

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. Department of Health & Human Services
USPHS, NIH, NIAID

2. Rocky Mountain Laboratories
903 South 4th Street
Hamilton, Montana 59840

In accordance with letter dated
January 21, 1997

3. License number 25-01203-01 is amended in
its entirety to read as follows:

4. Expiration date December 31, 2004

5. Docket or
Reference No 030-05167

6. Byproduct, source, and/or
special nuclear material

7. Chemical and/or physical
form

8. Maximum amount that licensee
may possess at any one time
under this license

A. Any byproduct material
with Atomic Numbers
1-83

A. Any except sealed
sources

A. Not to exceed 50
millicuries per
radionuclide except:

Hydrogen-3	500 millicuries
Carbon-14	50 millicuries
Chromium-51	150 millicuries
Iodine-125	300 millicuries
Phosphorus-32	700 millicuries
Sulfur-35	80 millicuries

B. Any byproduct material
with Atomic Numbers
3-83

B. Sealed sources,
plated sources,
foils, or wires

B. Not to exceed 50
millicuries per
sealed source,
plated source, wire,
or foil

C. Cesium-137

C. Sealed sources
(J. L. Shepherd
Model 6810)

C. 2000 curies

9. Authorized use

A. and B. For use in research and development as defined in Section 30.4 of
10 CFR Part 30, calibration of licensee's survey instruments, and academic
instruction.

C. For use in J. L. Shepherd Mark I Series, Model 30 Gamma Irradiator for
irradiation of biological specimens.

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

25-01203-01

Docket or Reference Number

030-05167

Amendment No. 35

CONDITIONS

10. Licensed material shall be used only at the licensee's facility located at 903 South 4th Street, Hamilton, Montana.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Committee, Dianne Huhtanen, Chairman.
B. The Radiation Safety Officer for this license is Dianne Huhtanen.
12. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
B. Notwithstanding Paragraph A of this Condition, sealed sources and detector cells designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
C. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
D. Sealed sources need not be leak tested if:
 - (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

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Amendment No. 35

- E. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Radiation Safety and Safeguards. The report shall specify the source involved, the test results, and corrective action taken.
- F. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to Perform such services.
13. Maintenance, repair, cleaning, replacement, and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.
14. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by the Commission or an Agreement State to perform such services.
15. For each J. L. Shepherd and Associates, Mark I Cesium-137 Irradiator installed and used, the licensee shall:
- A. Permit the use of the irradiator only when a calibrated and operable radiation survey meter or room monitor is available; and
 - B. Permit the irradiator door to be opened only after the operator has checked visual indicators to verify that the source has returned to its safe storage position; and
 - C. Have room monitors installed that will:
 - (i) Operate at all times when the irradiator is in use; and
 - (ii) Activate a visible and audible alarm when radiation exceeds 2 millirems per hour; and
 - (iii) Detect any radiation leaking from the irradiator door; and
 - (iv) Be visible to the irradiator user when he is next to the irradiator; or

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030-05167

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- D. If a room monitor is not installed, have available a calibrated and operable survey meter which will be used to:
- (i) Determine the radiation level at the irradiation door when the door is closed; and
 - (ii) Check for any increase in radiation levels each time the irradiator door is opened.
- E. Not repair or authorize repairs of the irradiator except by the manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.
16. Licensed material shall not be used in or on human beings.
17. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
18. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.
19. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate meter set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
 - C. A record of each disposal permitted under this License Condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
20. Pursuant to 10 CFR 20.1302(c) and 10 CFR 20.2002, the licensee is authorized to dispose of licensed material by incineration provided the gaseous effluent from incineration does not exceed the limits specified for air in Appendix B, Table II, 10 CFR Part 20.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

25-01203-01

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030-05167

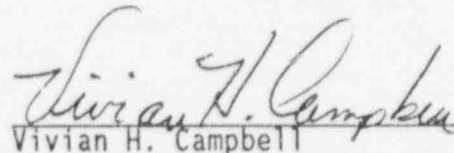
Amendment No. 35

21. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.
22. The licensee shall maintain records of information related to decommissioning at the address specified in item 2 above per the provision of 10 CFR 30.35(g) until this license is terminated by the Commission.
23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Letter dated February 22, 1994
 - B. Application dated January 18, 1994
 - C. Letter dated November 22, 1994
 - D. Letter dated December 9, 1994
 - E. Letter dated December 16, 1996
 - F. Letter dated February 25, 1997
 - G. Letter dated March 18, 1997
 - H. Letter dated January 21, 1997

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date MAR 27 1997

By


Vivian H. CampbellNuclear Materials Licensing Branch
Region IV
Arlington, Texas 76011

MCH.



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

March 27, 1997

Department of Health & Human Services
USPHS, NIH, NIAID
Rocky Mountain Laboratories
ATTN: Dianne Huhtanen
Radiation Safety Officer
903 South 4th Street
Hamilton, Montana 59840

SUBJECT: LICENSE AMENDMENT

Please find enclosed License No. 25-01203-01. You should review this license carefully and be sure that you understand all conditions. If you have any questions, you may contact me at 817-860-8217.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public which can result from failure to comply with NRC requirements, you must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).
5. Request and obtain written NRC consent before transferring your license or any right thereunder, either voluntarily or involuntarily, directly or indirectly, through transfer of control of your license to any person or entity. A transfer of control of your license includes not only a total change of ownership, but also a change in the controlling interest in your company whether it is a corporation, partnership, or other entity. In addition, appropriate license amendments must be requested and obtained for any other planned changes in your facility or program that are contrary to your license or contrary to representations made in your license.

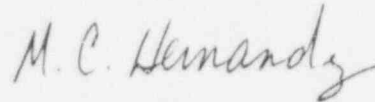
application, as well as supplemental correspondence thereto, which are incorporated into your license. A license fee may be charged for the amendments if you are not in a fee-exempt category.

6. Maintain in a single document decommissioning records that have been certified for completeness and accuracy listing all the following items applicable to the license:
 - Onsite areas designated or formerly designated as restricted areas as defined in 10 CFR 20.3(a)(14) or 20.1003.
 - Onsite areas, other than restricted areas, where radioactive materials in quantities greater than amounts listed in Appendix C to 10 CFR 20.1001-20.2401 have been used, possessed, or stored.
 - Onsite areas, other than restricted areas, where spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site have occurred that required reporting pursuant to 10 CFR 30.50(b)(1) or (b)(4), including areas where subsequent cleanup procedures have removed the contamination.
 - Specific locations and radionuclide contents of previous and current burial areas within the site, excluding radioactive material with half-lives of 10 days or less, depleted uranium used only for shielding or as penetrators in unused munitions, or sealed sources authorized for use at temporary job sites.
 - Location and description of all contaminated equipment involved in licensed operations that is to remain onsite after license termination.
7. Submit a complete renewal application with proper fee, or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
8. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation; imposition of a civil penalty; or an order suspending, modifying, or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), 60 FR 34381, June 30, 1995.

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script, reading "M. C. Hernandez". The signature is written in dark ink and is positioned above the printed name and title.

Christi Hernandez, Radiation Specialist
Nuclear Materials Licensing Branch

Docket: 030-05167
License: 25-01203-01
Control: 466302

Enclosures: As stated

MAR 27 1997

Department of Health & Human Services -4-

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Rocky Mountain Laboratories
Hamilton, Montana 59840-2999
(406) 363-9400

February 6, 1997

Dr. Blair Spitzberg
U.S. Nuclear Regulatory Commission
Region IV
Material Radiation Protection Section
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Dear Dr. Spitzberg:

This letter is to serve as a follow-up of our conversation with you and Vivian Campbell on February 3, 1997. During our telephone call, we discussed the proposed NRC agenda to review the decommissioning procedures undertaken by the Rocky Mountain Laboratories (RML) for one of our structures (Building 4). To summarize, we agreed that the timetable of events for the NRC review process is as follows:

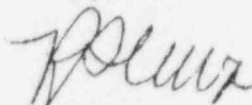
1. The decommissioning report from RML was received by your office on January 22, 1997.
2. The report is currently being reviewed by Vivian Campbell and other NRC staff.
3. The NRC indicated that it is mandated that a confirmatory survey be completed.
4. The NRC inspector from the Walnut Creek office will arrive at the RML on or before February 19, 1997.
5. Confirmatory testing will be performed within a day of arrival.
6. Results of the confirmatory testing will be available within a week to 10 days.
7. Unless test results indicate contamination levels greater than NRC release guidelines established in Regulatory Guide 1.86, i.e. 1000 dpm/100cm², the NRC will clear Building 4 for demolition by February 28, 1997.
8. The release of Building 4 by RML to on-site construction contractors for demolition will occur March 3, 1997.

TOTAL P.02

Dr. Blair Spitzberg - 2
February 6, 1997

It is very important that we give the contractors a precise date when they will have unrestricted access to Building 4 so that they can mobilize and proceed with the demolition without further delay. If there is some reasons you feel the above time lines are not realistic, please notify me immediately at (406) 363-9324. Thank you for your attention to this very critical issue.

Sincerely yours,



Pat Stewart
Chief, Administrative and Facilities Management
Rocky Mountain Laboratories

cc:
Ms. Huhtanen
Dr. Bergman
Mr. Darrow



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

March 3, 1997

Department of Health & Human Services
ATTN: Pat Stewart
USPHS, NIH, HIAID
Rocky Mountain Laboratories
903 South 4th Street
Hamilton, Montana 59840

SUBJECT: DECOMMISSIONING OF BUILDING 4

As discussed in our telephone conversation of March 3, 1997, the results of our independent survey conducted on February 19, 1997, indicate that area exposure rates and wipe samples did not exceed the guideline levels. Based on these results, we have no objection to your release of Building 4 for unrestricted use. You should receive a detailed report of our inspection and closeout survey in the near future.

Sincerely,

D. Blair Spitzberg, Ph.D., Chief
Nuclear Materials Licensing Branch

Docket: 030-05167
License: 25-01203-01
Control: 466302

Distribution:

D. B. Spitzberg

J. J. Holonich, NMSS/DWM/URB (T 7 J8)

H. D. Chaney, WCFO

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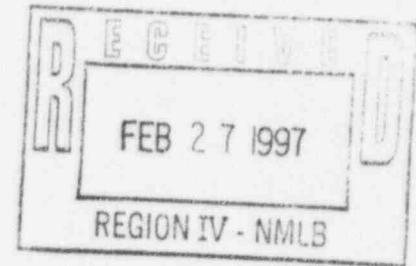
DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Rocky Mountain Laboratories
Hamilton, Montana 59840
(406) 363-3211
FTS (700) 322-8400

February 25, 1997

U.S. Nuclear Regulatory Commission, Region IV
Division of Nuclear Materials Safety
Attn.: Vivian Campbell
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064



Ref: NRC License 25-01203-01

Dear Ms. Campbell:

Enclosed is the document addressing my education, experience and qualifications as a candidate for the position of Radiation Safety Officer at the Rocky Mountain Laboratories.

Also, I have enclosed a corrected page 8 that should be attached to page 8 of the Final Status Survey Report for Decommissioning Building 4, RML. I did give a corrected copy of page 8 to Kristi last week, so perhaps this has already been accomplished.

Thank you for your assistance in this process.

Sincerely,

Dianne Huhtanen
Acting Radiation Safety Officer
Rocky Mountain Laboratories



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

February 4, 1997

Department of Health & Human Services
ATTN: Pat Stewart
USPHS, NIH, HIAID
Rocky Mountain Laboratories
903 South 4th Street
Hamilton, Montana 59840

SUBJECT: DECOMMISSIONING OF BUILDING 4

As discussed in our telephone conversation on February 3, 1997, we have no objection to your initiating asbestos abatement in Building 4 prior to our performing NRC's confirmatory closeout survey. It is our understanding that the surfaces to be abated involve primarily pipes and overhead areas that have been determined through your surveys to be free of contamination. We also understand that abatement activities should not significantly disturb sinks, hoods, countertops, floors, or other surfaces of potential contamination from routine licensed activities. We plan to schedule our inspection as soon as possible.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Blair Spitzberg", is written over a horizontal line.

D. Blair Spitzberg, Ph.D., Chief
Nuclear Materials Licensing Branch

Docket: 030-05167
License: 25-01203-01
Control: 466302

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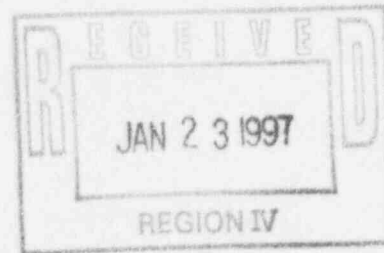
DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Rocky Mountain Laboratories
Hamilton, Montana 59840-2999
(406) 363-9400

U.S. Nuclear Regulatory Commission
Region IV
Material Radiation Protection Section
Attn.: Vivian Campbell
611 Ryan Plaza Drive Suite 1000
Arlington, TX 76011

January 21, 1997



Ref: NRC License 25-01203-01
Docket 03-05167

Dear Ms. Campbell:

Enclosed is the final survey status report pertaining to the decommissioning of Building 4 at Rocky Mountain Laboratories prior to demolition. It is of the utmost importance that we receive a reply regarding the decommissioning as soon as possible. We will incur heavy financial penalties for delay of the contract if we cannot release the building for demolition in the immediate future.

I would like to explain how this situation came about so that you might better understand the urgency of our position. The renovation project at RML has been in the planning stages for some time and contractual agreements with the architectural firm who designed the renovation have been in place for about 2 years. Part of the renovation is to remove Building 4, which is one wing of the main building. We were, of course, aware of the need for an extensive radiological survey as well as chemical and biological safety surveys before the building could be relinquished for demolition. In view of the large scope of surveys that were necessary, the office of Federal Occupational Health (FOH), DHHS, contracted the services of JMN and Assoc. of Seattle to conduct the activities for decommissioning of the building. FOH drafted a plan for the radiological survey which is included as an appendix to our final report. However, 10CFR 30.36d (Sept. 29, 1995), which states that a notification to the NRC is required if "(1) The license has expired----(2) the licensee has decided to permanently cease principal activities-----in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with NRC requirements", was interpreted by JMN and Assoc. with my concurrence, to mean that we should notify the NRC **only if** the building contained non-remediable contamination at levels that were not in accordance with NRC requirements.

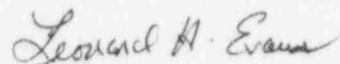
After an assessment of the building, which included preliminary surveys of most of the work areas and of the sewer system, review of the extensive records of surveys conducted routinely in the

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work areas, and review of activities that historically took place in the building, it was concluded that the presence of significant non-remediable contamination was very unlikely (as confirmed in our final status survey), that notification to the NRC was not required and that demolition could commence immediately after the final status survey. Accordingly, a contractual agreement was established for the demolition of Building 4 to commence upon completion of the final status survey. The contract was awarded on September 30, 1996, prior to the release of the NRC Administrative Letter 96-05 regarding the timeliness rule, which clarified the ambiguities (10 CFR 30.36. d) in the requirements for NRC notification. With that change in interpretation of the NRC requirements, commencement of the contract is now dependent on NRC approval of our final status survey, the contractors are currently idle, and penalties for contractual delay to be assessed at a rate of \$20,000/month are imminent.

I hope that the above explanation serves to describe the circumstances leading to our present situation and the urgency of that situation. Again, I request your prompt review and response to our final status survey.

Sincerely,

A handwritten signature in cursive script that reads "Leonard H. Evans".

Leonard H. Evans, Ph.D.
Radiation Safety Officer
Rocky Mountain Laboratories

**FINAL STATUS SURVEY REPORT FOR DECOMMISSIONING
BUILDING 4, ROCKY MOUNTAIN LABORATORIES**

Prepared for:

**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV
MATERIAL RADIATION PROTECTION SECTION
ARLINGTON, TEXAS**

Prepared by:

**ROCKY MOUNTAIN LABORATORIES
NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES
NATIONAL INSTITUTES OF HEALTH
HAMILTON, MONTANA**

Date of Submission:

21 JANUARY 1997

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FINAL STATUS SURVEY REPORT FOR DECOMMISSIONING

NATIONAL INSTITUTES OF HEALTH ROCKY MOUNTAIN LABORATORIES HAMILTON, MONTANA NOVEMBER 1996 - JANUARY 1997

1.0 BACKGROUND

1.1 REASON FOR DECOMMISSIONING

The facility designated for decommissioning is Building 4 of the Rocky Mountain Laboratories (RML) complex. This building is scheduled for demolition as part of a major renovation program at RML. As of November 1996, active research no longer takes place in the laboratory; only laboratory benches, cabinets, doors, shelves and typical secured building fixtures remain. A courtyard will later be built where Building 4 currently stands.

1.2 MANAGEMENT APPROACH

In an effort to determine historical use of radioactive isotopes in Building 4, current and former researchers were asked about which areas were involved with radioactive isotope use. Most isotopes used were characterized by having relatively short half-lives except for 3-H and 14-C. Since monthly surveys are required from any lab using isotopes, recent isotope use has been monitored regularly. Therefore, the approach of the survey design was primarily to determine whether there was 3-H or 14-C contamination. Methods for conducting the surveys were outlined in "Supplement to Renovation Radiological Monitoring and Survey Plan" (see Appendix A). The Radiation Safety Officer, Dr. Leonard Evans, assigned sampling duties to Theron Holland, Safety contractor, counting duties to Frank Malik, Technician, and quality assurance and interpretive duties to Dianne Huhtanen, Radiation Technician. Training, qualifications and experience for these individuals are listed below:

Dr. Leonard Evans, PH.D., Radiation Safety Officer

Formal Courses: Medical School, University of Oregon, course on Use of Isotopes (approximately 2 weeks); RML, NIAID, NIH, special training course to qualify as an authorized user at RML (20 hours of lectures and laboratory training); RML, NIH, Irradiator Training Course to qualify as Authorized User of Gamma Irradiator.

Experience: Has served as RML Radiation Safety Officer since 1994. Has 24 years experience working with soft beta emitters; 16 years with hard beta emitters, and 12 years with gamma emitters in labeling cells and other biochemical experiments.

Dianne Huhtanen

Formal Courses: Radiation Safety Officer Training class, presented by CSI-Radiation Safety Training (40 hours of lecture and laboratory training); RML, NIAID, NIH Special Training Course to qualify as an Authorized User at RML (20 hours of lectures and laboratory training); RML, NIH, Irradiator Training Course to qualify as Authorized User of Gamma Irradiator. Beckman Liquid Scintillation Seminar Series (2 hour Course).

Experience: 6 years experience in record-keeping of isotope inventories and waste management under supervision of RSO. Radiation Safety Officer (elect) as of February 1, 1997.

Frank Malik

Formal Courses: NIH, Liquid Scintillation/Radiation Safety Course (approx. 24 hours of lectures and laboratory training).

Experience: Has 10 years experience using hard beta emitters; 3 years with soft beta and gamma emitters in labeling cells and other biochemical experiments.

Theron Holland

Formal Courses: University of California, Berkley, 4 credit (60 hour) course, Radiation for Safety and Health Professionals. Included training with Scintillation counter and Ludlum 3 counter.

2.0 SITE DESCRIPTION

2.1 TYPE AND LOCATION OF FACILITY

The building scheduled for demolition is Building 4, a two-story brick building housing offices and research laboratories at 903 S. 4th St., Hamilton, Montana. Pro-Builders of Missoula, Montana is the general contractor over the project.

2.2 OWNERSHIP

Building 4 is owned by the United States Government, National Institutes of Health, National Institute of Allergies and Infectious Diseases.

2.3 BUILDING DESCRIPTION

Building 4 is a two-story, cast-in-place concrete building with brick veneer and a flat roof. Photographs of Building 4 appear in Appendix B. A partial basement on the south side was used for equipment storage and scintillation counting. Nine (9) vacated laboratories, a common usage area, six (6) offices and a unisex rest- and lockeroom occupy the first floor. The laboratories are numbered 145, 152, 153, 155, 156 and 157. The common usage area is numbered 146. On the second floor there are five (5) laboratories, four (4) offices, two (2) darkrooms, two (2) storage areas, a unisex rest- and lockeroom and a heating-ventilation room. The laboratories on the second floor are numbered 240, 241, 249, 250 and 255.

3.0 OPERATING HISTORY

Building 4 was built in 1936. The laboratories contained therein have conducted various types of biological research for 60 years. Initially, RML programs were directed toward the investigation and control of spotted fever and production of spotted fever vaccine. During World War II the laboratory was used extensively for typhus and yellow fever vaccination production. By the 1950's the scope of research broadened significantly. The first record of isotope use was in 1954 in which procurement applications were approved for millicurie amounts of 14-C.

3.1 LICENSING AND OPERATIONS

In September of 1954 the first procurement application was authorized by the Atomic Energy Commission. An individual user license number 25-01203-01 was issued November of 1956. Current research activities are permitted under NRC License Number 25-01203-01 and the amendments attendant to that license. Formerly, some aspects relating to the J.L. Shepherd Mark I Gamma Irradiator (NOT Located in Building 4) were previously permitted under NRC License 25-01203-02. In Amendment 27, program aspects relating to the Gamma Irradiator were included in the Broad Scope License so that all activities are now covered under 25-01203-01, Docket Number 3005167. Amendment 5 issued 2/27/89 terminated License Number 25-01203-02. The current license operates under Amendment No. 32 issued January 18, 1994, with an expiration date of December 31, 1999. However, License Number 25-01203-01,

Docket Number 3005167, has been extended by five years to expire December 31, 2004, according to NRC amended regulations in 10CFR30, 40 and 70.

3.2 PROCESSES PERFORMED

Radionuclides have been used in small quantities (microcurie and millicurie amounts) for biological research at RML for over 40 years. Typical applications and processes have included tracing metabolic and immunological pathways in microorganisms or animals; tracing biological mechanisms in tissue culture; studying viral replication, nucleic acid metabolism, molecular cloning and nucleic acid sequencing; performing preparative and purification procedures as well as analytical techniques.

The history of radionuclide use in Building 4 has been researched extensively in isotope order records, lab survey records, and interviews with senior and former employees. The first isotope procurement application was dated September 10, 1954, but there is no record of isotope use in Building 4 until 1974. A list of radionuclides used in Building 4 from 1974 until November of 1996 is attached (see Appendix C). The chemical form, processes performed, and total millicurie amounts used each year are included.

Although records could not be found for years prior to 1973, radionuclides were used in Building 4 during that period. The types of radionuclides used are almost certain to be the same as those used after 1973, according to interviews with senior and former employees. More specifically these isotopes are thought to have been primarily 14-C and 3-H with the possibility of some shorter-lived isotopes such as 32-P, 125-I, and 131-I.

3.3 WASTE-DISPOSAL PRACTICES

NRC Licenses for RML historically and currently have permitted that liquid wastes be disposed of via the sanitary sewer. In interviews with senior and former employees solutions containing radioactive materials were poured down the drain of lab sinks in Building 4 and also in Building 5 and 10. Large amounts of water was used to flush the radioactive solutions through the sewer pipes.

More recently, aqueous solutions may be disposed of in designated lab sinks or in the sink in the Hot Lab, Room 197, Building 5. Ample volumes of water are used to flush solutions down the drain. Accurate records of disposal are maintained to insure limits are not exceeded. Surveys are conducted to check for contamination.

Disposal of solid wastes originally consisted of placing materials in a burial site in the back of the compound away from the research buildings. This practice was discontinued in 1978. Since that time solid waste is double-bagged or placed in plastic lined cardboard boxes, labeled with Radioactive Materials tags, catalogued according to isotope, date and activity and placed in the basement of Building 15 for decay. Ultimate disposal consists of incineration supervised by the RSO or his designee to insure that the quantity of radioactive material incinerated does not exceed 50% of the Maximum Permissible Quantity (MPQ) of activity allowed if all of the activity were to be contained in the incinerator stack effluent.

4.0 DECOMMISSIONING ACTIVITIES

The decommissioning activities selected were based on methodology and procedures outlined by the Regional Environmental Health Manager, Federal Occupational Health, DHHS, in the supplement to the Renovation Radiological Monitoring and Survey Plan. This plan was written according to requirements established by NRC, NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination".

4.1 OBJECTIVES

The goal in decommissioning Building 4 of the Rocky Mountain Laboratories is to assure that the building contains no radioactive contamination that might result in individuals being exposed to

unacceptable levels of radiation, either during the demolition process or at a later date when the debris is disposed of in the public domain. Guidelines set forth in NRC Regulation Guide 1.86 entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" were chosen as criteria for meeting that goal.

4.2 RESULTS OF PREVIOUS SURVEYS

In consideration of the historical use of nuclides in Building 4, it was determined that the potential contaminants were 14-C and 3-H. This was based primarily on half-life data, since all other isotopes used would have decayed more than 10 half-lives. Because monthly contamination surveys are required, recent contamination-free reports are well documented.

Site history reviews and evaluation of the potential contaminants (14-C and 3-H) indicated that the lab areas defined in Section 2.3 were the locations which potentially may have contamination; that is rooms 145, 146, 152, 153, 155, 156, 157, 240, 241, 249, 250, and 255. There is also an area just outside Building 4 referred to as the vault which may have stored "lead pigs" or other containers in which nuclides were shipped.

Scanning surveys using a Ludlum Model 3 survey meter were performed with both an end window gamma probe and the pancake G-M probe for beta detection. All scoping surveys resulted in readings equivalent to background levels, indicating that contamination was not present. Areas scanned included laboratory and darkroom floors, counter tops, shelves, cabinets, drawers, doors and door handles, exhaust ducts, sinks, sink traps and drains, hallways, ceilings, and walls up to six feet above floor level. Floors in offices adjacent to laboratories were also surveyed as added precaution.

Upon vacating the laboratory work spaces technicians provided complete wipe test surveys of all areas where radionuclides were used, disposed of or may have come in contact. In addition, freezers, fume hoods, and biological safety cabinets were wipe tested before moving to the new laboratory space. All reports on these smears were reported as <100 dpm/cm².

4.3 DECONTAMINATION PROCEDURES

Since the results of scanning surveys and preliminary wipe tests showed no evidence of radioactive contamination, decontamination procedures were not required at this point.

5.0 FINAL SURVEY PROCEDURES

5.1 GENERAL APPROACH AND SAMPLING PARAMETERS

The approach used in the final status survey was adopted ad hoc from a radiological monitoring and survey plan submitted to Pat Stewart, Chief, Administrative and Facilities Management Section, RML from Arvin G. Apol, C.I.H., Regional Environmental Health Manager, Federal Occupational Health on September 30, 1996. Appendix A contains this document.

Key tasks identified in the above document and completed during the final status survey include:

- establishing background levels
- performing scanning survey using portable survey instruments
- measuring removable surface contamination
- laboratory analysis and measurement of wipe (filter paper) samples.

This approach was written and specifically tailored to the research and historical context of RML. The processes identified the possible contaminants and areas most apt to be contaminated. Procedures were based on NRC recommendations.

As mentioned earlier, areas sampled were initially surveyed by laboratory technicians in monthly wipe test reports. Areas designated for isotope use were considered as having high potential for

contamination along with adjacent floor space, shelves, walls and drawers. These areas were marked off in one square meter units or equivalents. Wipe tests were performed in a representative smear of each one square meter grid using Whatman paper two centimeters square.

Samples taken at air exhaust ducts for fume hoods were retrieved by drilling pilot holes at the elbow of the duct where it exited the building immediately after the hood and also at the elbow leading to the exhaust fan motor on the roof of the building. The interior of the duct was wiped in a serpentine pattern at these points using a cotton swab. The wooden handle was broken off and the swab placed in a counting vial.

Samples on sink drains, hood drains and traps were taken by first removing liquid within the trap using a plunger. Pipe locations sampled included: (1) the vertical portion of pipe between the sink base and trap, (2) trap unit, and (3) horizontal portion of pipe leading away from the trap. The trap was dismantled, and wipes were taken in a helical motion from the interior out using a cotton swab.

Since all radioactive solutions poured down the drain were documented on disposal records there was no concern for exceeding limits for effluent concentrations for release to sewerage. In a few cases where sludge was sitting in the drain pipes, samples were taken for scintillation counting and the pipes were reassembled. Drains were then treated with Mulekick drain cleaner, followed by large volumes of water. This eliminated sludge problems.

5.2 WASTEWATER & SEWAGE EFFLUENT SAMPLING

In June 1996, wastewater/sewage effluent from Building 4 (one of two total samples consisting of temporally distinct composite samples) was collected by James Neely, C.I.H., and later analyzed by gross alpha, gross beta, and gamma spectrometry. Based on review by a Certified Health Physicist, the sources of radiation detected in the effluent appeared to be related to naturally occurring and fission (fallout) radionuclides (see Appendix D). The sample was collected with a one-gallon polyethylene sample container, twenty-five feet of vinyl suction line and polypropylene strainer. Using Environmental Protection Agency (EPA) recommended chain-of-custody procedures, the sample was sent to Data Chem Laboratories of Salt Lake City, Utah.

5.3 BACKGROUND/BASELINE LEVELS IDENTIFIED

Background levels were determined by conducting instrument surveys and wipe tests in Room 219 of Building 1 which has always served as an office. The sample areas were as follows: #1 Door to Room 219; #2 North Wall Room 219; #3 Counter Top in Room 219. The results of the scanning survey using a portable Ludlum survey meter (first with a beta probe; and then with a gamma probe) consisted of all readings falling within the range of 50-80 cpm for beta and 500-800 cpm for gamma. Background wipe smears were placed in vials with scintillation fluid and counted with each count performed. The average of the three counts was used as the background number in the cpm to dpm conversion for that data. Background levels for the exhaust ducts were established from wipe test data taken from the ducts of the second floor bathroom in Building 4.

5.4 MAJOR CONTAMINANTS IDENTIFIED

There were no major radioactive contaminants found. Some indications of 3-H with possibly 14-C also were found at low levels in drain pipes. This would be consistent with the historical use of nuclides in Building 4.

5.5 GUIDELINE ESTABLISHED

Nuclear Regulatory Guide 1.86 entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use..." establishes that acceptable removable surface contamination levels should not exceed 1000 dpm/100cm² for Beta-gamma emitters and 20 dpm/100 cm²

for 125-I. The RML Radiation Safety Manual requires wipe tests to show 100dpm/100cm² or less to be considered contamination free.

5.6 EQUIPMENT AND PROCEDURES SELECTED

5.6.A. INSTRUMENTS AND EQUIPMENT

Ludlum Model 3 portable survey meter was used for surface scanning (Ludlum Measurements, Inc., Sweetwater, Texas; serial no. 47524). Two probes were used for scanning: pancake beta detector, Model 44-9 (serial no. 031256) and low energy gamma scintillator, Model 44-3 (serial no. 031258). The beta probe was used for the purpose of 32-P and perhaps gross 35-S detection. The gamma probe was employed for 125-I detection. The survey meter and probes had been calibrated in October of 1996 by SUNTRAC Services, Inc., League City, Texas. The beta probe has a sensitivity of 3300 cpm/mR/hr, whereas the gamma probe had a sensitivity of 675cpm/microR/hr.

The Beckman LS 6500 scintillation system (Beckman Instruments; Fullerton, CA; serial no. 7068472), was used to count wipe tests taken to check for removable radioactive contamination. This counter was purchased within the last six months and calibrated by an authorized Beckman service representative. On the recommendation of the Beckman Technical support staff, samples were counted on three channels. The first channel counts from 0-400, thus counting mainly 3-H (400). If present, 55-Fe (350) would count in that channel also. The second channel counts 14-C (670), 125-I (567), 35-S (688), and 33-P (750) while the third channel counts 32-P (945) and perhaps 59-Fe (900).

5.6.B. INSTRUMENT USE TECHNIQUES

The following techniques were followed during use of the Ludlum survey meter: surfaces were scanned to determine whether residual gross activity or non-removable contamination was present. The probes were kept as close to the scanned surfaces as possible (usually 1 cm on average). For beta radiation, the scan speed did not exceed one-half a detector window width per second. The probe was moved from the outside of a grid to the inside in ever decreasing square patterns. The gamma probe was moved in a serpentine manner at a speed of approximately 0.5 meters per second. Changes in instrument response were monitored via audible output and fluctuations in the analog meter reading.

Procedures followed during scintillation counting consisted of loading samples in the appropriate sample racks. Samples were placed in sequence after first loading the 14-C standard, 3-H standard and three background vials. The first rack always contains the User Number Card which specifies instructions for calibration, count channels, etc. The Beckman LS 6500 was designated as the only machine to be used for counting the wipe samples. When all of the samples in the set had been counted for a particular day, the data was transferred to a computer disk. Each sample counted was identified on the raw data count sheet to correspond to vial numbers and codes.

In reviewing the cpm's, samples having counts greater than 80 cpm were selected for recount, to eliminate evidence caused by spurious counts or chemiluminescence. In every case, with the exception of several sink traps, counts greater than 100 dpm/100cm² were decreased to acceptable levels, i.e. counts less than 100 dpm/100cm².

5.7 PROCEDURES FOLLOWED

Areas of the laboratories, a darkroom, and common use rooms were subdivided into grids approximately 1 meter by 1 meter in size. Whatman filter paper (3M Chromatography paper) was cut into squares 2cm by 2cm. Stainless steel forceps were used to hold the filter paper to wipe a random area equivalent to at least 100 cm² within the grid area of one square meter. One wipe was taken from each drawer including the front plate and inside surface, as well as from all horizontal surfaces. In addition, smears were taken from selected ceiling areas near vents as well as from selected wall areas six feet above the floor. Surveys of hallways, doors, door handles, and office floors adjacent to laboratories were also taken. The wipe sample for each location was placed in a vial and 4 milliliters of liquid scintillation fluid (Beckman Ready Safe) was added to each vial. Each vial cap was coded to coordinate with the grid description for each room. For example, 145, F1 describes the floor grid #1 for room 145. A chain-of-

custody form was completed and passed with the samples, in person, to the scintillation analyst. After analysis the samples were archived.

Procedures for the scanning survey, duct sampling and drain wipe tests were discussed in earlier sections.

The wipe tests and scoping surveys were all performed by Theron Holland, M.S., M.P.H., who serves as a contract environmental/occupational safety and health consultant for RML. Training and experience were listed in Section 1.2. Personal protective equipment worn during the survey included a laboratory coat, double latex gloves, and safety glasses. Potentially contaminated gloves, Kim Wipes and other disposable materials were stored in radiation waste containers and consolidated into the laboratory radioactive waste stream. Proper personal hygiene was maintained at all times: there was no eating, drinking or smoking in the surveyed areas and hands were thoroughly washed before leaving the work area.

Remediation measures were used on the sink drains and traps which continued to have counts above 100 dpm/100 cm², after recounting to eliminate spurious counts or chemiluminescence. These measures included cleaning drains with drain cleaner, flushing with large volumes of water and then cleaning the drains further with Count-off liquid concentrate (Dupont Biotechnology Systems, Boston, MA.), followed by copious amounts of water. Double latex gloves, safety glasses, face shield and lab coat were all used as safety precautions.

5.8 SURVEYING ORGANIZATION

Survey and wipe tests were performed by Theron Holland (see Section 5.7). Once the vials were ready for counting he delivered them to Frank Malik who was responsible for the scintillation counting. Frank counted the samples and transferred the data to a computer disk. He identified the samples on the raw data sheet of counts. Once this was complete all vials were catalogued in boxes and stored in Building 15 which is the radioactive waste storage area. Count sheets containing the raw data were then delivered to Dianne Huhtanen who converted the raw data to disintegrations per minute by subtracting average background counts and dividing by the efficiency of counting for 3-H, 14-C and 32-P. Dianne Huhtanen was also responsible for checking sampling procedures, overseeing remediation processes and determining which samples should be retaken and counted.

6.0 SURVEY FINDINGS

Building 4 of RML was surveyed extensively to check for radioactive contamination. Over 2400 wipe tests were done on the building. See raw data counts in Appendix E. Counts remaining above 100 dpm/100 cm², after recounting to eliminate chemiluminescence, with the exception of sink drains and traps, were found only in two areas: (1) a drawer on cabinet D in Room 145 (D2J with 147 dpm) and (2) a hood drain pipe in Room 241. The hood drain was cleaned with count-off and recounted several days later. The results of that count were well below 100 dpm/100 cm² at 27 dpm. See appendix F, Table 1.

The sink drains with counts greater than 100 dpm/100 cm² were also recounted to eliminate effects of chemiluminescence. Twelve of the 68 total samples taken on sink drains and traps remained above 100 dpm. These areas were treated with Mulekick drain cleaner, flushed several hours, treated with Count-off, flushed several hours and then retested. Table 2 of Appendix F documents original counts and recounts performed on the drains.

The center sink in Room 145 historically has been designated as a sink for disposal of liquid radioactive waste. Counts indicate residual activity in various sections to be between 100 and 400 dpm. The CV section which is a vertical portion cleaned up when scrubbed with Count-off and a bottle brush. Probably some residue was sitting in a groove or junction. The horizontal portion of the East and West sinks in Room 153 also seem to have some low level 3-H contaminant. The drain for the North sink in Room 241 continues to show counts between 100 and 400 counts. Horizontal portions were not scrubbed since they are probably representative of the remainder of the pipes extending to the sewer.

The attached page 8 serves as a correction for errors printed in paragraph 2 of section 6.2 of the original "Final Status Survey Report for Decommissioning Building 4, Rocky Mountain Laboratories".

Dianne Huhtanen

Dianne Huhtanen

Acting Radiation Safety Officer

6.1 TECHNIQUES FOR REDUCING/EVALUATING DATA

Techniques for reducing and evaluating data were straightforward. All counts were converted to disintegrations per minute. See appendix E. The method consisted of averaging the three background counts; subtracting the average background count from the counts per minute and dividing that number by the efficiency. Efficiency was calculated for each time counts were performed by counting the 3-H and 14-C standards and dividing by the number of dpm listed for each standard. An example of this calculation is shown below:

Rm 250 Sample b = 30 cpm in the 3-H channel
Average background count = 24 cpm

$$\frac{\text{Count for 3-H std}}{\text{*3-H std dpm}} = \frac{61,697}{97,811} = 63\% \text{ efficiency}$$

*3 month decay from date of std. was calculated.

$$\text{DPM for sample 6} = \frac{\text{count-bkg ave}}{\text{efficiency}} = \frac{30-24}{.63} = 9$$

In the raw data of appendix E, it is understood that there is no such thing as negative dpm and that these entries should read as 0.

As mentioned in section 6.0 any suspect counts, i.e. counts > 100 dpm/100cm² were than reanalyzed, and if necessary, cleaned and recounted.

Statistically, counting efficiency was extremely consistent for both 3-H and 14-C. Calculations for 3-H efficiency ranged from .631 to .638; for 14-C calculations for efficiency ranged from .789 to .800.

Background average counts for the lab areas ranged from 15 to 31 with an overall average of 21 for 3-H; from 8 to 20 with overall average of 14 for 14-C and from 5 to 17 with an overall average of 9 for 32-P.

6.2 COMPARISON OF FINDINGS WITH GUIDELINE VALUES AND CONDITIONS

Comparison of findings with guideline values indicated that all areas that were not associated with sink drains were clean, i.e. having counts <100 dpm/100 cm². Thus, these areas met standards set by the RML Radiation Safety Manual as being contamination free.

On final counts after cleaning, sink drains and traps possessed low level counts ranging from 128 dpm/100 cm² to about 390 dpm/100 cm². These counts were well below the guidelines set by Nuclear Regulatory Guide 1.86 which establishes acceptable levels of removable surface contamination at <1000 dpm/100 cm² for Beta-gamma emitters.

Our studies indicate that 125-I (1.86 Reg. guide limit- 20 cpm/100 cm²) is not a likely contaminant for several reasons:

- (1) Historical use of iodine up to the last two years would have decayed to undetectable levels (i.e. 10 half-lives).
- (2) Recent orders indicate approximately 1-2 millicurie of 125-I used each year. The Protein A form is stored for common use in Room 197, Building 5. Users obtain microcurie amounts for experiments of which only a portion were performed in Bldg 4.

7.0 SUMMARY

In summary, Building 4 has been surveyed and sampled for radioactive contamination in a very complete, consistent and conscientious manner. No evidence of contamination exceeding limits established by the Nuclear Regulatory Commission has been indicated. Building 4 can, therefore, be released for demolition and disposed in the public domain without concern that individuals might be exposed to unacceptable levels of radiation.

Appendix A

Supplement to the Renovation
Radiological Monitoring and Survey Plan



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Region X
M/S RX-21
2201 Sixth Avenue
Seattle WA 98121

September 30, 1996

Ref: D0H96HE30319

Ms. Pat Stewart
Chief, Administrative and Facilities Management Section
Rocky Mountain Laboratories
903 S. 4th St.
Hamilton, MT 59840-2999
(406) 393-9324

Dear Ms. Stewart:

Enclosed is the Supplement to the Renovation Radiological Monitoring and Survey Plan. This plan discussed specific sampling activities that should occur prior to demolition of Building 4.

Please contact me at 206\615-2440 should you have any questions or require any further assistance.

Sincerely,

Arvin G. Apol, C.I.H.
Regional Environmental Health Manager
Federal Occupational Health

**SUPPLEMENT
TO
RENOVATION RADIOLOGICAL MONITORING
AND
SURVEY PLAN**

SEPTEMBER 15, 1996

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1.0 RADIOLOGICAL SURVEYS SUPPORTING RENOVATION ACTIVITIES IN BUILDING 4

1.1 INTRODUCTION

The following radiological surveys shall be conducted by the Licensee prior to demolishing Building 4.

- Establishing Background Levels
- Scanning Survey Using Portable Survey Instruments
- Removable Surface Contamination Measurements
- Laboratory Analysis and Measurement of Wipe (Filter Paper) Samples
- Laboratory Analysis and Measurement of Liquid and Sludge (Sediment) Samples

These surveys shall be accomplished and performed in accordance with and as specified in the Nuclear Regulatory Commission (NRC), NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination," Draft Report for Comment, May, 1992.

1.1.1 ESTABLISHING BACKGROUND LEVELS

Background is determined by conducting survey measurements and/or sampling at locations on the site, which are unaffected by-site operations, i.e., preferable locations for interior background determinations all within on-site buildings of similar constructions, or even Building 4 locations that have had no previous history of licensed operations, i.e., use of radioactive materials. Surveys conducted with portable survey instruments as well as wipe surveys should be duplicated in laboratories and/or office space similar in dimensions and construction as the laboratories that are presently using licensed materials (i.e., laboratories using radioactive materials).

Based on previous historical records, interviews with personnel, present licence inventory and possession license limits and conditions as well as current and present documented monthly Laboratory Contamination Surveys of Laboratories, RML #191, the radiological surveys (instrument and smears) should be conducted to assess the radionuclides presently identified and used in Building 4 as listed in Table 1.0.

Since it can be readily shown from previous records, inventories, possession limits and many surveys that alpha radioactive material has not been used at this facility, it is recommended that only Beta-Gamma (B- γ) assessment be performed at this time. However, it is strongly recommended that a gross alpha analysis shall be conducted and performed of sink traps and manhole liquid and sludge (sediment) samples.

If a positive result is obtained from the gross alpha analysis, then a specific isotopic radionuclide analysis shall be performed to identify the specific alpha emitting radionuclide. In addition, the following protocol shall be used in conducting both portable radiation instrument and smear surveys.

Areas of the laboratory and/or space that have been used for handling radionuclides should be subdivided into grids approximately 1 meter by 1 meter (1M^2) in size (which corresponds to 10.76 square feet). One wipe of approximately 100 cm^2 should be taken from each grid area of 1M^2 . It is also recommended that one wipe should also be taken from the inside of every drawer in the radionuclide use areas. In addition smears should be taken of selected ceiling areas (e.g., near vents) as well as the selected wall areas up to 4 feet above the floor in these areas. In addition, all the laboratories should have all the equipment used in radionuclide research surveyed, such as storage cabinets, refrigerators and freezers that have previously stored radioactive material. In some laboratories, items such as electrical outlet boxes, water faucets, and fume hood service handles (such as gas, vacuum, air, etc.) should also be surveyed. Finally surveys of door handles and entry areas are required to assess the absence or presence of contamination.

In addition, to smear surveys of areas that use radioactive material, an instrument survey (scanning using a portable survey instrument) will be conducted of the areas to detect any nonremovable or fixed contamination.

In summary, each laboratory in Building 4 presently using or have previously used radioactive material as identified in Table 1.0 should be surveyed as follows:

- Scanning survey using a portable radiation instrument
- Wipe surveys to assess removable surface contamination

In addition, the following components shall be surveyed in the laboratories:

- Fume Hoods
- Glove Boxes
- Laboratory Benches
- Refrigerators and Freezers
- Walk-in Coolers
- Filters (charcoal and HEPA)
- Walls
- Floors
- Ceiling Tile
- Miscellaneous Laboratory Equipment

External surface surveys and wipe tests are acceptable for equipment that will continued to be used for radionuclide storage or handling in the new location.

TABLE 1.0

Radionuclides Presently in Use in Laboratories at the Rocky Mountain Laboratory Facility

Radionuclide	Radiation	Energy	Half-Life	Instrument
Tritium (H-3)	Beta (100%)	18.6 KeV	12.3 years	Liquid Scintillation Counter
Carbon (C-14)	Beta (100%)	156 KeV	5730 years	Liquid Scintillation Counter or Ludlum # 2 or 3
Phosphorus (P-32)	Beta (100%)	1.7 MeV	14.3 days	Liquid Scintillation Counter or Ludlum # 2 or 3
Phosphorus (P-33)	Beta (100%)	248 KeV	24.4 days	Liquid Scintillation Counter or Ludlum # 2 or 3
Sulfur (S-35)	Beta (100%)	167 KeV	87.0 days	Liquid Scintillation Counter or Ludlum # 2 or 3
Chromium (Cr-51)	Gamma (9%)	320 KeV	27.8 days	Gamma Scintillation Counter or Ludlum # 2 or 3
Iron (Fe-55)	X-rays (28%)	6 KeV	2.70 years	Gamma Scintillation Counter
Iron (Fe-59)	Beta (100%)	273; 466 KeV and 1.56 MeV	44.5 days	Liquid Scintillation Counter or Ludlum # 2 or 3
	Gamma (100%)	190 KeV and 1.10 and 1.29 MeV		Gamma Scintillation Counter or Ludlum # 2 or 3
Iodine (I-125)	Gamma (7%)	35 KeV	60.2 days	Gamma Scintillation Counter or Ludlum # 2 or 3
	X-rays --	27 and 31 KeV		Low-Energy Gamma Scintillation Detector

1.1.2 SCANNING SURVEYS USING PORTABLE RADIATION INSTRUMENTS

These measurements typically consist of surface scanning (moving the detector at a consistent speed and distance near the surface) and measuring levels of direct radiation (surface activity and exposure rate) at representative points.

Before conducting any fixed measurements, surfaces are scanned to identify the presence of elevated direct radiation which might indicate residual gross activity or hot-spots. Scans are conducted for all radiations potentially present, based on the operational history. The scanning detector is kept as close as possible to the surface and moved cross the surface at a slow speed. Nominally, the distance between the detector and the surface is maintained at less than two centimeters. For particulate radiations (beta) which may have very limited ranges, the scan speed should not exceed 1 detector width per second; this speed should be reduced to as low as 1/3 detector width per second for those situations when relatively low count rates may be indicative of residual activity exceeding guideline values. For gamma radiation the scanning speed may be greater; the probe is typically moved in a serpentine pattern while advancing at a speed of about 0.5 m per second.

For optimum detection sensitivity, changes in the instrument response are monitored via the audible output (use of headphones is recommended), rather than by observing fluctuations in the analog meter reading. This use of an audible signal negates concern for the time constant related to the meter response. Locations of direct radiation, discernable above the ambient level (typically 2 to 3 times the ambient count rate), are marked on facility maps and identified for further measurements and/or sampling.

1.1.3 REMOVABLE SURFACE CONTAMINATION MEASUREMENTS

Smears for removable surface activity are obtained by wiping an area of approximately 100 cm², within a 1 m² area using a dry filter paper, such as Whatman 50 or equivalent, while applying moderate pressure. A 47 mm diameter filter is typically used, although, for surveys for low-energy beta emitters, smaller sizes may be more appropriate because that can be placed directly into a liquid scintillation vial for counting.

1.1.4 RADIOLOGICAL SURVEYS OF CHEMICAL FUME HOODS USING RADIOACTIVE MATERIALS

The sampling of fume hoods should be limited to those laboratories presently utilizing radiochemical fume hoods in research activities presently located in Building 4 and listed in Table 1.0. The hoods should be scanned by a portable radiation instrument for Beta-Gamma radiation to detect nonremovable or fixed contamination. Areas of specific concern should be work areas, drains and traps; fume hood handles for gas, vacuum, air, water, etc. In addition, the sides, tops and upstream and downstream of the filters and blowers should be surveyed as well as the discharge point at the roof line. Special concern should be given to survey the filters if any are in place.

