPRINKLER LINE
(118)	77	SPRINKLER LINE
(120)	28	SUPPORT RODS

A-95

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
WRAY BERRETT / Wray Berrett	Douglas A. Warner	11-29-94	28		BC-4 / 34053 / 3-20-95	HD-29A / 5137 / 3-14-95	MOD.3 / 74173 / 5-8-95
J. Russell K. Rackel							

(1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

SAC-4 1015 | RO2 2938

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-116A	Overhead above 116	11-28-94	0800	23-94-0-0-6-0-0-CH

R1 Duct is open to the inside, but closed to the outside. No detectable on a masslinn smear. No detectable fixed

R2 Duct is open to the inside, but closed to the outside. No detectable on a masslinn smear. No detectable fixed.

R3 Duct is capped off about two feet into the room. Cap was not removed.

R4 One of the two cover caps removed. Accessible area of wall penetration smeared and frisked. No detectable found. Because of penetration through wall, area will be listed as an exception.

R5 West wall is concrete. 2/3 of they way down. The bottom 2/3 is steel plate.

R6 Sample is painted removed from steel plate

R7 Wall ends at this point.

R8 Large area smear was on the wall behind the filter housing

93E Ducts inaccessible surfaces

94E Capped duct inaccessible surfaces

95E Penetrations behind coverplates

96E Filter housing and duct work

97E Penetrations into hollow part of ribbed decking on floor.

98E Inaccessible area between I-beams and steel deck ceiling

Next Page

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / J. Rowsell W. Berrett / W. Berrett	Douglas A. Warner	11-29-94	28		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-116A	LOCATION: Overhead above 116	DATE: 11-28-94	TIME 0800	SURVEY # 23-94-0-0-6-0-0-CH

PAE Misc. electrical conduit, boxes, lights, controls and sensors on walls and ceiling.

East wall (4) Electrical conduit

South wall (1) Electrical conduit

West wall (1) Electrical conduit (Just off of wall)

Ceiling (2) Lights (1) Fire sprinklers and sensor

General Remarks

Direct readings and smears taken at areas with highest potential for contamination within the grid.

(Wall-floor intersections, behind fixtures, oily areas, etc.)

All surfaces covered with large area smears. Detectable listed on map.

Any areas of detectable fixed or loose found during survey were documented on map or in remarks.

PC-000456/0

SURVEYOR: J. Rowsell / Romeo Rowsell W. Berlett / Wray Berlett	REVIEWED BY: Douglas C. Warren	DATE: 11-29-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N A	N A	N A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

D . . 4 of 1

PC-000456/0

SURVEY No: 23-94-600-CH

SURVEY BY: J. Rowsell K. Rowsell W. Bennett W. Bennett

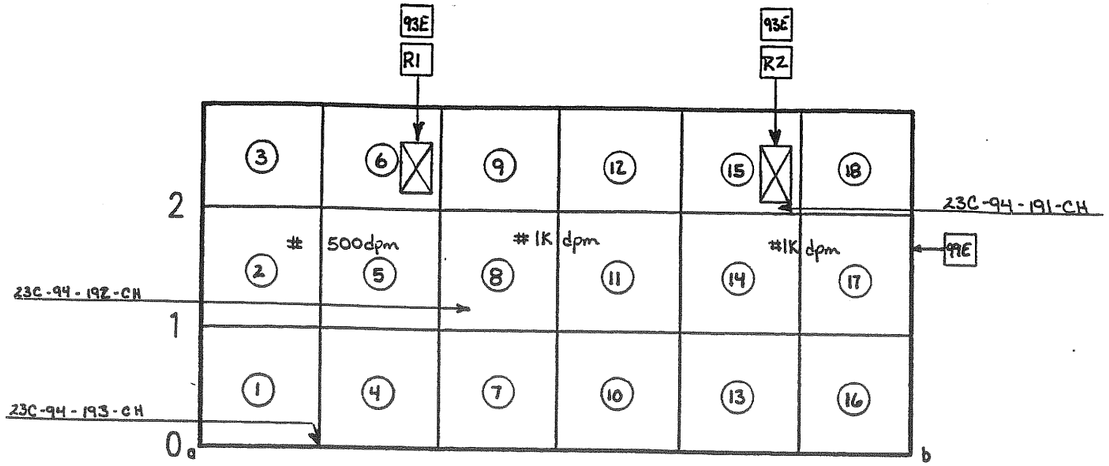
INST TYPE			
SERIAL No	See front	two pages	
CAL DUE DATE			

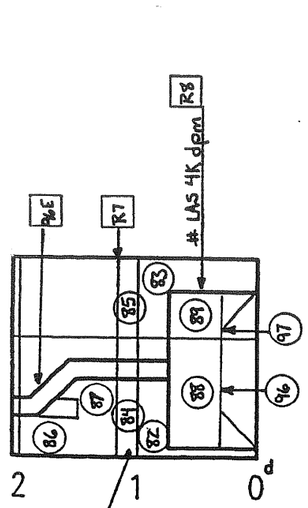
GRID PATTERN = 1 METER

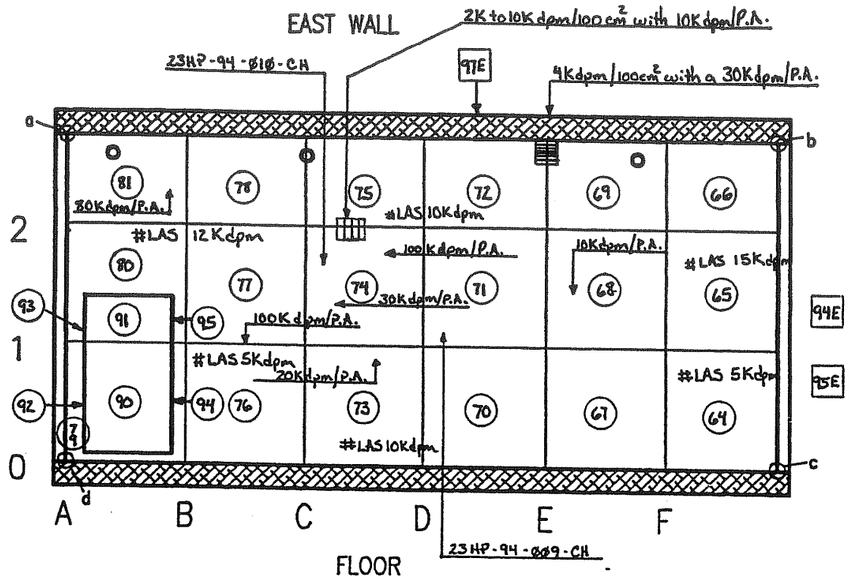
☒ Duct ☒ Cover Plate

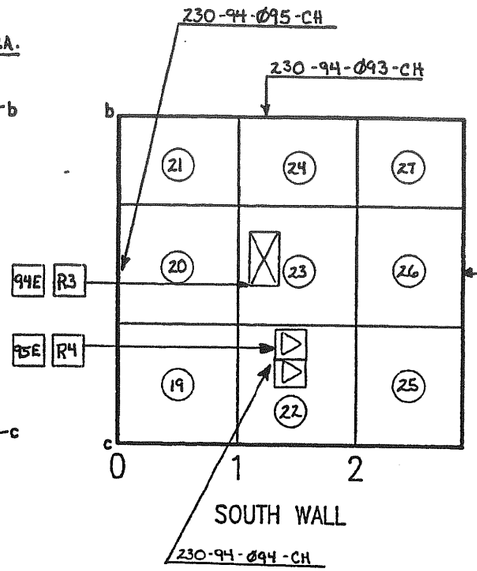
⊗ Duct ⊗ Light

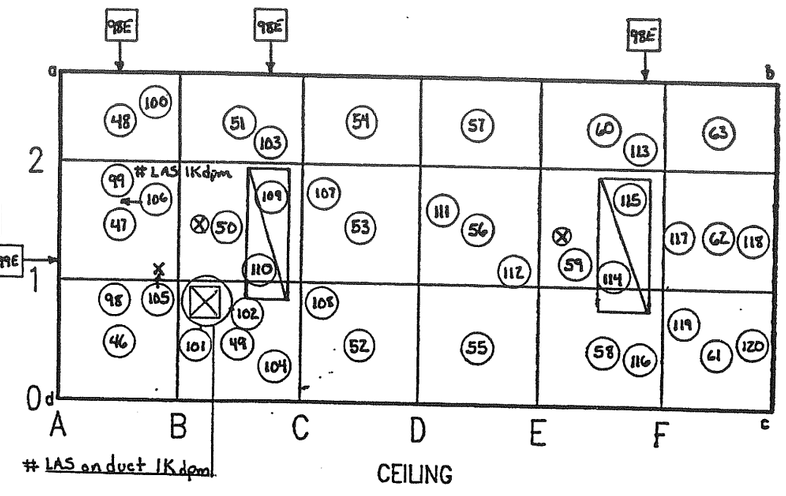
⊗ Fire Sprinkler x Fire Sensor

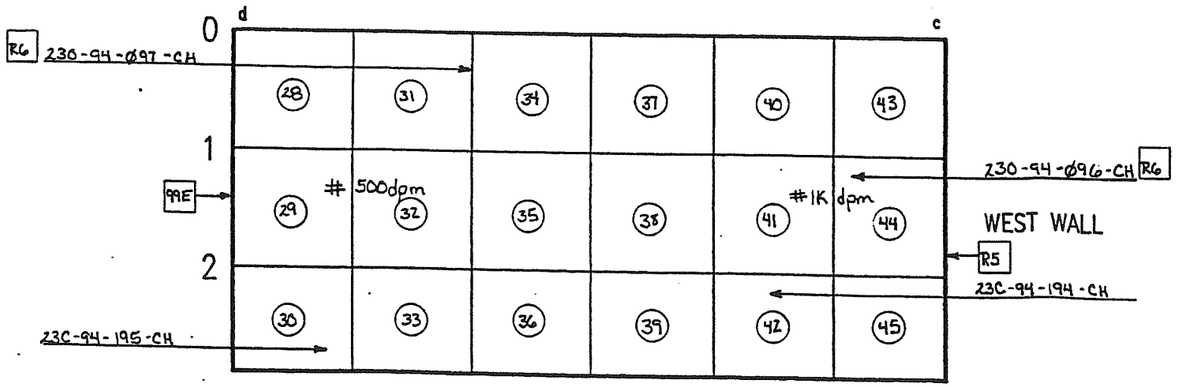












A-98

ROOM NO.	23/116A
MEMO NO.	HCI:267:VB:94

PC-000456/0

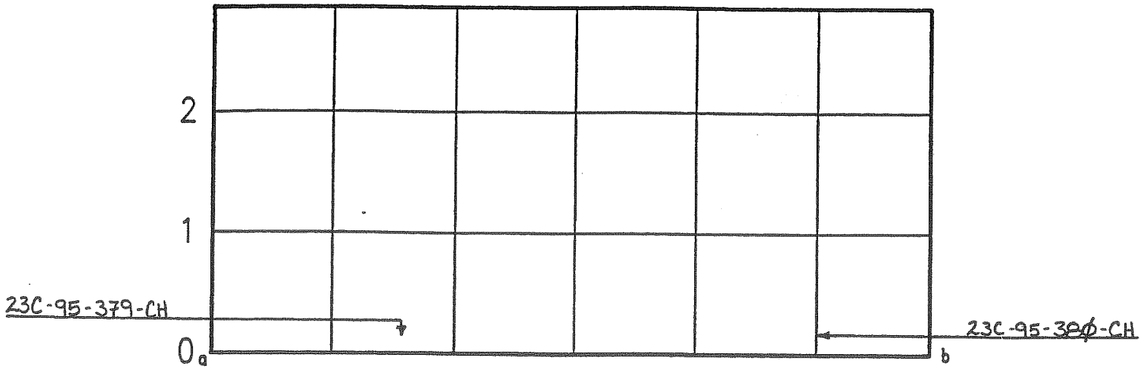
SURVEY No: 23-94-600-CH

SURVEY BY: J. Bowsell / J. Bowsell J. Bottel J. Bottel

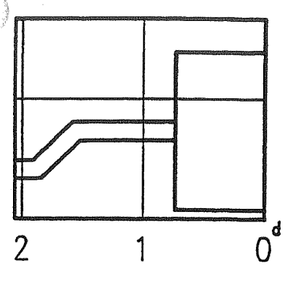
INST TYPE			
SERIAL No	N/A	N/A	N/A
CAL DUE DATE			

GRID PATTERN = 1 METER

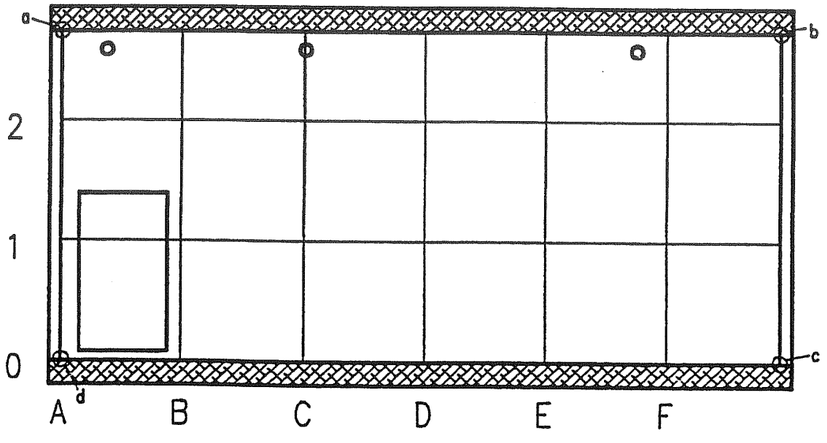
Supplemental Sample Map



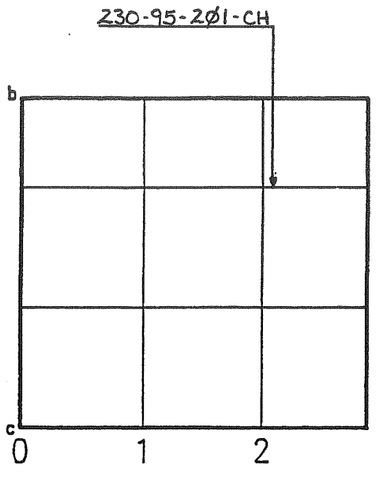
EAST WALL



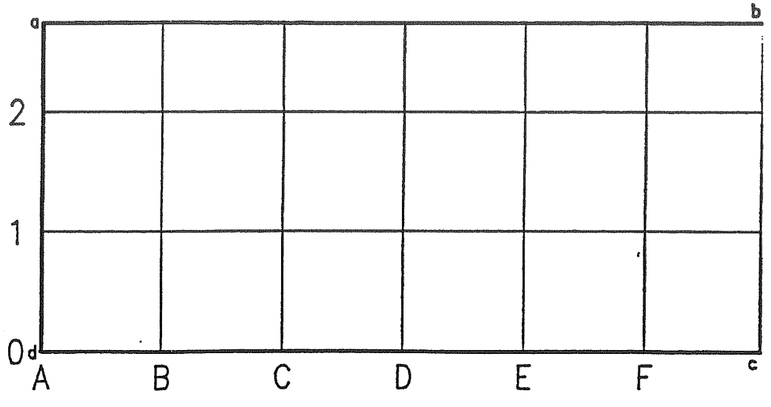
NORTH WALL



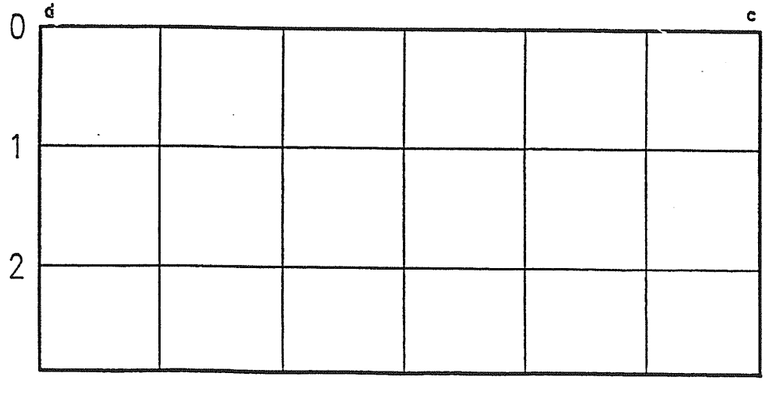
FLOOR



SOUTH WALL



CEILING

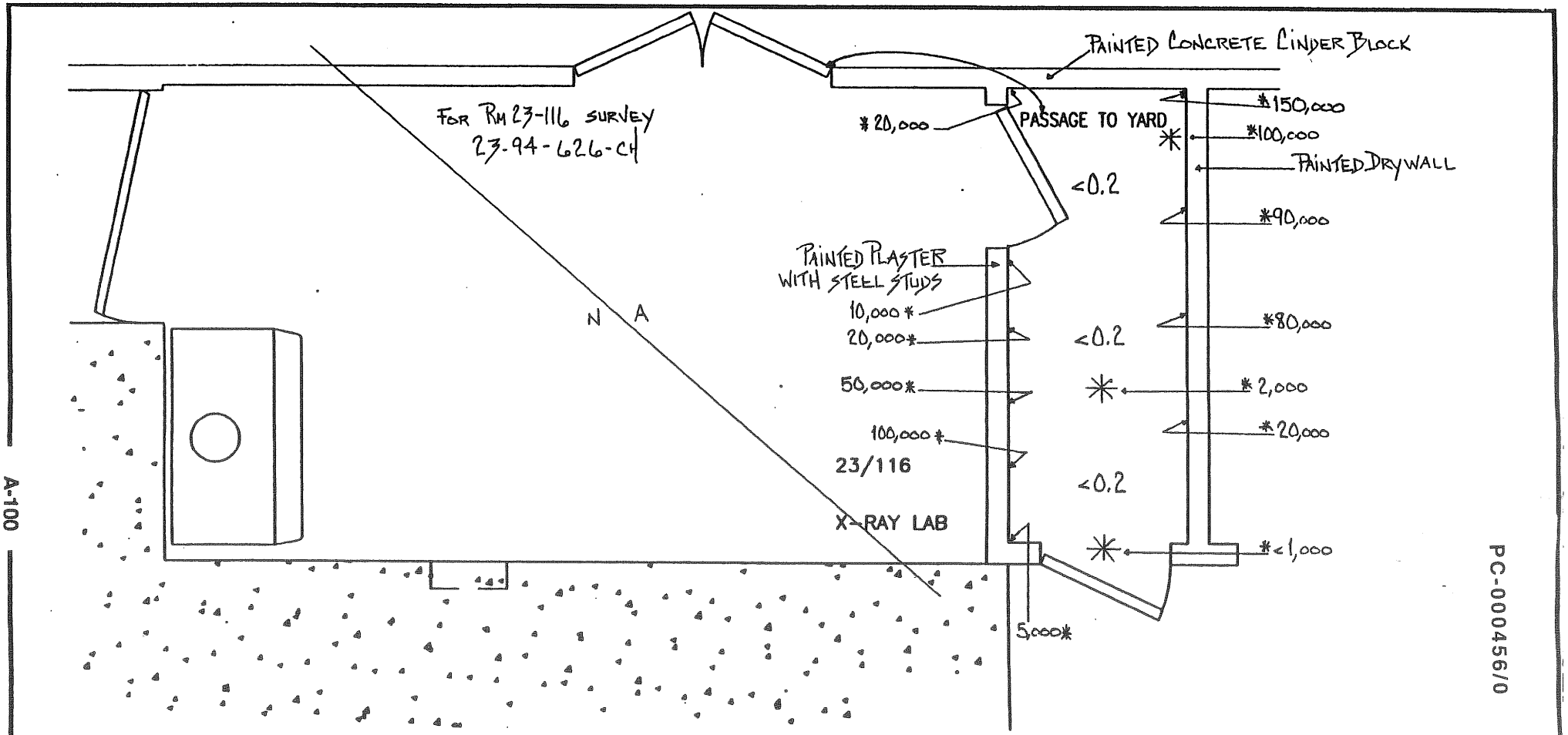


WEST WALL

ROOM NO.	23/116A
MEMO NO.	HCI:267:VB:94

A-99

MAP#: 23-116	LOCATION: RM. 105 AND RM. 116 ADJOINING HALLWAY X-Ray Laboratory	DATE: 12-01-94	TIME 1500	SURVEY # 23-94-0-0-6-2-7-CH



KEY				No.	dpm/100 cm²	No.	dpm/ LAS
O	SMEAR	◆	H³ SMEAR	(25)	5,000	# A	<1,000
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
✱	CONTACT DOSE RATE	+	12" DOSE RATE		N A		N A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

✱ DIRECT FRISK SURVEY RESULTS IN dpm/PA. AT SAMPLE LOCATIONS ON FLOOR BENEATH HERCULITE AND ALONG BASEBOARDS.

☐ 10% OF SMEARS COUNTED FOR ALPHA CONTAMINATION.

ALL SMEARS <20 dpm/100 cm² α.

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER P. BUTLER	Douglas Q. Warren	12-13-94	4-028	LUDLUM 3 / 4687 / 04-12-95	RO2 / 2938 / 01-11-95	N/A	

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23- HALL	Rm105 AND Rm116 ADJOINING HALLWAY	12-01-94	1500	23-94-0-0-6-2-7-CH

R1 THE FLOOR IS CONCRETE WITH FLOOR TILES AND COVERED WITH HERCULITE. THERE ARE NUMEROUS AREAS WITH BOTH LOOSE AND FIXED CONTAMINATION DUE TO WATER HAVING OVERFLOWED ~~FROM~~ INTO DW HIGH LEVEL CELL, ~~IN TO~~ DW RM. 116, HALLWAY AND RM. 117. DECONTAMINATION WAS NOT POSSIBLE SO HERCULITE WAS USED TO MAINTAIN ACCESS THROUGH RM 116 AND INTO OUTSIDE YARD. THE DIRECT AND INDIRECT SURVEY OF FLOOR AREA WAS LIMITED TO THE THREE SAMPLE LOCATIONS AND BORDERING FLOOR/BASEBOARD JUNCTIONS.

R2 BECAUSE OF WATER HAVING OVERFLOWED FROM THE HIGH LEVEL CELL INTO RM 116, RM. 117 AND THE ADJOINING HALLWAY THE BASEBOARDS WERE NOT REMOVED DUE TO THE LIKELIHOOD OF EXPOSING HOT PARTICLES AND HIGH CONTAMINATION. THIS IS EVIDENCED BY THE CONTAMINATION LEVELS FOUND ~~AROUND~~ ALONG (Tech 201-94) AND BENEATH THE (RM 23 HALL SOUTH) SHARED WALL OF RM. 117 (NORTH WALL) AND DIRECT FRISK SURVEY RESULTS ALONG BASEBOARDS.

112E AIRFLOW VENT FRAME AND WALL JUNCTION ON NORTH WALL.

113E DOOR FRAME AND WALL JUNCTION ON WEST WALL.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, PENETRATIONS, SURFACE JUNCTIONS/SEAMS AND ANY OTHER SUSPECT LOCATIONS. EXCEPT WHERE DENOTED ON MAP ALL DIRECT FRISK SURVEY RESULTS WERE ≤ BACKGROUND RADIATION LEVELS.

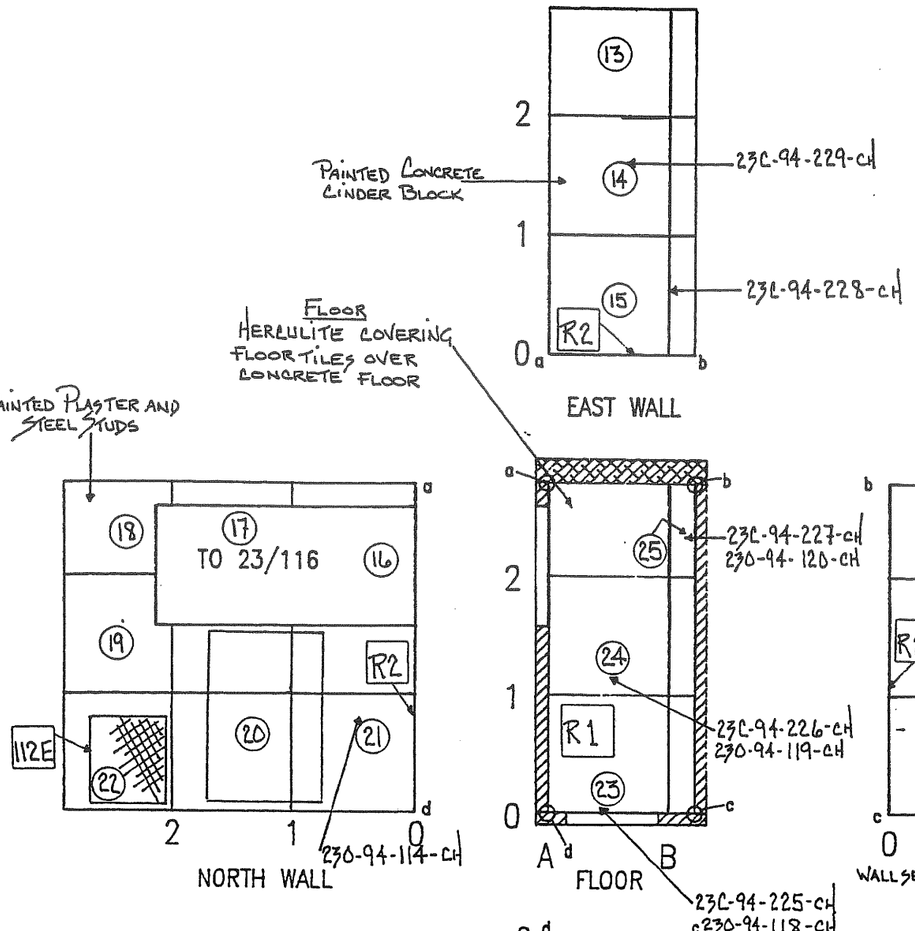
PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER, PRESTON BUTLER	Douglas A. Warren	12-13-94	4-028		N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-627-CH
SURVEY BY: B. HUNTER / P. BUTLER

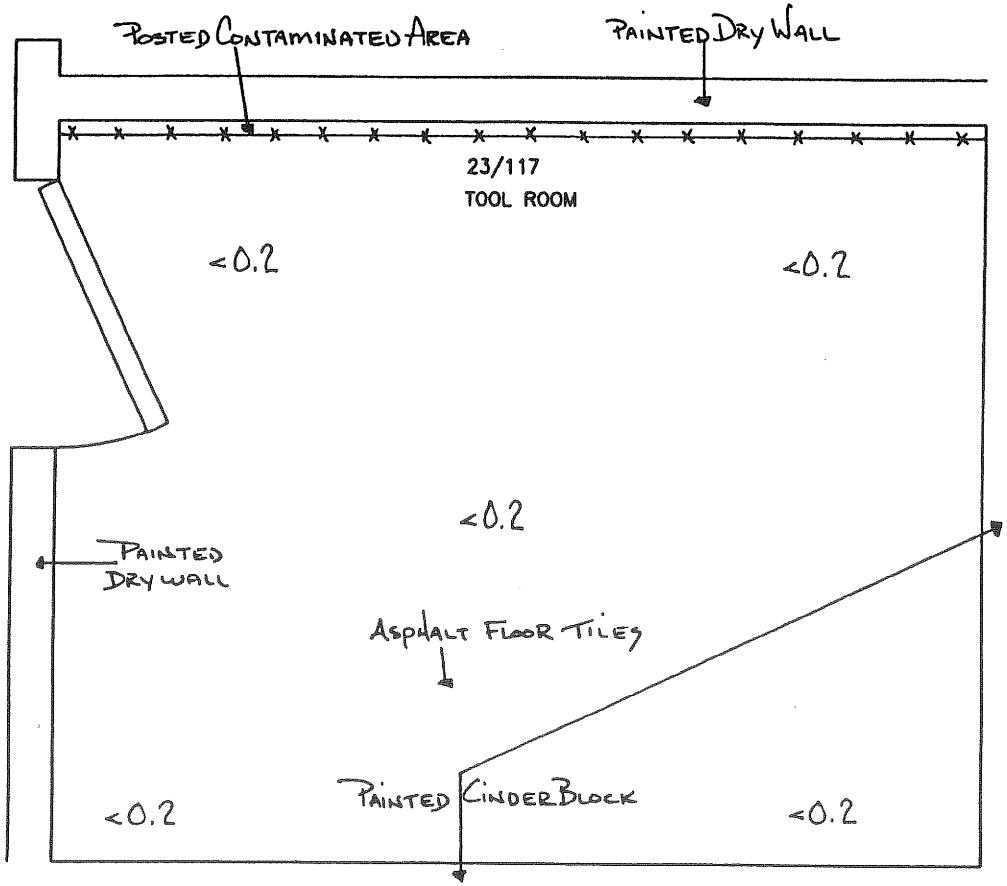
INST TYPE	Ro2	LUDLUM 3	TBM 15
SERIAL No	2938	4687	079061
CAL DUE DATE	01-11-95	04-12-95	05-31-95
GRID PATTERN = 1 METER		BL 4	SAL4
		34053	1015
		03-20-95	05-20-95



B-06D

ROOM NO.	23/HALL
MEMO NO.	HCI:267:VB:94

MAP#: 23-117	LOCATION: Tool Room	DATE: 09-22-94	TIME 0700	SURVEY # 23-94-0-0-4-5-3-Ch



No.	dpm\100cm2	No.	dpm\100cm2
N	A		

No.	dpm\100cm2	No.	dpm\100cm2
N	A		

No.	dpm\100cm2	No.	dpm\100cm2
		N	A

No.	dpm\100cm2	No.	dpm\100cm2
			N A

Additional Remarks:

R1 NORTH EAST CORNER OF ROOM HAS NUMEROUS FIXED HOT PARTICLES RANGING FROM 1000 dpm/PROBEAREA TO 20,000 dpm/PROBE AREA.

A-103

PC-000456/0

COPY

KEY

				No.	dpm/100 cm²	No.	dpm/_____
O	SMEAR	◆	H^3 SMEAR	(67)	2,000		
#	LARGE AREA SMEAR	***	BOUNDARY	(68)	25,000		
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE				N A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY		N A		
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

SMEARS (67) AND (68) TAKEN INSIDE CONTAMINATED AREA BOUNDARY AT NORTH FLOOR AND WALL JUNCTION. ALL REMAINING SMEARS (1) - (66) AND (69) WERE <1000 dpm/100cm² INCLUDING AIR VENT AND BENEATH STEEL PLATE. 5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION. RESULTS WERE <200 dpm/100cm².

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
B. HUNTER P. BUTLER	Douglas R. Warren	10/7/94	3-028		RO2 5865 11-01-94	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

Page 1 of 1

MAP#: 23-117	LOCATION: Tool Room	DATE: 09-22-94	TIME 0700	SURVEY # 23-94- 0-0-4-5-3-CH

R1 NORTHEAST CORNER OF ROOM HAS NUMEROUS FIXED HOT PARTICLES RANGING FROM 1,000 dpm/P.A. TO 20,000 dpm/P.A.. (PARTICLES FOUND PRIMARILY IN CRACKS BETWEEN ASPHALT FLOOR TILES)

R2 STEEL PLATE APPX. THICKNESS OF FLOOR TILE WITH AN UNKNOWN PURPOSE WAS ATTACHED TO CONCRETE. IT WAS REMOVED AND SURVEYED ALONG WITH EXPOSED CONCRETE. RESULTS WERE <1000 dpm/100cm² AND <1000 dpm/P.A.

R3 STEEL PANELED ROOF (PAINTED)

R4 AIRVENT SMEARED AND DIRECT FRISK EXTERNALLY ONLY. RESULTS WERE <1000dpm/100cm² AND <1000dpm/P.A.

R5 AREA ALONG NORTH WALL AT BASE AND FLOOR JUNCTION IS POSTED CONTAMINATED AREA DUE TO PREVIOUS FLOODING. SMEARABLE CONTAMINATION FROM WEST TO EAST RANGED FROM <1000dpm/100cm² TO 25,000 dpm/100cm². FIXED CONTAMINATION FROM WEST TO EAST RANGED FROM <1,000 dpm TO 120,000 dpm.

E40 AREA BENEATH NORTH WALL (INTERNALLY) WILL REQUIRE FURTHER H.P. MONITORING UPON DISMANTLEMENT.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD AND MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

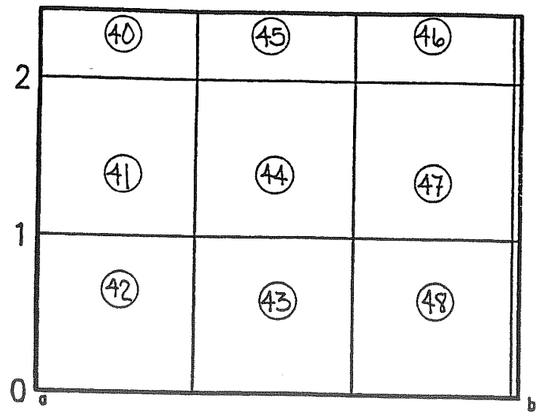
SURVEYOR: B HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

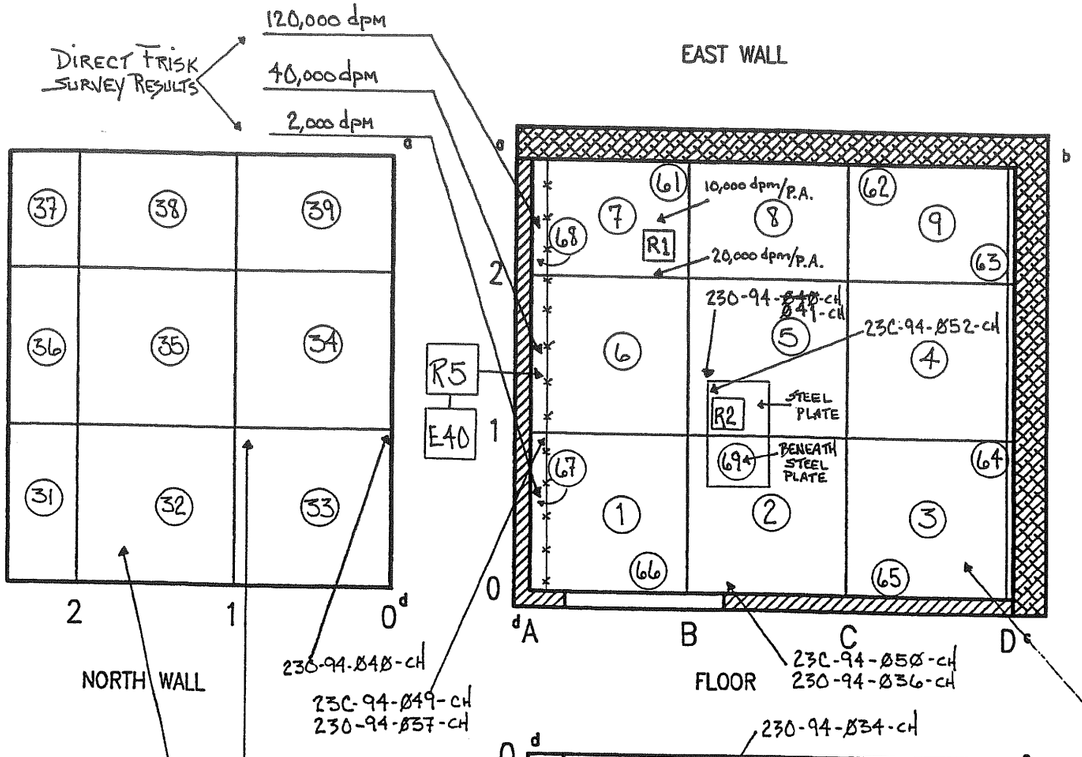
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

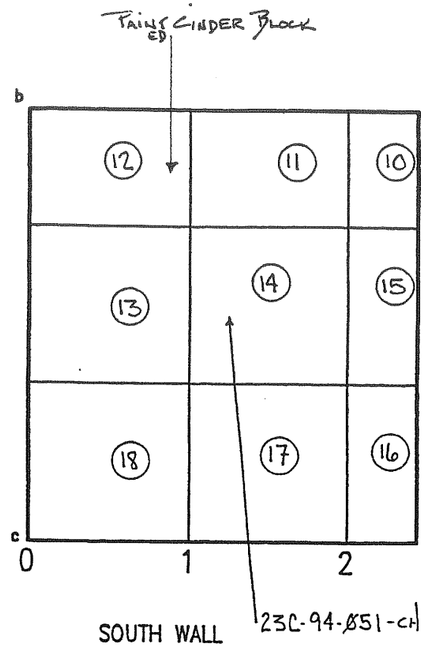
SURVEY No: 23-94-455-CH

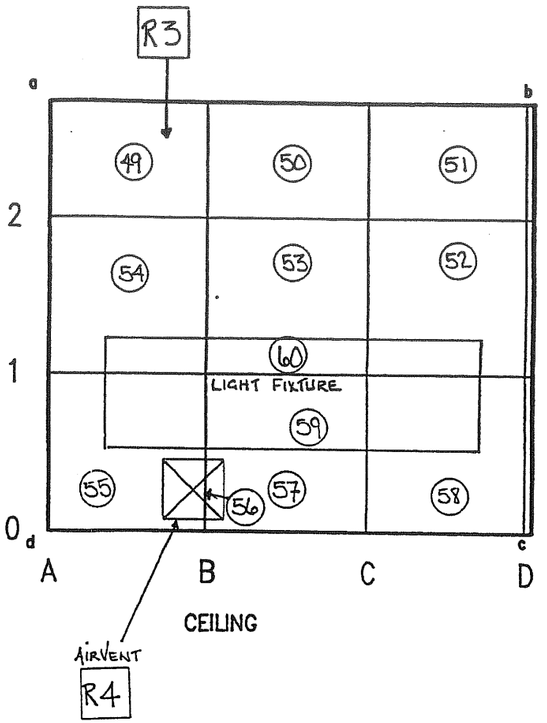
SURVEY BY: P. HUNTER & ~~BLACKWELL~~ / P. BUTLER ~~HOUSTON~~

INST TYPE	TBM 15	RM 14	RO2
SERIAL No	108114	32952	5865
CAL DUE DATE	03-18-95	02-17-95	11-01-94
GRID PATTERN = 1 METER		LUDLUM 177	BC 4
		73599	30362
		03-18-95	03-18-95









ROOM NO.	23/117
MEMO NO.	HCI:267:VB:94

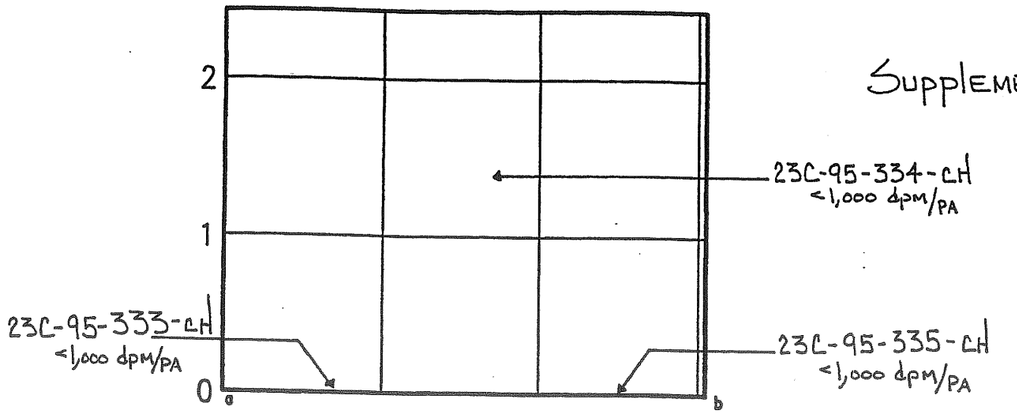
A-105

Supplemental Sample Map

SURVEY No: 23-94-453-CH
SURVEY BY: P. HUNTER BAGDADALLOOR/PBUTLER

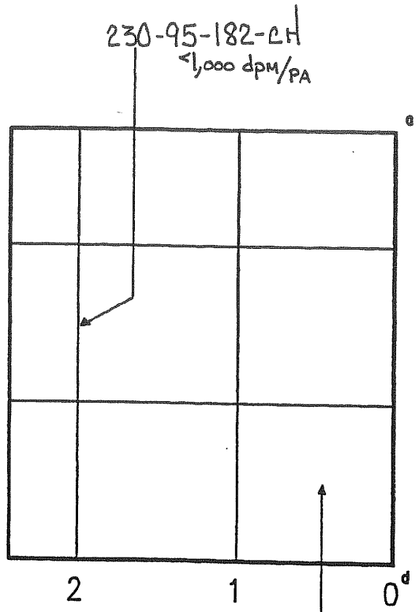
INST TYPE	LUDLUM 3	/	/
SERIAL No	4687	N/A	N/A
CAL DUE DATE	04-12-95	/	/

GRID PATTERN = 1 METER



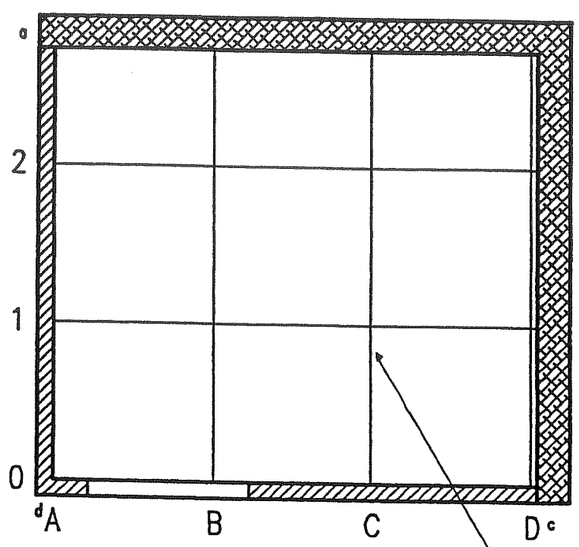
dpm/PA = PROBE AREA

EAST WALL

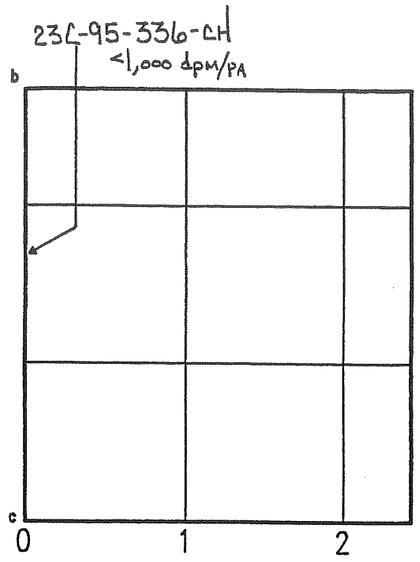


NORTH WALL

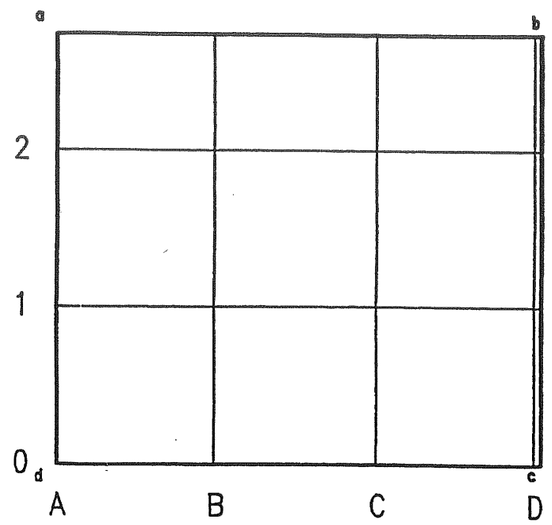
230-95-181-CH
<1,000dpm/PA



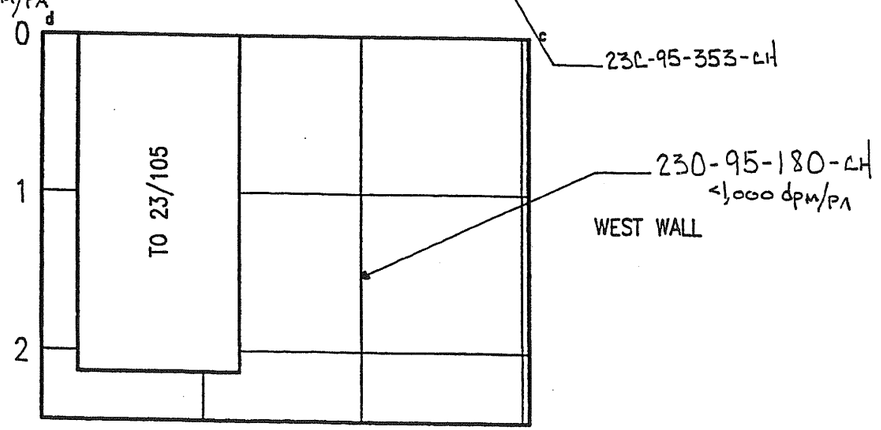
FLOOR



SOUTH WALL



CEILING

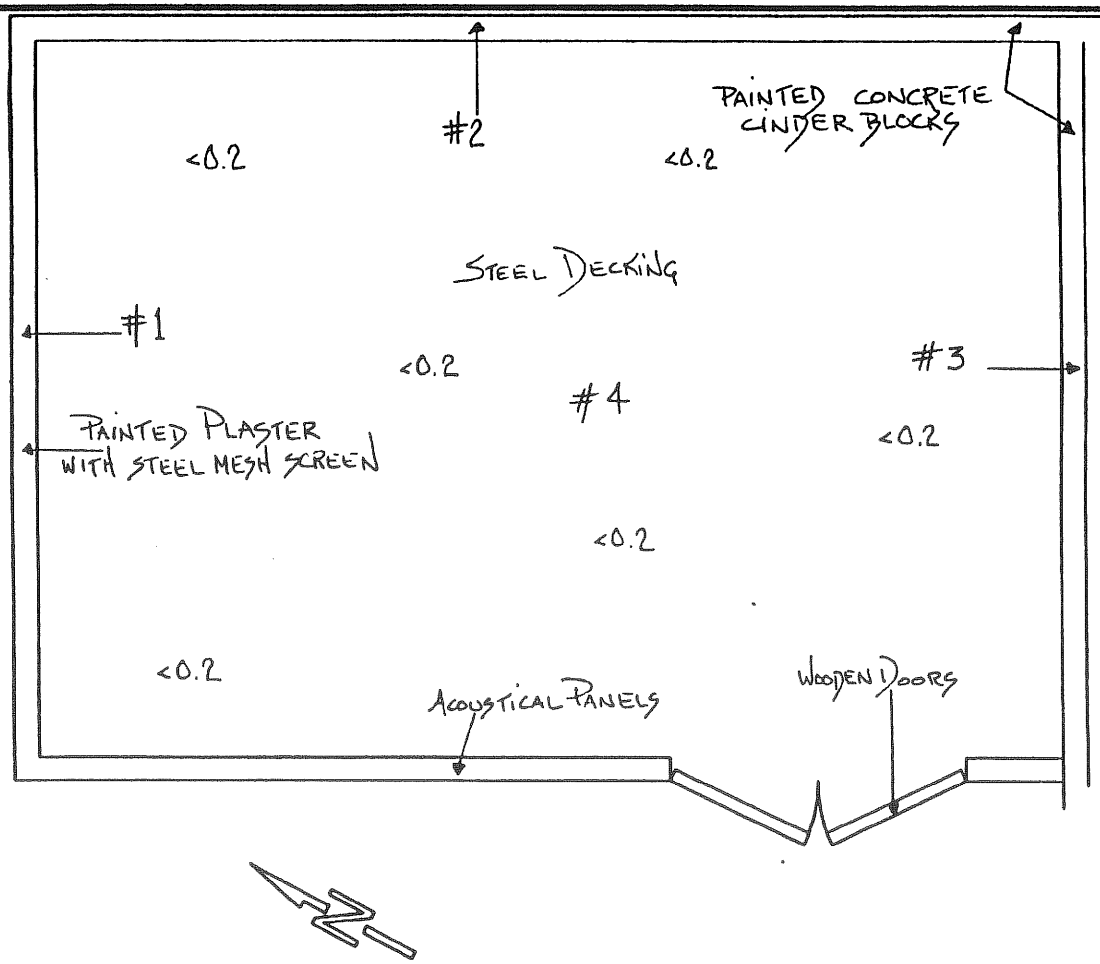


WEST WALL

PAGE 4 OF 4

ROOM NO.	23/117
MEMO NO.	HCI:267:VB:94

MAP#: 23 117A	LOCATION: PIG HEAVEN OVERHEAD ABOVE RM. 117	DATE: 10-04-94	TIME 0800	SURVEY # 23-94-0-0-4-7-1-CH



A-107

PC-000456/0

COPY

KEY				No.	dpm/100 cm²	No.	dpm/ L.A.S.	Remarks (see Note 4 below)
O	SMEAR	◆	H³ SMEAR			#1	<1000	ALL 86 SMEARS TAKEN FOR CHARACTERIZATION
#	LARGE AREA SMEAR	***	BOUNDARY			#2	<1000	PURPOSES WERE <1000 dpm/100cm². NO HOT PARTICLES
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		N	A	#3	<1000	FOUND IN THE #1-#4 LAS., ALL DIRECT FRISK
*	CONTACT DOSE RATE	+	12" DOSE RATE			#4	<1000	SURVEY RESULTS [illegible] WERE <1000 dpm/ PROBE AREA.
β	BETA DOSE RATE ONLY	α	ALPHA ONLY			N	A	5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION.
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				N A	NO ALPHA CONTAMINATION FOUND. <200 dpm/100cm²

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
D. HUNTER [signature] P. BUTLER [signature]	Douglas A. Warren	10/11/94	03-028	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP

MAP#: 23- 117A	LOCATION: "Pig Heaven" OVERHEAD ABOVE RM. 117	DATE: 10-04-94	TIME 0800	SURVEY # 23-94- 0-0-4-7-1-CH

R1 VOID SPACE ABOVE DROPPED CEILING LEADING INTO OPERATING GALLERY

R2 VENTILATION DUCTING RUNS THROUGH ROOM BETWEEN WAIST AND CHEST LEVEL THEN CONTINUES OUT OVER SUSPENDED CEILING OF OPERATING GALLERY. DUCTING IS COVERED WITH LOOSE, PEELING AND CHIPPED PAINT.