With respect to wipe surveys the same protocol and technique should be used as for laboratory surfaces and work areas, i.e., hood surfaces should be subdivided into grids approximately 1 meter by 1 meter (1 M^2) in size and one wipe approximately 100 cm^2 should be taken from each grid area of 1 M^2 . It is also important to ascertain if the fume hood has had a dedicated duct system or is connected to a common duct HVAC system, random wipe surveys can then be taken at various locations in the HVAC duct system. Access ports and clean outs can be used for access; in addition, sometimes cheesecloth attached to a pole can be used to conduct smear surveys to reach inaccessible locations in the duct system. Then small portions of the cheesecloth can be cut and then placed in vials for liquid scintillation counting.

1.1.5 RADIOLOGICAL SURVEYS OF SINKS AND TRAPS IN LABORATORIES USING RADIOACTIVE MATERIALS

The following protocol should be used to conduct radiological surveys of sinks and sink traps in laboratories using radionuclides.

- Scanning for Beta-Gamma radiation hot spots with a portable survey meter as described in section 1.1.2 and Table 1.0.
- Conduct wipe samples of sink drains and associated piping below sink and adjacent surrounding areas.

It is also strongly recommended that accumulated sludge (sediment) in sink traps be sampled.

- If appropriate, a Radiation Work Permit (RWP), necessary protective personnel equipment (PPE) and radiation safety training shall be issued and provided to personnel prior to work on sink traps.

- A scanning instrument survey shall be conducted prior to sampling the trap to assess potential contamination of the area prior to performing the necessary work.
- Personnel shall wear appropriate protective clothing, e.g., laboratory coats, 2 pairs of surgeon's (plastic) gloves and rubber booties and the necessary personnel dosimetry to assess radiation exposure.
- The area below the trap shall be prepared with absorbent paper and/or plastic covering and the appropriate radiation warning placards and signs.
- Wipe sampling will be conducted by attaching the wipe to a probe that is lowered into the trap.
- Liquid within the trap will be removed by a plunger or compressed air.
- Upon completing of work conduct a complete instrument survey of personnel and a smear survey of equipment used. Conduct a smear survey of area and absorbent paper and/or plastic covering, as warranted.
- If surveys are nondetectable, (i.e., not above natural background) then dispose of absorbent material in the regular trash. If the removable contamination smear surveys exceed 100 DPM/100 cm² then decontamination has to be initiated to reduce levels below 100 DPM/100 cm² as specified in the Rocky Mountain Laboratories (RML) Radiation Safety Manual, Revised September, 1993.
- The need for further internal monitoring and sampling is determined on the basis of visual observations of sludge buildup and direct measurements at the inlet, outlet, clean outs, and other access points to the pipe interior.
- Absorbent material can also be disposed of as Low-Level Radiative Waste (LLRW) for ultimate disposal off-site to a Licensed LLRW Disposal Facility.
- If contamination is found above the levels specified in the RML Radiation Safety Manual then, additional surveys, decontamination and possibly removal of the drain piping system may be required.

1.1.6

RADIOLOGICAL SURVEYS OF SEWER MANHOLE LIQUID AND SLUDGE (SEDIMENT) MATERIALS

The following protocol should be used to conduct radiological surveys of sewer manhole liquid and sludge (sediment) samples. A ISCO pump shall be used to pump liquid and sludge (sediment) samples into appropriate plastic containers. Typical volume of samples should be a minimum of 1 liter up to 1 gallon (3.78533 liters).

Appropriate protective clothing shall be used when taking these samples. Refer to section 1.1.5 for personnel protective equipment (PPE) and Radiation Safety Procedures and Requirements.

The liquid and sludge (sediment) samples shall then be analyzed for the following radioactivity:

- Gross ALPHA
- Gross BETA
- Gamma Scan

If any of the samples are positive then a specific isotopic analysis shall be performed to identify the specific radionuclide.

Samples shall be sent to laboratories that are qualified to perform these analyses and are currently approved by the U.S. Environmental Protection Agency (EPA).

If concentrations of radioactivity in the liquid and/or sludge (sediment) samples exceed the current Title 10 Code of Federal Regulations Part 20 et al. "Standards for Protection Against Radiation" Final Rule, May 21, 1991, Appendix B sections 20.1001-20.2401-Annual Limits on Intake (ALI's) and Desired Air Concentrations (DAC's) of Radionuclides for Occupational Exposure; Effluent Concentrations for Release to Sewerage, then further sampling and analysis shall be required to access and further evaluate the off-site effluent discharge concentrations to the surrounding environs.

2.0 RADIOLOGICAL INSTRUMENTATION

The following portable radiation survey instruments should be used in conducting a scanning survey to assess and evaluate the potential beta-gamma contamination of laboratory areas, spaces and equipment.

2.1 PORTABLE RADIATION SURVEY INSTRUMENTATION

For Beta Radiation:

A Ludlum Model #2 or 3 Portable Survey Meter with a Model #44-9 Pancake Geiger-Muller (G-M) detector with a pancake type halogen quenched G-M probe with a 1.7 ± 0.3 mg/cm² mica window and an active surface area of 15 cm² or equivalent. In addition, the instrument shall have been calibrated within the last six months and have the appropriate calibration curves and certificate on file. This instrument has an efficiency (2 Pi geometry) typically for C-14-10% and P-32-65%. This same instrument can also be used for gamma scanning surveys (Attachment A).

For Gamma Radiation: (Low Energy)

A Ludlum Model #2 or 3 portable survey meter with a Model 44-17 Low Energy Gamma Scintillator detector with a 2" (5.1 cm) diameter x 2 mm thick Sodium Iodide (Na I) Thallium activated (TI) crystal and an active and open window area of 7 cm² or equivalent. In addition, the instrument shall have been calibrated within the last six months and have the appropriate calibration curves and certificate on file. This instrument has an efficiency (2 pi geometry) typically for the low energy gamma of I-125-40% (ATTACHMENT A).

2.2 LABORATORY INSTRUMENTATION

It is strongly recommended that the smear (filter paper) surveys be counted in a Liquid Scintillation Counter.

Liquid Scintillation. Smears for low-energy beta activity (for example H-3 and C-14) can be placed directly into a scintillation cocktail and counted on a liquid scintillation spectrometer. The counting efficiency may be reduced; but as a screening method, this process will yield reasonable results. With the spectrum capability of the newer instruments, the analyst can (in most cases) identify the specific beta emitter(s) present. The introduction of the sample into the liquid scintillation medium produces quenching, a reduction in the efficiency of the scintillator as a result of the introduction of the sample. To evaluate the effect of quenching, an external standard may be used or a known amount of the identified radionuclide (referred to as an internal standard or spike) may be added to the sample after initial measurement and a recount performed

to enable determination of the detection efficiency for the specific sample. It should be noted that even with the identification of the nuclide(s) on the smears, this is still a gross analysis; and caution is advised in trying to infer too much from this information.

Since the laboratories at RML using radionuclides have access to liquid scintillation counting capacity, it is strongly recommended that a dedicated Liquid Scintillation Counter as well as one laboratory technician be assigned to analyze, count and record the survey results.

- The liquid scintillation counter shall have been calibrated within the last six months and have the approximate calibration and quenching curves as well as the calibration certificate on file.
- In addition, the liquid scintillation counter shall only be used to analyze smear samples dedicated to demolishing Building 4.
- The Laboratory Technician assigned to count, record the data and results shall be qualified and trained in the use of liquid scintillation counting techniques and be able to evaluate contamination results.

Each smear should be counted for a minimum of one minute.

3.0 CHARACTERIZATION OF AREAS THAT HAVE RESIDUAL, NONREMOVALBLE FIXED CONTAMINATION

If laboratory areas, surfaces, equipment and/or chemical fume hoods, ducts, filters, etc., are identified as being contaminated with radioactive material, then a decision shall be made by the Laboratory Radiation Safety Officer (RSO) to the extent, if any, to pursue the decontamination of such areas and equipment in accordance with the current U.S. NRC guidelines, specifically, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for ByProduct, Source or Special Nuclear Materials, U.S. NRC, Division of Fuel Cycle, Medical Academic, and Commercial Use Safety, Washington, D.C., April 1993 (Appendix A).

If decontamination is not performed and undertaken, then all material identified as contaminated with radioactive material shall be designated as Low-Level Radioactive Waste (LLRW) and appropriate provisions shall be made for adequate storage to initiate "Decay In Storage" as specified as condition 19 to the current Materials Licence #25-01203-01 as amended (Half lives of less than 65 days).

If areas, ducts, drains, equipment, chemical hoods, sewer pipes, surfaces, tiles etc., are determined to be contaminated with long-lived radionuclides, e.g., H-3 and C-14 that cannot be decontaminated (that is, fixed-nonremovable contamination) then all this material has to be inventoried, packaged, physically secured and stored in an area designed for Low-Level Radioactive Waste (LLRW), and then disposed of in the Northwest Compact at the Richland, Washington disposal facility. This may require the filing of a decommissioning plan in accordance with the provisions of 10 CFR 30, 40 and/or 70 as required by NRC regulations.

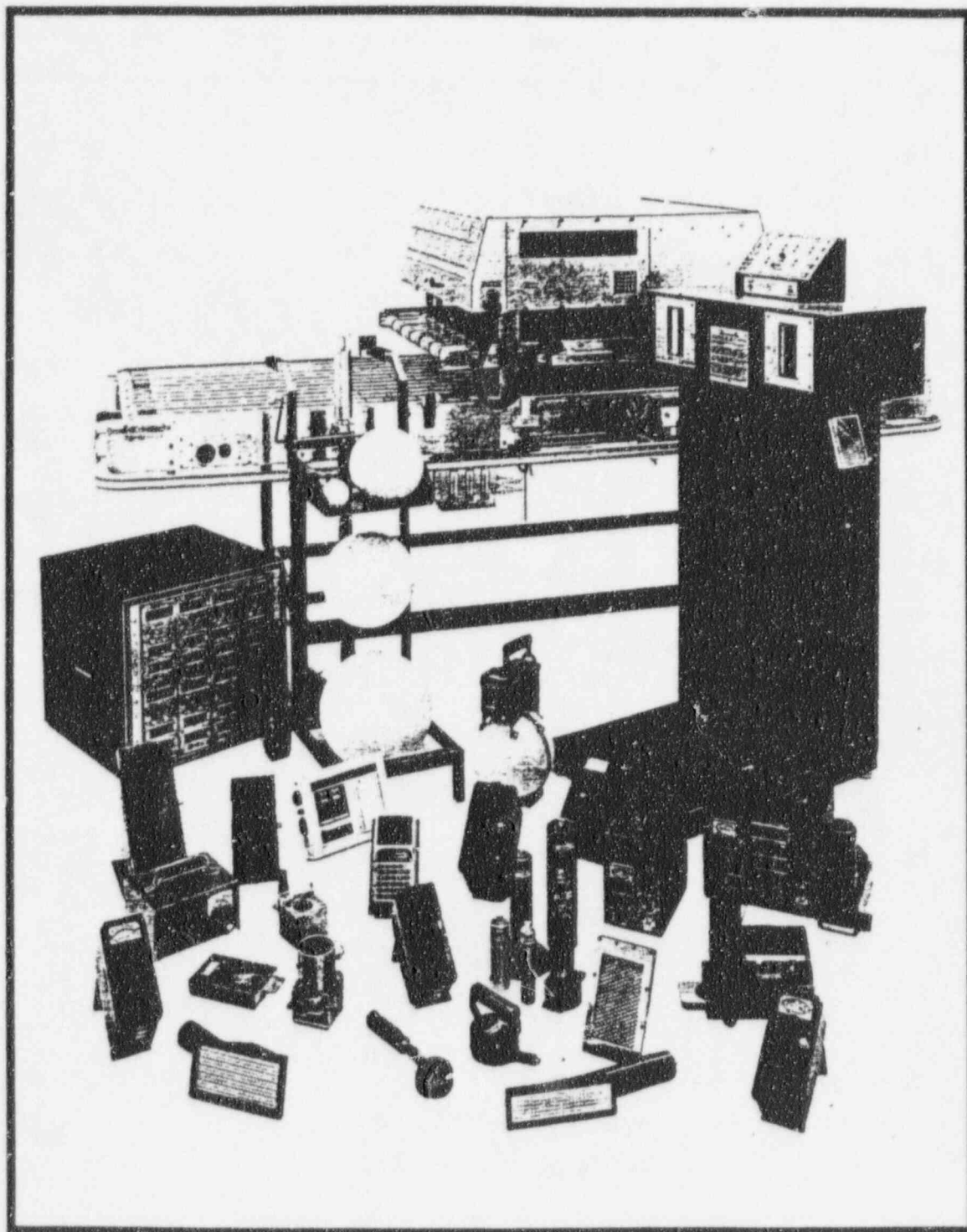
4.0 SAMPLE MANAGEMENT (SAMPLE CHAIN-OF-CUSTODY)

One of the most important aspects of sample management is to ensure that the integrity of the sample is maintained; that is, that there is an accurate record of sample collection, transport, analysis, and disposal. This ensures that samples are neither lost nor tampered with and that the sample analyzed in the laboratory is actually and verifiably the sample taken from a specific location in the field.

Sample custody should be assigned to one individual at a time. This will prevent confusion of responsibility. Custody is maintained when (1) the sample is under direct surveillance by the assigned individual, (2) the sample is maintained in a tamper-free container, or (3) the sample is within a controlled-access facility.

A chain-of-custody record (a standard form) should be initiated by the individual collecting or overseeing the collection of samples. A copy of this form should accompany the samples throughout transportation and analyses; and any break in custody or evidence of tampering should be documented.

ATTACHMENT A
PORTABLE RADIATION INSTRUMENTS
FOR
SCANNING SURVEYS

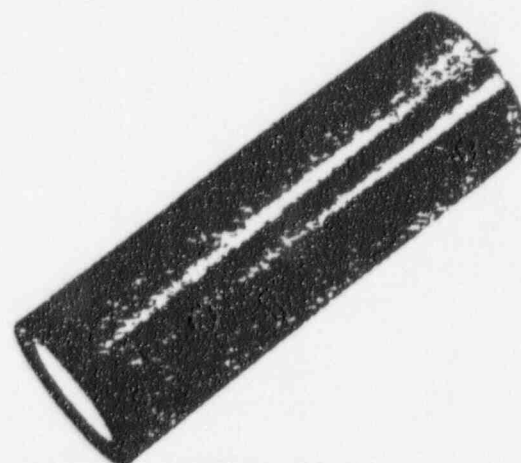


LUDLUM MEASUREMENTS, INC.

P.O. Box 810 • 501 Oak • Sweetwater, Texas 79556

915-235-5494 • Fax 915-235-4672 • 800-622-0828(USA)

GAMMA SCINTILLATION DETECTORS



MODEL 44-17
Low Energy Gamma Scintillator

COMMON SPECIFICATIONS

INDICATED USE: I-125, X-Ray survey
WINDOW: 8.2 mg/cm² mylar
RECOMMENDED ENERGY RANGE: Approximately 10 - 60 keV
ENERGY RESPONSE: Energy dependant
COMPATIBLE INSTRUMENTS: General purpose survey meters, ratemeters, and scalars
OPERATING VOLTAGE: Typically 500 - 1200 volts
CONNECTOR: Series "C" (*others available*)
CONSTRUCTION: Aluminum housing with beige polyurethane enamel paint
TEMPERATURE RANGE: 5°F(-15°C) to 122°F(50°C)
May be certified to operate from -40°F(-40°C) to 150°F(65°C)

MODEL 44-17

SCINTILLATOR: 2"(5.1cm) diameter X 2 mm thick NaI (TI)
crystal
WINDOW AREA: Active and open - 7 cm²
EFFICIENCY(2pi geometry): Typically 40%-¹²⁵I
TUBE: 2"(5.1cm) diameter magnetically shielded
photomultiplier
DYNODE STRING RESISTANCE: 60 megohm
SIZE: 2.6"(6.7cm) diameter X 9"(22.9cm)L
WEIGHT: 1.5 lbs (0.7kg)

ALPHA BETA-GAMMA G-M DETECTORS



MODEL 44-7
End Window G-M Detector



MODEL 44-9
Pancake G-M Detector

MODEL 44-7

INDICATED USE: Alpha, beta-gamma survey, and sample counting

DETECTOR: End window halogen quenched G-M

WINDOW: 1.7 ± 0.3 mg/cm² mica

WINDOW AREA:

Active - 6 cm²

Open - 5 cm²

EFFICIENCY(2pi geometry): 5%-¹⁴C, 20%-⁹⁰Sr/⁹⁰Y, 15%-²³⁸Pu

SENSITIVITY: Typically 2100 cpm/mR/hr (¹³⁷Cs gamma)

ENERGY RESPONSE: Energy dependant

DEAD TIME: Typically 160 μ s

COMPATIBLE INSTRUMENTS: General purpose survey meters, ratemeters, and scalars

OPERATING VOLTAGE: 900 volts

CONNECTOR: Series "C" (others available)

CONSTRUCTION: Anodized Aluminum housing with stainless steel protective screen (79% open)

TEMPERATURE RANGE: 5°F (-15°C) to 122°F (50°C)

May be certified to operate from -40°F (-40°C) to 150°F (65°C)

SIZE: 1.8" (4.6cm) diameter X 5.8" (14.7cm) L

WEIGHT: 1 lb (0.5kg)

MODEL 44-9

INDICATED USE: Alpha, beta-gamma survey, frisking

DETECTOR: Pancake type halogen quenched G-M

WINDOW: 1.7 ± 0.3 mg/cm² mica

WINDOW AREA:

Active - 15 cm²

Open - 12 cm²

EFFICIENCY(2pi geometry): Typically 10%-¹⁴C, 45%-⁹⁰Sr/⁹⁰Y, 38%-⁹⁹Tc, 65%-³²P, 30%-²³⁸Pu

SENSITIVITY: Typically 3300 cpm/mR/hr (¹³⁷Cs gamma)

ENERGY RESPONSE: Energy dependant

DEAD TIME: Typically 80 μ s

COMPATIBLE INSTRUMENTS: General purpose survey meters, ratemeters, and scalars

OPERATING VOLTAGE: 900 volts

CONNECTOR: Series "C" (others available)

CONSTRUCTION: Aluminum body with beige polyurethane enamel paint, and stainless steel protective screen (79% open)

TEMPERATURE RANGE: 5°F (-15°C) to 122°F (50°C)

May be certified to operate from -40°F (-40°C) to 150°F (65°C)

SIZE: 1.8" (4.6cm) H X 2.7" (6.9cm) W X 10.7" (27.2cm) L

WEIGHT: 1 lb (0.5kg)

NOTE: Handle is available in different lengths

1 GENERAL PURPOSE PORTABLE SURVEY METERS

COMMON SPECIFICATIONS

CONNECTOR: Series "C" (*others available*)

AUDIO: Built in unimorph speaker with ON/OFF switch (*greater than 60 dB at 2 feet*)

LINEARITY: Reading within $\pm 10\%$ of true value with detector connected

CALIBRATION CONTROLS: Accessible from front of instrument (*protective cover provided*)

RESPONSE: Toggle switch for FAST (4 seconds) or SLOW (22 seconds)
from 10% to 90% of final reading

RESET: Pushbutton to zero meter

POWER: 2 each "D" cell batteries

(*housed in sealed compartment that is externally accessible*)

BATTERY LIFE: Typically 600 hours with alkaline batteries

(*battery condition can be checked on meter*)

BATTERY DEPENDANCE: Less than 3% change in readings to battery endpoint.

METER: 2.5" (6.4cm) arc, 1 mA analog type

CONSTRUCTION: Cast and drawn aluminum with beige polyurethane enamel paint

TEMPERATURE RANGE: 5°F (-15°C) to 122°F (50°C)

May be certified for operation from -40°F (-40°C) to 150°F (65°C)

SIZE: 6.5" (16.5cm) H X 3.5" (8.9cm) W X 8.5" (21.6cm) L including handle

WEIGHT: 3.5 lbs (1.6kg) including batteries

MODEL 3 Survey Meter

COMPATIBLE DETECTORS: G-M, scintillation

METER DIAL: 0 - 2 mR/hr, or 0 - 5k cpm, BAT TEST
(*others available*)

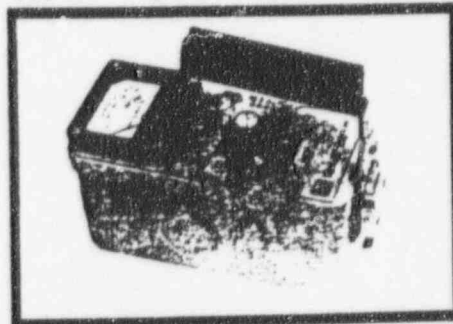
MULTIPLIERS: X0.1, X1, X10, X100

HIGH VOLTAGE: Adjustable from 200 - 1500 volts

THRESHOLD: 30 mV \pm 10 mV

NOTE: The 3 range version of the Model 3 is the
Model 2 Survey Meter

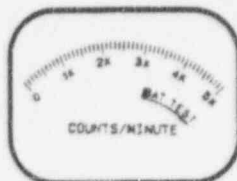
4 Range General Purpose Survey Meter
(typical range 0 - 200 mR/hr or 0 - 500,000 cpm)



GENERAL PURPOSE PORTABLE SURVEY METERS

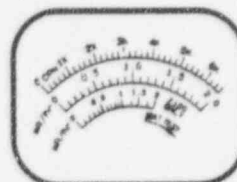
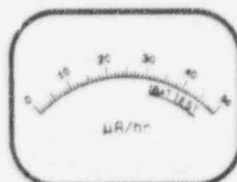
METER DIALS

202-2 for Models 2,3
with any detector
0 - 5k cpm



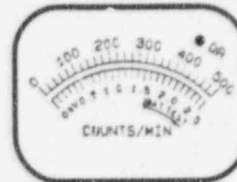
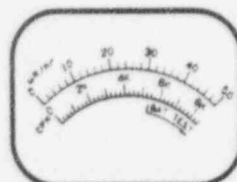
202-627 for Models 3, 14C
with 44-9
0 - 2 mR/hr

202-666 for Model 3
with 44-2
0 - 50 μ R/hr



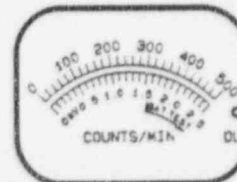
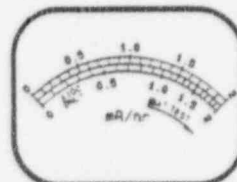
202-608 for Models 3, 14C
with 44-9
Dual Scale
0 - 2 mR/hr
0 - 6.6k cpm

202-654 for Model 3
with 44-2
Dual Scale
0 - 50 μ R/hr
0 - 8.4k cpm



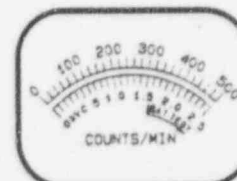
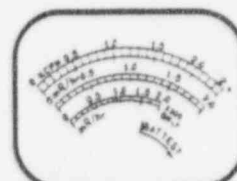
202-558 for Models 4
with any detector
0 - 500 cpm
0 - 2.5 kV
OR (overrange)

202-084 for Models 3, 14C
with 44-6, 44-38
0 - 2 mR/hr



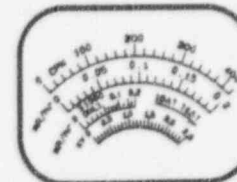
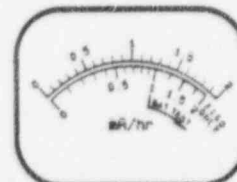
202-643 for Model 16
with any detector
0 - 500 cpm
0 - 2.5 kV
OL (overload)

202-241 for Models 3, 14C
with 44-6, 44-38
Dual Scale
0 - 2 mR/hr
0 - 2.4k cpm



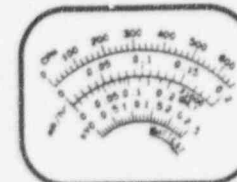
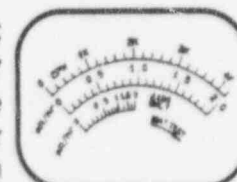
202-356 for Models 12, 18
with any detector
0 - 500 cpm
0 - 2.5 kV

202-085 for Models 3, 14C
with 44-7
0 - 2 mR/hr



202-365 for Models 12, 18
with 44-7
Dual Scale
0 - 0.2 mR/hr
0 - 420 cpm
0 - 2.5 kV

202-330 for Models 3, 14C
with 44-7
Dual Scale
0 - 2 mR/hr
0 - 4.2k cpm



202-618 for Models 12, 18
with 44-9
Dual Scale
0 - 0.2 mR/hr
0 - 660 cpm
0 - 2.5 kV

ABOVE METER DIALS ARE MOST COMMON OTHERS ARE AVAILABLE ON REQUEST

Appendix B

Photographs of Building 4

PHOTOGRAPHS OF BUILDING 4, ROCKY MOUNTAIN LABS



SOUTHWEST CORNER OF BUILDING 4
RML, HAMILTON, MONTANA



NORTHEAST CORNER OF BUILDING 4
RML, HAMILTON, MONTANA



WEST SIDE OF BUILDING 4,
ROCKY MOUNTAIN LABS, HAMILTON, MT

1993

SECOND FLOOR HALLWAY OF BUILDING 4
RML, HAMILTON, MONTANA





INTERIOR OF LABORATORY, POST-SURVEY,
LAB 250; (NOTE GRID PATTERN AND LABELING
OF SHELVES, WALLS, BENCH TOPS, CABINETS
AND FLOOR)

Appendix C

List of Isotopes used in Building 4

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
1973 No one in Building 4 used Isotopes				
1974	3H	Dinitrofluorobenzene	Protein sequencing	2.000
	14C	Sodium Acetate	Metabolic labeling	8.000
	125I	Sodium Iodide	Label proteins	10.000
1975	3H	Leucine	Protein sequencing	1.000
	3H	Uridine	Label RNA	1.000
	3H	Thymidine	Label DNA	6.000
	3H	Uracil	Label RNA	1.000
	14C	Glucosamine	Metabolic studies	0.100
1976	3H	Uracil	Label RNA	5.000
	3H	Thymidine	Label DNA	5.000
	3H	Uridine	Label RNA	6.000
	3H	Glucose	Metabolic labeling	1.000
	3H	L-leucine	Label proteins	1.000
	14C	Sodium Acetate	Metabolic labeling	5.000
	51Cr	Sodium Chromate	Cell Lysis	25.000
	125I	Sodium Iodide	Label proteins	10.000
	125I	Sodium Iodide Std.	Calibration	0.050
1977	3H	Thymidine	Label DNA	9.000
	3H	Leucine	Label proteins	1.000
	3H	Uridine	Label RNA	1.000
	51Cr	Sodium Chromate	Cell Lysis	34.000
	125I	Sodium Iodide Standard	Calibration	0.010
	131I	Sodium Iodide Standard	Calibration	0.010
1978	3H	Thymidine	DNA label	37.000
	3H	Alanine	Label amino acids	5.000
	3H	Standard		0.100
	3H	Adenosine	Label nucleotides	1.000
	3H	Adenine	Label RNA	1.000
	14C	AMP Standard		0.002
	14C	Glucosamine HCl	Metabolic studies	0.050
	14C	Glucose	Metabolic studies	0.250
	14C	Glucose PO4	Metabolic studies	0.100
	14C	Glutamic Acid	Metabolic studies	0.250
	14C	Glutamine	Metabolic studies	0.050
	14C	Cystidine	Label nucleotides	0.050
	14C	Cytosine SO4	Label nucleotides	0.050
	14C	Cytosine PO4	Label nucleotides	0.050
	14C	Cytosine di PO4	Label nucleotides	0.050
	14C	Cytosine tri PO4	Label nucleotides	0.050
	14C	Uracil	Label RNA	0.050
	14C	Uridine	Label RNA	0.100
	14C	Uridine PO4	Label nucleotides	0.050
	14C	Uridine di PO4	Label nucleotides	0.050
	14C	Uridine tri PO4	Label nucleotides	0.050
	32P	AMP	Metabolic studies	1.000
	51Cr	Sodium Chromate	Cell lysis	20.000
	125I	Deoxyuridine	Label DNA	1.000

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
<hr/>				
1979	3H	Thymidine	Label DNA	40.000
	3H	Alanine	Label amino acids	15.000
	3H	Glycerol	Metabolic studies	5.000
	3H	Cyclic GMP	Metabolic studies	2.000
	3H	Cyclic AMP	Metabolic studies	2.000
	3H	Acetic Anhydride	Protein acetylation	0.100
	14C	Glucosamine	Metabolic studies	0.260
	14C	Glucose	Metabolic studies	2.150
	14C	Pyruvic Acid	Metabolic studies	0.050
	14C	Adenosine	Label nucleic acids	0.050
	14C	Guanosine	Label nucleic acids	0.050
	14C	1,4 Succinic Acid	Metabolic studies	0.050
	14C	2,3 Succinic Acid	Metabolic studies	0.050
	14C	Acetic Acid	Metabolic studies	0.150
	14C	Thymidine	Label DNA	0.100
	14C	Uridine	Label RNA	0.100
	14C	ATP	Label nucleotides	0.050
	14C	AMP	Metabolic studies	0.050
	32P	AMP	Metabolic studies	2.000
	32P	Orthophosphate	Label proteins	10.000
	51Cr	Sodium Chromate	Cell lysis	27.000
	125I	C-AMP	Metabolic studies	0.001
	125I	C-GMP	Metabolic studies	0.001
<hr/>				
1980	3H	Thymidine	Label DNA	45.000
	3H	C-GMP	Metabolic studies	0.250
	3H	C-AMP	Metabolic studies	0.255
	3H	Prostaglandins	Metabolic studies	0.100
	3H	Acetic Anhydride	Protein acetylation	0.100
	3H	Leucine	Protein sequencing	1.000
	3H	Na borohydride	Label proteins	25.000
	14C	Succinic acid	Metabolic studies	0.050
	14C	Citric acid	Metabolic studies	0.100
	14C	Ketoglut acid	Metabolic studies	0.050
	14C	Lactic acid	Metabolic studies	0.100
	14C	Glycerol- 3PO4	Metabolic studies	0.050
	14C	Glycerol	Metabolic studies	0.100
	14C	Glucose	Metabolic studies	0.150
	14C	Cystine	Label nucleotides	0.050
	14C	Glutamic acid	Metabolic labeling	0.300
	14C	Proline	Label amino acids	0.050
	14C	Pyruvic acid	Metabolic studies	0.250
	14C	Adenosine	Label nucleotides	0.005
	14C	Starch	Metabolic studies	0.050
	14C	Maltose	Metabolic studies	0.050
	14C	Methyl protein mix	Label proteins	0.005
	14C	Glutaric acid	Metabolic studies	0.050
	14C	Fructose	Metabolic studies	0.050
	14C	Glycine	Label amino acids	0.050
	14C	cAMP	Metabolic studies	0.005
	14C	Arachidonic Acid	Metabolic studies	0.010
	35S	Cysteine	Label proteins	1.000

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
	35S	Methionine	Label proteins	2.000
	35S			0.054
	51Cr	Sodium Chromate	Cell lysis	5.000
	125I	NaI	Label proteins	95.000
	125I	cAMP	Metabolic studies	0.003
	125I	cGMP	Metabolic studies	0.003
	125I	cAMP kit	Metabolic studies	0.7545
	125I	cGMP kit	Metabolic studies	0.7545
	125I	IB-endorphin	Metabolic studies	0.002
	125I	NaI Hunter Bolton	Label proteins	2.000
1981	3H	Thymidine	DNA incorporation	30.000
	3H	Glucose	Metabolic studies	1.000
	3H	AA mix	Label proteins	1.000
	3H	Galactose	Metabolic studies	1.000
	3H	Mannose	Metabolic studies	1.000
	14C	Protein mix	Label proteins	0.012
	14C	MW markers	Electrophoresis	0.005
	51Cr	Sodium chromate	Cell lysis	10.000
	125I	NaI	Label proteins	160.000
1982	3H	cAMP	Metabolic studies	0.0045
	3H	Thymidine	Label DNA	10.000
	3H	Glycerol	Metabolic labeling	1.000
	3H	Palmitic acid	Label cell wall	5.000
	3H	Glucosamine	Label cell wall	1.500
	14C	Protein Standards	Electrophoresis	0.005
	14C	Glucuronic acid	Metabolic studies	0.250
	14C	Palmitic acid	Cell wall synthesis	0.150
	32P	H3PO4 (Phosphoric acid)	Label proteins	15.000
	35S	Methionine	Label proteins	1.000
	125I	NaI	Label proteins	75.000
1983	14C	Methyl-Protein mix	Label proteins	0.010
	14C	Glucose	Metabolic studies	0.250
	35S	Methionine	Label proteins	2.000
	125I	NaI	Iodinate proteins	75.000
1984	3H	Na Borohydride	Label proteins	25.000
	32P	ATP	Label DNA	22.000
	32P	ATP [x-32P]	Label DNA	12.000
1985	3H	Amino acid mix	Label proteins	2.000
	3H	NAD-3H	Enzymatic reactions	0.050
	3H	Sodium acetate	Metabolic studies	0.500
	3H	H2O	Purification proced.	0.300
	14C	Histidine	Metabolic studies	0.300
	14C	Sodium acetate	Metabolic studies	0.050
	14C	Protein	Metabolic studies	0.005
	14C	Glucose	Metabolic studies	0.500
	14C	Glutamic acid	Metabolic studies	0.050
	14C	Iodoacetimide	Metabolic studies	0.050
	14C	Amino acid mix	Label proteins	1.500

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
<hr/>				
	14C	Glycerol	Metabolic labeling	0.250
	14C	Starch	Label nucleotides	0.250
	32P	ATP	Label nucleotides	12.000
	32P	NAD	Metabolic studies	1.500
	32P	dATP	DNA sequencing	2.000
	32P	dCTP	DNA sequencing	8.000
	32P	dGTP	DNA sequencing	4.000
	32P	Gamma-ATP	Protein kinase assay	12.000
	35S	Methionine	Label proteins	3.000
<hr/>				
1986	3H	UTP	Label nucleic acids	2.000
	3H	CTP	Label nucleic acids	1.000
	14C	Palmitic Acid	Label cell wall	1.100
	14C	Oleic Acid	Label cell wall	0.050
	14C	Amino Acid Mix	Mark Autorads	0.150
	32P	dCTP	Label nucleic acids	6.000
	32P	ATP	Label nucleic acids	32.000
	35S	Cysteine	Label proteins	1.000
	125I	Protein A	Antibody detection	0.500
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1987	3H	UTP	RNA label	3.000
	14C	Palmitic acid	Cell wall studies	1.000
	14C	NAD	Metabolic studies	0.050
	14C	Alanine	Label amino acids	0.250
	32P	NAD	Metabolic studies	2.250
	32P	UTP	Label RNA	0.250
	32P	ATP	Label nucleic acids	36.000
	32P	CTP	Label nucleic acids	0.750
	125I	Anti-Hu IgG	Antibody labeling	0.100
	125I	Anti-Rab IgG	Antibody labeling	0.145
	125I	Protein A	Antibody detection	0.100
	125I	Insulin	Receptor assay	0.020
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1988	14C	NAD	Metabolic studies	0.100
	14C	Amino Acid Mix	Label proteins	0.550
	32P	ATP	Label nucleotides	31.000
	32P	CTP	Label nucleotides	5.250
	32P	NAD	Metabolic studies	5.750
	35S	ATP	Label nucleotides	10.250
	35S	Nick Trans. Kit=ATP	Label nucleotides	1.000
	S35	Cysteine	Label proteins	2.000
	35S	Methionine	Label proteins	1.000
	125I	IgG	Antibody detection	1.050
	125I	Protein A	Antibody detection	2.000
<hr/>				
1989	3H	Thymidine	DNA incorporation	5.000
	14C	Amino Acid Mix	Label proteins	1.500
	14C	NAD	Metabolic studies	0.050
	32P	ATP	Label nucleotides	33.000
	32P	CTP	Label nucleotides	1.250
	32P	NAD	Metabolic studies	3.000
	32P	UTP	Label RNA	1.000
	35S	Methionine	Label proteins	15.000

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
	35S	ATP	Label nucleic acids	19.500
	35S	Translabel=Methionine	Label proteins	5.000
	35S	Cysteine	Label proteins	2.000
	125I	Protein A	Antibody detection	7.000
	125I	Protein G	Antibody detection	0.010
1990	3H	Leucine	Label proteins	15.000
	14C	NAD	Metabolic studies	0.050
	14C	N-Acetyl Glucosamine	Label cell wall	0.100
	14C	Amino acid mix	Label proteins	1.500
	32P	NAD	Metabolic studies	4.000
	32P	ATP	Label nucleotides	33.750
	32P	CTP	Label nucleotides	1.950
	32P	TTP	Label DNA	0.250
	32P	UTP	Label RNA	1.000
	35S	Cysteine	Label proteins	6.000
	35S	ATP	Label nucleotides	8.650
	35S	Methionine	Label proteins	17.000
	35S	Meth/Cys	Label proteins	10.000
	35S	Translabel=Methionine	Label proteins	15.000
	125I	Protein A	Antibody detection	5.000
	125I	Na I	Label proteins	0.500
1991	3H	Thymidine	DNA incorporation	8.000
	3H	Oleic Acid	Cell wall synthesis	5.000
	3H	Palmitate	Cell wall synthesis	10.000
	3H	Arachidonic A.	Cell wall synthesis	0.250
	14C	Glutamine	Metabolic studies	0.250
	14C	Amino acid mix	Label proteins	4.500
	14C	Leucine	Label proteins	0.050
	14C	Protein mix	Label proteins	0.001
	14C	Chloramphenicol	Metabolic studies	0.050
	14C	Inositol	Metabolic studies	0.010
	32P	ATP	Label nucleotides	34.750
	32P	CTP	Label nucleotides	9.500
	32P	NAD	Metabolic studies	2.000
	35S	ATP	Label nucleotides	13.300
	35S	Translabel=Methionine	Label proteins	10.000
	35S	Methionine	Label proteins	60.000
	125I	NaI	Label proteins	30.000
	125I	Protein A	Antibody detection	5.000
1992	3H	Uridine	Label RNA	0.250
	3H	Thymidine	Label DNA	1.000
	3H	Inositol Phosphate	Metabolic studies	0.002
	14C	Myo-inositol Phosphate	Metabolic studies	0.010
	14C	NAD	Metabolic studies	0.050
	32P	Gamma ATP	DNA sequencing	10.500
	32P	dATP	DNA sequencing	4.000
	32P	d-CTP	DNA sequencing	2.500
	32P	2d ATP	DNA sequencing	1.000
	32P	NAD	Metabolic studies	0.500
	32P	Sodium Phosphate	Metabolic studies	2.000

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
	32P	Sodium Phosphorous	Metabolic studies	5.000
	35S	D-ATP	Label proteins	3.000
	35S	Methionine	Label proteins	50.000
	35S	Methionine/cysteine	Label proteins	10.000
	35S	GTP	Label proteins	0.250
	125I	NaI	Iodinate proteins	10.000
	125I	Protein A	Antibody detection	1.5
1993	3H	Myo-inositol	Metabolic studies	0.25
	3H	Leucine	Label proteins	5.000
	3H	Cyclic-AMP kit	Cyclic AMP detection	0.025
	3H	H2O	Purification process	5.000
	3H	Thymidine	Label DNA	5.000
	14C	Amino acids	Label proteins	0.250
	14C	Sucrose	Dead space determine	0.050
	14C	Inulin	Dead space determine	0.050
	14C	NAD	Metabolic studies	0.050
	14C	Sodium Acetate	Metabolic studies	1.000
	14C	Glycine	Label amino acids	0.250
	32P	Alpha-UTP	Label RNA	0.250
	32P	Alpha-dCTP	Label nucleotides	18.750
	32P	Gamma-ATP	Label nucleotides	58.750
	32P	Sodium Phosphate	Metabolic studies	5.000
	32P	Alpha-GTP	Label nucleotides	1.200
	32P	Alpha-dATP	Label nucleotides	6.450
	32P	Alpha-UTP	Label RNA	2.000
	32P	Adenylate NAD	Metabolic studies	0.500
	32P	8-Azido-GTP	Label proteins	0.200
	32P	NAD	Metabolic studies	1.000
	32P	Phosphoric Acid	Label proteins	9.000
	35S	Gamma-ATP	Label nucleotides	0.250
	35S	Alpha-dATP	Label nucleotides	10.850
	35S	Methionine	Label proteins	10.000
	35S	Methionine/Cysteine	Label proteins	20.000
	35S	Methionine/alpha press	Label proteins	3.000
	51Cr	Sodium chromate	Cell lysis	5.000
	125I	Protein A	Antibody detection	2.300
	125I	Sodium Iodide	Iodinate proteins	2.000
	125I	Transferrin	Receptor binding	0.020
1994	3H	Amino acid mixture	Label proteins	1.000
	3H	Thymidine	Label DNA	40.000
	3H	cAMP	Metabolic studies	0.065
	3H	Adenosyl-L. Methionine	Label lipids	0.250
	3H	dATP	Label DNA	1.000
	3H	TTP	Label DNA	1.000
	14C	Amino acid mixture	Label proteins	1.000
	14C	Sodium acetate	Metabolic studies	1.000
	14C	Octadecanol		5.000
	14C	Malonic acid	Metabolic studies	0.100
	14C	Acetic acid, Na salt	Metabolic studies	3.000
	14C	NAD	Metabolic studies	0.100
	32P	Alpha dCTP	Label DNA	10.700

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
	32P	Gamma ATP	Label nucleotides	27.000
	32P	Alpha dATP	Label nucleotides	6.750
	32P	Alpha-UTP	Label RNA	1.000
	32P	ATP	Label nucleotides	0.750
	32P	Adenylate 32P-NAD	Metabolic studies	1.500
	33P	Gamma ATP	Label nucleotides	7.000
	35S	Methionine	Label proteins	50.250
	35S	Alpha dATP	Label nucleotides	6.100
	35S	Radionuclide	Metabolic labeling	1.000
	35S	Sulfur labelling reagent	Metabolic labeling	1.000
	35S	Methionine/cysteine	Label proteins	15.000
	35S	L-Methionine	Label proteins	10.000
	55Fe	Ferric chloride	Metabolic studies	2.000
	125I	Protein A	Antibody detection	1.100
	125I	Transferrin	Receptor binding	0.100
	125I	NaI	Label proteins	2.000
1995	3H	Thymidine	DNA label	20.000
	3H	cAMP	Toxin activity assay	0.075
	3H	Adenosyl-L-Methionine	Label lipids	2.000
	14C	Propionic acid	Label cell wall	0.250
	14C	NAD	Metabolic studies	0.050
	14C	Custom protein marker kit	Electrophoresis	0.003
	14C	Acetic acid	Label lipids	12.000
	14C	Myristic acid	Cell wall studies	0.250
	14C	Palmitic acid	Cell wall studies	0.250
	14C	Adenosyl-L-Methionine	Label lipids	0.200
	14C	14C[2,3,5] Isoniazid	Label metabolic	1.500
	14C	Autoradiography Standards	Phosphoimager stds.	0.040
	14C	14C Standards	Phosphoimager stds.	0.040
	14C	Chenodeoxycholic acid	Drug permeab. assay	0.050
	14C	Malonic acid	In vitro lipid assay	0.100
	14C	Acetophenone	Label proteins	5.000
	14C	Malonyl Coenzyme A	In vitro lipid synth	0.020
	14C	Panthothenic acid	Label proteins	0.050
	14C	Beta-alanine	Label proteins	0.100
	32P	Alpha-dCTP	Label nucleotides	5.750
	32P	Gamma-dATP	Label nucleotides	2.000
	32P	Orthophosphoric acid	Label proteins	15.000
	32P	Alpha-dATP	Label nucleotides	5.000
	32P	NAD	Metabolic studies	0.750
	33P	Gamma-ATP	Protein kinase assay	5.500
	35S	Methionine	Label proteins	99.250
	35S	S-35 Radionuclide		5.000
	35S	dATP Sequitide	DNA sequencing	3.250
	35S	Alpha dATP	DNA sequencing	3.000
	35S	L-Methionine	Label proteins	1.000
	35S	Sodium Sulfate	Metabolic labeling	75.000
	35S	Methionine/Cysteine	Label proteins	28.000
	51Cr	Sodium chromate	Cell lysis	5.000
	59Fe	Ferric chloride	Metabolic studies	0.600
	125I	NaI	Label proteins	4.000
	125I	Protein A	Antibody detection	1.200

Isotopes ordered for Researchers in Building 4

Year	Nuclides	Form	Process Performed	mCi/Yr
	125I	Transferrin	Receptor binding	0.050
1996	3H	cAMP	Toxin activity assay	0.045
	3H	Thymidine	Label DNA	1.000
	3H	S-Adenosyl Methionine	Label lipids	6.000
	14C	Beta alanine	Label proteins	7.000
	14C	Propionic acid	Label lipids	0.250
	14C	Acetic acid	Label lipids	13.000
	14C	NAD	Adenosyl trans assay	0.150
	14C	Adenosyl-L-Methionine	Label lipids	0.750
	14C	14C (Carbonyl) Isoniazid	Drug metabolic assay	1.000
	14C	Malonyl-CoA	In vitro lipid synth	0.025
	14C	Lignoceric acid	Label proteins	0.100
	14C	Cheno-deoxycholic acid	Drug permeab. assay	0.050
	32P	dCTP	Label DNA	6.000
	32P	Alpha-dATP	Label DNA	2.750
	32P	Gamma ATP	Label DNA	0.750
	32P	NAD	Metabolic studies	0.250
	32P	Alpha ATP	Label DNA	0.250
	32P	Adenylate 32P-NAD	Metabolic studies	0.250
	33P	Gamma ATP	Label DNA	0.750
	35S	dATP	Label DNA	7.000
	35S	Methionine	Label proteins	48.000
	35S	Sodium Sulfate	Label glycolipids	5.000
	35S	Methionine/Cysteine	Label proteins	127.000
	35S	dATP/Sequitide	DNA sequencing	1.200
	51Cr	Sodium Chromate	Cell lysis	5.000
	125I	Protein A	Antibody detection	0.800
	125I	Streptavidin	Biotin detection	0.100

Appendix D

Environmental Media Sampling Report

The cause of the pH exceedences observed in both the composite sample and continuous monitor on June 25 was believed to be associated with deionized water generator maintenance activities. During this day, the maintenance worker noted problems with the water quality. The resin beds were regenerated twice, using an acidic treatment (hydrochloric acid) followed by a basic treatment (sodium hydroxide). This acidic / basic cycle corresponds to the pH exceedence pattern observed in the continuous monitoring data. In addition, the composite sample from June 26 was within pH limits. This result provides additional evidence that the exceedences observed on June 25 were related to the deionized water maintenance activities.

In response to this problem, RML has ordered a holding tank to collect resin bed wash effluent. The basic effluent will be slowly added to the acidic effluent. The combined effluent will undergo additional pH adjustment, as necessary, prior to release into the sewer.

The temperature levels at the primary sewer discharge did not exceed the regulatory criteria of 150°F during the 24-hour monitoring period.

The continuous temperature and pH monitor was moved to the manhole at HD3 on June 26, to monitor the incinerator discharge and HD building effluents. One minor exceedence above the pH 9.0 limit was noted at 11:40 am, when the pH was measured at 9.18. When combined with the primary sewer discharge, the overall pH would likely be below 9.0. The temperature levels at the HD3 discharge did not exceed the regulatory criteria of 150°F during the 12-hour monitoring period.

Sewage effluent samples were analyzed for gross alpha, gross beta, and gamma spectrometry. The radionuclides used at RML are limited to beta and gamma emitters; however, alpha analyses were included to assist evaluation of natural and man-made background radiation. Based upon a review of these data by a Certified Health Physicist, the sources of radiation detected in the effluent appears to be related to naturally occurring and fission (fallout) radionuclides.

The gross beta levels of both samples were well below NRC criteria for the beta emitters used at RML. Gross beta activity in the effluent ranged from 6.6×10^{-6} to 6.8×10^{-8} microcurie per milliliter (uCi/ml). Of the radionuclides used at RML, the one with the lowest limit for sewer discharges is Hydrogen-3, at 1×10^{-2} uCi/ml. This limit is substantially above the activity measured in the effluent.

The gamma spectrometry results indicate that the likely source of measured radiations within the effluent are naturally occurring isotopes, primarily from the thorium decay series. Cesium-137, a nuclear testing fission byproduct, was also detected.