58E INTERNAL VENTILATION DUCT

☐ A TOTAL OF 86 SMEARS WERE TAKEN FOR CHARACTERIZATION PURPOSES. DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

A-108

PC-000456/0

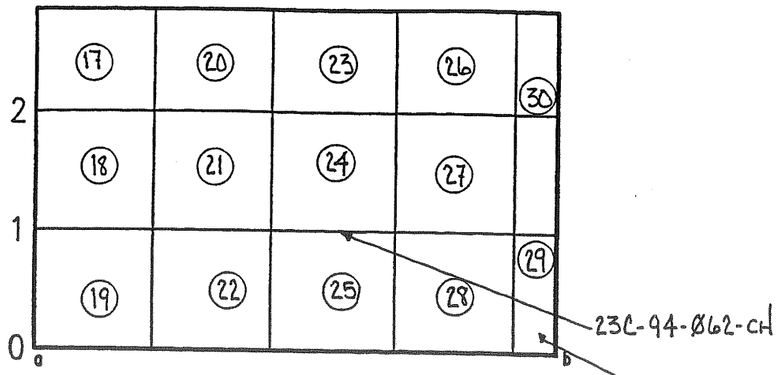
SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
P.T. HUNTER P.T. BUTLER	Douglas R. Warren	10/11/94	45-028		N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

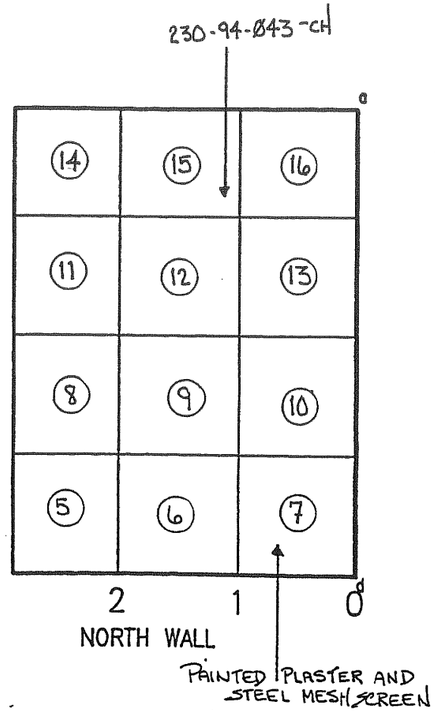
SURVEY No: 23-94-471-CH
SURVEY BY: B.L. HUNTER/P. BUTLER

INST TYPE	MODEL 3	BC4	SAC 4
SERIAL No	74305	34053	1015
CAL DUE DATE	02-17-95	03-20-95	03-28-95
GRID PATTERN = 1 METER		R02	LUDLUM 177
		4148	73599
		11-01-94	03-18-95



23C-94-062-CH

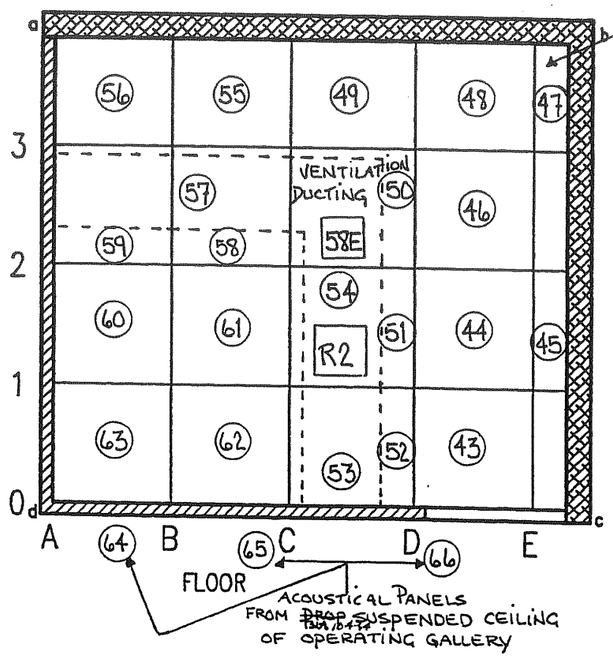
EAST WALL



230-94-043-CH

NORTH WALL

PAINTED PLASTER AND STEEL MESH SCREEN

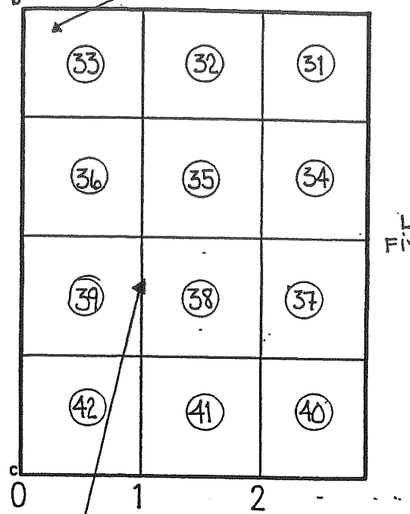


STEEL DECK

FLOOR

ACOUSTICAL PANELS FROM ~~DROP~~ SUSPENDED CEILING OF OPERATING GALLERY

PAINTED CONCRETE CINDER BLOCK

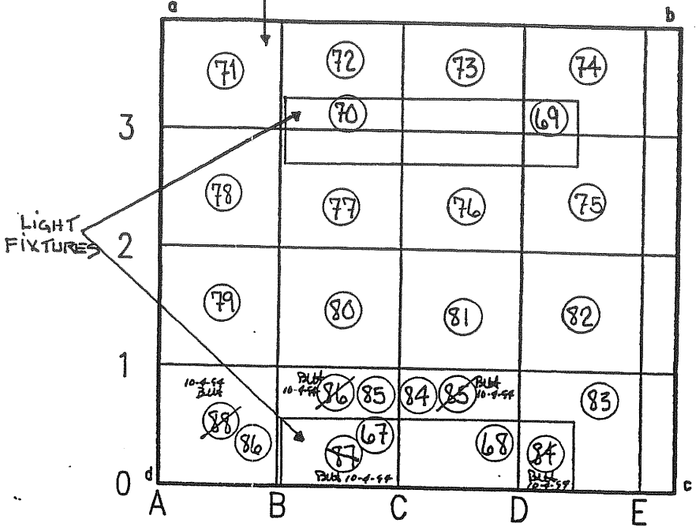


SOUTH WALL

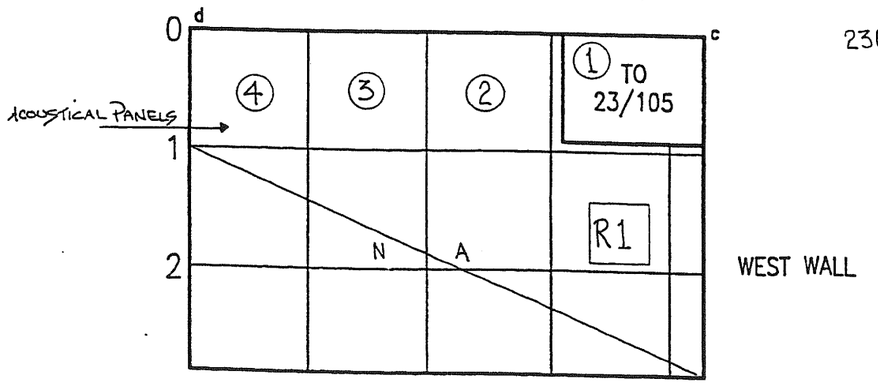
23C-94-061-CH

STEEL ~~A~~ PANELS

LIGHT FIXTURES



CEILING



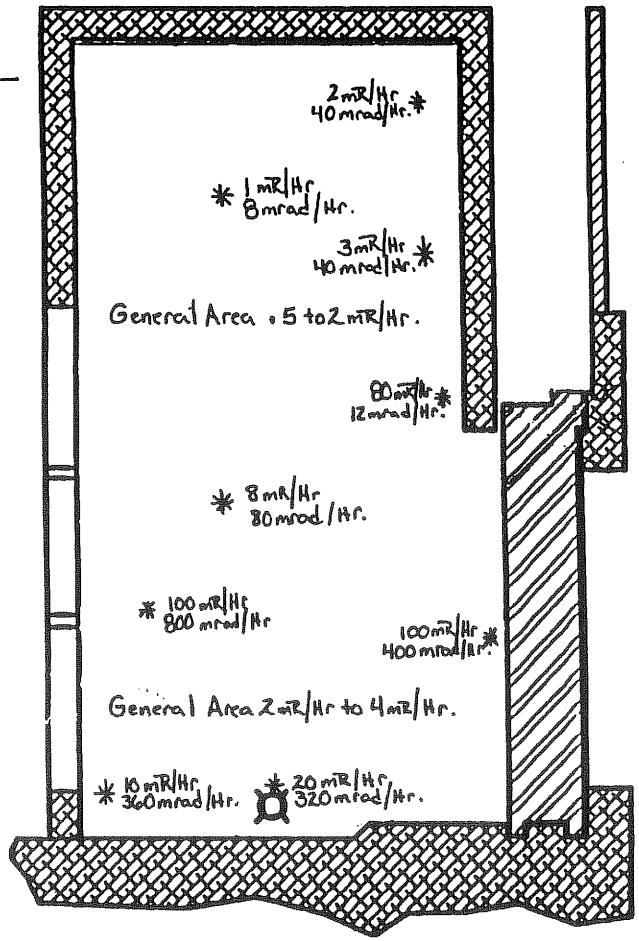
ACOUSTICAL PANELS

WEST WALL

A-109

ROOM NO.	23/117A
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-118	Decon Room	01-03-95	1000	23-94-0-0-6-6-0-CH



North, East and part of South walls are masonary with cement plaster. West (Met Cell wall) and the remainder of South wall (Low Level Cell Door) is concrete covered by steel.

Floor - Concrete

Ceiling - Steel covered with cement plaster

No.	dpm\100cm2	No.	dpm\100cm2
34	3K	51	2K
38	2K	52	6K
43	8K	55	17K
46	4K	57	2K
49	9K	58	2K
50	2K	60	4K

No.	dpm\100cm2	No.	dpm\100cm2
61	3K	85	5K
62	120K	86	18K
63	2K	87	7K
65	7K	88	2K
67	5K	89	22K
68	5K	90	44K

No.	dpm\100cm2	No.	dpm\100cm2
6	100K	17	1K
11	10K	20	2K
12	30K	21	5K
13	14K	24	2K
14	2K	25	1K
16	2K	26	2K

No.	dpm\100cm2	No.	dpm\100cm2
91	2K	98	40K
92	42K	99	16K
93	30K	100	3K
94	49K		
96	20K		
97	90K		

A-110

PC-000456/0

COPY

KEY				No.	dpm/100 cm²	No.	dpm/_____	Remarks (see Note 4 below)	
O	SMEAR	◆	H³ SMEAR					Smears 1 thru 100 taken. (15)=<MDCR	
#	LARGE AREA SMEAR	***	BOUNDARY					(40)=MDCR to 1K dpm/100cm² (45)=>1K dpm/100cm²	
||	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						Only those smears >1K dpm/100cm² listed	
*	CONTACT DOSE RATE	+	12" DOSE RATE					10% of smears counted for α. All <MDCR	RO-2
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					Air sample pulled during work and sample	5147
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					removal in 18.	3-7-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	BC-4	SAC-4	HD-29K
J. Rowsell / J. Rowsell	Douglas A. Warren	1/3/95	28 & 29	SERIAL NUMBER	34053	19326	5137
W. Berrett / W. Berrett				CAL DUE DATE:	3-20-95	5-31-95	3-14-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP lo

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-118	Decon Room	01-03-95	1000	23-94-0-0-6-6-0-CH

R1 470K dpm/P.A removed with masslinn and sampled as 23H.P.-94-Ø19-CH. Removed from lip of crane access.

R2 480K dpm/P.A. removed with masslinn and sampled as 23HP-94-Ø18-CH. Removed from conduit by the light.

R3 Small lip around recessed crane access is 10K to 20K dpm on large area smears.

R4 480K dpm/P.A used for sample 23H.P.-94-Ø18-CH. See remark #2

R5 Crane access is recessed into ceiling

R6 Decon room HEPA system duct work

R7 Decon room floor is covered with strippable painted and various layers of Herculite. Herculite was pulled back from south wall and cut at several locations and strippable painted removed before taking samples and smears.

A-111

141E Miscellaneous equipment, pipes, electrical conduit, boxes, controls, lights etc.

142E Inaccessible surfaces in and behind ducts

143E Floor drain

144E Tracks in floor have inaccessible areas

PC-000456/0

Next Page

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / W. Berrett	Douglas A. Warren	1/3/95	28 & 29		N. A	N. A	N. A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-118	Decon Room	01-03-95	1000	23-94-0-0-6-6-0-CH

General Remarks

Direct readings and smears taken at areas with highest potential for contamination with in the grid. (Wall-floor intersections, behind fixtures etc.)

All surfaces covered with large area smears. Detectable listed in remarks or on map.

Any areas of detectable fixed or loose contamination were documented on map or in remarks.

Areas where sample media was removed had lonse contamination removed if any had been detected there. Samples removed from floor had contaminated strippable paint removed, then concrete was sampled.

A-112

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell R. Rowsell W. BERRETT / W. Bennett	Douglas A. Warren	1/3/95	28, 29		N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please Indicate any additional "Remarks" on survey map.

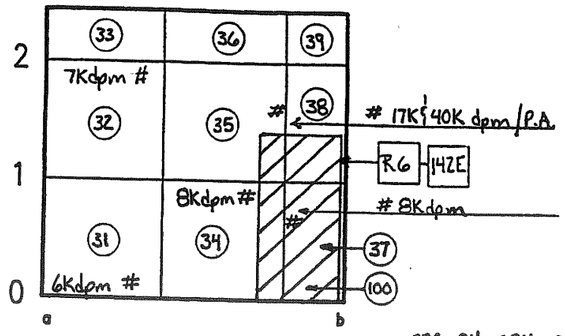
PC-000456/0

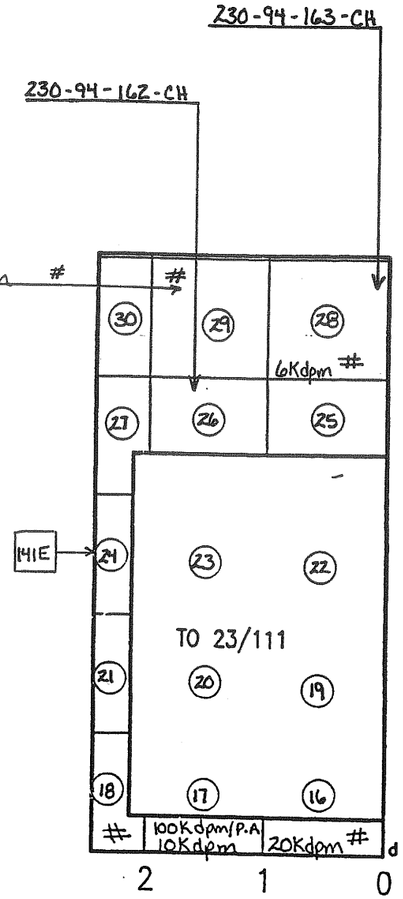
SURVEY No: 23-94-660-CH
SURVEY BY: J. Rowsell K. Rowsell W. Berrett W. Bruce

INST TYPE	BC-4	SAC-4	RM-14
SERIAL No	34053	19326	915
CAL DUE DATE	3-20-95	5-31-95	6-14-95

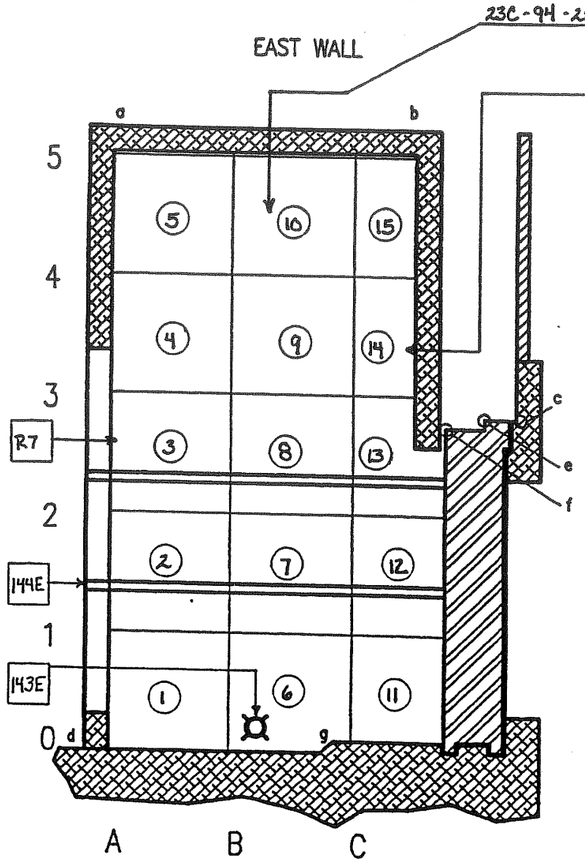
GRID PATTERN = 1 METER

▨ Filter duct work ⊙ Drain
▨ Lights # Large area smears

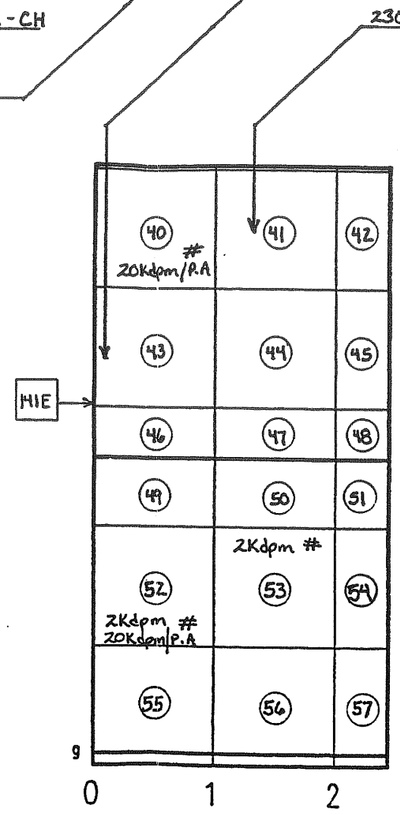




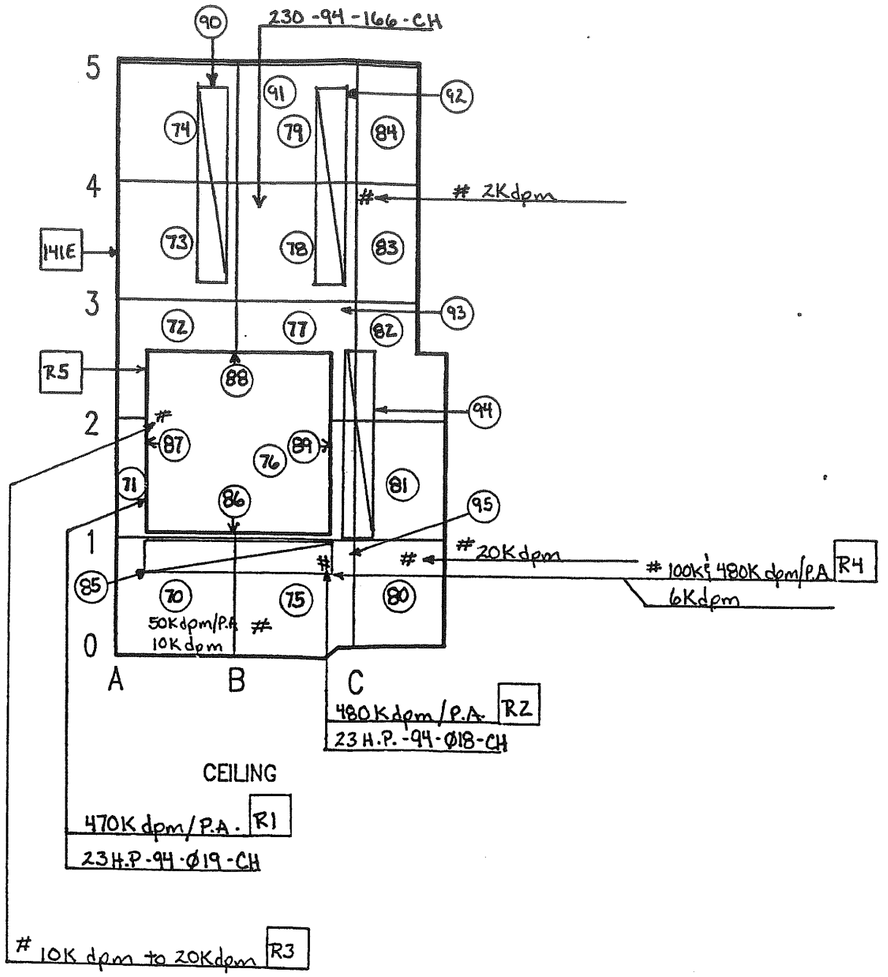
NORTH WALL

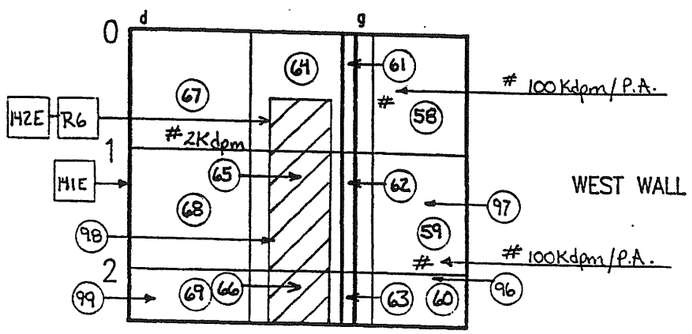


FLOOR



SOUTH WALL

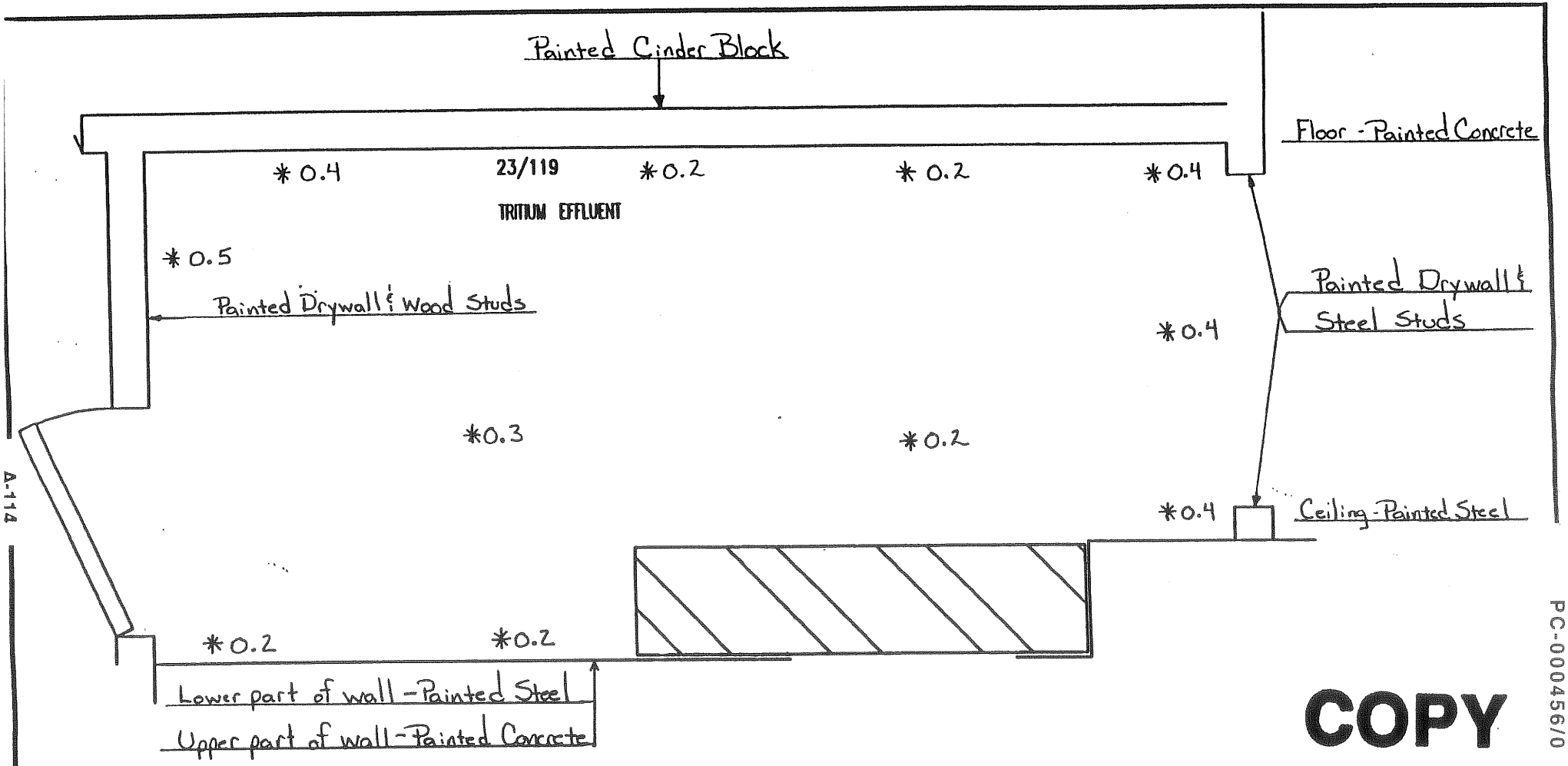




A-113

ROOM NO.	23/118
MEMO NO.	HCI:267:VB:94

MAP#: 23-119	LOCATION: Tritium Effluent	DATE: 01-04-95	TIME 1600	SURVEY # 23-94-0-0-6-7-0-CH



A-114

PC-000456/0

COPY

KEY				No.	dpm/100 cm² No.	dpm/_____		Remarks (see Note 4 below)	
O	SMEAR	◆	H^3 SMEAR	See	supplement	sheet		Smears (1) thru (113) taken.	
#	LARGE AREA SMEAR	***	BOUNDARY					Only those smears 1Kdpm/100 cm² or greater listed	
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						10% of smears counted for α. All <MDCR	
*	CONTACT DOSE RATE	+	12" DOSE RATE					except (57) 102dpm	RO-2
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					Airsample pulled during sample removal	2938
HS	HOT SPOT	Δ	NEUTRON DOSE RATE						1-11-95

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / J. Rowsell W. Berrett / W. Berrett	Douglas A. Warren	1-5-95	2815 29		RM-14 915 6-14-95	RM-14 9158 3-25-95	HD-29A 5137 3-14-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP

MAP#:	LOCATION:	DATE:	TIME	SUPPLEMENT TO SURVEY #
23-119	Tritium Effluent	01-04-95	1600	23-94-0-0-6-7-0-CH

Smear Continuation Sheet

REMARKS:

Smears counted on frisker.
See front page for instruments.

No.	dpm/100 cm²	Description
2	1K	Floor
11	1K	
13	1K	
14	2K	
15	4K	
17	1K	N. Wall
18	3K	
19	1K	
21	1K	
22	1K	
23	2K	
24	2K	
46	1K	S. Wall
47	2K	
48	1K	
49	3K	
50	1K	
53	1K	
54	2K	
57	24K	
58	1K	
59	1K	
60	1K	
64	4K	
76	1K	W. Wall
87	2K	
90	1K	
94	1K	S. Wall
98	1K	N. Wall
99	1K	
101	1K	S. Wall

No.	dpm/100 cm²	Description
103	5K	S. Wall
104	7K	
105	30K	
106	13K	
107	2K	
108	7K	W. Wall
109	5K	Top of duct
110	5K	
111	4K	Top of light
112	1K	Top of beam
57	102 α	S. Wall
	N. A.	

No.	dpm/_____	Description
	N. A.	

A-115

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
J. Rowsell / J. Rowsell D. Berrett / W. Bennett	Douglas A. Warren	1-5-95	28 & 29	See front page.	N. A.	N. A.	N. A.

(1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

MAP#: 23-119	LOCATION: Tritium Effluent	DATE: 01-04-95	TIME 1600	SURVEY # 23-94-0-0-6-7-0-CH

R1 Smear taken on side of cell door

R2 Met cell door.

R3 Ledge that runs the length of the wall

R4 Sample 23C-94-301-CH was removed from bottom of opening. (Inside)

R5 Duct was opened and checked. No detectable loose or fixed above background.

R6 Samples 23C-94-295-CH & 23C-94-296-CH removed along concrete/metal interface.

A-116

149E Duct work, inaccessible surfaces.

150E Wall added later Inaccessible surfaces and area that wall covers (West Wall) & (East Wall) Not shown on map.

151E Misc. equipment, piping, electrical conduit, boxes, controls, lights, etc on walls and in the overhead.

PC-000456/0

General Remarks

Direct readings and smears taken at areas with highest potential for contamination within the grid. (Wall/floor intersections etc)

All surfaces covered with large area smears. Detectable listed in remarks or on map.

Any areas of detectable fixed or loose contamination were documented on map or in remarks.

Areas where sample media was removed had any loose contamination or contaminated paint from floor removed before taking sample.

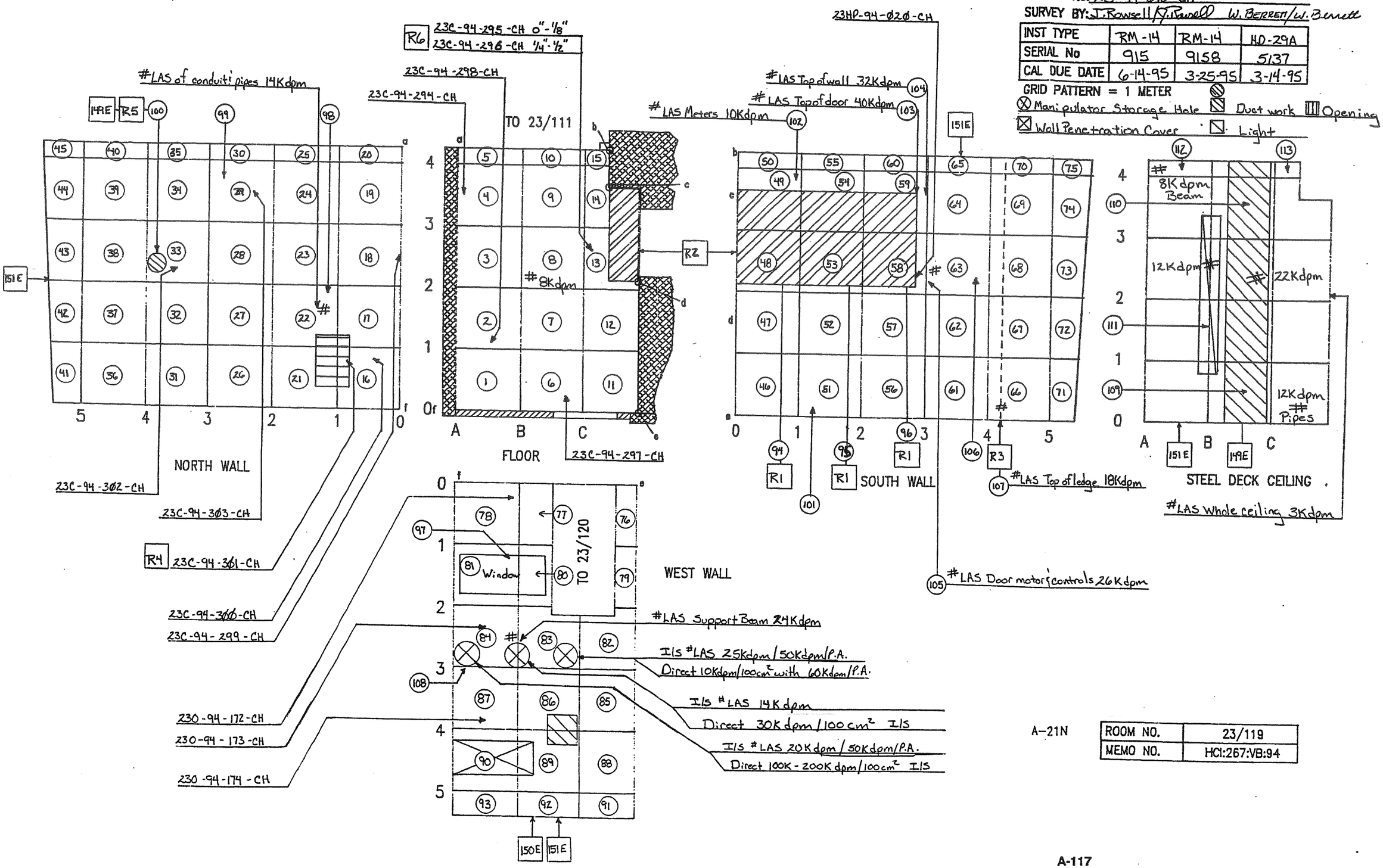
SURVEYOR: J. Rawsell / W. Berrett	REVIEWED BY: Douglas A. Warren	DATE: 1-5-95	JOB RWP# 28 & 29	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown. (2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS) (3)Indicate RWP for Job/Coverage surveys. (4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-670-CH
SURVEY BY: J. Rowsell/T. Powell W. Berrett/W. Berrett

INST TYPE	RM-14	RM-14	HD-29A
SERIAL No	915	9158	5137
CAL DUE DATE	6-14-95	3-25-95	3-14-95

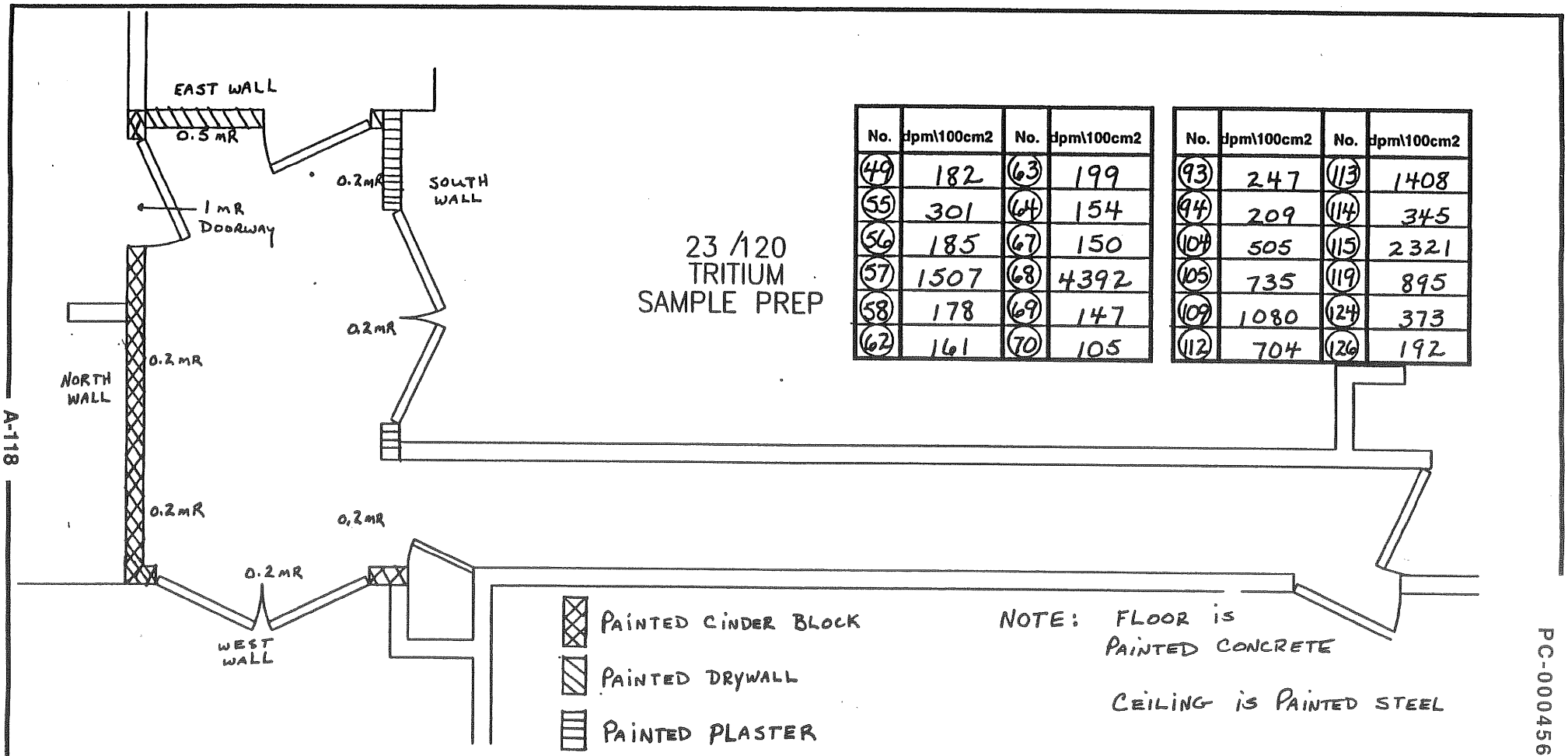
GRID PATTERN = 1 METER
⊗ Manipulator Storage Hole ▨ Duct work ▥ Opening
☒ Wall Penetration Cover ▧ Light



A-21N

ROOM NO.	23/119
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-120	Tritium Sample Prep.	12-2-94	1600	23-94-0-0-6-1-9-CH



No.	dpm\100cm2	No.	dpm\100cm2
49	182	63	199
55	301	64	154
56	185	67	150
57	1507	68	4392
58	178	69	147
62	161	70	105

No.	dpm\100cm2	No.	dpm\100cm2
93	247	113	1408
94	209	114	345
104	505	115	2321
105	735	119	895
109	1080	124	373
112	704	126	192

A-118

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)
O	SMEAR	◆	H^3 SMEAR	21	437	32	91	SMEARS < MDCR NOT LISTED.
#	LARGE AREA SMEAR	***	BOUNDARY	22	367	33	517	10% OF SMEARS COUNTED FOR ALPHA ON SAC-4.
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		24	77	36	196	NO ALPHA DETECTED.
*	CONTACT DOSE RATE	+	12" DOSE RATE	25	206	37	245	
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	27	157	38	175	AIR SAMPLES TAKEN DURING SAMPLE MEDIA COLLECTION
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	28	80	39	276	

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE:	BC-4	SAC-4	RO2
WRAY BERRETT / Wray Berrett	Douglas A. Warren	12/5/94	28	SERIAL NUMBER	34053	1015	2938
James Rowsell / James Rowsell				CAL DUE DATE:	3-20-95	5-20-95	1-11-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

AVS-28A
5323

MAP#: 23-120	LOCATION: Tritium Sample Prep	DATE: 12-2-94	TIME 1600	SUPPLEMENT TO SURVEY # 23-94-0-0-6-1-9-CH

Smear Continuation Sheet

REMARKS:

No.	dpm/100 cm²	Description	No.	dpm/100 cm²	Description	No.	dpm/_____	Description
(127)	334		(160)	5261				
(128)	233		(161)	6937				
(129)	362		(162)	732				
(130)	519		(163)	261				
(131)	4380		(165)	240				
(132)	314		(166)	1153				
(133)	289		(167)	252				
(134)	355		(168)	491				
(135)	505		(169)	359				
(136)	366		(176)	495				
(137)	355		(177)	596				
(138)	355		(178)	237				
(139)	401		(179)	1993				
(140)	310		(180)	275				
(141)	394		(181)	94				
(142)	258							
(143)	735							
(144)	261							
(145)	261							
(146)	2286							
(147)	216							
(148)	840							
(150)	2321							
(151)	223							
(152)	293							
(153)	233							
(154)	192							
(155)	502							
(156)	941							
(158)	261							
(159)	2014							

A N A

A N A

PC-000456/0

SURVEYOR: Wray Berrett / Wray Berrett; James Rowell / James Rowell	REVIEWED BY: Douglas A. Warren	DATE: 12-5-94	JOB RWP# 28	INST. TYPE:	BC-4	SAC-4	RO 2
				SERIAL NUMBER	34053	1015	2938
				CAL DUE DATE:	3-20-95	5-20-95	1-11-95

1)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(2)Indicate RWP for Job/Coverage surveys.

AVS-28A

MAP#: 23- 120	LOCATION: Tritium Sample Prep	DATE: 12-02-94	TIME 1600	SURVEY # 23-94- 0-0-6-1-9-CH

R1 Vent (damper) cover removed. Frisked and smeared. No detectable found.

R2 Penetration is open

R3 Drain cover was removed. Opening frisked and inside of pipes smeared. No detectable fixed or loose.

R4 Paint was contaminated. Removed and kept as sample before sampling concrete.

R5 Contamination removed with sample

R6 Paint sample removed from top of duct work.

R7 Three large area smears on top of duct work showed 20K dpm/P.A. to 60K dpm/P.A.

R8 Large area smears on top of light and pipes running in the overhead showed 1K dpm/100cm^2 with 2K to 30K dpm/P.A.

A-1-UG

102E Penetrations through walls (covered)

103E Drain cleanout. Inaccessible areas.

104E Inside of ductwork

105E Misc. pipes, electrical boxes and conduit on walls, ceiling and overhead.

106E Wall or part of wall added later. Inaccessible and covered areas

PC-000456/0

Next Page.

SURVEYOR: James Rawsell / Wray Bennett	REVIEWED BY: Douglas A. Warren	DATE: 12-5-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo

MAP#: 23-120	LOCATION: Tritium Sample Prep	DATE: 12-02-94	TIME 1600	SURVEY # 23-94-0-0-6-1-9-CH

General Remarks.

Direct readings and smears taken at areas with highest potential for contamination within the grid. (Wall-floor intersections, behind fixtures & base board areas etc)

All surfaces covered with large area smears. Detectable listed in remarks or on map.

Any areas of detectable fixed or loose contamination were documented on map OR in remarks.

Areas where sample media was removed had loose contamination removed if any had been detected there. Samples removed from floor had contaminated painted removed and sampled, then concrete was sampled.

A-121

PC-000456/0

SURVEYOR: James Rowell / Wray Berrett	REVIEWED BY: Douglas A. Weaver	DATE: 12-5-94	JOB RWP# 28	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N. A.	N. A.	N. A.

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

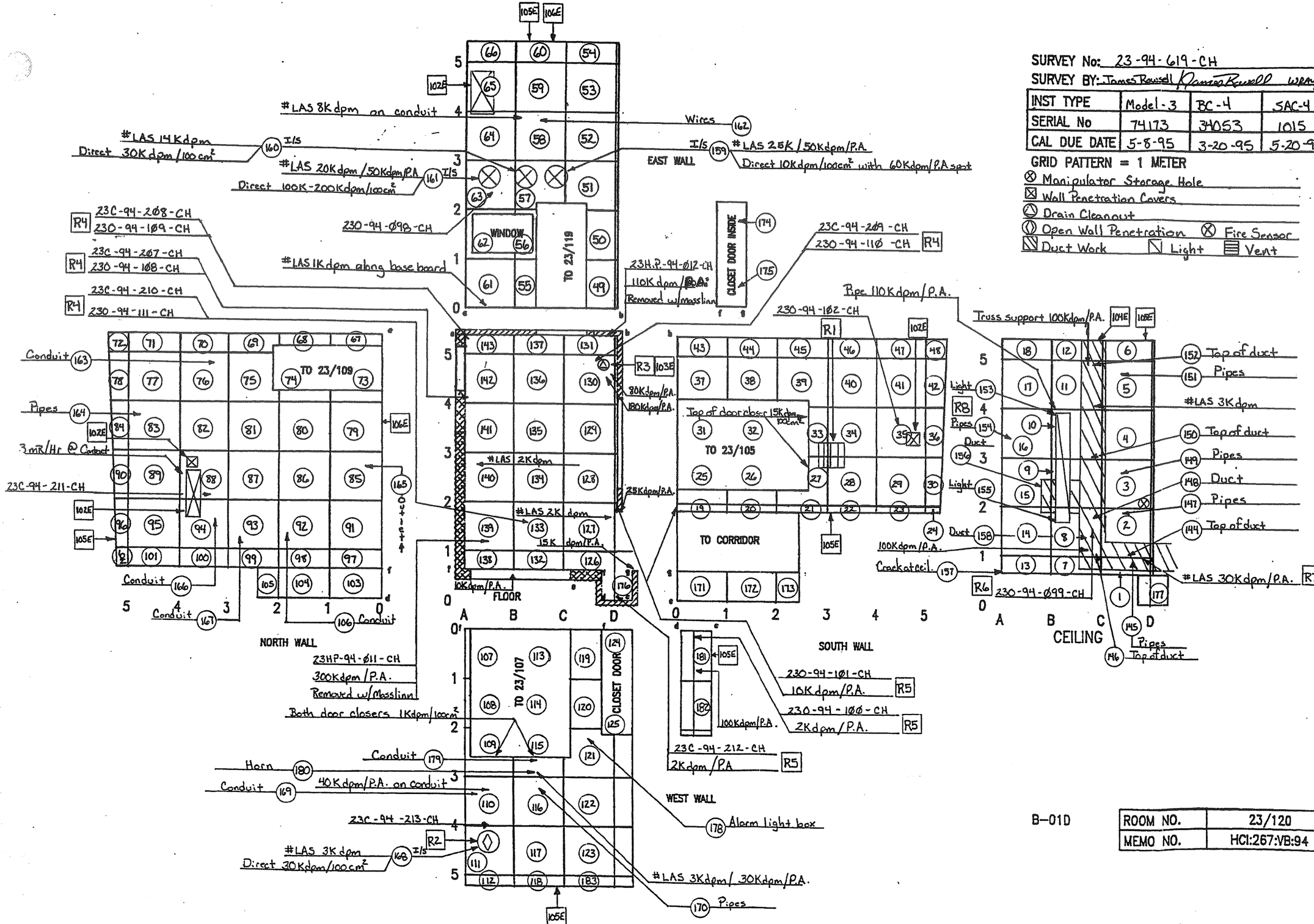
SURVEY No: 23-94-619-CH

SURVEY BY: James Russell / James Russell WILL BENNETT / Will Bennett

INST TYPE	Model-3	BC-4	SAC-4
SERIAL No	74173	34053	1015
CAL DUE DATE	5-8-95	3-20-95	5-20-95

GRID PATTERN = 1 METER

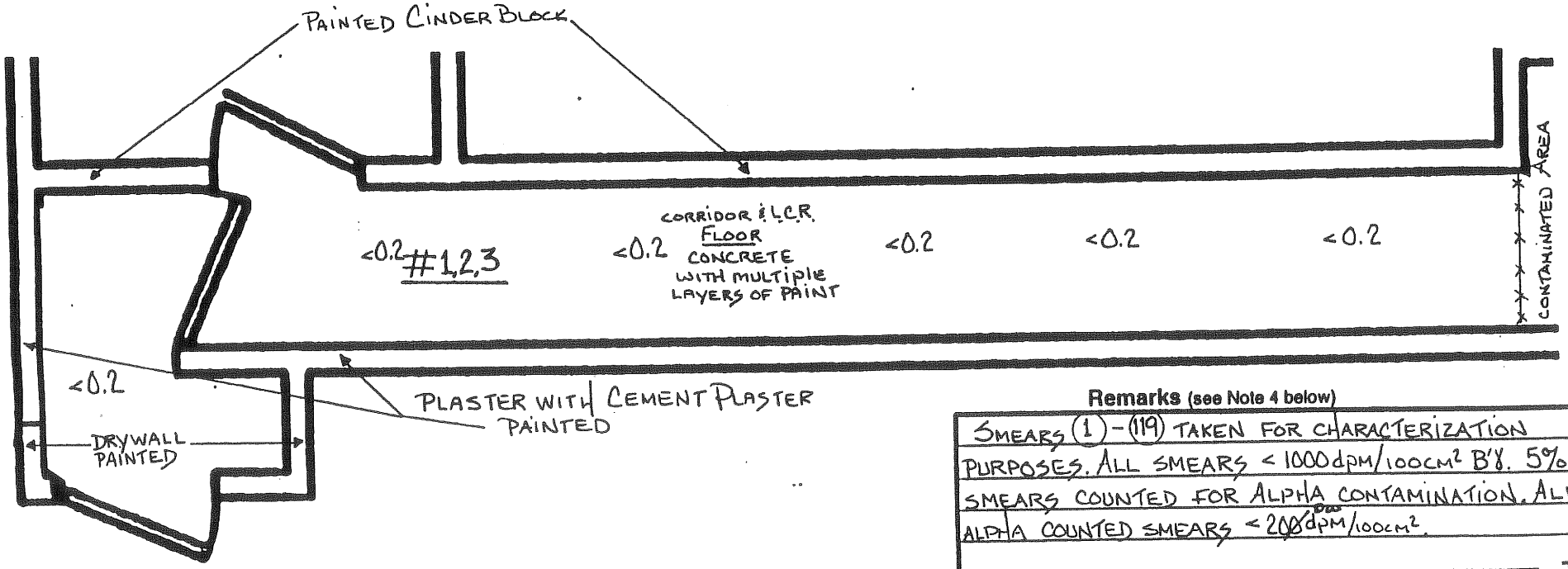
⊗ Manipulator Storage Hole
⊠ Wall Penetration Covers
Drain Cleanout
Open Wall Penetration ⊗ Fire Sensor
Duct Work Light Vent



B-01D

ROOM NO.	23/120
MEMO NO.	HCI:267:VB:94

MAP#: HOT 123-999 CLEAN AREAS	LOCATION: CORRIDOR & LADIES CHANGE ROOM	DATE: 09-15-94	TIME 0800	SURVEY # 23-94-0-0-4-5-CH



A-123

Remarks (see Note 4 below)

SMEARS (1)-(119) TAKEN FOR CHARACTERIZATION PURPOSES. ALL SMEARS < 1000 dpm/100cm² B'&. 5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION. ALL ALPHA COUNTED SMEARS < 200 dpm/100cm².

KEY				No.	dpm/100 cm²	No.	dpm/PROBE AREA
O	SMEAR	◆	H³ SMEAR			#1	8,000
#	LARGE AREA SMEAR	×××	BOUNDARY	N	A	#2	4,000
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)				#3	<1,000
✳	CONTACT DOSE RATE	+	12" DOSE RATE		N A	N	A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE		N A	N	A

PC-000456/0

COPY

SURVEYOR: B. HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	RO2 2938 11-30-94	RM14SA 360 02-27-95	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP I

P. 1 of 4

MAP#: Ho[illegible]-L 23-124 CLEAN AREAS	LOCATION: CORRIDOR AND LADIES CHANGE RM.	DATE: 09-15-94	TIME 0800	SURVEY # 23-94-0-0-4-5-5-CH

R1 FLOOR IN BOTH CORRIDOR AND LADIES CHANGE ROOM IS CONCRETE WITH MULTIPLE LAYERS OF PAINT WITH NUMEROUS LOCATIONS OF (FIXED CONTAMINATION AND FIXED HOT PARTICLES) ON FLOOR, FLOOR-WALL JUNCTIONS, DOOR THRESHOLDS AND BELOW THE FIRST 12 INCHES OF WALL.

R2 THE FOLLOWING IS A LIST OF PRE AND POST SAMPLE COLLECTION SURVEY RESULTS (dpm/PROBE AREA) ONLY FOR SAMPLE LOCATIONS WITH KNOWN FIXED CONTAMINATION:

23C-94-034-CH	23C-94-035-CH	23C-94-037-CH	23-94-039-CH	230-94-028-CH
PRE-25,000 POST-<1000	PRE-800,000 POST-2,000	PRE-35,000 POST<1000	PRE 10,000 POST 10,000	PRE22,000 POST <1000

R3 3 LARGE AREA MASSLIN SMEARS WERE TAKEN ON FLOOR. #1-8,000 dpm/PROBE AREA (BKM 9-15-94) #2-4,000 dpm/PROBE AREA #3 <1,000 dpm/PROBE AREA. TWO MORE LARGE AREA MASSLIN SMEARS WERE TAKEN ON EAST AND WEST WALLS. BOTH SMEARS <1,000 dpm/PROBE AREA NO HOT PARTICLES FOUND.

R4 CEILING IS SUSPENDED ACOUSTICAL PANELS. VISUAL ACCESS THROUGH SOUTH & NORTH END - WHERE PANELS WERE REMOVED.

E13 WALLS AND STEEL DECK ABOVE SUSPENDED CEILING AND TOPSIDE OF SUSPENDED CEILING ACOUSTICAL PANELS.

E49 TWO ELECTRICAL PANEL BOXES MOUNTED TO WALL.

E50 ABOVE SUSPENDED CEILING VENTILATION DUCTING, MISC. PIPING AND FIRE SPRINKLER PIPING.

E51 LADIES CHANGE ROOM FLOOR CONDUIT PIPE (FLOOR DUCT) GALLEY TRENCH WITH STEEL PLATE COVER.

E52 SEALED DOOR TO BOILER RM.. AREA BETWEEN DOOR AND FLOOR AND DOOR AND WALLS.

E53 TWO DOOR JAMS AND ~~COUNT RM~~ RM106 (BKM 9-15-94) DOOR THRESHOLD.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO BASEBOARD AND MISC. EQUIPMENT REMOVAL AND ANY LOCATIONS WITHIN GRIDS HAVING DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

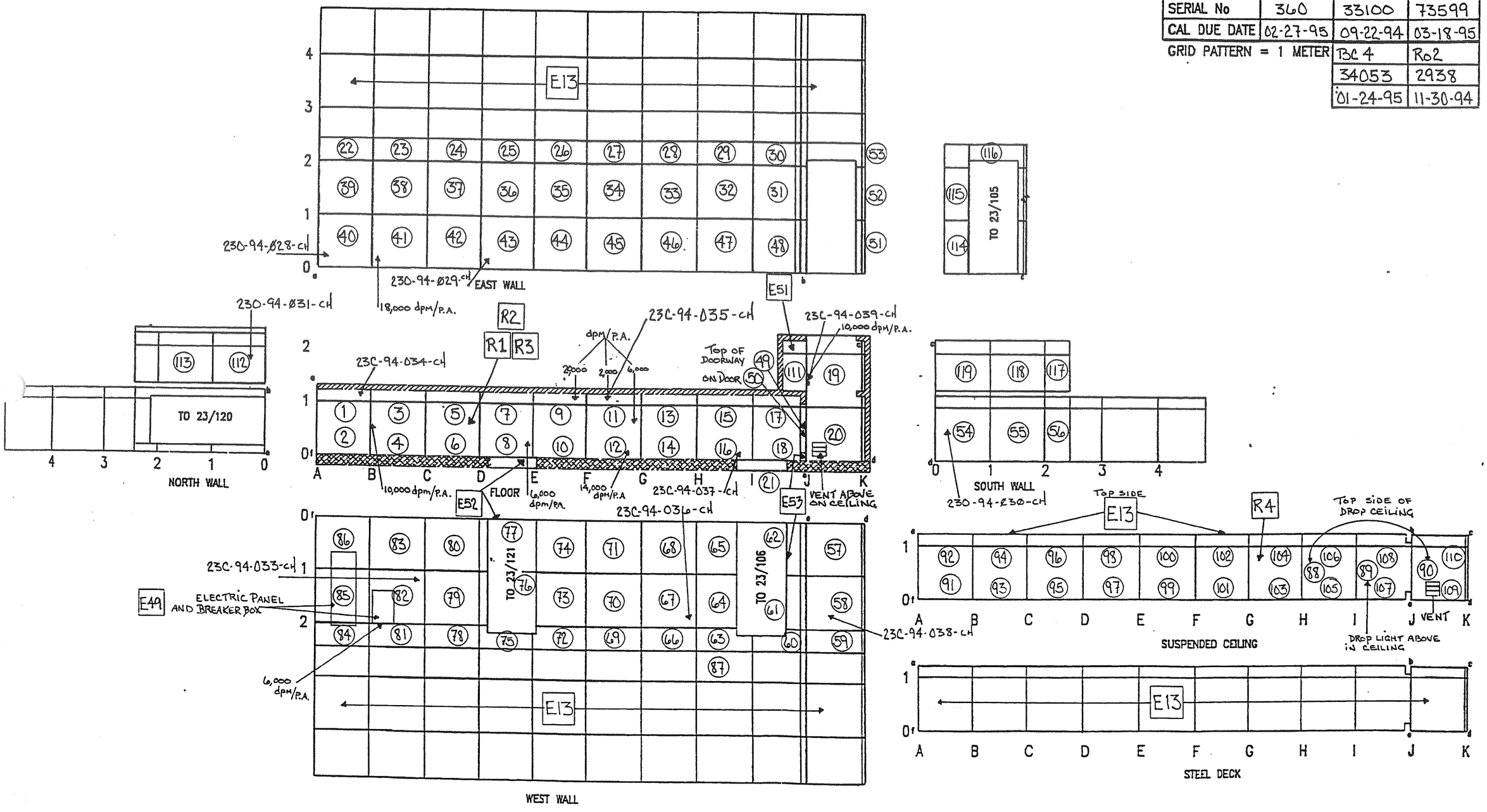
PC-000456/0

SURVEYOR: B. HUNTER / P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-435-CH
SURVEY BY: B HUNTER ~~B BULLOCK~~ / P BUTLER ~~T MALONE~~

INST TYPE	RM 14 SA	RM 14	LUDLUM 177
SERIAL No	360	33100	73599
CAL DUE DATE	02-27-95	09-22-94	03-18-95
GRID PATTERN = 1 METER		BC 4	R02
		34053	2938
		01-24-95	11-30-94



A-27S	ROOM NO.	23/CORRIDOR/LCR
	MEMO NO.	HCI:267:VB:94

A-125

Supplemental Sample Map

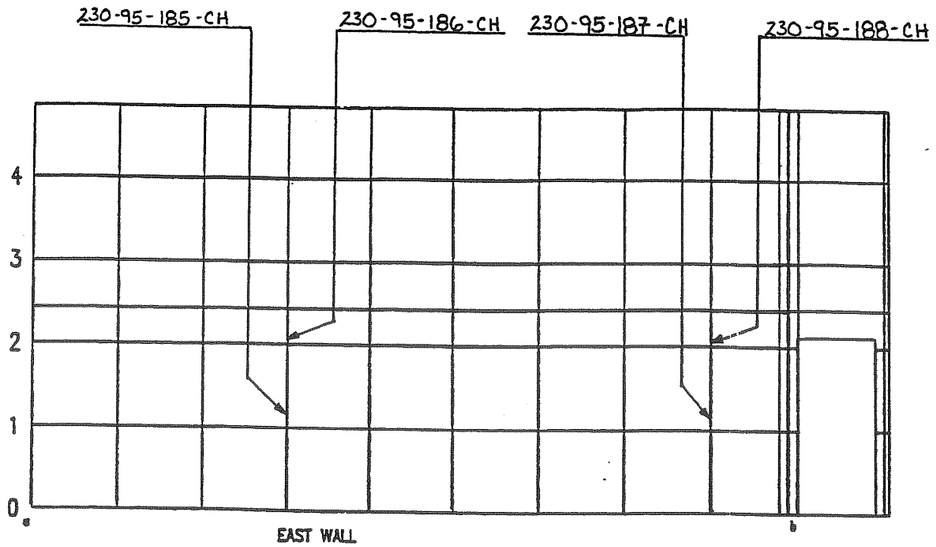
PC-000456/0

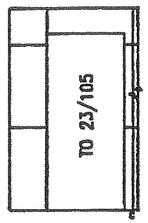
SURVEY No: 23-94-435-CH
SURVEY BY: J. Rowsell K. Rowsell T. Butler JR T. Butler

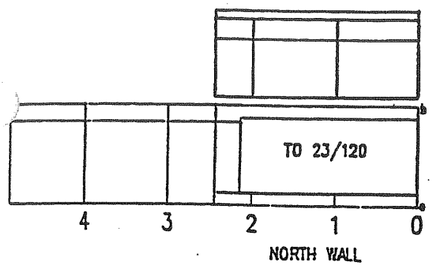
INST TYPE			
SERIAL No	N. A.	N. A.	N. A.
CAL DUE DATE			

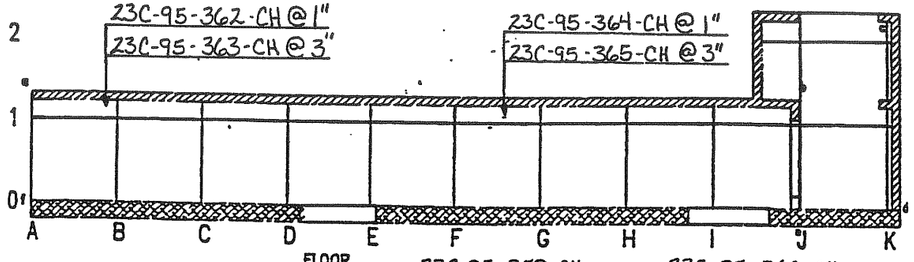
GRID PATTERN = 1 METER

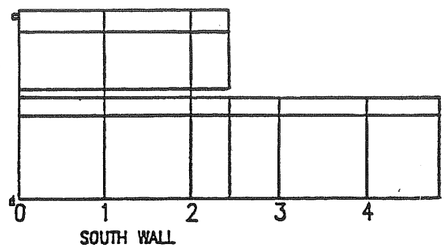
N. A.	N. A.	

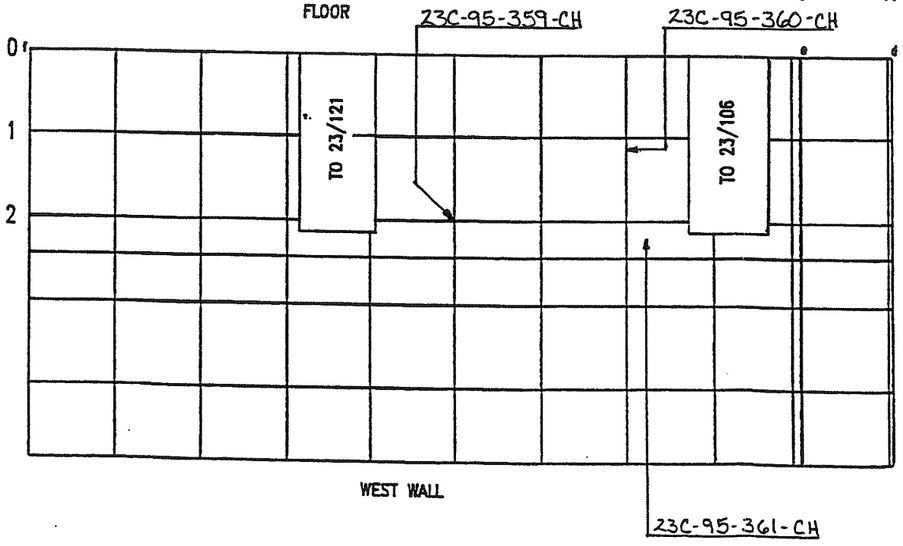


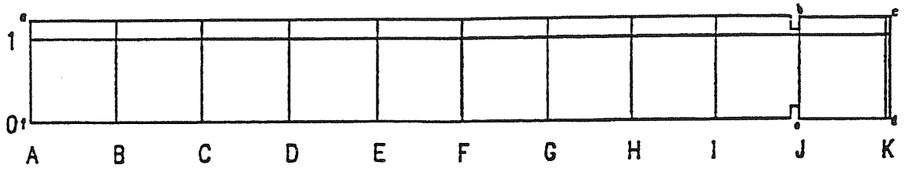


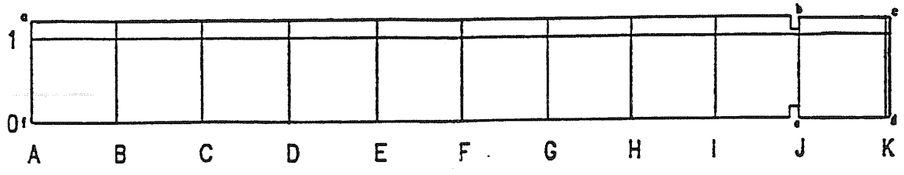










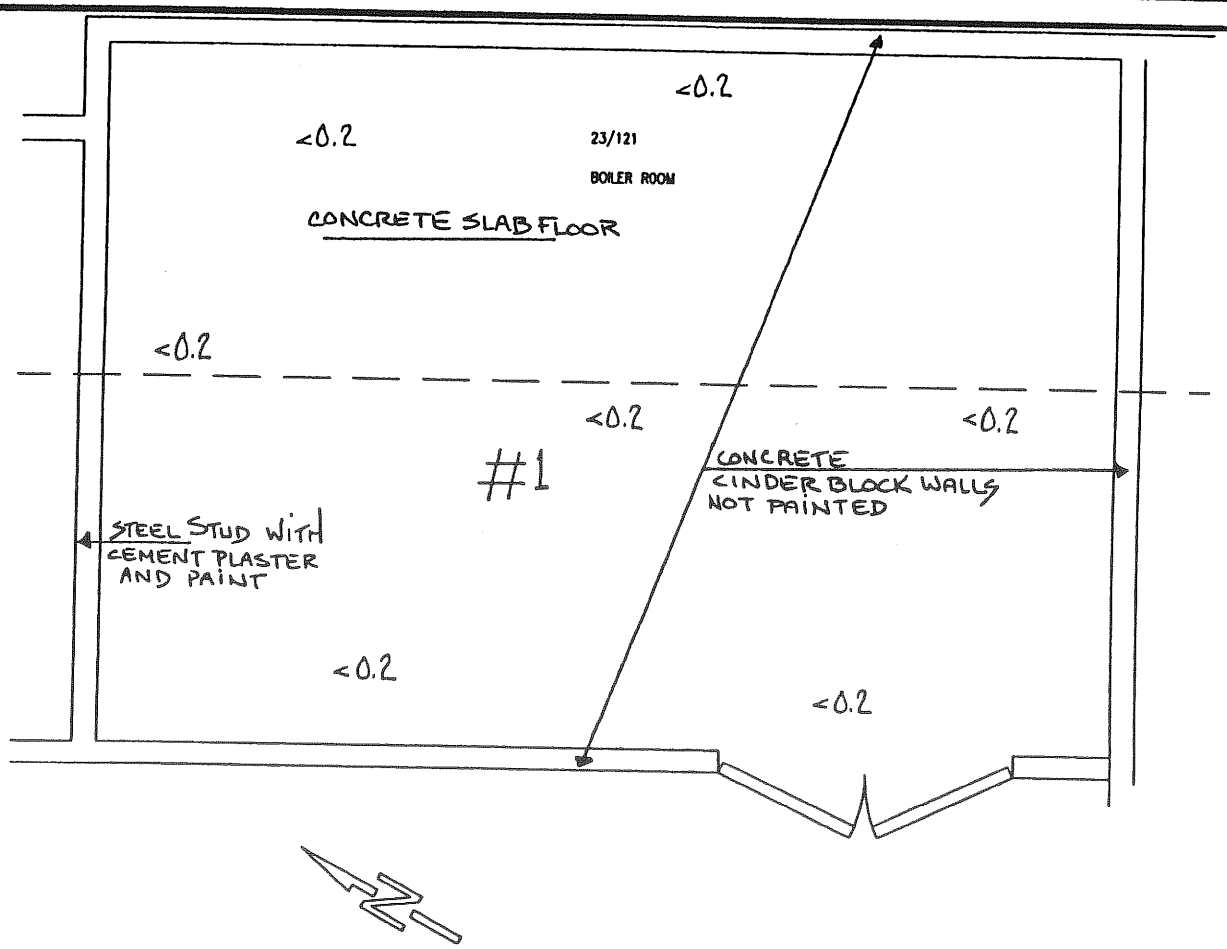


A-27S

A-126

ROOM NO.	23/CORRIDOR/LCR
MEMO NO.	HCI:267:VB:94

MAP#: 23-121	LOCATION: Boiler Room	DATE: 09-21-94	TIME 0800	SURVEY # 23-94-0-0-4-4-7CH



No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
	N A		

No.	dpm\100cm2	No.	dpm\100cm2
			N A

A-127

PC-000456/0

COPY

KEY

				No.	dpm/100 cm²	No.	dpm/ PROBE AREA
O	SMEAR	◆	H^3 SMEAR			#1	<1000
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)			N A	N	A
✱	CONTACT DOSE RATE	+	12" DOSE RATE				
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				N A

Remarks (see Note 4 below)

TOTAL OF 139 SMEARS TAKEN FOR CHARACTERIZATION PURPOSE. ALL SMEARS WERE < 1000 dpm/100cm² B-8. 5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION. RESULTS WERE <200 dpm/100cm² ∝. ALL DIRECT FRISK SURVEY RESULTS INCLUDING WATERHEATER DRAIN AND TRENCH WERE <1000 dpm/ PROBE AREA.

SURVEYOR: B. HUNTER, P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/7/94	JOB RWP# 3-028	INST. TYPE:	RO2	BC4	Model 177
				SERIAL NUMBER	5865	2562	7359
				CAL DUE DATE:	11-01-94	03-18-95	03-18-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-121	LOCATION: Boiler Room	DATE: 09-21-94	TIME 0800	SURVEY # 23-94-0-0-4-4-7-CH

R1 IN ADDITION TO THE 8 EXCEPTIONS LISTED THE BOILER ROOM HAS NUMEROUS LOCATIONS ALONG THE WALLS AND CEILING THAT ARE INACCESSIBLE OR DIFFICULT TO ACCESS DUE TO MANY CONDUIT LINES, SMALLER ELECTRICAL BOXES, PIPING ASSOCIATED WITH THE BOILER, AIRCOMPRESSERS AND FIRE SPRINKLER SYSTEM, PLUS SMALLER VENTILATION DUCTS WITH FAN MOTORS AND ALL THE ELECTRICAL, GAS AND WATER LINES LEADING TO AND FROM EQUIPMENT. THE ROOM ALSO HAD MANY BOXES, BAGS AND MISC. SUPPLIES AND DEBRIS STORED ABOUT. ALTHOUGH SOME ACCESS WAS MADE TO THE TRENCH THE SURVEY IS INCONCLUSIVE DUE TO A HEAVY BUILDUP OF SOIL, WATER, OIL, ABSORBING MATERIAL AND DEBRIS.

E2 LARGE ELECTRICAL PANEL ON SOUTH WALL

E3 LARGE VENTILATION DUCT WORK

E4 AIR COMPRESSERS

E5 ELECTRICAL PANEL ON EAST WALL

E6 CABINET

E7 BOILER

E8 BOTTOM OF TRENCH

E42 TWO FLOOR DRAINS AND POSSIBLY A THIRD AT NORTHWEST END OF TRENCH BENEATH OIL, WATER AND ABSORBANT.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, DRAINS, AND ANY LOCATIONS WITHIN GRIDS HAVING CRACKS, DISCOLORATIONS OR OTHER SUSPECT MARKINGS.

PC-000456/0

SURVEYOR: P. HUNTER, P. BUTLER	REVIEWED BY: Douglas R. Warren	DATE: 10/7/94	JOB RWP# 3-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

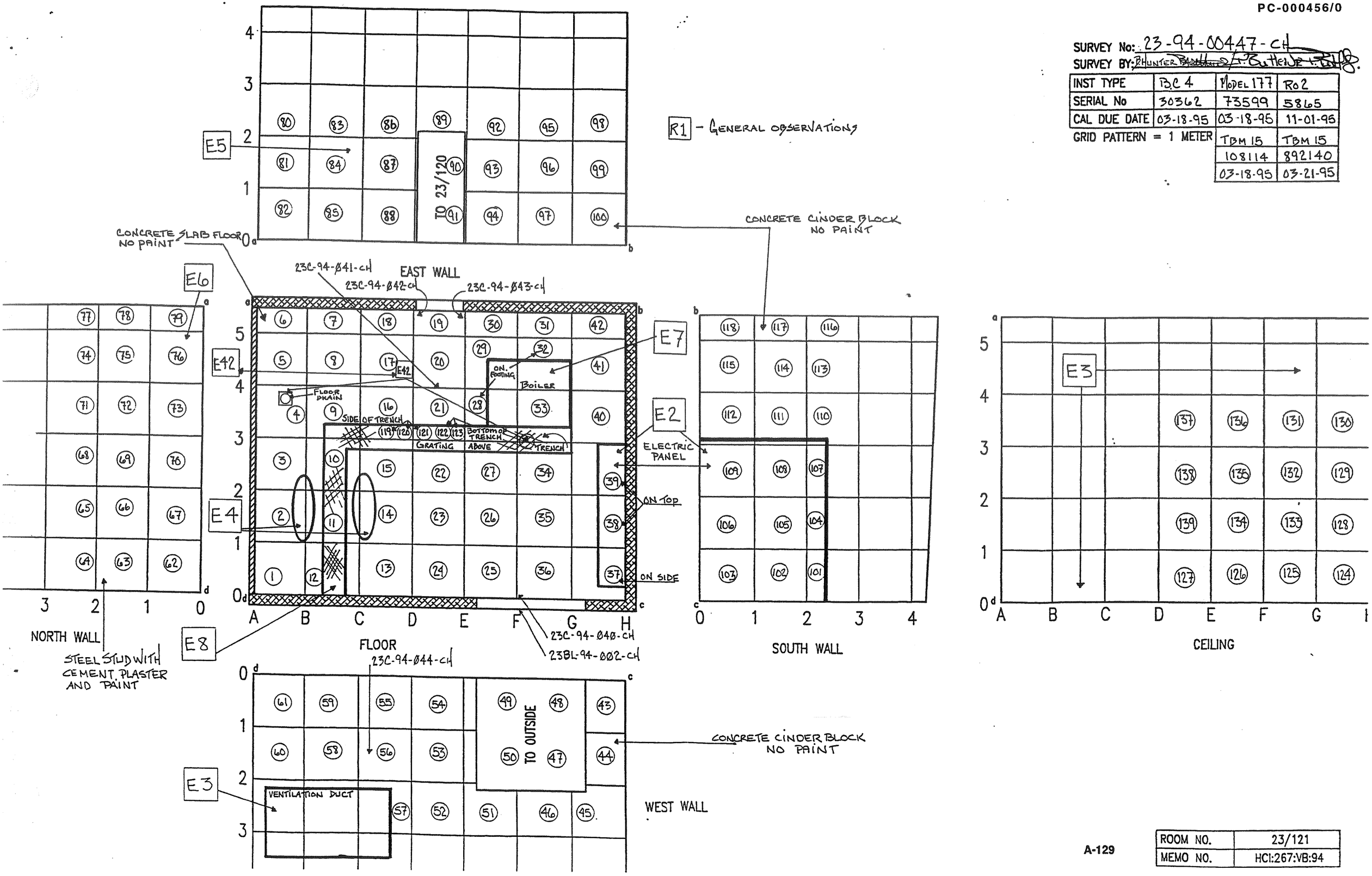
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

SURVEY No: 23-94-00447-CH
SURVEY BY: B HUNTER ~~B HUNTER~~ ~~J. C. THEIJE~~ ~~B HUNTER~~

INST TYPE	BC 4	MODEL 177	R02
SERIAL No	30362	73599	5865
CAL DUE DATE	03-18-95	03-18-95	11-01-95
GRID PATTERN = 1 METER		TBM 15	TBM 15
		108114	892140
		03-18-95	03-21-95

R1 - GENERAL OBSERVATIONS



A-129

ROOM NO.	23/121
MEMO NO.	HCI:267:VB:94

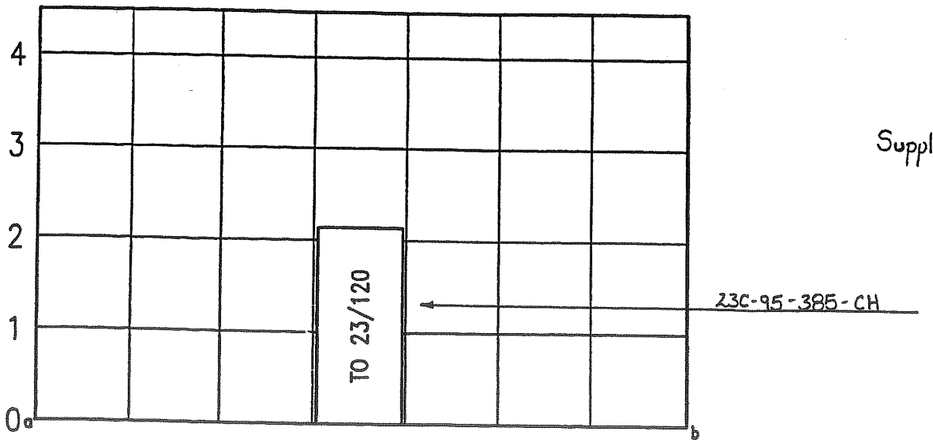
PC-000456/0

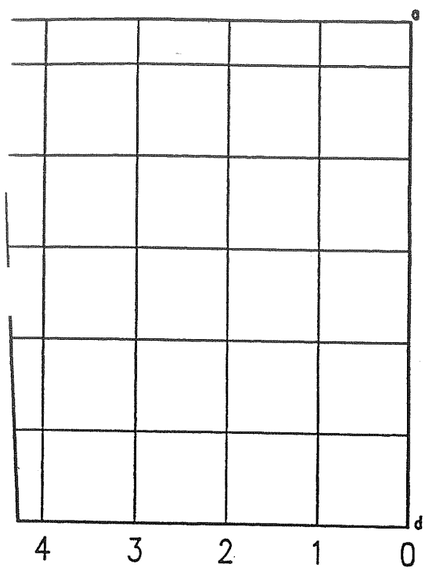
SURVEY No: 23-94-447-CH
SURVEY BY: J. Rowsell K. Rowsell

INST TYPE				
SERIAL No	N. A.	N. A.	N. A.	
CAL DUE DATE				

GRID PATTERN = 1 METER

Supplemental Sample Map

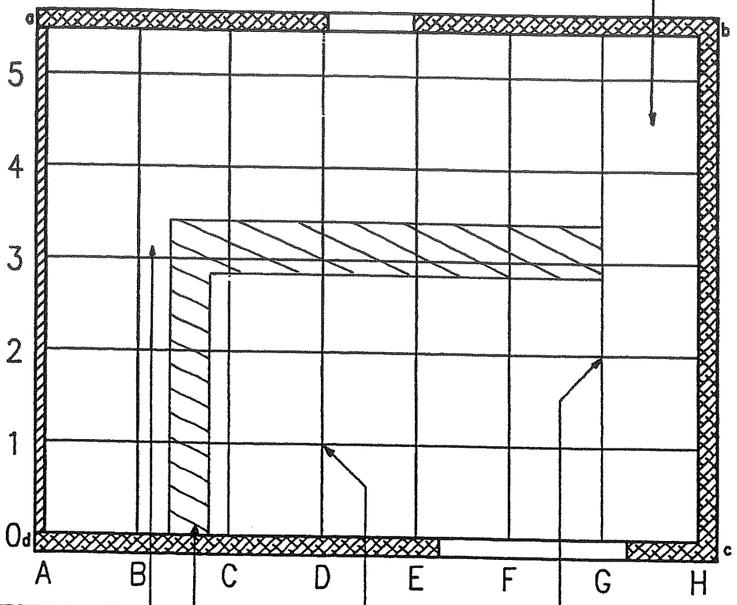




NORTH WALL

EAST WALL

23C-95-383-CH



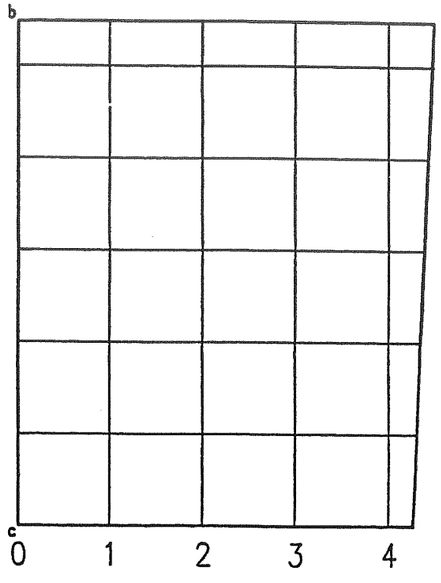
FLOOR

23C-95-384-CH

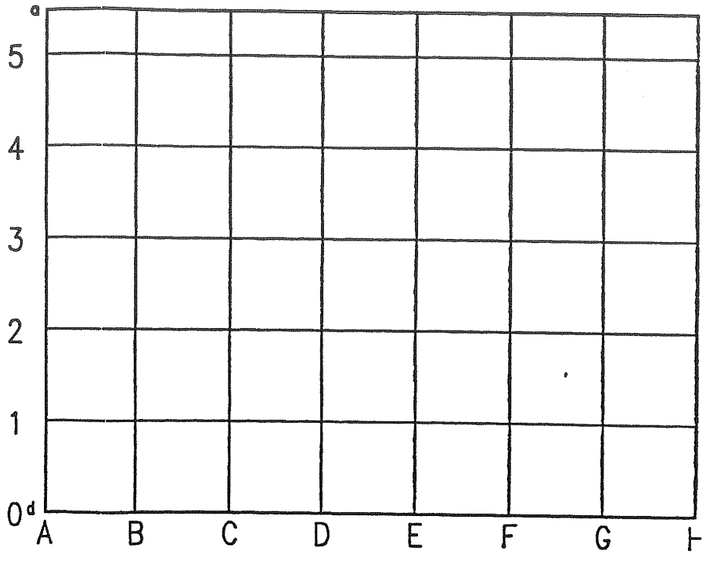
Trench

23C-95-381-CH

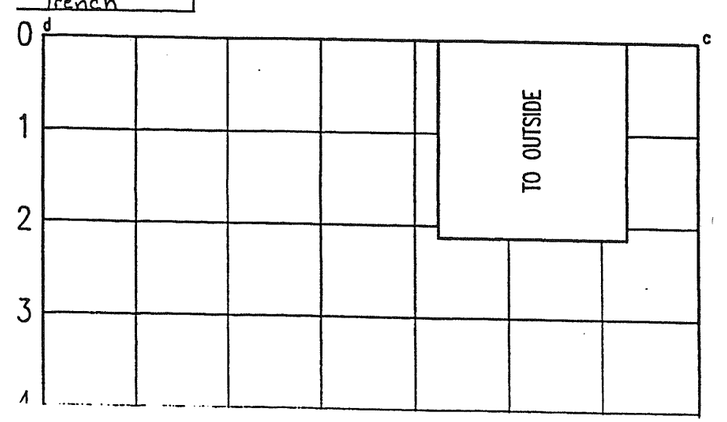
23C-95-382-CH



SOUTH WALL



CEILING

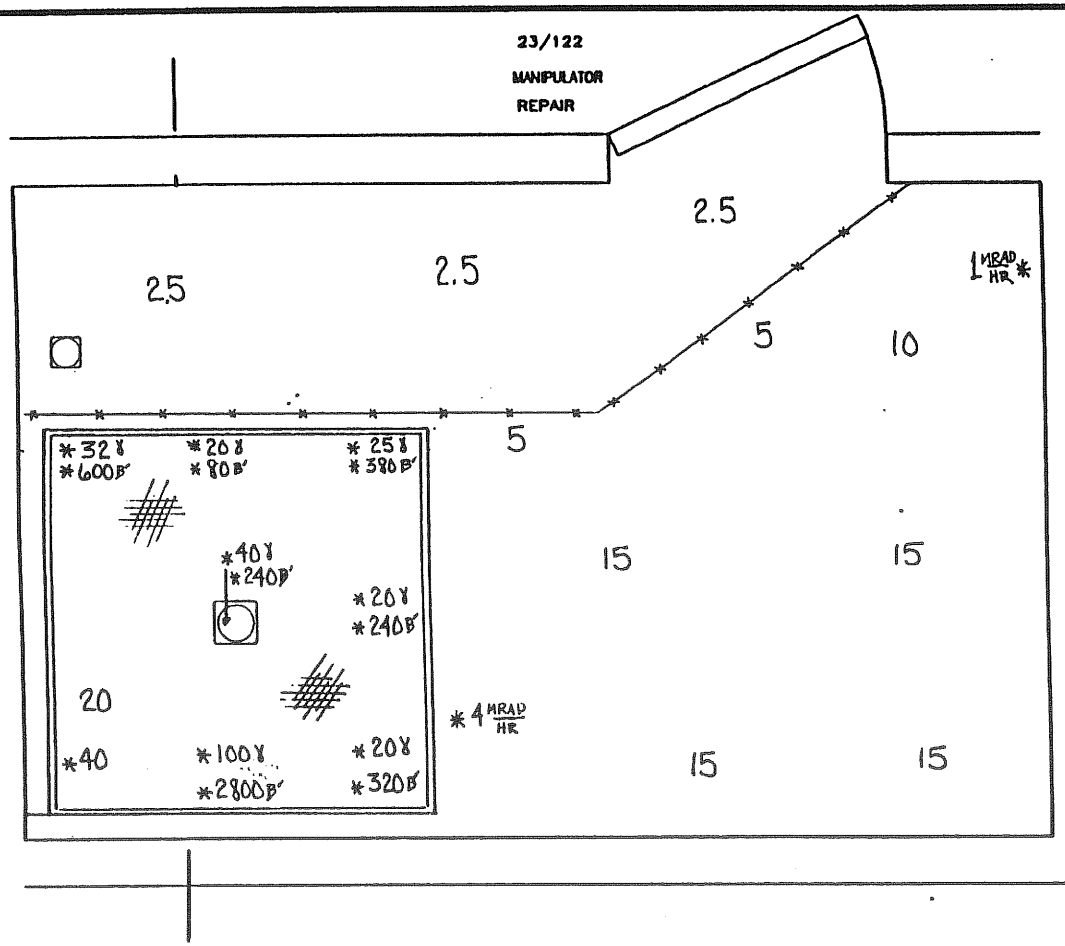


WEST WALL

ROOM NO.	23/121
MEMO NO.	HCI:267:VB:94

A-130

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-122	Manipulator Repair	12-12-94	12 Build 12-14-94 0700	23-94-0-0-L-5-0-CH



NO.	dpm/100 cm²	NO.	dpm/100 cm²	NO.	dpm/100 cm²	NO.	dpm/100 cm²	NO.
1	<1,000	19	8,000	37	3,000	55	<1,000	
2	5,000	20	10,000	38	2,000	56	1,000	
3	3,000	21	12,000	39	3,000	57	<1,000	
4	1,000	22	5,000	40	15,000	58	3,000	
5	2,000	23	2,000	41	3,000	59	8,000	
6	20,000	24	2,000	42	25,000	60	5,000	
7	<1,000	25	3,000	43	220,000	61	3,000	
8	5,000	26	5,000	44	100,000			
9	2,000	27	3,000	45	60,000			
10	3,000	28	3,000	46	25,000			
11	1,000	29	5,000	47	<1,000			
12	1,000	30	1,000	48	<1,000			
13	3,000	31	2,000	49	<1,000			
14	5,000	32	10,000	50	<1,000			
15	1,000	33	5,000	51	1,000			
16	<1,000	34	8,000	52	1,000			
17	5,000	35	2,000	53	2,000			
18	10,000	36	2,000	54	1,000			

A-131

PC-0004560

KEY				No.	dpm/100 cm²	No.	dpm/
⊙	SMEAR	◆	H³ SMEAR	N/A		N/A	
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY				
‖	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
✱	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE		N	A	N/A

Remarks (see Note 4 below)

- ✱ DENOTES CONTACT RADIATION READING ON GRATING OVER SUMP
- β MR/HR β' MRAD/HR — AND ON FLOOR
- ☐ 5% OF SMEARS COUNTED FOR ALPHA CONTAMINATION, <20 dpm/100

COPY

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	RO2 / 58605 / 01-31-95	RM14 / 30357-04 / 12-15-94	N/A
Barbara Butler, Preston Butler	Douglas A. Warren	12-15-94	4-028				

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-122	LOCATION: HOT MANIPULATOR REPAIR RM	DATE: 12-12-94	TIME 0700	SURVEY # 23-94-0-0-6-5-0-CH

R1 THE SUMP IS APPROX. EIGHT INCHES DEEP WITH THE DRAIN IN THE CENTER. THE SUMP IS STEEL WITH A BOLTED DOWN STEEL RIM, COVERED WITH STEEL GRATING AND SURROUNDED ON TWO SIDES BY AN APPROX. SIX FOOT HIGH STEEL SPLASH WALL.