Sewage Sludge

Sewage sludge samples were analyzed for radioactive characteristics only (gross alpha, gross beta, and gamma spectrometry). The purpose of this testing was to determine if RML discharges have resulted in any accumulation of laboratory radionuclides in sewage sludge.

Environmental Media Sampling Report

Analytical results of the sludge samples were similar to results of the effluent samples. Gross beta levels ranged from 2.1 to 4.3×10^2 picocuries per gram (p Ci/g). This is roughly equivalent to 2.1 to 4.3×10^{-4} uCi/ml, assuming that the sludge was washed into the effluent. This level is also below the NRC regulatory limit for Hydrogen-3 (1×10^{-2} uCi/ml). Based on this analysis, an effluent consisting entirely of sludge would not exceed RML regulatory criteria for radionuclides.

The gamma spectrometry of the sludge samples revealed thorium decay products and cesium, which were also found in the effluent samples. Naturally occurring uranium decay products and potassium-40, were also detected in these samples. The levels of these measured radionuclides were within expected activity ranges for soils, and do not indicate any adverse impact from RML operations.

TABLE 3

SEWAGE EFFLUENT COMPOSITES SAMPLES
JUNE 25-26, 1996

SAMPLE ID: SE62501 and SE62502

Parameter	Analytes	Units	Results		Regulatory Limits ^a
			SE62501	SE62502	
Oil and Grease	Same	mg/l	3.5	2.7	100
Total Metals	Silver	mg/l	ND	ND	5.0
Corrosivity	pH	pH	9.8	7.3	^{5.5} ≤5.5 , ≥9.0
Radioactivity	Total Alpha	uCi/ml	4.6E-7	2.0E-9	See Text ^b
	Total Beta	uCi/ml	6.6E-6	6.8E-8	

{ Total
metal
Scan
✓Notes:^a Regulatory Limits Apply to Hamilton Sewer Regulations Unless Otherwise Noted^b Regulatory Limits Apply to Nuclear Regulatory Commission Regulations (10 CFR 20)

See Laboratory Reports for Detailed Analytical Results and Methods

See Text For Discussion of Continuous pH and Temperature Monitoring

ND = Non Detectable

TABLE 4
SEWAGE MANHOLE SLUDGE SAMPLES
JUNE 25, 1996

SAMPLE ID: SS62501 AND SS62502

Parameter/ Method ^a	Analytes	Units	Results		Regulatory Limits
			SS62501	SS62502	
Radioactivity	Total Alpha	pCi/g	2.5E1	5.0E2	See Text ^a
	Total Beta	pCi/g	2.1E2	4.3E2	

pCi

Notes:

^a Regulatory Limits Apply to Nuclear Regulatory Commission Regulations (10 CFR 20)
See Laboratory Reports for Detailed Analytical Results and Methods

Appendix E

Raw Data, DPM, and Grid Maps

Instrument Type: LS 5000
 Data Capture Date: 17 Dec 1996 17:14:09
 User Filename: A:\USER03\U03C1704.BSF

USER#: 03
 ID: 3-CHANNEL

Comments: Rm.156

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

3-H = 63%

Sam	Rack	Time	3H		14C		32P		Rm No	Descrip
			CPM	Iso1	CPM	Iso2	CPM	Iso3		
1	1-1	1.00	8729.00		39289.00		337.00			14C STD
2	1-2	1.00	62276.00		638.00		8.00			3H STD
3	1-3	1.00	29.00		19.00		7.00			Bkg 1
4	1-4	1.00	17.00		8.00		5.00			Bkg 2
5	1-5	1.00	19.00		13.00		7.00			Bkg 3
6	1-6	1.00	15.00	-9.52	19.00	7.59	5.00	-1.02	156	F1
7	1-7	1.00	18.00	-4.76	19.00	7.59	6.00	0.00	156	F2
8	1-8	1.00	21.00	0.00	13.00	0.00	11.00	5.10	156	F3
9	1-9	1.00	23.00	3.17	12.00	-1.27	13.00	7.14	156	F4
10	1-10	1.00	20.00	-1.59	19.00	7.59	12.00	6.12	156	F5
11	1-11	1.00	21.00	0.00	10.00	-3.80	12.00	6.12	156	F6
12	1-12	1.00	19.00	-3.17	20.00	8.86	8.00	2.04	156	F7
13	1-13	1.00	31.00	15.87	7.00	-7.59	11.00	5.10	156	F8
14	1-14	1.00	25.00	6.35	18.00	6.33	7.00	1.02	156	F9
15	1-15	1.00	26.00	7.94	14.00	1.27	5.00	-1.02	156	F10
16	1-16	1.00	28.00	11.11	14.00	1.27	11.00	5.10	156	F11
17	1-17	1.00	38.00	26.98	12.00	-1.27	10.00	4.08	156	F12
18	1-18	1.00	27.00	9.52	10.00	-3.80	14.00	8.16	156	F13
19	2-1	1.00	22.00	1.59	14.00	1.27	12.00	6.12	156	F14
20	2-2	1.00	32.00	17.46	11.00	-2.53	8.00	2.04	156	F15
21	2-3	1.00	16.00	-7.94	19.00	7.59	9.00	3.06	156	F16
22	2-4	1.00	33.00	19.05	8.00	-6.33	7.00	1.02	156	F17
23	2-5	1.00	21.00	0.00	11.00	-2.53	8.00	2.04	156	F18
24	2-6	1.00	19.00	-3.17	13.00	0.00	4.00	-2.04	156	F19
25	2-7	1.00	22.00	1.59	7.00	-7.59	12.00	6.12	156	F20
26	2-8	1.00	22.00	1.59	10.00	-3.80	5.00	-1.02	156	F21
27	2-9	1.00	21.00	0.00	15.00	2.53	8.00	2.04	156	F22
28	2-10	1.00	19.00	-3.17	9.00	-5.06	15.00	9.18	156	F23
29	2-11	1.00	23.00	3.17	17.00	5.06	16.00	10.20	156	F24
30	2-12	1.00	20.00	-1.59	16.00	3.80	8.00	2.04	156	F25
31	2-13	1.00	20.00	-1.59	16.00	3.80	5.00	-1.02	156	F26
32	2-14	1.00	24.00	4.76	12.00	-1.27	5.00	-1.02	156	F27
33	2-15	1.00	16.00	-7.94	12.00	-1.27	7.00	1.02	156	F28
34	2-16	1.00	27.00	9.52	12.00	-1.27	15.00	9.18	156	F29
35	2-17	1.00	26.00	7.94	5.00	-10.13	8.00	2.04	156	F30
36	2-18	1.00	22.00	1.59	9.00	-5.06	9.00	3.06	156	F31
37	3-1	1.00	23.00	3.17	10.00	-3.80	19.00	13.27	156	F32
38	3-2	1.00	24.00	4.76	14.00	1.27	13.00	7.14	156	F33
39	3-3	1.00	19.00	-3.17	8.00	-6.33	20.00	14.29	156	F34
40	3-4	1.00	24.00	4.76	7.00	-7.59	8.00	2.04	156	F35
41	3-5	1.00	19.00	-3.17	16.00	3.80	13.00	7.14	156	F36
42	3-6	1.00	18.00	-4.76	11.00	-2.53	11.00	5.10	156	F37
43	3-7	1.00	19.00	-3.17	17.00	5.06	12.00	6.12	156	BH1A
44	3-8	1.00	25.00	6.35	13.00	0.00	9.00	3.06	156	BH1B
45	3-9	1.00	22.00	1.59	14.00	1.27	7.00	1.02	156	BH2
46	3-10	1.00	25.00	6.35	17.00	5.06	6.00	0.00	156	BH3A
47	3-11	1.00	11.00	-15.87	15.00	2.53	12.00	6.12	156	BH3B
48	3-12	1.00	31.00	15.87	9.00	-5.06	10.00	4.08	156	BH4A
49	3-13	1.00	23.00	3.17	12.00	-1.27	10.00	4.08	156	BH4B
50	3-14	1.00	28.00	11.11	16.00	3.80	15.00	9.18	156	BH5

51	3-15	1.00	18.00	-4.76	13.00	0.00	13.00	7.14	156	B16
52	3-16	1.00	25.00	6.35	19.00	7.59	4.00	-2.04	156	B17
53	3-17	1.00	18.00	-4.76	16.00	3.80	6.00	0.00	156	C11
54	3-18	1.00	16.00	-7.94	11.00	-2.53	13.00	7.14	156	C12
55	4-1	1.00	21.00	0.00	16.00	3.80	9.00	3.06	156	C13
56	4-2	1.00	26.00	7.94	11.00	-2.53	10.00	4.08	156	C14
57	4-3	1.00	18.00	-4.76	16.00	3.80	9.00	3.06	156	C15
58	4-4	1.00	18.00	-4.76	14.00	1.27	11.00	5.10	156	C1
59	4-5	1.00	14.00	-11.11	9.00	-5.06	12.00	6.12	156	C2
60	4-6	1.00	23.00	3.17	16.00	3.80	12.00	6.12	156	C3
61	4-7	1.00	11.00	-15.87	12.00	-1.27	11.00	5.10	156	C4
62	4-8	1.00	11.00	-15.87	4.00	-11.39	10.00	4.08	156	C5
63	4-9	1.00	19.00	-3.17	11.00	-2.53	9.00	3.06	156	C6
64	4-10	1.00	23.00	3.17	13.00	0.00	7.00	1.02	156	S1
65	4-11	1.00	20.00	-1.59	12.00	-1.27	7.00	1.02	156	A1
66	4-12	1.00	18.00	-4.76	12.00	-1.27	7.00	1.02	156	S2
67	4-13	1.00	28.00	11.11	12.00	-1.27	8.00	2.04	156	A2
68	4-14	1.00	17.00	-6.35	16.00	3.80	15.00	9.18	156	B1D1
69	4-15	1.00	29.00	12.70	10.00	-3.80	11.00	5.10	156	B1D2
70	4-16	1.00	23.00	3.17	11.00	-2.53	7.00	1.02	156	B1D3
71	4-17	1.00	28.00	11.11	9.00	-5.06	9.00	3.06	156	B1D4
72	4-18	1.00	32.00	17.46	12.00	-1.27	8.00	2.04	156	B1D5
73	5-1	1.00	20.00	-1.59	7.00	-7.59	7.00	1.02	156	B1D6
74	5-2	1.00	20.00	-1.59	10.00	-3.80	12.00	6.12	156	B1D7
75	5-3	1.00	18.00	-4.76	13.00	0.00	10.00	4.08	156	B1D8
76	5-4	1.00	15.00	-9.52	3.00	-12.66	16.00	10.20	156	B1D9
77	5-5	1.00	23.00	3.17	14.00	1.27	9.00	3.06	156	B1D10
78	5-6	1.00	20.00	-1.59	13.00	0.00	8.00	2.04	156	B1C1
79	5-7	1.00	21.00	0.00	16.00	3.80	10.00	4.08	156	B1C2
80	5-8	1.00	16.00	-7.94	15.00	2.53	12.00	6.12	156	B2C1
81	5-9	1.00	23.00	3.17	23.00	12.66	12.00	6.12	156	B2C2
82	5-10	1.00	30.00	14.29	20.00	8.86	8.00	2.04	156	B2C3
83	5-11	1.00	25.00	6.35	13.00	0.00	5.00	-1.02	156	B2C4
84	5-12	1.00	32.00	17.46	15.00	2.53	10.00	4.08	156	B2C5
85	5-13	1.00	31.00	15.87	7.00	-7.59	13.00	7.14	156	B2C6
86	5-14	1.00	28.00	11.11	9.00	-5.06	7.00	1.02	156	B3D1
87	5-15	1.00	29.00	12.70	9.00	-5.06	5.00	-1.02	156	B3D2
88	5-16	1.00	25.00	6.35	12.00	-1.27	9.00	3.06	156	B3D3
89	5-17	1.00	27.00	9.52	16.00	3.80	12.00	6.12	156	B3D4
90	5-18	1.00	23.00	3.17	13.00	0.00	12.00	6.12	156	B3D5
91	6-1	1.00	27.00	9.52	11.00	-2.53	9.00	3.06	156	B3D6
92	6-2	1.00	22.00	1.59	21.00	10.13	9.00	3.06	156	B3D7
93	6-3	1.00	16.00	-7.94	12.00	-1.27	11.00	5.10	156	B3D8
94	6-4	1.00	23.00	3.17	12.00	-1.27	4.00	-2.04	156	B3D9
95	6-5	1.00	31.00	15.87	13.00	0.00	10.00	4.08	156	B3D10
96	6-6	1.00	25.00	6.35	15.00	2.53	9.00	3.06	156	B3D11
97	6-7	1.00	21.00	0.00	7.00	-7.59	6.00	0.00	156	B3D12
98	6-8	1.00	32.00	17.46	6.00	-8.86	10.00	4.08	156	B3D13
99	6-9	1.00	32.00	17.46	14.00	1.27	13.00	7.14	156	B3D14
100	6-10	1.00	28.00	11.11	13.00	0.00	6.00	0.00	156	B3D15
101	6-11	1.00	25.00	6.35	15.00	2.53	18.00	12.24	156	B3C1
102	6-12	1.00	28.00	11.11	12.00	-1.27	8.00	2.04	156	B3C2
103	6-13	1.00	22.00	1.59	7.00	-7.59	12.00	6.12	156	C3
104	6-14	1.00	44.00	36.51	12.00	-1.27	11.00	5.10	156	B4D1
105	6-15	1.00	28.00	11.11	13.00	0.00	9.00	3.06	156	B4D2
106	6-16	1.00	41.00	31.75	12.00	-1.27	13.00	7.14	156	B4D3
107	6-17	1.00	51.00	47.62	16.00	3.80	14.00	8.16	156	B4D4
108	6-18	1.00	35.00	22.22	12.00	-1.27	12.00	6.12	156	B4D5
109	7-1	1.00	60.00	61.90	13.00	0.00	15.00	9.18	156	B4D6
110	7-2	1.00	53.00	50.79	17.00	5.06	12.00	6.12	156	B4D7
111	7-3	1.00	46.00	39.68	15.00	2.53	11.00	5.10	156	B4D8
112	7-4	1.00	39.00	28.57	13.00	0.00	8.00	2.04	156	B4D9
113	7-5	1.00	52.00	49.21	18.00	6.33	11.00	5.10	156	B4D10
114	7-6	1.00	36.00	23.81	6.00	-8.86	10.00	4.08	156	B4D11
115	7-7	1.00	43.00	34.92	16.00	3.80	9.00	3.06	156	B4D12
116	7-8	1.00	41.00	31.75	10.00	-3.80	12.00	6.12	156	B4D13

117	7-9	1.00	35.00	22.22	15.00	2.53	12.00	6.12	156	B4D14
118	7-10	1.00	45.00	38.10	13.00	0.00	7.00	1.02	156	B4D15
119	7-11	1.00	21.00	0.00	10.00	-3.80	6.00	0.00	156	B4C1
120	7-12	1.00	27.00	9.52	10.00	-3.80	11.00	5.10	156	B4C2
121	7-13	1.00	30.00	14.29	10.00	-3.80	9.00	3.06	156	B4C3
122	7-14	1.00	51.00	47.62	16.00	3.80	10.00	4.08	156	B5D1
123	7-15	1.00	44.00	36.51	17.00	5.06	6.00	0.00	156	B5D2
124	7-16	1.00	33.00	19.05	11.00	-2.53	8.00	2.04	156	B5D3
125	7-17	1.00	41.00	31.75	18.00	6.33	10.00	4.08	156	B5D4
126	7-18	1.00	38.00	26.98	15.00	2.53	12.00	6.12	156	B5D5
127	8-1	1.00	26.00	7.94	12.00	-1.27	10.00	4.08	156	B5CF
128	8-2	1.00	27.00	9.52	15.00	2.53	11.00	5.10	156	B6D1
129	8-3	1.00	54.00	52.38	16.00	3.80	10.00	4.08	156	B6D2
130	8-4	1.00	42.00	33.33	10.00	-3.80	12.00	6.12	156	B6D3
131	8-5	1.00	30.00	14.29	11.00	-2.53	4.00	-2.04	156	B6D4
132	8-6	1.00	41.00	31.75	6.00	-8.86	9.00	3.06	156	B6D5
133	8-7	1.00	42.00	33.33	4.00	-11.33	15.00	9.18	156	B6D6
134	8-8	1.00	30.00	14.29	9.00	-5.06	13.00	7.14	156	B6D7
135	8-9	1.00	45.00	38.10	9.00	-5.06	13.00	7.14	156	B6D8
136	8-10	1.00	20.00	-1.59	7.00	-7.59	8.00	2.04	156	B6D9
137	8-11	1.00	26.00	7.94	12.00	-1.27	8.00	2.04	156	B6D10
138	8-12	1.00	32.00	17.46	12.00	-1.27	16.00	10.20	156	B6C1
139	8-13	1.00	31.00	15.87	23.00	12.66	6.00	0.00	156	B6C2
140	8-14	1.00	19.00	-3.17	16.00	3.80	8.00	2.04	156	B7C0
141	8-15	1.00	40.00	30.16	16.00	3.80	5.00	-1.02	156	B7D1
142	8-16	1.00	35.00	22.22	13.00	0.00	10.00	4.08	156	B7D2
143	8-17	1.00	30.00	14.29	15.00	2.53	4.00	-2.04	156	B7D3
144	8-18	1.00	25.00	6.35	17.00	5.06	9.00	3.06	156	B7D4
145	9-1	1.00	18.00	-4.76	9.00	-5.06	7.00	1.02	156	B7D5
146	9-2	1.00	27.00	9.52	10.00	-3.80	12.00	6.12	156	B7CS1
147	9-3	1.00	31.00	15.87	11.00	-2.53	13.00	7.14	156	B7CS2
148	9-4	1.00	33.00	19.05	7.00	-7.59	9.00	3.06	156	B7CF
149	9-5	1.00	37.00	25.40	10.00	-3.80	16.00	10.20	156	B7C
150	9-6	1.00	33.00	19.05	10.00	-3.80	10.00	4.08	156	S1R1
151	9-7	1.00	30.00	14.29	13.00	0.00	27.00	21.43	156	S1R2
152	9-8	1.00	20.00	-1.59	10.00	-3.80	9.00	3.06	156	S2R1
153	9-9	1.00	29.00	12.70	12.00	-1.27	16.00	10.20	156	S2R2
154	9-10	1.00	16.00	-7.94	10.00	-3.80	6.00	0.00	156	S2R3
155	9-11	1.00	26.00	7.94	12.00	-1.27	15.00	9.18	156	S3R1
156	9-12	1.00	25.00	6.35	12.00	-1.27	6.00	0.00	156	S3R2
157	9-13	1.00	28.00	11.11	9.00	-5.06	7.00	1.02	156	S3R3
158	9-14	1.00	23.00	3.17	13.00	0.00	4.00	-2.04	156	S4R1
159	9-15	1.00	23.00	3.17	16.00	3.80	11.00	5.10	156	S4R2
160	9-16	1.00	40.00	30.16	16.00	3.80	10.00	4.08	156	S4R3
161	9-17	1.00	26.00	7.94	17.00	5.06	11.00	5.10	156	D1
162	9-18	1.00	34.00	20.63	18.00	6.33	15.00	9.18	156	D2
163	10-1	1.00	36.00	23.81	18.00	6.33	17.00	11.22	156	D3
164	10-2	1.00	16.00	-7.94	14.00	1.27	9.00	3.06	156	W1
165	10-3	1.00	32.00	17.46	16.00	3.80	8.00	2.04	156	W2
166	10-4	1.00	32.00	17.46	11.00	-2.53	9.00	3.06	156	W3
167	10-5	1.00	43.00	34.92	15.00	2.53	7.00	1.02	156	W4
168	10-6	1.00	40.00	30.16	12.00	-1.27	14.00	8.16	156	W5
169	10-7	1.00	27.00	9.52	13.00	0.00	4.00	-2.04	156	W6

✓ Floor Samples: F1 - F37

✓ Bench Top Samples: BT1 A B Includes front of counter top

BT 2

BT 3 A B

BT 4 A B

BT 5

BT 6

BT 7

✓ Counter Tops: CT1 - CT5 office

✓ Sink 1 (S1) Sink Trap 1 (ST 1) ✓ Aspirator Trap 1 (A1)

✓ Sink 2 (S2) Sink Trap 2 (ST 2) ✓ Aspirator Trap 2 (A2)

✓ Ceiling Tiles: C1 - C6

Drawers & Cabinets

✓ Bench Top 1 Drawers: BT1D1 - BT1D10

✓ Bench Top 1 Cabinet Fronts & Sides: BT1C1, BT1C2 } same for BT 6

✓ Bench Top 3 Drawers: BT3D1 - D15

✓ Bench Top 3 Cabinet Fronts & Sides: BT3C1, BT3C2, BT3C3 } same for BT 6

✓ Bench Top 2 Cabinet Front: BT2CF

✓ Bench Top 2 Cabinet Doors: BT2C1, BT2C2

✓ Bench Top 2 Cabinet (Inside Floor): BT2CIF

✓ " " Cabinet Doors (Inside): B2CDI1 & B2CDI2 (& shelf)

Theron Holland 12/14/0

Drawers & Cabinets

- ✓ Bench Top 5 Drawers: BT5D1 — BT5D5
- ✓ Bench Top 5 Cabinet Front: BT5CF Inside: B7CIF
- ✓ Bench Top 7 Cabinet Doors: BT7CD ↘
- ✓ Bench Top 7 Drawers: BT7D1 — BT7D5 Cabinet Front: BT7CF
- ✓ Bench Top 7 Corner Shelves: BT7CS1, BT7CS2
- ✓ Bench Top 7 Inside Cabinet: B7IC

Shelves

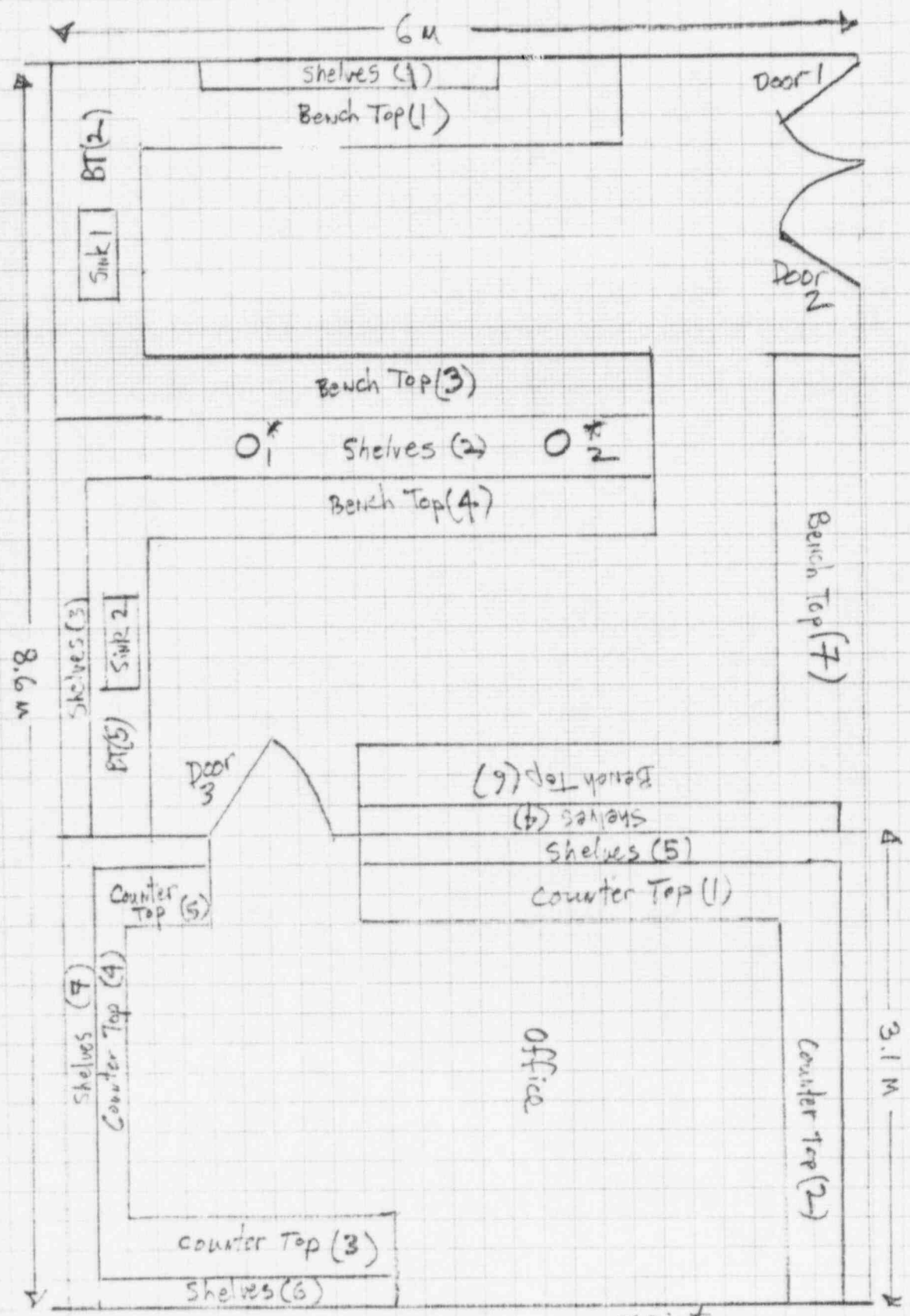
- ✓ S1: Row 1 & Row 2 (S1R1, S1R2)
- ✓ S2: Row 1, Row 2, Row 3 (S2R1 — S2R3)
- ✓ S3: Row 1, Row 2, Row 3 (S3R1 — S3R3)
- ✓ S4: Row 1 — Row 3 (S4R1 — S4R3)

Doors (Inc. knobs)

- ✓ D1 & D2 & D3

Walls: W1 — W6

RML, Building 4 Final Survey, Rm 156



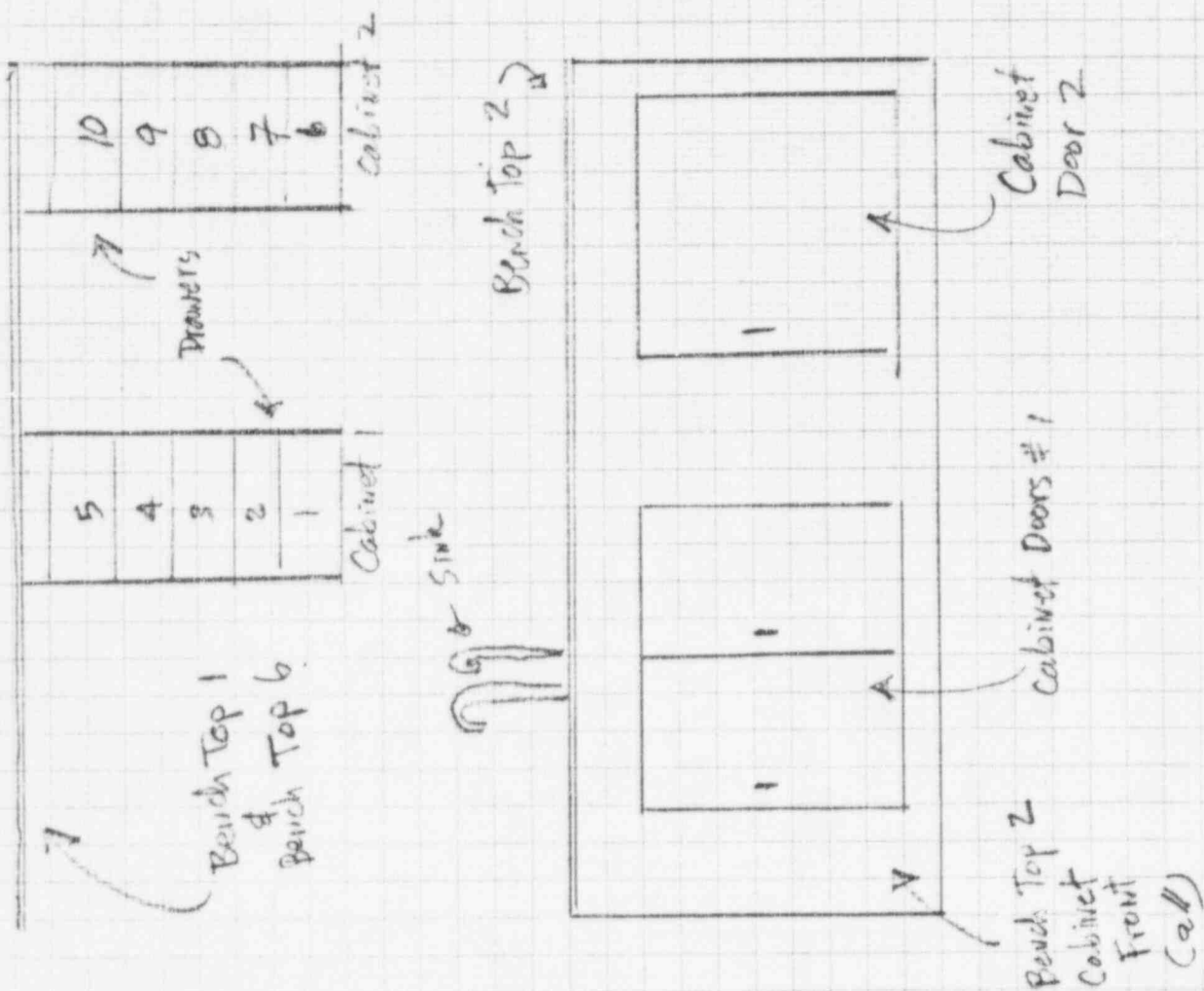
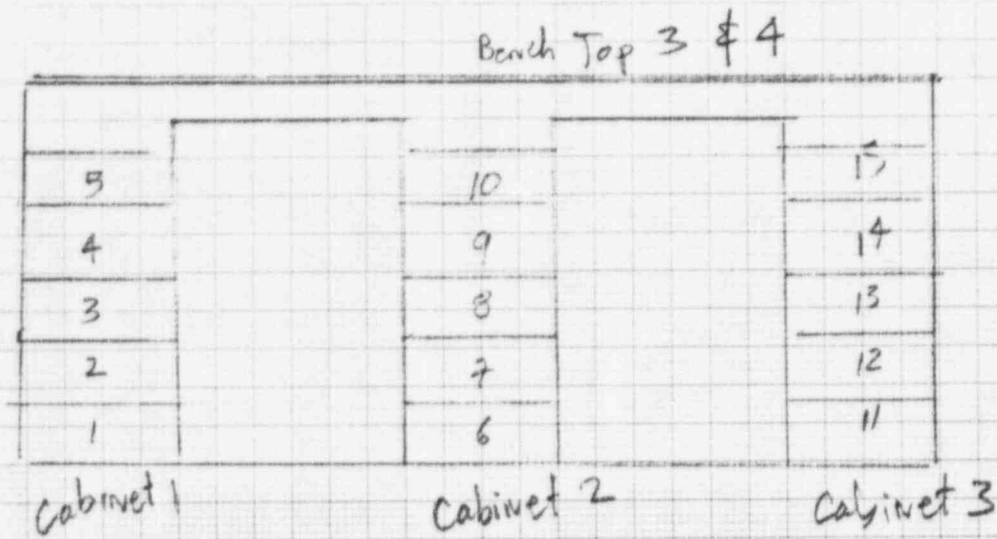
* O = aspirator
Trap

Map not exactly to scale. (TH)

Sherrill Holland, M.S.
12/14/96 M.P.H.

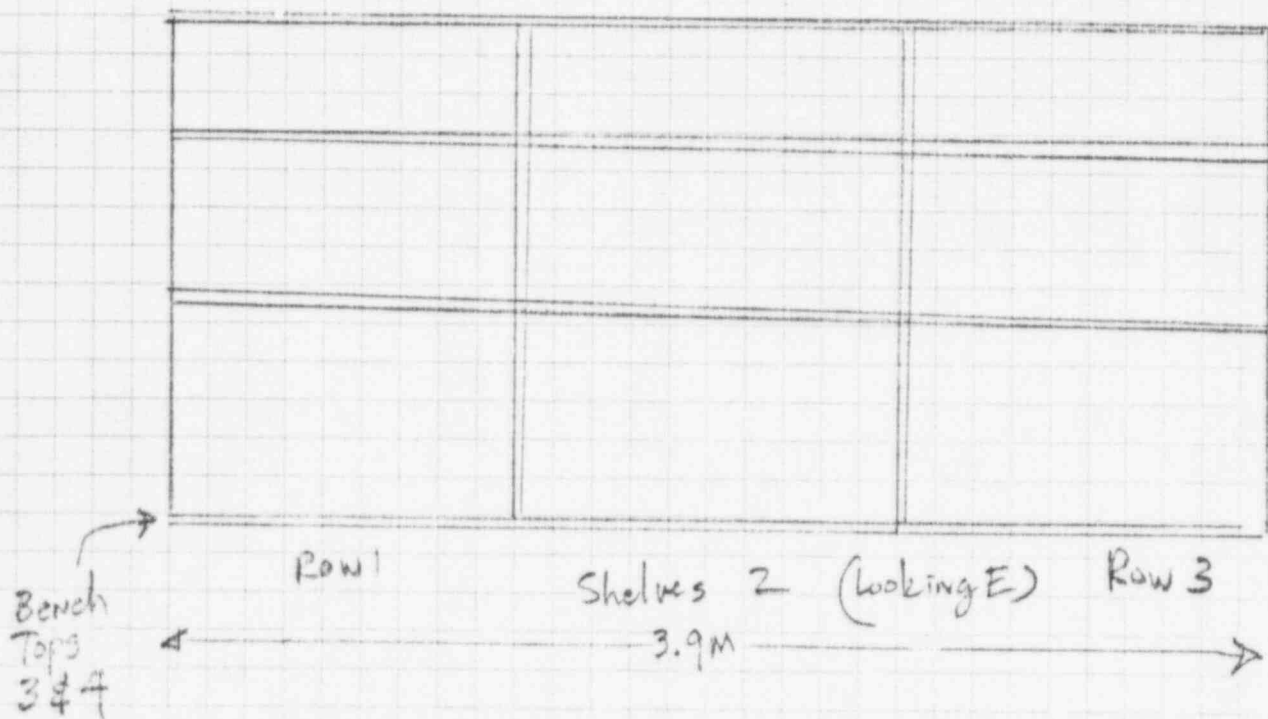
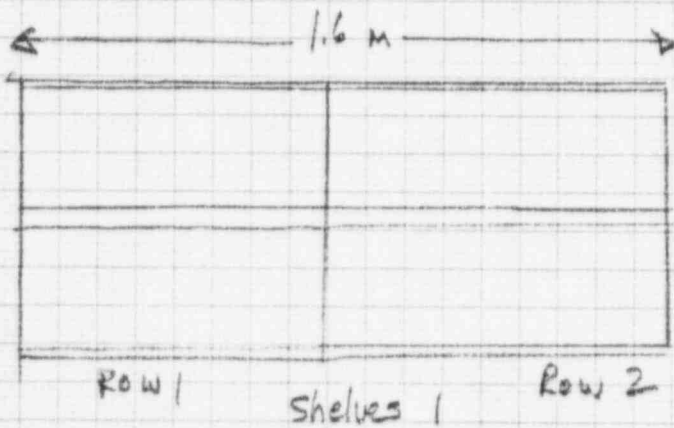
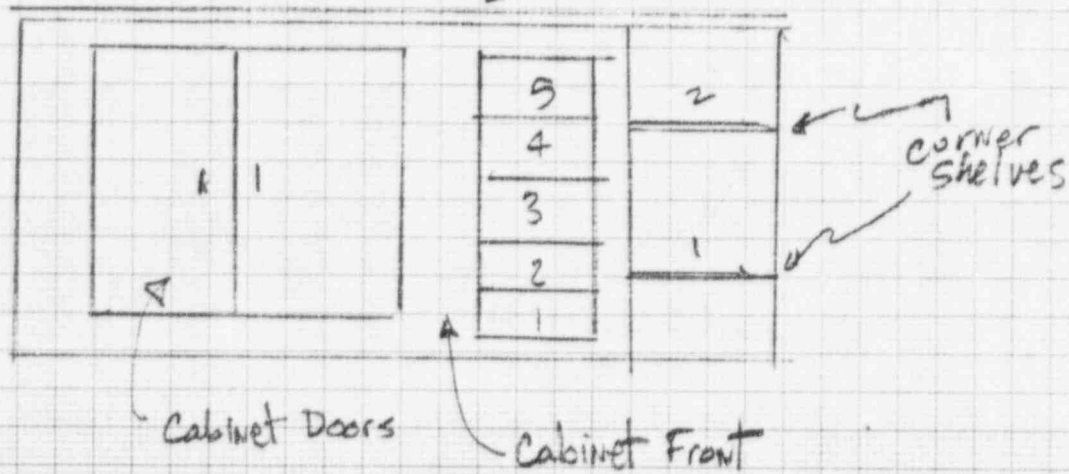
Rm 156: Drawers, Cabinets, Cabinet Doors & Fronts

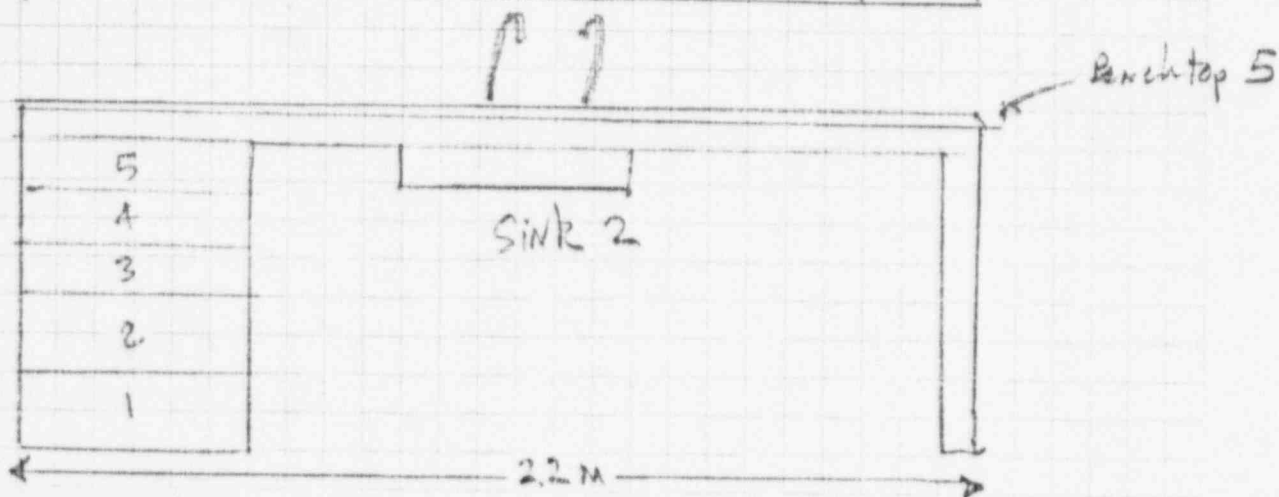
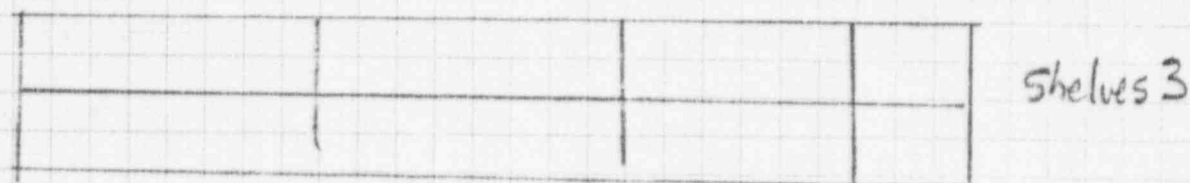
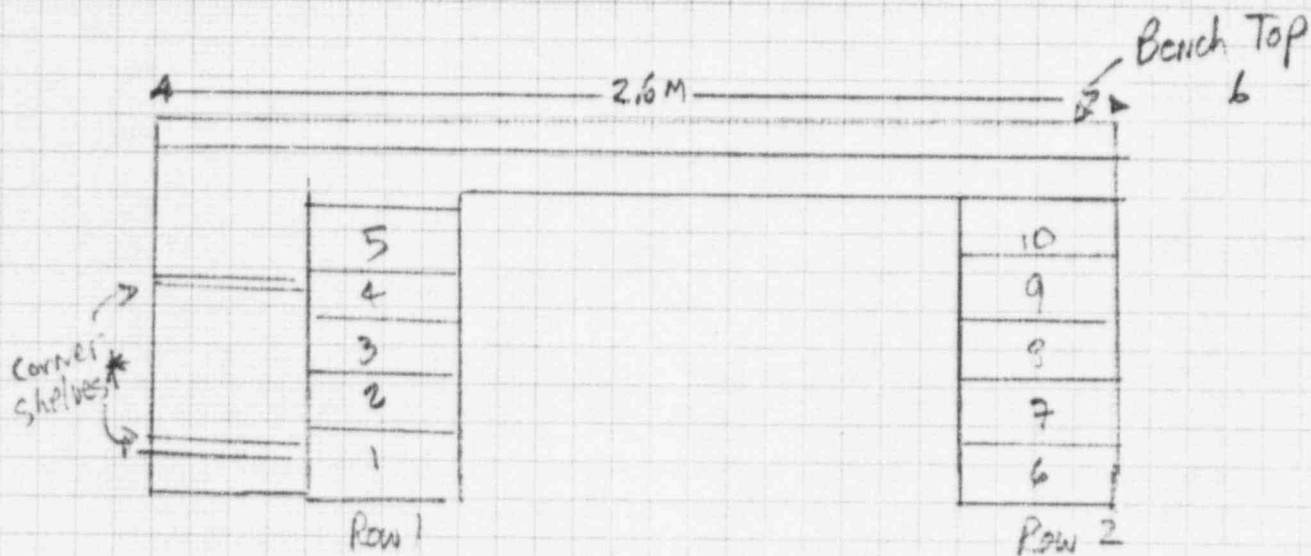
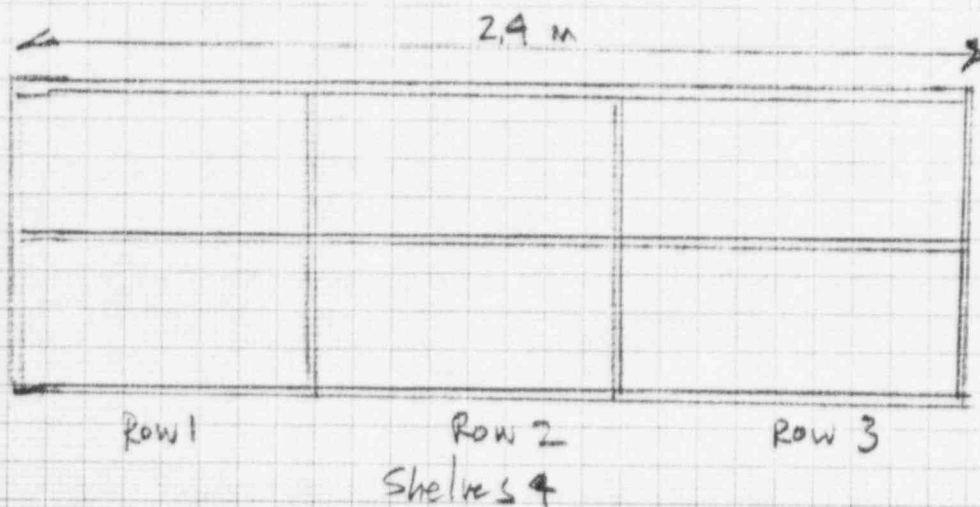
Page
2
of 6



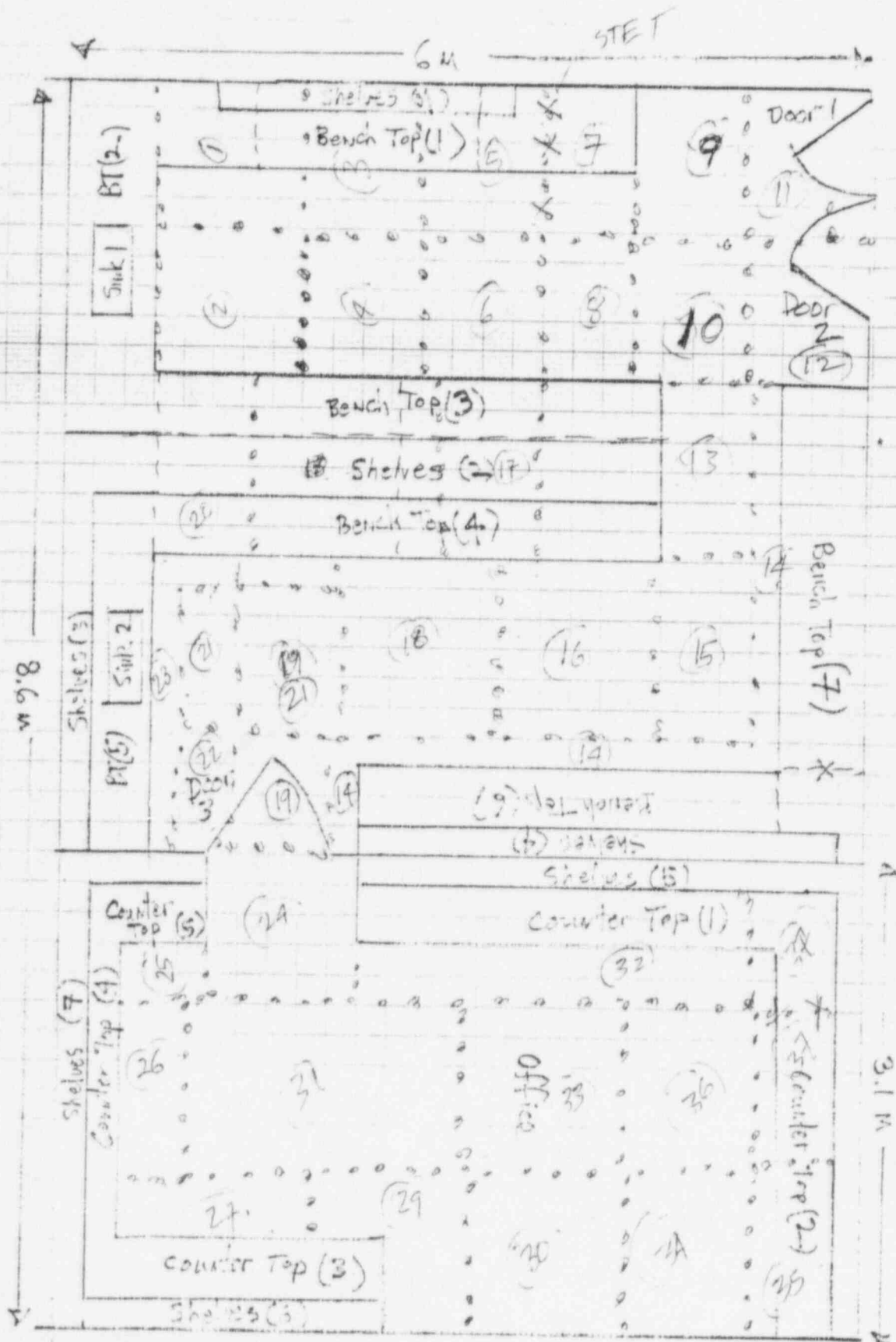
Sharon Holland 12/14/96

Bench Top 7





* sampled w/ Bench 7



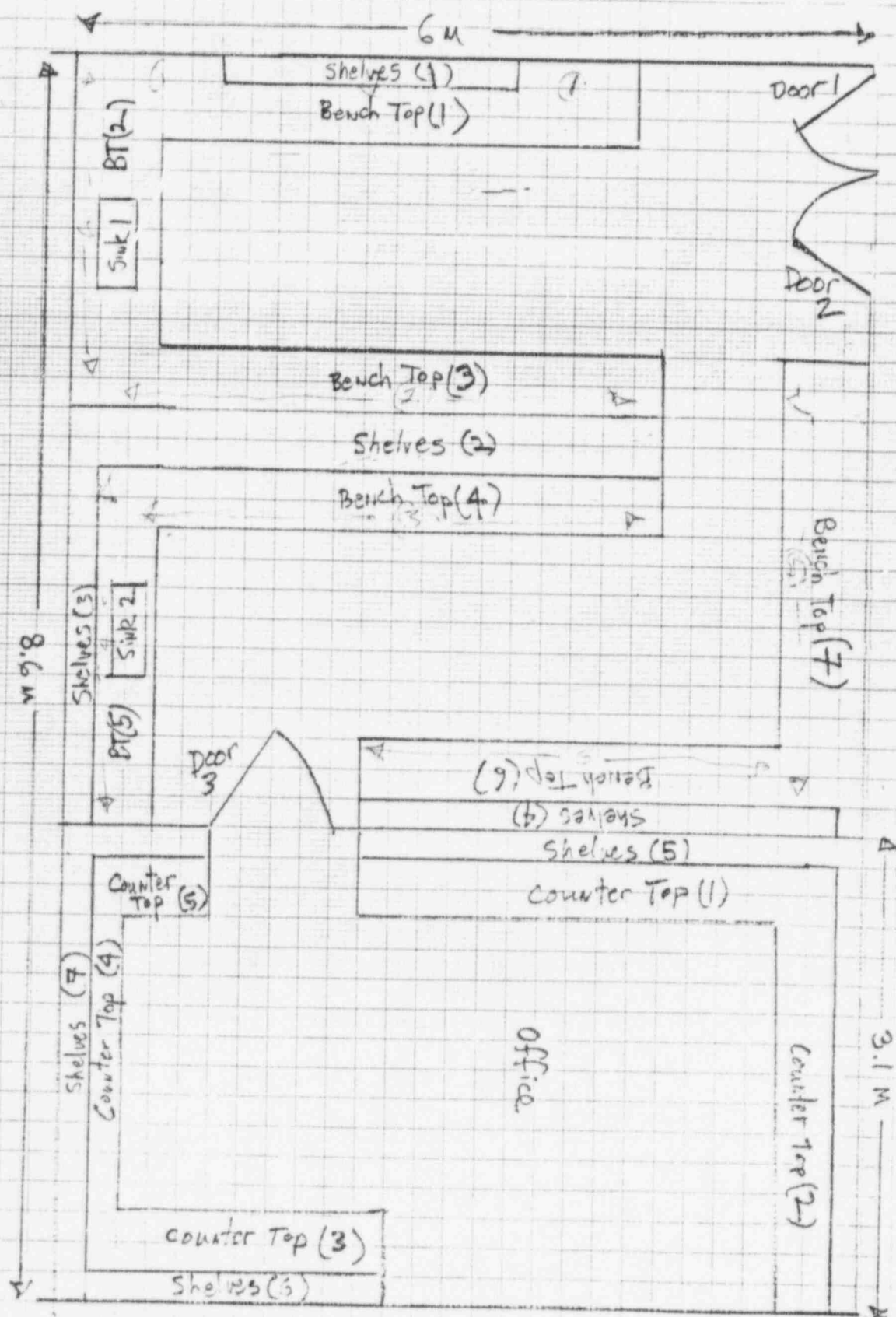
Bench Tops

floor 5

①

Map not exactly to scale. (11)

Shen-Holland, N.C.



Map not exactly to scale. (TH)

Sherrill Holland, M.S.,

Instrument Type: LS 6000
 Data Capture Date: 18 Dec 1996 16:13:41
 User Filename: A:\USER03\UD3C1802.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: Rm. 153 & 152

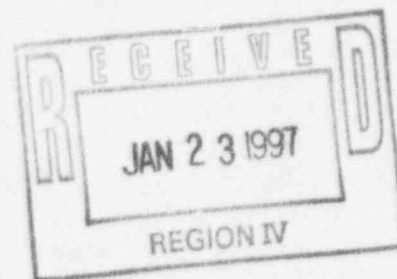
Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

3-H = 63%



		3H		14C		32P					
Sam	Rack	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip	
1	1-1	1.00	8677.00		39093.00		290.00			14C STD	
2	1-2	1.00	62373.00		625.00		9.00			3H STD	
3	1-3	1.00	18.00		14.00		5.00			BKG 1	
4	1-4	1.00	20.00		9.00		5.00			BKG 2	
5	1-5	1.00	23.00		18.00		15.00			BKG 3	
6	1-6	1.00	16.00	-6.35	13.00	0.00	11.00	3.06	153	F1	
7	1-7	1.00	18.00	-3.17	11.00	-2.53	13.00	5.10	153	F2	
8	1-8	1.00	24.00	6.35	14.00	1.27	8.00	0.00	153	F3	
9	1-9	1.00	41.00	33.33	13.00	0.00	8.00	0.00	153	F4	
10	1-10	1.00	27.00	11.11	17.00	5.06	15.00	7.14	153	F5	
11	1-11	1.00	32.00	19.05	14.00	1.27	10.00	2.04	153	F6	
12	1-12	1.00	28.00	12.70	18.00	6.33	21.00	13.27	153	F7	
13	1-13	1.00	17.00	-4.76	11.00	-2.53	10.00	2.04	153	F8	
14	1-14	1.00	29.00	14.29	12.00	-1.27	14.00	6.12	153	F9	
15	1-15	1.00	27.00	11.11	13.00	0.00	13.00	5.10	153	F10	
16	1-16	1.00	23.00	-4.76	10.00	-3.80	8.00	0.00	153	F11	
17	1-17	1.00	29.00	14.29	10.00	-3.80	7.00	-1.02	153	F12	
18	1-18	1.00	28.00	12.70	16.00	3.80	15.00	7.14	153	F13	
19	2-1	1.00	36.00	25.40	18.00	6.33	7.00	-1.02	153	F14	
20	2-2	1.00	16.00	-6.35	15.00	2.53	13.00	5.10	153	F15	
21	2-3	1.00	27.00	11.11	16.00	3.80	13.00	5.10	153	F16	
22	2-4	1.00	28.00	12.70	15.00	2.53	10.00	2.04	153	F17	
23	2-5	1.00	21.00	1.59	15.00	2.53	8.00	0.00	153	F18	
24	2-6	1.00	26.00	9.52	9.00	-5.06	19.00	11.22	153	F19	
25	2-7	1.00	33.00	20.63	13.00	0.00	8.00	0.00	153	F20	
26	2-8	1.00	24.00	-6.35	16.00	3.80	11.00	3.06	153	F21	
27	2-9	1.00	29.00	14.29	12.00	-1.27	9.00	1.02	153	F22	
28	2-10	1.00	30.00	15.87	18.00	6.33	15.00	7.14	153	F23	
29	2-11	1.00	45.00	39.68	16.00	3.80	8.00	0.00	153	F24	
30	2-12	1.00	25.00	7.94	11.00	-2.53	4.00	-4.08	153	F25	
31	2-13	1.00	26.00	9.52	11.00	-2.53	7.00	-1.02	153	F26	
32	2-14	1.00	25.00	7.94	19.00	7.59	8.00	0.00	153	F27	
33	2-15	1.00	33.00	20.63	12.00	-1.27	7.00	-1.02	153	F28	
34	2-16	1.00	31.00	17.46	13.00	0.00	17.00	9.18	153	F29	
35	2-17	1.00	31.00	17.46	14.00	1.27	10.00	2.04	153	F30	
36	2-18	1.00	25.00	7.94	16.00	3.80	13.00	5.10	153	F31	
37	3-1	1.00	38.00	28.57	16.00	3.80	9.00	1.02	153	F32	
38	3-2	1.00	27.00	11.11	10.00	-3.80	8.00	0.00	153	F33	
39	3-3	1.00	26.00	9.52	11.00	-2.53	8.00	0.00	153	F34	
40	3-4	1.00	21.00	1.59	7.00	-7.59	7.00	-1.02	153	F35	
41	3-5	1.00	24.00	6.35	7.00	-7.59	9.00	1.02	153	F36	
42	3-6	1.00	29.00	14.29	15.00	2.53	10.00	2.04	153	F37	
43	3-7	1.00	30.00	15.87	13.00	0.00	5.00	-3.06	153	F38	
44	3-8	1.00	16.00	-6.35	14.00	1.27	10.00	2.04	153	F39	
45	3-9	1.00	19.00	-1.59	14.00	1.27	4.00	1.02	153	F40	
46	3-10	1.00	29.00	14.29	8.00	-6.33	9.00	1.02	153	F41	
47	3-11	1.00	25.00	7.94	11.00	-2.53	6.00	-2.04	153	F42	
48	3-12	1.00	28.00	12.70	13.00	0.00	4.00	-4.08	153	F43	
49	3-13	1.00	26.00	9.52	9.00	-5.06	8.00	0.00	153	F44	
50	3-14	1.00	36.00	25.40	8.00	-6.33	7.00	-1.02	153	F45	

51	3-15	1.00	29.00	14.29	10.00	-3.80	13.00	5.10	153	F46
52	3-16	1.00	26.00	9.52	17.00	5.06	16.00	8.16	153	F47
53	3-17	1.00	18.00	-3.17	11.00	-2.53	8.00	0.00	153	F48
54	3-18	1.00	23.00	4.76	8.00	-6.33	14.00	6.12	153	F49
55	4-1	1.00	26.00	9.52	10.00	-3.80	4.00	-4.08	153	F50
56	4-2	1.00	22.00	3.17	10.00	-3.80	11.00	3.06	153	W1
57	4-3	1.00	30.00	15.87	14.00	1.27	6.00	-2.04	153	W2
58	4-4	1.00	27.00	11.11	13.00	0.00	10.00	2.04	153	W3
59	4-5	1.00	90.00	111.11	22.00	11.39	8.00	0.00	153	W4
60	4-6	1.00	27.00	11.11	11.00	-2.53	5.00	-3.06	153	W5
61	4-7	1.00	30.00	15.87	11.00	-2.53	11.00	3.06	153	D11
62	4-8	1.00	26.00	9.52	11.00	-2.53	6.00	-2.04	153	D1a
63	4-9	1.00	22.00	3.17	10.00	-3.80	15.00	7.14	153	D21
64	4-10	1.00	23.00	4.76	12.00	-1.27	7.00	-1.02	153	D2a
65	4-11	1.00	28.00	12.70	14.00	1.27	2.00	-6.12	153	D31
66	4-12	1.00	14.00	-9.52	8.00	-6.33	8.00	0.00	153	D3a
67	4-13	1.00	22.00	3.17	10.00	-3.80	14.00	6.12	153	D41
68	4-14	1.00	16.00	-6.35	7.00	-7.59	12.00	4.08	153	D4a
69	4-15	1.00	18.00	-3.17	11.00	-2.53	7.00	-1.02	153	S1
70	4-16	1.00	27.00	11.11	16.00	3.80	8.00	0.00	153	S2
71	4-17	1.00	17.00	-4.76	12.00	-1.27	10.00	2.04	153	S3
72	4-18	1.00	21.00	1.59	13.00	0.00	9.00	1.02	153	S4
73	5-1	1.00	26.00	9.52	12.00	-1.27	10.00	2.04	153	B1
74	5-2	1.00	24.00	6.35	12.00	-1.27	11.00	3.06	153	D1A
75	5-3	1.00	51.00	49.21	18.00	6.33	12.00	4.08	153	D1B
76	5-4	1.00	31.00	17.46	10.00	-3.80	7.00	-1.02	153	D1C
77	5-5	1.00	19.00	-1.59	10.00	-3.80	4.00	-4.08	153	D1D
78	5-6	1.00	23.00	4.76	13.00	0.00	8.00	0.00	153	D1E
79	5-7	1.00	29.00	14.29	15.00	2.53	12.00	4.08	153	C1FS
80	5-8	1.00	17.00	-4.76	17.00	5.06	13.00	5.10	153	B2
81	5-9	1.00	24.00	6.35	16.00	3.80	11.00	3.06	153	D2A
82	5-10	1.00	22.00	3.17	12.00	-1.27	4.00	-4.08	153	D2B
83	5-11	1.00	21.00	1.59	7.00	-7.59	13.00	5.10	153	D2C
84	5-12	1.00	35.00	23.81	17.00	5.06	12.00	4.08	153	D2D
85	5-13	1.00	18.00	-3.17	7.00	-7.59	12.00	4.08	153	D2E
86	5-14	1.00	37.00	26.98	15.00	2.53	7.00	-1.02	153	D2F
87	5-15	1.00	30.00	15.87	17.00	5.06	11.00	3.06	153	D2G
88	5-16	1.00	23.00	4.76	16.00	3.80	12.00	4.08	153	D2H
89	5-17	1.00	34.00	22.22	6.00	-8.86	13.00	5.10	153	D2I
90	5-18	1.00	41.00	33.33	7.00	-7.59	13.00	5.10	153	D2J
91	6-1	1.00	30.00	15.87	9.00	-5.06	7.00	-1.02	153	C2PS
92	6-2	1.00	21.00	1.59	25.00	15.19	14.00	6.12	153	B3A
93	6-3	1.00	31.00	17.46	41.00	35.44	8.00	0.00	153	B3B
94	6-4	1.00	24.00	6.35	11.00	-2.53	10.00	2.04	153	D3A
95	6-5	1.00	25.00	7.94	10.00	-3.80	13.00	5.10	153	D3B
96	6-6	1.00	18.00	-3.17	9.00	-5.06	13.00	5.10	153	D3C
97	6-7	1.00	32.00	19.05	26.00	16.46	5.00	-3.06	153	D3D
98	6-8	1.00	36.00	25.40	14.00	1.27	12.00	4.08	153	D3E
99	6-9	1.00	27.00	11.11	10.00	-3.80	6.00	-2.04	153	D3F
100	6-10	1.00	17.00	-4.76	6.00	-8.86	10.00	2.04	153	D3G
101	6-11	1.00	26.00	9.52	15.00	2.53	13.00	5.10	153	D3H
102	6-12	1.00	27.00	11.11	11.00	-2.53	11.00	3.06	153	D3I
103	6-13	1.00	13.00	-11.11	13.00	0.00	5.00	-3.06	153	D3J
104	6-14	1.00	31.00	17.46	23.00	12.66	9.00	1.02	153	D3K
105	6-15	1.00	56.00	57.14	56.00	54.43	11.00	3.06	153	D3L
106	6-16	1.00	30.00	15.87	15.00	2.53	7.00	-1.02	153	D3M
107	6-17	1.00	31.00	17.46	14.00	1.27	15.00	7.14	153	D3N
108	6-18	1.00	44.00	38.10	37.00	30.58	9.00	1.02	153	D3O
109	7-1	1.00	24.00	6.35	10.00	-3.80	10.00	2.04	153	D3P
110	7-2	1.00	24.00	6.35	10.00	-3.80	7.00	-1.02	153	D3Q
111	7-3	1.00	29.00	14.29	16.00	3.80	10.00	2.04	153	D3R
112	7-4	1.00	22.00	3.17	16.00	3.80	5.00	-3.06	153	D3S
113	7-5	1.00	19.00	-1.59	19.00	7.59	6.00	-2.04	153	D3T
114	7-6	1.00	26.00	9.52	11.00	-2.53	4.00	-4.08	153	C3FS1
115	7-7	1.00	22.00	3.17	12.00	-1.27	11.00	3.06	153	C3FS2
116	7-8	1.00	24.00	6.35	10.00	-3.80	7.00	-1.02	153	C3FS3

117	7-9	1.00	33.00	20.63	16.00	3.80	9.00	1.02	153	C3FSA
118	7-10	1.00	19.00	-1.59	16.00	3.80	6.00	-2.04	153	C5FS1
119	7-11	1.00	17.00	-4.76	15.00	2.53	7.00	-1.02	153	C5FS2
120	7-12	1.00	22.00	3.17	17.00	5.06	8.00	0.00	153	B4A
121	7-13	1.00	26.00	9.52	19.00	7.59	9.00	1.02	153	B4B
122	7-14	1.00	31.00	17.46	7.00	-7.59	9.00	1.02	153	D4A
123	7-15	1.00	24.00	6.35	14.00	1.27	9.00	1.02	153	D4B
124	7-16	1.00	26.00	9.52	13.00	0.00	15.00	7.14	153	D4C
125	7-17	1.00	26.00	9.52	13.00	0.00	10.00	2.04	153	D4D
126	7-18	1.00	19.00	-1.59	14.00	1.27	10.00	2.04	153	D4E
127	8-1	1.00	21.00	1.59	11.00	-2.53	11.00	3.06	153	D4F
128	8-2	1.00	27.00	11.11	12.00	-1.27	19.00	11.22	153	D4G
129	8-3	1.00	17.00	-4.76	13.00	0.00	5.00	-3.06	153	D4H
130	8-4	1.00	22.00	3.17	12.00	-1.27	4.00	-4.08	153	D4I
131	8-5	1.00	15.00	-7.94	10.00	-3.80	8.00	0.00	153	D4J
132	8-6	1.00	30.00	15.87	14.00	1.27	11.00	3.06	153	D4K
133	8-7	1.00	22.00	3.17	15.00	2.53	7.00	-1.02	153	D4L
134	8-8	1.00	23.00	4.76	5.00	-10.13	9.00	1.02	153	D4M
135	8-9	1.00	30.00	15.87	13.00	0.00	9.00	1.02	153	D4N
136	8-10	1.00	33.00	20.63	14.00	1.27	9.00	1.02	153	D4O
137	8-11	1.00	52.00	50.79	18.00	6.33	13.00	5.10	153	D4P
138	8-12	1.00	19.00	-1.59	8.00	-6.33	15.00	7.14	153	D4Q
139	8-13	1.00	29.00	14.29	11.00	-2.53	10.00	2.04	153	D4R
140	8-14	1.00	26.00	9.52	7.00	-7.59	11.00	3.06	153	D4S
141	8-15	1.00	28.00	12.70	10.00	-3.80	10.00	2.04	153	D4T
142	8-16	1.00	16.00	-6.35	12.00	-1.27	10.00	2.04	153	C4FS1
143	8-17	1.00	61.00	65.08	12.00	-1.27	12.00	4.08	153	C4FS2
144	8-18	1.00	25.00	7.94	8.00	-6.33	5.00	-3.06	153	C4FS3
145	9-1	1.00	20.00	0.00	17.00	5.06	13.00	5.10	153	C4FS4
146	9-2	1.00	30.00	15.87	15.00	2.53	10.00	2.04	153	B5
147	9-3	1.00	20.00	0.00	15.00	2.53	16.00	8.16	153	D5A
148	9-4	1.00	853.00	1322.22	92.00	100.00	18.00	10.20	153	D5B
149	9-5	1.00	33.00	20.63	14.00	1.27	12.00	4.08	153	D5C
150	9-6	1.00	22.00	3.17	8.00	-6.33	8.00	0.00	153	D5D
151	9-7	1.00	27.00	11.11	16.00	3.80	9.00	1.02	153	D5E
152	9-8	1.00	109.00	141.27	9.00	-5.06	9.00	1.02	153	D5F
153	9-9	1.00	35.00	23.81	8.00	-6.33	18.00	10.20	153	D5G
154	9-10	1.00	32.00	19.05	19.00	7.59	5.00	-3.06	153	D5H
155	9-11	1.00	28.00	12.70	14.00	1.27	16.00	8.16	153	D5I
156	9-12	1.00	199.00	284.13	224.00	267.09	67.00	60.20	153	D5J
157	9-13	1.00	24.00	6.35	9.00	-5.06	11.00	3.06	153	Cb1
158	9-14	1.00	26.00	9.52	10.00	-3.80	8.00	0.00	153	Cb1in
159	9-15	1.00	34.00	22.22	13.00	0.00	7.00	-1.02	153	Cb2
160	9-16	1.00	28.00	12.70	9.00	-5.06	10.00	2.04	153	Cb2in
161	9-17	1.00	23.00	4.76	7.00	-7.59	7.00	-1.02	153	B6
162	9-18	1.00	23.00	4.76	14.00	1.27	11.00	3.06	153	B7
163	10-1	1.00	29.00	14.29	10.00	-3.80	12.00	4.08	153	B7A
164	10-2	1.00	25.00	7.94	9.00	-5.06	8.00	0.00	153	B7B
165	10-3	1.00	21.00	1.59	10.00	-3.80	11.00	3.06	153	B7C
166	10-4	1.00	20.00	0.00	15.00	2.53	4.00	-4.08	153	B7D
167	10-5	1.00	14.00	-9.52	11.00	-2.53	10.00	2.04	153	C7FS
168	10-6	1.00	30.00	15.87	12.00	-1.27	6.00	-2.04	153	B8A
169	10-7	1.00	23.00	4.76	6.00	-8.86	10.00	2.04	153	B8B
170	10-8	1.00	21.00	1.59	8.00	-6.33	9.00	1.02	153	D8A
171	10-9	1.00	14.00	-9.52	10.00	-3.80	7.00	-1.02	153	D8B
172	10-10	1.00	18.00	-3.17	9.00	-5.06	16.00	8.16	153	D8C
173	10-11	1.00	21.00	1.59	10.00	-3.80	7.00	-1.02	153	D8D
174	10-12	1.00	33.00	20.63	11.00	-2.53	6.00	-2.04	153	D8E
175	10-13	1.00	23.00	4.76	18.00	6.33	6.00	-2.04	153	D8F
176	10-14	1.00	21.00	1.59	17.00	5.06	9.00	1.02	153	D8G
177	10-15	1.00	19.00	-1.59	7.00	-7.59	8.00	0.00	153	D8H
178	10-16	1.00	24.00	6.35	12.00	-1.27	7.00	-1.02	153	D8I
179	10-17	1.00	29.00	14.29	15.00	2.53	7.00	-1.02	153	D8J
180	10-18	1.00	22.00	3.17	15.00	2.53	6.00	-2.04	153	C8FS1
181	11-1	1.00	17.00	-4.76	13.00	0.00	11.00	3.06	153	C8FS2
182	11-2	1.00	26.00	9.52	3.00	-12.66	13.00	5.10	153	C1

183	11-3	1.00	27.00	11.11	12.00	-1.27	9.00	1.02	153	C2
184	11-4	1.00	18.00	-3.17	15.00	2.53	6.00	-2.04	153	C3
185	11-5	1.00	20.00	0.00	7.00	-7.59	9.00	1.02	153	C4
186	11-6	1.00	19.00	-1.59	11.00	-2.53	7.00	-1.02	153	C5
187	11-7	1.00	18.00	-3.17	14.00	1.27	8.00	0.00	153	C6
188	11-8	1.00	10.00	-15.87	10.00	-3.80	4.00	-4.08	153	C7
189	11-9	1.00	11.00	-14.29	15.00	2.53	10.00	2.04	153	C8
190	11-10	1.00	14.00	-9.52	17.00	5.06	11.00	3.06	153	C9
191	11-11	1.00	27.00	11.11	11.00	-2.53	11.00	3.06	153	C10
192	11-12	1.00	35.00	23.81	10.00	-3.80	5.00	-3.06	153	C11
193	11-13	1.00	16.00	-6.35	12.00	-1.27	12.00	4.08	153	C12
194	11-14	1.00	12.00	-12.70	15.00	2.53	11.00	3.06	153	C13
195	11-15	1.00	13.00	-11.11	12.00	-1.27	7.00	-1.02	153	C14
196	11-16	1.00	16.00	-6.35	10.00	-3.80	7.00	-1.02	153	C15
197	11-17	1.00	22.00	3.17	9.00	-5.06	8.00	0.00	153	C16
198	11-18	1.00	23.00	4.76	15.00	2.53	8.00	0.00	153	EDA
199	12-1	1.00	29.00	14.29	7.00	-7.59	9.00	1.02	153	EDB
200	12-2	1.00	14.00	-9.52	17.00	5.06	11.00	3.06	153	EDout
201	12-3	1.00	28.00	12.70	8.00	-6.33	8.00	0.00	153	EDS
202	12-4	1.00	20.00	0.00	14.00	1.27	12.00	4.08	153	S1
203	12-5	1.00	21.00	1.59	11.00	-2.53	9.00	1.02	153	S2R1
204	12-6	1.00	11.00	-14.29	17.00	5.06	10.00	2.04	153	S2R2
205	12-7	1.00	13.00	-11.11	16.00	3.80	10.00	2.04	153	S3R1
206	12-8	1.00	21.00	1.59	15.00	2.53	11.00	3.06	153	S3R2
207	12-9	1.00	19.00	-1.59	16.00	3.80	11.00	3.06	153	S4
208	12-10	1.00	20.00	0.00	15.00	2.53	9.00	1.02	153	S5R1
209	12-11	1.00	20.00	0.00	11.00	-2.53	8.00	0.00	153	S5R2
210	12-12	1.00	29.00	14.29	10.00	-3.80	9.00	1.02	153	S5R3
211	12-13	1.00	21.00	1.59	11.00	-2.53	7.00	-1.02	153	RCT
217	13-1	1.00	16.00	-6.35	9.00	-5.06	10.00	2.04	152	F1
218	13-2	1.00	13.00	-11.11	16.00	3.80	17.00	9.18	152	F2
219	13-3	1.00	24.00	6.35	12.00	-1.27	7.00	-1.02	152	F3
220	13-4	1.00	17.00	-4.76	16.00	3.80	5.00	-3.06	152	F4
221	13-5	1.00	23.00	4.76	20.00	8.86	6.00	-2.04	152	F5
222	13-6	1.00	27.00	11.11	18.00	6.33	10.00	2.04	152	F6
223	13-7	1.00	19.00	-1.59	10.00	-3.80	8.00	0.00	152	F7
224	13-8	1.00	15.00	-7.94	16.00	3.80	10.00	2.04	152	F8
225	13-9	1.00	20.00	0.00	9.00	-5.06	11.00	3.06	152	F9
226	13-10	1.00	19.00	-1.59	12.00	-1.27	8.00	0.00	152	F10
227	13-11	1.00	18.00	-3.17	17.00	5.06	9.00	1.02	152	F11
228	13-12	1.00	16.00	-6.35	17.00	5.06	10.00	2.04	152	F12
229	13-13	1.00	17.00	-4.76	17.00	5.06	9.00	1.02	152	F13
230	13-14	1.00	30.00	15.87	7.00	-7.59	11.00	3.06	152	F14
231	13-15	1.00	28.00	12.70	8.00	-6.33	13.00	5.10	152	F15
232	13-16	1.00	27.00	11.11	9.00	-5.06	15.00	7.14	152	F16
233	13-17	1.00	20.00	0.00	20.00	8.86	8.00	0.00	152	F17
234	13-18	1.00	29.00	14.29	7.00	-7.59	13.00	5.10	152	F18
235	14-1	1.00	17.00	-4.76	14.00	1.27	8.00	0.00	152	F19
236	14-2	1.00	14.00	-9.52	13.00	0.00	11.00	3.06	152	F20
237	14-3	1.00	21.00	1.59	12.00	-1.27	7.00	-1.02	152	F21
238	14-4	1.00	26.00	9.52	11.00	-2.53	19.00	11.22	152	F22
239	14-5	1.00	20.00	0.00	13.00	0.00	2.00	-6.12	152	F23
240	14-6	1.00	13.00	-11.11	14.00	1.27	10.00	2.04	152	F24
241	14-7	1.00	16.00	-6.35	13.00	0.00	7.00	-1.02	152	F25
242	14-8	1.00	11.00	1.59	16.00	3.80	10.00	2.04	152	F26
243	14-9	1.00	8.00	-3.17	6.00	-8.86	10.00	2.04	152	F27
244	14-10	1.00	14.00	-9.52	13.00	0.00	8.00	0.00	152	F28
245	14-11	1.00	17.00	-4.76	18.00	6.33	12.00	4.08	152	F29
246	14-12	1.00	26.00	9.52	15.00	2.53	8.00	0.00	152	F30
247	14-13	1.00	17.00	-4.76	8.00	-6.33	14.00	6.12	152	F31
248	14-14	1.00	14.00	-9.52	17.00	5.06	6.00	-2.04	152	F32
249	14-15	1.00	20.00	0.00	17.00	5.06	11.00	3.06	152	F33
250	14-16	1.00	19.00	-1.59	12.00	-1.27	4.00	-4.08	152	B1
251	14-17	1.00	16.00	-6.35	11.00	-2.53	8.00	0.00	152	B1FAU
252	14-18	1.00	29.00	14.29	22.00	11.39	7.00	-1.02	152	D1A
253	15-1	1.00	11.00	-14.29	13.00	0.00	9.00	1.02	152	D1B

254	15-2	1.00	28.00	12.70	28.00	18.99	13.00	5.10	152	D1C
255	15-3	1.00	10.00	-15.87	18.00	6.33	12.00	4.08	152	D1D
256	15-4	1.00	20.00	0.00	12.00	-1.27	5.00	-3.06	152	D1E
257	15-5	1.00	18.00	-3.17	15.00	2.53	6.00	-2.04	152	D1F
258	15-6	1.00	22.00	3.17	19.00	7.59	10.00	2.04	152	D1G
259	15-7	1.00	18.00	-3.17	18.00	6.33	5.00	-3.06	152	D1H
260	15-8	1.00	18.00	-3.17	14.00	1.27	15.00	7.14	152	D1I
261	15-9	1.00	21.00	1.59	8.00	-6.33	17.00	9.18	152	D1J
262	15-10	1.00	28.00	12.70	18.00	6.33	12.00	4.08	152	D1K
263	15-11	1.00	17.00	-4.76	9.00	-5.06	10.00	2.04	152	D1L
264	15-12	1.00	23.00	4.76	17.00	5.06	9.00	1.02	152	D1M
265	15-13	1.00	16.00	-6.35	5.00	-10.13	10.00	2.04	152	D1N
266	15-14	1.00	18.00	-3.17	11.00	-2.53	11.00	3.06	152	D1O
267	15-15	1.00	25.00	7.94	22.00	11.39	8.00	0.00	152	D1P
268	15-16	1.00	24.00	6.35	14.00	1.27	7.00	-1.02	152	D1Q
269	15-17	1.00	13.00	-11.11	14.00	1.27	9.00	1.02	152	D1R
270	15-18	1.00	16.00	-6.35	14.00	1.27	15.00	7.14	152	D1S
271	16-1	1.00	16.00	-6.35	13.00	0.00	5.00	8.16	152	D1T
272	16-2	1.00	26.00	9.52	16.00	3.80	7.00	-1.02	152	D1U
273	16-3	1.00	19.00	-1.59	9.00	-5.06	13.00	5.10	152	D1V
274	16-4	1.00	20.00	0.00	9.00	-5.06	13.00	5.10	152	D1W
275	16-5	1.00	24.00	6.35	12.00	-1.27	5.00	-3.06	152	D1X
276	16-6	1.00	24.00	6.35	10.00	-3.80	3.00	-5.10	152	D1Y
277	16-7	1.00	16.00	-6.35	15.00	2.53	14.00	6.12	152	D1Z
278	16-8	1.00	21.00	1.59	15.00	2.53	10.00	2.04	152	D1AA
279	16-9	1.00	12.00	-12.70	17.00	5.06	13.00	5.10	152	D1BB
280	16-10	1.00	13.00	-11.11	15.00	2.53	13.00	5.10	152	D1CC
281	16-11	1.00	22.00	3.17	18.00	6.33	16.00	8.16	152	D1DD
282	16-12	1.00	16.00	-6.35	20.00	8.86	6.00	-2.04	152	D1EE
283	16-13	1.00	21.00	1.59	14.00	1.27	11.00	3.06	152	D1FF
284	16-14	1.00	28.00	12.70	13.00	0.00	6.00	-2.04	152	D1GG
285	16-15	1.00	24.00	6.35	13.00	0.00	11.00	3.06	152	D1HH
286	16-16	1.00	21.00	1.59	17.00	5.06	12.00	4.08	152	D1IFS
287	16-17	1.00	8.00	-19.05	9.00	-5.06	8.00	0.00	152	B2A
288	16-18	1.00	23.00	4.76	8.00	-6.33	4.00	-4.08	152	B2B
289	17-1	1.00	18.00	-3.17	21.00	10.13	9.00	1.02	152	B2FAU
290	17-2	1.00	23.00	4.76	21.00	10.13	6.00	-2.04	152	D2A
291	17-3	1.00	17.00	-4.76	8.00	-6.33	7.00	-1.02	152	D2B
292	17-4	1.00	15.00	-7.94	7.00	-7.59	3.00	-5.10	152	D2C
293	17-5	1.00	13.00	-11.11	10.00	-3.80	12.00	4.08	152	D2D
294	17-6	1.00	15.00	-7.94	19.00	7.59	9.00	1.02	152	D2E
295	17-7	1.00	18.00	-3.17	9.00	-5.06	8.00	0.00	152	D2F
296	17-8	1.00	18.00	-3.17	5.00	-10.13	11.00	3.06	152	D2G
297	17-9	1.00	15.00	-7.94	10.00	-3.80	17.00	9.18	152	D2H
298	17-10	1.00	21.00	1.59	11.00	-2.53	15.00	7.14	152	D2I
299	17-11	1.00	22.00	3.17	7.00	-7.59	19.00	11.22	152	D2J
300	17-12	1.00	19.00	-1.59	13.00	0.00	15.00	7.14	152	D2K
301	17-13	1.00	20.00	0.00	9.00	-5.06	14.00	6.12	152	D2L
302	17-14	1.00	16.00	-6.35	18.00	6.33	9.00	1.02	152	D2M
303	17-15	1.00	19.00	-1.59	16.00	3.80	11.00	3.06	152	D2N
304	17-16	1.00	26.00	9.52	15.00	2.53	13.00	5.10	152	D2O
305	17-17	1.00	25.00	7.94	17.00	5.06	7.00	-1.02	152	D2P
306	17-18	1.00	14.00	-9.52	20.00	8.86	10.00	2.04	152	D2Q
307	18-1	1.00	22.00	3.17	14.00	1.27	6.00	0.00	152	D2R
308	18-2	1.00	18.00	-3.17	10.00	-3.80	14.00	6.12	152	D2S
309	18-3	1.00	15.00	-7.94	12.00	-1.27	7.00	-1.02	152	D2T
310	18-4	1.00	18.00	-3.17	10.00	-3.80	14.00	6.12	152	D2U
311	18-5	1.00	24.00	6.35	10.00	-3.80	10.00	2.04	152	D2V
312	18-6	1.00	15.00	-7.94	14.00	1.27	11.00	3.06	152	D2W
313	18-7	1.00	22.00	3.17	12.00	-1.27	9.00	1.02	152	D2X
314	18-8	1.00	13.00	-11.11	15.00	2.53	6.00	-2.04	152	D2Y
315	18-9	1.00	23.00	4.76	14.00	1.27	12.00	4.08	152	D2Z
316	18-10	1.00	20.00	0.00	16.00	3.80	11.00	3.06	152	D2AA
317	18-11	1.00	12.00	-12.70	11.00	-2.53	15.00	7.14	152	D2BB
318	18-12	1.00	21.00	1.59	21.00	10.13	10.00	2.04	152	D2CC
319	18-13	1.00	30.00	15.87	16.00	3.80	10.00	2.04	152	D2DD

320	18-14	1.00	12.00	-12.70	14.00	1.27	13.00	5.10	152	D2EE
321	18-15	1.00	20.00	0.00	10.00	-3.80	7.00	-1.02	152	D2FF
322	18-16	1.00	21.00	1.59	15.00	2.53	11.00	3.06	152	D2GG
323	18-17	1.00	17.00	-4.76	19.00	7.59	9.00	1.02	152	D2HH
324	18-18	1.00	15.00	-7.94	13.00	0.00	7.00	-1.02	152	B2CFS
325	20-1	1.00	15.00	-7.94	14.00	1.27	12.00	4.08	152	D5D
326	20-2	1.00	27.00	11.11	14.00	1.27	9.00	1.02	152	D5E
327	20-3	1.00	22.00	3.17	11.00	-2.53	8.00	0.00	152	D5F
328	20-4	1.00	22.00	3.17	9.00	-5.06	6.00	-2.04	152	D5G
329	20-5	1.00	14.00	-9.52	17.00	5.06	7.00	-1.02	152	B5CFS
330	20-6	1.00	18.00	-3.17	13.00	0.00	11.00	3.06	152	CT1
331	20-7	1.00	17.00	-4.76	9.00	-5.06	14.00	6.12	152	CT2
332	20-8	1.00	18.00	-3.17	6.00	-8.86	10.00	2.04	152	CT3
333	20-9	1.00	17.00	-4.76	11.00	-2.53	12.00	4.08	152	Cb1
334	20-10	1.00	13.00	-11.11	10.00	-3.80	10.00	2.04	152	Cb1i
335	20-11	1.00	8.00	-19.05	14.00	1.27	8.00	0.00	152	Cb2
336	20-12	1.00	18.00	-3.17	13.00	0.00	11.00	3.06	152	Cb2i
337	20-13	1.00	23.00	4.76	17.00	5.06	5.00	-3.06	152	Cb3
338	20-14	1.00	17.00	-4.76	15.00	2.53	16.00	8.16	152	Cb3i
339	20-15	1.00	17.00	-4.76	16.00	3.80	13.00	5.10	152	S1A
340	20-16	1.00	17.00	-4.76	17.00	5.06	11.00	3.06	152	S1B
341	20-17	1.00	20.00	0.00	9.00	-5.06	12.00	4.08	152	S1C
342	20-18	1.00	25.00	7.94	14.00	1.27	11.00	3.06	152	S1D
343	19-1	1.00	17.00	-4.76	10.00	-3.80	9.00	1.02	152	B3
344	19-2	1.00	21.00	1.59	12.00	-1.27	11.00	3.06	152	D3A
345	19-3	1.00	18.00	-3.17	7.00	-7.59	10.00	2.04	152	D3B
346	19-4	1.00	19.00	-1.59	16.00	3.80	10.00	2.04	152	D3C
347	19-5	1.00	24.00	6.35	13.00	0.00	7.00	-1.02	152	D3D
348	19-6	1.00	17.00	-4.76	12.00	-1.27	11.00	3.06	152	D3E
349	19-7	1.00	25.00	7.94	22.00	11.39	15.00	7.14	152	B3CFS
350	19-8	1.00	22.00	3.17	10.00	-3.80	10.00	2.04	152	B4
351	19-9	1.00	24.00	6.35	9.00	-5.06	9.00	1.02	152	D4A
352	19-10	1.00	21.00	1.59	9.00	-5.06	13.00	5.10	152	D4B
353	19-11	1.00	27.00	11.11	13.00	0.00	9.00	1.02	152	D4C
354	19-12	1.00	22.00	3.17	18.00	6.33	9.00	1.02	152	D4D
355	19-13	1.00	17.00	-4.76	16.00	3.80	5.00	-3.06	152	D4E
356	19-14	1.00	20.00	0.00	18.00	6.33	11.00	3.06	152	D4CFS
357	19-15	1.00	22.00	3.17	15.00	2.53	17.00	9.18	152	B5
358	19-16	1.00	18.00	-3.17	12.00	-1.27	17.00	9.18	152	D5A
359	19-17	1.00	20.00	0.00	9.00	-5.06	11.00	3.06	152	D5B
360	19-18	1.00	17.00	-4.76	8.00	-6.33	12.00	4.08	152	D5C
361	21-1	1.00	17.00	-4.76	17.00	5.06	8.00	0.00	152	S1FTS
362	21-2	1.00	21.00	1.59	10.00	-3.80	13.00	5.10	152	S2
363	21-3	1.00	27.00	11.11	18.00	6.33	9.00	1.02	152	S3R1
364	21-4	1.00	16.00	-6.35	12.00	-1.27	18.00	10.20	152	S3R2
365	21-5	1.00	10.00	-15.87	6.00	-8.86	12.00	4.08	152	S4R1
366	21-6	1.00	26.00	9.52	8.00	-6.33	10.00	2.04	152	S4R2
367	21-7	1.00	19.00	-1.59	11.00	-2.53	12.00	4.08	152	S5R1
368	21-8	1.00	13.00	-11.11	16.00	3.80	9.00	1.02	152	S5R2
369	21-9	1.00	14.00	-9.52	11.00	-2.53	16.00	8.16	152	S5R3
370	21-10	1.00	12.00	-12.70	19.00	7.59	10.00	2.04	152	S6R1
371	21-11	1.00	18.00	-3.17	16.00	3.80	12.00	4.08	152	S6R2
372	21-12	1.00	12.00	-12.70	11.00	-2.53	11.00	3.06	152	C1
373	21-13	1.00	14.00	-9.52	13.00	0.00	5.00	-3.06	152	C2
374	21-14	1.00	22.00	3.17	11.00	-2.53	12.00	4.08	152	C3
375	21-15	1.00	17.00	-4.76	14.00	1.27	12.00	4.08	152	C4
376	21-16	1.00	18.00	-3.17	12.00	-1.27	9.00	1.02	152	C5
377	21-17	1.00	24.00	6.35	8.00	-6.33	8.00	0.00	152	C6
378	21-18	1.00	26.00	9.52	19.00	7.59	11.00	3.06	152	C7
379	22-1	1.00	8.00	-19.05	4.00	1.27	13.00	5.10	152	C8
380	22-2	1.00	13.00	-11.11	6.00	-8.86	9.00	1.02	152	C9
381	22-3	1.00	10.00	-15.87	17.00	5.06	15.00	7.14	152	L1
382	22-4	1.00	18.00	-3.17	13.00	0.00	11.00	3.06	152	L2
383	22-5	1.00	15.00	-7.94	16.00	3.80	12.00	4.08	152	L3
384	22-6	1.00	20.00	0.00	12.00	-1.27	14.00	6.12	152	W1
385	22-7	1.00	20.00	0.00	7.00	-7.59	10.00	2.04	152	W2

386	22-8	1.00	15.00	-7.94	14.00	1.27	11.00	3.06	152	W3
387	22-9	1.00	19.00	-1.59	8.00	-6.33	7.00	-1.02	152	W4
388	22-10	1.00	19.00	-1.59	17.00	5.06	16.00	8.16	152	W5
389	22-11	1.00	25.00	7.94	11.00	-2.53	8.00	0.00	152	W6
390	22-12	1.00	22.00	3.17	17.00	5.06	9.00	1.02	152	W7
391	22-13	1.00	12.00	-12.70	12.00	-1.27	12.00	4.08	152	W8
392	22-14	1.00	23.00	4.76	19.00	7.59	10.00	2.04	152	W9
393	22-15	1.00	14.00	-9.52	15.00	2.53	15.00	7.14	152	W10
394	22-16	1.00	20.00	0.00	19.00	7.59	12.00	4.08	152	W11
395	22-17	1.00	25.00	7.94	11.00	-2.53	4.00	-4.08	152	W12
396	22-18	1.00	22.00	3.17	9.00	-5.06	11.00	3.06	152	W13
397	23-1	1.00	20.00	0.00	8.00	-6.33	10.00	2.04	152	W14
398	23-2	1.00	16.00	-6.35	14.00	1.27	8.00	0.00	152	W15
399	23-3	1.00	26.00	9.52	19.00	7.59	12.00	4.08	152	Dr1o
400	23-4	1.00	25.00	7.94	12.00	-1.27	17.00	9.18	152	Dr1i
401	23-5	1.00	11.00	-14.29	17.00	5.06	14.00	6.12	152	DR2o
402	23-6	1.00	15.00	-7.94	8.00	-6.33	12.00	4.08	152	Dr2i

Rm 152, Bldg 4, Final Survey

Samples

- ✓ Floor : F1 - F33
- ✓ Bench 1 : B1A, B1FAU
- ✓ Bench 1 Drawers : D1A - H4
- ✓ Bench 2 : B2A & B2B & B2CFAU
- ✓ Bench 2 Drawers : D2A - HH
- ✓ Bench 3 : B3
- ✓ B3 Drawers : D3 A-E
- ✓ Bench 4 : B4
- ✓ Bench 4 Drawers : D4A - E
- ✓ Bench 5 : B5
- ✓ Bench 5 Drawers : D5A - G
- ✓ Counter Top 1 : CT1
- ✓ Counter Top 2 : CT2
- ✓ Counter Top 3 : CT3
- ✓ Cabinet 1 : Cb1
- ✓ Inside Cabinet 1 : Cb1 (IN)
- ✓ Cabinet 2 : Cb2
- ✓ Inside Cabinet 2 : Cb2 (IN)
- ✓ Cabinet 3 : Cb3
- ✓ Inside Cabinet 3 : Cb3 (IN)

✓ Shelves 1 : S1A - D

✓ Shelf 1 front : S1FS

✓ Shelves 2 : S2

✓ Shelves 3 : S3R1
S3R2

✓ Shelves 4 : S4R1
S4R2

✓ Shelves 5 : S5R1
S5R2
S5R3

✓ Shelves 6 : S6R1
S6R2

✓ Ceiling : C1 - C9

✓ Lights : L1 - L3

Walls : W1 - W15

Cabinet Fronts & Sides

- ✓ B1CFS
- ✓ B2CFS
- ✓ B3CFS
- ✓ B4CFS
- ✓ B5CFS

Door 1 : DR1 out
DR1 IN

Door 2 : DR2 out
DR2 IN

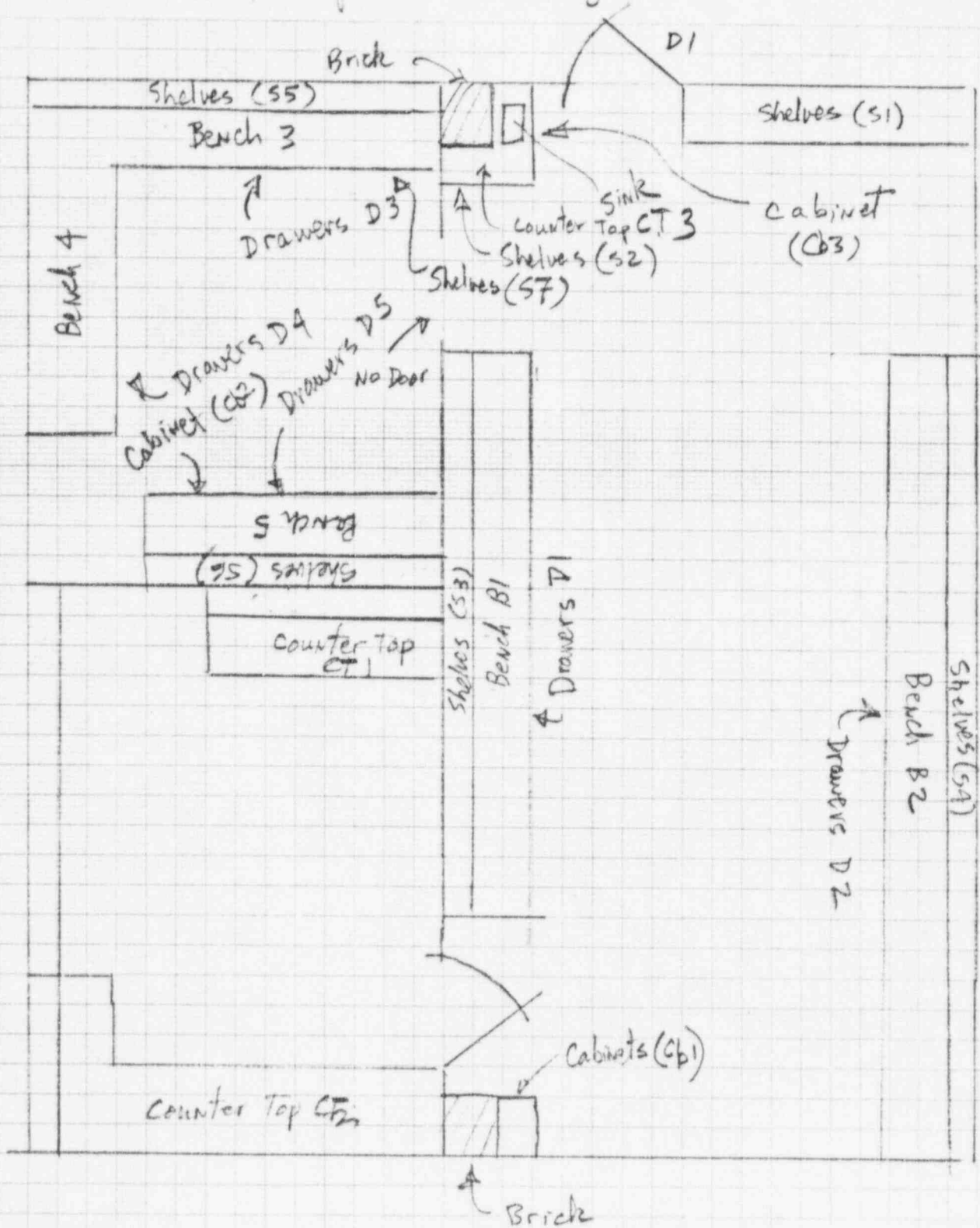
Samples $\frac{17}{11}$

(186)