R2 THERE ARE THREE MANIPULATOR ARMS EXTENDING FROM WEST WALL PENETRATIONS TOWARDS EAST WALL AT APPROX. NINE ~~FOOT~~ FEET OFF FLOOR. THEY ARE WRAPPED IN PLASTIC AND ARE KNOWN TO HAVE VERY HIGH CONTAMINATION AND HOT PARTICLES. BWP 12-12-94

114E BENEATH SUMP AND BEHIND SPLASH WALLS OF SUMP

115E MANIPULATOR ARMS (THREE) IN OVERHEAD - HIGHLY CONTAMINATED - WRAPPED IN PLASTIC

116E VENTILATION DUCT WORK IN OVERHEAD AND ALONG WEST AND NORTH WALLS.

117E SUMP DRAIN LINE AND SINK DRAIN LINE.

118E INTERNAL, BEHIND, AND UNDER MISC. EQUIPMENT, PIPING, CONDUIT, ELECTRICAL BOXES AND SUPPORTS.

☐ DUE TO ELEVATED RADIATION LEVELS W/ DIRECT FRISK SURVEYS WERE PERFORMED WITH A RO2 DOSE RATE METER. BWP 12-12-94 DIRECT SURVEYS WERE PERFORMED AT A MINIMUM OF GRID INTERSECTIONS, PENETRATIONS, DISCOLORATIONS AND ANY OTHER SUSPECT LOCATIONS. AREAS NOT DENOTED ON MAP WERE ≤ BACKGROUND RADIATION LEVELS.

119E INACCESSIBLE AREAS IN OVERHEAD. WALLS AND CEILING.

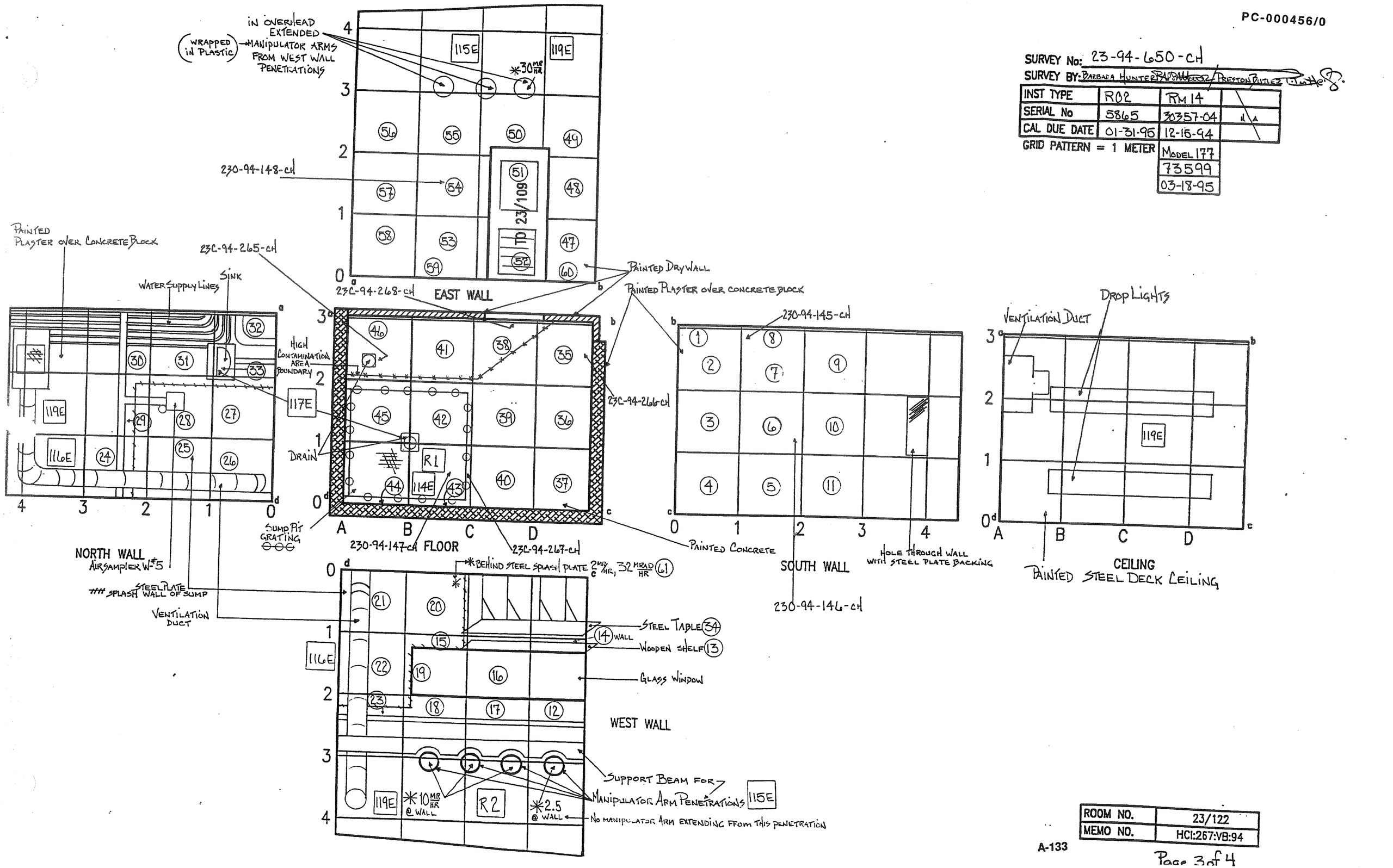
PC-000456/0

SURVEYOR: BARBARA HUNTER, PRESTON BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 12-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP fo
Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-650-CH
SURVEY BY: BARBARA HUNTER ~~BUDDY~~ ~~DAVIS~~ PRESTON BUTLER

INST TYPE	R02	RM 14	
SERIAL No	5865	30357-04	N/A
CAL DUE DATE	01-31-95	12-16-94	
GRID PATTERN = 1 METER		MODEL 177	
		73599	
		03-18-95	



ROOM NO.	23/122
MEMO NO.	HCI:267:VB:94

A-133

PC-000456/0

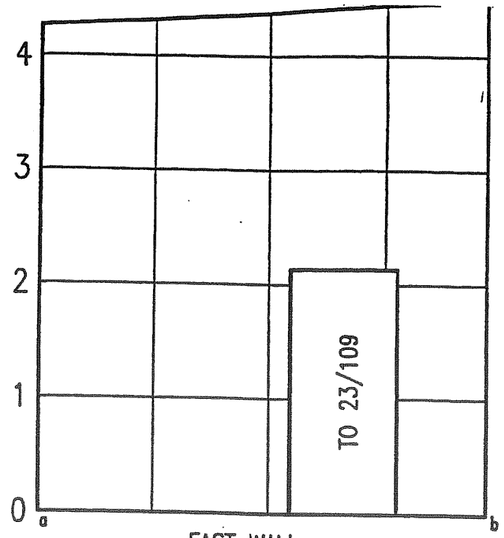
SURVEY No: 23-94-650-CH

SURVEY BY: J. Bowsell, A. Rowell, R. Hatch, T. Pe...

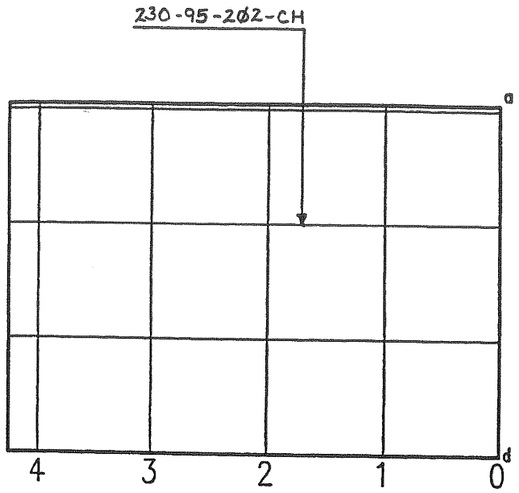
INST TYPE			
SERIAL No	N. A.	N. A.	N. A.
CAL DUE DATE			

GRID PATTERN = 1 METER

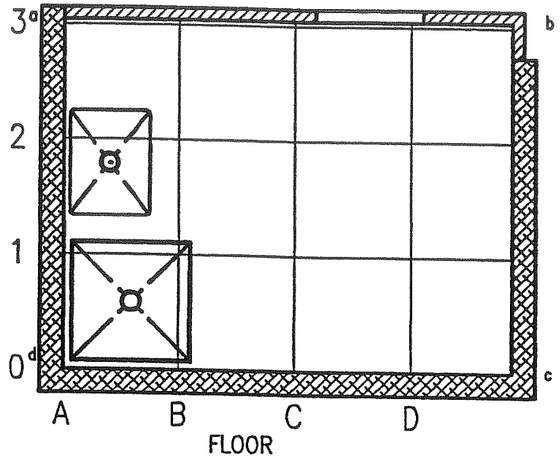
Supplemental Sample Map



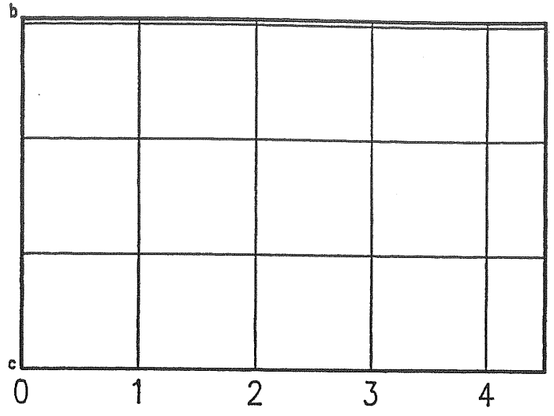
EAST WALL



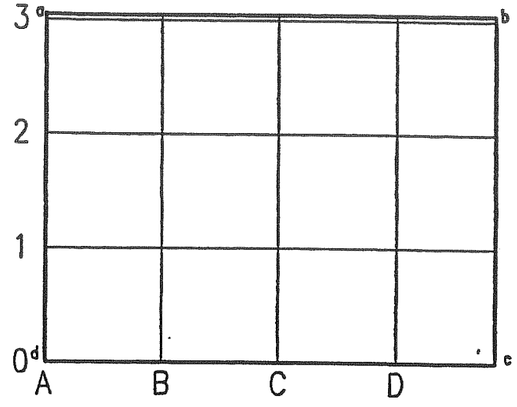
NORTH WALL



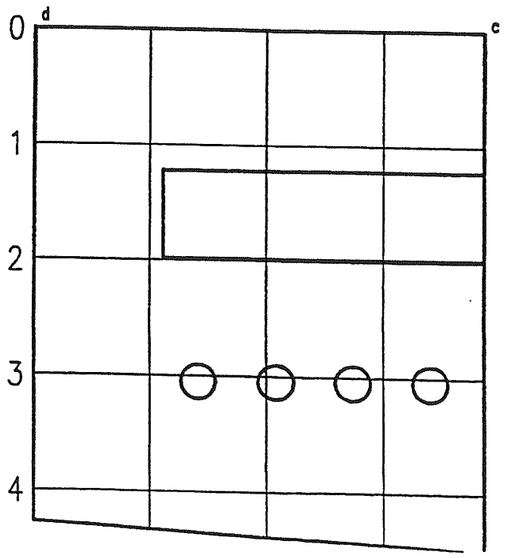
FLOOR



SOUTH WALL



CEILING

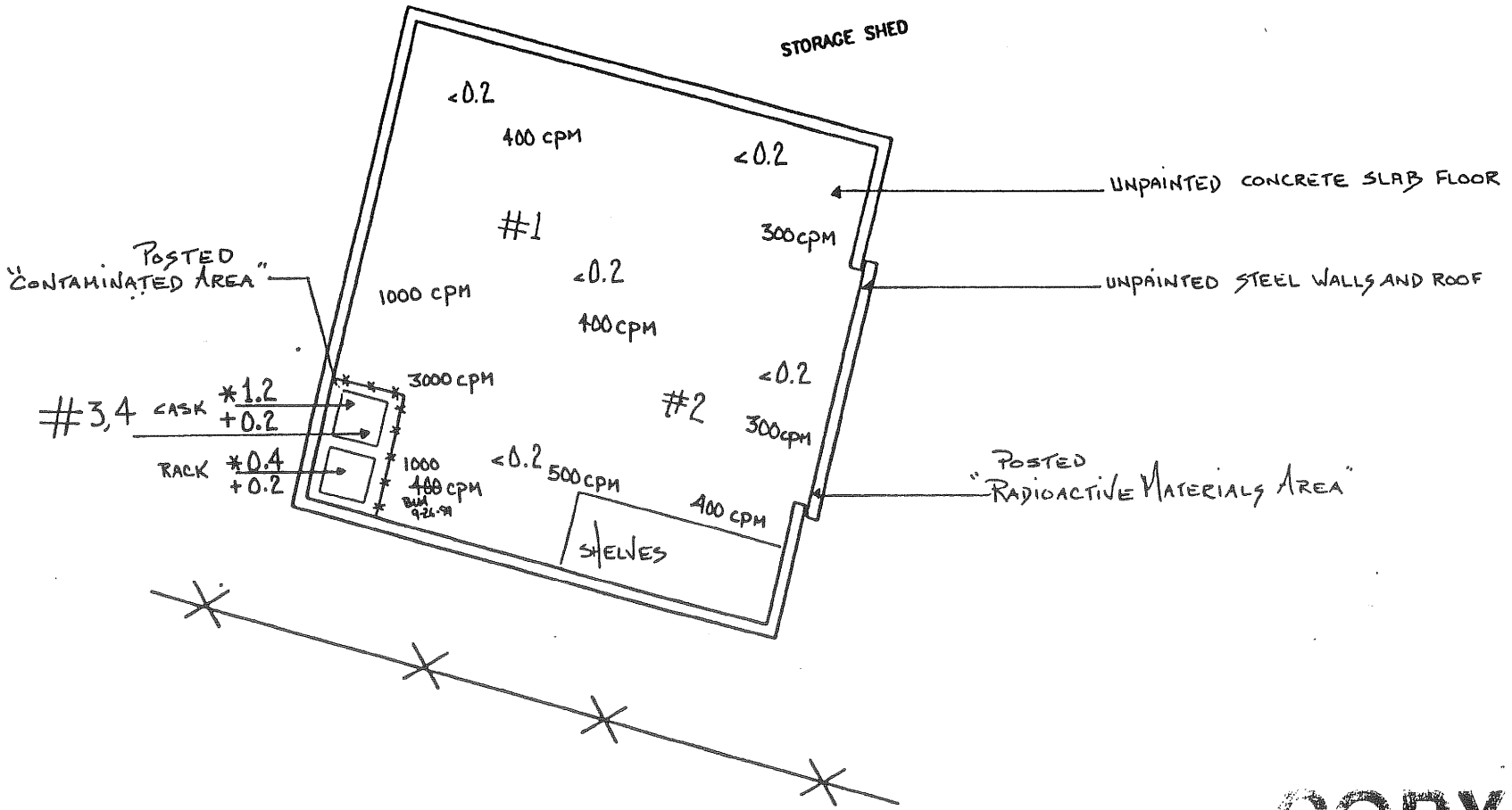


WEST WALL

ROOM NO.	23/122
MEMO NO.	HCI:267:VB:94

A-134

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23- STORAGE SHED	HOT CELL YARD	09-26-14	0800	23-94-0-0-1-5-6-CH



A-135

PC-0004560

COPY

KEY				No.	dpm/100 cm²	No.	dpm/L.A.S.	Remarks (see Note 4 below)
O	SMEAR	◆	H³ SMEAR	99	750	#1	<1000	A TOTAL OF 118 SMEARS TAKEN FOR CHARACTERIZATION
#	LARGE AREA SMEAR	xxx	BOUNDARY	100	750	#2	<1000	PURPOSES. 5% OF SMEARS COUNTED FOR ALPHA
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		111	20,000	#3	1,000-2,000	CONTAMINATION WERE <200 dpm/100cm². FOUR L.A.S.
*	CONTACT DOSE RATE	+	12" DOSE RATE	112	3000	#4	6,000-8,000	TAKEN AND NO HOT PARTICLES WERE FOUND.
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	114	1100	N		RADIATION READINGS IN CPM TAKEN WITH PORTABLE B'γ
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	116	1200		A	FRISKER TO INDICATE ELEVATED BACKGROUND LEVELS

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
P. HUNTER P. BUTLER	Douglas A. Warner	10/10/94	3-028	RO2 5865 11-01-94	MODEL 3 74305 02-17-95	N/A	

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23- SHED	LOCATION: STORAGE SHED HOT CELL YARD	DATE: 09-26-94	TIME 0800	SURVEY # 23-94-0-0-4-5-6-CH

R1 SMEARS (96) – (105) AND (106) TAKEN ON INSULATING FOAM BETWEEN FLOOR AND WALL. (99) & (100) 750 dpm/100cm²

R2 WOODEN RACK HOLDING CONTAMINATED LEAD PENETRATIONS FOR HIGH AND LOW LEVEL CELLS. SMEAR (111) 20,000 dpm/100cm² TAKEN ON TOP OF RACK AND SMEARS (112) – (118) TAKEN ON FRONT OF RACK AND PENETRATIONS. SMEAR RESULTS RANGED FROM <1000 – 3000 dpm/100cm².

R3 CONTAMINATED CASK WRAPPED IN HERCULITE ON TOP OF WOODEN PALLET. #4 BENEATH HERCULITE 6,000-8,000 dpm/LAS / #3 ON HERCULITE 1,000 – 2,000 dpm/L.A.S. (3 dated 9-26-94)

R4 BAGGED BUCKET OF "MINI SOURCE PIGS" MADE OF LEAD. DIRECT FRISK SURVEY RESULTS WERE 5,000 dpm.

9E UNDER, BEHIND, INSIDE AND CONTENTS OF CONTAMINATED LEAD PENETRATIONS STORAGE RACK.

5AE BEHIND ELECTRICAL PANELS

55E UNDER AND BEHIND FLOOR TO CEILING STORAGE SHELVES.

56E AREA BETWEEN FLOOR AND WALL JUNCTION FILLED WITH INSULATING FOAM. CURRENT DIRECT FRISK SURVEYS SHOWED ELEVATED RADIATION LEVELS ABOVE BACKGROUND.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF ALL GRID INTERSECTIONS, FLOOR AND WALL JUNCTIONS, EXPOSED SURFACES DUE TO EQUIPMENT RELOCATION AND, OR REMOVAL, DISCOLORATIONS OR OTHER SUSPECT MARKINGS. BASED UPON THE ENTIRE SHED HAVING BEEN POSTED A "CONTAMINATED AREA", EXPOSED CONTAMINATED MATERIAL HAVING BEEN STORED WITHIN SHED AND CURRENT SURVEY RESULTS INDICATING FIXED CONTAMINATION THERE IS A HIGH PROBIBILITY OF ADDITIONAL AREAS OF FIXED CONTAMINATION BUT DUE TO ELEVATED RADIATION BACKGROUND LEVELS FROM RADIOACTIVE MATERIAL STORED INSIDE SHED A MORE CONCLUSIVE SURVEY WILL NEED TO BE PERFORMED WHEN BACKGROUND RADIATION LEVELS PERMIT.

57E CEILING OF SHED

59E EAST WALL DISASSEMBLED SHELVING BEING STORED ON WEST WALL SHELVING AND THE WEST WALL SHELVING SHOWED AREAS WITH ELEVATED RADIATION READINGS FROM CURRENT DIRECT FRISK SURVEY SPOT CHECKS ABOVE BACKGROUND LEVELS

10E UNDER AND BEHIND WEST SHELVING

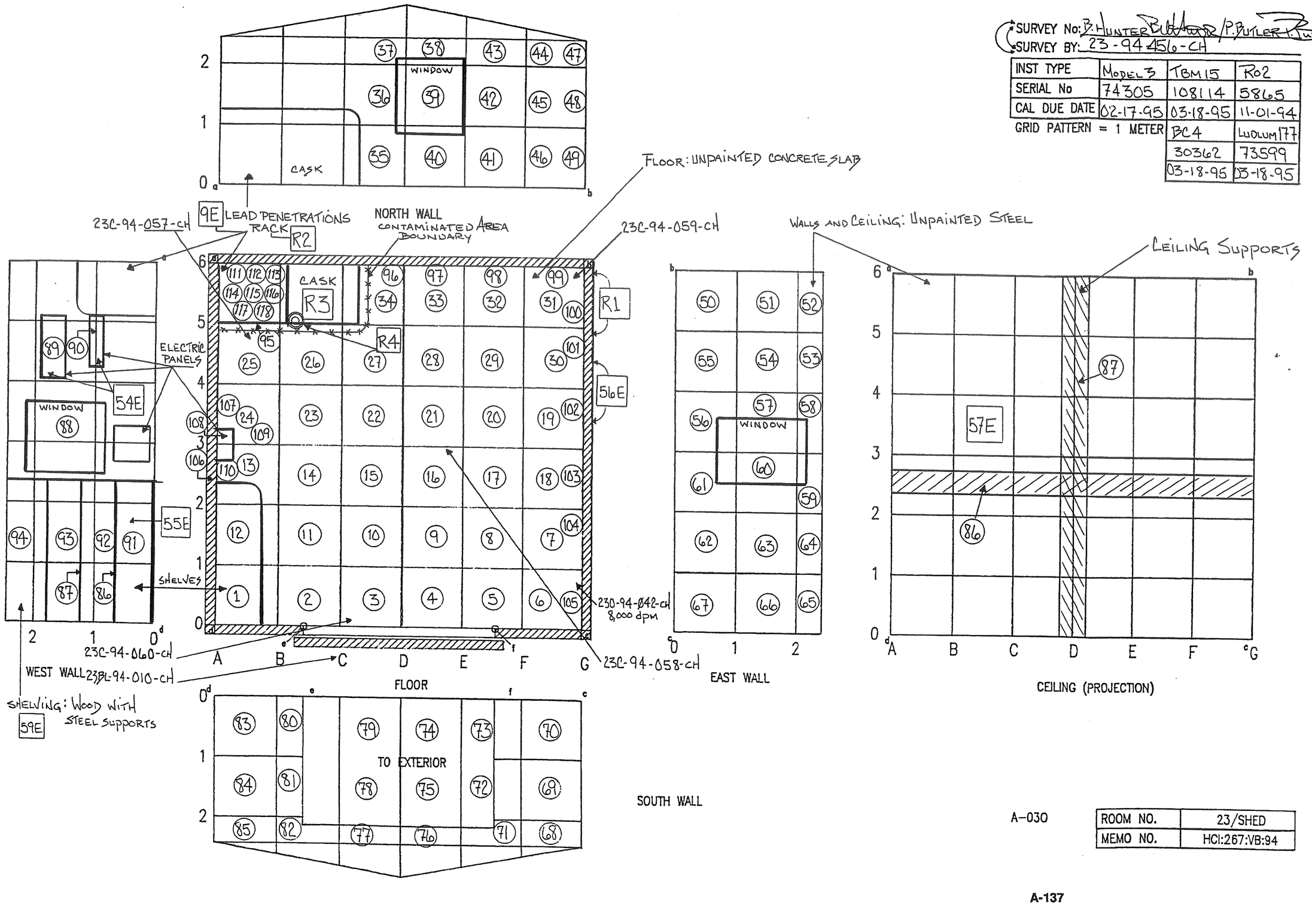
PC-000456/0

SURVEYOR: B HUNTER / P BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 10/10/94	JOB RWP# 03-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: B.HUNTER/P.BUTLER
SURVEY BY: 23-94456-CH

INST TYPE	MODEL 3	TBM 15	RO2
SERIAL No	74305	108114	58665
CAL DUE DATE	02-17-95	03-18-95	11-01-94
GRID PATTERN = 1 METER		BC4	LUDLUM 177
		30362	73599
		03-18-95	03-18-95



A-030

ROOM NO.	23/SHED
MEMO NO.	HCI:267:VB:94

MAP#: REMARKS/EXCEPTIONS 23-ROOF EXTERIOR	LOCATION: HOT CELL ROOF	DATE: 10-12-94	TIME 0800	SURVEY # 23-94-0-0-4-9-6-CH

R1 ROOF SURFACE CONSISTS OF (LOOSE) GRAVEL, ASPHALT ROOFING MATERIAL AND INSULATION. SMEARS TAKEN ALONG ROOF AREA BOUNDARIES WERE ON SHORT CONCRETE CINDERBLOCK VERTICLE SURFACES NOT REPRESENTED ON OTHER EXTERIOR MAPS.

R2 VEGETATION SAMPLES WERE TAKEN FROM HEAVY BUILDUP OF DEBRIS COLLECTED IN RAIN GUTTERS.

R3 THIS SECTION OF ROOF IS A STEEL OVERHANG ALONG WALKWAY AT FRONT ENTRANCE TO BUILDING. SURFACE CONSISTS OF LOOSE GRAVEL & ASPHALT ROOFING MATERIAL AND INSULATION.

60E VENTILATION DUCT WORK INTERNAL

61E ROOF SURFACE BENEATH ROOFING MATERIAL

62E ROOF ACCESS TO HOT CELL BENEATH COVER AND HOT CELL HYDROLIC VERTICLE DOOR MECHANISM COMPONENTS BENEATH COVER.

65E AREA BENEATH FLASHING ALONG ROOF BOUNDARY

☐ ALL SMEARS TAKEN WERE <1,000 dpm/100cm² B'Y. 5% OF SMEARS COUNTED FOR ALPHA AND ALL WERE ~~<200~~ <20 dpm/100cm² BKG 10-12-94

☐ DIRECT FRISK SURVEYS WERE PERFORMED WERE BACKGROUND RADIATION LEVELS PERMITTED, PRIMARILY ALONG SOUTH AND WEST SIDES. ALL SURVEYED AREAS <1000 dpm/100 PA/PHG WITH THE EXCEPTION OF SAMPLE LOCATION 230-94-049-CH (400 cpm).

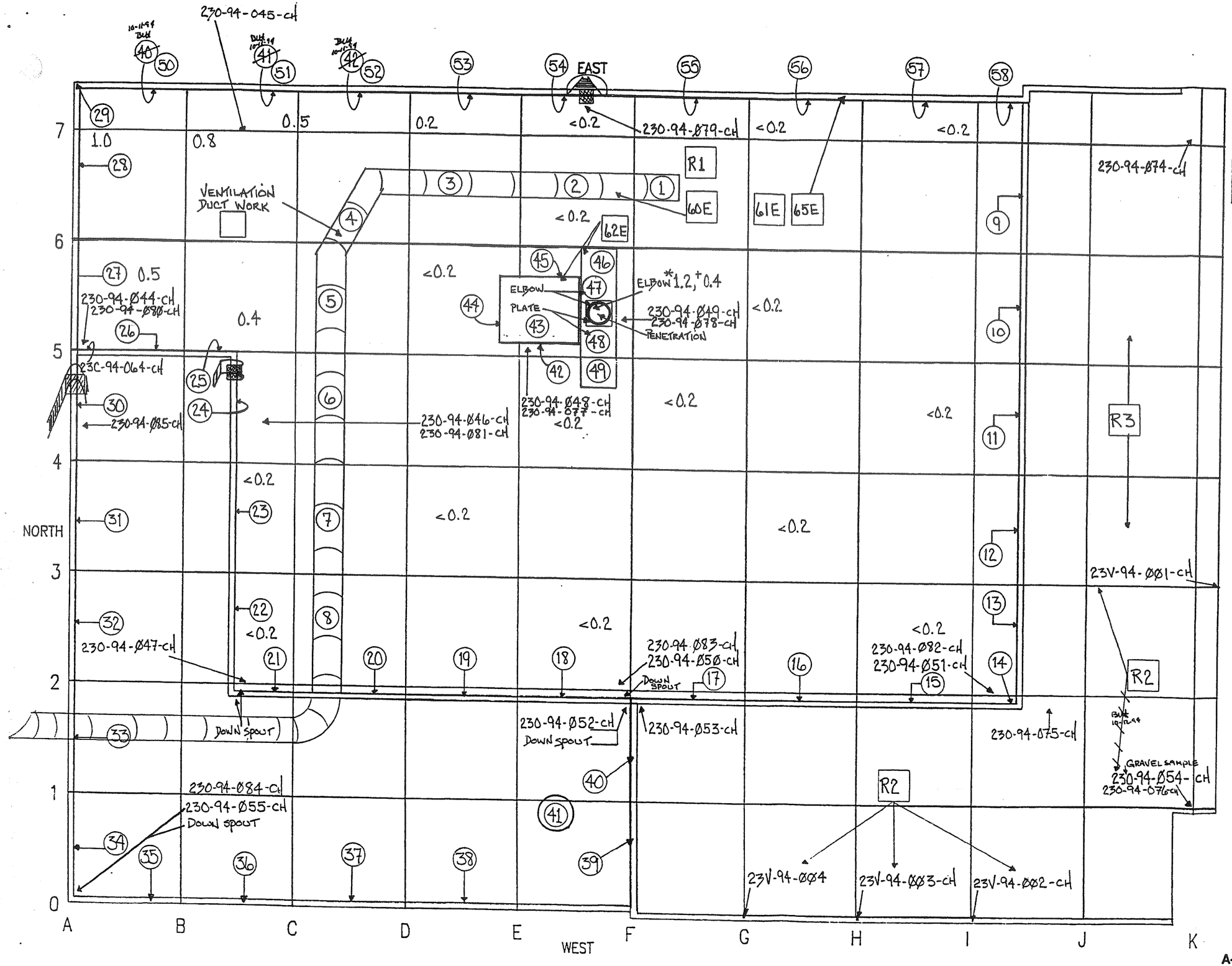
☐ SMEARS WERE TAKEN AT ALL SAMPLE LOCATIONS WHICH EXPOSED STEEL DECK OF ROOF. ALL RESULTS <1,000 dpm/100cm²

PC-000456/0

COPY

SURVEYOR: B. HUNTER, T. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.



SURVEY No: 23-94-496-CH
SURVEY BY: B.HUNTER BH/PB/PBUTLER

INST TYPE	RO2	RM14	TBM 15
SERIAL No	5865	9162	10811 04
CAL DUE DATE	11-01-94	02-17-95	03-18-95
GRID PATTERN = 3 METER		Dc4	SAC4
		34053	1015
		03-20-95	03-28-95

A-110

ROOM NO.	23/ROOF
MEMO NO.	HCI:267:VB:94

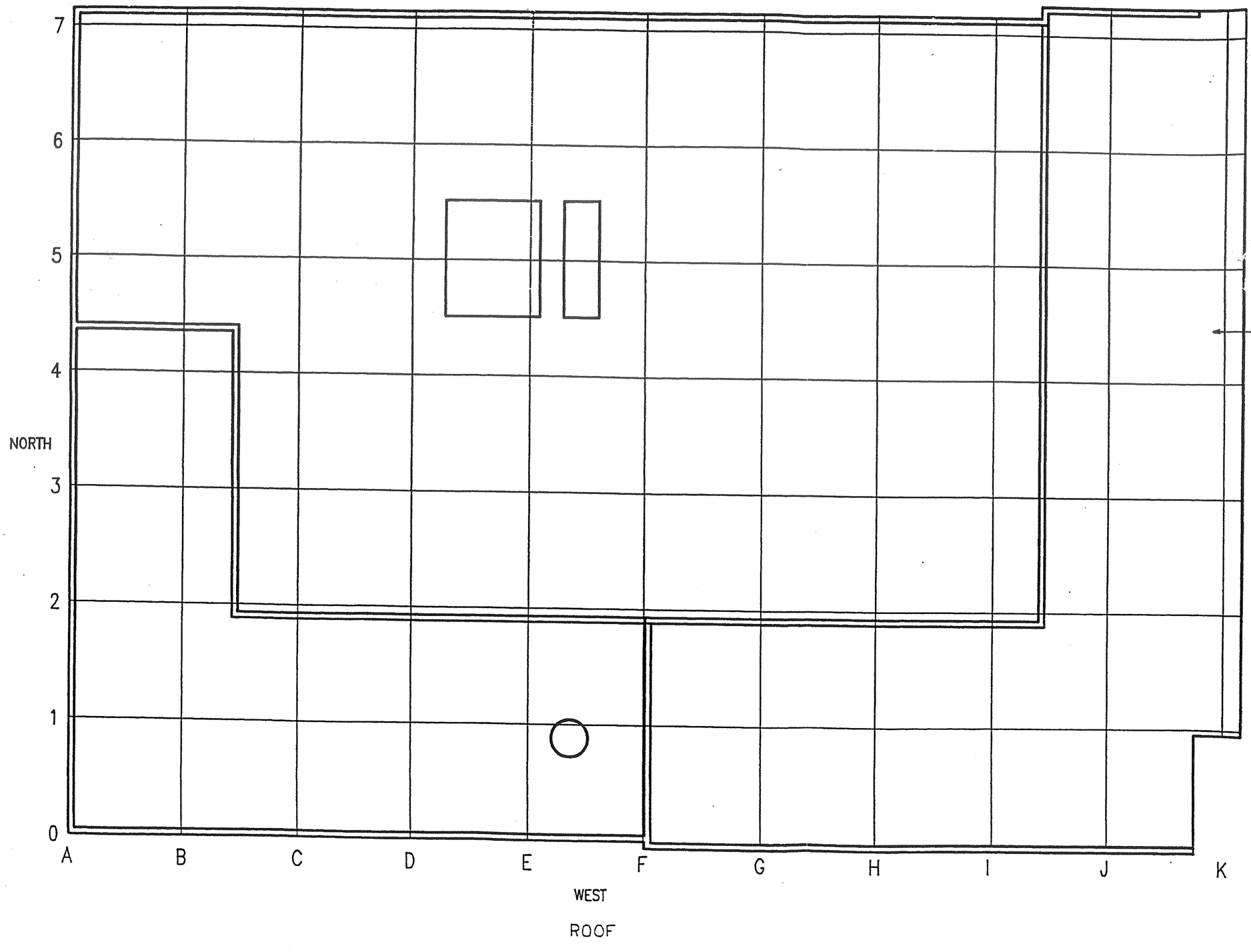
PC-000456/0

Supplemental Sample Map

SURVEY No: 23-94-496-CH
SURVEY BY: J. Rowsell / T. Rowell

INST TYPE			
SERIAL No	N. A.	N. A.	N. A.
CAL DUE DATE			

GRID PATTERN = 3 METER



230-95-206-CH
230-95-207-CH

ROOM NO.	23/ROOF
MEMO NO.	HCI:267:V8:94

A-140

MAP#: HOT CELL 23-/EAST-FACE EXTERIOR	LOCATION: WALL BLDG. 23 EXTERIOR (EAST FACE)	DATE: 10-14-94	TIME 0800	SURVEY # 23-94-0-0-5-0-3-CA

R1 ELEVATED DOSE RATES AROUND AND IN FRONT OF VENTILATION DUCT WORK AND HEPA FILTERS DUE TO RADIOACTIVE EQUIPMENT BEING STORED WITHIN RADIATION AREA BOUNDARY IN FRONT OF VENTILATION UNIT.

R2 L.A.S. TAKEN ON VENTILATION DUCT WORK AND HEPA FILTER ACCESS. RESULTS WERE #1 AND #4 ON VENT. DUCTING - 1500-2000 dpm/L.A.S. #2 (HEPA ACCESS) 2,000 dpm/L.A.S. #3 (HEPA ACCESS) 10,000 dpm/L.A.S. VENTILATION POSTED "INTERNAL CONTAMINATION".

63E CINDER BLOCK WALL BEHIND VENTILATION DUCT WORK (A CONTAMINATION POTENTIAL EXISTS DUE TO THE L.A.S. RESULTS ON VENTILATION DUCTING FROM PAST HEPA FILTER CHANGE OUTS.)

64E CINDER BLOCK WALL BEHIND COMPRESSED GAS BOTTLES

66E INTERNAL AND INACCESSIBLE EXTERNAL VENTILATION DUCT WORK INCLUDING MOTORS, FANS, HEPA FILTERS AND HOUSING.

67E MISC. ELECTRIC PANELS, CONDUIT, BRACKETS, RACKS, ETC., MOUNTED ON WALL.

☐ DIRECT FRISK SURVEYS WERE NOT PERFORMED ALONG NORTH HALF OF EAST FACE DUE TO ELEVATED RADIATION LEVELS. DIRECT FRISK SURVEYS WERE PERFORMED ALONG SOUTH HALF OF EAST FACE AT A MINIMUM OF GRID INTERSECTIONS, WALL JUNCTIONS, DISCOLORATIONS, PENETRATIONS, SAMPLE LOCATION AND ANY SUSPECT AREAS. THERE WERE NO AREAS FOUND ON SOUTH END ≥ BACKGROUND B'G. ALL SURVEYED AREAS <1,000 dpm/PROBE AREA DIRECT FRISK. PLUS 10-19-94

☐ ALL SMEARS <1,000 dpm/100cm² B'G. 5% OF SMEARS COUNTED FOR ALPHA, ALL <20 dpm/100cm².

PC-000456/0

COPY

SURVEYOR: BARBARA L. HUNTER, PRESTON BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP f
Job/Coverage surveys (4)Please indicate any additional "Remarks" on survey map.

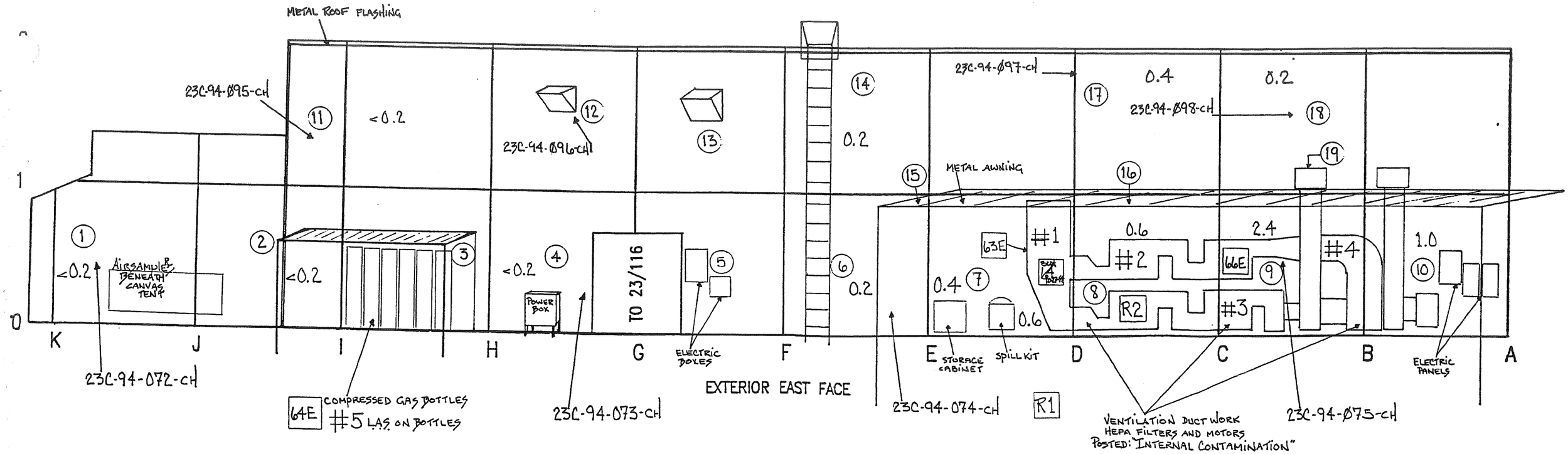
SURVEY No: 23-94-503-CH

SURVEY BY: B. HUNTER BUTLER & P. BUTLER L. [illegible]

INST TYPE	R02	RM 14	LUDLUM 3
SERIAL No	5865	9158	4687
CAL DUE DATE	11-01-94	03-25-95	04-12-95
GRID PATTERN = 3 METER		SAC 4	BC 4
		1015	34053
		03-28-95	03-20-95

SOUTH

NORTH



A-26S

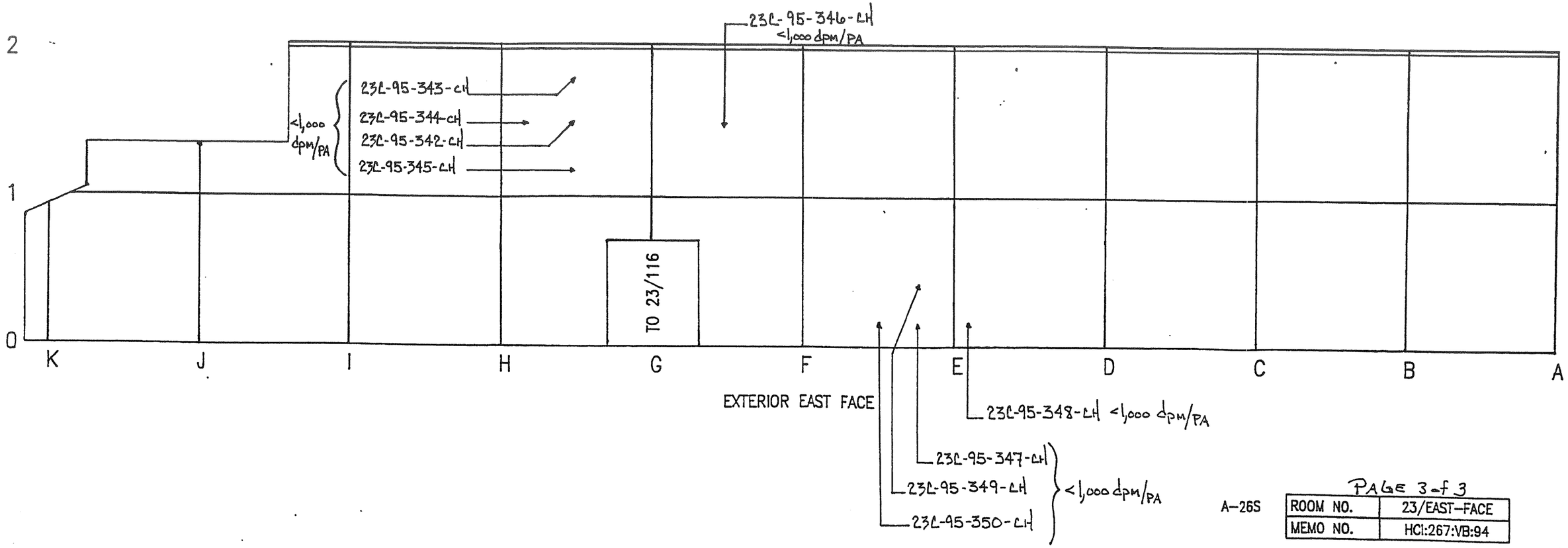
ROOM NO.	23/EAST-FACE
MEMO NO.	HCI:267:VB:94

Supplemental Sample map

SURVEY No: 23-94-503-CH
SURVEY BY: B.L. HUNTER ~~BRETHAUER~~ / P. BUTLER P. Butler

INST TYPE	LUDLUM 3		
SERIAL No	4687		
CAL DUE DATE	04-12-95	N/A	N/A
GRID PATTERN = 3 METER			

dpm/PA = PROBE AREA



A-26S

PAGE 3-of 3

ROOM NO.	23/EAST-FACE
MEMO NO.	HCI:267:VB:94

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-HOT CELL FACILITY	BUILDING 23 EXTERIOR WEST FACE	10-14-94	0800	23-94-0-0-5-0-2-CH

☐ PRESENTLY THERE ARE NO FORESEEABLE EXCEPTIONS ALONG EXTERIOR WEST FACE TO BE ADDED TO "EXCEPTIONS LIST".

☐ ALL SMEARS TAKEN WERE <1,000 dpm/100cm² B'S. 5% COUNTED FOR ALPHA <20 dpm/100cm² ∝.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF GRID INTERSECTION, PENETRATIONS, DISCOLOURATIONS AND ANY OTHER SUSPECT LOCATIONS.

A-144

PC-000456/0

COPY

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER / PRESTON BUTLER	Douglas A. Warren	11-15-94	4-028		N/A	N/A	N/A

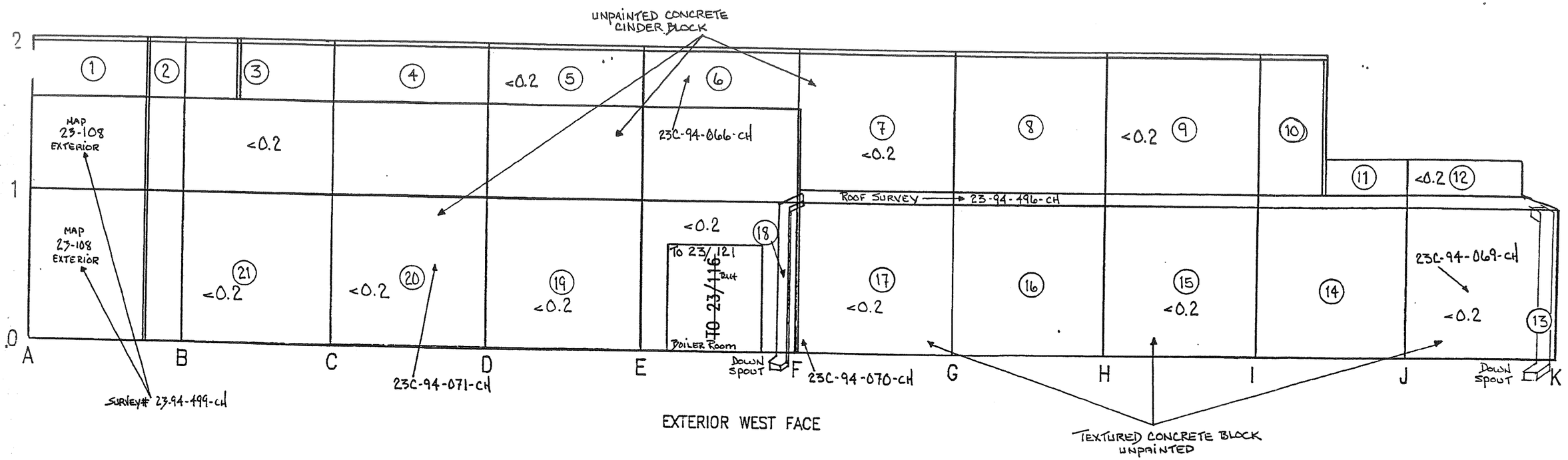
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-502-CH
SURVEY BY: B.HUNTER/~~B.BUTLER~~/P.BUTLER

INST TYPE	RM 14	RO2	TBM 15
SERIAL No	9162	5865	108114
CAL DUE DATE	02-17-95	11-01-94	03-18-95
GRID PATTERN = 3 METER		SAE 4	BC4
		1015	34053
		03-28-95	03-20-95

NORTH

SOUTH



EXTERIOR WEST FACE

PAGE 2 of 3

A-130

ROOM NO.	23/WEST—FACE
MEMO NO.	HCI:267:VB:94

Supplemental Sample Map

dpm/PA = probe Area

SURVEY No: 23-94-502-cH

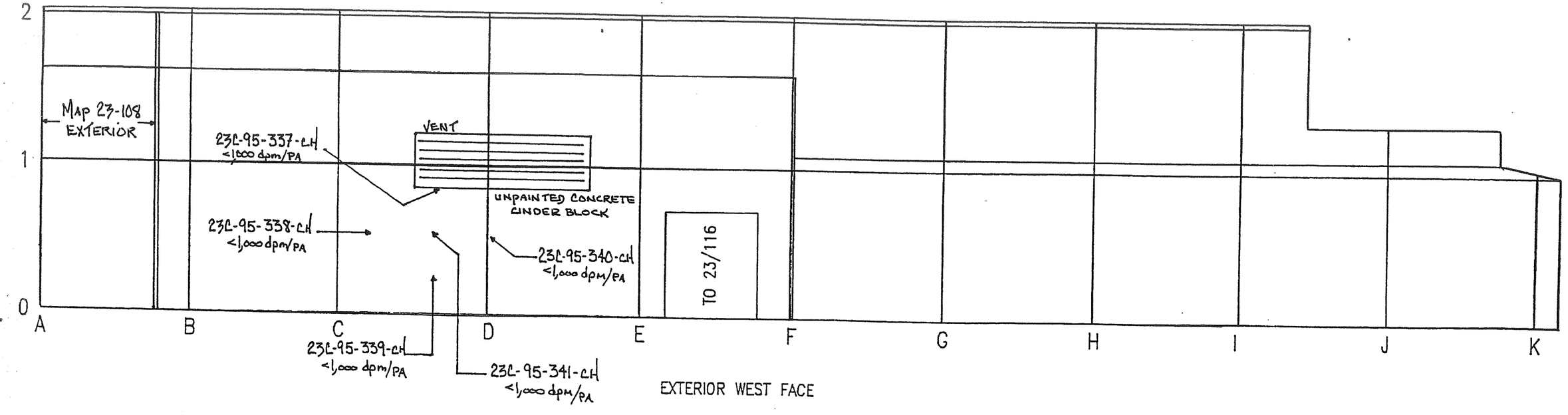
SURVEY BY: B. Hunter Blalock / P. Butler

INST TYPE	4687	Ludlum 3	
SERIAL No	04-12-95	4687	N/A
CAL DUE DATE	Qual 01-10-95	04-12-95	

GRID PATTERN = 3 METER

NORTH

SOUTH



EXTERIOR WEST FACE

Page 3 of 3

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ROOM NO.	23/WEST-FACE
MEMO NO.	HCI:267:VB:94

MAP#: 23-N/A HOT CELL YARD	LOCATION: EXTERIOR NORTH FACE	DATE: 10-14-94	TIME 0800	SURVEY # 23-94-0-0-5-0-1-CH

R1 HEPA VENTILATION DUCT WORK WITH MULTIPLE HEPA FILTER HOUSINGS, FANS, MOTORS ALONG NORTH WALL FROM GRIDS 1-5.

R2 HATCH LEADING TO UNDERGROUND CONFINED SPACE OF "CELL EXHAUST DUCT PIT.

R3 STEEL DOORS WITH PAINT LEADING FROM SERVICE GALLERY TO OUTSIDE RAMP. "POSTED" "CONTAMINATED AREA".

77E MULTIPLE AREAS TO BE SURVEYED IN AND BEHIND OF MISC. PIPES, PENETRATIONS, RACKS, ELECTRIC PANELS MOUNTED AGAINST WALL

☐ DUE TO ELEVATED RADIATION LEVELS ALONG ENTIRE NORTH FACE THERE WERE NO DIRECT FRISK SURVEYS PERFORMED.

☐ ALL SMEARS TAKEN < 1,000 dpm/100cm². 5% SMEARS COUNTED FOR ALPHA < 20 dpm/100cm².

A-147

PC-000456/0

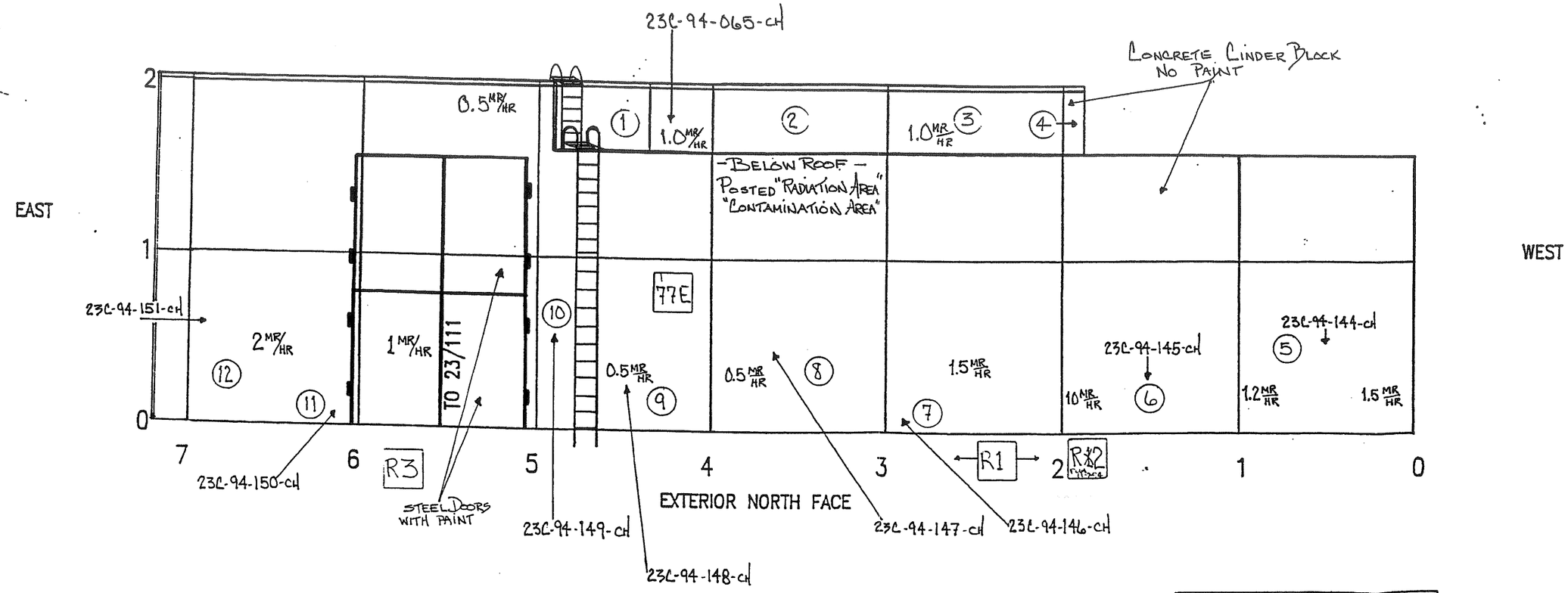
COPY

SURVEYOR: ~~BARBARA HUNTER~~ BARBARA HUNTER / L. PETTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP # Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-501-CH
SURVEY BY: B. HUNTER ~~B. HUNTER~~ / P. BUTLER

INST TYPE	RO2	RM 14	LUDLUM 3
SERIAL No	5865	9162	4687
CAL DUE DATE	11-01-94	02-17-95	04-12-95
GRID PATTERN = 3 METER		SIC 4 11-02-94	LUDLUM 177
		1015	73599
		04-24-95	03-18-95
		BC 4	
		34053	
		03-20-95	



A-26S

ROOM NO.	23/NORTH-FACE
MEMO NO.	HCI:267:VB:94

MAP#: 23- HOT CELL FACILITY	LOCATION: BUILDING 23 EXTERIOR SOUTH FACE	DATE: 10-14-94	TIME 0800	SURVEY # 23-94- 0-0-5-0-0-CH

R1 ALONG FIRST FLOOR AND EAST OF ENTRANCE DOORS THE WALLS ARE PAINTED METAL PANELS WITH ASBESTOS CONCRETE INSULATION AND GLASS WINDOWS HENCE NO SAMPLE MEDIA WAS REMOVED FROM THIS LOCATION.

☐ CURRENTLY THERE ARE NO FORSEEABLE EXCEPTIONS ALONG EXTERIOR SOUTH FACE TO BE ADDED TO "EXCEPTIONS LIST."

☐ ALL SMEARS TAKEN < 1,000 dpm/100cm² B'S, 5% COUNTED FOR ALPHA < 20 dpm/100cm² α

☐ DIRECT FRISK SURVEY RESULTS WERE < 1000 dpm/PROBE AREA. DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF GRID INTERSECTIONS, PENETRATIONS, DISCOLORATIONS AND ANY OTHER SUSPECT LOCATIONS.

A-149

PC-000456/0

COPY

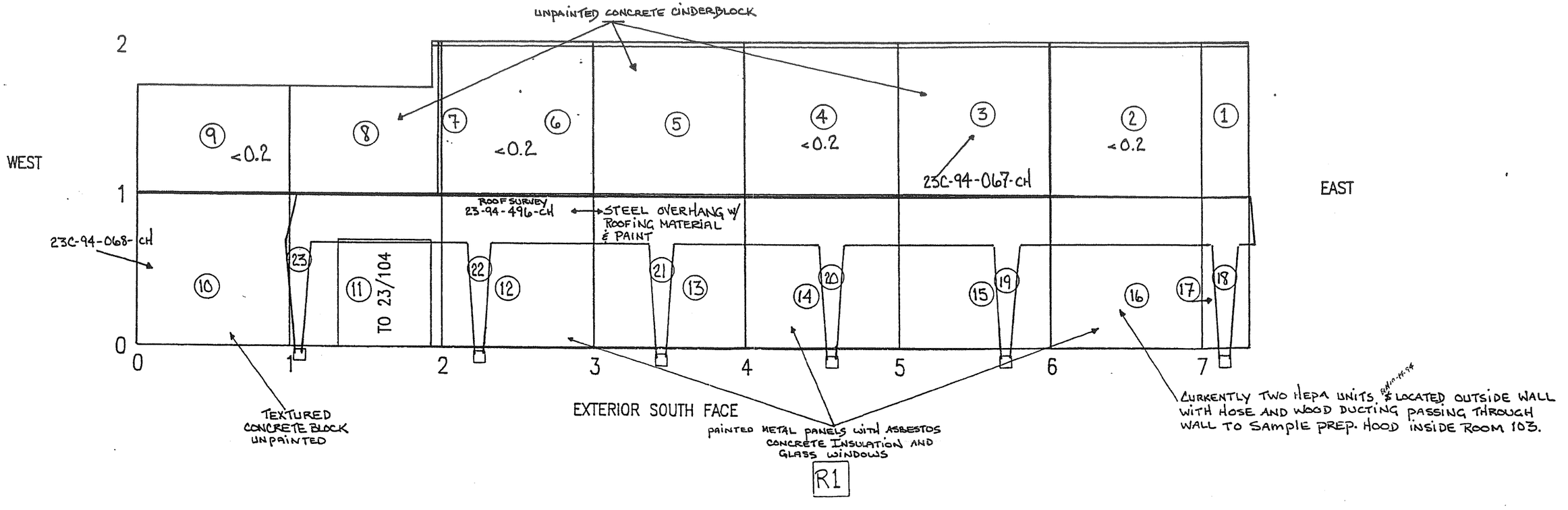
SURVEYOR: BARBARA HUSTED PRESTON BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-500-CH
SURVEY BY: P. HUNTER P. BUTLER

INST TYPE	R02	RM 14	TBM 15
SERIAL No	5865	9162	108114
CAL DUE DATE	11-01-94	02-17-95	03-18-95
GRID PATTERN = 3 METER		BC 4	SAC 4
		34053	1015
		03-20-95	03-28-95

2



A-26S

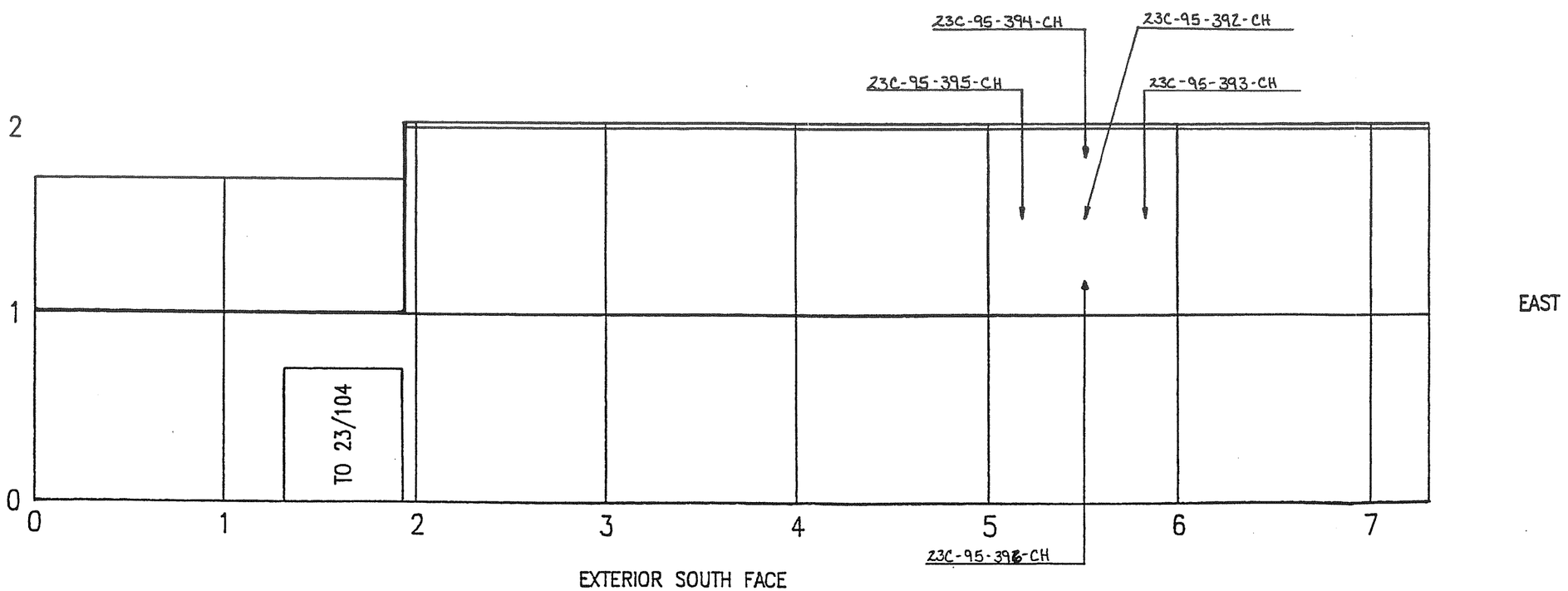
ROOM NO.	23/SOUTH-FACE
MEMO NO.	HCI:267:VB:94

Supplemental Sample Map

SURVEY No: 23-94-500-CH
SURVEY BY: J. Rowsell/K. Rowsell

INST TYPE				
SERIAL No	N. A.	N. A.	N. A.	
CAL DUE DATE				

GRID PATTERN = 3 METER



A-26S

ROOM NO.	23/SOUTH-FACE
MEMO NO.	HCI:267:VB:94

MAP#: 23-108	LOCATION: EXTERIOR CONTROLLED MACHINE SHOP	DATE: 10-14-94	TIME 0800	SURVEY # 23-94-0-0-4-9-9-CH

R1 ROOFING MATERIAL IS A TOP LAYER OF GRAVEL OVER ASPHALT AND INSULATION. UPON DIRECT FRISK THREE LOCATIONS WERE DETERMINED TO HAVE FIXED CONTAMINATION. INITIAL DIRECT FRISK SURVEY TOOK PLACE ABOVE GRAVEL. UPON REMOVAL OF GRAVEL, EXPOSING SOME DIRT ON ROOFING MATERIAL, RADIATION LEVELS INCREASED AT A MINIMUM 2X. THIS SCENARIO LEAVES OPEN THE POSSIBILITY FOR OTHER LOCATIONS BENEATH THE LAYER OF GRAVEL WITH EITHER FIXED OR LOOSE SURFACE CONTAMINATION.

☐ DIRECT FRISK SURVEYS WERE PERFORMED AT A MINIMUM OF GRID INTERSECTIONS, PENETRATIONS, DOWN SPOUTS, DISCOLORATIONS AND ANY OTHER SUSPECT LOCATIONS. EXCEPT WHERE NOTED ON THE ROOF ALL DIRECT FRISK SURVEY RESULTS WERE <1,000 dpm/PROBE AREA.

☐ ALL SMEARS TAKEN <1,000 dpm/100cm² INCLUDING SMEARS THAT WERE TAKEN ON STEEL DECK AFTER SAMPLE MEDIA COLLECTION. 5% SMEARS COUNTED FOR ALPHA, ALL <20 dpm/100cm².

79E BETWEEN WALL (EXTERIOR) Rm 108 AND Rm 107

80E ALONG LOWER NORTH WALL AREAS BEHIND, BETWEEN AND INTERNAL THE BOTTLE STORAGE RACK, BOTTLE RACK LIFTING PLATFORM AND TWO PUMP SHEDS WITH PUMPS

81E BETWEEN AND UNDER DOOR FRAME AND WALL AND UNDER THRESHOLD.

82E BETWEEN DOWNSPOUT HOUSINGS AND WALL AND AROUND POSSIBLE PRE-EXISTING PENETRATION LOCATION.

PC-000456/0

COPY

SURVEYOR: B.L. HUNTER P. BUTLER	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 4-028	INST. TYPE: SERIAL NUMBER CAL DUE DATE:	N/A	N/A	N/A

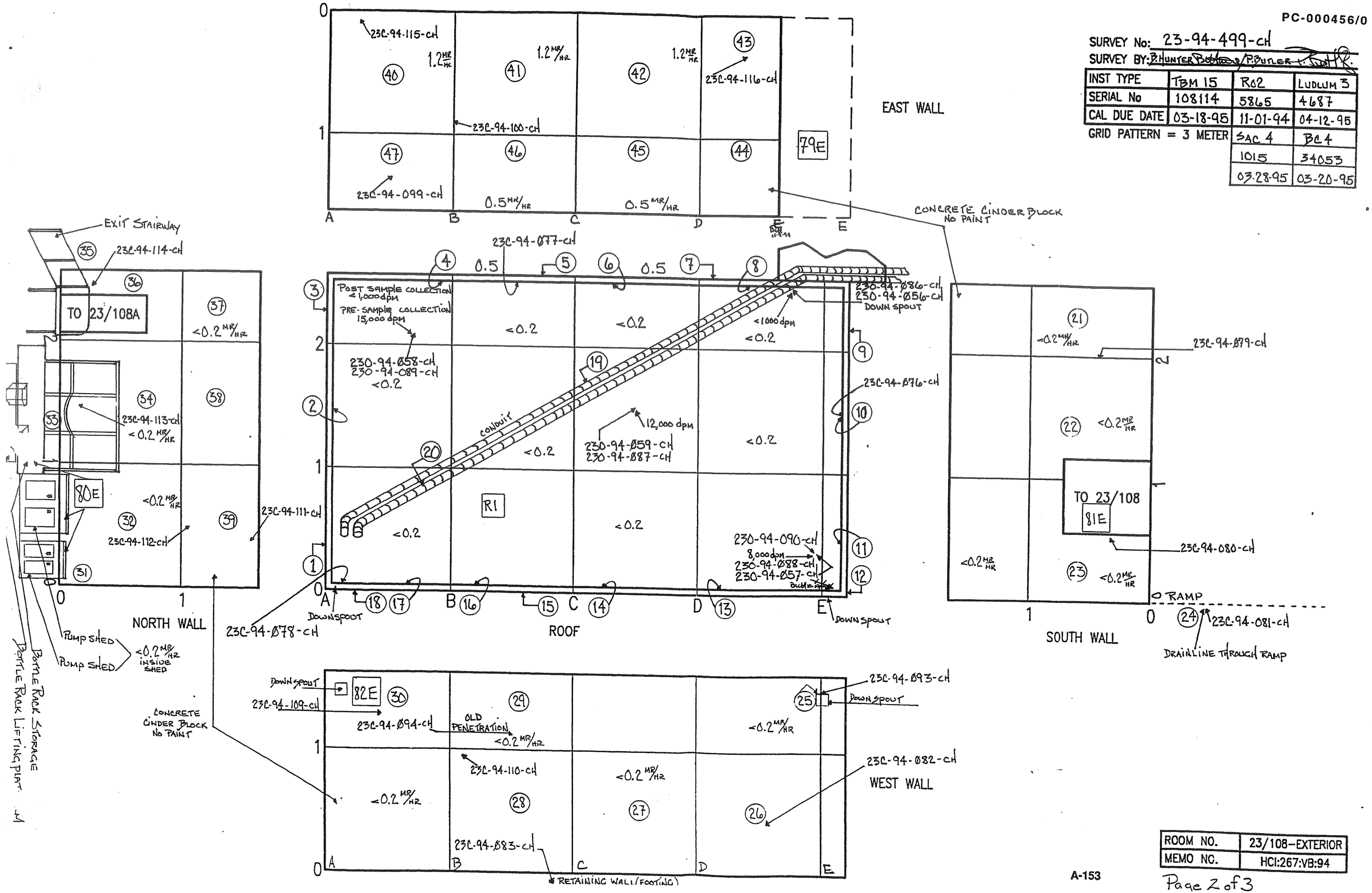
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

PC-000456/0

SURVEY No: 23-94-499-CH

SURVEY BY: B. HUNTER / P. BUTLER

INST TYPE	TBM 15	R02	LUDLUM 3
SERIAL No	108114	5865	4687
CAL DUE DATE	03-18-95	11-01-94	04-12-95
GRID PATTERN = 3 METER		SAC 4	BC4
		1015	34053
		03-28-95	03-20-95



ROOM NO.	23/108–EXTERIOR
MEMO NO.	HCI:267:VB:94

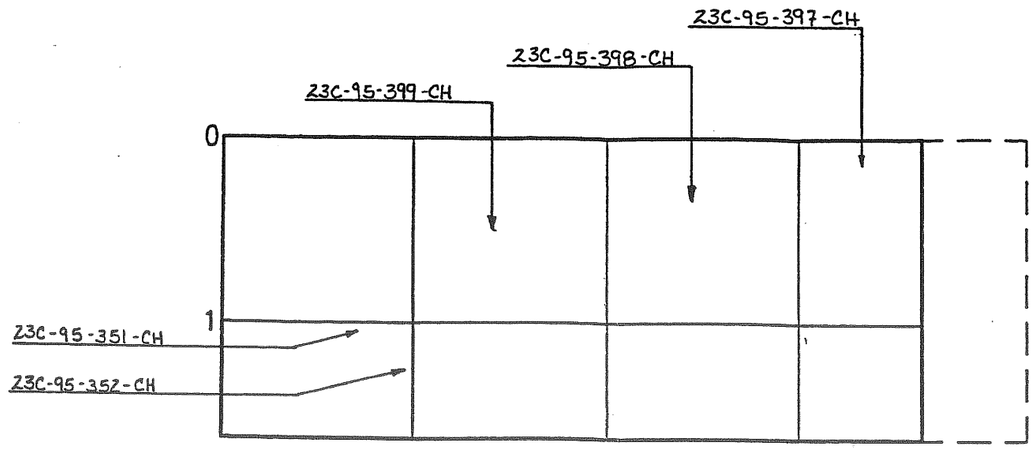
A-153

Supplemental Sample Map

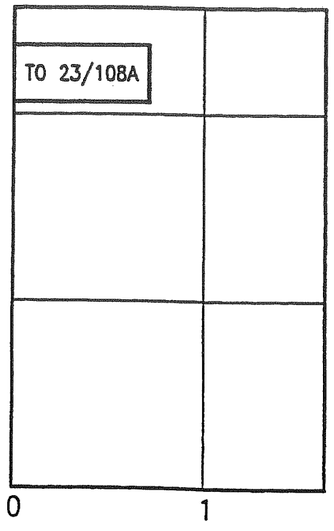
SURVEY No: 23-94-499-CH
SURVEY BY: J. Rowsell/T. Rowell

INST TYPE			
SERIAL No	N. A	N. A	N. A.
CAL DUE DATE			

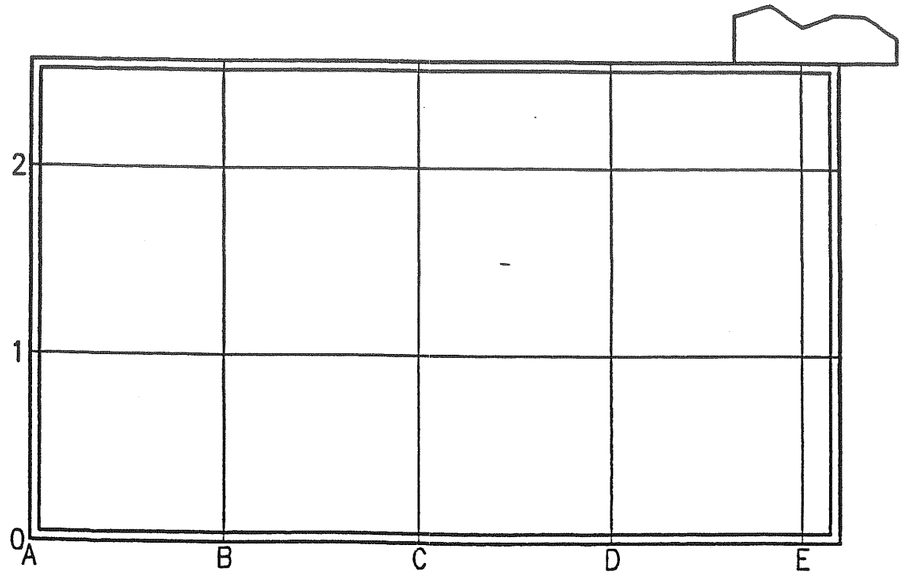
GRID PATTERN = 3 METER



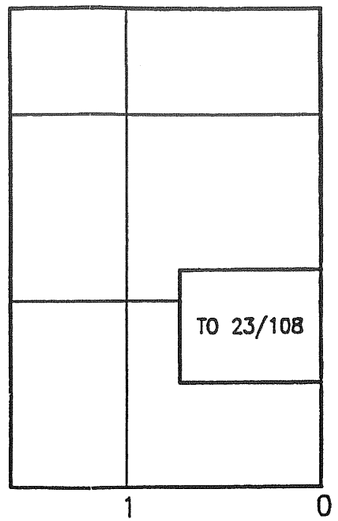
EAST WALL



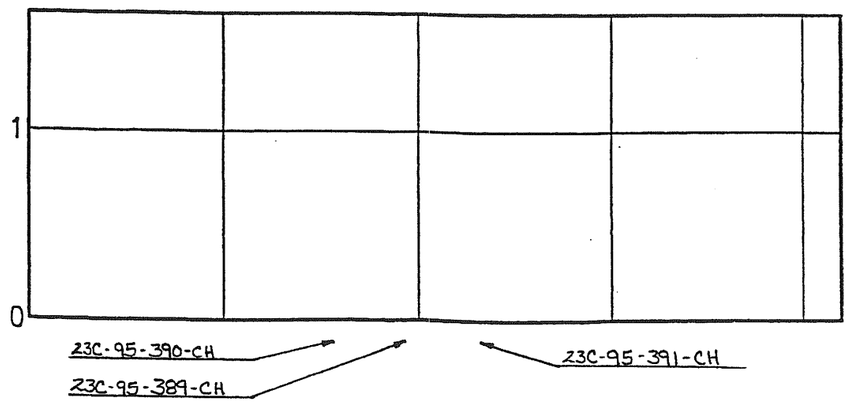
NORTH WALL



ROOF



SOUTH WALL



WEST WALL

ROOM NO.	23/108–EXTERIOR
MEMO NO.	HCI:267:V8:94

MAP#: 23- 999	LOCATION: HCF YARD, Outside Hepa Unit	DATE: 11-15-94	TIME 0930	SURVEY # 23-94-0-0-5-8-4 CH

Survey of HCF yard Hepa Ventilation Unit. Also Survey of Booster Plenum Filter Housing. A total of 27 smears were taken. Smears (9) taken on Booster Unit Into Hepa Housing Reading 2K dpm/100cm^2 (18) taken on Hepa filter Box 3K dpm/100cm^2 (20) taken on front lip of of filter Box 8K dpm/100cm^2 (25) Taken on lip of door were Hepa filters are placed. (27) Taken on the Outside of Hepa filter Box 1K dpm/100cm^2 All other smears <1000dpm/100cm^2 B'd No indications of alpha present. Highest Dose Rates in Area Contact 40 mr/hr. At 30cm 12 mr/hr. General Area Dose rate <2 mr/hr. If any indications are present to open the Booster Plenum Filter Box See map# 23-94-00325 attached. Any other information needed for review please See attached Log entry 10-6-94 @ 1020.

Exception #78 ~~Internal~~ / External Hepa Vent, Plenum Box - Airpumps, Fans, Motors System - Housing - Ducting - Filters

~~See Sig. 11-16-94~~

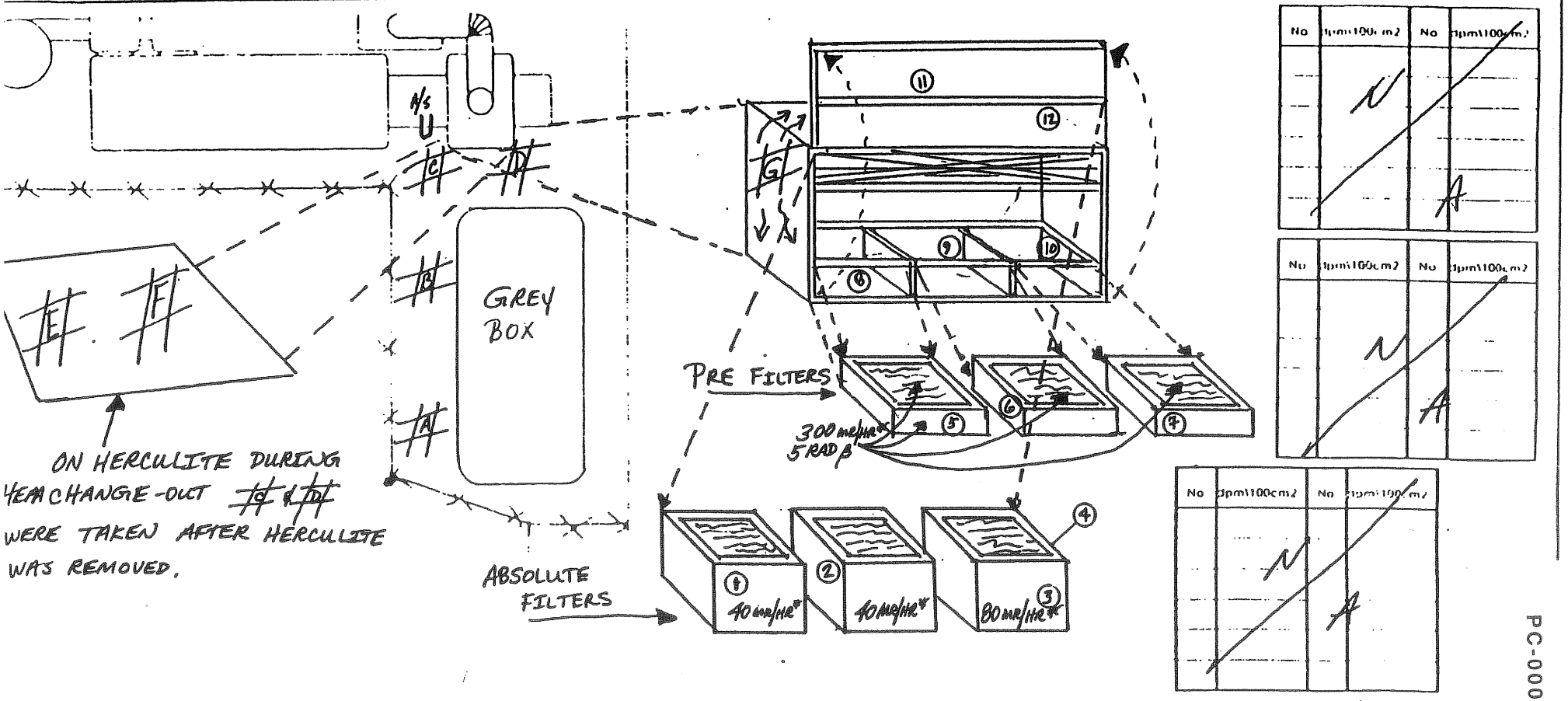
PC-000456/0

COPY

SURVEYOR: Weston Butterfield	REVIEWED BY: Douglas A. Warren	DATE: 11-15-94	JOB RWP# 94-0028	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	502 2938 1-11-95	RM 14 303510 12-13-94	BC-4 34053 3-20-95

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm^2 β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 3-125A	LOCATION: HCF YARD BOOSTER PLENUM FILTER CHANGE-OUT	DATE: 07/20/94	TIME 0730	SURVEY # 23-94 00325



No	dpm/100cm2	No	dpm/100cm2

No	dpm/100cm2	No	dpm/100cm2

No	dpm/100cm2	No	dpm/100cm2

PC-000456/0

KEY			No.	dpm/100 cm²	No.	dpm/100 cm²
SMEAR	◆	H³ SMEAR	①	10K	⑦	40K
LARGE AREA SMEAR	✱✱✱	BOUNDARY	②	8K	⑧	400K
AIR SAMPLE LOCATION		(Show sample Id in Remarks)	③	8K	⑨	300K
CONTACT DOSE RATE	+	12" DOSE RATE	④	12K	⑩	20 MRAD
BETA DOSE RATE ONLY	α	ALPHA ONLY	⑤	30K	⑪	25K
HOT SPOT	Δ	NEUTRON DOSE RATE	⑥	30K	⑫	10K

Remarks (see Note 4 below)

~~1A~~ THRU ~~1G~~ = <1K/LAS, ~~1D~~ = 5K/LAS

~~1E~~ = 400K/LAS ON HERCULITE, ~~1F~~ = 40K/LAS ON HERCULITE

~~1G~~ = 8K/LAS TAKEN AFTER JOB COMPLETED.

COPY

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	RO-2	RM-14	RADECO
G. RABBITT	Adrian Lucy	7-26-94	3-017		2938 09/06/94	30357-04 12/15/94	33562 05/26/95

(1)All radiation readings are in mR/hr unless otherwise shown (2)All smears not listed above or on supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear (3)Indicate RWP

Hot Cell

PC-000456/0

NOTEBOOK NO. 11088
ISSUED TO LR QUINTANA → J. Sills 8/15/94
ORG. NO. 176
DATE 3-30-94

LABORATORY NOTEBOOK

GENERAL ATOMICS
PROPRIETARY INFORMATION

GENERAL ATOMICS

COPY

0900 - COMPLETED DAILY ROUTINES.
CONTINUED WORKING ON INSTRUMENT INVENTORY LIST.
DELIVERED ORIGINAL HCF A/S DATA SHEETS FOR
1300 MONTH of SEPTEMBER TO MARY PERRY, BLD 15, RECORDS

K. ELLIOTT/KS Elliott

1100 - SAC-4 # 19326 WAS SENT TO MARIO MONREAL AT CAL. LAB. DUE TO HIGH BKG. FAILURE.

Y. C.

0745 - CONTINUE WORKING ON MONTHLY ROUTINES
1020 - PROVIDE H.P. SUPPORT FOR RICK JESSE AS HE INSPECTS A HEPA PRE-FILTER ON THE MAIN UNIT. PRE-FILTER <2 MR.
MASSENN ON UNIT OPENING 400 mR/h
RO-2 #5865
CAL. DUE 11/01/94
SAR

1300 - PROVIDE H.P. SUPPORT - TO ASSIST DRESSING OUT O.P.'s. PERSONNEL FOR ESTES DISMANTLEMEN
(1430 - 1545) - SURVEY FOR FREE RELEASE ITEMS LISTED ON SURVEY #23-94-00469.
SAR

0900 - 1130 T. Lomen, J Bennett into 109 with Bubbleheads to continue cutting SE Mike Dupray

1330 - 1515 R. Tomlin, Woodhouse into 109 with Bubbleheads to clean up & package cut pieces. Mike Dupray
Surveyed CA. See #493

1430 Completed All Post J-03 Reviews for 3rd QTR Rwp's Except ESTES.

Signed: _____ Date _____
Read and understood by
Signed: Douglas C. Warren Date 10/21/94

COPY

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23- S.S.Pit	HOT CELL YARD STACK SAMPLING PIT	11-04-94	0800	23-94-0-0-5-8-5-CH

R1 STACK SAMPLING PIT IS A CONFINED SPACE LOCATED IN HOT CELL YARD WITHIN A CONTAMINATED AREA.

R2 ALL SURFACES ARE UNPAINTED CONCRETE SLAB.

R3 THERE ARE NUMEROUS PIPE PENETRATIONS WITHIN ROOM, PRIMARILY ELECTRICAL. THERE IS NOT AN APPARENT DRAIN.

R4 NON-FUNCTIONING LIGHT SWITCH AT TOP OF LADDER.

R5 HORIZONTAL SURFACE FULL OF DUST-DIRT, MISC. DEBRIS.

91E UNDER, BEHIND AND INTERNAL VARIOUS PIECES OF INSTRUMENTATION ON WALLS AND FLOOR.

☐ SMEARS (1)-(7) AND (9)-(15) <1,000 dpm/100cm². SMEAR (8) 8,000 dpm/100cm². 5% SMEARS COUNTED FOR ALPHA <20 dpm/100cm²

☐ DIRECT FRISK SURVEY PERFORMED AT A MINIMUM OF GRID INTERSECTIONS, PENETRATIONS, INSTRUMENTATION, DISCOLORATIONS AND ANY OTHER SUSPECT LOCATIONS. ALL AREAS <1,000 dpm/PROBE AREA WITH THE EXCEPTION OF SAMPLE LOCATION 23C-94-173-CH AT BASE OF LADDER READING 40,000 dpm/PROBE AREA.

R6 SAMPLE 230-94-069-CH IS MISC. DEBRIS TAKEN FROM GENERAL AREA FLOOR SURFACE.

A-159

PC-000456/0

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
PRESTON BUTLER/NEXTEL	Douglas A. Warren	11-16-94	4-028		N/A	N/A	N/A

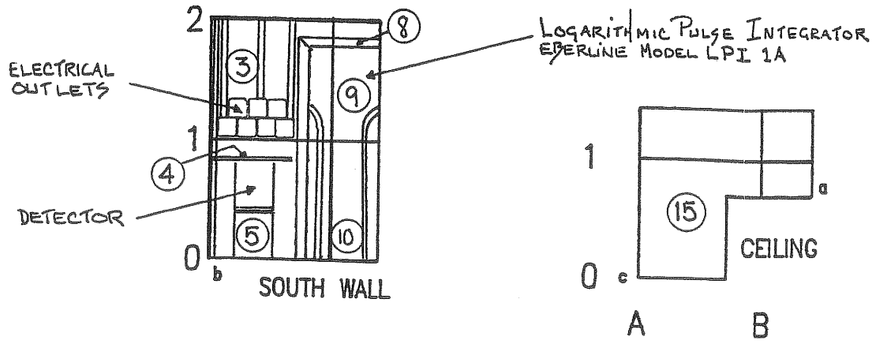
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP I Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

COPY

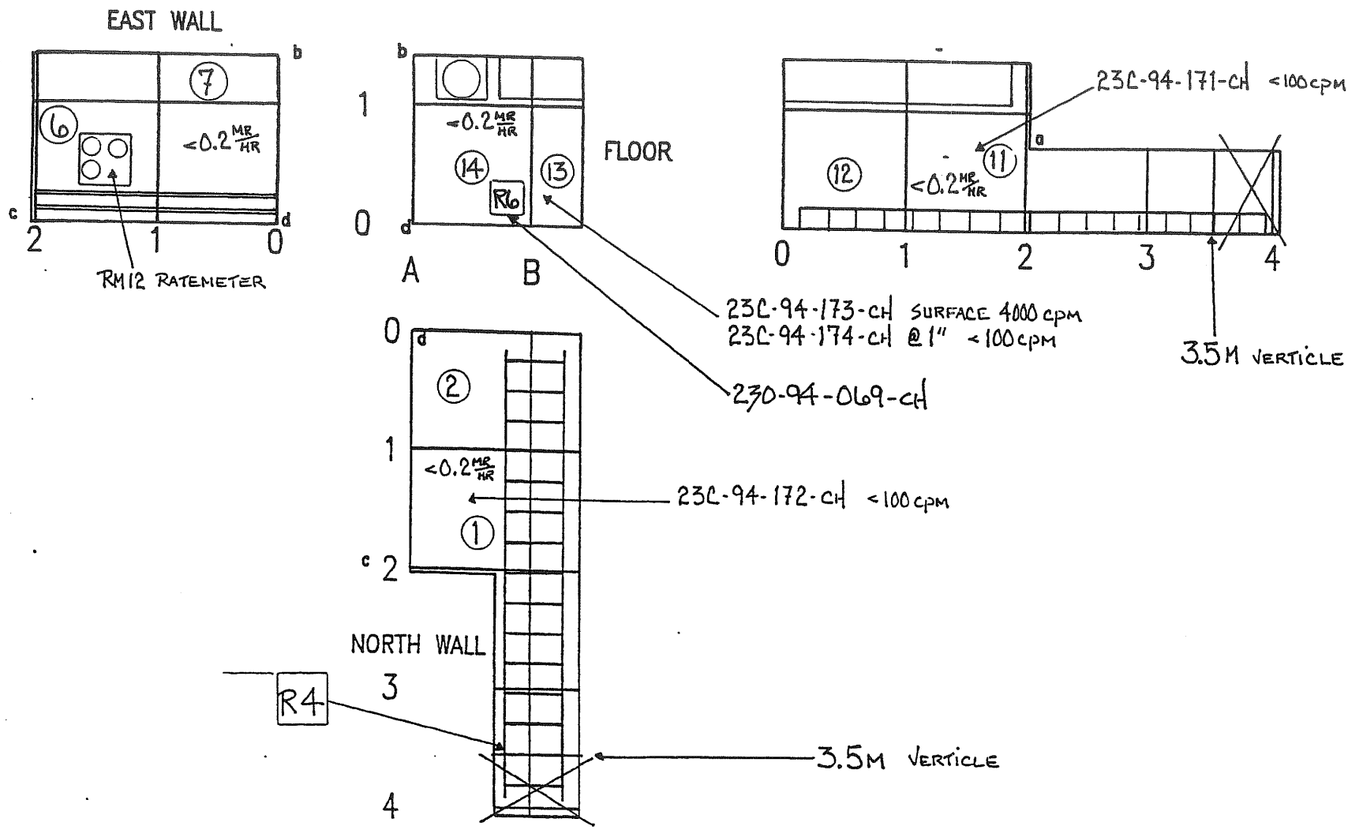
SURVEY No: 23-94-585-CH
SURVEY BY: P. BUTLER

INST TYPE	TELETECTOR	RO2	LUDLUM 3
SERIAL No	34618	2938	4687
CAL DUE DATE	05-01-95	01-11-95	04-12-95
GRID PATTERN = 1 METER	BC 4	LUDLUM177	
	34503	73599	
	03-20-95	03-18-95	

STACK SAMPLING PIT



BACKGROUND RADIATION LEVELS GENERAL AREA
<0.2 MR/HR
150 CPM

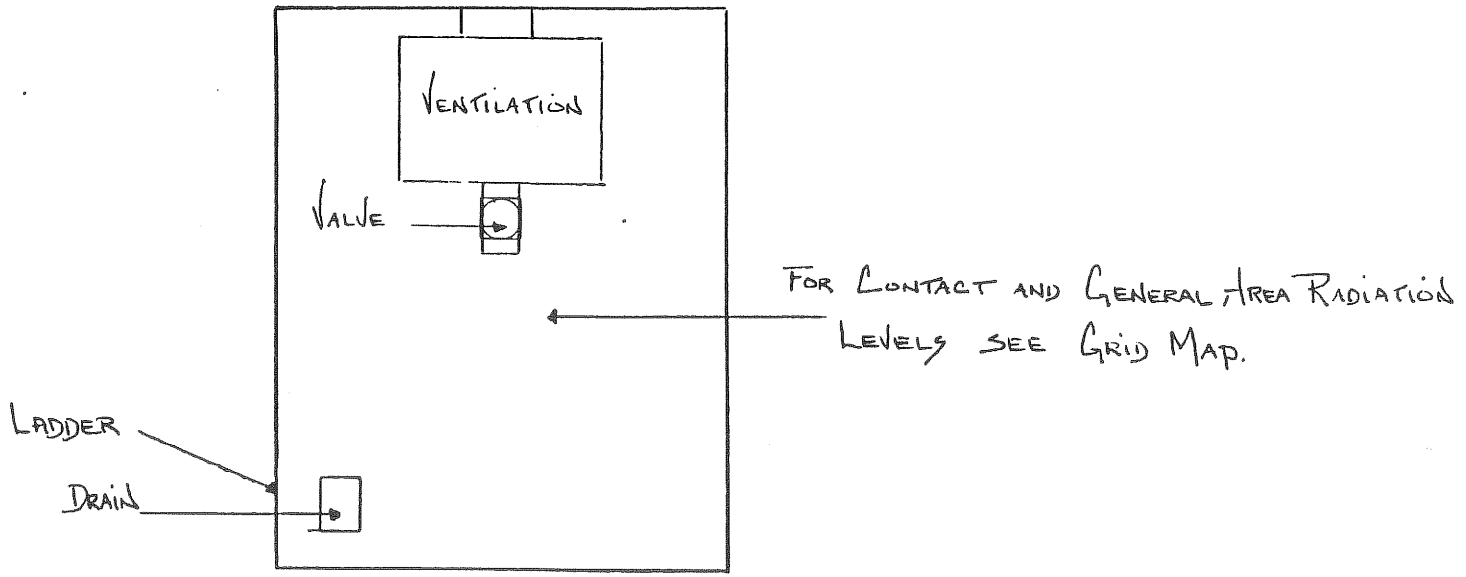


R1
R2
R3
~~R4~~ R5
Out 11-4-94
91E

ROOM NO.	23/S.S.PIT
MEMO NO.	