$\frac{17}{11}$

Thompson
12/16/96

Rm 152, Bldg 4 Final Survey

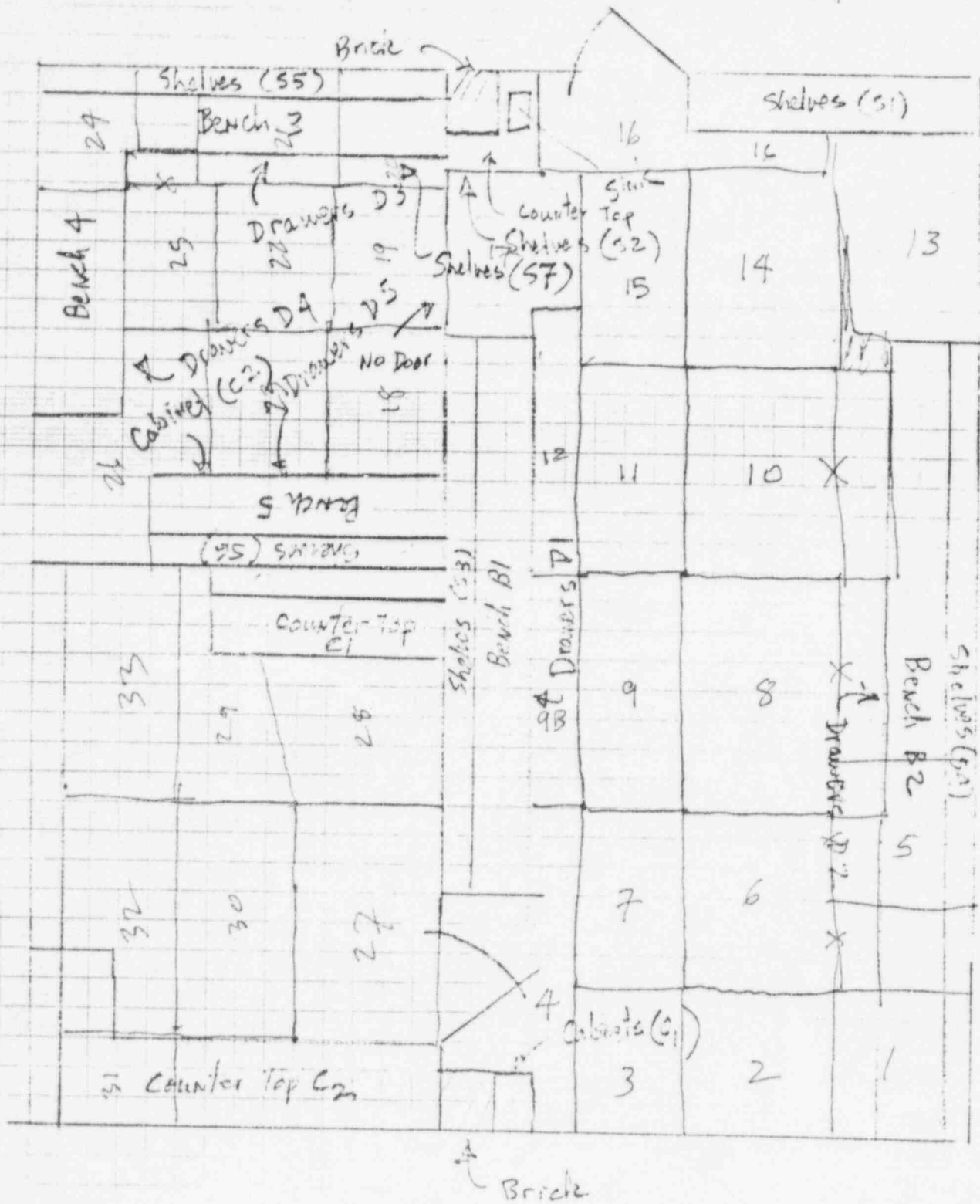


Not to Scale

Therow Holland
12/15/96

Fig. 15. Floor Grid

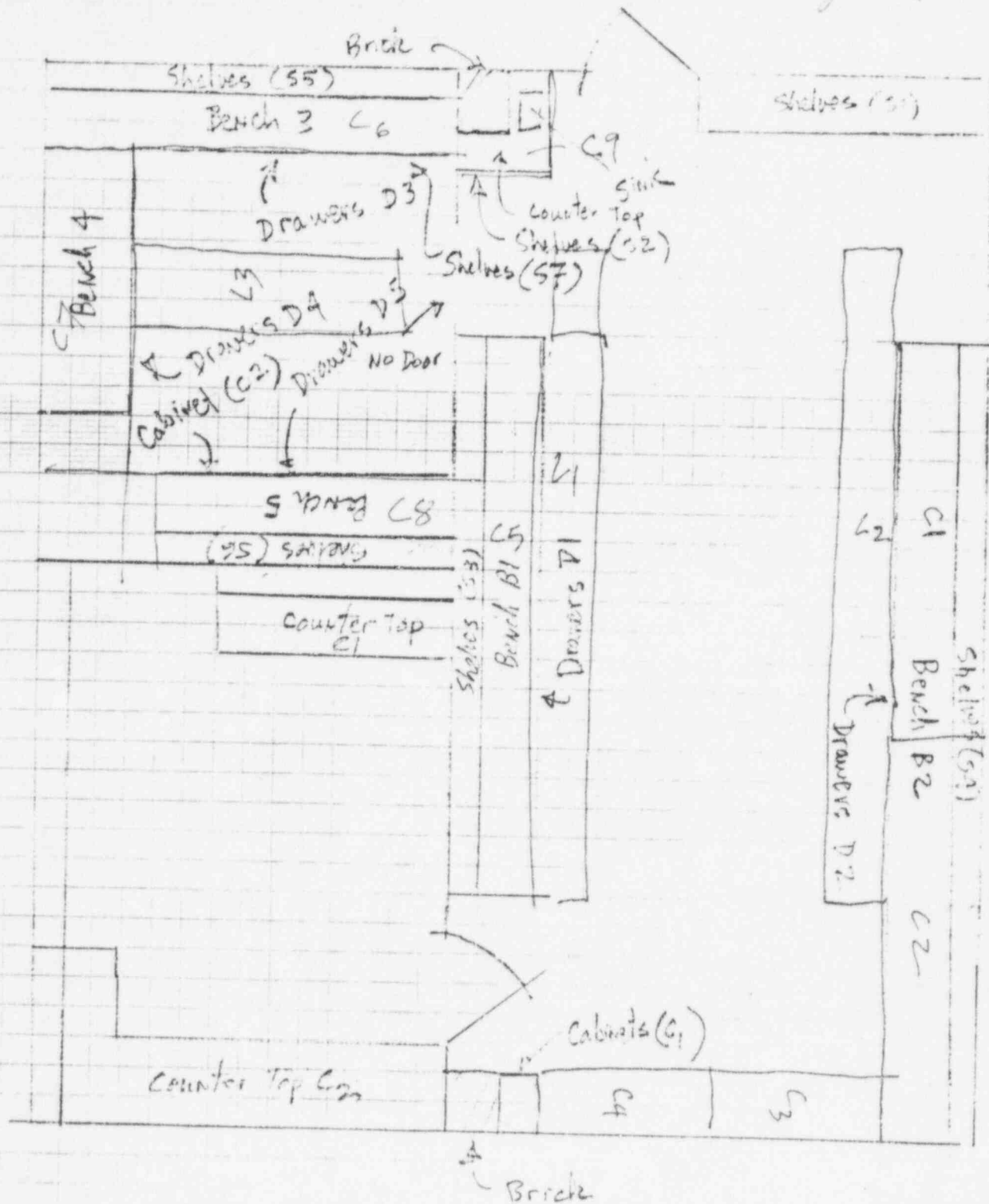
Floor Grid



Not to Scale

Therion Holland
12/15/10

100 120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020 1080 1140 1200 1260 1320 1380 1440 1500 1560 1620 1680 1740 1800 1860 1920 1980 2040 2100 2160 2220 2280 2340 2400 2460 2520 2580 2640 2700 2760 2820 2880 2940 3000 3060 3120 3180 3240 3300 3360 3420 3480 3540 3600 3660 3720 3780 3840 3900 3960 4020 4080 4140 4200 4260 4320 4380 4440 4500 4560 4620 4680 4740 4800 4860 4920 4980 5040 5100 5160 5220 5280 5340 5400 5460 5520 5580 5640 5700 5760 5820 5880 5940 6000 6060 6120 6180 6240 6300 6360 6420 6480 6540 6600 6660 6720 6780 6840 6900 6960 7020 7080 7140 7200 7260 7320 7380 7440 7500 7560 7620 7680 7740 7800 7860 7920 7980 8040 8100 8160 8220 8280 8340 8400 8460 8520 8580 8640 8700 8760 8820 8880 8940 9000 9060 9120 9180 9240 9300 9360 9420 9480 9540 9600 9660 9720 9780 9840 9900 9960 10000

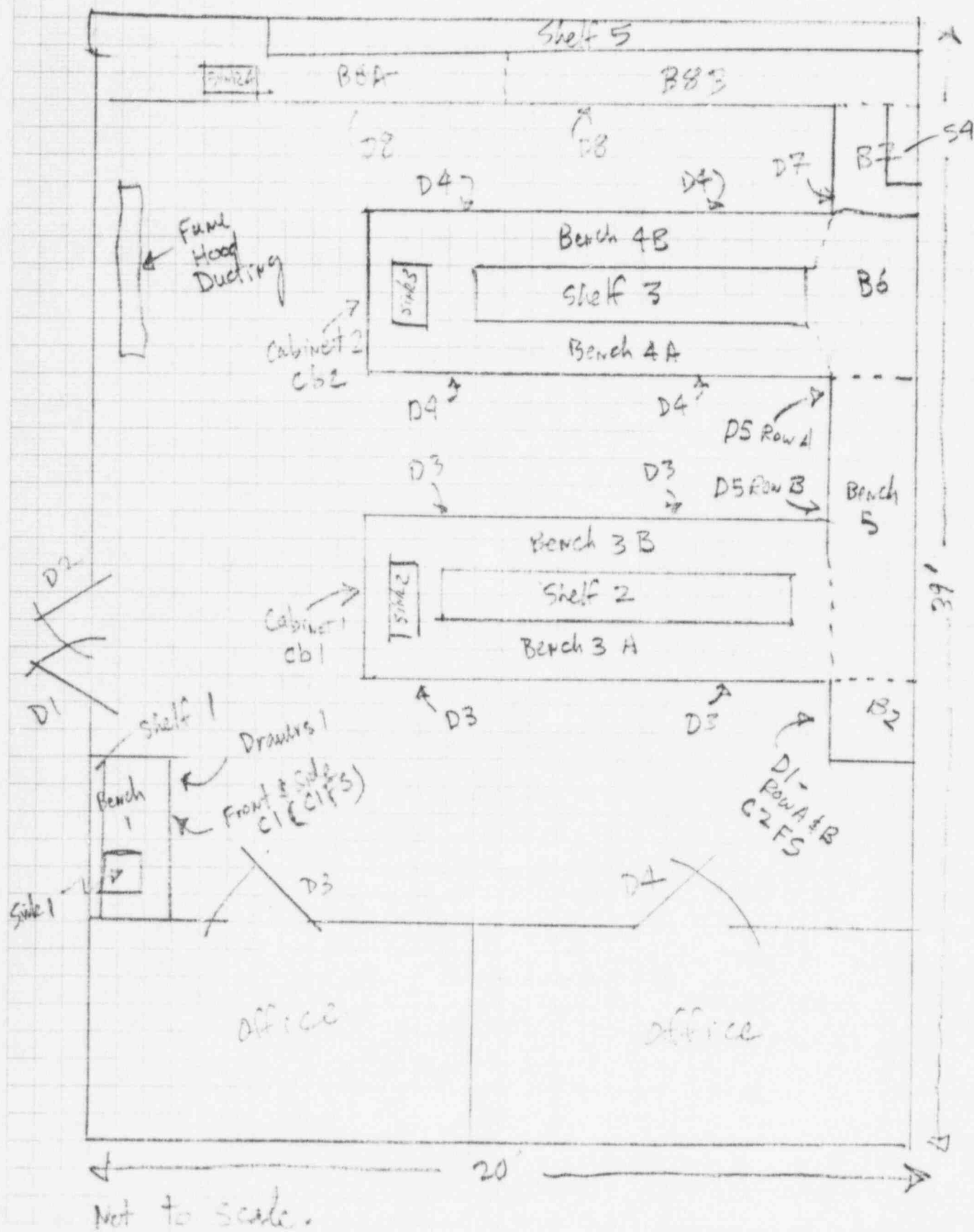


Not to scale

Therion Holland
12/15/10

Lab 153, Bldg 4 Final Survey, Dec 1996

Map



Shawn Holland
12/12/96

Samples

✓ Floor : F1 - S0

✓ Walls : W1 - W5

✓ Doors : D1 in D2 in D3 in D4 in
 D1 out D2 out D3 out D4 out

✓ Sinks : S1 - S4

Benches & Drawers & Cabinet Fronts / Insides / Sides

✓ Bench 1 : B1

~~✓ Sink 1 : S1~~

✓ Drawers 1 : D1A - D1E

✓ Cabinet 1 : C1FS

✓ Bench 2 : B2

✓ Drawers 2 : D2A - D2J

✓ Cabinet 2 : C2FS (front & sides)

✓ Bench 3 : B3A, B3B

✓ Drawers 3 : D3A - D3T

✓ Cabinets 3 : C3FS1 - C3FS4

✓ Sink 2 : S2

① Sink Cabinet : Cb1 & Cb1 in (same as Cb2)

✓ Bench 4 : B4A, B4B

✓ Drawers 4 : D4A - D4T

✓ Cabinets 4 : C4FS1 - C4FS4

✓ Sink 3 : S3

① Sink Cabinet : Cb2 & Cb2 in

↑ doors & sides
(outside)

↑ inside of doors
& cabinet

Sherrill Holland

12/17/96

Samples (cont)✓ Bench 5 : B5✓ Drawers 5 : D5A - D5J✓ Cabinet = C5FS1, C5FS2✓ Bench 6 : B6✓ Bench 7 : B7✓ Drawers 7 : D7A - D7D✓ Cabinet 7 : C7FS✓ Bench 8 : B8A, B8B✓ Drawers 8 : D8A - D8J✓ Cabinet 8 : C8FS1, C8FS2✓ Sink 4 : S4✓ Ceiling : C1 - C16✓ Exhaust Duct : EDA, EDB, ED OUT, ED small duct✓ Shelves : ^{S1} S2R1, S2R2
S3R1, S3R2
S4

S5R1 - S5R3

= EDS

Removed Ceiling Tiles - SW corner : RCTTotal Samples : $12 \times 17 + 2 = 206$ Shera Holland
12/17/96

Instrument Type: LS 6000
 Data Capture Date: 19 Dec 1996 18:21:19
 User Filename: A:\USER03\U03C1903.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: Rm.145

Isotope Name(s): ³H, ¹⁴C, ³²P

Scintillator Choice: LIQUID

Counting Efficiency:

¹⁴C = 79%

³H = 63%

Sam	Rack	Time	3H		14C		32P		Rm No	Descrip
			CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM		
1	1-1	1.00	8632.00		39026.00		326.00			14C STD
2	1-2	1.00	62309.00		655.00		4.00			3H STD
3	1-3	1.00	27.00		8.00		17.00			BKG 1
4	1-4	1.00	35.00		11.00		14.00			BKG 2
5	1-5	1.00	32.00		7.00		5.00			BKG 3
6	1-6	1.00	23.00	-12.70	9.00	1.27	6.00	-6.12	145	F1
7	1-7	1.00	22.00	-14.29	10.00	2.53	13.00	1.02	145	F2
8	1-8	1.00	23.00	-12.70	6.00	-2.53	9.00	-3.06	145	F3
9	1-9	1.00	15.00	-25.40	16.00	10.13	10.00	-2.04	145	F4
10	1-10	1.00	26.00	-7.94	10.00	2.53	5.00	-7.14	145	F5
11	1-11	1.00	21.00	-15.87	16.00	10.13	8.00	-4.08	145	F6
12	1-12	1.00	23.00	-12.70	17.00	11.39	12.00	0.00	145	F7
13	1-13	1.00	17.00	-22.22	17.00	11.39	10.00	-2.04	145	F8
14	1-14	1.00	27.00	-6.35	11.00	3.80	11.00	-1.02	145	F9
15	1-15	1.00	20.00	-17.46	17.00	11.39	12.00	0.00	145	F10
16	1-16	1.00	21.00	-15.87	13.00	6.33	7.00	-5.10	145	F11
17	1-17	1.00	22.00	-14.29	18.00	12.66	11.00	-1.02	145	F12
18	1-18	1.00	26.00	-7.94	13.00	6.33	10.00	-2.04	145	F13
19	2-1	1.00	16.00	-23.81	12.00	5.06	13.00	1.02	145	F14
20	2-2	1.00	24.00	-11.11	12.00	5.06	12.00	0.00	145	F15
21	2-3	1.00	20.00	-17.46	4.00	-5.06	11.00	-1.02	145	F16
22	2-4	1.00	22.00	-14.29	11.00	3.80	14.00	2.04	145	F17
23	2-5	1.00	17.00	-22.22	10.00	2.53	9.00	-3.06	145	F18
24	2-6	1.00	27.00	-6.35	13.00	6.33	17.00	5.10	145	F19
25	2-7	1.00	11.00	-31.75	7.00	-1.27	7.00	-5.10	145	F20
26	2-8	1.00	10.00	-33.33	15.00	8.86	10.00	-2.04	145	F21
27	2-9	1.00	27.00	-6.35	16.00	10.13	8.00	-4.08	145	F22
28	2-10	1.00	16.00	-23.81	16.00	10.13	6.00	-6.12	145	F23
29	2-11	1.00	22.00	-14.29	6.00	-2.53	10.00	-2.04	145	F24
30	2-12	1.00	14.00	-26.98	8.00	0.00	13.00	1.02	145	F25
31	2-13	1.00	19.00	-19.05	8.00	0.00	11.00	-1.02	145	F26
32	2-14	1.00	23.00	-12.70	9.00	1.27	11.00	-1.02	145	F27
33	2-15	1.00	25.00	-9.52	15.00	8.86	11.00	-1.02	145	F28
34	2-16	1.00	19.00	-19.05	17.00	11.39	7.00	-5.10	145	F29
35	2-17	1.00	25.00	-9.52	8.00	0.00	12.00	0.00	145	F30
36	2-18	1.00	25.00	-9.52	15.00	8.86	4.00	-8.16	145	F31
37	3-1	1.00	28.00	-4.76	10.00	2.53	7.00	-5.10	145	F32
38	3-2	1.00	27.00	-6.35	12.00	5.06	5.00	-7.14	145	F33
39	3-3	1.00	21.00	-15.87	16.00	10.13	8.00	-4.08	145	F34
40	3-4	1.00	22.00	-14.29	13.00	6.33	7.00	-5.10	145	F35
41	3-5	1.00	18.00	-20.63	20.00	15.19	10.00	-2.04	145	F36
42	3-6	1.00	14.00	-26.98	10.00	2.53	6.00	-6.12	145	F37
43	3-7	1.00	16.00	-23.81	15.00	8.86	10.00	-2.04	145	F38
44	3-8	1.00	23.00	-12.70	23.00	18.99	10.00	-2.04	145	F39
45	3-9	1.00	18.00	-20.63	10.00	2.53	6.00	-4.08	145	F40
46	3-10	1.00	19.00	-19.05	7.00	-1.27	17.00	5.10	145	F41
47	3-11	1.00	20.00	-17.46	12.00	5.06	15.00	3.06	145	F42
48	3-12	1.00	25.00	-9.52	14.00	7.59	14.00	2.04	145	F43
49	3-13	1.00	59.00	-44.44	11.00	3.80	12.00	0.00	145	F44
50	3-14	1.00	22.00	-14.29	15.00	8.86	10.00	-2.04	145	F45

51	3-15	1.00	17.00	-22.22	10.00	2.53	8.00	-4.08	145	F46
52	3-16	1.00	23.00	-12.70	10.00	2.53	7.00	-5.10	145	F47
53	3-17	1.00	23.00	-12.70	14.00	7.59	7.00	-5.10	145	F48
54	3-18	1.00	21.00	-15.87	14.00	7.59	7.00	-5.10	145	F49
55	4-1	1.00	29.00	-3.17	5.00	-3.80	18.00	6.12	145	F50
56	4-2	1.00	34.00	4.76	8.00	0.00	13.00	1.02	145	F51
57	4-3	1.00	18.00	-20.63	6.00	-2.53	12.00	0.00	145	F52
58	4-4	1.00	16.00	-23.81	12.00	5.06	10.00	-2.04	145	F53
59	4-5	1.00	19.00	-19.05	14.00	7.59	8.00	-4.08	145	F54
60	4-6	1.00	24.00	-11.11	11.00	3.80	16.00	4.08	145	F55
61	4-7	1.00	108.00	122.22	76.00	86.08	13.00	1.02	145	F56
62	4-8	1.00	22.00	-14.29	9.00	1.27	5.00	-7.14	145	F57
63	4-9	1.00	24.00	-11.11	18.00	12.66	12.00	0.00	145	F58
64	4-10	1.00	15.00	-25.40	17.00	11.39	10.00	-2.04	145	F59
65	4-11	1.00	25.00	-9.52	11.00	3.80	5.00	-7.14	145	F60
66	4-12	1.00	21.00	-15.87	12.00	5.06	16.00	4.08	145	F61
67	4-13	1.00	19.00	-19.05	27.00	24.05	12.00	0.00	145	F62
68	4-14	1.00	26.00	-7.94	15.00	8.86	31.00	19.39	145	F63
69	4-15	1.00	25.00	-9.52	14.00	7.59	17.00	5.10	145	F64
70	4-16	1.00	30.00	-1.59	7.00	-1.27	11.00	-1.02	145	F65
71	4-17	1.00	24.00	-11.11	9.00	1.27	11.00	-1.02	145	W1
72	4-18	1.00	86.00	87.30	10.00	2.53	7.00	-5.10	145	W2
73	5-1	1.00	5.00	-41.27	9.00	1.27	10.00	-2.04	145	W3
74	5-2	1.00	28.00	-4.76	12.00	5.06	11.00	-1.02	145	W4
75	5-3	1.00	35.00	5.35	18.00	12.66	12.00	0.00	145	W5
76	5-4	1.00	27.00	-6.35	14.00	7.59	11.00	-1.02	145	W6
77	5-5	1.00	42.00	17.46	15.00	8.86	14.00	2.04	145	W7
78	5-6	1.00	20.00	-17.46	13.00	6.33	13.00	1.02	145	W8
79	5-7	1.00	18.00	-20.63	13.00	6.33	11.00	-1.02	145	W9
80	5-8	1.00	17.00	-22.22	10.00	2.53	14.00	2.04	145	W10
81	5-9	1.00	29.00	-3.17	18.00	12.66	7.00	-5.10	145	W11
82	5-10	1.00	29.00	-3.17	9.00	0.00	5.00	-3.06	145	EDA
83	5-11	1.00	33.00	3.17	35.00	34.18	18.00	6.12	145	EDB
84	5-12	1.00	23.00	-12.70	18.00	12.66	6.00	-6.12	145	De1
85	5-13	1.00	26.00	-7.94	9.00	1.27	13.00	1.02	145	De1
86	5-14	1.00	20.00	-17.46	6.00	-2.53	9.00	-3.06	145	De2
87	5-15	1.00	24.00	-11.11	15.00	8.86	9.00	-3.06	145	De2
88	5-16	1.00	24.00	-11.11	6.00	-2.53	11.00	-1.02	145	De3
89	5-17	1.00	21.00	-15.87	13.00	6.33	11.00	-1.02	145	De4
90	5-18	1.00	15.00	-25.40	19.00	13.92	9.00	-3.06	145	De5
91	6-1	1.00	38.00	11.11	13.00	6.33	16.00	4.08	145	De5
92	6-2	1.00	36.00	7.94	13.00	6.33	10.00	-2.04	145	De6
93	6-3	1.00	28.00	-4.76	14.00	7.59	9.00	-3.06	145	De6
94	6-4	1.00	66.00	55.56	11.00	3.80	14.00	2.04	145	D1A
95	6-5	1.00	20.00	-17.46	17.00	11.39	9.00	-3.06	145	9B
96	6-6	1.00	15.00	-25.40	8.00	0.00	11.00	-1.02	145	D1A
97	6-7	1.00	23.00	-12.70	13.00	6.33	6.00	-6.12	145	D1B
98	6-8	1.00	19.00	-19.05	8.00	0.00	7.00	-5.10	145	D1C
99	6-9	1.00	25.00	-9.52	13.00	6.33	16.00	4.08	145	D1D
100	6-10	1.00	23.00	-12.70	9.00	1.27	9.00	-3.06	145	D1E
101	6-11	1.00	21.00	-15.87	12.00	5.06	7.00	-5.10	145	D1F
102	6-12	1.00	25.00	-9.52	13.00	6.33	7.00	-5.10	145	D1G
103	6-13	1.00	154.00	195.24	41.00	41.77	8.00	-4.08	145	D1H
104	6-14	1.00	22.00	-14.29	6.00	0.00	15.00	3.06	145	D1I
105	6-15	1.00	14.00	-26.98	10.00	2.53	8.00	-4.08	145	D1J
106	6-16	1.00	27.00	-6.35	17.00	11.39	11.00	-1.02	145	D1K
107	6-17	1.00	25.00	-9.52	10.00	2.53	10.00	-2.04	145	D1L
108	6-18	1.00	24.00	-11.11	5.00	-3.80	17.00	5.10	145	D1M
109	7-1	1.00	27.00	-6.35	8.00	0.00	12.00	0.00	145	D1N
110	7-2	1.00	13.00	-20.63	7.00	-1.27	7.00	-5.10	145	D1O
111	7-3	1.00	108.00	122.22	12.00	5.06	8.00	-4.08	145	D1P
112	7-4	1.00	22.00	-14.29	14.00	7.59	9.00	-3.06	145	D1Q
113	7-5	1.00	20.00	-17.46	4.00	-5.06	10.00	-2.04	145	D1R
114	7-6	1.00	31.00	0.00	16.00	10.13	9.00	-3.06	145	D1S
115	7-7	1.00	21.00	-15.87	15.00	8.86	6.00	-6.12	145	D1T
116	7-8	1.00	23.00	-12.70	15.00	8.86	12.00	0.00	145	D1U

117	7-9	1.00	288.00	407.94	23.00	18.99	12.00	0.00	145	B1CFSA
118	7-10	1.00	17.00	-22.22	3.00	-6.33	10.00	-2.04	145	B1CFSB
119	7-11	1.00	18.00	-20.63	12.00	5.06	13.00	1.02	145	B2
120	7-12	1.00	19.00	-19.05	10.00	2.53	13.00	1.02	145	D2A
121	7-13	1.00	51.00	31.75	7.00	-1.27	12.00	0.00	145	D2B
122	7-14	1.00	17.00	-22.22	18.00	12.66	12.00	0.00	145	D2C
123	7-15	1.00	17.00	-22.22	18.00	12.66	8.00	-4.08	145	D2D
124	7-16	1.00	22.00	-14.29	10.00	2.53	15.00	3.06	145	D2E
125	7-17	1.00	22.00	-14.29	12.00	5.06	5.00	-7.14	145	D2F
126	7-18	1.00	28.00	-4.76	11.00	3.80	10.00	-2.04	145	D2G
127	8-1	1.00	24.00	-11.11	10.00	2.53	11.00	-1.02	145	D2H
128	8-2	1.00	31.00	0.00	8.00	0.00	9.00	-3.06	145	D2I
129	8-3	1.00	91.00	95.24	12.00	5.06	14.00	2.04	145	D2J
130	8-4	1.00	24.00	-11.11	10.00	2.53	10.00	-2.04	145	D2K
131	8-5	1.00	14.00	-26.98	10.00	2.53	6.00	-6.12	145	D2L
132	8-6	1.00	19.00	-19.05	8.00	0.00	9.00	-3.06	145	B2CFSA
133	8-7	1.00	144.00	179.37	18.00	12.66	14.00	2.04	145	B2CFSB
134	8-8	1.00	20.00	-17.46	12.00	5.06	15.00	3.06	145	B3A
135	8-9	1.00	13.00	-28.57	10.00	2.53	10.00	-2.04	145	B3B
136	8-10	1.00	34.00	4.76	18.00	12.66	13.00	1.02	145	B3C
137	8-11	1.00	18.00	-20.63	12.00	5.06	21.00	9.18	145	B3D
138	8-12	1.00	17.00	-22.22	9.00	1.27	11.00	-1.02	145	B3E
139	8-13	1.00	29.00	-3.17	8.00	0.00	16.00	4.08	145	D3A
140	8-14	1.00	23.00	-12.70	8.00	0.00	8.00	-4.08	145	D3B
141	8-15	1.00	14.00	-26.98	9.00	1.27	13.00	1.02	145	D3C
142	8-16	1.00	18.00	-20.63	14.00	7.59	7.00	-5.10	145	D3D
143	8-17	1.00	18.00	-20.63	14.00	7.59	12.00	0.00	145	D3E
144	8-18	1.00	16.00	-23.81	12.00	5.06	8.00	-4.08	145	D3F
145	9-1	1.00	18.00	-20.63	10.00	2.53	9.00	-3.06	145	D3G
146	9-2	1.00	18.00	-20.63	16.00	10.13	11.00	-1.02	145	D3H
147	9-3	1.00	19.00	-19.05	9.00	1.27	6.00	-6.12	145	D3I
148	9-4	1.00	27.00	-6.35	11.00	3.80	12.00	0.00	145	D3J
149	9-5	1.00	17.00	-22.22	11.00	3.80	10.00	-2.04	145	D3K
150	9-6	1.00	21.00	-15.87	6.00	-2.53	11.00	-1.02	145	D3L
151	9-7	1.00	19.00	-19.05	12.00	5.06	10.00	-2.04	145	D3M
152	9-8	1.00	24.00	-11.11	9.00	1.27	5.00	-7.14	145	D3N
153	9-9	1.00	28.00	-4.76	8.00	0.00	14.00	2.04	145	B3CFSA
154	9-10	1.00	21.00	-5.87	9.00	1.27	10.00	-2.04	145	B3CFSB
155	9-11	1.00	20.00	-17.46	10.00	2.53	15.00	3.06	145	B3CFSC
156	9-12	1.00	63.00	50.79	11.00	3.80	11.00	-1.02	145	B3CFSD
157	9-13	1.00	19.00	-19.05	9.00	1.27	14.00	2.04	145	B3CFSE
158	9-14	1.00	16.00	-23.81	12.00	5.06	8.00	-4.08	145	B4A
159	9-15	1.00	20.00	-17.46	9.00	1.27	10.00	-2.04	145	B4B
160	9-16	1.00	23.00	-12.70	14.00	7.59	12.00	0.00	145	B4C
161	9-17	1.00	22.00	-14.29	14.00	7.59	14.00	2.04	145	B4D
162	9-18	1.00	29.00	-3.17	9.00	1.27	14.00	2.04	145	D4A
163	10-1	1.00	21.00	-15.87	10.00	2.53	5.00	-7.14	145	D4B
164	10-2	1.00	22.00	-14.29	8.00	0.00	6.00	-6.12	145	D4C
165	10-3	1.00	22.00	-14.29	10.00	2.53	12.00	0.00	145	D4D
166	10-4	1.00	87.00	88.89	10.00	2.53	7.00	-5.10	145	D4E
167	10-5	1.00	19.00	-19.05	10.00	2.53	8.00	-4.08	145	D4F
168	10-6	1.00	21.00	-15.87	5.00	-3.80	5.00	-7.14	145	D4G
169	10-7	1.00	25.00	-9.52	12.00	5.06	14.00	2.04	145	D4H
170	10-8	1.00	18.00	-20.63	10.00	2.53	16.00	4.08	145	D4I
171	10-9	1.00	23.00	-12.70	13.00	6.33	11.00	-1.02	145	D4J
172	10-10	1.00	23.00	-12.70	8.00	0.00	9.00	-3.06	145	D4K
173	10-11	1.00	29.00	-3.17	10.00	2.53	8.00	-4.08	145	D4L
174	10-12	1.00	25.00	-9.52	16.00	10.13	15.00	3.06	145	D4M
175	10-13	1.00	23.00	-12.70	15.00	8.86	5.00	-7.14	145	D4N
176	10-14	1.00	30.00	-1.59	15.00	8.86	7.00	-5.10	145	D4O
177	10-15	1.00	18.00	-20.63	8.00	0.00	11.00	-1.02	145	D4P
178	10-16	1.00	23.00	-12.70	12.00	5.06	9.00	-3.06	145	D4Q
179	10-17	1.00	17.00	-22.22	8.00	0.00	10.00	-2.04	145	D4R
180	10-18	1.00	16.00	-23.81	6.00	-2.53	1.00	-11.22	145	D4S
181	11-1	1.00	23.00	-12.70	6.00	-2.53	12.00	0.00	145	D4T
182	11-2	1.00	20.00	-17.46	8.00	0.00	15.00	3.06	145	D4U

183	11-3	1.00	44.00	20.63	28.00	25.32	16.00	4.08	145	D4V
184	11-4	1.00	15.00	-25.40	11.00	3.80	9.00	-3.06	145	D4W
185	11-5	1.00	22.00	-14.29	13.00	6.33	11.00	-1.02	145	D4X
186	11-6	1.00	22.00	-14.29	11.00	3.80	10.00	-2.04	145	D4Y
187	11-7	1.00	15.00	-25.40	9.00	1.27	9.00	-3.06	145	D4Z
188	11-8	1.00	18.00	-20.63	16.00	10.13	12.00	0.00	145	D4AA
189	11-9	1.00	22.00	-14.29	12.00	5.06	10.00	-2.04	145	D4BB
190	11-10	1.00	18.00	-20.63	18.00	12.66	10.00	-2.04	145	D4CC
191	11-11	1.00	16.00	-23.81	11.00	3.80	10.00	-2.04	145	D4DD
192	11-12	1.00	21.00	-15.87	11.00	3.80	11.00	-1.02	145	B4CFA
193	11-13	1.00	21.00	-15.87	14.00	7.59	9.00	-3.06	145	B4CFSB
194	11-14	1.00	13.00	-28.57	13.00	6.33	12.00	0.00	145	B4CFSC
195	11-15	1.00	20.00	-17.46	14.00	7.59	6.00	-6.12	145	B4CFSD
196	11-16	1.00	27.00	-6.35	12.00	5.06	7.00	-5.10	145	B4CFSEa
197	11-17	1.00	21.00	-15.87	8.00	0.00	14.00	2.04	145	B4CFSEb
198	11-18	1.00	12.00	-30.16	11.00	3.80	13.00	1.02	145	B4CFSEc
199	12-1	1.00	13.00	-28.57	13.00	6.33	9.00	-3.06	145	B4CFSEd
200	12-2	1.00	26.00	-7.94	12.00	5.06	16.00	4.08	145	B4CFSEe
201	12-3	1.00	14.00	-26.98	9.00	1.27	5.00	-7.14	145	B4CFSEf
202	12-4	1.00	31.00	0.00	15.00	8.86	9.00	-3.06	145	B5A
203	12-5	1.00	23.00	-12.70	9.00	1.27	7.00	-5.10	145	B5B
204	12-6	1.00	21.00	-15.87	11.00	3.80	12.00	0.00	145	D5A
205	12-7	1.00	19.00	-19.05	8.00	0.00	6.00	-6.12	145	D5B
206	12-8	1.00	125.00	149.21	189.00	229.11	65.00	54.08	145	D5C
207	12-9	1.00	28.00	-4.76	29.00	26.58	8.00	-4.08	145	D5D
208	12-10	1.00	21.00	-15.87	10.00	2.53	20.00	8.16	145	D5E
209	12-11	1.00	13.00	-28.57	15.00	8.86	11.00	-1.02	145	D5F
210	12-12	1.00	18.00	-20.63	15.00	8.86	8.00	-4.08	145	D5G
211	12-13	1.00	46.00	23.81	18.00	12.66	8.00	-4.08	145	D5H
212	12-14	1.00	17.00	-22.22	11.00	3.80	12.00	0.00	145	D5I
213	12-15	1.00	13.00	-28.57	9.00	1.27	13.00	1.02	145	D5J
214	12-16	1.00	16.00	-23.81	9.00	1.27	18.00	6.12	145	D5K
215	12-17	1.00	24.00	-11.11	7.00	-1.27	11.00	-1.02	145	B5CFSA
216	12-18	1.00	18.00	-20.63	15.00	8.86	6.00	-6.12	145	B5CFSB
217	13-1	1.00	15.00	-25.40	13.00	6.33	15.00	3.06	145	B6
218	13-2	1.00	15.00	-25.40	12.00	5.06	5.00	-7.14	145	B7
219	13-3	1.00	26.00	-7.94	18.00	12.66	8.00	-4.08	145	S1A
220	13-4	1.00	15.00	-25.40	12.00	5.06	9.00	-3.06	145	S1B
221	13-5	1.00	27.00	-6.35	6.00	-2.53	17.00	5.10	145	S2A
222	13-6	1.00	128.00	153.97	25.00	21.52	11.00	-1.02	145	S2B
223	13-7	1.00	28.00	-4.76	14.00	7.59	7.00	-5.10	145	S3R1
224	13-8	1.00	19.00	-19.05	8.00	0.00	4.00	-8.16	145	S3R2
225	13-9	1.00	19.00	-19.05	14.00	7.59	7.00	-5.10	145	S3R3
226	13-10	1.00	28.00	-4.76	15.00	8.86	7.00	-5.10	145	S3R4
227	13-11	1.00	23.00	-12.70	12.00	5.06	13.00	1.02	145	S4R1
228	13-12	1.00	24.00	-11.11	7.00	-1.27	14.00	2.04	145	S4R2
229	13-13	1.00	22.00	-14.29	7.00	-1.27	10.00	-2.04	145	S5A
230	13-14	1.00	13.00	-28.57	12.00	5.06	9.00	-3.06	145	S5B
231	13-15	1.00	21.00	-15.87	14.00	7.59	12.00	0.00	145	S6A
232	13-16	1.00	22.00	-14.29	7.00	-1.27	10.00	-2.04	145	S6Ba
233	13-17	1.00	63.00	50.79	14.00	7.59	7.00	-5.10	145	S6Bb
234	13-18	1.00	22.00	-14.29	10.00	2.53	12.00	0.00	145	S6C
235	14-1	1.00	28.00	-4.76	13.00	6.33	9.00	-3.06	145	S7
236	14-2	1.00	31.00	0.00	12.00	5.06	14.00	2.04	145	S8
237	14-3	1.00	16.00	-23.81	18.00	12.66	8.00	-4.08	145	Sk1
238	14-4	1.00	85.00	85.71	114.00	134.18	11.00	-1.02	145	Sk2
239	14-5	1.00	21.00	-15.87	12.00	5.06	9.00	-3.06	145	Sk3
240	14-6	1.00	22.00	-14.29	14.00	7.59	11.00	-1.02	145	CA
241	14-7	1.00	18.00	-20.63	8.00	0.00	6.00	-6.12	145	CB
242	14-8	1.00	16.00	-23.81	14.00	7.59	14.00	2.04	145	CC
243	14-9	1.00	21.00	-15.87	18.00	12.66	11.00	-1.02	145	CD
244	14-10	1.00	19.00	-19.05	15.00	8.86	15.00	3.06	145	CE
245	14-11	1.00	22.00	-14.29	9.00	1.27	11.00	-1.02	145	CF
246	14-12	1.00	30.00	-1.59	10.00	2.53	8.00	-4.08	145	CG
247	14-13	1.00	43.00	19.05	8.00	0.00	9.00	-3.06	145	CH
248	14-14	1.00	24.00	-11.11	11.00	3.80	8.00	-4.08	145	RCT

Samples

✓ Doors: D1 - D6 (D4 removed)

Sinks = S1 - S3

Benches, Cabinets, Drawers

✓ Bench 1 = B1A, B1B ; ✓ Shelves 1 = S1A, S1B

✓ Drawers 1 = D1A - D1U (& cabinets) front of door only

✓ Cabinet Front & Sides = B1CFSA & B1CFSS

✓ Bench 2 = B2A, ~~B2B~~

✓ Drawers 2 = D2A - D2L (& cabinets)

✓ Cabinet Front & Sides = B2CFSA & B2CFSS

✓ Shelves 2 = S2

✓ Bench 3 = B3A - B3E

✓ Drawers 3 = D3A - D3N (& cabinets)

✓ Shelves 3 = S3R1 - S3R4

✓ Cabinet Front & Sides = B3CFSA - E

✓ Bench 4 = B4A - B4D

✓ Drawers = D4A - D4DD (& Cabinet)

✓ Cabinet Front & Sides = B4CFSA - I

Note: CFSAE (out) & (in)

✓ Bench 5 = B5A & B5B

✓ Drawers = D5A - K

✓ Cabinet Front & Sides = B5CFSA & B

Ceilings = CA - CH

Total # Samples = 243

✓ Bench 6 = B6

✓ Shelves = S6

✓ Bench 7 = B7

✓ Bench 7 Shelves = S7

✓ Other Shelves =

S4, S5, S8

✓ Floors = F1 - F6S

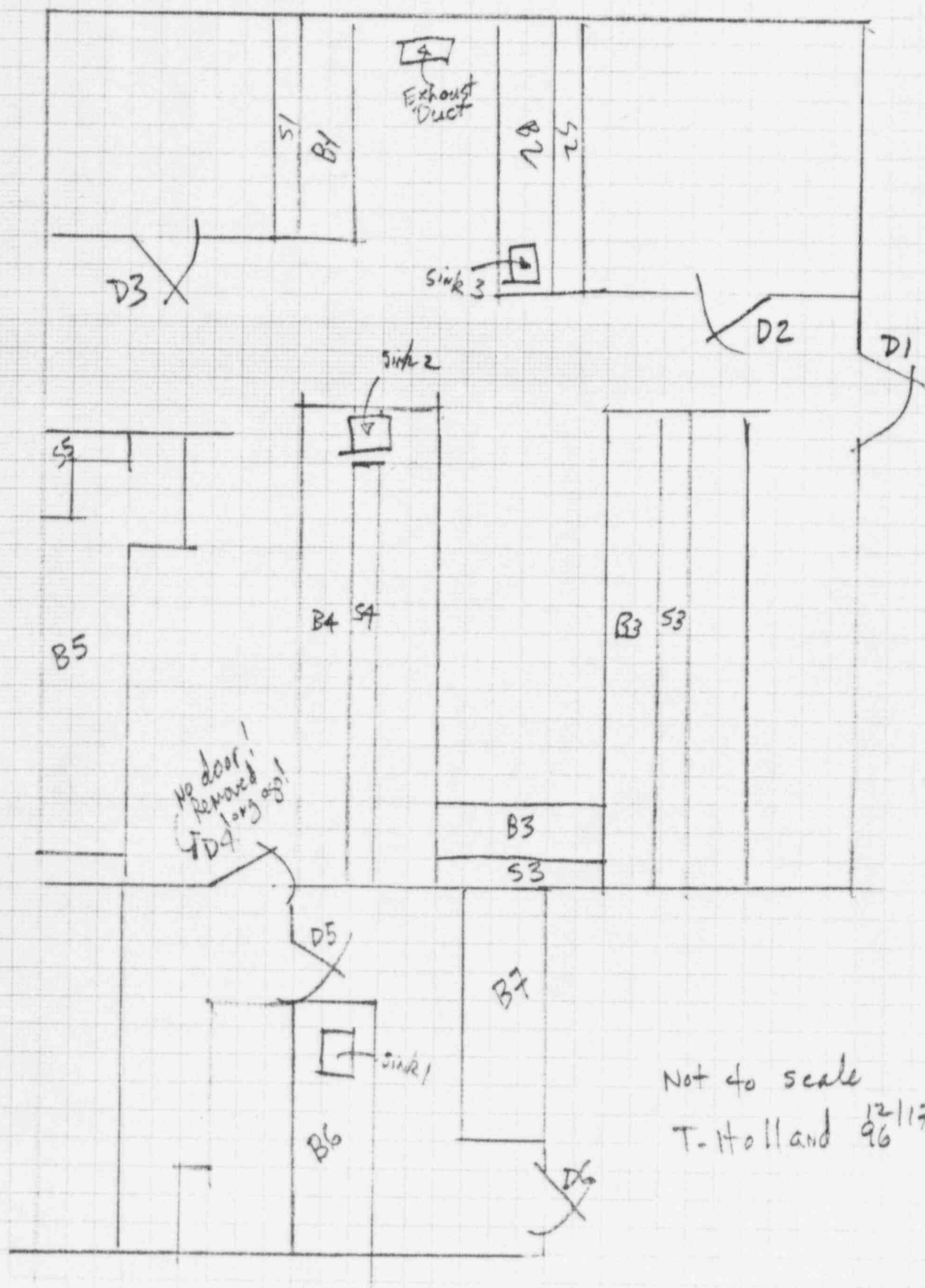
✓ Walls = W1 - W11

✓ Exhaust Duct = EDA, EDB

RCT = removed ceiling tiles

Rm 145, Bldg 4 Final Survey

P. 1 of 2



Not to scale
T. Holland 12/17/96

Instrument Type: LS 6000
 Data Capture Date: 23 Dec 1996 17:41:12
 User Filename: A:\USER03\U03C2301.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: Rm. 146, 241, 155

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

3-H = 63%

		3H		14C		32P				
Sam	Rack	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8605.00		39103.00		312.00			14C STD
2	1-2	1.00	62128.00		675.00		6.00			3H STD
3	1-3	1.00	15.00		15.00		11.00			BKG 1
4	1-4	1.00	19.00		14.00		11.00			BKG 2
5	1-5	1.00	18.00		16.00		8.00			BKG 3
6	1-6	1.00	35.00	28.57	16.00	1.27	7.00	-3.06	146	F1
7	1-7	1.00	19.00	3.17	7.00	-10.13	15.00	5.10	146	F2
8	1-8	1.00	19.00	3.17	11.00	-5.06	10.00	0.00	146	F3
9	1-9	1.00	34.00	26.98	17.00	2.53	13.00	3.06	146	F4
10	1-10	1.00	16.00	-1.59	8.00	-8.86	7.00	-3.06	146	F5
11	1-11	1.00	21.00	6.35	13.00	-2.53	10.00	0.00	146	F6
12	1-12	1.00	28.00	17.46	8.00	-8.86	9.00	-1.02	146	F7
13	1-13	1.00	22.00	7.94	12.00	-3.80	7.00	-3.06	146	F8
14	1-14	1.00	18.00	1.59	10.00	-6.33	9.00	-1.02	146	F9
15	1-15	1.00	22.00	7.94	10.00	-6.33	10.00	0.00	146	F10
16	1-16	1.00	31.00	22.22	11.00	-5.06	9.00	-1.02	146	F11
17	1-17	1.00	16.00	-1.59	12.00	-3.80	13.00	3.06	146	F12
18	1-18	1.00	24.00	11.11	11.00	-5.06	14.00	4.08	146	F13
19	2-1	1.00	23.00	9.52	11.00	-5.06	12.00	2.04	146	F14
20	2-2	1.00	19.00	3.17	8.00	-8.86	9.00	-1.02	146	F15
21	2-3	1.00	67.00	79.37	21.00	7.59	9.00	-1.02	146	B1
22	2-4	1.00	14.00	-4.76	19.00	5.06	9.00	-1.02	146	B2
23	2-5	1.00	20.00	4.76	14.00	-1.27	18.00	8.16	146	B3
24	2-6	1.00	22.00	7.94	9.00	-7.59	7.00	-3.06	146	B4
25	2-7	1.00	24.00	11.11	12.00	-3.80	7.00	-3.06	146	B5
26	2-8	1.00	19.00	3.17	6.00	-11.39	6.00	-4.08	146	B6
27	2-9	1.00	22.00	7.94	13.00	-2.53	9.00	-1.02	146	Cb1
28	2-10	1.00	22.00	7.94	10.00	-6.33	11.00	1.02	146	Cb2
29	2-11	1.00	21.00	6.35	9.00	-8.86	15.00	5.10	146	D2A
30	2-12	1.00	19.00	3.17	15.00	0.00	10.00	0.00	146	D2B
31	2-13	1.00	23.00	9.52	15.00	0.00	12.00	2.04	146	D2C
32	2-14	1.00	84.00	106.35	22.00	8.86	15.00	5.10	146	D2D
33	2-15	1.00	17.00	0.00	9.00	-7.59	9.00	-1.02	146	D2E
34	2-16	1.00	19.00	3.17	18.00	3.80	6.00	-4.08	146	Cb3
35	2-17	1.00	20.00	4.76	10.00	-6.33	11.00	1.02	146	D4A
36	2-18	1.00	57.00	63.49	26.00	13.92	9.00	-1.02	146	D4B
37	3-1	1.00	14.00	-4.76	12.00	-3.80	12.00	2.04	146	D4C
38	3-2	1.00	62.00	71.43	15.00	0.00	6.00	-4.08	146	D4D
39	3-3	1.00	17.00	0.00	15.00	0.00	8.00	-2.04	146	W1
40	3-4	1.00	24.00	11.11	14.00	-1.27	11.00	1.02	146	W2
41	3-5	1.00	12.00	-7.94	14.00	-1.27	10.00	0.00	146	W3
42	3-6	1.00	19.00	3.17	12.00	-3.80	10.00	0.00	146	W4
43	3-7	1.00	10.00	-11.11	9.00	-7.59	14.00	4.08	146	W5
44	3-8	1.00	25.00	12.70	14.00	-1.27	9.00	-1.02	146	W6
45	3-9	1.00	16.00	-1.59	13.00	-2.53	10.00	0.00	146	W7
46	3-10	1.00	19.00	3.17	13.00	-2.53	18.00	8.16	146	Dr1i
47	3-11	1.00	15.00	-3.17	13.00	-2.53	10.00	0.00	146	Dr1o
48	3-12	1.00	22.00	7.94	12.00	-3.80	10.00	0.00	146	Dr2i
49	3-13	1.00	14.00	-4.76	13.00	-2.53	7.00	-3.06	146	Dr2o
50	3-14	1.00	21.00	6.35	11.00	-5.06	10.00	0.00	146	Dr3i