MAP#: H.L.. YARD 23-999	LOCATION: MAIN CELL VENTILATION EXHAUST PIT	DATE: 11-22-94	TIME 0900	SURVEY # 23-94-0-0-6-0-3-CH

CONFINED SPACE



A-161

PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/ L.A.S	Remarks (see Note 4 below)
⊙	SMEAR	◆	H^3 SMEAR			#A	2,000 R1	R1 L.A.S - NO HOT PARTICLES DETECTED ON VALVE & DUCT.
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY					R2 DRAIN IN BOTTOM OF VAULT FLOWS DIRECTLY INTO SOIL. DRAINAGE IS EXTREMELY SLOW.
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)						☐ ALL SMEARS < 1,000 dpm/100cm². PIT WITHIN CONTAMINATED AREA.
✳	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A	☐ WALLS AND FLOOR UNPAINTED SLAB CONCRETE. SURVEYED FOR BETA RADIATION WITH RO2. NONE DETECTED.
β	BETA DOSE RATE ONLY	α	ALPHA ONLY					
HS	HOT SPOT	Δ	NEUTRON DOSE RATE					

SURVEYOR: T. BUTLER T. HUNTER D. WARREN	REVIEWED BY: Douglas A. Warren	DATE: 11-29-94	JOB RWP# 4-028	INST. TYPE:	RO2	RM14	
				SERIAL NUMBER	2438	30357-04	N/A
				CAL DUE DATE:	01-11-95	12-13-94	

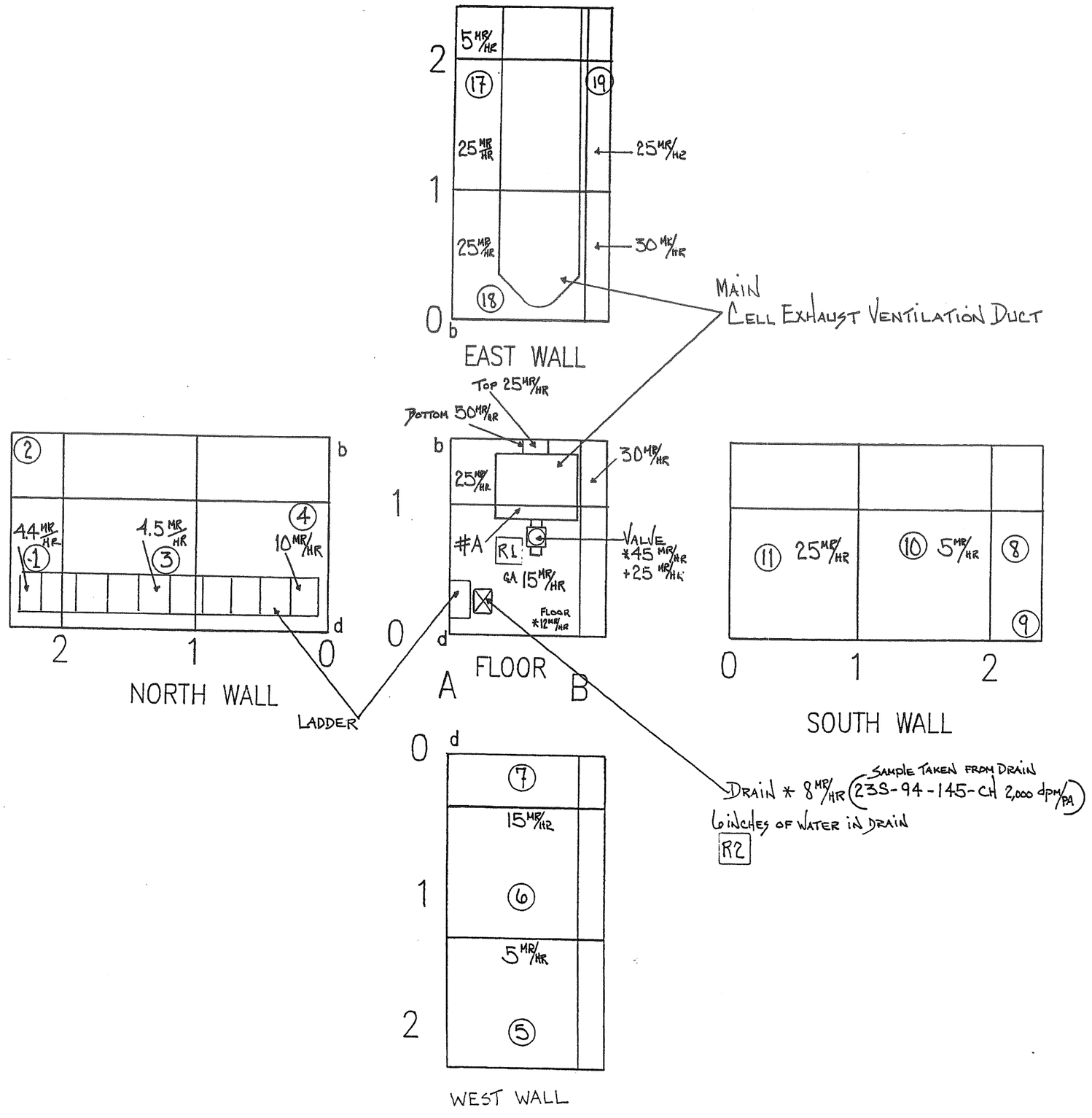
(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

SURVEY No: 23-94-00603-CH

SURVEY BY: P. BUTLER: [illegible] D. WARREN Douglas Q. Warren

INST TYPE	RO2	RM 14	
SERIAL No	2938	30357-04	N/A
CAL DUE DATE	01-11-95	12-13-94	

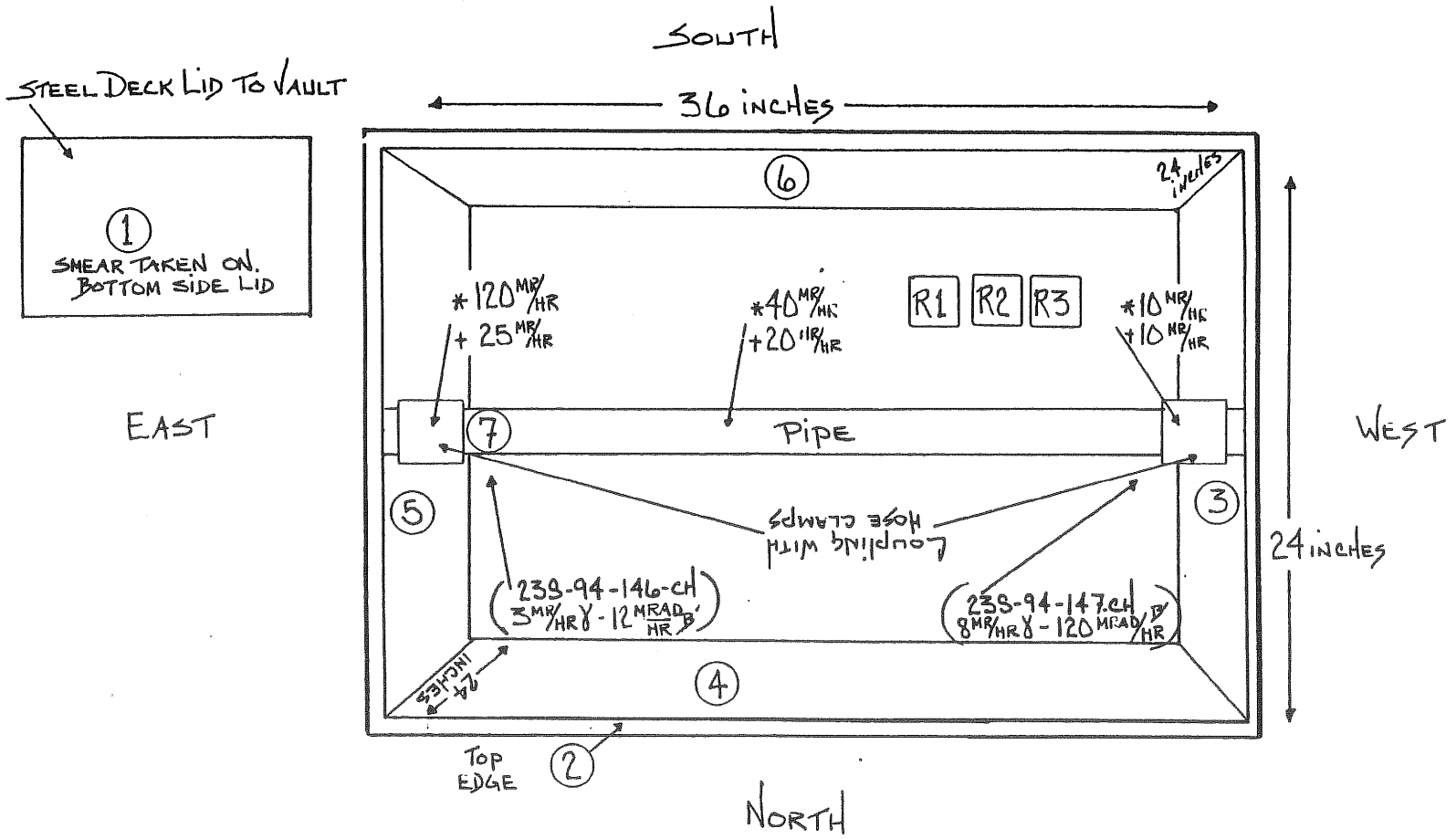
GRID PATTERN = 1 METER



CONFINED SPACE

ROOM NO.	23/HEPA-PIT
MEMO NO.	

MAP#: H.C.F 23-999 D	LOCATION: LIQUID WASTE DRAIN SYSTEM ACCESS VAULT	DATE: 11-22	TIME 0900	SURVEY # 23-94-0-0-602-2-CH



A-163

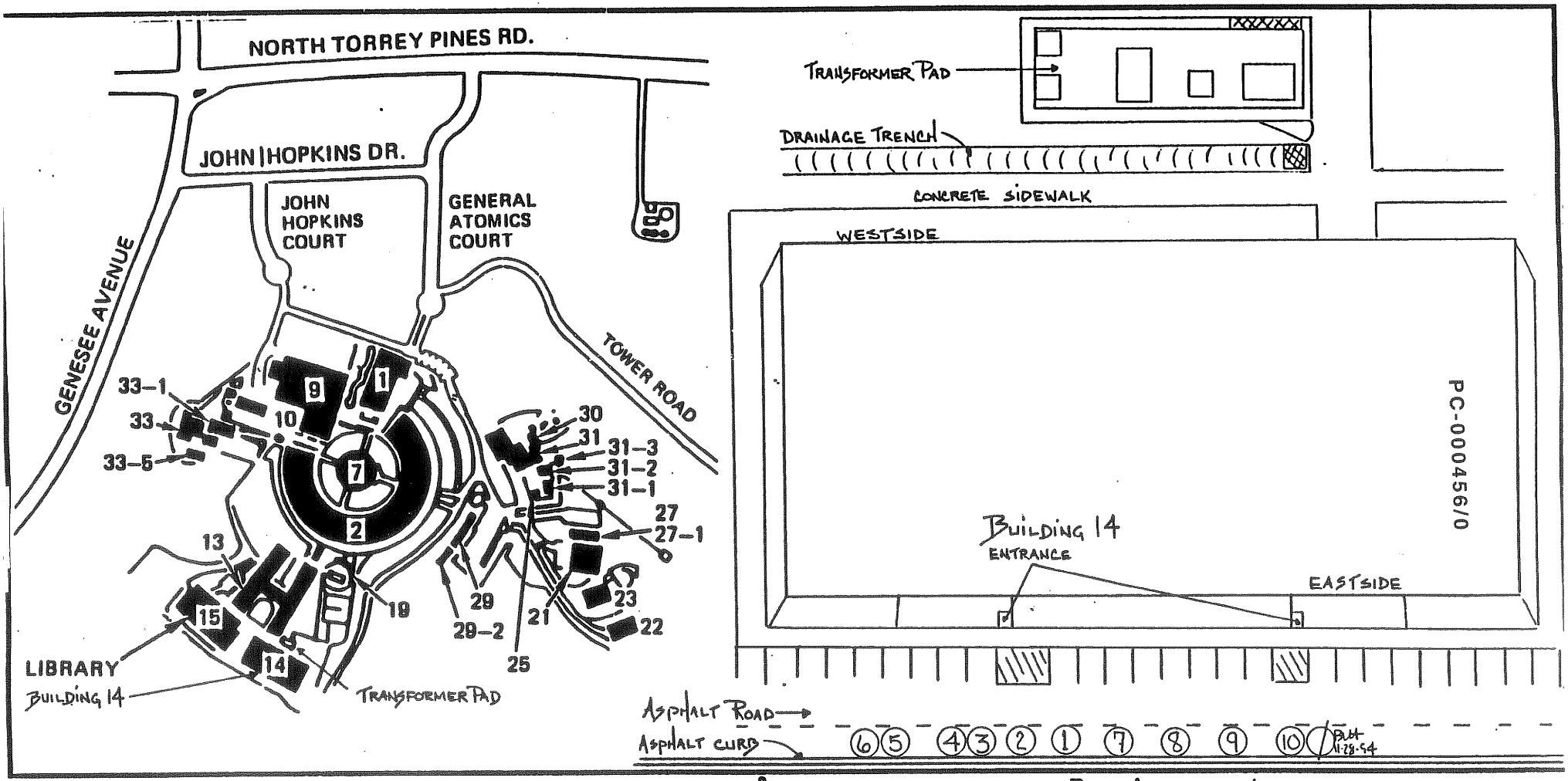
PC-000456/0

KEY				No.	dpm/100 cm²	No.	dpm/100 cm²	Remarks (see Note 4 below)
○	SMEAR	◆	H^3 SMEAR	1.	<1,000	7.	6,000	R1 APPRX. 3 INCHES OF MUD IN BOTTOM OF VAULT
#	LARGE AREA SMEAR	✱✱✱	BOUNDARY	2.	2,000	N/A		R2 VAULT - FLOOR AND WALLS CONCRETE SLAB - NO PAINT
[ ]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)		3.	1,000			R3 PIPE, COUPLINGS AND SURFACE OF MUD SURVEYED FOR BETA
✱	CONTACT DOSE RATE	+	12" DOSE RATE	4.	3,000		N/A	RADIATION WITH RO2. NO DETECTABLE BETA.
β	BETA DOSE RATE ONLY	α	ALPHA ONLY	5.	200,000			☐ ORIGIN OF MUD IN BOTTOM OF VAULT FROM ADJACENT DIRT SLOPE.
HS	HOT SPOT	Δ	NEUTRON DOSE RATE	6.	1,000		N/A	☐ NO CONCRETE SAMPLES TAKEN.

SURVEYOR: L. HUNTER / D. WARREN	REVIEWED BY: Douglas A. Warren	DATE: 11-28-94	JOB RWP# 4-028	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:	RO2 / 2938 / 01-11-95	RM4 / 3035704 / 12-13-94	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP for Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-999	LOCATION: EAST SIDE BUILDING 14 ROAD CURB	DATE: 11-28-94	TIME 1700	SURVEY # 23-94-0-0-6-1-1-CH



KEY				No.	dpm/100 cm²	No.	dpm/
⊙	SMEAR	◆	H^3 SMEAR				
#	LARGE AREA SMEAR	✕✕✕	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

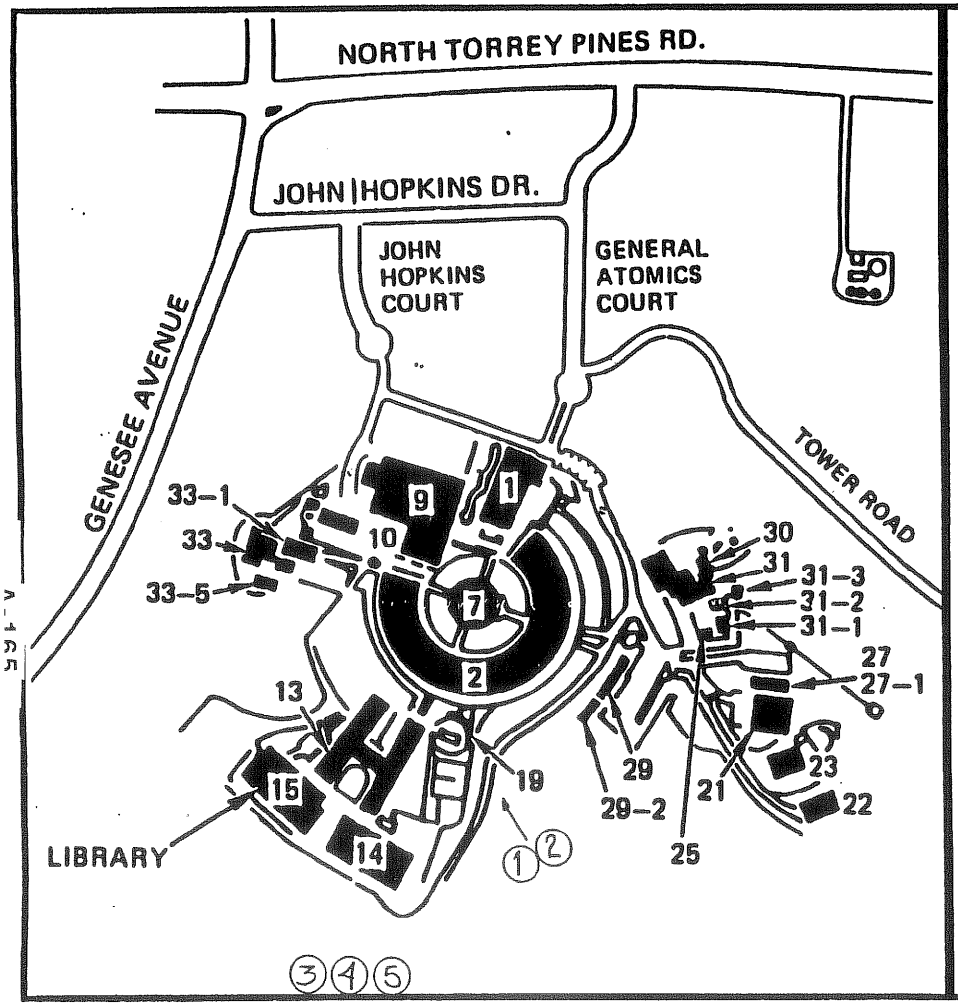
(1) 23BL-94-026-CH	(7) 23BL-94-032-CH	ORIGINAL SITE ASPHALT
(2) 23BL-94-027-CH	(8) 23BL-94-033-CH	SELECTED FOR BACKGROUN
(3) 23BL-94-028-CH	(9) 23BL-94-034-CH	ASPHALT SAMPLES FOR
(4) 23BL-94-029-CH	(10) 23BL-94-035-CH	CHARACTERIZATION PURPOSES
(5) 23BL-94-030-CH	N/A	OF THE HOT CELL FACILITY.
(6) 23BL-94-031-CH	A	

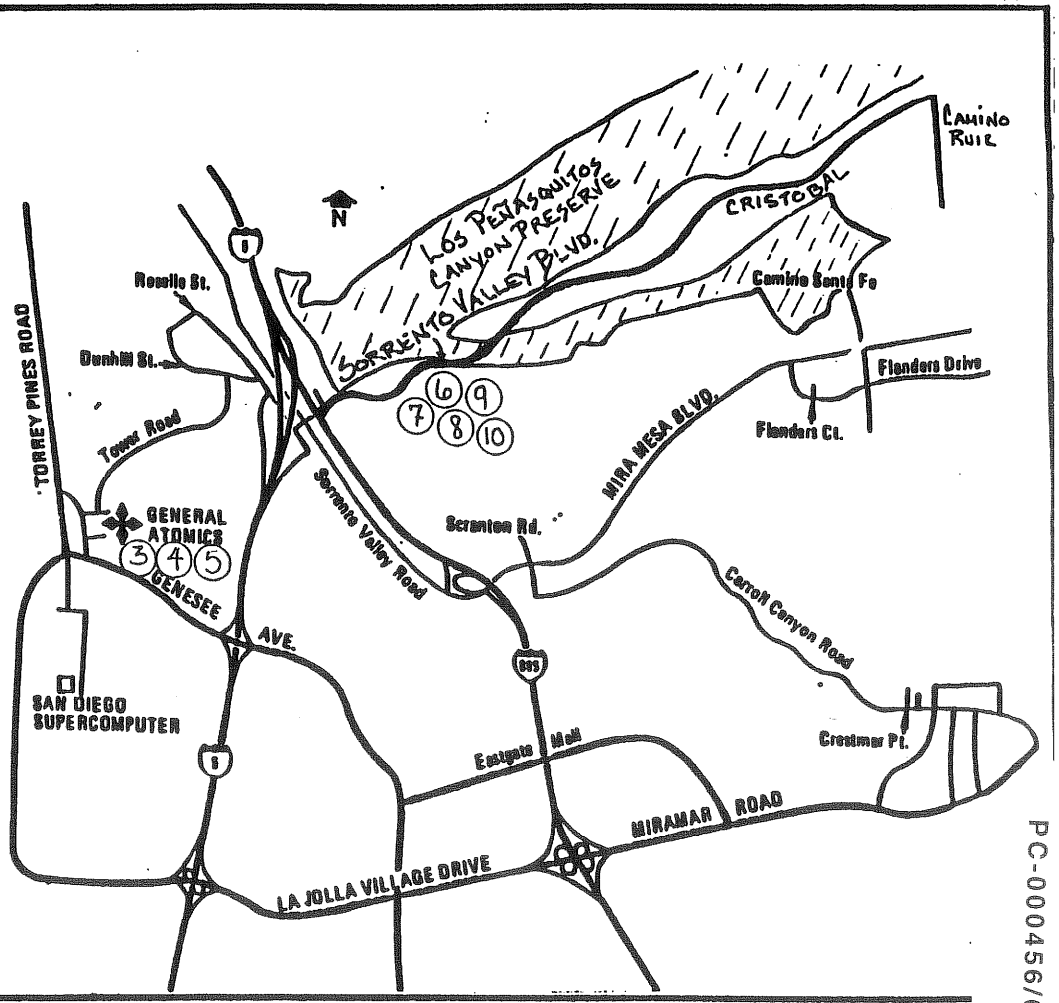
SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER/BH	Douglas A. Warren	11-28-94	4-028		LUDLUM 3 / 74173 / 05-08-95	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-999	LOCATION: Soil outside General Atomics Boundary	DATE: 11-28-94	TIME 1700	SURVEY # 23-94-0-0-6-1-0-CH 2

Rev'd 11-28-94





A-165

PC-000456/0

KEY

				No.	dpm/100 cm²	No.	dpm/
O	SMEAR	◆	H^3 SMEAR				
#	LARGE AREA SMEAR	***	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

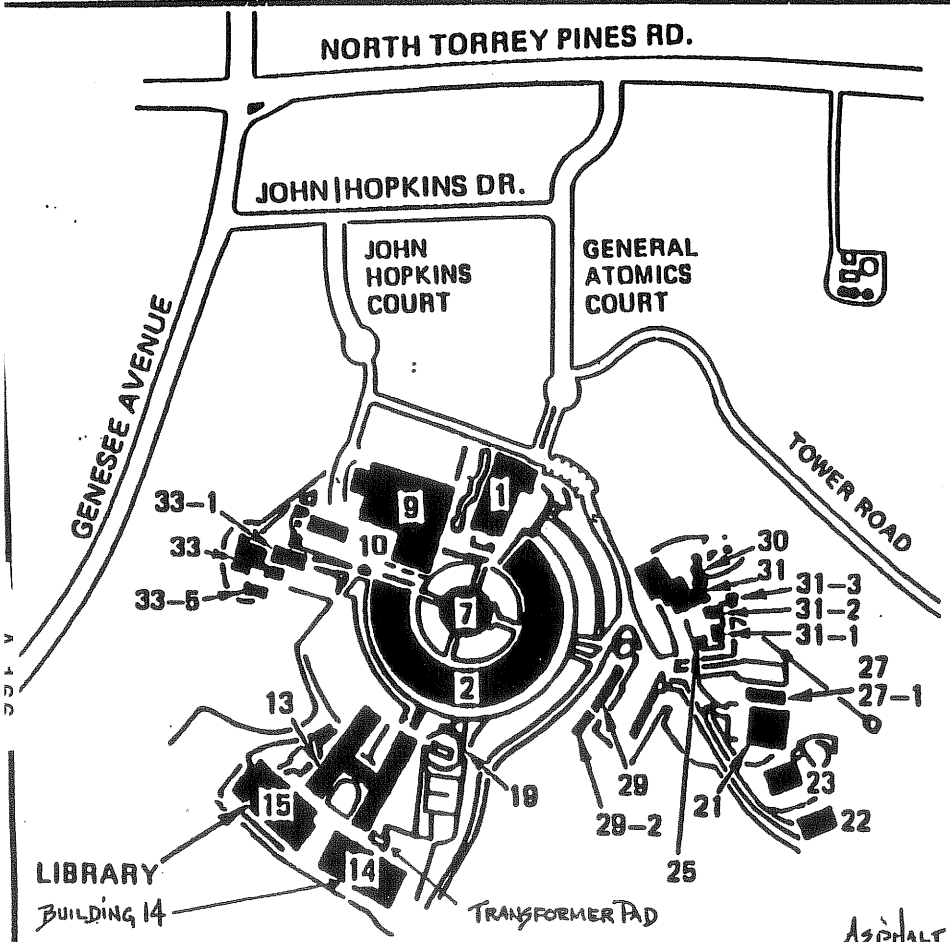
Remarks (see Note 4 below)

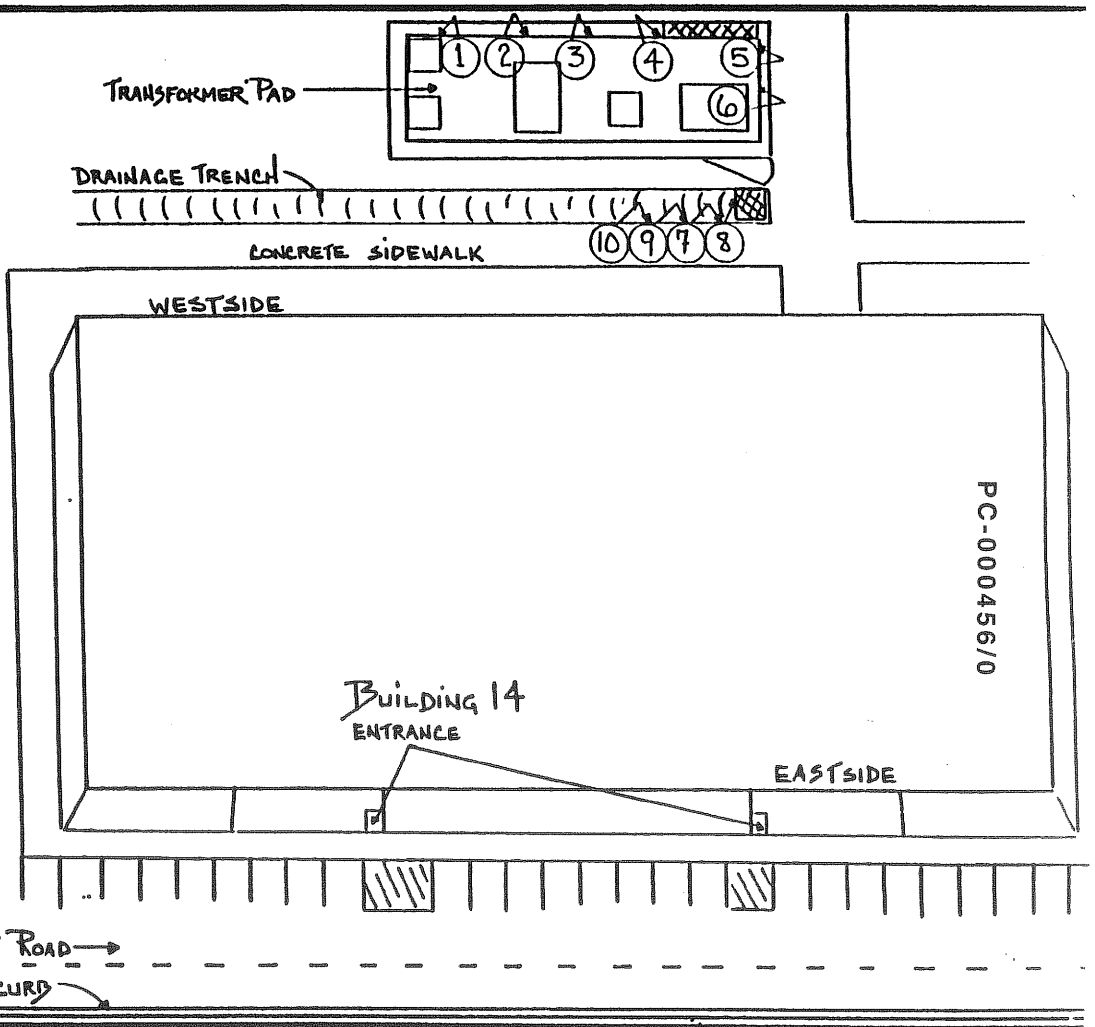
(1) 23S-94-148-CH	(7) 23S-94-154-CH	SOIL SAMPLE	SURFACE FOR
(2) 23S-94-149-CH	(8) 23S-94-155-CH	LOCATIONS WERE	BACKGROUND
(3) 23S-94-150-CH	(9) 23S-94-156-CH Rev'd 11-13-94	SELECTED AT	SAMPLE -
(4) 23S-94-151-CH	(10) 23S-94-157-CH	AREAS WITH AN	CHARACTERIZATION
(5) 23S-94-152-CH	N/A	ORIGINAL AND	PURPOSES O
(6) 23S-94-153-CH	N/A	UNDISTURBED	THE HOT CELL FACILI

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
B. HUNTER / D. WARREN	Douglas A. Warren	11-30-94	4-028	Ludlum 3 / 74173 / 05-08-95	N/A	N/A	

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

MAP#: 23-999	LOCATION: WEST SIDE BLDG. #14 - TRANSFORMER PAD AND DRAINAGE TRENCH AREA	DATE: 11-20-94	TIME 1700	SURVEY # 23-94-0-0-6-1-0-CH





KEY				No.	dpm/100 cm²	No.	dpm/
○	SMEAR	◆	H^3 SMEAR				
#	LARGE AREA SMEAR	×××	BOUNDARY				
⫴	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

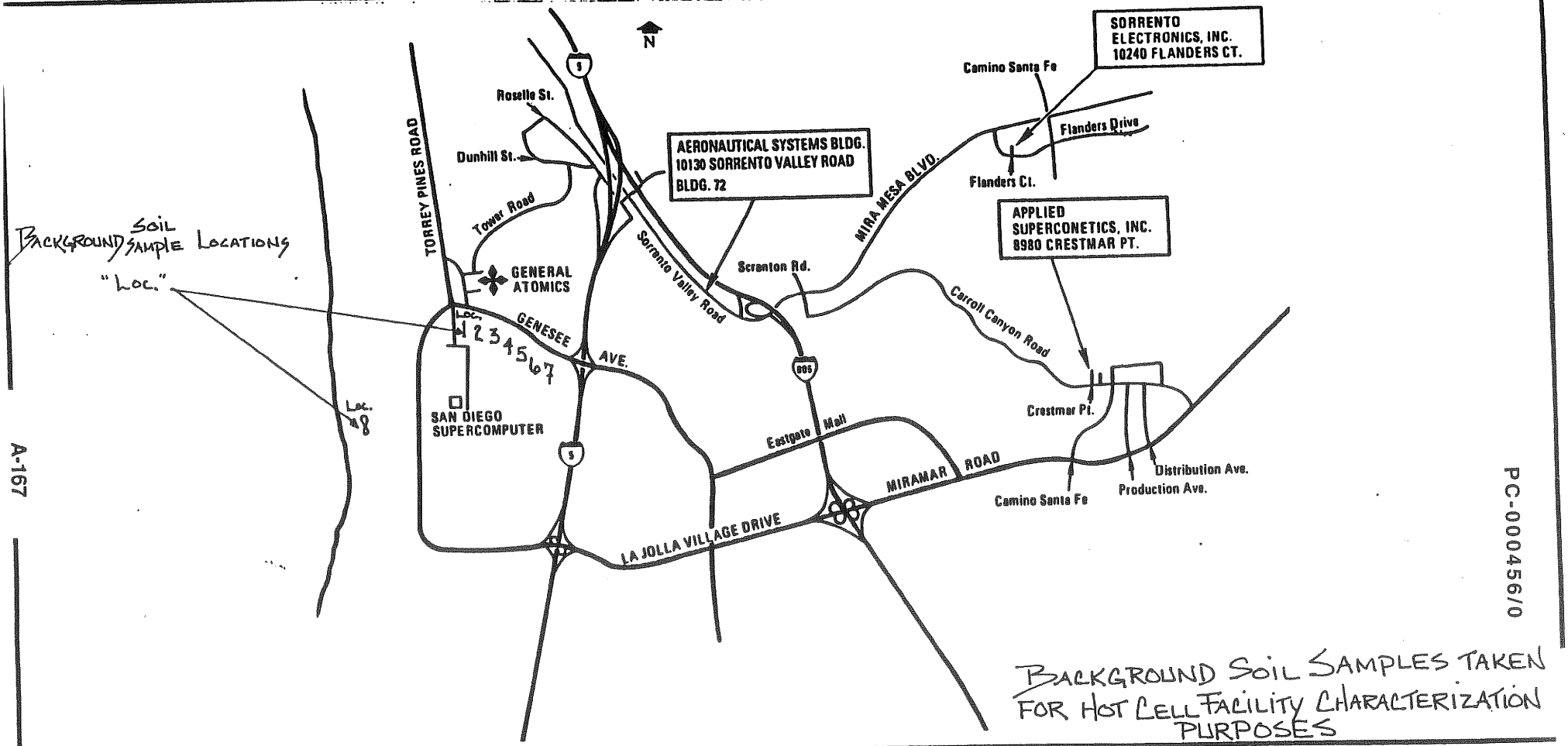
Remarks (see Note 4 below)

(1) 23C-94-197-CH	(7) 23C-94-203-CH	ORIGINAL SITE CONCRETE
(2) 23C-94-198-CH	(8) 23C-94-204-CH	SELECTED FOR BACKGROUN
(3) 23C-94-199-CH	(9) 23C-94-205-CH	CONCRETE SAMPLES FOR
(4) 23C-94-200-CH	(10) 23C-94-206-CH	CHARACTERIZATION PURPOSE
(5) 23C-94-201-CH	N/A	OF THE HOT CELL FACILITY
(6) 23C-94-202-CH		

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER / [signature]	Douglas A. Warren	11-28-94	4-028	LUDLUM 3 / 74173 / 05-08-95	N/A	N/A

(1) All radiation readings are in mR/hr unless otherwise shown (2) All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear α. L... Sta... indicate RW

MAP#:	LOCATION:	DATE:	TIME	SURVEY #
23-Vicinity of General Atomics	ORIGINAL AND UNDISTURBED SOIL	12-09-94	1200	23-94-0-0-6-1-6-CH



A-167

PC-000456/0

BACKGROUND SOIL SAMPLES TAKEN FOR HOT CELL FACILITY CHARACTERIZATION PURPOSES

KEY				No.	dpm/100 cm²	No.	dpm/
O	SMEAR	◆	H^3 SMEAR				
#	LARGE AREA SMEAR	***	BOUNDARY				
[]	AIR SAMPLE LOCATION	(Show sample Id in Remarks)					
*	CONTACT DOSE RATE	+	12" DOSE RATE		N/A		N/A
β	BETA DOSE RATE ONLY	α	ALPHA ONLY				
HS	HOT SPOT	Δ	NEUTRON DOSE RATE				

Remarks (see Note 4 below)

23S-94-158 Loc. 1 @ 0"	23S-94-164 Loc. 4 @ 0"	23S-94-170 Loc. @ 0"
23S-94-159 Loc. 1 @ 12"	23S-94-165 Loc. 4 @ 12"	23S-94-171 Loc. @ 12"
23S-94-160 Loc. 2 @ 0"	23S-94-166 Loc. 5 @ 0"	23S-94-172 Loc. @ 0"
23S-94-161 Loc. 2 @ 12"	23S-94-167 Loc. 5 @ 12"	23S-94-173 Loc. @ 12"
23S-94-162 Loc. 3 @ 0"	23S-94-168 Loc. 6 @ 0"	ALL SAMPLES < 1,000 dpm/100cm²
23S-94-163 Loc. 3 @ 12"	23S-94-169 Loc. 6 @ 12"	ALL SAMPLE #'S END W/ CH

SURVEYOR:	REVIEWED BY:	DATE:	JOB RWP#	INST. TYPE: / SERIAL NUMBER / CAL DUE DATE:			
BARBARA HUNTER / DOUG WARREN	Douglas A. Warren	12-19-94	4-028		RM 14 8075 06-08-95	N/A	N/A

(1)All radiation readings are in mR/hr unless otherwise shown.(2)All smears not listed above or on a supplemental map are <1000 dpm/100 cm² β-γ or <1000 dpm/smear β-γ (LAS)(3)Indicate RWP Job/Coverage surveys.(4)Please indicate any additional "Remarks" on survey map.

COPY

APPENDIX B—COMPLETED HAZARDOUS CONSTITUENT SURVEY FORMS

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Block Wall, 1 Telephone Term Block, Thick Paint of different colors, 2 Plug Outlet built into the wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/09/29/001/P	A + 2.5, 1.5	Paint Chips

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Same Paint and Construction Material as North Wall, all Electrical Boxes and Conduit attached to surface of wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: [signature] DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 9:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile Floor - no spills. Ameritech believes tile to contain asbestos.
Electrical Junction Box and Terminal

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Insulation in wall, 3' x 4' Glass Window x2, Door Hardware is Brass, No Electrical Boxes or outlets

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 11:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Insulation around air vent, Overhead Sprinkling System - some parts are Brass, (2) Fluorescent Light Fixtures with (4) Bulbs and (2) Ballasts, Painted Ceiling Tiles

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 11:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: From construction drawings it is known that asbestos material was used in the construction of this wall.