51	3-15	1.00	19.00	3.17	19.00	5.06	17.00	7.14	146	Dr3o
52	3-16	1.00	18.00	1.59	9.00	-7.59	8.00	-2.04	146	Panel
53	3-17	1.00	8.00	-14.29	13.00	-2.53	13.00	3.06	146	C1
54	3-18	1.00	19.00	3.17	11.00	-5.06	6.00	-4.08	146	C2
55	4-1	1.00	19.00	3.17	13.00	-2.53	9.00	-1.02	146	C3
56	4-2	1.00	30.00	20.63	10.00	-6.33	11.00	1.02	146	C4
57	4-3	1.00	13.00	-6.35	1.00	-17.72	0.00	-10.20	146	SA
58	4-4	1.00	12.00	-7.94	8.00	-8.86	1.00	-9.18	146	SB
59	4-5	1.00	18.00	1.59	17.00	2.53	6.00	-4.08	146	S1
60	4-6	1.00	23.00	9.52	13.00	-2.53	15.00	5.10	146	S2
61	4-7	1.00	17.00	0.00	15.00	0.00	10.00	0.00	146	S3
62	4-8	1.00	19.00	3.17	15.00	0.00	12.00	2.04	146	S4
63	4-9	1.00	24.00	11.11	12.00	-3.80	7.00	-3.06	146	S5
64	4-10	1.00	23.00	9.52	11.00	-5.06	11.00	1.02	146	S6
65	4-11	1.00	19.00	3.17	14.00	-1.27	9.00	-1.02	146	S7
66	4-12	1.00	19.00	3.17	9.00	-7.59	10.00	0.00	146	S8
67	4-13	1.00	22.00	7.94	17.00	2.53	11.00	1.02	146	S9
68	4-14	1.00	21.00	6.35	19.00	5.06	16.00	6.12	146	S10
69	4-15	1.00	20.00	4.76	8.00	-8.86	13.00	3.06	146	S11
70	4-16	1.00	23.00	9.52	12.00	-3.80	11.00	1.02	146	B1
71	4-17	1.00	21.00	6.35	8.00	-8.86	10.00	0.00	146	B2
72	4-18	1.00	17.00	0.00	9.00	-7.59	13.00	3.06	146	B3
73	5-1	1.00	16.00	-1.59	14.00	-1.27	7.00	-3.06	146	Cb1
74	5-2	1.00	22.00	7.94	9.00	-7.59	10.00	0.00	146	DA
75	5-3	1.00	18.00	1.59	24.00	11.39	10.00	0.00	146	DB
76	5-4	1.00	18.00	1.59	19.00	5.06	11.00	1.02	146	DC
77	5-5	1.00	17.00	0.00	15.00	0.00	9.00	-1.02	146	DD
78	5-6	1.00	15.00	-3.17	9.00	-7.59	10.00	0.00	146	DE
79	5-7	1.00	15.00	-3.17	8.00	-8.86	8.00	-2.04	146	DF
80	5-8	1.00	22.00	7.94	15.00	0.00	14.00	4.08	146	W1
81	5-9	1.00	21.00	6.35	14.00	-1.27	7.00	-3.06	146	W2
82	5-10	1.00	22.00	7.94	15.00	0.00	15.00	5.10	146	W3
83	5-11	1.00	65.00	76.19	9.00	-7.59	15.00	5.10	146	W4
84	5-12	1.00	26.00	14.29	10.00	-6.33	8.00	-2.04	146	W5
85	5-13	1.00	19.00	3.17	11.00	-5.06	13.00	3.06	146	W6
86	5-14	1.00	29.00	19.05	9.00	-7.59	8.00	-2.04	146	W7
87	5-15	1.00	25.00	12.70	13.00	-2.53	12.00	2.04	146	D4i
88	5-16	1.00	20.00	4.76	12.00	-3.80	6.00	-4.08	146	D4o
89	5-17	1.00	20.00	4.76	18.00	3.80	9.00	-1.02	146	P1
90	5-18	1.00	31.00	22.22	9.00	-7.59	10.00	0.00	146	P2
91	6-1	1.00	20.00	4.76	9.00	-7.59	8.00	-2.04	146	P3
92	6-2	1.00	14.00	-4.76	13.00	-2.53	12.00	2.04	146	P4
93	6-3	1.00	20.00	4.76	13.00	-2.53	8.00	-2.04	146	P5
94	6-4	1.00	14.00	-4.76	13.00	-2.53	10.00	0.00	146	P6
95	6-5	1.00	11.00	-9.52	7.00	-10.13	17.00	7.14	146	P7
96	6-6	1.00	23.00	4.76	16.00	1.27	9.00	-1.02	146	P8
97	6-7	1.00	23.00	9.52	13.00	-2.53	9.00	-1.02	146	P9
98	6-8	1.00	27.00	15.87	7.00	-10.13	10.00	0.00	146	P10
99	6-9	1.00	22.00	7.94	16.00	1.27	9.00	-1.02	146	P11
100	6-10	1.00	18.00	1.59	19.00	5.06	10.00	0.00	146	P12
101	6-11	1.00	22.00	7.94	14.00	-1.27	11.00	1.02	146	P13
102	6-12	1.00	26.00	14.29	12.00	-3.80	10.00	0.00	146	P14
103	6-13	1.00	30.00	20.63	12.00	-3.80	10.00	0.00	146	P15
104	6-14	1.00	25.00	12.70	13.00	-2.53	9.00	-1.02	146	P16
105	6-15	1.00	35.00	28.57	13.00	-2.53	10.00	0.00	146	P17
106	6-16	1.00	19.00	3.17	7.00	-10.13	9.00	-1.02	146	P18
107	6-17	1.00	26.00	14.29	9.00	-7.59	10.00	0.00	146	P19
108	6-18	1.00	23.00	9.52	9.00	-7.59	9.00	-1.02	146	P20
109	7-1	1.00	26.00	14.29	14.00	-1.27	5.00	-5.10	146	P21
110	7-2	1.00	13.00	-6.35	14.00	-1.27	12.00	2.04	146	P22
111	7-3	1.00	28.00	17.46	18.00	3.80	9.00	-1.02	146	P23
112	7-4	1.00	16.00	-1.59	8.00	-8.86	9.00	-1.02	146	P24
113	7-5	1.00	22.00	7.94	18.00	3.80	8.00	-2.04	146	P25
114	7-6	1.00	18.00	1.59	8.00	-8.86	13.00	3.06	146	P26
115	7-7	1.00	20.00	4.76	17.00	2.53	9.00	-1.02	146	P27
116	7-8	1.00	30.00	20.63	10.00	-6.33	10.00	0.00	146	P28

117	7-9	1.00	21.00	6.35	8.00	-8.86	10.00	0.00	146	P29
118	7-10	1.00	11.00	-9.52	8.00	-8.86	7.00	-3.06	146	P30
119	7-11	1.00	31.00	22.22	18.00	3.80	13.00	3.06	146	P31
120	7-12	1.00	33.00	25.40	16.00	1.27	11.00	1.02	146	P32
121	7-13	1.00	460.00	703.17	33.00	22.78	9.00	-1.02	146	P33
122	7-14	1.00	23.00	9.52	12.00	-3.80	15.00	5.10	146	P34
123	7-15	1.00	28.00	17.46	7.00	-10.13	5.00	-5.10	146	P35
124	7-16	1.00	23.00	9.52	19.00	5.06	7.00	-3.06	146	P36
125	7-17	1.00	20.00	4.76	19.00	5.06	10.00	0.00	146	P37
126	7-18	1.00	22.00	7.94	15.00	0.00	7.00	-3.06	146	P38
127	8-1	1.00	22.00	7.94	10.00	-6.33	9.00	-1.02	146	P39
128	8-2	1.00	16.00	-1.59	13.00	-2.53	17.00	7.14	146	P40
129	8-3	1.00	25.00	12.70	15.00	0.00	18.00	8.16	146	P41
130	8-4	1.00	26.00	14.29	15.00	0.00	5.00	-5.10	146	P42
131	8-5	1.00	24.00	11.11	13.00	-2.53	18.00	8.16	146	P43
132	8-6	1.00	28.00	17.46	14.00	-1.27	13.00	3.06	146	P44
133	8-7	1.00	38.00	34.92	12.00	-3.80	11.00	1.02	146	P45
145	9-1	1.00	27.00	15.87	13.00	-2.53	5.00	-5.10	241	F1
146	9-2	1.00	22.00	7.94	17.00	2.53	7.00	-3.06	241	F2
147	9-3	1.00	15.00	-3.17	8.00	-8.86	5.00	-5.10	241	F3
148	9-4	1.00	30.00	20.63	5.00	-12.66	13.00	3.06	241	F4
149	9-5	1.00	21.00	6.35	6.00	-11.39	8.00	-2.04	241	F5
150	9-6	1.00	19.00	3.17	10.00	-6.33	11.00	1.02	241	F6
151	9-7	1.00	23.00	9.52	11.00	-5.06	12.00	2.04	241	F7
152	9-8	1.00	18.00	1.59	8.00	-8.86	5.00	-5.10	241	F8
153	9-9	1.00	16.00	-1.59	13.00	-2.53	9.00	-1.02	241	F9
154	9-10	1.00	11.00	-9.52	6.00	-11.39	9.00	-1.02	241	F10
155	9-11	1.00	17.00	0.00	9.00	-7.59	9.00	-1.02	241	F11
156	9-12	1.00	32.00	23.81	10.00	-6.33	15.00	5.10	241	F12
157	9-13	1.00	32.00	23.81	13.00	-2.53	5.00	-5.10	241	F13
158	9-14	1.00	22.00	7.94	19.00	5.06	6.00	-4.08	241	F14
159	9-15	1.00	22.00	7.94	14.00	-1.27	9.00	-1.02	241	F15
160	9-16	1.00	13.00	-6.35	8.00	-8.86	11.00	1.02	241	F16
161	9-17	1.00	23.00	9.52	9.00	-7.59	9.00	-1.02	241	F17
162	9-18	1.00	17.00	0.00	6.00	-11.39	8.00	-2.04	241	F18
163	10-1	1.00	28.00	17.46	10.00	-6.33	6.00	-4.08	241	F19
164	10-2	1.00	23.00	9.52	20.00	6.33	15.00	5.10	241	F20
165	10-3	1.00	31.00	22.22	13.00	-2.53	12.00	2.04	241	F21
166	10-4	1.00	22.00	7.94	11.00	-5.06	9.00	-1.02	241	F22
167	10-5	1.00	27.00	15.87	9.00	-7.59	10.00	0.00	241	F23
168	10-6	1.00	31.00	22.22	13.00	-2.53	7.00	-3.06	241	F24
169	10-7	1.00	16.00	-1.59	14.00	-1.27	10.00	0.00	241	F25
170	10-8	1.00	20.00	4.76	14.00	-1.27	7.00	-3.06	241	F26
171	10-9	1.00	15.00	-3.17	13.00	-2.53	12.00	2.04	241	F27
172	10-10	1.00	16.00	-1.59	9.00	-7.59	8.00	-2.04	241	F28
173	10-11	1.00	20.00	4.76	11.00	-5.06	12.00	2.04	241	F29
174	10-12	1.00	24.00	11.11	24.00	11.39	14.00	4.08	241	F30
175	10-13	1.00	24.00	11.11	10.00	-6.33	9.00	-1.02	241	F31
176	10-14	1.00	17.00	0.00	13.00	-2.53	9.00	-1.02	241	F32
177	10-15	1.00	16.00	-1.59	16.00	1.27	13.00	3.06	241	F33
178	10-16	1.00	18.00	1.59	13.00	-2.53	12.00	2.04	241	F34
179	10-17	1.00	24.00	11.11	16.00	1.27	15.00	5.10	241	F35
180	10-18	1.00	22.00	7.94	14.00	-1.27	6.00	-4.08	241	F36
181	11-1	1.00	22.00	7.94	5.00	-12.66	9.00	-1.02	241	F37
182	11-2	1.00	17.00	0.00	14.00	-1.27	9.00	-1.02	241	F38
183	11-3	1.00	24.00	11.11	10.00	-6.33	11.00	1.02	241	F39
184	11-4	1.00	22.00	7.94	14.00	-1.27	8.00	-2.04	241	F40
185	11-5	1.00	24.00	11.11	10.00	-6.33	10.00	0.00	241	F41
186	11-6	1.00	19.00	3.17	10.00	-6.33	12.00	2.04	241	F42
187	11-7	1.00	23.00	9.52	7.00	-10.13	8.00	-2.04	241	F43
188	11-8	1.00	20.00	4.76	9.00	-7.59	12.00	2.04	241	F44
189	11-9	1.00	27.00	15.87	11.00	-5.06	12.00	2.04	241	F45
190	11-10	1.00	21.00	6.35	14.00	-1.27	9.00	-1.02	241	F46
191	11-11	1.00	25.00	12.70	17.00	2.53	6.00	-4.08	241	F47
192	11-12	1.00	24.00	11.11	15.00	0.00	12.00	2.04	241	F48
193	11-13	1.00	15.00	-3.17	11.00	-5.06	11.00	1.02	241	F49

194	11-14	1.00	15.00	-3.17	11.00	-5.06	12.00	2.04	241	F50
195	11-15	1.00	13.00	-6.35	9.00	-7.59	6.00	-4.08	241	F51
196	11-16	1.00	22.00	7.94	6.00	-11.39	7.00	-3.06	241	F52
197	11-17	1.00	18.00	1.59	10.00	-6.33	16.00	6.12	241	F53
198	11-18	1.00	20.00	4.76	16.00	1.27	5.00	-5.10	241	F54
199	12-1	1.00	15.00	-3.17	13.00	-2.53	12.00	2.04	241	F55
200	12-2	1.00	27.00	15.87	10.00	-6.33	8.00	-2.04	241	F56
201	12-3	1.00	18.00	1.59	8.00	-8.86	6.00	-4.08	241	F57
202	12-4	1.00	22.00	7.94	6.00	-11.39	6.00	-4.08	241	F58
203	12-5	1.00	22.00	7.94	12.00	-3.80	12.00	2.04	241	F59
204	12-6	1.00	22.00	7.94	14.00	-1.27	8.00	-2.04	241	F60
205	12-7	1.00	21.00	6.35	16.00	1.27	14.00	4.08	241	F61
206	12-8	1.00	21.00	6.35	8.00	-8.86	9.00	-1.02	241	F62
207	12-9	1.00	21.00	6.35	14.00	-1.27	7.00	-3.06	241	F63
208	12-10	1.00	24.00	11.11	17.00	2.53	15.00	5.10	241	F64
209	12-11	1.00	11.00	-9.52	11.00	-5.06	11.00	1.02	241	F65
210	12-12	1.00	21.00	6.35	10.00	-6.33	5.00	-5.10	241	F66
211	12-13	1.00	17.00	0.00	12.00	-3.80	7.00	-3.06	241	F67
212	12-14	1.00	83.00	104.76	17.00	2.53	9.00	-1.02	241	F68
213	12-15	1.00	19.00	3.17	16.00	1.27	8.00	-2.04	241	B1
214	12-16	1.00	27.00	15.87	14.00	-1.27	4.00	-6.12	241	Cb1
215	12-17	1.00	17.00	0.00	8.00	-8.86	10.00	0.00	241	Cb2
216	12-18	1.00	22.00	7.94	10.00	-6.33	13.00	3.06	241	D1A
217	13-1	1.00	28.00	17.46	9.00	-7.59	9.00	-1.02	241	D1B
218	13-2	1.00	15.00	-3.17	9.00	-7.59	14.00	4.08	241	D1C
219	13-3	1.00	20.00	4.76	11.00	-5.06	11.00	1.02	241	D1D
220	13-4	1.00	23.00	9.52	8.00	-8.86	9.00	-1.02	241	D1E
221	13-5	1.00	19.00	3.17	14.00	-1.27	5.00	-5.10	241	B2
222	13-6	1.00	23.00	9.52	14.00	-1.27	7.00	-3.06	241	Cb3
223	13-7	1.00	23.00	9.52	11.00	-5.06	12.00	2.04	241	B3
224	13-8	1.00	20.00	4.76	12.00	-3.80	7.00	-3.06	241	Cb4
225	13-9	1.00	21.00	6.35	9.00	-7.59	19.00	9.18	241	B3A
226	13-10	1.00	19.00	3.17	13.00	-2.53	12.00	2.04	241	B3B
227	13-11	1.00	11.00	-9.52	16.00	1.27	9.00	-1.02	241	B3C
228	13-12	1.00	31.00	22.22	11.00	-5.06	12.00	2.04	241	B3D
229	13-13	1.00	32.00	23.81	17.00	2.53	14.00	4.08	241	B3E
230	13-14	1.00	27.00	15.87	17.00	2.53	15.00	5.10	241	Cb5
231	13-15	1.00	19.00	3.17	17.00	2.53	8.00	-2.04	241	B4
232	13-16	1.00	69.00	82.54	16.00	1.27	10.00	0.00	241	Cb6
233	13-17	1.00	14.00	-4.76	12.00	-3.80	11.00	1.02	241	D4A
234	13-18	1.00	15.00	-3.17	12.00	-3.80	13.00	3.06	241	D4B
235	14-1	1.00	24.00	11.11	10.00	-6.33	11.00	1.02	241	D4C
236	14-2	1.00	19.00	3.17	15.00	0.00	7.00	-3.06	241	D4D
237	14-3	1.00	24.00	11.11	15.00	0.00	14.00	4.08	241	D4E
238	14-4	1.00	14.00	-4.76	15.00	0.00	11.00	1.02	241	Cb7
239	14-5	1.00	12.00	-7.94	9.00	-7.59	9.00	-1.02	241	Cb6B
240	14-6	1.00	21.00	6.35	10.00	-6.33	9.00	-1.02	241	Cb6BDA
241	14-7	1.00	24.00	11.11	18.00	3.80	5.00	-5.10	241	Cb6BDB
242	14-8	1.00	20.00	4.76	11.00	-5.06	14.00	4.08	241	Cb6BDC
243	14-9	1.00	26.00	14.29	19.00	5.06	8.00	-2.04	241	Cb6BDD
244	14-10	1.00	15.00	-3.17	17.00	2.53	14.00	4.08	241	B5
245	14-11	1.00	26.00	14.29	8.00	-8.86	6.00	-4.08	241	C6B
246	14-12	1.00	23.00	9.52	14.00	-1.27	9.00	-1.02	241	D5A
247	14-13	1.00	29.00	19.05	8.00	-8.86	13.00	3.06	241	D5B
248	14-14	1.00	23.00	9.52	11.00	-5.06	7.00	-3.06	241	D5C
249	14-15	1.00	19.00	3.17	15.00	0.00	13.00	3.06	241	D5D
250	14-16	1.00	17.00	0.00	10.00	-6.33	10.00	0.00	241	D5E
251	14-17	1.00	19.00	3.17	4.00	-13.92	8.00	-2.04	241	B6
252	14-18	1.00	16.00	-1.59	5.00	-12.66	12.00	2.04	241	Cb9
253	15-1	1.00	18.00	1.59	12.00	-3.80	17.00	7.14	241	Cb10
254	15-2	1.00	15.00	-3.17	9.00	-7.59	11.00	1.02	241	D6A
255	15-3	1.00	18.00	1.59	15.00	0.00	7.00	-3.06	241	D6B
256	15-4	1.00	30.00	20.63	10.00	-6.33	6.00	-4.08	241	D6C
257	15-5	1.00	23.00	9.52	11.00	-5.06	9.00	-1.02	241	D6D
258	15-6	1.00	20.00	4.76	7.00	-10.13	10.00	0.00	241	D6E
259	15-7	1.00	19.00	3.17	12.00	-3.80	16.00	6.12	241	Cb11

260	15-8	1.00	20.00	4.76	12.00	-3.80	12.00	2.04	241	B7
261	15-9	1.00	21.00	6.35	10.00	-6.33	6.00	-4.08	241	Cb12
262	15-10	1.00	21.00	6.35	14.00	-1.27	8.00	-2.04	241	D7A
263	15-11	1.00	20.00	4.76	5.00	-12.66	10.00	0.00	241	D7B
264	15-12	1.00	23.00	9.52	14.00	-1.27	6.00	-4.08	241	D7C
265	15-13	1.00	15.00	-3.17	7.00	-10.13	10.00	0.00	241	D7D
266	15-14	1.00	20.00	4.76	12.00	-3.80	20.00	10.20	241	D7E
267	15-15	1.00	24.00	11.11	9.00	-7.59	17.00	7.14	241	B8
268	15-16	1.00	17.00	0.00	11.00	-5.06	13.00	3.06	241	Cb13
269	15-17	1.00	21.00	6.35	17.00	2.53	8.00	-2.04	241	D8A
271	16-1	1.00	21.00	6.35	8.00	-8.86	8.00	-2.04	241	D8B
272	16-2	1.00	30.00	20.63	4.00	-13.92	13.00	3.06	241	D8C
273	16-3	1.00	26.00	14.29	13.00	-2.53	9.00	-1.02	241	D8D
274	16-4	1.00	22.00	7.94	13.00	-2.53	11.00	1.02	241	D8E
275	16-5	1.00	33.00	25.40	27.00	15.19	13.00	3.06	241	B9
276	16-6	1.00	23.00	9.52	10.00	-6.33	12.00	2.04	241	Cb15
277	16-7	1.00	30.00	20.63	6.00	-11.39	9.00	-1.02	241	D9A
278	16-8	1.00	31.00	22.22	10.00	-6.33	6.00	-4.08	241	D9B
279	16-9	1.00	27.00	15.87	11.00	-5.06	9.00	-1.02	241	D9C
280	16-10	1.00	23.00	9.52	13.00	-2.53	9.00	-1.02	241	B10
281	16-11	1.00	15.00	-3.17	7.00	-10.13	13.00	3.06	241	Cb16
282	16-12	1.00	26.00	14.29	20.00	6.33	14.00	4.08	241	D10A
283	16-13	1.00	25.00	12.70	11.00	-5.06	19.00	9.18	241	D10B
284	16-14	1.00	23.00	9.52	8.00	-8.86	10.00	0.00	241	D10C
285	16-15	1.00	23.00	9.52	11.00	-5.06	8.00	-2.04	241	D10D
286	16-16	1.00	27.00	15.87	11.00	-5.06	6.00	-4.08	241	D10E
287	16-17	1.00	30.00	20.63	16.00	1.27	14.00	4.08	241	Cb17
288	16-18	1.00	21.00	6.35	11.00	-5.06	11.00	1.02	241	B11
289	17-1	1.00	22.00	7.94	12.00	-3.80	5.00	-5.10	241	Cb18
290	17-2	1.00	22.00	7.94	10.00	-6.33	11.00	1.02	241	D11A
291	17-3	1.00	12.00	-7.94	9.00	-7.59	8.00	-2.04	241	D11B
292	17-4	1.00	22.00	7.94	9.00	-7.59	9.00	-1.02	241	D11C
293	17-5	1.00	19.00	3.17	5.00	-12.66	13.00	3.06	241	D11D
294	17-6	1.00	32.00	23.81	5.00	-12.66	15.00	5.10	241	D11E
295	17-7	1.00	26.00	14.29	10.00	-6.33	12.00	2.04	241	B12
296	17-8	1.00	26.00	14.29	6.00	-11.39	8.00	-2.04	241	Sink1
297	17-9	1.00	17.00	0.00	10.00	-6.33	8.00	-2.04	241	Cb22A
298	17-10	1.00	31.00	22.22	15.00	0.00	10.00	0.00	241	Cb22B
299	17-11	1.00	20.00	4.76	13.00	-2.53	8.00	-2.04	241	Cb19A
300	17-12	1.00	34.00	26.98	12.00	-3.80	14.00	4.08	241	Cb19B
301	17-13	1.00	18.00	1.59	11.00	-5.06	14.00	4.08	241	Sink2
302	17-14	1.00	14.00	-4.76	15.00	0.00	16.00	6.12	241	B13
303	17-15	1.00	22.00	7.94	19.00	5.06	9.00	-1.02	241	Cb20
304	17-16	1.00	23.00	9.52	8.00	-8.86	6.00	-4.08	241	D13A
305	17-17	1.00	18.00	1.59	15.00	0.00	14.00	4.08	241	D13B
306	17-18	1.00	22.00	7.94	6.00	-11.39	9.00	-1.02	241	D13C
307	18-1	1.00	13.00	-6.35	13.00	-2.53	18.00	8.16	241	D13D
308	18-2	1.00	18.00	1.59	7.00	-10.13	8.00	-2.04	241	D13E
309	18-3	1.00	17.00	0.00	13.00	-2.53	5.00	-5.10	241	D13F
310	18-4	1.00	15.00	-3.17	10.00	-6.33	12.00	2.04	241	D13G
311	18-5	1.00	16.00	-1.59	21.00	7.59	6.00	-4.08	241	D13H
312	18-6	1.00	32.00	23.81	13.00	-2.53	8.00	-2.04	241	Cb21
313	18-7	1.00	24.00	11.11	11.00	-5.06	12.00	2.04	241	Sink3
314	18-8	1.00	20.00	4.76	8.00	-8.86	12.00	2.04	241	B14
315	18-9	1.00	14.00	-4.76	11.00	-5.06	9.00	-1.02	241	B15
316	18-10	1.00	14.00	-4.76	8.00	-8.86	6.00	-4.08	241	B16
317	18-11	1.00	15.00	-3.17	10.00	-6.33	10.00	0.00	241	Cb23
318	18-12	1.00	19.00	3.17	15.00	0.00	8.00	-2.04	241	Cb24
319	18-13	1.00	25.00	12.70	12.00	-3.80	8.00	-2.04	241	Cb24A
320	18-14	1.00	33.00	25.40	16.00	1.27	7.00	-3.06	241	Cb24B
321	18-15	1.00	666.00	1030.16	192.00	224.05	15.00	5.10	241	Cb24C
322	18-16	1.00	27.00	15.87	13.00	-2.53	5.00	-5.10	241	Cb24D
323	18-17	1.00	23.00	9.52	14.00	-1.27	3.00	-7.14	241	Cb25A
324	18-18	1.00	327.00	492.06	90.00	94.94	12.00	2.04	241	Cb25B
325	19-1	1.00	16.00	-1.59	6.00	-11.39	13.00	3.06	241	Cb25C
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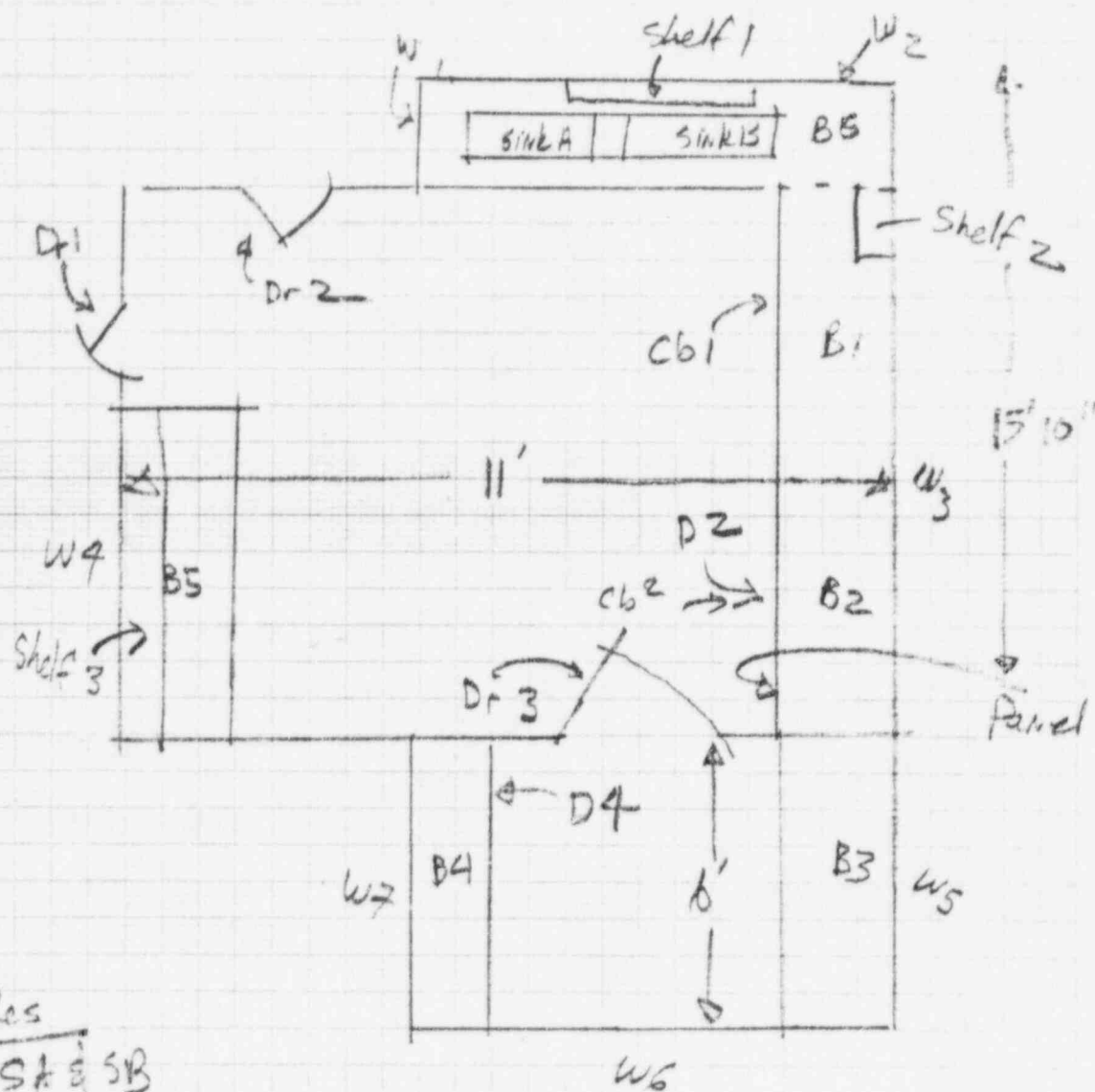
327	19-3	1.00	48.00	49.21	17.00	2.53	12.00	2.04	241	B17
328	19-4	1.00	23.00	9.52	8.00	-8.86	6.00	-4.08	241	Cb26
329	19-5	1.00	18.00	1.59	7.00	-10.13	6.00	-4.08	241	D17A
330	19-6	1.00	26.00	14.29	11.00	-5.06	11.00	1.02	241	D17B
331	19-7	1.00	27.00	15.87	10.00	-6.33	9.00	-1.02	241	D17C
332	19-8	1.00	28.00	17.46	9.00	-7.59	14.00	4.08	241	D17D
333	19-9	1.00	23.00	9.52	8.00	-8.86	11.00	1.02	241	D17E
334	19-10	1.00	35.00	28.57	14.00	-1.27	11.00	1.02	241	Cb27
335	19-11	1.00	22.00	7.94	10.00	-6.33	9.00	-1.02	241	Cb28
336	19-12	1.00	25.00	12.70	13.00	-2.53	4.00	-6.12	241	B18
337	19-13	1.00	25.00	12.70	4.00	-13.92	15.00	5.10	241	D18A
338	19-14	1.00	413.00	628.57	65.00	63.29	14.00	4.08	241	D18B
339	19-15	1.00	18.00	1.59	13.00	-2.53	13.00	3.06	241	D18C
340	19-16	1.00	22.00	7.94	16.00	1.27	14.00	4.08	241	D18D
341	19-17	1.00	18.00	1.59	8.00	-8.86	17.00	7.14	241	D18E
342	19-18	1.00	30.00	20.63	13.00	-2.53	14.00	4.08	241	B19
343	20-1	1.00	15.00	-3.17	11.00	-5.06	9.00	-1.02	241	Cb29
344	20-2	1.00	24.00	11.11	13.00	-2.53	10.00	0.00	241	D19A
345	20-3	1.00	17.00	0.00	12.00	-3.80	14.00	4.08	241	D19B
346	20-4	1.00	21.00	6.35	9.00	-7.59	7.00	-3.06	241	D19C
347	20-5	1.00	24.00	11.11	12.00	-3.80	18.00	8.16	241	D19D
348	20-6	1.00	76.00	93.65	33.00	22.78	99.00	90.82	241	B20
349	20-7	1.00	10.00	-11.11	10.00	-6.33	10.00	0.00	241	Cb30
350	20-8	1.00	65.00	76.19	36.00	26.58	16.00	6.12	241	O20A
351	20-9	1.00	28.00	17.46	14.00	-1.27	5.00	-5.10	241	O20B
352	20-10	1.00	40.00	36.51	18.00	3.80	6.00	-4.08	241	O20C
353	20-11	1.00	22.00	7.94	6.00	-11.39	4.00	-6.12	241	O20D
354	20-12	1.00	18.00	1.59	14.00	-1.27	8.00	-2.04	241	M1
355	20-13	1.00	25.00	12.70	15.00	0.00	8.00	-2.04	241	M2
356	20-14	1.00	22.00	7.94	12.00	-3.80	7.00	-3.06	241	M3
357	20-15	1.00	21.00	6.35	8.00	-8.86	10.00	0.00	241	Fau1
358	20-16	1.00	23.00	9.52	18.00	3.80	6.00	-4.08	241	Fau2
359	20-17	1.00	77.00	95.24	149.00	169.62	41.00	31.63	241	S1
360	20-18	1.00	22.00	7.94	10.00	-6.33	5.00	-5.10	241	S2
361	21-1	1.00	28.00	17.46	12.00	-3.80	13.00	3.06	241	S3
362	21-2	1.00	70.00	84.13	17.00	2.53	6.00	-4.08	241	S4
363	21-3	1.00	32.00	23.81	15.00	0.00	10.00	0.00	241	S5
364	21-4	1.00	20.00	4.76	11.00	-5.06	12.00	2.04	241	S6
365	21-5	1.00	113.00	152.38	26.00	13.92	11.00	1.02	241	S7
366	21-6	1.00	23.00	9.52	12.00	-3.80	8.00	-2.04	241	S8
367	21-7	1.00	48.00	49.21	15.00	0.00	11.00	1.02	241	S9
368	21-8	1.00	24.00	11.11	14.00	-1.27	11.00	1.02	241	S10
369	21-9	1.00	20.00	4.76	8.00	-8.86	11.00	1.02	241	S11
370	21-10	1.00	25.00	12.70	9.00	-7.59	11.00	1.02	241	S12
371	21-11	1.00	20.00	4.76	22.00	8.86	9.00	-1.02	241	S13
372	21-12	1.00	31.00	22.22	15.00	0.00	10.00	0.00	241	S14
373	21-13	1.00	20.00	4.76	9.00	-7.59	11.00	1.02	241	S15
374	21-14	1.00	20.00	4.76	14.00	-1.27	4.00	-6.12	241	S16
375	21-15	1.00	27.00	15.87	14.00	-1.27	5.00	-5.10	241	S17
376	21-16	1.00	25.00	12.70	18.00	3.80	9.00	-1.02	241	S18
377	21-17	1.00	22.00	7.94	15.00	0.00	8.00	-2.04	241	S19
378	21-18	1.00	29.00	19.05	14.00	-1.27	8.00	-2.04	241	S20
379	22-1	1.00	31.00	22.22	17.00	2.53	10.00	0.00	241	S21
380	22-2	1.00	19.00	3.17	10.00	-6.33	7.00	-3.06	241	S22
381	22-3	1.00	22.00	7.94	11.00	-5.06	2.00	-8.16	241	S23
382	22-4	1.00	24.00	11.11	14.00	-1.27	9.00	-1.02	241	S24
383	22-5	1.00	19.00	3.17	13.00	-2.53	7.00	-3.06	241	S25
384	22-6	1.00	27.00	15.87	13.00	-2.53	7.00	-3.06	241	S26
385	22-7	1.00	23.00	9.52	16.00	1.27	12.00	2.04	241	S27
386	22-8	1.00	18.00	1.59	6.00	-11.39	7.00	-3.06	241	S28
387	22-9	1.00	23.00	9.52	13.00	-2.53	12.00	2.04	241	L1
388	22-10	1.00	21.00	6.35	5.00	-12.66	17.00	7.14	241	L2
389	22-11	1.00	13.00	-6.35	16.00	1.27	3.00	-7.14	241	L3
390	22-12	1.00	22.00	7.94	6.00	-11.39	17.00	7.14	241	L4
391	22-13	1.00	10.00	-11.11	13.00	-2.53	8.00	-2.04	241	L5
392	22-14	1.00	18.00	1.59	14.00	-1.27	12.00	2.04	241	VE

393	22-15	1.00	25.00	14.29	7.00	-10.13	11.00	1.02	241	VW
394	22-16	1.00	21.00	6.35	12.00	-3.80	8.00	-2.04	241	W1
395	22-17	1.00	26.00	14.29	10.00	-6.33	13.00	3.06	241	W2
396	22-18	1.00	21.00	6.35	8.00	-8.86	8.00	-2.04	241	W3
397	23-1	1.00	15.00	-3.17	7.00	-10.13	8.00	-2.04	241	W4
398	23-2	1.00	29.00	19.05	7.00	-10.13	7.00	-3.06	241	W5
399	23-3	1.00	23.00	9.52	12.00	-3.80	11.00	1.02	241	W6
400	23-4	1.00	29.00	19.05	13.00	-2.53	9.00	-1.02	241	W7
401	23-5	1.00	20.00	4.76	10.00	-6.33	8.00	-2.04	241	W8
402	23-6	1.00	19.00	3.17	7.00	-10.13	11.00	1.02	241	W9
403	23-7	1.00	29.00	19.05	9.00	-7.59	10.00	0.00	241	W10
404	23-8	1.00	27.00	15.87	14.00	-1.27	9.00	-1.02	241	W11
405	23-9	1.00	31.00	22.22	14.00	-1.27	7.00	-3.06	241	W12
406	23-10	1.00	24.00	11.11	7.00	-10.13	7.00	-3.06	241	W13
407	23-11	1.00	25.00	12.70	10.00	-6.33	14.00	4.08	241	W14
408	23-12	1.00	32.00	23.81	7.00	-10.13	10.00	0.00	241	D1i
409	23-13	1.00	22.00	7.94	9.00	-7.59	4.00	-6.12	241	D1o
410	23-14	1.00	23.00	9.52	17.00	2.53	13.00	3.06	241	D2i
411	23-15	1.00	17.00	0.00	6.00	-11.39	8.00	-2.04	241	D2o
412	23-16	1.00	27.00	15.87	9.00	-7.59	8.00	-2.04	241	D3i
413	23-17	1.00	23.00	9.52	11.00	-5.06	9.00	-1.02	241	D3o
414	23-18	1.00	16.00	-1.59	12.00	-3.80	8.00	-2.04	241	D4i
415	24-1	1.00	24.00	11.11	10.00	-6.33	7.00	-3.06	241	D4o
416	24-2	1.00	18.00	1.59	14.00	-1.27	13.00	3.06	241	D5i
417	24-3	1.00	17.00	0.00	19.00	5.00	10.00	0.00	241	D5o
418	24-4	1.00	101.00	133.33	16.00	1.27	7.00	-3.06	241	HDE
419	24-5	1.00	170.00	242.86	86.00	89.87	4.00	-6.12	241	HDP
426	24-12	1.00	19.00	3.17	9.00	-7.59	14.00	4.08	155	F1
427	24-13	1.00	169.00	241.27	17.00	2.53	10.00	0.00	155	F2
428	24-14	1.00	23.00	9.52	8.00	-8.86	8.00	-2.04	155	F3
429	24-15	1.00	26.00	14.29	10.00	-6.33	9.00	-1.02	155	F4
430	24-16	1.00	35.00	28.57	20.00	6.33	11.00	1.02	155	F5
431	24-17	1.00	209.00	304.76	32.00	21.52	10.00	0.00	155	F6
432	24-18	1.00	28.00	17.46	15.00	0.00	14.00	4.08	155	F7
433	25-1	1.00	25.00	12.70	15.00	0.00	10.00	0.00	155	F8
434	25-2	1.00	25.00	12.70	11.00	-5.06	10.00	0.00	155	F9
435	25-3	1.00	18.00	1.59	9.00	-7.59	11.00	1.02	155	F10
436	25-4	1.00	27.00	15.87	16.00	1.27	14.00	4.08	155	F11
437	25-5	1.00	23.00	9.52	15.00	0.00	14.00	4.08	155	F12
438	25-6	1.00	32.00	23.81	13.00	-2.53	10.00	0.00	155	F13
439	25-7	1.00	30.00	20.63	8.00	-8.86	10.00	0.00	155	F14
440	25-8	1.00	22.00	7.94	11.00	-5.06	3.00	-7.14	155	F15
441	25-9	1.00	47.00	47.62	9.00	-7.59	12.00	2.04	155	F16
442	25-10	1.00	22.00	7.94	8.00	-8.86	13.00	3.06	155	F17
443	25-11	1.00	17.00	0.00	13.00	-2.53	14.00	4.08	155	F18
444	25-12	1.00	18.00	1.59	9.00	-7.59	11.00	1.02	155	F19
445	25-13	1.00	23.00	9.52	9.00	-7.59	17.00	7.14	155	F20
446	25-14	1.00	34.00	26.98	13.00	-2.53	8.00	-2.04	155	F21
447	25-15	1.00	27.00	15.87	9.00	-7.59	8.00	-2.04	155	F22
448	25-16	1.00	19.00	3.17	17.00	2.53	6.00	-4.08	155	F23
449	25-17	1.00	20.00	4.76	11.00	-5.06	12.00	2.04	155	F24
450	25-18	1.00	24.00	11.11	10.00	-6.33	14.00	4.08	155	F25
451	26-1	1.00	27.00	15.87	7.00	-10.13	11.00	1.02	155	F26
452	26-2	1.00	18.00	1.59	8.00	-8.86	9.00	-1.02	155	F27
453	26-3	1.00	27.00	15.87	12.00	-3.80	5.00	-5.10	155	F28
454	26-4	1.00	108.00	144.44	44.00	36.71	10.00	0.00	155	F29
455	26-5	1.00	33.00	25.40	17.00	2.53	13.00	3.06	155	F30
456	26-6	1.00	32.00	23.81	19.00	5.06	13.00	3.06	155	F31
457	26-7	1.00	23.00	9.52	10.00	-6.33	11.00	1.02	155	F32
458	26-8	1.00	25.00	12.70	11.00	-5.06	8.00	-2.04	155	F33
459	26-9	1.00	27.00	15.87	7.00	-10.13	14.00	4.08	155	F34
460	26-10	1.00	26.00	14.29	15.00	0.00	14.00	4.08	155	F35
461	26-11	1.00	17.00	0.00	13.00	-2.53	8.00	-2.04	155	F36
462	26-12	1.00	25.00	12.70	16.00	1.27	5.00	-5.10	155	B1
463	26-13	1.00	24.00	11.11	7.00	-10.13	4.00	-6.12	155	CbAn
464	26-14	1.00	26.00	14.29	13.00	-2.53	7.00	7.14	155	CbAl
465	26-15	1.00	25.00	12.70	13.00	-2.53	9.00	-1.02	155	CbBo

466	26-16	1.00	34.00	26.98	19.00	5.06	9.00	-1.02	155	Cb9H
467	26-17	1.00	25.00	12.70	9.00	-7.59	7.00	-3.06	155	B2
468	26-18	1.00	21.00	6.35	10.00	-6.33	12.00	2.04	155	Cb2
469	27-1	1.00	23.00	9.52	9.00	-7.59	7.00	-3.06	155	D2A
470	27-2	1.00	34.00	26.98	13.00	-2.53	9.00	-1.02	155	D2B
471	27-3	1.00	20.00	4.76	9.00	-7.59	14.00	4.08	155	D2C
472	27-4	1.00	54.00	58.73	14.00	-1.27	7.00	-3.06	155	D2D
473	27-5	1.00	19.00	3.17	8.00	-8.86	11.00	1.02	155	D2E
474	27-6	1.00	22.00	7.94	8.00	-8.86	9.00	-1.02	155	B3
475	27-7	1.00	23.00	9.52	9.00	-7.59	9.00	-1.02	155	Cb3A
476	27-8	1.00	32.00	23.81	9.00	-7.59	9.00	-1.02	155	D3A
477	27-9	1.00	24.00	11.11	38.00	29.11	8.00	-2.04	155	D3B
478	27-10	1.00	25.00	12.70	9.00	-7.59	11.00	1.02	155	D3C
479	27-11	1.00	18.00	1.59	10.00	-6.33	15.00	5.10	155	D3D
480	27-12	1.00	23.00	9.52	10.00	-6.33	13.00	3.06	155	D3E
481	27-13	1.00	31.00	22.22	11.00	-5.06	8.00	-2.04	155	C83Bo
482	27-14	1.00	21.00	6.35	17.00	2.53	8.00	-2.04	155	C83bi
483	27-15	1.00	31.00	22.22	10.00	-6.33	9.00	-1.02	155	B4
484	27-16	1.00	25.00	12.70	10.00	-6.33	14.00	4.08	155	Cb4
485	27-17	1.00	27.00	15.87	15.00	0.00	6.00	-4.08	155	D4A
486	27-18	1.00	14.00	-4.76	10.00	-6.33	9.00	-1.02	155	D4B
487	28-1	1.00	17.00	0.00	9.00	-7.59	12.00	2.04	155	D4C
488	28-2	1.00	838.00	1303.17	11.00	-5.06	8.00	-2.04	155	D4D
489	28-3	1.00	33.00	25.40	13.00	-2.53	8.00	-2.04	155	B5
490	28-4	1.00	21.00	6.35	8.00	-8.86	10.00	0.00	155	Cb5Ai
491	28-5	1.00	40.00	36.51	10.00	-6.33	10.00	0.00	155	Cb5Ao
492	28-6	1.00	21.00	6.35	12.00	-3.80	10.00	0.00	155	Cb5b
493	28-7	1.00	31.00	22.22	14.00	-1.27	12.00	2.04	155	D5A
494	28-8	1.00	16.00	-1.59	11.00	-5.06	15.00	5.10	155	D5B
495	28-9	1.00	27.00	15.87	11.00	-5.06	12.00	2.04	155	D5C
496	28-10	1.00	28.00	17.46	9.00	-7.59	9.00	-1.02	155	D5D
497	28-11	1.00	236.00	347.52	29.00	17.72	10.00	0.00	155	D5E
498	28-12	1.00	21.00	6.35	10.00	-6.33	12.00	2.04	155	B6
499	28-13	1.00	14.00	-4.76	8.00	-8.86	10.00	0.00	155	Cb6
500	28-14	1.00	20.00	4.76	8.00	-8.86	10.00	0.00	155	D6A
501	28-15	1.00	20.00	4.76	18.00	3.80	13.00	3.06	155	D6B
502	28-16	1.00	13.00	-6.35	11.00	-5.06	15.00	5.10	155	D6C
503	28-17	1.00	15.00	-3.17	6.00	-11.39	10.00	0.00	155	D6D
504	28-18	1.00	18.00	1.59	9.00	-7.59	10.00	0.00	155	D6E
505	29-1	1.00	16.00	-1.59	11.00	-5.06	15.00	5.10	155	B7
506	29-2	1.00	33.00	25.40	14.00	-1.27	10.00	0.00	155	Cb7Ao
507	29-3	1.00	18.00	1.59	11.00	-5.06	6.00	-4.08	155	Cb7Ai
508	29-4	1.00	24.00	11.11	14.00	-1.27	5.00	-5.10	155	Cb7bo
509	29-5	1.00	25.00	12.70	11.00	-5.06	9.00	-1.02	155	Cb7ci
510	29-6	1.00	23.00	9.52	15.00	0.00	7.00	-3.06	155	Cb7co
511	29-7	1.00	24.00	11.11	11.00	-5.06	7.00	-3.06	155	Cb7ci
512	29-8	1.00	20.00	4.76	8.00	-8.86	9.00	-1.02	155	B8
513	29-9	1.00	18.00	1.59	8.00	-8.86	12.00	2.04	155	C6B
514	29-10	1.00	19.00	3.17	18.00	3.00	18.00	8.16	155	D8A
515	29-11	1.00	135.00	187.30	17.00	2.53	10.00	0.00	155	D8B
516	29-12	1.00	41.00	38.10	14.00	-1.27	12.00	2.04	155	D8C
517	29-13	1.00	24.00	11.11	12.00	-3.80	7.00	-3.06	155	D8D
518	29-14	1.00	22.00	7.94	11.00	-5.06	11.00	1.02	155	D8E
519	29-15	1.00	19.00	3.17	10.00	-6.33	10.00	0.00	155	B9
520	29-16	1.00	26.00	14.29	9.00	-7.59	9.00	-1.02	155	Cb9
521	29-17	1.00	27.00	15.87	16.00	1.27	13.00	3.06	155	D9A
522	29-18	1.00	224.00	328.57	30.00	18.99	10.00	0.00	155	D9B
523	30-1	1.00	20.00	4.76	11.00	-5.06	8.00	-2.04	155	D9C
524	30-2	1.00	22.00	7.94	13.00	-2.53	15.00	5.10	155	D9D
525	30-3	1.00	25.00	12.70	16.00	1.27	8.00	-2.04	155	W1
526	30-4	1.00	251.00	371.43	62.00	59.49	28.00	18.37	155	W2
527	30-5	1.00	19.00	3.17	6.00	-11.39	9.00	-1.02	155	W3
528	30-6	1.00	19.00	3.17	15.00	0.00	4.00	-6.12	155	W4
529	30-7	1.00	18.00	1.59	16.00	1.27	11.00	1.02	155	W5
530	30-8	1.00	32.00	23.81	23.00	10.13	30.00	20.41	155	W6
531	30-9	1.00	216.00	315.87	40.00	31.65	12.00	2.04	155	C1

532	30-10	1.00	21.00	6.35	7.00	-10.13	13.00	3.06	155	C2
533	30-11	1.00	15.00	-3.17	9.00	-7.59	10.00	0.00	155	C3
534	30-12	1.00	23.00	9.52	11.00	-5.06	11.00	1.02	155	C4
535	30-13	1.00	1093.00	1707.94	176.00	203.80	87.00	78.57	155	C5
536	30-14	1.00	27.00	15.87	12.00	-3.80	13.00	3.06	155	C6
537	30-15	1.00	15.00	-3.17	10.00	-6.33	11.00	1.02	155	C7
538	30-16	1.00	15.00	-3.17	10.00	-6.33	15.00	5.10	155	D1i
539	30-17	1.00	1822.00	2865.08	63.00	60.76	57.00	47.96	155	Dr1i
540	30-18	1.00	49.00	50.79	57.00	53.16	3.00	-7.14	155	Dr2i
541	31-1	1.00	20.00	4.76	18.00	3.80	6.00	-4.08	155	Dr2i
542	31-2	1.00	8.00	-14.29	10.00	-6.33	15.00	5.10	155	Dr2o
543	31-3	1.00	29.00	19.05	11.00	-5.06	11.00	1.02	155	Dr3i
544	31-4	1.00	17.00	0.00	13.00	-2.53	15.00	5.10	155	Dr3o
545	31-5	1.00	20.00	4.76	9.00	-7.59	5.00	-5.10	155	Sink1
546	31-6	1.00	21.00	6.35	11.00	-5.06	12.00	2.04	155	Sink2
547	31-7	1.00	62.00	71.43	26.00	13.92	15.00	5.10	155	S1
548	31-8	1.00	30.00	20.63	14.00	-1.27	5.00	-5.10	155	S2
549	31-9	1.00	18.00	1.59	18.00	3.80	9.00	-1.02	155	S3
550	31-10	1.00	23.00	9.52	10.00	-6.33	11.00	1.02	155	S4
551	31-11	1.00	183.00	263.49	114.00	125.32	51.00	41.84	155	S5

Rm 146, Building 4 Final Survey



Sinks: Sink A & Sink B
Floor: F1 - 15

Benches: B1 - B5

Cabinet & Drawers:
 Cb1
 D2A - F
 Cb2
 D4A - D; Cb3

Walls: W1 - W7

Panel: Panel

Doors: D1 - 3 (in & out)

Ceiling: C1 - C4

Purgatory

Walls: W1 - W7

Stairs: S1 - S11

Cabinet & Drawers: Cb1; DA - DF

Floor: P1 - 45

Bench Tops: B1 - B3

Cabinet & Drawers: Cb1, DA - F

Sharon Holland

12/19/96

SamplesFloor: F1 - F68Mat = M1 - M3Benches & CabinetsCabinet - Cb1Bench 1 = B1Cb2, D1A-E (Drawers)Cabinet 3 = Cb3Bench 3 = B3Cabinet 4 = Cb4Drawers = B3A - B3ECabinet 5 = Cb5Bench 4 = B4Cabinet 6 = Cb6Drawers = D4A - D4ECabinet 7 = Cb7Cabinet 6B = Cb6BDrawers of 6B = Cb6BDA - DDBench 5 = B5Cabinet 8 = Cb8Drawers = D5A - ECabinet 9 = Cb9Bench 6 = B6Cabinet 10 = Cb10Drawers 6 = D6A - ECabinet 11 = Cb11Bench 7 = B7Cabinet 12 = Cb12Drawers 7 = D7A - ECabinet 13 = Cb13Bench 8 = B8Cabinet 14 = Cb14Drawers 8 = D8A - EBench 9 = B9Cabinet 15 = Cb15Drawers 9 = D9A - DCBench 10 = B10Cabinet 16 = Cb16Drawers 10 = D10A - ECabinet 17 = Cb17Bench 11 = B11Cabinet 18 = Cb18Drawers 11 = D11A - EBench 12 = B12Sink 1Cabinet 22 = Cb22A & Cb22B

Sink 2:

→ Bench 13 : B13

↳ Cabinet 19 : Cb19 A & B

Cabinet 20 : Cb20

Drawers : D13A - G

Cabinet 21 : Cb21

Sink 3
Bench 14 : B14

Bench 15 : B15

Bench 16 : B16

Cabinet 25 : 25A, B, C

Cabinet 24 : Cb24

Cabinet 23 : Cb23

Cabinet 26 : Cb26

Bench 17 : B17

Drawers 17 : D17A - E

Cabinet 27 : Cb27

Cabinet 28 : Cb28

Bench 18 : B18

Drawers 18 : D18A - E

Bench 19 : B19

Drawers 19 : D19A - D

A
D

Cabinet 29 : Cb29

Cabinet 30 : Cb30

Bench 20 : B20

Drawers 20 : D20A - D

Shelves : S1 - S27, S28

Lights : L1 - L5

Ceiling Vents : VE, VW

Walls : W1 - W12, 13, 14

Doors : D1 (in) & out

D2

D3 ibid.

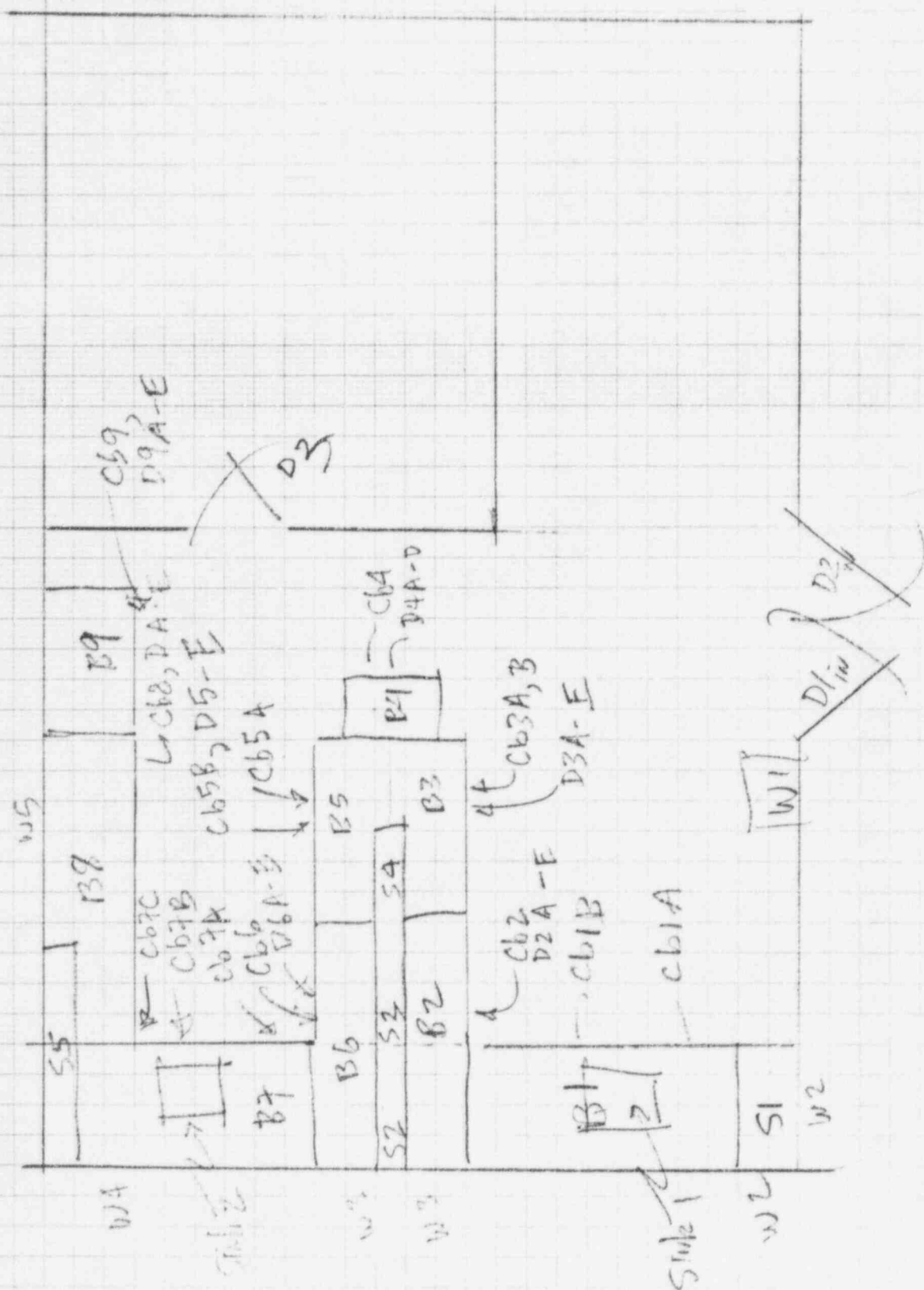
D4

Faucets 1 & 2

Mat : M1 - M3

Hood Duct (Exhaust) : HDE

Hood Drain Pipe : HDP



SamplesFloor: F1 - F36Benches / Cabinets / DrawersBench 1 = B1Cabinets 1 & B = CbA (ov.) CbA (W)
CbB (o) CbA (i)Bench 2 = ~~B1~~ B2Cabinet 2 = Cb2 ; Drawers 2 = D2A-EBench 3 = B3Cabinet 3 = Cb3A & Cb3B (i) & (o)Drawers 3 = D3A-EBench 4 = B4Cabinet 4 = Cb4Drawers 4 = D4A-DBench 5 = B5Cabinets 5 = Cb5(i) & ext; Cb6Drawers 5 = ~~D5A~~ D5A-EBench 6 = B6Cabinet 6 = Cb6Drawers 6 = D6A-EBench 7 = B7Cabinet 7 = Cb7A (i & o)
+
Cb7C (i & o)Bench 8 = B8Cabinet 8 = Cb8Drawers 8 = D8A-EBench 9 = B9Cabinet 9 = Cb9Drawers 9 = D9A-DWalls = W1-W6Ceiling = C1-C7Doors = D

D1 (i) & (o)

D2 (i) & (o)

D3 (i) & (o)

Sinks = Sink 1
Sink 2Shelves = S1-S5

Instrument Type: LS 6000
 Data Capture Date: 30 Dec 1996 17:14:34
 User Filename: A:\USER03\U03C3001.BSF

USER#: 03
 ID: 3-CHANNEL

Comments: Rm. 157

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

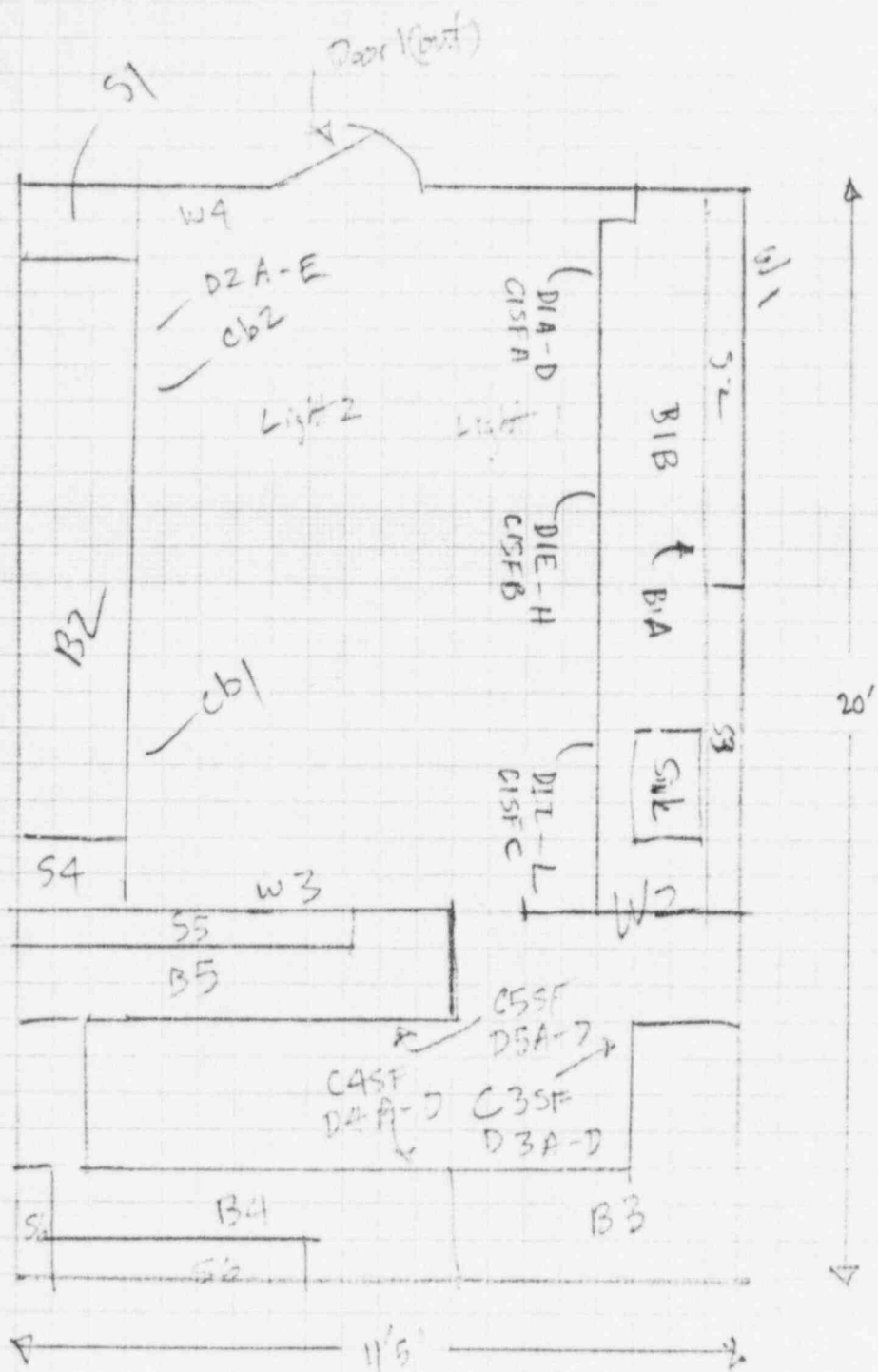
3-H = 63%

Sam	Rack	Time	3H		14C		32P		Rm No	Descrip
			CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM		
1	1-1	1.00	8708.00		38914.00		299.00			14C STD
2	1-2	1.00	62202.00		603.00		4.00			3H STD
3	1-3	1.00	21.00		20.00		10.00			Bkg 1
4	1-4	1.00	20.00		9.00		7.00			Bkg 2
5	1-5	1.00	21.00		12.00		7.00			Bkg 3
6	1-6	1.00	19.00	-1.59	19.00	7.59	8.00	0.00	157	F1
7	1-7	1.00	19.00	-1.59	11.00	-2.53	10.00	2.04	157	F2
8	1-8	1.00	18.00	-3.17	15.00	2.53	11.00	3.06	157	F3
9	1-9	1.00	22.00	3.17	7.00	-7.59	18.00	10.20	157	F4
10	1-10	1.00	21.00	1.59	13.00	0.00	10.00	2.04	157	F5
11	1-11	1.00	17.00	-4.76	17.00	5.06	10.00	2.04	157	F6
12	1-12	1.00	22.00	3.17	16.00	3.80	7.00	-1.02	157	F7
13	1-13	1.00	21.00	1.59	16.00	3.80	12.00	4.08	157	F8
14	1-14	1.00	23.00	4.76	12.00	-1.27	7.00	-1.02	157	F9
15	1-15	1.00	16.00	-6.35	7.00	-7.59	9.00	1.02	157	F10
16	1-16	1.00	11.00	-14.29	20.00	8.86	17.00	9.18	157	B1A
17	1-17	1.00	16.00	-6.35	19.00	7.59	10.00	2.04	157	B1B
18	1-18	1.00	17.00	-4.76	16.00	3.80	7.00	-1.02	157	B2
19	2-1	1.00	19.00	-1.59	14.00	1.27	7.00	-1.02	157	B3
20	2-2	1.00	16.00	-6.35	15.00	2.53	13.00	5.10	157	B4
21	2-3	1.00	14.00	-9.52	14.00	1.27	12.00	4.08	157	B5
22	2-4	1.00	16.00	-6.35	12.00	-1.27	13.00	5.10	157	C1FSA
23	2-5	1.00	17.00	-4.76	7.00	-7.59	9.00	1.02	157	D1A
24	2-6	1.00	22.00	3.17	6.00	-8.86	10.00	2.04	157	D1B
25	2-7	1.00	12.00	-12.70	14.00	1.27	9.00	1.02	157	D1C
26	2-8	1.00	13.00	-11.11	14.00	1.27	9.00	1.02	157	D1D
27	2-9	1.00	22.00	3.17	10.00	-3.80	11.00	3.06	157	C1FSB
28	2-10	1.00	21.00	1.59	13.00	0.00	9.00	1.02	157	D1E
29	2-11	1.00	18.00	-3.17	13.00	0.00	16.00	8.16	157	D1F
30	2-12	1.00	17.00	-4.76	7.00	-7.59	8.00	0.00	157	D1G
31	2-13	1.00	17.00	-4.76	13.00	0.00	11.00	3.06	157	D1H
32	2-14	1.00	19.00	-1.59	10.00	-3.80	8.00	0.00	157	C1FSC
33	2-15	1.00	20.00	0.00	12.00	-1.27	10.00	2.04	157	D1I
34	2-16	1.00	18.00	-3.17	13.00	0.00	12.00	4.08	157	D1J
35	2-17	1.00	16.00	-6.35	13.00	0.00	18.00	10.20	157	D1K
36	2-18	1.00	16.00	-6.35	10.00	-3.80	10.00	2.04	157	D1L
37	3-1	1.00	14.00	-9.52	10.00	-3.80	2.00	-6.12	157	Cb1
38	3-2	1.00	23.00	4.76	12.00	-1.27	15.00	7.14	157	Cb2
39	3-3	1.00	13.00	-11.11	11.00	-2.53	15.00	7.14	157	D2A
40	3-4	1.00	25.00	7.94	14.00	1.27	12.00	4.08	157	D2B
41	3-5	1.00	21.00	1.59	8.00	-6.33	13.00	5.10	157	D2C
42	3-6	1.00	12.00	-12.70	9.00	-5.06	8.00	0.00	157	D2D
43	3-7	1.00	25.00	7.94	5.00	-10.13	11.00	3.06	157	D2E
44	3-8	1.00	25.00	7.94	13.00	0.00	11.00	3.06	157	Sink
45	3-9	1.00	17.00	-4.76	18.00	6.33	11.00	3.06	157	C3SF
46	3-10	1.00	15.00	-7.94	10.00	-3.80	12.00	4.08	157	D3A
47	3-11	1.00	16.00	-6.35	9.00	-5.06	9.00	1.02	157	D3B
48	3-12	1.00	10.00	-15.87	7.00	-7.59	11.00	3.06	157	D3C
49	3-13	1.00	19.00	-1.59	17.00	5.06	14.00	6.12	157	D3D
50	3-14	1.00	14.00	-9.52	7.00	-7.59	9.00	1.02	157	C4SF

51	3-15	1.00	25.00	7.94	9.00	-5.06	13.00	5.10	157	D4A
52	3-16	1.00	414.00	625.40	44.00	39.24	10.00	2.04	157	D4B
53	3-17	1.00	17.00	-4.76	11.00	-2.53	7.00	-1.02	157	D4C
54	3-18	1.00	17.00	-4.76	15.00	2.53	6.00	-2.04	157	D4D
55	4-1	1.00	15.00	-7.94	8.00	-6.33	6.00	-2.04	157	C5SF
56	4-2	1.00	22.00	3.17	9.00	-5.06	14.00	6.12	157	D5A
57	4-3	1.00	15.00	-7.94	14.00	1.27	13.00	5.10	157	D5B
58	4-4	1.00	26.00	9.52	13.00	0.00	11.00	3.06	157	D5C
59	4-5	1.00	18.00	-3.17	11.00	-2.53	3.00	-5.10	157	D5D
60	4-6	1.00	13.00	-11.11	13.00	0.00	9.00	1.02	157	W1
61	4-7	1.00	21.00	1.59	15.00	2.53	9.00	1.02	157	W2
62	4-8	1.00	18.00	-3.17	11.00	-2.53	9.00	1.02	157	W3
63	4-9	1.00	20.00	0.00	12.00	-1.27	16.00	8.16	157	W4
64	4-10	1.00	15.00	-7.94	9.00	-5.06	9.00	1.02	157	S1
65	4-11	1.00	13.00	-11.11	14.00	1.27	11.00	3.06	157	S2
66	4-12	1.00	19.00	-1.59	8.00	-6.33	3.00	-5.10	157	S3
67	4-13	1.00	20.00	0.00	11.00	-2.53	11.00	3.06	157	S4
68	4-14	1.00	16.00	-6.35	16.00	3.80	12.00	4.08	157	S5
69	4-15	1.00	15.00	-7.94	13.00	0.00	9.00	1.02	157	S6
70	4-16	1.00	14.00	-9.52	12.00	-1.27	11.00	3.06	157	D11
71	4-17	1.00	19.00	-1.59	13.00	0.00	6.00	-2.04	157	D10
72	4-18	1.00	12.00	-12.70	5.00	-10.13	14.00	6.12	157	L1
73	5-1	1.00	22.00	3.17	14.00	1.27	10.00	2.04	157	L2
75	5-3	1.00	17.00	-4.76	15.00	2.53	5.00	-3.06	250	F1
76	5-4	1.00	23.00	4.76	6.00	-8.86	7.00	-1.02	250	F2
77	5-5	1.00	13.00	-11.11	9.00	-5.06	11.00	3.06	250	F3
78	5-6	1.00	13.00	-11.11	12.00	-1.27	6.00	-2.04	250	F4
79	5-7	1.00	26.00	9.52	14.00	1.27	8.00	0.00	250	F5
80	5-8	1.00	13.00	-11.11	9.00	-5.06	14.00	6.12	250	F6
81	5-9	1.00	27.00	11.11	11.00	-2.53	10.00	2.04	250	F7
82	5-10	1.00	101.00	128.57	34.00	26.58	12.00	4.08	250	F8
83	5-11	1.00	24.00	6.35	18.00	6.33	7.00	-1.02	250	F9
84	5-12	1.00	20.00	0.00	11.00	-2.53	7.00	-1.02	250	F10
85	5-13	1.00	14.00	-9.52	13.00	0.00	5.00	-3.06	250	F11
86	5-14	1.00	11.00	-14.29	15.00	2.53	3.00	-5.10	250	F12
87	5-15	1.00	17.00	-4.76	18.00	6.33	6.00	-2.04	250	F13
88	5-16	1.00	17.00	-4.76	14.00	1.27	9.00	1.02	250	F14
89	5-17	1.00	15.00	-7.94	17.00	5.06	9.00	1.02	250	F15
90	5-18	1.00	12.00	-12.70	16.00	3.80	12.00	4.08	250	F16
91	6-1	1.00	22.00	3.17	15.00	2.53	16.00	8.16	250	F17
92	6-2	1.00	18.00	-3.17	10.00	-3.80	11.00	3.06	250	F18
93	6-3	1.00	21.00	1.59	9.00	-5.06	8.00	0.00	250	F19
94	6-4	1.00	18.00	-3.17	16.00	3.80	14.00	6.12	250	F20
95	6-5	1.00	15.00	-7.94	12.00	-1.27	10.00	2.04	250	F21
96	6-6	1.00	24.00	6.35	13.00	0.00	11.00	3.06	250	F22
97	6-7	1.00	64.00	69.84	8.00	-6.33	10.00	2.04	250	F23
98	6-8	1.00	17.00	-4.76	10.00	-3.80	7.00	-1.02	250	F24
99	6-9	1.00	26.00	9.52	14.00	1.27	6.00	-2.04	250	F25
100	6-10	1.00	19.00	-1.59	9.00	-5.06	10.00	2.04	250	F26
101	6-11	1.00	49.00	46.03	8.00	-6.33	13.00	5.10	250	F27
102	6-12	1.00	22.00	3.17	16.00	3.80	13.00	5.10	250	F28
103	6-13	1.00	18.00	-3.17	13.00	0.00	5.00	-3.06	250	F29
104	6-14	1.00	16.00	-6.35	12.00	-1.27	15.00	7.14	250	F30
105	6-15	1.00	22.00	3.17	10.00	-3.80	12.00	4.08	250	F31
106	6-16	1.00	13.00	-11.11	9.00	-5.06	11.00	3.06	250	F32
107	6-17	1.00	20.00	0.00	13.00	0.00	6.00	-2.04	250	F33
108	6-18	1.00	18.00	-3.17	9.00	-5.06	8.00	0.00	250	F34
109	7-1	1.00	39.00	30.16	12.00	-1.27	9.00	1.02	250	F35
110	7-2	1.00	18.00	-3.17	16.00	3.80	4.00	-4.08	250	F36
111	7-3	1.00	22.00	3.17	10.00	-3.80	18.00	10.20	250	F37
112	7-4	1.00	19.00	-1.59	24.00	13.92	12.00	4.08	250	F38
113	7-5	1.00	179.00	252.38	13.00	0.00	17.00	9.18	250	F39
114	7-6	1.00	19.00	-1.59	13.00	0.00	7.00	-1.02	250	F40
115	7-7	1.00	15.00	-7.94	9.00	-5.06	9.00	1.02	250	F41
116	7-8	1.00	18.00	-3.17	13.00	0.00	8.00	0.00	250	F42
117	7-9	1.00	20.00	0.00	17.00	5.06	11.00	3.06	250	F43

118	7-10	1.00	16.00	-6.35	15.00	2.53	9.00	1.02	250	F44
119	7-11	1.00	16.00	-6.35	12.00	-1.27	10.00	2.04	250	F45
120	7-12	1.00	14.00	-9.52	7.00	-7.59	6.00	-2.04	250	F46
121	7-13	1.00	9.00	-17.46	15.00	2.53	11.00	3.06	250	F47
122	7-14	1.00	11.00	-14.29	16.00	3.80	7.00	-1.02	250	F48
123	7-15	1.00	14.00	-9.52	15.00	2.53	10.00	2.04	250	F49
124	7-16	1.00	15.00	-7.94	9.00	-5.06	13.00	5.10	250	F50
125	7-17	1.00	20.00	0.00	11.00	-2.53	14.00	6.12	250	F51
126	7-18	1.00	11.00	-14.29	11.00	-2.53	2.00	-6.12	250	Cb1
127	8-1	1.00	16.00	-6.35	16.00	3.80	6.00	-2.04	250	Cb2
128	8-2	1.00	14.00	-9.52	11.00	-2.53	11.00	3.06	250	Cb3
129	8-3	1.00	8.00	-19.05	16.00	3.80	8.00	0.00	250	Cb4
130	8-4	1.00	18.00	-3.17	13.00	0.00	10.00	2.04	250	Cb5
131	8-5	1.00	27.00	11.11	12.00	-1.27	13.00	5.10	250	Cb6
132	8-6	1.00	15.00	-7.94	9.00	-5.06	16.00	8.16	250	Cb7

For 1st, Final Lab Inventory, Diag - 1



Samp 25

Floor : F - 10

Benchs/ Drawers/ Cabinets:

B1A & B d B5
B2
B3
B4

B/D/C (cont.)

2IFSA
DIA - D
CISFB
DIE - H
CISFC
DIE - D L
Cb1
Cb2
D2A - E
Sink
C3SF
D3A - D
C4SF
D4A - D
C5SF
D5A - PSD

Walls: W1 - W4

Shelves: S1 - S6

Door: in & out

Lights: L1 & L2

Journal/land 12/21/96

Instrument Type: LS 6000
 Data Capture Date: 31 Dec 1996 17:32:55
 User Filename: A:\USER03\U03C03103.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: Rm. 249, 255, Sink Tr

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 80%

3-H = 63%

			3H		14C		32P			
Sam	Rock	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8793.00		39459.00		279.00			14C STD
2	1-2	1.00	62278.00		622.00		8.00			3H STD
3	1-3	1.00	24.00		11.00		7.00			BKG 1
4	1-4	1.00	26.00		22.00		7.00			BKG 2
5	1-5	1.00	28.00		10.00		6.00			BKG 3
6	1-6	1.00	13.00	-20.53	9.00	-6.25	13.00	6.12	249	F1
7	1-7	1.00	26.00	0.00	7.00	-8.75	11.00	4.08	249	F2
8	1-8	1.00	22.00	-6.35	19.00	6.25	8.00	1.02	249	F3
9	1-9	1.00	30.00	6.35	13.00	-1.25	11.00	4.08	249	F4
10	1-10	1.00	17.00	-14.29	7.00	-8.75	19.00	12.24	249	F5
11	1-11	1.00	24.00	-3.17	14.00	0.00	9.00	2.04	249	F6
12	1-12	1.00	18.00	-12.70	11.00	-3.75	10.00	3.06	249	F7
13	1-13	1.00	27.00	1.59	8.00	-7.50	4.00	-3.06	249	F8
14	1-14	1.00	17.00	-14.29	10.00	-5.00	5.00	-2.04	249	F9
15	1-15	1.00	20.00	-9.52	9.00	-6.25	12.00	5.10	249	F10
16	1-16	1.00	22.00	-6.35	15.00	1.25	13.00	6.12	249	F11
17	1-17	1.00	19.00	-11.11	13.00	-1.25	9.00	2.04	249	F12
18	1-18	1.00	32.00	9.52	6.00	-10.00	6.00	-1.02	249	F13
19	2-1	1.00	35.00	14.29	24.00	12.50	12.00	5.10	249	F14
20	2-2	1.00	22.00	-6.35	10.00	-5.00	10.00	3.06	249	F15
21	2-3	1.00	20.00	-9.52	14.00	0.00	7.00	0.00	249	F16
22	2-4	1.00	24.00	-3.17	9.00	-6.25	5.00	-2.04	249	F17
23	2-5	1.00	23.00	-4.76	13.00	-1.25	11.00	4.08	249	F18
24	2-6	1.00	19.00	-11.11	8.00	-7.50	5.00	-2.04	249	F19
25	2-7	1.00	12.00	-22.22	18.00	5.00	9.00	2.04	249	F20
26	2-8	1.00	19.00	-11.11	9.00	-6.25	16.00	9.18	249	F21
27	2-9	1.00	21.00	-7.94	6.00	-10.00	15.00	8.16	249	F22
28	2-10	1.00	24.00	-3.17	10.00	-5.00	15.00	8.16	249	F23
29	2-11	1.00	19.00	-11.11	17.00	3.75	13.00	6.12	249	F24
30	2-12	1.00	24.00	-3.17	10.00	-5.00	10.00	3.06	249	F25
31	2-13	1.00	27.00	1.59	9.00	-6.25	7.00	0.00	249	F26
32	2-14	1.00	23.00	-4.76	9.00	-6.25	12.00	5.10	249	F27
33	2-15	1.00	24.00	-3.17	9.00	-6.25	11.00	4.08	249	F28
34	2-16	1.00	20.00	-9.52	13.00	-1.25	6.00	-1.02	249	F29
35	2-17	1.00	18.00	-12.70	9.00	-6.25	5.00	-2.04	249	F30
36	2-18	1.00	21.00	-7.94	11.00	-3.75	6.00	-1.02	249	F31
37	3-1	1.00	17.00	-14.29	8.00	-7.50	9.00	2.04	249	F32
38	3-2	1.00	21.00	-7.94	16.00	2.50	11.00	4.08	249	F33
39	3-3	1.00	28.00	3.17	13.00	-1.25	13.00	6.12	249	Cb1A
40	3-4	1.00	19.00	-11.11	8.00	-7.50	6.00	-1.02	249	Cb1B
41	3-5	1.00	27.00	1.59	14.00	0.00	12.00	5.10	249	Cb1C
42	3-6	1.00	20.00	-9.52	12.00	-2.50	7.00	0.00	249	Cb2A
43	3-7	1.00	23.00	-4.76	14.00	0.00	13.00	6.12	249	Cb2B
44	3-8	1.00	23.00	-4.76	14.00	0.00	4.00	-3.06	249	Cb3A
45	3-9	1.00	13.00	-20.63	15.00	1.25	13.00	6.12	249	Cb3B
46	3-10	1.00	16.00	-15.87	13.00	-1.25	10.00	3.06	249	Cb4A
47	3-11	1.00	15.00	-17.46	9.00	-6.25	4.00	-3.06	249	Cb4B
48	3-12	1.00	24.00	-3.17	12.00	-2.50	19.00	12.24	249	Cb5A
49	3-13	1.00	26.00	3.17	11.00	-3.75	8.00	1.02	249	Cb5B
50	3-14	1.00	17.00	-14.29	12.00	-2.50	6.00	-1.02	249	Cb6

51	3-15	1.00	23.00	-4.76	2.00	-15.00	11.00	4.08	249	Cb7A
52	3-16	1.00	20.00	-9.52	15.00	1.25	8.00	1.02	249	Cb7B
53	3-17	1.00	14.00	-19.05	12.00	-2.50	8.00	1.02	249	Cb8
54	3-18	1.00	16.00	-15.87	10.00	-5.00	11.00	4.08	249	Cb9
55	4-1	1.00	17.00	-14.29	9.00	-6.25	11.00	4.08	249	B1
56	4-2	1.00	17.00	-14.29	12.00	-2.50	14.00	7.14	249	B2
57	4-3	1.00	17.00	-14.29	11.00	-3.75	9.00	2.04	249	B3
58	4-4	1.00	14.00	-19.05	10.00	-5.00	9.00	2.04	249	B4
59	4-5	1.00	28.00	3.17	15.00	1.25	8.00	1.02	249	B5
60	4-6	1.00	25.00	-1.59	8.00	-7.50	12.00	5.10	249	B6
61	4-7	1.00	28.00	3.17	6.00	-10.00	7.00	0.00	249	B7
62	4-8	1.00	22.00	-6.35	11.00	-3.75	8.00	1.02	249	B8
63	4-9	1.00	21.00	-7.94	12.00	-2.50	10.00	3.06	249	B9
64	4-10	1.00	23.00	-4.76	8.00	-7.50	9.00	2.04	249	D2A
65	4-11	1.00	25.00	-1.59	11.00	-3.75	8.00	1.02	249	D2B
66	4-12	1.00	19.00	-11.11	10.00	-5.00	8.00	1.02	249	D2C
67	4-13	1.00	18.00	-12.70	12.00	-2.50	7.00	0.00	249	D2D
68	4-14	1.00	25.00	-1.59	13.00	-1.25	4.00	-3.06	249	D2E
69	4-15	1.00	22.00	-6.35	6.00	-10.00	6.00	-1.02	249	D3A
70	4-16	1.00	24.00	-3.17	12.00	-2.50	6.00	-1.02	249	D3B
71	4-17	1.00	16.00	-15.87	10.00	-5.00	8.00	1.02	249	D3C
72	4-18	1.00	11.00	-23.81	5.00	-11.25	12.00	5.10	249	D3D
73	5-1	1.00	17.00	-14.29	12.00	-2.50	8.00	1.02	249	D3E
74	5-2	1.00	17.00	-14.29	16.00	2.50	10.00	3.06	249	D4A
75	5-3	1.00	19.00	-11.11	6.00	-10.00	11.00	4.08	249	D4B
76	5-4	1.00	27.00	1.59	13.00	-1.25	9.00	2.04	249	D4C
77	5-5	1.00	19.00	-11.11	12.00	-2.50	5.00	-2.04	249	D4D
78	5-6	1.00	24.00	-3.17	12.00	-2.50	13.00	6.12	249	D4E
79	5-7	1.00	22.00	-6.35	13.00	-1.25	9.00	2.04	249	D5A
80	5-8	1.00	26.00	0.00	9.00	-6.25	6.00	-1.02	249	D5B
81	5-9	1.00	15.00	-17.46	12.00	-2.50	11.00	4.08	249	D5C
82	5-10	1.00	22.00	-6.35	8.00	-7.50	6.00	-1.02	249	D5D
83	5-11	1.00	24.00	-3.17	19.00	6.25	5.00	-2.04	249	D5E
84	5-12	1.00	18.00	-12.70	5.00	-11.25	10.00	3.06	249	D6A
85	5-13	1.00	15.00	-17.46	5.00	-11.25	13.00	6.12	249	D6B
86	5-14	1.00	18.00	-12.70	4.00	-12.50	12.00	5.10	249	D6C
87	5-15	1.00	16.00	-15.87	9.00	-6.25	16.00	9.18	249	D6D
88	5-16	1.00	24.00	-3.17	12.00	-2.50	12.00	5.10	249	D6E
89	5-17	1.00	23.00	-4.76	5.00	-11.25	8.00	1.02	249	D7A
90	5-18	1.00	25.00	-1.59	5.00	-11.25	16.00	9.18	249	D7B
91	6-1	1.00	23.00	-4.76	6.00	-10.00	10.00	3.06	249	D7C
92	6-2	1.00	20.00	-9.52	16.00	2.50	9.00	2.04	249	D7D
93	6-3	1.00	15.00	-17.46	16.00	2.50	18.00	11.22	249	D7E
94	6-4	1.00	30.00	6.35	16.00	2.50	11.00	4.08	249	D8A
95	6-5	1.00	16.00	-15.87	13.00	-1.25	10.00	3.06	249	D8B
96	6-6	1.00	11.00	-23.81	8.00	-7.50	11.00	4.08	249	D8C
97	6-7	1.00	22.00	-6.35	8.00	-7.50	6.00	-1.02	249	D8D
98	6-8	1.00	17.00	-14.29	14.00	0.00	7.00	0.00	249	D8E
99	6-9	1.00	23.00	-4.76	18.00	5.00	13.00	6.12	249	S1
100	6-10	1.00	22.00	-6.35	13.00	-1.25	10.00	3.06	249	S2
101	6-11	1.00	13.00	-20.63	13.00	-1.25	12.00	5.10	249	S3
102	6-12	1.00	20.00	-9.52	23.00	11.25	13.00	6.12	249	S4
103	6-13	1.00	25.00	-1.59	10.00	-5.00	7.00	0.00	249	S5A
104	6-14	1.00	19.00	-11.11	13.00	-1.25	8.00	1.02	249	S5B
105	6-15	1.00	14.00	-19.05	11.00	-3.75	12.00	5.10	249	S6A
106	6-16	1.00	34.00	12.70	11.00	-3.75	7.00	0.00	249	S6B
107	6-17	1.00	23.00	-4.76	10.00	-5.00	7.00	0.00	249	S7A
108	6-18	1.00	17.00	-14.29	7.00	-8.75	10.00	3.06	249	S7B
109	7-1	1.00	17.00	-14.29	17.00	3.75	5.00	-2.04	249	S8
110	7-2	1.00	19.00	-11.11	12.00	-2.50	5.00	-2.04	249	S9
111	7-3	1.00	16.00	-15.87	15.00	1.25	10.00	3.06	249	W1
112	7-4	1.00	16.00	-15.87	14.00	0.00	8.00	1.02	249	W2
113	7-5	1.00	21.00	-7.94	4.00	-12.50	10.00	3.06	249	W3
114	7-6	1.00	20.00	-9.52	10.00	-5.00	13.00	6.12	249	W4
115	7-7	1.00	14.00	-19.05	10.00	-5.00	12.00	5.10	249	W5
116	7-8	1.00	12.00	-22.22	13.00	-1.25	7.00	0.00	249	W6

117	7-9	1.00	24.00	-3.17	9.00	-6.25	10.00	3.06	249	L1
118	7-10	1.00	20.00	-9.52	10.00	-5.00	9.00	2.04	249	L2
119	7-11	1.00	10.00	-25.40	17.00	3.75	13.00	6.12	249	L3
120	7-12	1.00	21.00	-7.94	13.00	-1.25	8.00	1.02	249	Vent
121	7-13	1.00	18.00	-12.70	15.00	1.25	8.00	1.02	249	Di
122	7-14	1.00	16.00	-15.87	12.00	-2.50	5.00	-2.04	249	Do
123	7-15	1.00	21.00	-7.94	19.00	6.25	8.00	1.02	249	Sink
125	7-17	1.00	28.00	3.17	15.00	1.25	17.00	10.20	255	F1
126	7-18	1.00	16.00	-15.87	9.00	-6.25	14.00	7.14	255	F2
127	8-1	1.00	18.00	-12.70	8.00	-7.50	9.00	2.04	255	F3
128	8-2	1.00	20.00	-9.52	10.00	-5.00	14.00	7.14	255	F4
129	8-3	1.00	16.00	-15.87	7.00	-8.75	6.00	-1.02	255	F5
130	8-4	1.00	21.00	-7.94	7.00	-8.75	2.00	-5.10	255	F6
131	8-5	1.00	16.00	-15.87	15.00	1.25	10.00	3.06	255	F7
132	8-6	1.00	22.00	-6.35	8.00	-7.50	9.00	2.04	255	F8
133	8-7	1.00	19.00	-11.11	4.00	-12.50	14.00	7.14	255	F9
134	8-8	1.00	15.00	-17.46	14.00	0.00	15.00	8.16	255	F10
135	8-9	1.00	21.00	-7.94	14.00	0.00	3.00	-4.08	255	F11
136	8-10	1.00	20.00	-9.52	10.00	-5.00	6.00	-1.02	255	F12
137	8-11	1.00	16.00	-15.87	12.00	-2.50	15.00	8.16	255	F13
138	8-12	1.00	20.00	-9.52	13.00	-1.25	3.00	-4.08	255	F14
139	8-13	1.00	31.00	7.94	14.00	0.00	6.00	-1.02	255	F15
140	8-14	1.00	22.00	-6.35	15.00	1.25	12.00	5.10	255	F16
141	8-15	1.00	17.00	-14.29	14.00	0.00	7.00	0.00	255	F17
142	8-16	1.00	16.00	-15.87	8.00	-7.50	6.00	-1.02	255	F18
143	8-17	1.00	28.00	3.17	13.00	-1.25	8.00	1.02	255	F19
144	8-18	1.00	16.00	-15.87	10.00	-5.00	5.00	-2.04	255	F20
145	9-1	1.00	35.00	14.29	9.00	-6.25	9.00	2.04	255	F21
146	9-2	1.00	22.00	-6.35	11.00	-3.75	5.00	-2.04	255	F22
147	9-3	1.00	18.00	-12.70	13.00	-1.25	10.00	3.06	255	F23
148	9-4	1.00	15.00	-17.46	8.00	-7.50	14.00	7.14	255	F24
149	9-5	1.00	27.00	1.59	12.00	-2.50	11.00	4.08	255	F25
150	9-6	1.00	15.00	-17.46	15.00	1.25	8.00	1.02	255	F26
151	9-7	1.00	17.00	-14.29	9.00	-6.25	13.00	6.12	255	F27
152	9-8	1.00	23.00	-4.76	13.00	-1.25	8.00	1.02	255	F28
153	9-9	1.00	14.00	-19.05	7.00	-8.75	10.00	3.06	255	F29
154	9-10	1.00	16.00	-15.87	7.00	-8.75	9.00	2.04	255	F30
155	9-11	1.00	19.00	-11.11	12.00	-2.50	11.00	4.08	255	F31
156	9-12	1.00	20.00	-9.52	11.00	-3.75	17.00	10.20	255	F32
157	9-13	1.00	27.00	1.59	11.00	-3.75	11.00	4.08	255	F33
158	9-14	1.00	16.00	-15.87	6.00	-10.00	5.00	-2.04	255	F34
159	9-15	1.00	19.00	-11.11	14.00	0.00	14.00	7.14	255	F35
160	9-16	1.00	22.00	-6.35	5.00	-11.25	8.00	1.02	255	F36
161	9-17	1.00	17.00	-14.29	9.00	-6.25	10.00	3.06	255	F37
162	9-18	1.00	22.00	-6.35	12.00	-2.50	10.00	3.06	255	F38
163	10-1	1.00	21.00	-7.94	5.00	-11.25	13.00	6.12	255	F39
164	10-2	1.00	20.00	-9.52	14.00	0.00	7.00	0.00	255	F40
165	10-3	1.00	17.00	-14.29	12.00	-2.50	10.00	3.06	255	F41
166	10-4	1.00	21.00	-7.94	9.00	-6.25	12.00	5.10	255	F42
167	10-5	1.00	20.00	-9.52	13.00	-1.25	7.00	0.00	255	F43
168	10-6	1.00	28.00	3.17	11.00	-3.75	6.00	-1.02	255	F44
169	10-7	1.00	15.00	-17.46	11.00	-3.75	9.00	2.04	255	F45
170	10-8	1.00	15.00	-17.46	14.00	0.00	10.00	3.06	255	F46
171	10-9	1.00	14.00	-19.05	5.00	-11.25	8.00	1.02	255	F47
172	10-10	1.00	23.00	-4.76	11.00	-3.75	11.00	4.08	255	F48
173	10-11	1.00	18.00	-12.70	8.00	-7.50	10.00	3.06	255	F49
174	10-12	1.00	21.00	-7.94	8.00	-7.50	4.00	-3.06	255	F50
175	10-13	1.00	23.00	-4.76	18.00	5.00	12.00	5.10	255	F51
176	10-14	1.00	21.00	-7.94	11.00	-3.75	9.00	2.04	255	F52
177	10-15	1.00	18.00	-12.70	10.00	-5.00	12.00	5.10	255	F53
178	10-16	1.00	17.00	-14.29	12.00	-2.50	14.00	7.14	255	Cb1
179	10-17	1.00	19.00	-11.11	4.00	-12.50	12.00	5.10	255	Cb2a
180	10-18	1.00	22.00	-6.35	6.00	-10.00	11.00	4.08	255	Cb2b
181	11-1	1.00	21.00	-7.94	16.00	2.50	13.00	6.12	255	Cb3
182	11-2	1.00	19.00	-11.11	8.00	-7.50	9.00	2.04	255	Cb4
183	11-3	1.00	22.00	-6.35	9.00	-6.25	15.00	8.16	255	Cb5