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 10:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 103

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ STEEL DECK
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Looks like original paint - one coat

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: DC DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[x]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[x]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[ ]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[ ]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Glass Windows, Painted Wood Walls, Insulation in Wall, Brass Door Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/03/002/P	C + 3.5, 0.5	Paint Debris

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:55 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☒ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Asbestos Tile and Adhesive, no spills

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature] DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:50 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass Sprinkler Heads, Painted Ceiling Tiles, 6 Fluorescent Bulbs, 3 Ballasts

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Glass Windows, Brass Door Hardware, Insulation in Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:30 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Block Wall, painted different colors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:40 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-7-94 ROOM NO. 102

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☒ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Asbestos Insulation in wall, Painted, Glass Windows

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: [signature] DATE: 9-7-94

PRINTED NAME: David Coppinger TIME: 1:45 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: 8 Glass Windows, Asbestos used in construction of wall, Painted Metal Wall, Power Strip

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/04/003/P	D + 5, 1.5	Paint Chips

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 2:21 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Block Wall, 3' x 5' Sliding Glass on Aluminum track and frame, Chalk Board with Lead counter weight

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See South Wall		

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 1:50 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Asbestos Tile and Adhesive, no spills

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 2:30 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: 6 Light Fixtures, 12 Fluorescent Bulbs, 6 Ballasts, Painted Tiles, 6 Brass Sprinklers

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 2:14 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass Door Hardware, Insulation in Wall, 1 Glass Window, Painted Fiberboard

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See South Wall		

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 2:26 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-13-94 ROOM NO. 100

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [x] Asbestos, Friable
- [x] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Insulation in Wall, Painted Fiberboard, (2) 3' x 4' Glass

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See South Wall		

INSPECTED BY: _____ DATE: 9-13-94

PRINTED NAME: David Coppinger TIME: 1:55 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Phone Box on wall, Metal Plate on wall- possible Brass, Alarm Systems/Electrical

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/12/005/P	D + 0.5, 0.5	Paint Debris

INSPECTED BY: _____ DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [x] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [x] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Door with possible Brass Hardware with Oil, Electrical Box and Panel

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: [signature] DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Doors with Brass Hardware , Lots of Electrical Equipment in Alarm System

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: [signature] DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Drinking Fountain with possible Brass Fixtures, Electrical Outlets and Conduit with wiring

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☒ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☒ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Fire Sprinklers and Heat Detectors - possible Brass, Fluorescent Lights, Painted Ceiling tiles - possible Asbestos

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. 104

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☒ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Drinking Fountain - possible Brass Hardware, Tile is potentially Asbestos containing

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 3:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE:
- [x] EAST
- [ ] WEST
- [ ] NORTH
- [ ] SOUTH
- [ ] FLOOR
- [ ] CEILING

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [x] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [x] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Door with Brass Hardware, Oil in hardware, 1 Light switch, 1 Electrical Outlet

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/05/004/P	B + 5, 3.5, 1.5	

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Metal Plate on wall in toilet area may be Brass

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Toilet Fixtures may contain Brass

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Brass Coat Hanging Hooks on wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile materials potentially Asbestos containing. Lead Joints in drain lines

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Ladies Bathroom

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: 2 Sprinklers, Heat Detectors with possible Brass, Light Bulbs (non-fluorescent)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-22-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile with possible Asbestos, Door with Brass Hardware, Oil in door hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile with possible Asbestos, Toilets with possible Brass

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [x] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Tile with possible Asbestos

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/12/006/P	C + 5, 2.1, 0.5	

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE:
- ☐ EAST
- ☒ WEST
- ☐ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile with possible Asbestos, Sink and Urinal with possible Brass Fixtures

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile with possible Asbestos, Brass Drain Cover, Drain Lines contain Lead

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. Mens Bathroom

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Fire Detectors and Sprinklers- possible Brass. Lights (non-fluorescent)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-19-94 ROOM NO. Coffee Room

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Plaster Ceiling, Painted, Trap Door, Brass Sprinklers

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-19-94

PRINTED NAME: David Coppinger TIME: 12:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-19-94 ROOM NO. Coffee Room

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Plaster Wall, Electrical Boxes and Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-19-94

PRINTED NAME: David Coppinger TIME: 11:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-19-94 ROOM NO. Coffee Room

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall, Copper Drain Pipe, Lead Solder

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 9-19-94

PRINTED NAME: David Coppinger TIME: 11:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-14-94 ROOM NO. Coffee Room

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Plaster Wall, Conduit and Electrical Outlet. Sink may contain Brass Components

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/12/007/P	A + 1.0, 0.5	Paint Debris

INSPECTED BY: _____ DATE: 9-14-94

PRINTED NAME: David Coppinger TIME: 2:30 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-19-94 ROOM NO. Coffee Room

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Electrical Boxes and Conduit, Light Switch, Brass Door Hardware, Oil in Door Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: [signature] DATE: 9-19-94

PRINTED NAME: David Coppinger TIME: 11:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-19-94 ROOM NO. Coffee Room

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass Equipment on floor, Drain Lines possibly contain Lead Joints, Tile possibly Asbestos

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-19-94

PRINTED NAME: David Coppinger TIME: 11:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-23-94 ROOM NO. 105

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[x]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[x]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[x]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[ ]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[x]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[x]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[x]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[x]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[x]	Magnetite	[ ]	Transite

NOTES: Mineral Oil in cell windows, Brass Hardware in equipment and valves, Painted Wall with Lead and Magnetite used as shielding, Prefilters on walls

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 11-23-94

PRINTED NAME: David Coppinger TIME: 11:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 105

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Plaster Wall, Oil in door hardware, Brass in door hardware, Zinc Piping

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/19/009/P	P + 5, 2.1	Surface Paint

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 105

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☒ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☒ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: about (30) Ballasts, (120) Fluorescent Light Bulbs, Brass Sprinklers and Electrical Components, Solder Joints

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 9:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 105

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Asbestos Tile, Metal Gratings, Electrical Components containing Brass and Lead Joints (such as wire) in trenches

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 9:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 105

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☒ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Zinc Piping, Electrical Components containing Brass and Solder Joints, Painted Block Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: [signature] DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 8:55 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-23-94 ROOM NO. 105

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☒	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☒	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☒	Magnetite	☐	Transite

NOTES: Hg Transformers/Switches, Brass Hardware, Oil in Door Components, Mineral Oil in Cell Window, Painted Walls, Lead used as Shielding for Cell (about 300 bricks), Zinc Components

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 11-23-94

PRINTED NAME: David Coppinger TIME: 11:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [x] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [x] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [x] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Brass Hardware on Door, Painted Plaster Wall, Electrical Outlet

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: [signature] DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Plaster Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: [signature] DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:55 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Overhead Sprinkler, Lights are not fluorescent, 1 Air Vent, Painted Drywall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Drywall, Water Lines, Brass Equipment in valves and electrical outlets

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:35 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile Floors. Sample Floor from Investigations

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/07/01/SS	A + 8, 1.7	Surface, Concrete

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:25 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 105A

SURFACE:
- ☐ EAST
- ☐ FLOOR
- ☒ WEST
- ☐ CEILING
- ☐ NORTH
- ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Drywall, Electrical Outlet

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/13/018/P	B + 1, 1, 0.5	Surface, Paint

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 10:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile with possible Asbestos, Sink with possible Brass Hardware, Door with Brass Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Fire Sprinklers and Heat Detectors - possibly Brass. Flourescent Light Bulbs, need to check lights out in more detail for possible PCBs

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Tile with possible Asbestos, Brass Drain Covers, Drain Lines contain Lead Joints

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile with possible Asbestos. Brass Hooks (and shower fixtures?)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile with possible Asbestos, Brass Power Plug

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See East Wall		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-15-94 ROOM NO. 106

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [x] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [x] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [x] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Tile with possible Asbestos, Doors with Brass Hardware and Oil

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/19/009/P		

INSPECTED BY: _____ DATE: 9-15-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☒ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Drain Pipe possibly contains Lead. Sump possibly contains Beryllium
Floor is very dirty. Painted

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See HCC/11/2/006/S		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:35 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[x]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[x]	Bases, Aqueous	[ ]	Oil contaminated materials
[ ]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[ ]	Lead	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Copper Pipe with solder joints, Zinc Conduit, Brass Valves

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		
HCC/11/29/017/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:55 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Plaster Wall, Zinc Conduit, Brass Door Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		
HCC/11/29/017/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:42 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall, Zinc Piping and Conduit Electrical Outlets containing Lead Solder Joints and Brass Components, Lead Joints in drain lines

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/29/017/P	A + 5, 1.8	Surface Paint

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:40 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☒	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: about (10) Ballasts, about (20) Bulbs, Steel Ceiling, Electrical Components containing Lead and Brass

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 2:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 108A

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐ Acids, Aqueous	☐ Manometer/Flowmeter containing Hg
☐ Aerosol Cans, misc. materials	☒ Metal, Misc. elemental
☐ Asbestos, Friable	☐ Metal contaminated materials, Misc.
☐ Asbestos, Non-friable	☐ Metal plated equipment and building materials
☐ Beryllium (Be, BeO)	☐ Metal solders and soldered materials
☐ Bases, Aqueous	☐ Oil contaminated materials
☐ Brass equipment	☐ Oil, Hydraulic
☐ Decon Solution (Aqueous, General)	☐ Oil, Mineral
☐ Decon Solution (Organic, General)	☐ Oil, PCB Containing/contaminated
☐ Decon Solution (SynTech)	☐ Oil, Pump
☐ Decon Solution (Water)	☐ Oil, Synthetic
☐ Fluorescent Light Bulbs	☐ Paint, Un-used
☐ Freon	☐ Paint, Un-used, containing Lead
☐ Grease contaminated materials	☐ Paint, Un-used, Lead free
☐ HEPA Filters	☐ Paint, Used, containing Lead
☐ HEPA Filters (Absolute)	☐ Paint, Used, Lead free
☐ Hg Switches	☐ PCB Light Ballasts
☐ Lead	☐ Solid, misc. N.O.S.
☐ Liquid, misc. N.O.S.	☐ Tar
☐ Magnetite	☐ Transite

NOTES: Block Wall, Zinc Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:45 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 109

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete. Sample Machine location from investigations for Hg

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/07/04/SS	B + 5, 0.1	Surface, Concrete
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:05 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 109

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☒ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete Wall, Emergency Light with Battery, Electrical Conduit, Duct Work, Copper and Brass WaterLines, Switch for crane

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 109

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Concrete Wall, Electrical Conduit, Emergency Light with Battery

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 109

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☒ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete Wall, Electrical Conduit, Galvanized air lines, Duct Work for fume hood, Fume Hood has Lead in hood

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 109

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass Hardware on door, Painted Drywall, Electrical Conduit, Copper and Brass on breathing air system

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 109

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Elecrical Conduit, (3) 8' Light Fixtures, Steel Crane Support, Overhead Sprinklers, Painted Steel Ceiling

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☒	Bases, Aqueous	☒	Oil contaminated materials
☐	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☒	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: (12) 8 ft Light Fixtures, Painted Steel, Overhead Sprinkler System, Crane (in use), Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 10:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete, Steel Runners for Trolley

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 11:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall, Painted Concrete, Electrical Conduit and Equipment, 3 Circuit Breakers, Lead and Magnetite used as shielding, Copper Water Lines

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 11:35 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Concrete with Magnetite and Lead as shielding. Electrical Conduit and Equipment, Air Duct Work. 2 Electric Motors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 11:25 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [x] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Block Wall, Electrical Conduit and Equipment, Emergency Light/Alarm, 2 Air Vents with Prefilters, Water Lines coated with insulation

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 11:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 111

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Block Wall, Metal Double Doors, Electrical Conduit, Brass equipment on doors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 11:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 112

SURFACE: [x] EAST [x] FLOOR [x] WEST [x] CEILING [x] NORTH [x] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[x]	Asbestos, Friable	[x]	Metal contaminated materials, Misc.
[x]	Asbestos, Non-friable	[x]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[x]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[x]	Lead Bricks/Shielding	[x]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[x]	Magnetite	[ ]	Transite

NOTES: Electronic Motors and Equipment, Brass Polishers, Crane Oven, Pained Concrete Walls, Electrical Outlets, pieces of Lead, Sodium Lighting

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Exception Area		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 113

SURFACE: [x] EAST [x] FLOOR [x] WEST [x] CEILING [x] NORTH [x] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[x]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[x]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[x]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[x]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[x]	Lead Bricks/Shielding	[x]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[x]	Magnetite	[ ]	Transite

NOTES: Prefilter, Electrical Outlets, Painted Concrete Walls, Sodium Lighting, Crane, Electrical Equipment and Motors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Exception Area		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 115

SURFACE: [x] EAST [x] FLOOR [x] WEST [x] CEILING [x] NORTH [x] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[x]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[x]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[x]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[x]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[x]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[x]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[x]	Lead Bricks/Shielding	[x]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[x]	Magnetite	[ ]	Transite

NOTES: Painted Concrete Walls, Misc items(too many to list), PAR, Sodium Lighting, Prefilters, Electrical Equipment and Components, Lead and Brass pieces.

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Exception Area		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters - Prefilter
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☒ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental - Zinc
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☒ Oil, Hydraulic
- ☐ Oil, Mineral
- ☒ Oil, PCB Containing/contaminated
- ☒ Oil, Pump
- ☒ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Lead Plugs on cart. All oils must be sampled. Floor where pumps sit will be sampled for oil contamination

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/07/02/SS	B + 1, 1.2	Surface Concrete
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters - Prefilter	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass Sprinklers, (2) Fluorescent Bulbs, (1) Ballast, Painted Metal Ceiling

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 8:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters - Prefilter
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☒ Lead
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Lead in electronics possible

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 8:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters - Prefilter
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Nothing but paint on this wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 8:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters - Prefilter
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental - Zinc
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Block Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 114

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☒	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters - Prefilter	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☒	Magnetite	☐	Transite

NOTES: Brass possible in cell opening equipment. Lead and Magnetite in wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:07 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Fume Hood, Painted Concrete, Electrical Conduit, Water Lines, Lead in fume hood

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Concrete, Lead/Magnetite used as sheilding, Electrical Conduit, Water Lines (Copper)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:05 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Drywall, Phone, Electrical Conduit, Water Lines (Copper)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Steel, (2) 8' Light Fixtures, Electrical Conduit, Overhead Sprinklers

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:25 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[x]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[ ]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[ ]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Painted Block Wall, Double Doors, Brass Hardware, Electrical Conduit, Circuit Breaker Panel

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:35 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 116

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile Floor, Brass Foot Valve

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 9:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Steel Wall, Lead/Magnetite Shielding, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/29/013/P	E + 7, 0.3	Surface, Paint

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☒ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Vent Duct Work with Prefilters

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☒ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☒ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Steel, Electrical Conduit, (2) 4 ft Light Fixtures, Overhead Sprinkler

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: ☐ EAST ☐ WEST ☐ NORTH ☐ SOUTH ☒ FLOOR ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Galvanized Metal

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 116A

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Concrete Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See West Wall		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Block Wall, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:10 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Drywall, Brass Door Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Drywall, Electrical Conduit, Brass Door Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/13/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Steel, Overhead Sprinklers, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Drywall, 1 Outlet Box

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/117		
HCC/11/15/012/P		

INSPECTED BY: [signature] DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. Hallway

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Tile Floor

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature] DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 11:55 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-23-94 ROOM NO. 117

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Fiberboard Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/15/012/P	A + 2.5, 1.1	Paint Debris

INSPECTED BY: _____ DATE: 11-23-94

PRINTED NAME: David Coppinger TIME: 8:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-23-94 ROOM NO. 117

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Block Wall, Electrical Conduit, Gas Lines

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 11-23-94

PRINTED NAME: David Coppinger TIME: 8:25 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-23-94 ROOM NO. 117

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Block Wall, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: [signature] DATE: 11-23-94

PRINTED NAME: David Coppinger TIME: 8:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-22-94 ROOM NO. 117

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Brass Door Hardware, Painted Fiberboard Wall, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 11-22-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-22-94 ROOM NO. 117

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☒ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☒ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: (4) 8ft Bulbs, (2) Ballasts, Brass Equipment on sprinkler systems

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-22-94

PRINTED NAME: David Coppinger TIME: 4:05 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-22-94 ROOM NO. 117

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Asbestos Floor Tiles, Steel Plate placed on floor for unknown reasons, only concrete underneath

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-22-94

PRINTED NAME: David Coppinger TIME: 3:30 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 117A

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [x] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [x] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Block Wall, Zinc Conduit, Brass Gas Lines and Valves

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 9:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 117A

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☒ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Steel Deck, Galvanized (Zinc)

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 12:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 117A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: (2) 8ft Flourescent Bulbs, (1) Ballast, Zinc Conduit, Painted Steel

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 12:05 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 117A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall, Zinc Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 12:10 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 117A

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall, Zinc Pipes, Copper Pipes with solder

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
sample taken from duct work		
HCC/11/15/011/P	NA	Surface Paint

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 12:15 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 118

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Plaster Wall with Wood Doors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:10 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 118

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted 1/2 Block and 1/2 Concrete Wall, Electrical Box, Zinc Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: [signature] DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:25 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 118

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Painted Concrete Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: [signature] DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:05 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 118

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: (8) 4 ft Bulbs, (2) Ballasts, Zinc Conduit, Electrical Components containing solder joints

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:20 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-28-94 ROOM NO. 118

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☒	Magnetite	☐	Transite

NOTES: Electric Switches containing Solder Joints and Brass Contacts, Door containing Lead and Magnetite, Hydraulic Line containing Oil used to move door

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
See 23/116A		
HCC/11/29/013/P		

INSPECTED BY: _____ DATE: 11-28-94

PRINTED NAME: David Coppinger TIME: 1:15 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Drywall, Wood Frame Work, (3) Steel Plugs 12" diameter

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Concrete Wall, Crane Fixture (in use), Lead Shielding, Electrical Conduit, 2 Air Monitors, 1 Circuit Breaker

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Block Wall, Copper Air Line, Galvanized Electrical Conduit, 1 Circuit Breaker, Power Strip

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 9:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Steel, (1) 8 ft Light Fixture, Air Duct Work, Electrical Conduit

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 10:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Only frame work for Double Doors, Drywall Material, See South Wall for picture

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 10:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 119

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Painted Concrete Floor, Electrical Line going into floor

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 10:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Brass Door Hardware, Drywall Construction

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: _____

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE:
- ☐ EAST
- ☐ FLOOR
- ☒ WEST
- ☐ CEILING
- ☐ NORTH
- ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Electrical	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Asbestos on piping, one Ballast inaccessable, (2) Fluorescent Bulbs, Brass on sprinklers

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Paint on floor is the same as 23/CO

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-26-94 ROOM NO. 120

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Block Wall Construction

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-26-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-21-94 ROOM NO. Corridor

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Ceiling Tiles have original paint, Sprinkler has Brass Components, (3) Ballasts, (3) Bulbs

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 9-21-94

PRINTED NAME: David Coppinger TIME: 10:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-21-94 ROOM NO. Corridor

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Plaster Construction, Painted

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 9-21-94

PRINTED NAME: David Coppinger TIME: 10:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-21-94 ROOM NO. Corridor

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Plaster Wall, Painted, Conduit, Electrical Outlets

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 9-21-94

PRINTED NAME: David Coppinger TIME: 11:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-21-94 ROOM NO. Corridor

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Block Wall, Painted Circuit Panels, Outlets, Conduit, 2 Doors, all Doors have Brass Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 9-21-94

PRINTED NAME: David Coppinger TIME: 10:35 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 9-21-94 ROOM NO. Corridor

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐ Acids, Aqueous	☐ Manometer/Flowmeter containing Hg
☐ Aerosol Cans, misc. materials	☐ Metal, Misc. elemental
☐ Asbestos, Friable	☐ Metal contaminated materials, Misc.
☐ Asbestos, Non-friable	☐ Metal plated equipment and building materials
☐ Beryllium (Be, BeO)	☐ Metal solders and soldered materials
☐ Bases, Aqueous	☐ Oil contaminated materials
☐ Brass equipment	☐ Oil, Hydraulic
☐ Decon Solution (Aqueous, General)	☐ Oil, Mineral
☐ Decon Solution (Organic, General)	☐ Oil, PCB Containing/contaminated
☐ Decon Solution (SynTech)	☐ Oil, Pump
☐ Decon Solution (Water)	☐ Oil, Synthetic
☐ Fluorescent Light Bulbs	☐ Paint, Un-used
☐ Freon	☐ Paint, Un-used, containing Lead
☐ Grease contaminated materials	☐ Paint, Un-used, Lead free
☐ HEPA Filters	☒ Paint, Used, containing Lead
☐ HEPA Filters (Absolute)	☒ Paint, Used, Lead free
☐ Hg Switches	☐ PCB Light Ballasts
☐ Lead Bricks/Shielding	☐ Solid, misc. N.O.S.
☐ Liquid, misc. N.O.S.	☐ Tar
☐ Magnetite	☐ Transite

NOTES: Concrete Floor with many thick layers of paint. Conduit in floor

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 9-21-94

PRINTED NAME: David Coppinger TIME: 10:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 121

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[x]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[x]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[x]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Water Lines, Gas Lines, Electrical Conduit, Brass Door Hardware, Oil in door, Electrical Equipment (in use), (1) 4' Light Unit, Galvanized Air Duct Work

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature] DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 2:10 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 121

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☒ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☒ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Block Wall, Large Transformer (in use), Electrical Conduit, 2 Small Transformers, Air Motors, Duct Work

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 1:30 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 121

SURFACE:
- ☐ EAST
- ☐ WEST
- ☒ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Dry Wall, Copper Water Lines, Electrical Conduit, Gas Lines, Water Heater, Air Filter System for breathing air

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 1:50 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-18-95 ROOM NO. 121

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☒	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☒	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Steel, (4) 4' Light Fixtures, Electrical Conduit, Lots of Duct Work, Electric Motor, Overhead Sprinkler System

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature] DATE: 1-18-95

PRINTED NAME: David Coppinger TIME: 1:20 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 121

SURFACE:
- ☐ EAST
- ☐ FLOOR
- ☒ WEST
- ☐ CEILING
- ☐ NORTH
- ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☒ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☒ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Block Wall, Copper Water Lines, Brass Valves, Sprinkler Water Supply Lines and Gauges, Electrical Conduit, Double Doors, Brass Door Hardware, (1) 4' Light Fixture

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: DC DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 1:40 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-17-95 ROOM NO. 121

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Concrete, Oil Spills around Air Compressors, Drainage Trench in floor, Drain Lines with Lead Joints

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/15/07/SS	C + 5, 2.5	Surface, Concrete

INSPECTED BY: _____ DATE: 1-17-95

PRINTED NAME: David Coppinger TIME: 2:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 122

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [x] Metal, Misc. elemental - Zinc
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [x] Paint, Used, containing Lead
- [x] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Uknown residue on wall - need swipe sample, Galvanized Water Line

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/07/05/SS	C + 1, 2.5	Surface Swipe
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:35 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-22-94 ROOM NO. 122

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters - Prefilter	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Zinc/Galvanized Water Lines, (4) 8 ft Flourescent Bulbs, (2) Light Ballasts, Painted Ceiling- same paint as walls

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 11-22-94

PRINTED NAME: David Coppinger TIME: 8:45 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 11-22-94 ROOM NO. 122

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters - Prefilter	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Plaster Wall, (1) Electrical outlet on wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 11-22-94

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 122

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☒	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☒	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Lead in pipe joints, possible lead contamination on floor from lead bricks moved over the floor in the past, grating trench is very dirty, paint is the same as 23/CO

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/CO		
HCC/10/14/008/P		

INSPECTED BY: _____ DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 122

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental - Zinc
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Plaster Walls, Galvanized Water Lines, Tin splash guard near grating, Brass possible in valves

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 10-27-94 ROOM NO. 122

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☒	Metal, Misc. elemental - Zinc
☒	Asbestos, Friable	☒	Metal contaminated materials, Misc.
☒	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☒	HEPA Filters - Prefilter	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Brass in valves and possibly in air flow equipment, Asbestos on piping

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 23/107		
HCC/11/29/015/P		

INSPECTED BY: [signature] DATE: 10-27-94

PRINTED NAME: David Coppinger TIME: 9:11 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Dry type three-phase transformer. Unpainted Concrete

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
Transformer, Exception		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Electrical Conduit and 1 Circuit Panel, 2 HV Switches, unpainted Galvanized Sheeting

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Unpainted Galvanized Sheeting, Electrical Conduit and 2 Standard Lights

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☒ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Unpainted Galvanized Sheeting used as doors and walls, Electrical Conduit/Switch, Plug Box

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature] DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Unpainted Galvanized Sheeting , (1) 4' x 3' Glass Window

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Storage Shed

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [ ] Paint, Used, containing Lead
- [ ] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: Unpainted Galvanized Sheeting , (1) 4' x 3' Glass Window

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Roof

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☒ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☒ Tar
- ☐ Transite

NOTES: Loose Gravel, Asphalt Roofing Material, Galvanized Duct Work, Electrical Conduit, Asbestos Samples Taken

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See Section 5.0 (Asbestos)		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 12:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. Exterior

SURFACE: [x] EAST [ ] FLOOR [x] WEST [ ] CEILING [x] NORTH [x] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[x]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[x]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[x]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[x]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[x]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[x]	HEPA Filters	[ ]	Paint, Used, containing Lead
[x]	HEPA Filters (Absolute)	[ ]	Paint, Used, Lead free
[ ]	Hg Switches	[x]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Unpainted Block, Galvanized Metal, Electrical Conduit, Air Conditioning Unit on West side, 2 Mercury Lights with Ballasts, Doors contain Oil Reservoirs, Glass on South side, Transformer and switch on East side, Asbestos insulation on East side, Hepa Unit containing Hepa Filters & Prefilters on East side, Sprinkling Water Feed Lines and Tap Water on East side, SST Gas Lines on East side, (18) CO^2 Fire Supression Bottles on East side, (3) 8' Fluorescent Light Units, (5) Circuit Breakers on East side, one small Transformer, 2 Emergency Lights w/Batteries, Pump & Motor running Bubbler on East

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 8:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95

ROOM NO. 108 Roof and Exterior

SURFACE:
- [x] EAST
- [x] WEST
- [x] NORTH
- [x] SOUTH
- [ ] FLOOR
- [ ] CEILING

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [x] Asbestos, Friable
- [x] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [x] Fluorescent Light Bulbs
- [ ] Freon
- [x] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [x] Metal plated equipment and building materials
- [x] Metal solders and soldered materials
- [x] Oil contaminated materials
- [x] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [x] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [ ] Paint, Used, containing Lead
- [ ] Paint, Used, Lead free
- [x] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [x] Tar
- [ ] Transite

NOTES: Unpainted Block, Electrical Conduit, one small Fluorescent Light Unit, PVC Piping, Copper Water Lines, 2 Pumps in use, Hydraulic Lift, Galvanized Rain Gutters, 6 Breakers/Switches. Roof has Electrical Conduit, Rocks, Tar, Paper and possible Asbestos.

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		
Exception Area/Pumps		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:00 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95 ROOM NO. Outside Hepa Unit

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☒	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Made of SST and Galvanized Metal, Electric Motors containing Oil Contaminated Parts and Brass Equipment. Unit contains 20 Hepa Filters and 18 Pre-Filters

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Exception Area		

INSPECTED BY: _____ DATE: 1-26-95

PRINTED NAME: David Coppinger TIME: 11:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 1-26-95

ROOM NO. Stack Sampling Pit

SURFACE:
- ☐ EAST
- ☐ WEST
- ☐ NORTH
- ☐ SOUTH
- ☐ FLOOR
- ☐ CEILING

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☒ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☒ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: All Surfaces are Unpainted Concrete, Electrical Conduit and Outlets, 1 pc of equipment - Logarithmic Pulse Intergrater - Emberline Model #LPI 1A, Steel Ladder on North Wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: [signature]

PRINTED NAME: David Coppinger

DATE: 1-26-95

TIME: 1:00 pm

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. Liquid Waste Vault

SURFACE: [x] EAST [x] FLOOR [x] WEST [x] CEILING [x] NORTH [x] SOUTH

- [ ] Acids, Aqueous
- [ ] Aerosol Cans, misc. materials
- [ ] Asbestos, Friable
- [ ] Asbestos, Non-friable
- [ ] Beryllium (Be, BeO)
- [ ] Bases, Aqueous
- [ ] Brass equipment
- [ ] Decon Solution (Aqueous, General)
- [ ] Decon Solution (Organic, General)
- [ ] Decon Solution (SynTech)
- [ ] Decon Solution (Water)
- [ ] Fluorescent Light Bulbs
- [ ] Freon
- [ ] Grease contaminated materials
- [ ] HEPA Filters
- [ ] HEPA Filters (Absolute)
- [ ] Hg Switches
- [ ] Lead Bricks/Shielding
- [ ] Liquid, misc. N.O.S.
- [ ] Magnetite
- [ ] Manometer/Flowmeter containing Hg
- [ ] Metal, Misc. elemental
- [ ] Metal contaminated materials, Misc.
- [ ] Metal plated equipment and building materials
- [ ] Metal solders and soldered materials
- [ ] Oil contaminated materials
- [ ] Oil, Hydraulic
- [ ] Oil, Mineral
- [ ] Oil, PCB Containing/contaminated
- [ ] Oil, Pump
- [ ] Oil, Synthetic
- [ ] Paint, Un-used
- [ ] Paint, Un-used, containing Lead
- [ ] Paint, Un-used, Lead free
- [ ] Paint, Used, containing Lead
- [ ] Paint, Used, Lead free
- [ ] PCB Light Ballasts
- [ ] Solid, misc. N.O.S.
- [ ] Tar
- [ ] Transite

NOTES: 24" x 24" x 32" Concrete Box with Steel Lip and Lid. Electrical Conduit, 2 .25" PVC Pipe with hose clamps at each end for attachment.

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
Unaffected Area		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Concrete same as Co floor sample

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See Co		Surface, Paint
HCC/12/07/03/SS	B + 5, 4.5	Surface, Concrete

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:05 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: (6) 8' Light Systems, 6 Ballasts, Painted Steel, Electrical Conduit, Sprinkler System contains Brass Equipment

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:40 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Plaster, Galvanized Air Lines, Electrical Conduit, Vent Duct Work, Brass Equipment in air monitors

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/29/15/P	A -0, 0.5	Surface Paint

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☐	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☐	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Plaster, Vent Duct Work, 2 Electrical Switches, Electrical Conduit, Emergency Light, Water Line has insulation, Carbon from heater, Copper Water Lines

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:25 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: ☐ EAST ☐ FLOOR ☒ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☒	Oil contaminated materials
☒	Brass equipment	☒	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Block with plaster over it, Painted, Copper WaterLines, Galvanized Air Lines and Gas Lines, Electrical Conduit, Door has Oil Reservoir and Brass Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 107

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[ ]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[ ]	Oil contaminated materials
[x]	Brass equipment	[ ]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[x]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[x]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Painted Drywall, Copper Gas Lines and Water Lines, Electrical Conduit, 2' x 8' Glass Window, Doors have Brass Hardware

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See North Wall		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: ☐ EAST ☒ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☐ Metal solders and soldered materials
- ☒ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☐ Paint, Used, containing Lead
- ☐ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Electrical Equipment: 2 mills, 2 lathes, 3 drill presses, 1 chopsaw, 3 grinders, 1 sander, 1 break, 1 sheer, lots of misc tools and cabinets. Tile Floor badly oil stained

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/12/09/06/SS	F + 7, 1.2	Surface, Concrete

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:15 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☒ CEILING ☐ NORTH ☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☒	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☒	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☒	Paint, Used, Lead free
☐	Hg Switches	☒	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: 30 Ballasts, 60 Flourescent Bulbs, 2 Wall Heaters, Be Vent Duct Work, Electrical Conduit, Overhead Sprinkler System contains Brass, Painted Steel

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/29/16/P	N/A	Surface, Paint (duct work)

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 9:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: [x] EAST [ ] FLOOR [ ] WEST [ ] CEILING [ ] NORTH [ ] SOUTH

[ ]	Acids, Aqueous	[ ]	Manometer/Flowmeter containing Hg
[ ]	Aerosol Cans, misc. materials	[ ]	Metal, Misc. elemental
[ ]	Asbestos, Friable	[ ]	Metal contaminated materials, Misc.
[ ]	Asbestos, Non-friable	[ ]	Metal plated equipment and building materials
[ ]	Beryllium (Be, BeO)	[x]	Metal solders and soldered materials
[ ]	Bases, Aqueous	[x]	Oil contaminated materials
[x]	Brass equipment	[x]	Oil, Hydraulic
[ ]	Decon Solution (Aqueous, General)	[ ]	Oil, Mineral
[ ]	Decon Solution (Organic, General)	[ ]	Oil, PCB Containing/contaminated
[ ]	Decon Solution (SynTech)	[ ]	Oil, Pump
[ ]	Decon Solution (Water)	[ ]	Oil, Synthetic
[ ]	Fluorescent Light Bulbs	[ ]	Paint, Un-used
[ ]	Freon	[ ]	Paint, Un-used, containing Lead
[ ]	Grease contaminated materials	[ ]	Paint, Un-used, Lead free
[ ]	HEPA Filters	[ ]	Paint, Used, containing Lead
[ ]	HEPA Filters (Absolute)	[ ]	Paint, Used, Lead free
[ ]	Hg Switches	[ ]	PCB Light Ballasts
[ ]	Lead Bricks/Shielding	[ ]	Solid, misc. N.O.S.
[ ]	Liquid, misc. N.O.S.	[ ]	Tar
[ ]	Magnetite	[ ]	Transite

NOTES: Lots of Valves and Switches that contain Brass, Air, Gas and Water Lines are Galvanized, Electrical Conduit, Vent Duct Work, Door has glass and Brass, Electrical Equipment such as lighting alarms and bells, Plastered Block Wall which has been painted

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 108A		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:50 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☐ NORTH ☒ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: 2 Large Circuit Panels, Galvanized Gas, Water & Air Lines, Valves have Brass Hardware, 1 Wall Heater, Vent Duct Work, 1 Small Light, Steel Doors contain Glass and Brass, Phone on wall

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 108A		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:20 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: ☐ EAST ☐ FLOOR
☒ WEST ☐ CEILING
☐ NORTH
☐ SOUTH

☐	Acids, Aqueous	☐	Manometer/Flowmeter containing Hg
☐	Aerosol Cans, misc. materials	☐	Metal, Misc. elemental
☐	Asbestos, Friable	☐	Metal contaminated materials, Misc.
☐	Asbestos, Non-friable	☐	Metal plated equipment and building materials
☐	Beryllium (Be, BeO)	☒	Metal solders and soldered materials
☐	Bases, Aqueous	☐	Oil contaminated materials
☒	Brass equipment	☐	Oil, Hydraulic
☐	Decon Solution (Aqueous, General)	☐	Oil, Mineral
☐	Decon Solution (Organic, General)	☐	Oil, PCB Containing/contaminated
☐	Decon Solution (SynTech)	☐	Oil, Pump
☐	Decon Solution (Water)	☐	Oil, Synthetic
☐	Fluorescent Light Bulbs	☐	Paint, Un-used
☐	Freon	☐	Paint, Un-used, containing Lead
☐	Grease contaminated materials	☐	Paint, Un-used, Lead free
☐	HEPA Filters	☐	Paint, Used, containing Lead
☐	HEPA Filters (Absolute)	☐	Paint, Used, Lead free
☐	Hg Switches	☐	PCB Light Ballasts
☐	Lead Bricks/Shielding	☐	Solid, misc. N.O.S.
☐	Liquid, misc. N.O.S.	☐	Tar
☐	Magnetite	☐	Transite

NOTES: Painted Block, Electrical Conduit, Vent Duct Work, Galvanized Air and Water Lines, Sink, Lead Joints possible in drain lines, 2 Wall Heaters, Brass Hardware in valves

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
See 108A		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:30 am

HAZARDOUS CONSTITUENT SURVEY FORM

DATE 2-2-95 ROOM NO. 108

SURFACE: ☐ EAST ☐ FLOOR ☐ WEST ☐ CEILING ☒ NORTH ☐ SOUTH

- ☐ Acids, Aqueous
- ☐ Aerosol Cans, misc. materials
- ☐ Asbestos, Friable
- ☐ Asbestos, Non-friable
- ☐ Beryllium (Be, BeO)
- ☐ Bases, Aqueous
- ☐ Brass equipment
- ☐ Decon Solution (Aqueous, General)
- ☐ Decon Solution (Organic, General)
- ☐ Decon Solution (SynTech)
- ☐ Decon Solution (Water)
- ☐ Fluorescent Light Bulbs
- ☐ Freon
- ☐ Grease contaminated materials
- ☐ HEPA Filters
- ☐ HEPA Filters (Absolute)
- ☐ Hg Switches
- ☐ Lead Bricks/Shielding
- ☐ Liquid, misc. N.O.S.
- ☐ Magnetite
- ☐ Manometer/Flowmeter containing Hg
- ☐ Metal, Misc. elemental
- ☐ Metal contaminated materials, Misc.
- ☐ Metal plated equipment and building materials
- ☒ Metal solders and soldered materials
- ☐ Oil contaminated materials
- ☐ Oil, Hydraulic
- ☐ Oil, Mineral
- ☐ Oil, PCB Containing/contaminated
- ☐ Oil, Pump
- ☐ Oil, Synthetic
- ☐ Paint, Un-used
- ☐ Paint, Un-used, containing Lead
- ☐ Paint, Un-used, Lead free
- ☒ Paint, Used, containing Lead
- ☒ Paint, Used, Lead free
- ☐ PCB Light Ballasts
- ☐ Solid, misc. N.O.S.
- ☐ Tar
- ☐ Transite

NOTES: Electrical Conduit, Painted Drywall, Be Vent Pipes (see sample), Emergency Lights

SAMPLE NOS. (Including Wipes)

Sample No.	Grid No.	Type
HCC/11/29/16/P	N/A	Surface, Paint (duct work)
See 108A for wall		

INSPECTED BY: _____ DATE: 2-2-95

PRINTED NAME: David Coppinger TIME: 10:40 am

APPENDIX C—SOIL HAND AUGER LOGS

SOIL HAND AUGER LOG

Sample Location ID#: A-4
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.41 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 10/11/94 (0930 hrs) FINISH: 10/11/94 (1115 hrs)
MONITORING DEVICES: Model 3 - #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-022-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 2" No apparent cracks observed			Sampling location is at west edge of concrete-backfilled trench and east of the end of another concrete-backfilled trench.
10 / 5			FILL (?): 2 - 24" Brown (7.5 YR 4/2) sandy loam, few gravel to 1-1/2 inch diameter, moist; few twigs, few pieces of asphalt	SM		
20 / 10	23S-94-087-CH	BACK GROUND				
30 / 15						
40			Same as above			
50 / 20						
60			24 - 35" Brown (7.5 YR 5/3) sandy loam, some gravel to 3/4-inch diameter, well rounded, moist, unconsoliated, weakly indurated			
25	23S-94-088-CH	BACK GROUND		SM		

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: A-4
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.41 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 10/11/94 (0930 hrs) FINISH: 10/11/94 (1115 hrs)
MONITORING DEVICES: Model 3 - #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30 / 80 / 35 / 90 / 40 / 100 / 110 / 45 / 120 / 50	23S-94-088-CH	BACK GROUND	FILL (?) (continued): 24 - 35" Brown (7.5 YR 5/3) sandy loam, some gravel to 3/4 inch diameter, well rounded, moist, unconsoliated, weakly indurated	SM		Refusal at 35 inches No groundwater noted Backfilled with lean concrete Excavated soil was placed in 55-gallon drums which are stored outside the HCF yard

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

Richard L Wong
SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: A-5
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 336.66 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0900 hrs) FINISH: 09/28/94 (0935 hrs)
MONITORING DEVICES: Model 3 - #4687
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-013-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3" Asphalt is weathered with no apparent cracks			
10 / 5	23S-94-044-CH	BACK GROUND	SOIL (FILL?): 3 - 11" Dark brown (7.5 YR 3/2), sandy clay to clay; moist to very moist; some gravel to 1-inch diameter; pods of plastic clay noted in cuttings	SC-CL		Total Depth = 11 inches No groundwater noted Owing to high clay content, gravel not separated from sample 235-94-044-CH Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Richard L Wong
SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
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SOIL HAND AUGER LOG

Sample Location ID#: A-6
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 335.32 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0915 hrs) **FINISH:** 09/28/94 (1138 hrs)
MONITORING DEVICES: Model 3 - #4687
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-012-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3" Relatively uniform, no apparent cracking noted			A-6 is located approximately 3 inches east of a recently constructed asphalt berm.
3			AGGREGATE BASE/FILL (?): 3 - 13" Very dark gray (2.5 Y N3/0), sandy clay, moist; approximately 10 to 15 percent subrounded gravel to 1-1/2-inch diameter; hydrocarbon odor noted	CL		
10 / 5						
20 / 10	23S-94-40-CH	BACK GROUND				
30						
13	23S-94-39-CH	BACK GROUND	SILTSTONE: 13 - 16" Pale yellow (5Y 7/3), silt, moist; mottled dark red (2-5 YR 4/4) along parting/bedding surfaces; moderately indurated; no organics noted	ML		
40 / 15						Total Depth = 16 inches No groundwater noted Backfilled with lean concrete
50 / 20						
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Richard L Wong
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NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: A-7
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: W. Berrett

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 334.15 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0930 hrs) FINISH: 09/28/94 (1500 hrs)
MONITORING DEVICES: Model 3 – #4687
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-014-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 – 2.5" No apparent cracks noted			
10 / 5	23S-94-043-CH	BACK GROUND	FILL (?): 2.5 – 9.5" Reddish-yellow (7.5 YR 6/6), clay loam to clay, moist to very moist; strong brown (7.5 YR 5/8) mottling/staining noted; some (approximately 20 percent) gravel to 1-inch diameter	CL		Total Depth = 9.5 inches No groundwater noted Owing to clay and moisture content, gravels not separated during sampling Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: B-1
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 339.45 ft. msl **SURFACE CHARACTERISTICS:** Concrete sidewalk
SAMPLING DATES: START: 10/07/94 (1030 hrs) **FINISH:** 10/07/94 (1115 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23C-94-063-CH	BACKGROUND	CONCRETE SIDEWALK: 0 - 6" No apparent cracks observed			
6 / 15	23S-94-077-CH	BACKGROUND	TOPSOIL: 6 - 17" Reddish-brown (5 YR 4/3), loam, moist; some roots	SM/SC		Total Depth = 17 inches No groundwater noted Backfilled with lean concrete
17 / 43						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: B-2
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.80 ft. msl SURFACE CHARACTERISTICS: Soil w/organic cover
SAMPLING DATES: START: 10/11/94 (0900 hrs) FINISH: 11/30/94 (0930 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-085-CH	BACK GROUND	ORGANIC COVER: 0 - 0.5" Brown (7.5 YR 5/2) and very pale brown (10 YR 7/4), dried leaves and twigs TOPSOIL: 0.5 - 14" Brown (7.5 YR 5/2) and reddish-brown (5 YR 5/3), loam, dry to moist; very abundant roots to 5 inches below ground surface, roots noted throughout soil sample; very few gravel to 3/4 inch diameter	SM/SC		Organic cover sample was not collected
20 / 10						
30 / 15	23S-94-086-CH	BACK GROUND				
40 / 20						Total Depth = 14 inches No groundwater noted Excavated by hand auger Backfilled with excavated material
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Sample Location ID#: B-3
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.53 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 10/07/94 (1400 hrs) FINISH: 10/07/94 (1430 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BI-94-021-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3" No apparent cracks observed			
10 / 5	23S-94-078-CH	BACK GROUND	WEATHERED CONGLOMERATE: 3 - 9.5" Dark reddish-gray (5 YR 4/2), sandy gravel with a sandy loam matrix, moist; few fine roots, approximately 60 to 70 percent gravel by weight; no cementation noted	GW		Total Depth = 9.5 inches No groundwater noted Separate bag of rocks collected from the 3 to 9.5 inch interval Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50						
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

Sample Location ID#: B-4

Page 1 of 1

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 339.36 ft. msl SURFACE CHARACTERISTICS: Soil/Grass covered

SAMPLING DATES: START: 10/07/94 (1435 hrs) FINISH: 10/07/94 (1500 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 - 10 / 0 - 5	23S-94-079-CH	BACK GROUND	WEATHERED CONGLOMERATE: 0 - 6" Pinkish-gray (7-5 YR 6/2), gravel and cobble and conglomerate with a sandy loam matrix, dry; approximately 50 to 60 percent gravel and cobbles by weight; fine roots	GW		
10 - 30 / 5 - 15	23S-94-080-CH	BACK GROUND	CONGLOMERATE: 6 - 12" Pale brown (10 YR 6/3), gravel and cobble conglomerate with a sandy loam matrix, dry; approximately 60 percent gravel by weight; cemented; difficult to excavate	GW		Total Depth = 12 inches No groundwater noted Separate bag of rocks from each soil sample Backfilled with excavated material
30 - 60 / 15 - 25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Richard L. Wong, Senior Geologist, RG 5372
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Sample Location ID#: B-6
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 336.17 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0915 hrs) **FINISH:** 09/28/94 (1035 hrs)
MONITORING DEVICES: Model 3 #4687
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-011-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 2" Random oriented, hairline to 1/4 inch wide cracks noted at surface; vegetation noted in some cracks			
10 / 5	23S-94-038-CH	BACK GROUND	FILL (?): 2 - 9" Brown (7.5 YR 4/2), loam with few gravel, very moist; approximately 10 to 15 percent gravel by weight	SM/SC		Total Depth = 9 inches No groundwater noted Backfilled by lean concrete Soil moisture in fill influenced by asphalt coring equipment
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Richard L. Wong, Senior Geologist, RG 5372
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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: B-7
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 334.91 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0950 hrs) FINISH: 09/28/94 (1510 hrs)
MONITORING DEVICES: Model 3 #4687
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-015-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 1.5" Asphalt observed as cracked and broken			
10 / 5	23S-94-041-CH	BACK GROUND	GRAVEL CONGLOMERATE: 1.5 - 10" Pale brown (10 YR 6/3), gravel conglomerate, sandy loam matrix, dry; gravel (approximately 80 percent) subangular to subrounded clasts to 3 inches in diameter; few cobbles (approximately 10 percent) to 4 inches in diameter	GW		Total Depth = 10 inches No groundwater noted Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

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NAME AND TITLE

PC-000456/0

Sample Location ID#: B-8

Page 1 of 1

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 332.76 ft. msl SURFACE CHARACTERISTICS: Soil

SAMPLING DATES: START: 10/07/94 (0915 hrs) FINISH: 10/07/94 (1015 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-075-CH	BACK GROUND	FILL: 0 - 5" Grayish-brown (10 YR 5/2) to dark grayish-brown (10 YR 4/2), sandy gravel with a clay loam matrix, dry; abundant fragments of asphalt; approximately 60 percent gravel by weight; roots	GC		
10 / 5	23S-94-076-CH	BACK GROUND	TOPSOIL (?): 5 - 12" Brown (7.5 YR 5/4) with dark red (2.5 YR 4/6) mottling, clay, moist; fewer roots than noted in above soil	CL		Total Depth = 12 inches No groundwater noted Backfilled with excavated material
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: B-9
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 331.71 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 10/06/94 (1100 hrs) FINISH: 10/06/94 (1130 hrs)
MONITORING DEVICES: RO-2A - Model 3 - #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23BL-94-020-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 5" Black (7.5 YR 2.5/1) angular to subangular aggregate to 1/4-inch diameter; no fractures or cracks in core			
5 / 10			FILL: 5 - 8" Dark brown (7.5 YR 3/2) loamy sand; some gravel (20 percent); subrounded to well rounded to 2 inch diameter; wet (as a result of coring)	SM		
8 / 20	23S-94-074-CH	BACK GROUND	SILTSTONE: 8 - 12" Pale brown (10 YR 6/3) silt, moist; moderately indurated	ML		Total Depth = 12 inches No groundwater noted Backfilled with lean concrete
12 / 30						
15 / 40						
20 / 50						
24 / 60						
25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: C-1

Page 1 of 1

Sampler: R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 339.49 ft. msl **SURFACE CHARACTERISTICS:** Soil w/organic cover

SAMPLING DATES: START: 10/10/94 (0830 hrs) **FINISH:** 11/30/94 (0930 hrs)

MONITORING DEVICES: Model 3 #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0			ORGANIC COVER: 0 - 1" Brown (7-5 YR 6/2) and very pale brown (10 YR 7/4), dried leaves and twigs with some paper and trash	SM/SC		Organic sample was not collected
10 / 5	23S-94-081-CH	BACK GROUND	FILL (?): 1 - 12" Brown (7.5 YR 5/2) loam, dry; abundant roots to 6 inches below ground surface, fewer roots thereafter; very few gravel to 0.5 inches in diameter			
20 / 10	23S-94-082-CH	BACK GROUND				
30 / 15						Total Depth = 12 inches No groundwater noted Separate bag of vegetation collected from sample 23S-094-082-CH Backfilled with excavated material
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

Richard L. Wong
SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: C-5
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.60 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/27/94 (0940 hrs) FINISH: 09/28/94 (1500 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-017-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 1.5" Uniform with no apparent cracks			
10 / 5	23S-94-042-CH	BACK GROUND	SOIL: 1.5 - 7" Brown (7.5 YR 4/2), sandy loam, moist; some gravel (approximately 40 percent) to 2-inch diameter; no organics	SM		Total Depth = 7 inches No groundwater noted Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

Richard L Wong
SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: C-6

Page 1 of 1

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 336.24 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 09/27/94 (0915 hrs) FINISH: 09/28/94 (1021 hrs)

MONITORING DEVICES: Model 3 - #4687

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23BL-94-016-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 5.5" Uniform with no apparent cracks			Total Depth = 11.5 inches No groundwater noted Backfilled with lean concrete Soil moisture influenced by asphalt coring equipment
5 / 10	23S-94-037-CH	BACK GROUND	AGGREGATE BASE: 5.5 - 11.5" Very dark gray (2.5 Y, N 3/0), sandy gravel, (75 percent subangular gravel to 1/4-inch diameter; scattered subrounded gravel to 1-inch diameter), very moist; few pods (approximately 1/2 to 1 inch diameter) of brown, sandy clay loam matrix	GP		
10 / 20						
15 / 30						
20 / 40						
25 / 50						
30 / 60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

Sample Location ID#: C-8
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 333.96 ft. msl SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 10/06/94 (0925 hrs) FINISH: 10/06/94 (1000 hrs)
MONITORING DEVICES: RO-2A - Model 3 - #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 – 10 / 0 – 5	23S-94-070-CH	BACK GROUND	ALLUVIUM/COLLUVIUM: 0 – 8.5" Brown (7-5 YR 5/2), loamy sand with some gravel; well rounded to 2.5-inch diameter, dry, loose, moderately indurated, trace roots	SM		
10 – 20 / 5 – 10						
20 – 40 / 10 – 15	23S-94-071-CH	BACK GROUND	SILTSTONE: 8.5 – 17" Very pale brown (10 YR 7/3) silt; dry, some reddish-brown staining along apparent bedding plane, well indurated	ML		
40 – 60 / 15 – 25						Total Depth = 17 inches No groundwater noted Backfilled with excavated soil

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: C-9

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 331.62 ft. msl **SURFACE CHARACTERISTICS:** Soil

SAMPLING DATES: START: 10/06/94 (0855 hrs) **FINISH:** 10/06/94 (0915 hrs)

MONITORING DEVICES: RO-2A - Model 3 - #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-068-CH	BACK GROUND	ALLUVIUM: 0 - 16" Brown (7.5 YR 5/2), sandy loam, dry, few gravels (less than 20 percent), well rounded to 1.5-inch diameter, few fine roots, loose	SM		Total Depth = 16 inches No groundwater noted Backfilled with excavated soil
10 / 5						
20 / 10	23S-94-069-CH	BACK GROUND				
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: C-10

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 329.67 ft. msl SURFACE CHARACTERISTICS: Soil

SAMPLING DATES: START: 10/06/94 (0805 hrs) FINISH: 10/06/94 (0845 hrs)

MONITORING DEVICES: Model 3 - #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-066-CH	BACK GROUND	ALLUVIUM: 0 - 16" Brown (7.5 YR 5/2), sandy loam to silt loam, dry, few fine roots, trace gravel to 1-inch diameter, very loose, weakly indurated, trace roots	SM-ML		Total Depth = 16 inches No groundwater noted Backfilled with excavated material
20 / 10						
30 / 15	23S-94-067-CH	BACK GROUND				
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: D-1

Page 1 of 1

Sampler: R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 339.39 ft. msl **SURFACE CHARACTERISTICS:** Soil w/organic cover

SAMPLING DATES: START: 10/10/94 (0955 hrs) **FINISH:** 10/10/94 (1045 hrs)

MONITORING DEVICES: Model 3 - #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0			ORGANIC COVER: 0 - 0.5" Brown (7.5 YR 5/2), and very pale brown (10 YR 7/4), dried leaves and twigs	SM		Organic sample was not collected
10 / 5	23S-94-083-CH	BACK GROUND	FILL (?): 0.5 - 18" Dark gray (7.5 YR 4/1) to brown (7.5 YR 4/2) loam, moist; roots throughout; few gravel to 1-inch diameter			
20 / 10						
30 / 15	23S-94-084-CH	BACK GROUND				
40 / 20						Total Depth = 18 inches No groundwater noted Backfilled with excavated material
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: D-6

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 335.85 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete

SAMPLING DATES: START: 09/26/94 (1530 hrs) **FINISH:** 09/27/94 (1445 hrs)

MONITORING DEVICES: Model 3 / TBM 15/28

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-009-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 – 3" Asphalt observed as cracked and broken			
10 / 5	23S-94-036-CH	BACK GROUND	AGGREGATE BASE: 3 – 10" Black (7.5 YR 2.5/1) gravel (subangular to well rounded) to 4-inch diameter in a clay matrix; sticky, high plasticity, moist	GW		Total Depth = 10 inches No groundwater noted Well cemented bedrock at 10 inches below ground surface (pinkish-gray-7.5 YR 7/2) Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

PC-000456/0

Sample Location ID#: D-7

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 333.00 ft. msl **SURFACE CHARACTERISTICS:** Soil

SAMPLING DATES: START: 10/06/94 (1020 hrs) **FINISH:** 10/06/94 (1100 hrs)

MONITORING DEVICES: RO-2A - Model 3 - #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-072-CH	BACK GROUND	ALLUVIUM/COLLUVIUM: 0 - 5.5" Brown (7.5 YR 5/2), loamy sand with gravel (±25 percent), dry, loose	SM		
5 / 10						
	23S-94-073-CH	BACK GROUND	SILTSTONE: 5.5 - 14" Very pale brown (10 YR 7/3) silt; dry, some reddish-brown staining along apparent bedding planes, well indurated	ML		Total Depth = 14 inches No groundwater noted Backfilled with excavated material
10 / 20						
15 / 30						
20 / 40						
25 / 50						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: D-8

Page 1 of 1

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 329.47 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete

SAMPLING DATES: START: 10/05/94 (0930 hrs) **FINISH:** 10/05/94 (0940 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-019-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 2" No apparent cracks noted			
10 / 5	23S-94-062-CH	BACK GROUND	AGGREGATE BASE: 2 - 8.5" Brown (7.5 YR 4/2), sandy gravel with a sandy loam matrix, very wet	GP		Total Depth = 8.5 inches No groundwater noted Backfilled with excavated material Wet soil moisture content likely caused by asphalt coring equipment
20 / 10						
30 / 15						
40 / 20						
50 / 20						
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: D-9

Page 1 of 1

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 329.52 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete

SAMPLING DATES: START: 10/05/94 (0900 hrs) **FINISH:** 10/05/94 (0915 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-018-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 2" Visible cracks not observed			
10 / 5	23S-94-061-CH	100 ABOVE BACK GROUND	AGGREGATE BASE: 2 - 7" Brown (7.5 YR 4/3), sandy gravel with a sandy loam matrix, very wet	GP		Total Depth = 7 inches No groundwater noted Backfilled with excavated material Wet moisture content in aggregate base likely caused by coring equipment
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: D-10

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 331.08 ft. msl SURFACE CHARACTERISTICS: Soil

SAMPLING DATES: START: 09/22/94 (1045 hrs) FINISH: 09/22/94 (1130 hrs)

MONITORING DEVICES: RM-14

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-027-CH	BACK GROUND	ALLUVIUM: 0 - 2" Light brown (7.5 YR 6/3) sandy loam; dry, few gravels (less than 20 percent) to 2.5 inches, well-rounded, moderately indurated, few fine to medium roots	SM		
10 / 5			ALLUVIUM/WEATHERED BEDROCK: 2 - 12" Light brown (7.5 YR 6/3), sandy loam; dry, moderately indurated, few well-rounded gravel to 2-inch diameter; trace fine roots	SM		
20 / 10	23S-94-028-CH	BACK GROUND				
30 / 15						Total Depth = 12 inches No groundwater noted
40 / 20						
50 / 25						
60 /						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: E-1
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: T. Rabbitt

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 338.37 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/26/94 (1550 hrs) FINISH: 09/27/94 (0940 hrs)
MONITORING DEVICES: Model 3 / TBM 15/28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-003-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 6.5" Asphalt observed as cracked and broken			
10 / 5						
20	23S-94-029-CH	BACK GROUND	FILL: 6.5 - 13" Dark brown (7.5 YR 3/3), loamy sand; few gravels to 2-inch diameter, moist, unconsolidated, moderately well sorted, few roots	SM		
30 / 10						
40 / 15						Refusal at 13 inches (conglomerate/sharp contact)
50 / 20						No groundwater noted
60 / 25						Well-cemented bedrock at 13 inches below ground surface (pinkish-gray-7.5 YR 7/2)
						Backfilled with lean concrete
						Sampled with hand auger

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-2

Page 1 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 339.41 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 9/15/94 (0915 hrs) FINISH: 9/15/94 (1500 hrs)

MONITORING DEVICES: RM 14 #9158, RD-2 #5865

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23BL-94-001-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 5.5" No apparent cracks noted			
10 / 5						
20 / 10	23S-94-006-CH	BACK GROUND	FILL: 5.5 - 21" Dark brown (7.5 YR 3/3) sandy loam, few gravel (<20 percent by weight), moist; clasts are well rounded and up to 2 inches in diameter; soil portion is quartz-rich and fine- to medium-grain; very friable	SM		
30 / 15						
40 / 20						
50 / 25	23S-94-007-CH	BACK GROUND	21 - 26" Brown (7.5 YR 5/4) coarse gravel (clasts are well rounded to 3 inches in diameter) in a loamy sand matrix, moist; quartz-rich with red-brown and gray staining; loose with clods of sandy clay; sharp contact with underlying unit	GW		
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

PC-000456/0

Sample Location ID#: E-2

Page 2 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 339.41 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 9/15/94 (0915 hrs) FINISH: 9/15/94 (1500 hrs)

MONITORING DEVICES: RM 14 #9158, RD-2 #5865

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-007-CH		FILL (continued):	GW		
	23S-94-008-CH	BACK GROUND	26 - 36" Dark reddish-brown (5 YR 4/2) clay with some sand, moist; few gravel (<20 percent); moderately plastic/sticky; mottled dark red	CL		
80 / 35	23S-94-009-CH	BACK GROUND				
90 / 40	23S-94-010-CH	BACK GROUND	36 - 40" Grayish-brown (10 YR 5/2) gravelly, clay, moist; <20 percent gravel by weight with clasts to 3 inches in diameter; gravel is well rounded; mottled red (2.5 YR 5/8); moderately to poorly plastic; slightly sticky			Total Depth = 40 inches No groundwater noted Backfilled with lean concrete Spoils placed in 55-gallon drums which are stored outside HCF yard
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-3

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 339.67 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 09/26/94 (1530 hrs) FINISH: 09/27/94 (1400 hrs)

MONITORING DEVICES: Model 3 / TBM 15/28

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-008-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 5.5" Uniform, no apparent cracks observed			
10 / 5						
20 / 10	23S-94-034-CH	BACK GROUND	CONGLOMERATE: 5.5 - 10" Cobble and gravel and conglomerate, rocks to 3.5-inch diameter, moderately indurated; matrix: brown (7.5 YR 4/2), loamy sand (medium to coarse grained, little silt), lithic fragments, dry, poorly sorted	GW		Total Depth = 10 inches No groundwater noted Backfilled with lean concrete
30 / 15						
40 /						
50 / 20						
60 /						
25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: E-4
Page 1 of 1
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.73 ft. msl SURFACE CHARACTERISTICS: Paved/Concrete
SAMPLING DATES: START: 09/26/94 (1520 hrs) FINISH: 09/27/94 (1105 hrs)
MONITORING DEVICES: Model 3 and TBM 15/28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23C-94-055-CH	BACK GROUND	CONCRETE: 0 - 4.5" No apparent cracks			
10 / 5			WEATHERED CONGLOMERATE: 4.5 - 14" Light brown (7.5 YR 6/6), silty clay loam; trace gravel, slightly moist, moderately indurated, pinkish-gray (7.5 YR 6/2) staining along apparent bedding	SM-SC		
20 / 10	23S-94-032-CH	BACK GROUND				
30 / 15						Total Depth = 14 inches No groundwater noted Backfilled with lean concrete
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-5
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 337.56 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete
SAMPLING DATES: START: 09/26/94 (1540 hrs) **FINISH:** 09/27/94 (1130 hrs)
MONITORING DEVICES: Model 3 and TBM 15/28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-008-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3" Asphalt observed as cracked and broken			
10 / 5			SOIL: 3 - 15" Dark brown (7.5 YR 3/3) clay; few gravel to 2-inch diameter, moist, medium plasticity	CL		
20 / 10	23S-94-033-CH	BACK GROUND				
30 / 15						Total Depth = 15 inches No groundwater noted Backfilled with lean concrete
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-6

Page 1 of 2

Sampler: D. Harvey

H.P. Tech.: Berrett,9/26;Rabbitt,10/24

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 336.04 ft. msl **SURFACE CHARACTERISTICS:** Paved/Concrete

SAMPLING DATES: START: 09/26/94 (1300 hrs) **FINISH:** 10/24/94 (1530 hrs)

MONITORING DEVICES: TBM 15/28 #108114 and Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0 to 10 / 5	23C-94-056-CH	BACK GROUND	CONCRETE: 0 - 22" Thick, coarse aggregate and rebar; no apparent cracks; upper 6 inches collected for sample 23C-94-056-CH on 9/26/94			Sample 23C-94-056-CH was collected by BCG on 9/26/94. Depth of the concrete exceeded the capability of the Hilti coring equipment. Yankee Engineering excavated a second concrete core at an adjacent location to sample 23C-94-056CH. This core was separated into two samples. Sample 23C-94-091-CH was collected 0 to 12 inches below the ground surface. Sample 23C-94-092-CH was collected 12 to 22 inches below the ground surface. These two samples were collected by T. Rabbit.
10 / 5 to 60 / 25	23S-94-099-CH		SILTSTONE: 22 - 35" Very pale brown (10 YR 7/4) and light gray (10 YR 7/1), silt slightly moist, interbedded, moderately indurated	ML		

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

Sample Location ID#: E-6
Page 2 of 2
Sampler: D. Harvey
H.P. Tech.: Berrett,9/26;Rabbitt,10/24

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 336.04 ft. msl **SURFACE CHARACTERISTICS:** Paved/Concrete
SAMPLING DATES: START: 09/26/94 (1300 hrs) **FINISH:** 10/24/94 (1530 hrs)
MONITORING DEVICES: TBM 15/28 #108114 and Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-099-CH	BACK GROUND	SILTSTONE (continued): 22 - 35" Very pale brown (10 YR 7/4) and light gray (10 YR 7/11), silt slightly moist, interbedded, moderately indurated	ML		Total Depth = 35 inches No groundwater noted 9/26/94: Concrete greater than 15 inches thick (practical limit of Hilti coring machine) 10/24/94: BCG returned to site to observe Yankee Engineering complete concrete coring and collect soil sample
80 / 35						
90 / 40						
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-7

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 335.83 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 09/26/94 (1530 hrs) FINISH: 09/27/94 (1400 hrs)

MONITORING DEVICES: TBM 15/28 #108114

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-007-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3" Asphalt observed as cracked and broken			
10 / 5	23S-94-035-CH	BACK GROUND	WEATHERED LINDAVISTA FORMATION: 3 - 11" Light brown (10 YR 6/3), sandy loam, few gravel and cobbles to 5-inch diameter, dry, unconsolidated, dense, poorly sorted	SW		Total Depth = 11 inches No groundwater noted Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

Sample Location ID#: E-9
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 335.02 ft. msl SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 09/21/94 (1445 hrs) FINISH: 09/22/94 (1000 hrs)
MONITORING DEVICES: Model 3 and L-3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-023-CH	BACK GROUND	WEATHERED CONGLOMERATE: 0 - 9" Light brown (7.5 YR 6/3) gravel and cobble conglomerate in a loamy sand matrix; loose, dry; rocks to 8-inch diameter	GW		
10 / 5						
20 / 10			9 - 15" Brown (7.5 YR 4/4) gravel and cobble conglomerate in a loamy sand matrix; slightly dense, moist; rocks to 8-inch diameter			
30 / 15	23S-94-024-CH	BACK GROUND				Total Depth = 15 inches No groundwater noted Backfilled with excavated material
40 / 20						
50 / 25						
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: E-10

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 333.43 ft. msl **SURFACE CHARACTERISTICS:** Soil/Unpaved

SAMPLING DATES: START: 09/22/94 (1000 hrs) **FINISH:** 09/22/94 (1040 hrs)

MONITORING DEVICES: L-3 and RM-14

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-025-CH	BACK GROUND	ALLUVIUM: 0 - 2" Light brown (7.5 YR 6/3) clay loam, dry, some olive-yellow (5 Y 6/6) mottling, some gravel, well-rounded to 3-inch diameter, weak to moderate induration, few roots	SC		
10 / 5			2 - 12" Light brown (7.5 YR 6/3) sandy loam, dry, few gravels to 2-inch diameter, weakly to moderately indurated, friable, few fine roots	SM		
20 / 10	23S-94-026-CH	BACK GROUND				
30 / 15						Total Depth = 12 inches No groundwater noted Backfilled with excavated material
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: F-2
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 338.40 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 09/26/94 (1540 hrs) FINISH: 09/27/94 (0955 hrs)
MONITORING DEVICES: Model 3 and TBM 15/28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23BL-94-004-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 4.5" Uniform, no cracks observed			
20 / 10	23S-94-030-CH	BACK GROUND	FILL: 4.5 - 15" Dark brown (7.5 YR 3/3) loamy sand, few gravels to 2-inch diameter, moist, unconsolidated, moderately well sorted, few roots; possibly scarified and rcompacted native material/bedrock	SM-SC		
30 / 15						Refusal at 15 inches (conglomerate) Sample soil collected with hand auger No groundwater noted Backfilled with lean concrete
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: F-3

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 339.58 ft. msl **SURFACE CHARACTERISTICS:** Paved/Asphaltic concrete

SAMPLING DATES: START: 09/26/94 (1530 hrs) **FINISH:** 09/27/94 (1020 hrs)

MONITORING DEVICES: Model 3 and TBM 15/28

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-005-CH	BACK GROUND	ASPHALTIC CONCRETE: 0 - 3.5" Uniform, no apparent cracks			
10 / 5	23S-94-031-CH	BACK GROUND	SOIL/FILL (?): 3.5 - 15" Dark brown (7.5 YR 3/3) loamy sand, few gravels to 2-inch diameter, moist, unconsolidated, moderately well sorted, few roots	SM		Refusal at 15 inches (conglomerate) Sample soil collected with hand auger No groundwater noted Backfilled with lean concrete
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: F-4
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: T. Rabbitt

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 340.28 ft. msl SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 09/20/94 (0810 hrs) FINISH: 09/20/94 (0900 hrs)
MONITORING DEVICES: RM 14 #9158
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23S-94-011-CH	BACK GROUND	TOPSOIL: 0 - 2" Light brown (7.5 YR 6/3) sandy loam, few gravels (well-rounded to 3-inch diameter), loose, non-sticky, non-plastic; few fine roots	SM		
10 / 5	23S-94-012-CH	BACK GROUND	2 - 6" Light brown (7.5 YR 6/3) sandy loam, damp, weakly to moderately indurated	SM		Total Depth = 6 inches No groundwater noted Backfilled with excavated material
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: F-5

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 340.63 ft. msl **SURFACE CHARACTERISTICS:** Soil

SAMPLING DATES: START: 09/20/94 (0915 hrs) **FINISH:** 09/20/94 (1015 hrs)

MONITORING DEVICES: RM 14 #9158 - RO-2 #5865

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-013-CH	BACK GROUND	TOPSOIL: 0 - 6" Light brown (7.5 YR 6/3) sandy loam, few gravels (well-rounded to 3-inch diameter), few fine to medium roots and root casts; weakly to moderately indurated; poor to medium sorting; dry; sharp contact with underlying soil	SM		
6 / 15	23S-94-014-CH	BACK GROUND	6 - 9" Dusky red (2.5 YR 3/4) clay; trace sand; many fine roots/root casts; sticky; moderate to high plasticity; damp to moist	CL		Total Depth = 9 inches No groundwater noted Backfilled with excavated material
9 / 23						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: F-6
Page 1 of 1
Sampler: D. Harvey
H.P. Tech.: T. Rabbitt

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 339.06 ft. msl SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 09/20/94 (1030 hrs) FINISH: 09/20/94 (1400 hrs)
MONITORING DEVICES: RM 14
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23S-94-015-CH	BACK GROUND	WEATHERED CONGLOMERATE: 0 - 4" Light brown (7.5 YR 6/3) Conglomerate, weakly to well-cemented, gravel/cobbles to 6-inch diameter; weathered matrix, coarse-grained, granular, dry	GW		
10 / 5	23S-94-016-CH	BACK GROUND	4 - 9" Dark brown (7.5 YR 3/2) gravel and cobble (conglomerate); well rounded to 6-inch diameter, metasedimentary rocks; matrix: sandy clay; coarse-grained sand; quartz-rich; slightly moist; well indurated; poorly sorted; poor plasticity; non-sticky	GC		Total Depth = 9 inches No groundwater noted Backfilled with excavated material
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: F-7

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 337.75 ft. msl **SURFACE CHARACTERISTICS:** Soil

SAMPLING DATES: START: 09/20/94 (1410 hrs) **FINISH:** 09/20/94 (1530 hrs)

MONITORING DEVICES: RM 14

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23S-94-017-CH	BACK GROUND	WEATHERED CONGLOMERATE: 0 - 2" Light brown (7.5 YR 6/3) gravel and cobble conglomerate to 6-inch diameter, subangular, well-rounded, sandy loam matrix; quartz-rich; poorly sorted; poorly to moderately well indurated; dry	GW		
10 / 5	23S-94-018-CH	BACK GROUND	CONGLOMERATE: 2 - 7" Light brown (7.5 YR 6/2) gravel and cobble conglomerate; dry, well indurated, gravel and cobbles subrounded to well rounded to 6-inch diameter; matrix: loamy sand; quartz-rich, lithic fragments	GW		Total Depth = 7 inches No groundwater noted Backfilled with excavated material
20 / 10						
30 / 15						
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: F-8

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 337.75 ft. msl SURFACE CHARACTERISTICS: Soil

SAMPLING DATES: START: 09/21/94 (0945 hrs) FINISH: 09/21/94 (1045 hrs)

MONITORING DEVICES: RM 14

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23S-94-019-CH	BACK GROUND	ALLUVIUM/WEATHERED BEDROCK: 0 – 3" Light brown (7.5 YR 6/3), sandy loam; some gravel (well rounded to 3-inch diameter); loose, dry, few fine roots	SW		
10 / 5			LINDAVISTA FORMATION: 3 – 11" Weathered, light brown (7.5 YR 6/2), sandy loam, some gravel to 3-inch diameter, dry, weakly to moderately indurated			
20 / 10	23S-94-020-CH	BACK GROUND				
30 / 15						Total Depth = 11 inches No groundwater noted Backfilled with excavated material
40 / 20						
50 / 25						
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: F-9

Page 1 of 1

Sampler: D. Harvey

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 335.81 ft. msl **SURFACE CHARACTERISTICS:** Soil

SAMPLING DATES: START: 09/21/94 (1045 hrs) **FINISH:** 09/21/94 (1140 hrs)

MONITORING DEVICES: RM 14

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23S-94-021-CH	BACK GROUND	ALLUVIUM: 0 - 9" Light brown (7.5 YR 6/3), sandy loam/loamy sand; little gravel to 3-inch diameter; loose, moderately indurated, dry, few fine roots	SM		
10 / 5						
20						
10	23S-94-022-CH	BACK GROUND	SOIL: 9 - 12" Brown (7.5 YR 4/4) clay; slightly moist, sticky, medium to high plasticity, few fine roots, trace gravel and cobbles to 4-inch diameter	CL		Total Depth = 12 inches No groundwater noted Backfilled with excavated material
30						
15 / 40						
20 / 50						
60						
25						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: F-10
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: T. Rabbitt

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 334.17 SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 09/14/94 (1035 hrs) FINISH: 09/15/94 (1030 hrs)
MONITORING DEVICES: L3 and RM-14
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected. Jill Slater on site to observe sampling procedures

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-001-CH	BACK GROUND	ALLUVIUM: 0 - 6" Light brown (7.5 YR 6/3), loam; dry; few subrounded gravel and cobbles to 3-inch diameter; very fine rootlets	SM		The near-surface soils apparently deposited as a result of erosion of higher areas.
10 / 5	23S-94-002-CH	BACK GROUND	SOIL: 6 - 12" Grayish-brown (10 YR 5/2) gravel (greater than 50 precent subrounded gravel and cobbles to 3-inch diameter); matrix: sandy loam; dry; mottled dark red (2.5 YR 4/8) to very dusty red (2.5 YR 2.5/4); fine to coarse roots; moderately indurated; granular; very poorly sorted; gradational contact to underlying material	GW		
30 / 15	23S-94-003-CH	BACK GROUND	CONGLOMERATE: 12 - 36" Light brown (7.5 YR 6/3), very coarse gravel and cobbles (subrounded to well rounded to 6-inch diameter); matrix: fine to coarse sand; quartz-rich; moderately lithic fragments; well indurated; poorly sorted; some red to dusky red mottling; granular	GW		Difficult excavation due to abundant cobbles and gravel
40 / 20						Boring completed to a depth of 22 inches below ground surface 9/14/94
50 / 25						
60 /						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: F-10
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: T. Rabbitt

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 334.17 SURFACE CHARACTERISTICS: Soil
SAMPLING DATES: START: 09/14/94 (1035 hrs) FINISH: 09/15/94 (1030 hrs)
MONITORING DEVICES: L3 and RM-14
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected. Jill Slater on site to observe sampling procedures

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30			CONGLOMERATE (continued): 12 - 36" Light brown (7.5 YR 6/3), very coarse gravel and cobbles (subrounded to well rounded to 6-inch diameter); matrix: fine to coarse sand; quartz-rich; moderately lithic fragments; well indurated; poorly sorted; some red to dusky red mottling; granular	GW		
80 / 35	23S-94-004-CH	BACK GROUND				
90 / 40						Boring completed to a depth of 36 inches below ground surface 9/15/94 No groundwater noted Backfilled with excavated material
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: R-11A

Page 1 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 335.86 SURFACE CHARACTERISTICS: Paved/Asphaltic concrete at edge of concrete

SAMPLING DATES: START: 10/12/94 (0935 hrs) FINISH: 10/12/94 (1520 hrs)

MONITORING DEVICES: Model 3 #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination.

No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-023-CH	7,000	ASPHALTIC CONCRETE: 0 - 4" Diagonal crack noted from the northeast corner of the concrete trestle pad			Surface and cracks cracks in asphaltic concrete pavement measured as much as 7,000 cpm above background
10 / 5	23S-94-089-CH	BACK GROUND	COBBLE AND GRAVEL CONGLOMERATE: 4 - 26" Reddish-gray (5 YR 5/2) and brown (7.5 YR 5/2), cobble and gravel conglomerate (rock fragments to 4-inch diameter) with a sandy loam matrix (approximately 70 to 80 percent rocks by weight); moist; upper 2 to 3 inches of unit is gray (5 YR 5/1), discoloration possibly caused by oil from overlying asphaltic concrete pavement; some gravel and cobbles are clay-coated	GW		
20 / 10						
30 / 15						
40 / 20						
50 / 25	23S-94-090-CH	BACK GROUND				
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372

NAME AND TITLE

PC-000456/0

Sample Location ID#: R-11A
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: T. Rabbitt

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 335.86 SURFACE CHARACTERISTICS: Paved/Asphaltic concrete at edge of concrete
SAMPLING DATES: START: 10/12/94 (0935 hrs) FINISH: 10/12/94 (1520 hrs)
MONITORING DEVICES: Model 3 #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination.
No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-091-CH	BACK GROUND	SILTSTONE: 26 – 42" Very pale brown (10 YR 7/4) and light gray (10 YR 7/1) silt; moist; interbeds of silt loam; no apparent fractures noted; fissile structure	GW / ML		Total Depth = 42 inches No groundwater noted Backfilled with lean concrete Excess material was placed in 55-gallon drums and stored outside the hot cell yard Located in Area 40, 14' NE of D-5 and 33.6' NW of E-5
80 / 35						
90 / 40	23S-94-092-CH	BACK GROUND				
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: R-11B
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 335.95 ft. msl SURFACE CHARACTERISTICS: Paved @ Concrete/Asphaltic concrete joint
SAMPLING DATES: START: 10/17/94 (1300 hrs) FINISH: 10/18/94 (1100 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination.
No contamination detected. Jill Slater on site.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-024-CH	10,000	ASPHALTIC CONCRETE: 0 – 2.5" No apparent cracks noted in asphaltic concrete pavement; grass noted growing in joint with concrete trestle pad			
10 / 5	23S-94-093-CH	100	AGGREGATE BASE/FILL: 2.5 – 9" Brown (10 YR 5/3) cobble and gravel conglomerate (approximately 60 to 70 percent rocks by weight) in a sandy loam matrix, moist; cemented; rocks to 4-inch diameter; separate bag of rocks collected	GW		
20 / 10			COBBLE AND GRAVEL CONGLOMERATE: 9 – 22" Brown (10 YR 5/3), cobble and gravel conglomerate (approximately 60 to 70 percent rocks by weight) in a sandy loam matrix; moist; cemented; rocks to 4-inch diameter; separate bags of rocks collected	GW		
30 / 15						
40 / 20	23S-94-094-CH	BACK GROUND				
50 / 25			22 – 32" Light yellowish-brown (10 YR 6/4), cobble and gravel conglomerate (approximately 60 to 70 percent rocks by weight) in a sandy loam matrix; moist; cemented; rocks to 4-inch diameter; separate bag of rocks collected			
60						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

SOIL HAND AUGER LOG

Sample Location ID#: R-11B
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 335.95 ft. msl SURFACE CHARACTERISTICS: Paved @ Concrete/Asphaltic concrete joint
SAMPLING DATES: START: 10/17/94 (1300 hrs) FINISH: 10/18/94 (1100 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination.
No contamination detected. Jill Slater on site.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30 / 80	23S-94-095-CH	BACK GROUND	COBBLE AND GRAVEL CONGLOMERATE (continued): 22 - 32" Light yellowish-brown (10 YR 6/4), cobble and gravel conglomerate (approximately 60 to 70 percent rocks by weight) in a sandy loam matrix; moist; cemented; rocks to 4-inch diameter; separate bag of rocks collected	GW		Total Depth = 32 inches No groundwater noted Backfilled with excavated material Excess soil/rock was placed in 55-gallon drums and stored outside the hot cell yard Located on boundary of Areas 32/39, 2' W of D-5, 30.8' E of C-5
90 / 35 / 100 / 40 / 110 / 45 / 120 / 50						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
NAME AND TITLE

SIGNATURE OF REVIEWER

Richard L. Wong, Senior Geologist, RG 5372
NAME AND TITLE

PC-000456/0

Sample Location ID#: R-11C

Page 1 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 336.05 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete

SAMPLING DATES: START: 10/18/94 (1300 hrs) FINISH: 10/18/94 (1530 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0	23BL-94-025-CH	20,000	ASPHALTIC PAVEMENT: 0 - 2" No apparent cracks noted			
10 / 5	23S-94-096-CH	200	AGGREGATE BASE/FILL: 2 - 9" Brown (7.5 YR 4/2), gravel, very moist; sandy loam matrix; fill debris including wood fragments; approximately 60 to 70 percent rock by weight	GW		
20 / 10			FILL: 9 - 33" Light yellowish-brown (10 YR 6/4) and brownish-yellow (10 YR 6/6), gravel and cobbles to 4-inch diameter in a sandy loam matrix (approximately 50 to 75 percent rocks by weight); moist to very moist; fill debris noted to 14 inches below ground surface including a ±6-inch piece of a wooden 2- by 4-inch board; relatively easy to excavate	GW		
30 / 15						
40 / 20						
50						
60 / 25	23S-94-097-CH	BACK GROUND	24 - 27" As above			

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist

NAME AND TITLE

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Richard L. Wong, Senior Geologist, RG 5372

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SOIL HAND AUGER LOG

Sample Location ID#: R-11C
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 336.05 ft. msl SURFACE CHARACTERISTICS: Paved/Asphaltic concrete
SAMPLING DATES: START: 10/18/94 (1300 hrs) FINISH: 10/18/94 (1530 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-097-CH	BACK GROUND	FILL (continued): 9 - 33" Light yellowish-brown (10 YR 6/4) and brownish-yellow (10 YR 6/6), gravel and cobbles to 4-inch diameter in a sandy loam matrix (approximately 50 to 75 percent rocks by weight); moist to very moist; fill debris noted to 14 inches below ground surface including a ±6-inch piece of a wooden 2- by 4-inch board; relatively easy to excavate	GW		Total Depth = 33 inches No groundwater noted Backfilled with excavated material Separate bag of rocks obtained for sample 23S-94-098-CH Located in Area 33, 36' NW of E-4, and 28.2' SW of E-5
80 / 35	23S-94-098-CH	BACK GROUND				
90 / 40						
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

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Richard L. Wong, Senior Geologist, RG 5372
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SOIL HAND AUGER LOG

Sample Location ID#: R-13
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 328.81 ft. msl SURFACE CHARACTERISTICS: Soil/Bottom of slope
SAMPLING DATES: START: 10/04/94 (0930 hrs) FINISH: 10/04/94 (1035 hrs)
MONITORING DEVICES: RO-2A / Model 3 #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-055-CH	250	ALLUVIUM: 0 - 14" Brown (7.5 YR 5/2), sandy loam; dry; fine roots; plastic sheeting; few gravel to 1-inch diameter; very loose; very porous; asphalt fragments to 1/4-inch diameter	SM		
20 / 10						
30 / 15						
40 / 20	23S-94-058-CH	100	SILTSTONE: 14 - 39" Pale brown (10 YR 6/3) with light gray (10 YR 7/1), silt, damp, well indurated; minor reddish-yellow staining along apparent joint and bedding surfaces	ML		
50 / 25						
60	23S-94-057-CH	BACK GROUND				

SIGNATURE OF FIELD SUPERVISOR

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SOIL HAND AUGER LOG

Sample Location ID#: R-13
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 328.81 ft. msl SURFACE CHARACTERISTICS: Soil/Bottom of slope
SAMPLING DATES: START: 10/04/94 (0930 hrs) FINISH: 10/04/94 (1035 hrs)
MONITORING DEVICES: RO-2A / Model 3 #74305
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-057-CH	BACK GROUND	SILTSTONE (continued): 14 - 39" Pale brown (10 YR 6/3) with light gray (10 YR 7/1), silt, damp, well indurated; minor reddish-yellow staining along apparent joint and bedding surfaces	ML		Total Depth = 39 inches No groundwater noted Hand auger location at southeast corner of waste tank area at the bottom of bank where an asphalt swale terminates into area Located in Area 54, 30.9' SW of E-8, and 20' SE of D-8
80 / 35						
90 / 40						
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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PC-000456/0

Sample Location ID#: R-16

Page 1 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 328.99 ft. msl **SURFACE CHARACTERISTICS:** Soil/Drainage path

SAMPLING DATES: START: 10/04/94 (1035 hrs) **FINISH:** 10/04/94 (1136 hrs)

MONITORING DEVICES: RO-2A / Model 3 #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-058-CH	600	ALLUVIUM: 0 – 18" Brown (7.5 YR 4/2), sandy loam; dry; fine roots; plastic sheeting; few gravel to 1-inch diameter; layer of dark gray soil (7.5 YR 4/1) at a depth of 6.5 to 9 inches; 2 to 3 inch thick gravel layer noted at top of underlying siltstone unit; coarse sand to 1/2-inch fragments of asphalt noted in alluvium	SM		
20 / 10						
30 / 15				GW		
40 / 20			SILTSTONE: 18 – 26" Light yellowish-brown (10 YR 6/4) with light gray (10 YR 7/1), silt; moist; well indurated	ML		
50 / 25	23S-94-059-CH	BACK GROUND				
60						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

Sample Location ID#: R-16

Page 2 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 328.99 ft. msl **SURFACE CHARACTERISTICS:** Soil/Drainage path

SAMPLING DATES: START: 10/04/94 (1035 hrs) **FINISH:** 10/04/94 (1136 hrs)

MONITORING DEVICES: RO-2A / Model 3 #74305

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30			SILTSTONE (continued):	ML		
80 / 35	23S-94-060-CH	BACK GROUND	26 - 40" Pale brown (10 YR 6/3) with light gray (10 YR 7/1), silt, damp, well indurated			
90 / 40						Total Depth = 40 inches No groundwater noted Hand auger location inside waste tank contaminated area, inside of chain link fence, along east drainage path Located in Area 61, 17.5' NE of D-8, and 22.1' SE of D-9
100 / 40						
110 / 45						
120 / 50						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: R-35
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA – Hot Cell Facility D&D **LOCATION:** San Diego, CA
ELEVATION: 329.54 ft. msl **SURFACE CHARACTERISTICS:** Soil/Drainage path
SAMPLING DATES: START: 10/04/94 (1355 hrs) **FINISH:** 10/04/94 (1430 hrs)
MONITORING DEVICES: Model 3
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 – 10 in. / 0 – 5 cm	23S-94-063-CH	100	ALLUVIUM: 0 – 14" Brown (7.5 YR 5/2), sandy loam to silt loam; dry; fragments of light yellowish-brown (10 YR 7/1) silt to 1.5-inch diameter; desiccation cracks ranging in width from hairline to 1/8 inch and ranging in depth to 2 inches below ground surface; grass noted at surface; roots to 8 inches below ground surface; layers of darker and coarser soil noted	SM-ML		
10 – 20 in. / 5 – 10 cm						
20 – 30 in. / 10 – 15 cm						
30 – 40 in. / 15 – 20 cm	23S-94-064-CH	BACK GROUND	SILTSTONE: 14 – 40" Very pale brown (10 YR 7/4), silt; damp; very hard (cemented)	ML		
40 – 50 in. / 20 – 25 cm						
50 – 60 in. / 25 – 30 cm						

SIGNATURE OF FIELD SUPERVISOR

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Sample Location ID#: R-35

Page 2 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA

ELEVATION: 329.54 ft. msl SURFACE CHARACTERISTICS: Soil/Drainage path

SAMPLING DATES: START: 10/04/94 (1355 hrs) FINISH: 10/04/94 (1430 hrs)

MONITORING DEVICES: Model 3

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-065-CH	BACK GROUND	SILTSTONE (continued): 14 – 40" Very pale brown (10 YR 7/4), silt; damp; very hard (cemented)	ML		
80 / 35						
90 / 40						Total Depth = 40 inches No groundwater noted Backfilled with excavated material Located in Area 67, 15.7' SW of D-10, and 22.6' SE of C-10
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

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SOIL HAND AUGER LOG

Sample Location ID#: S06A
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 327.65 ft. msl SURFACE CHARACTERISTICS: Soil/Drainage path
SAMPLING DATES: START: 09/29/94 (1045 hrs) FINISH: 09/29/94 (1530 hrs)
MONITORING DEVICES: TA TBM-28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
0 / 0	23S-94-045-CH	150,000	ALLUVIUM: 0 - 3" Light brown (7.5 YR 6/4), sandy loam; dry; very loose and unconsolidated; few gravel to 1-inch diameter; roots	SM		
10 / 5	23S-94-046-CH	25,000	3 - 14" Brown (7.5 YR 5/3), sandy loam; dry; porous; fine roots; platy soil structure; mottled dark gray (10 YR 4/1); few gravel; debris including paper and dried paint chips	SM		
20 / 10						
30 / 15			ALLUVIUM: 14 - 30" Brown (7.5 YR 5/2), clay; damp; fine roots; plastic; pods to 1/8 to 1/4 inch diameter of very dark gray (7.5 YR 3/1) clay; few gravel at top of contact with overlying alluvium	CL		
40 / 20	23S-94-047-CH	BACK GROUND		CL		
50 / 25						
60 / 25						

SIGNATURE OF FIELD SUPERVISOR

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SOIL HAND AUGER LOG

Sample Location ID#: S06A
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 327.65 ft. msl SURFACE CHARACTERISTICS: Soil/Drainage path
SAMPLING DATES: START: 09/29/94 (1045 hrs) FINISH: 09/29/94 (1530 hrs)
MONITORING DEVICES: TA TBM-28
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30		BACK GROUND	ALLUVIUM (continued): 30 - 40" Brown (7.5 YR 5/2), clay; damp; plastic; relatively homogeneous; no organics noted	CL		
80 / 35						
90	23S-94-048-CH					
100 / 40						Total Depth = 40 inches No groundwater noted Backfilled with excavated material Located in Area 66, 19' E of B-10, and 13.8 W of C-10
110 / 45						
120 / 50						

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: S06B
Page 1 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA – Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 327.96 ft. msl SURFACE CHARACTERISTICS: Soil/Drainage path
SAMPLING DATES: START: 10/03/94 (0925 hrs) FINISH: 10/03/94 (1010 hrs)
MONITORING DEVICES: TBM-28 Serial #892140
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-049-CH	35	ALLUVIUM: 0 – 8" Brown (7.5 YR 4/2), sandy loam; dry; very loose and unconsolidated; few gravel to 1-inch diameter; fine roots	SM		
20 / 10			8 – 20" Brown (7.5 YR 4/2), clay, damp to moist; plastic; few gravel to 1.5-inch diameter at and below contact with overlying soil; mottled reddish-yellow (7.5 YR 6/6)	CL		
30 / 15	23S-94-050-CH	BACK GROUND		CL		
50 / 20			SILTSTONE: 20 – 37" Very pale brown (10 YR 7/3), silt to silt loam, damp; well indurated; upper 6 inches very difficult to excavate with hand auger; mottled very dark gray (10 YR 3/1) and reddish-yellow (7.5 YR 6/6) along apparent bedding and joint surface	ML		
60 / 25	23S-94-051-CH	BACK GROUND				

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

SOIL HAND AUGER LOG

Sample Location ID#: S06B
Page 2 of 2
Sampler: D. Harvey, R. Wong
H.P. Tech.: W. Berrett

PROJECT: GA - Hot Cell Facility D&D LOCATION: San Diego, CA
ELEVATION: 327.96 ft. msl SURFACE CHARACTERISTICS: Soil/Drainage path
SAMPLING DATES: START: 10/03/94 (0925 hrs) FINISH: 10/03/94 (1010 hrs)
MONITORING DEVICES: TBM-28 Serial #892140
MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30	23S-94-051-CH	BACK GROUND	SILTSTONE (continued): 20 - 37" Very pale brown (10 YR 7/3), silt to silt loam, damp; well indurated; upper 6 inches very difficult to excavate with hand auger; mottled very dark gray (10 YR 3/1) and reddish-yellow (7.5 YR 6/6) along apparent bedding and joint surface	ML		Total Depth = 37 inches No groundwater noted Backfilled with excavated material Located on boundary of Areas 66/67, 25' N of C-9
80 / 35						
90 / 40						
100 / 45						
110 / 50						
120						

SIGNATURE OF FIELD SUPERVISOR

Douglas D. Harvey, Geologist
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Richard L. Wong, Senior Geologist, RG 5372
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PC-000456/0

Sample Location ID#: S06C

Page 1 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA – Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 328.49 ft. msl **SURFACE CHARACTERISTICS:** Soil/East of concrete dam

SAMPLING DATES: START: 10/03/94 (1045 hrs) **FINISH:** 10/03/94 (1116 hrs)

MONITORING DEVICES: TBM-28 Serial #892140

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
10 / 5	23S-94-052-CH	350	ALLUVIUM: 0 – 10" Light gray (10 YR 7/1) clay; dry to moist; upper 3 inches desiccation cracks ranging from 1/4 to 1-1/4 inch to a depth from 1 to 3 inches; very porous; scattered pieces of debris including plastic and leaves; fine roots; mottled reddish-yellow (7.5 YR 6/6)	CL-CH		
20 / 10			10 – 20" Grayish-brown (10 YR 5/2) clay, very moist; few coarse sand fragments; mottled very dark grayish-brown (10 YR 3/2) and brownish-yellow (10 YR 6/6)	CL		
30 / 15	23S-94-053-CH	350				
40 / 20			SILTSTONE: 20 – 39" Very pale brown (10 YR 7/3), silt to silt loam, damp; well indurated; mottled very dark gray (10 YR 3/1) and reddish-yellow (7.5 YR 6/6) along apparent bedding and joint surfaces	ML		
50						
60 / 25	23S-94-054-CH	BACK GROUND				

SIGNATURE OF FIELD SUPERVISOR

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PC-000456/0

Sample Location ID#: S06C

Page 2 of 2

Sampler: D. Harvey, R. Wong

H.P. Tech.: W. Berrett

SOIL HAND AUGER LOG

PROJECT: GA - Hot Cell Facility D&D **LOCATION:** San Diego, CA

ELEVATION: 328.49 ft. msl **SURFACE CHARACTERISTICS:** Soil/East of concrete dam

SAMPLING DATES: START: 10/03/94 (1045 hrs) **FINISH:** 10/03/94 (1116 hrs)

MONITORING DEVICES: TBM-28 Serial #892140

MEMO: Prior to sampling, equipment was wiped and screened by H.P. technician for contamination. No contamination detected.

Depth Below Surface in. / cm	Sample ID#	Detector Reading CPM	Soil Description Color, Texture, Moisture, etc.	Unified Classification	Graphic Log	REMARKS
70 / 30 / 80 / 35 / 90 / 40 / 100 / 110 / 45 / 120 / 50	23S-94-054-CH	BACK GROUND	SILTSTONE (continued): 20 - 39" Very pale brown (10 YR 7/3), silt to silt loam, damp; well indurated; mottled very dark gray (10 YR 3/1) and reddish-yellow (7.5 YR 6/6) along apparent bedding and joint surfaces	ML		Total Depth = 39 inches No groundwater noted Backfilled with excavated material Located in Area 67, 10.8' SE of C-10, and 26.2' SW of D-10

SIGNATURE OF FIELD SUPERVISOR

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