184	11-4	1.00	21.00	-7.94	9.00	-6.25	9.00	2.04	255	Cb6
185	11-5	1.00	22.00	-6.35	20.00	7.50	8.00	1.02	255	Cb7
186	11-6	1.00	24.00	-3.17	17.00	3.75	13.00	6.12	255	Cb8
187	11-7	1.00	25.00	-1.59	8.00	-7.50	7.00	0.00	255	Cb9
188	11-8	1.00	13.00	-20.63	13.00	-1.25	7.00	0.00	255	Cb10
189	11-9	1.00	21.00	-7.94	18.00	5.00	12.00	5.10	255	Cb11
190	11-10	1.00	6.00	-31.75	11.00	-3.75	7.00	0.00	255	Cb12a
191	11-11	1.00	26.00	0.00	8.00	-7.50	7.00	0.00	255	Cb12b
192	11-12	1.00	21.00	-7.94	14.00	0.00	10.00	3.06	255	Cb13a
193	11-13	1.00	21.00	-7.94	9.00	-6.25	7.00	0.00	255	Cb13b
194	11-14	1.00	22.00	-6.35	10.00	-5.00	9.00	2.04	255	S1
195	11-15	1.00	10.00	-25.40	17.00	3.75	15.00	8.16	255	S2
196	11-16	1.00	21.00	-7.94	10.00	-5.00	12.00	5.10	255	S3
197	11-17	1.00	14.00	-19.05	10.00	-5.00	7.00	0.00	255	S4
198	11-18	1.00	24.00	-3.17	10.00	-5.00	8.00	1.02	255	S5
199	12-1	1.00	12.00	-22.22	4.00	-12.50	10.00	3.06	255	S6
200	12-2	1.00	23.00	-4.76	11.00	-3.75	14.00	7.14	255	S7
201	12-3	1.00	17.00	-14.29	8.00	-7.50	10.00	06	255	S8
202	12-4	1.00	21.00	-7.94	12.00	-2.50	12.00	10	255	S9
203	12-5	1.00	23.00	-4.76	7.00	-8.75	7.00	3.00	255	S10
204	12-6	1.00	21.00	-7.94	12.00	-2.50	4.00	-3.05	255	S11
205	12-7	1.00	14.00	-19.05	11.00	-3.75	6.00	-1.02	255	S12
206	12-8	1.00	22.00	-6.35	10.00	-5.00	8.00	1.02	255	S13
207	12-9	1.00	25.00	-1.59	19.00	6.25	9.00	2.04	255	S14
208	12-10	1.00	13.00	-20.63	6.00	-10.00	7.00	0.00	255	S15
209	12-11	1.00	25.00	-1.59	8.00	-7.50	9.00	2.04	255	S16
210	12-12	1.00	14.00	-19.05	5.00	-11.25	9.00	2.04	255	W1
211	12-13	1.00	25.00	-1.59	13.00	-1.25	11.00	4.08	255	W2
212	12-14	1.00	24.00	-3.17	14.00	0.00	3.00	-4.08	255	W3
213	12-15	1.00	15.00	-17.46	8.00	-7.50	9.00	2.04	255	W4
214	12-16	1.00	24.00	-3.17	11.00	-3.75	12.00	5.10	255	W5
215	12-17	1.00	16.00	-15.87	16.00	2.50	12.00	5.10	255	W6
216	12-18	1.00	11.00	-23.81	11.00	-3.75	12.00	5.10	255	W7
217	13-1	1.00	31.00	7.94	9.00	-6.25	9.00	2.04	255	W8
218	13-2	1.00	24.00	-3.17	14.00	0.00	11.00	4.08	255	W9
219	13-3	1.00	13.00	-20.63	7.00	-8.75	6.00	-1.02	255	W10
220	13-4	1.00	19.00	-11.11	17.00	3.75	11.00	4.08	255	W11
221	13-5	1.00	25.00	-1.59	11.00	-3.75	6.00	-1.02	255	W12
222	13-6	1.00	16.00	-15.87	8.00	-7.50	7.00	0.00	255	W13
223	13-7	1.00	22.00	-6.35	8.00	-7.50	9.00	2.04	255	W14
224	13-8	1.00	27.00	1.59	11.00	-3.75	10.00	3.06	255	W15
225	13-9	1.00	20.00	-9.52	18.00	5.00	8.00	1.02	255	W16
226	13-10	1.00	15.00	-17.46	11.00	-3.75	11.00	4.08	255	W17
227	13-11	1.00	10.00	-25.40	9.00	-6.25	9.00	2.04	255	W18
228	13-12	1.00	14.00	-19.05	17.00	3.75	11.00	4.08	255	W19
229	13-13	1.00	19.00	-11.11	7.00	-8.75	7.00	0.00	255	W20
230	13-14	1.00	15.00	-17.46	14.00	0.00	8.00	1.02	255	W21
231	13-15	1.00	25.00	-1.59	13.00	-1.25	10.00	3.06	255	W22
232	13-16	1.00	27.00	1.59	10.00	-5.00	9.00	2.04	255	W23
233	13-17	1.00	16.00	-15.87	13.00	-1.25	13.00	6.12	255	W24
234	13-18	1.00	28.00	3.17	16.00	2.50	5.00	-2.04	255	L1
235	14-1	1.00	19.00	-11.11	16.00	2.50	12.00	5.10	255	L2
236	14-2	1.00	25.00	-1.59	6.00	-10.00	14.00	7.14	255	L3
237	14-3	1.00	26.00	0.00	9.00	-6.25	13.00	6.12	255	L4
238	14-4	1.00	21.00	-7.94	6.00	-10.00	10.00	3.06	255	L5
239	14-5	1.00	25.00	-1.59	8.00	-7.50	10.00	3.06	255	L6
240	14-6	1.00	30.00	6.35	8.00	-7.50	11.00	4.08	255	L7
241	14-7	1.00	25.00	-1.59	11.00	-3.75	12.00	5.10	255	L8
242	14-8	1.00	24.00	-3.17	6.00	-10.00	8.00	1.02	255	Dr1i
243	14-9	1.00	20.00	-9.52	13.00	-1.25	15.00	8.16	255	Dr1o
244	14-10	1.00	21.00	-7.94	11.00	-3.75	11.00	4.08	255	Dr2o
245	14-11	1.00	30.00	6.35	15.00	1.25	8.00	1.02	255	Dr2i
246	14-12	1.00	18.00	-12.70	10.00	-5.00	10.00	3.06	255	Dr3o
247	14-13	1.00	26.00	0.00	8.00	-7.50	12.00	5.10	255	Dr3i
248	14-14	1.00	19.00	-11.11	9.00	-6.25	8.00	1.02	255	B1
249	14-15	1.00	23.00	-4.76	14.00	0.00	9.00	2.04	255	D1a

250	14-16	1.00	18.00	-12.70	14.00	0.00	13.00	6.12	255	D1b
251	14-17	1.00	17.00	-14.29	7.00	-8.75	15.00	8.16	255	D1c
252	14-18	1.00	26.00	0.00	9.00	-6.25	11.00	4.08	255	D1d
253	15-1	1.00	17.00	-14.29	9.00	-6.25	5.00	-2.04	255	B2
254	15-2	1.00	26.00	0.00	13.00	-1.25	10.00	3.06	255	B3
255	15-3	1.00	19.00	-11.11	6.00	-10.00	10.00	3.06	255	D3a
256	15-4	1.00	21.00	-7.94	7.00	-8.75	9.00	2.04	255	D3b
257	15-5	1.00	19.00	-11.11	13.00	-1.25	8.00	1.02	255	D3c
258	15-6	1.00	23.00	-4.76	9.00	-6.25	12.00	5.10	255	D3d
259	15-7	1.00	24.00	-3.17	6.00	-10.00	9.00	2.04	255	B4
260	15-8	1.00	16.00	-15.87	14.00	0.00	13.00	6.12	255	D4a
261	15-9	1.00	16.00	-15.87	11.00	-3.75	10.00	3.06	255	D4b
262	15-10	1.00	22.00	-6.35	10.00	-5.00	8.00	1.02	255	D4c
263	15-11	1.00	18.00	-12.70	19.00	6.25	11.00	4.08	255	D4d
264	15-12	1.00	24.00	-3.17	18.00	5.00	6.00	-1.02	255	D5
265	15-13	1.00	12.00	-22.22	11.00	-3.75	10.00	3.06	255	D5a
266	15-14	1.00	32.00	9.52	9.00	-6.25	15.00	8.16	255	D5b
267	15-15	1.00	25.00	-1.59	13.00	-1.25	9.00	2.04	255	D5c
268	15-16	1.00	14.00	-19.05	12.00	-2.50	5.00	-2.04	255	D5d
269	15-17	1.00	16.00	-15.87	11.00	-3.75	9.00	2.04	255	B6
270	15-18	1.00	22.00	-6.35	10.00	-5.00	8.00	1.02	255	B6a
271	16-1	1.00	23.00	-4.76	11.00	-3.75	17.00	10.20	255	B6b
272	16-2	1.00	21.00	-7.94	15.00	1.25	14.00	7.14	255	B6c
273	16-3	1.00	24.00	-3.17	12.00	-2.50	9.00	2.04	255	B6d
274	16-4	1.00	13.00	-20.63	9.00	-6.25	6.00	-1.02	255	B6e
275	16-5	1.00	21.00	-7.94	9.00	-6.25	10.00	3.06	255	B6f
276	16-6	1.00	30.00	6.35	8.00	-7.50	14.00	7.14	255	B7
277	16-7	1.00	30.00	6.35	7.00	-8.75	6.00	-1.02	255	B7a
278	16-8	1.00	18.00	-12.70	14.00	0.00	7.00	0.00	255	B7b
279	16-9	1.00	25.00	-1.59	17.00	3.75	9.00	2.04	255	B7c
280	16-10	1.00	13.00	-20.63	10.00	-5.00	11.00	4.08	255	B7d
281	16-11	1.00	21.00	-7.94	15.00	1.25	13.00	6.12	255	B7e
282	16-12	1.00	27.00	1.59	10.00	-5.00	15.00	8.16	255	B7f
283	16-13	1.00	25.00	-1.59	15.00	1.25	13.00	6.12	255	B8a
284	16-14	1.00	24.00	-3.17	15.00	1.25	13.00	6.12	255	B8b
285	16-15	1.00	25.00	-1.59	10.00	-5.00	7.00	0.00	255	B8c
286	16-16	1.00	19.00	-11.11	16.00	2.50	12.00	5.10	255	B8d
287	16-17	1.00	14.00	-19.05	15.00	1.25	13.00	6.12	255	B8
288	16-18	1.00	17.00	-14.29	10.00	-5.00	11.00	4.08	255	B9
289	17-1	1.00	18.00	-12.70	10.00	-5.00	4.00	-3.06	255	B10
290	17-2	1.00	30.00	6.35	7.00	-8.75	15.00	8.16	255	D10a
291	17-3	1.00	26.00	0.00	14.00	0.00	9.00	2.04	255	D10b
292	17-4	1.00	24.00	-3.17	8.00	-7.50	13.00	6.12	255	D10c
293	17-5	1.00	24.00	-3.17	9.00	-6.25	8.00	1.02	255	D10d
294	17-6	1.00	22.00	-6.35	10.00	-5.00	10.00	3.06	255	D10e
296	17-8	1.00	26.00	0.00	16.00	2.50	12.00	5.10	TRAPS	B1
297	17-9	1.00	28.00	3.17	14.00	0.00	6.00	-1.02	TRAPS	B1
298	17-10	1.00	22.00	-6.35	13.00	-1.25	18.00	11.22	TRAPS	B1
299	17-11	1.00	36.00	15.87	26.00	15.00	2.00	-5.10	TRAPS	157U
300	17-12	1.00	31.00	7.94	25.00	13.75	7.00	0.00	TRAPS	157V
301	17-13	1.00	35.00	14.29	18.00	5.00	15.00	8.16	TRAPS	157H
302	17-14	1.00	19.00	-11.11	15.00	1.25	11.00	4.08	TRAPS	155U
303	17-15	1.00	60.00	53.97	12.00	-2.50	11.00	4.08	TRAPS	155V
304	17-16	1.00	32.00	9.52	19.00	6.25	12.00	5.10	TRAPS	155H
305	17-17	1.00	23.00	-4.76	13.00	-1.25	7.00	0.00	TRAPS	155U
306	17-18	1.00	46.00	31.75	16.00	2.50	14.00	7.14	TRAPS	155V
307	18-1	1.00	30.00	6.35	16.00	2.50	6.00	-1.02	TRAPS	155H
308	18-2	1.00	22.00	-6.35	17.00	3.75	9.00	2.04	TRAPS	156U
309	18-3	1.00	28.00	3.17	14.00	0.00	4.00	-3.06	TRAPS	156V
310	18-4	1.00	13.00	-20.63	9.00	-6.25	14.00	7.14	TRAPS	156H
311	18-5	1.00	19.00	-11.11	15.00	1.25	10.00	3.06	TRAPS	156U
312	18-6	1.00	20.00	-9.52	16.00	2.50	8.00	1.02	TRAPS	156V
313	18-7	1.00	16.00	-15.87	12.00	-2.50	9.00	2.04	TRAPS	156H
314	18-8	1.00	37.00	17.46	14.00	0.00	15.00	8.16	TRAPS	153EU
315	18-9	1.00	66.00	63.49	39.00	31.25	5.00	-2.04	TRAPS	153EV
316	18-10	1.00	79.00	84.13	149.00	168.75	12.00	5.10	TRAPS	153EH

317	18-11	1.00	142.00	184.13	57.00	53.75	13.00	6.12	TRAPS	153ECU
318	18-12	1.00	21.00	-7.94	14.00	0.00	9.00	2.04	TRAPS	153ECV
319	18-13	1.00	137.00	176.19	126.00	140.00	11.00	4.08	TRAPS	153ECH
320	18-14	1.00	31.00	7.94	25.00	13.75	11.00	4.08	TRAPS	153WCU
321	18-15	1.00	158.00	209.52	65.00	63.75	16.00	9.18	TRAPS	153WCV
322	18-16	1.00	92.00	104.76	67.00	66.25	10.00	3.06	TRAPS	153WCH
323	18-17	1.00	46.00	31.75	7.00	-8.75	10.00	3.06	TRAPS	153WC
324	18-18	1.00	43.00	26.98	27.00	16.25	11.00	4.08	TRAPS	153WV
325	19-1	1.00	51.00	39.68	14.00	0.00	14.00	7.14	TRAPS	153WH
326	19-2	1.00	201.00	277.78	60.00	57.50	13.00	6.12	TRAPS	152SU
327	19-3	1.00	146.00	190.48	89.00	93.75	9.00	2.04	TRAPS	152SV
328	19-4	1.00	73.00	74.60	45.00	38.75	7.00	0.00	TRAPS	152SH
329	19-5	1.00	48.00	34.92	61.00	58.75	8.00	1.02	TRAPS	152Hoodp
330	19-6	1.00	25.00	-1.59	23.00	11.25	12.00	5.10	TRAPS	152WU
331	19-7	1.00	23.00	-4.76	13.00	-1.25	11.00	4.08	TRAPS	152WV
332	19-8	1.00	17.00	-14.29	11.00	-3.75	11.00	4.08	TRAPS	152WH
333	19-9	1.00	20.00	-9.52	18.00	5.00	10.00	3.06	TRAPS	146LU
334	19-10	1.00	54.00	44.44	13.00	-1.25	11.00	4.08	TRAPS	146LV
335	19-11	1.00	16.00	-15.87	13.00	-1.25	8.00	1.02	TRAPS	146LH
336	19-12	1.00	33.00	11.11	10.00	-5.00	11.00	4.08	TRAPS	146RU
337	19-13	1.00	31.00	7.94	26.00	15.00	10.00	3.06	TRAPS	146RV
338	19-14	1.00	36.00	15.87	14.00	0.00	9.00	2.04	TRAPS	146RH
339	19-15	1.00	14.00	-19.05	8.00	-7.50	12.00	5.10	TRAPS	145WU
340	19-16	1.00	24.00	-3.17	16.00	2.50	9.00	2.04	TRAPS	145WV
341	19-17	1.00	15.00	-17.46	12.00	-2.50	14.00	7.14	TRAPS	145WH
342	19-18	1.00	719.00	1100.00	153.00	173.75	7.00	0.00	TRAPS	145CU
343	20-1	1.00	815.00	1252.38	431.00	521.25	10.00	3.06	TRAPS	145CV
344	20-2	1.00	314.00	457.14	197.00	228.75	13.00	6.12	TRAPS	145CH
345	20-3	1.00	66.00	63.49	35.00	26.25	4.00	-3.06	TRAPS	145SU
346	20-4	1.00	25.00	-1.59	22.00	10.00	5.00	-2.04	TRAPS	145SV
347	20-5	1.00	27.00	1.59	23.00	11.25	6.00	-1.02	TRAPS	145SH

RM 255, Bldg 7, Final Survey

Samples

✓ Floor : F1 - F53

✓ Cabinets : Cb1 - Cb10

Benches & Drawers :

Bench 1 : ✓ B1a, B1b

✓ D1a - d

✓ B2

✓ B3

✓ D3a - d

✓ B4

✓ D4a - d

✓ B5

D5a - d

B6

D6a - F

B7

D7a - f

✓ B8

✓ B8a - d

✓ B9

✓ B10

✓ D10a - e

✓ Shelves : S1 - S16

✓ Walls : W1 - W24

✓ Lights : L1 - L8

✓ Doors : D1 - D5 (i) & (o)

Sink : Sink A & Sink B

J. Holland

12/24/96

Bldg 4 Survey, Radiation

Sink Traps

Rm 145

Center Sink - P-trap : U
Vertical : V
Horizontal : H

Rm 152 : U, V, H

Rm 153 : U, V, H (center east)
U, V, H (west center)

Rm 240 : U, V, H

Rm 241 : Head Drain
U, V, H (north)
U, V, H (south)

Rm 249 : U, V, H

Rm 250 : U, V, H (east)
U, V, H (hot sink / west lab)

Rm 255 : U, V, H

John Holland

Bldg 4 Final Survey

(RED)

Roof Exhaust Ducts (see map; East to west each side)

5R

2R

4R

1R

3R

W

South

12R

11R

14R

10R

9R

8R

7R

W

North

Blanks

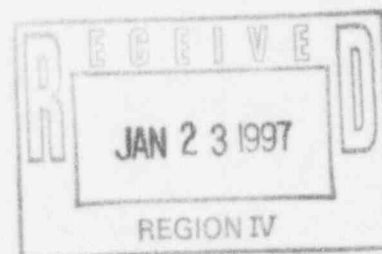
From 2nd Floor Bathroom
exhaust duct

3 total

Sh Holland

1/7/97

Instrument Type: LS 6000
 Data Capture Date: 31 Dec 1996 12:19:18
 User Filename: A:\USER03\U03C3101.BSF



USER#: 03
 ID: 3 CHANNEL
 Comments: Rm.250
 Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:
 14-C = 80%
 3-H = 63%

		3H		14C		32P				
Sam	Rack	Time	CPM iso1	DPM	CPM iso2	DPM	CPM iso3	DPM	Rm No	Descrip
1	1-1	1.00	8783.00		39396.00		322.00			14C STD
2	1-2	1.00	61967.00		662.00		5.00			3H STD
3	1-3	1.00	23.00		17.00		6.00			BKG 1
4	1-4	1.00	23.00		23.00		16.00			BKG 2
5	1-5	1.00	26.00		19.00		5.00			BKG 3
6	1-6	1.00	30.00	9.52	14.00	-7.50	14.00	5.10	250	Cb8
7	1-7	1.00	29.00	7.94	7.00	-16.25	12.00	3.06	250	Cb9
8	1-8	1.00	36.00	19.05	10.00	-12.50	10.00	1.02	250	Cb10
9	1-9	1.00	31.00	11.11	19.00	-1.25	11.00	2.04	250	Cb11
10	1-10	1.00	36.00	19.05	14.00	-7.50	8.00	-1.02	250	Cb12
11	1-11	1.00	45.00	33.33	10.00	-12.50	8.00	-1.02	250	Cb13
12	1-12	1.00	40.00	28.57	12.00	-10.00	7.00	-2.04	250	Cb14
13	1-13	1.00	35.00	17.46	15.00	-6.25	12.00	3.06	250	Cb15
14	1-14	1.00	39.00	23.81	10.00	-12.50	16.00	7.14	250	Cb16
15	1-15	1.00	37.00	20.63	15.00	-6.25	7.00	-2.04	250	Cb17
16	1-16	1.00	52.00	44.44	10.00	-12.50	6.00	-3.06	250	Cb18
17	1-17	1.00	41.00	26.98	13.00	-8.75	9.00	0.00	250	Cb19
18	1-18	1.00	39.00	23.81	8.00	-15.00	3.00	-6.12	250	B1A
19	2-1	1.00	37.00	20.63	11.00	-11.25	9.00	0.00	250	B1B
20	2-2	1.00	43.00	30.16	11.00	-11.25	4.00	-5.10	250	D1A
21	2-3	1.00	24.00	0.00	13.00	-8.75	13.00	4.08	250	D1B
22	2-4	1.00	24.00	0.00	11.00	-11.25	7.00	-2.04	250	D1C
23	2-5	1.00	22.00	-3.17	11.00	-11.25	9.00	0.00	250	D1D
24	2-6	1.00	23.00	-1.59	14.00	-7.50	6.00	-3.06	250	D1E
25	2-7	1.00	27.00	4.76	9.00	-13.75	10.00	1.02	250	D1F
26	2-8	1.00	21.00	-4.76	12.00	-10.00	10.00	1.02	250	D1G
27	2-9	1.00	20.00	-6.35	7.00	-16.25	6.00	-3.06	250	D1H
28	2-10	1.00	27.00	4.76	8.00	-15.00	9.00	0.00	250	B2A
29	2-11	1.00	21.00	-4.76	4.00	-20.00	12.00	3.06	250	B2B
30	2-12	1.00	22.00	-3.17	17.00	-3.75	13.00	4.08	250	B2C
31	2-13	1.00	32.00	12.70	17.00	-3.75	9.00	0.00	250	D2A
32	2-14	1.00	20.00	-6.35	20.00	0.00	4.00	-5.10	250	D2B
33	2-15	1.00	26.00	3.17	14.00	-7.50	7.00	-2.04	250	D2C
34	2-16	1.00	24.00	0.00	14.00	-7.50	11.00	2.04	250	D2D
35	2-17	1.00	29.00	7.94	11.00	-11.25	2.00	-7.14	250	D2E
36	2-18	1.00	20.00	-6.35	15.00	-6.25	16.00	7.14	250	D2F
37	3-1	1.00	21.00	-4.76	16.00	-5.00	7.00	-2.04	250	D2G
38	3-2	1.00	11.00	-20.63	12.00	-10.00	10.00	1.02	250	D2H
39	3-3	1.00	19.00	-7.94	12.00	-10.00	13.00	4.08	250	B3A
40	3-4	1.00	13.00	-17.46	10.00	-12.50	0.00	-9.18	250	D3
41	3-5	1.00	15.00	-14.29	9.00	-13.75	11.00	2.04	250	D3A
42	3-6	1.00	22.00	-3.17	15.00	-6.25	7.00	-2.04	250	D3B
43	3-7	1.00	19.00	-7.94	9.00	-13.75	4.00	-5.10	250	D3C
44	3-8	1.00	19.00	-7.94	14.00	-7.50	9.00	0.00	250	D3D
45	3-9	1.00	8.00	-25.40	9.00	-13.75	0.00	-9.18	250	B4
46	3-10	1.00	20.00	-6.35	7.00	-16.25	6.00	-3.06	250	B4A
47	3-11	1.00	24.00	0.00	7.00	-16.25	9.00	0.00	250	B4B
48	3-12	1.00	18.00	-9.52	16.00	-5.00	6.00	-3.06	250	B4C
49	3-13	1.00	25.00	1.59	10.00	-12.50	7.00	-2.04	250	B4D
50	3-14	1.00	29.00	7.94	15.00	-6.25	7.00	-2.04	250	B5

51	3-15	1.00	20.00	-6.35	15.00	-6.25	11.00	2.04	250	D5A
52	3-16	1.00	12.00	-19.05	10.00	-12.50	12.00	3.06	250	D5B
53	3-17	1.00	14.00	-15.87	9.00	-13.75	9.00	0.00	250	D5C
54	3-18	1.00	16.00	-12.70	15.00	-6.25	7.00	-2.04	250	D5D
55	4-1	1.00	20.00	-6.35	12.00	-10.00	18.00	9.18	250	D5E
56	4-2	1.00	15.00	-14.29	4.00	-20.00	10.00	1.02	250	D5F
57	4-3	1.00	23.00	-1.59	9.00	-13.75	13.00	4.08	250	D5G
58	4-4	1.00	26.00	3.17	12.00	-10.00	16.00	7.14	250	D5H
59	4-5	1.00	24.00	0.00	13.00	-8.75	7.00	-2.04	250	D5I
60	4-6	1.00	13.00	-17.46	12.00	-10.00	11.00	2.04	250	D5J
61	4-7	1.00	18.00	-9.52	10.00	-12.50	14.00	5.10	250	B6
62	4-8	1.00	20.00	-6.35	14.00	-7.50	10.00	1.02	250	D6A
63	4-9	1.00	25.00	1.59	9.00	-13.75	11.00	2.04	250	D6B
64	4-10	1.00	590.00	898.41	130.00	137.50	11.00	2.04	250	D6C
65	4-11	1.00	50.00	41.27	9.00	-13.75	14.00	5.10	250	D6D
66	4-12	1.00	19.00	-7.94	13.00	-8.75	7.00	-2.04	250	D6E
67	4-13	1.00	21.00	-4.76	10.00	-12.50	8.00	-1.02	250	D6F
68	4-14	1.00	21.00	-4.76	8.00	-15.00	10.00	1.02	250	D6G
69	4-15	1.00	18.00	-9.52	13.00	-8.75	6.00	-3.06	250	D6H
70	4-16	1.00	16.00	-12.70	15.00	-6.25	12.00	3.06	250	D6I
71	4-17	1.00	23.00	-1.59	9.00	-13.75	12.00	3.06	250	D6J
72	4-18	1.00	22.00	-3.17	5.00	-18.75	11.00	2.04	250	B7
73	5-1	1.00	15.00	-14.29	14.00	-7.50	5.00	-4.08	250	D7A
74	5-2	1.00	20.00	-6.35	15.00	-6.25	8.00	-1.02	250	D7B
75	5-3	1.00	32.00	12.70	10.00	-12.50	11.00	2.04	250	D7C
76	5-4	1.00	15.00	-14.29	14.00	-7.50	16.00	7.14	250	D7D
77	5-5	1.00	13.00	-17.46	16.00	-5.00	10.00	1.02	250	D7E
78	5-6	1.00	17.00	-11.11	11.00	-11.25	15.00	6.12	250	B8
79	5-7	1.00	20.00	-6.35	9.00	-13.75	12.00	3.06	250	D8A
80	5-8	1.00	35.00	17.46	8.00	-15.00	8.00	-1.02	250	D8B
81	5-9	1.00	26.00	3.17	9.00	-13.75	11.00	2.04	250	D8C
82	5-10	1.00	21.00	-4.76	17.00	-3.75	12.00	3.06	250	D8D
83	5-11	1.00	26.00	3.17	12.00	-10.00	9.00	0.00	250	D8E
84	5-12	1.00	21.00	-4.76	9.00	-13.75	6.00	-3.06	250	B9a
85	5-13	1.00	28.00	6.35	16.00	-5.00	11.00	2.04	250	B9b
86	5-14	1.00	21.00	-4.76	9.00	-13.75	8.00	-1.02	250	D9A
87	5-15	1.00	17.00	-11.11	13.00	-8.75	10.00	1.02	250	D9B
88	5-16	1.00	14.00	-15.87	12.00	-10.00	7.00	-2.04	250	D9C
89	5-17	1.00	19.00	-7.94	14.00	-7.50	14.00	5.10	250	D9D
90	5-18	1.00	17.00	-11.11	11.00	-11.25	9.00	0.00	250	D9E
91	6-1	1.00	23.00	-1.59	12.00	-10.00	11.00	2.04	250	D9F
92	6-2	1.00	24.00	0.00	14.00	-7.50	5.00	-4.08	250	D9G
93	6-3	1.00	24.00	0.00	11.00	-11.25	7.00	-2.04	250	D9H
94	6-4	1.00	17.00	-11.11	12.00	-10.00	8.00	-1.02	250	B10
95	6-5	1.00	32.00	12.70	9.00	-13.75	11.00	2.04	250	D10A
96	6-6	1.00	21.00	-4.76	21.00	1.25	8.00	-1.02	250	D10B
97	6-7	1.00	22.00	-3.17	9.00	-13.75	6.00	-3.06	250	D10C
98	6-8	1.00	20.00	-6.35	7.00	-16.25	13.00	4.08	250	D10D
99	6-9	1.00	20.00	-6.35	20.00	0.00	11.00	2.04	250	B11
100	6-10	1.00	27.00	4.76	11.00	-11.25	9.00	0.00	250	B12
101	6-11	1.00	19.00	-7.94	16.00	-5.00	11.00	2.04	250	D12A
102	6-12	1.00	19.00	-7.94	12.00	-10.00	12.00	3.06	250	D12B
103	6-13	1.00	17.00	-11.11	12.00	-10.00	15.00	6.12	250	D12C
104	6-14	1.00	15.00	-14.29	16.00	-5.00	14.00	5.10	250	D12D
105	6-15	1.00	29.00	7.94	13.00	-8.75	9.00	0.00	250	D12E
106	6-16	1.00	16.00	-12.70	15.00	-6.25	10.00	1.02	250	D12F
107	6-17	1.00	14.00	-15.87	11.00	-11.25	9.00	0.00	250	B13
108	6-18	1.00	18.00	-9.52	9.00	-13.75	11.00	2.04	250	B13A
109	7-1	1.00	18.00	-9.52	6.00	-17.50	12.00	3.06	250	B13B
110	7-2	1.00	26.00	3.17	11.00	-11.25	7.00	-2.04	250	B13C
111	7-3	1.00	19.00	-7.94	19.00	-1.25	6.00	-3.06	250	B13D
112	7-4	1.00	22.00	-3.17	9.00	-13.75	17.00	8.16	250	B13E
113	7-5	1.00	13.00	-17.46	20.00	0.00	12.00	3.06	250	B14
114	7-6	1.00	17.00	-11.11	8.00	-15.00	14.00	5.10	250	B14A
115	7-7	1.00	28.00	6.35	11.00	-11.25	8.00	-1.02	250	B14B
116	7-8	1.00	25.00	1.59	10.00	-12.50	14.00	5.10	250	B14C

117	7-9	1.00	25.00	1.59	13.00	-8.75	12.00	3.06	250	B14D
118	7-10	1.00	17.00	-11.11	15.00	-6.25	9.00	0.00	250	B15
119	7-11	1.00	22.00	-3.17	15.00	-6.25	13.00	4.08	250	B15A
120	7-12	1.00	21.00	-4.76	9.00	-13.75	9.00	0.00	250	B15B
121	7-13	1.00	20.00	-6.35	11.00	-11.25	8.00	-1.02	250	B15C
122	7-14	1.00	30.00	9.52	6.00	-17.50	10.00	1.02	250	B15D
123	7-15	1.00	19.00	-7.94	15.00	-6.25	6.00	-3.06	250	B16
124	7-16	1.00	16.00	-12.70	10.00	-12.50	6.00	-3.06	250	D19A
125	7-17	1.00	84.00	35.24	13.00	-8.75	11.00	2.04	250	D19B
126	7-18	1.00	26.00	3.17	11.00	-11.25	13.00	4.08	250	D19C
127	8-1	1.00	24.00	0.00	14.00	-7.50	9.00	0.00	250	D19D
128	8-2	1.00	12.00	-19.05	10.00	-12.50	6.00	-3.06	250	S1
129	8-3	1.00	18.00	-9.52	8.00	-15.00	13.00	4.08	250	S2
130	8-4	1.00	18.00	-9.52	12.00	-10.00	13.00	4.08	250	S3
131	8-5	1.00	23.00	-1.59	17.00	-3.75	9.00	0.00	250	S4
132	8-6	1.00	18.00	-9.52	11.00	-11.25	12.00	3.06	250	S5
133	8-7	1.00	24.00	0.00	11.00	-11.25	14.00	5.10	250	S6
134	8-8	1.00	20.00	-6.35	11.00	-11.25	6.00	-3.06	250	S7
135	8-9	1.00	16.00	-12.70	9.00	-13.75	14.00	5.10	250	S8
136	8-10	1.00	23.00	-1.59	11.00	-11.25	8.00	-1.02	250	S9
137	8-11	1.00	21.00	-4.76	11.00	-11.25	9.00	0.00	250	S10
138	8-12	1.00	20.00	-6.35	12.00	-10.00	16.00	7.14	250	S11
139	8-13	1.00	16.00	-12.70	14.00	-7.50	9.00	0.00	250	S12
140	8-14	1.00	27.00	4.76	11.00	-11.25	8.00	-1.02	250	S13
141	8-15	1.00	26.00	3.17	13.00	-8.75	7.00	-2.04	250	S14
142	8-16	1.00	18.00	-9.52	22.00	2.50	8.00	-1.02	250	S15
143	8-17	1.00	19.00	-7.94	9.00	-13.75	7.00	-2.04	250	S16
144	8-18	1.00	25.00	1.59	13.00	-8.75	7.00	-2.04	250	S17
145	9-1	1.00	26.00	3.17	8.00	-15.00	14.00	5.10	250	S18
146	9-2	1.00	24.00	0.00	6.00	-17.50	13.00	4.08	250	S19
147	9-3	1.00	23.00	-1.59	4.00	-20.00	11.00	2.04	250	S20
148	9-4	1.00	16.00	-12.70	8.00	-15.00	12.00	3.06	250	S21
149	9-5	1.00	21.00	-4.76	14.00	-7.50	7.00	-2.04	250	W1A
150	9-6	1.00	11.00	-20.63	15.00	-6.25	11.00	2.04	250	W1B
151	9-7	1.00	27.00	4.76	19.00	-1.25	15.00	6.12	250	W2A
152	9-8	1.00	21.00	-4.76	12.00	-10.00	6.00	-3.06	250	W2B
153	9-9	1.00	16.00	-12.70	13.00	-8.75	10.00	1.02	250	W3
154	9-10	1.00	27.00	4.76	15.00	-6.25	8.00	-1.02	250	W4
155	9-11	1.00	35.00	17.46	16.00	-5.00	8.00	-1.02	250	W5
156	9-12	1.00	19.00	-7.94	12.00	-10.00	4.00	-5.10	250	W6
157	9-13	1.00	12.00	-19.05	10.00	-12.50	10.00	1.02	250	W7
158	9-14	1.00	21.00	-4.76	15.00	-6.25	12.00	3.06	250	W8
159	9-15	1.00	23.00	-1.59	20.00	0.00	6.00	-3.06	250	W9
160	9-16	1.00	15.00	-14.29	11.00	-11.25	8.00	-1.02	250	W10
161	9-17	1.00	16.00	-12.70	12.00	-10.00	11.00	2.04	250	W11
162	9-18	1.00	12.00	-19.05	9.00	-13.75	14.00	5.10	250	L2
163	10-1	1.00	17.00	-11.11	15.00	-6.25	6.00	-3.06	250	L3
164	10-2	1.00	17.00	-11.11	11.00	-11.25	6.00	-3.06	250	L4
165	10-3	1.00	15.00	-14.29	11.00	-11.25	16.00	7.14	250	L5
166	10-4	1.00	18.00	-9.52	9.00	-13.75	11.00	2.04	250	FHA
167	10-5	1.00	17.00	-11.11	12.00	-10.00	6.00	-3.06	250	FHB
168	10-6	1.00	16.00	-12.70	8.00	-15.00	10.00	1.02	250	FHC
169	10-7	1.00	28.00	6.35	11.00	-11.25	6.00	-3.06	250	FHD
170	10-8	1.00	18.00	-9.52	10.00	-12.50	7.00	-2.04	250	FHE
171	10-9	1.00	14.00	-15.87	11.00	-11.25	7.00	-2.04	250	FHF
172	10-10	1.00	18.00	-9.52	9.00	-13.75	10.00	1.02	250	FHG
173	10-11	1.00	23.00	-1.59	9.00	-13.75	11.00	2.04	250	FHH
174	10-12	1.00	14.00	-15.87	12.00	-10.00	11.00	2.04	250	CVE
175	10-13	1.00	26.00	3.17	12.00	-10.00	8.00	-1.02	250	CVW
176	10-14	1.00	19.00	-7.94	10.00	-12.50	13.00	4.08	250	Sink1
177	10-15	1.00	29.00	7.94	10.00	-12.50	19.00	10.20	250	Sink2
178	10-16	1.00	19.00	-7.94	9.00	-13.75	10.00	1.02	250	Dr1i
179	10-17	1.00	17.00	-11.11	5.00	-18.75	13.00	4.08	250	Dr1o
180	10-18	1.00	18.00	-9.52	11.00	-11.25	9.00	0.00	250	Dr2i
181	11-1	1.00	18.00	-9.52	17.00	-3.75	4.00	-5.10	250	Dr2o
182	11-2	1.00	15.00	-14.29	8.00	-15.00	7.00	-2.04	250	Dr3i
183	11-3	1.00	22.00	-3.17	7.00	-16.25	6.00	-3.06	250	Dr3o

Samples

✓ Floor = F1 - 51

✓ Cabinets = C01 - 19

Benches & Drawers

✓ Bench 1 B1A, B1B

✓ D1A - D1H

✓ Bench 2 B2A - B2C

D2A - D1H

✓ Bench 3 B3A, (B3B)

D3A - D

✓ Bench 4 (B4)

D4A - D

✓ Bench 5 B5

D5A - J

✓ Bench 6 = B6

D6A - J

✓ Bench 7 = B7

D7A - E

✓ Bench 8 = B8

D8A - E

✓ Bench 9 = B9A, B9B

✓ Bench 15 = B15, D15A - E

✓ D9A - H

✓ Bench 10 = B10

D10A - D

✓ Bench 11 = B11

✓ Bench 12 = B12

D12A - F

✓ Bench 13 = B13

D13A - F

✓ Bench 15 = B15

✓ Bench 14 = B14

✓ Drawers B14A - E

✓ Drawers = D19A - D

✓ Shelves = S1 - S21

✓ Walls = W1 - W11

✓ Lights = L1 - L5

✓ Fume Hood = FHA - FHH

✓ Ceiling Vents = CVE

Sinks 1 & 2 B CVW

Doors Dr1a(f), (a)

Dr2 (1), (a)

Dr3 (1), (a)

Sherr-Holland 12/22/96

Instrument Type: LS 6000
 Data Capture Date: 2 Jan 1997 16:48:25
 User Filename: A:\USER03\10310202.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: RECOUNTS

Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUO

Counting Efficiency:
 14-C = 79%
 3-H = 63%

		3H			14C			32P				
Sam	Rock	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip		
1	1-1	1.00	8718.00		38.00		304.00				14C STD	
2	1-2	1.00	62178.00		668.00		14.00				3H STD	
3	1-3	1.00	23.00		15.00		16.00				BKG 1	
4	1-4	1.00	16.00		12.00		5.00				BKG 2	
5	1-5	1.00	15.00		20.00		14.00				BKG 3	
6	1-6	1.00	21.00	4.76	13.00	-2.53	7.00	-4.08	145		F56	
7	1-7	1.00	13.00	-7.84	18.00	3.80	16.00	5.10	145		D1H	
8	1-8	1.00	14.00	-6.35	15.00	0.00	5.00	-6.12	145		D1P	
9	1-9	1.00	21.00	4.76	10.00	-6.33	11.00	0.00	145		B1CF5A	
10	1-10	1.00	14.00	-6.35	13.00	-2.53	8.00	-3.06	145		B2CF5B	
11	1-11	1.00	12.00	-9.52	14.00	-1.27	8.00	-3.06	145		D5C	
12	1-12	1.00	20.00	3.17	14.00	-1.27	8.00	-3.06	145		S28	
13	1-13	1.00	23.00	7.94	10.00	-6.33	4.00	-7.14	146		P33	
14	1-14	1.00	22.00	6.35	18.00	3.80	17.00	6.12	153		D5B	
15	1-15	1.00	32.00	22.22	13.00	-2.53	13.00	2.04	153		D5F	
16	1-16	1.00	10.00	-12.70	11.00	-5.06	2.00	-9.18	153		D5J	
17	1-17	1.00	19.00	1.59	13.00	-2.53	10.00	-1.02	155		F2	
18	1-18	1.00	32.00	22.22	14.00	-1.27	8.00	-3.06	155		F6	
19	2-1	1.00	26.00	12.70	16.00	1.27	8.00	-3.06	155		F29	
20	2-2	1.00	16.00	-3.17	4.00	-13.92	11.00	0.00	155		D4D	
21	2-3	1.00	23.00	7.94	15.00	0.00	14.00	3.06	155		D5E	
22	2-4	1.00	22.00	6.35	5.00	-12.66	7.00	-4.08	155		D8B	
23	2-5	1.00	21.00	4.76	15.00	0.00	9.00	-2.04	155		D9B	
24	2-6	1.00	11.00	-11.11	12.00	-3.80	10.00	-1.02	155		W2	
25	2-7	1.00	23.00	7.94	17.00	2.53	8.00	-3.06	155		C1	
26	2-8	1.00	15.00	-4.76	13.00	-2.53	10.00	-1.02	155		C5	
27	2-9	1.00	12.00	-9.52	12.00	-3.80	11.00	0.00	155		D1I	
28	2-10	1.00	15.00	-4.76	9.00	-7.59	10.00	-1.02	155		S5	
29	2-11	1.00	20.00	3.17	14.00	-1.27	7.00	-4.08	157		D4B	
30	2-12	1.00	14.00	-6.35	18.00	3.80	9.00	-2.04	241		CB24C	
31	2-13	1.00	16.00	-3.17	21.00	7.59	17.00	6.12	241		CB25B	
32	2-14	1.00	21.00	4.76	10.00	-6.33	13.00	2.04	241		D18B	
33	2-15	1.00	16.00	-3.17	17.00	2.53	13.00	2.04	241		S1	
34	2-16	1.00	15.00	-4.76	10.00	-6.33	14.00	3.06	241		S7	
35	2-17	1.00	22.00	6.35	19.00	5.06	5.00	-6.12	241		HDE	
36	2-18	1.00	195.00	280.95	83.00	86.08	7.00	-4.08	241		HDP	
37	3-1	1.00	12.00	-3.80	10.00	-6.33	11.00	0.00	250		F8	
38	3-2	1.00	22.00	6.35	19.00	5.06	10.00	-1.02	250		F39	
39	3-3	1.00	25.00	11.11	8.00	-8.86	10.00	-1.02	250		D6C	
40	3-4	1.00	155.00	217.46	49.00	43.04	11.00	0.00	153TR		ECU	
41	3-5	1.00	121.00	163.49	148.00	168.35	7.00	-4.08	153TR		EDH	
42	3-6	1.00	147.00	204.76	62.00	59.49	12.00	1.02	153TR		WCV	
43	3-7	1.00	94.00	120.63	66.00	64.56	7.00	-4.08	153TR		WCH	
44	3-8	1.00	212.00	307.94	44.00	36.71	9.00	-2.04	152TR		SU	
45	3-9	1.00	142.00	196.83	80.00	82.28	8.00	-3.06	152TR		SV	
46	3-10	1.00	760.00	1177.78	152.00	173.42	12.00	1.02	145TR		CU	
47	3-11	1.00	861.00	1338.10	394.00	479.75	8.00	-3.06	145TR		CV	
48	3-12	1.00	292.00	434.92	194.00	226.58	10.00	-1.02	145TR		CH	

Instrument Type: LS 6000
 Data Capture Date: 2 Jan 1997 11:09:02
 User Filename: A:\USER03\U0310201.RSF

USER#: 03
 ID: 3 CHANNEL

Comments: Rm.240

Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:
 14-C = 79%
 3-H = 63%

		3H		14C		32P				
Sam	Rock	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8558.00		39158.00		291.00			14C STD
2	1-2	1.00	61995.00		688.00		9.00			3H STD
3	1-3	1.00	27.00		11.00		10.00			BKG 1
4	1-4	1.00	17.00		19.00		12.00			BKG 2
5	1-5	1.00	12.00		12.00		7.00			BKG 3
6	1-6	1.00	11.00	-11.11	14.00	0.00	12.00	3.06	240	F1
7	1-7	1.00	14.00	-6.35	14.00	0.00	10.00	1.02	240	F2
8	1-8	1.00	20.00	3.17	11.00	-3.80	10.00	1.02	240	F3
9	1-9	1.00	25.00	11.11	15.00	1.27	14.00	5.10	240	F4
10	1-10	1.00	19.00	1.59	4.00	-6.33	8.00	-1.02	240	F5
11	1-11	1.00	23.00	7.94	10.00	-5.06	3.00	-6.12	240	F6
12	1-12	1.00	21.00	4.76	7.00	-8.86	12.00	3.06	240	F7
13	1-13	1.00	25.00	11.11	16.00	2.53	9.00	0.00	240	F8
14	1-14	1.00	26.00	17.70	19.00	6.33	13.00	4.08	240	F9
15	1-15	1.00	21.00	4.76	9.00	-6.33	13.00	4.08	240	F10
16	1-16	1.00	16.00	-3.17	10.00	-5.06	12.00	3.06	240	F11
17	1-17	1.00	16.00	-3.17	14.00	0.00	16.00	7.14	240	F12
18	1-18	1.00	17.00	-1.59	16.00	2.53	7.00	-2.04	240	F13
19	2-1	1.00	20.00	3.17	14.00	0.00	9.00	0.00	240	F14
20	2-2	1.00	22.00	6.35	19.00	6.33	7.00	-2.04	240	F15
21	2-3	1.00	16.00	-3.17	9.00	-6.33	7.00	-2.04	240	F16
22	2-4	1.00	20.00	3.17	5.00	-11.39	10.00	1.02	240	F17
23	2-5	1.00	20.00	3.17	13.00	-1.27	11.00	2.04	240	F18
24	2-6	1.00	17.00	-1.59	8.00	-7.59	13.00	4.08	240	F19
25	2-7	1.00	23.00	7.94	14.00	0.00	11.00	2.04	240	F20
26	2-8	1.00	23.00	7.94	9.00	-6.33	10.00	1.02	240	F21
27	2-9	1.00	22.00	6.35	17.00	3.80	11.00	2.04	240	F22
28	2-10	1.00	20.00	3.17	12.00	-2.53	7.00	-2.04	240	F23
29	2-11	1.00	16.00	1.59	8.00	-7.59	6.00	-3.06	240	F24
30	2-12	1.00	17.00	-1.59	11.00	-3.80	5.00	-4.08	240	F25
31	2-13	1.00	23.00	7.94	10.00	-5.06	13.00	4.08	240	F26
32	2-14	1.00	21.00	4.76	17.00	3.80	6.00	-3.06	240	F27
33	2-15	1.00	26.00	15.87	14.00	0.00	10.00	1.02	240	F28
34	2-16	1.00	22.00	6.35	9.00	-6.33	10.00	1.02	240	F29
35	2-17	1.00	17.00	-1.59	8.00	-7.59	9.00	0.00	240	F30
36	2-18	1.00	22.00	6.35	12.00	-2.53	11.00	2.04	240	F31
37	3-1	1.00	21.00	4.76	12.00	-2.53	9.00	0.00	240	F32
38	3-2	1.00	20.00	3.17	9.00	-6.33	13.00	4.08	240	F33
39	3-3	1.00	18.00	0.00	8.00	-7.59	4.00	-5.10	240	F34
40	3-4	1.00	17.00	-1.59	9.00	-6.33	13.00	4.08	240	F35
41	3-5	1.00	18.00	0.00	7.00	-8.86	21.00	12.24	240	F36
42	3-6	1.00	23.00	7.94	12.00	-2.53	7.00	-2.04	240	F37
43	3-7	1.00	20.00	3.17	9.00	-6.33	10.00	1.02	240	F38
44	3-8	1.00	21.00	4.76	7.00	-8.86	5.00	-4.08	240	F39
45	3-9	1.00	22.00	6.35	10.00	-5.06	7.00	-2.04	240	F40
46	3-10	1.00	13.00	-7.94	6.00	-10.13	13.00	4.08	240	F41
47	3-11	1.00	20.00	3.17	12.00	-2.53	11.00	2.04	240	F42
48	3-12	1.00	15.00	-4.76	9.00	-6.33	9.00	0.00	240	F43
49	3-13	1.00	17.00	-1.59	13.00	-1.27	12.00	3.06	240	F44
50	3-14	1.00	14.00	-6.35	4.00	-12.66	5.00	-4.08	240	F45

51	3-15	1.00	11.00	-11.11	14.00	0.00	9.00	0.00	240
52	3-16	1.00	27.00	14.29	15.00	1.27	4.00	-5.10	240
53	3-17	1.00	19.00	1.59	8.00	-7.59	14.00	5.10	240
54	3-18	1.00	12.00	-9.52	9.00	-6.33	9.00	0.00	240
55	4-1	1.00	18.00	0.00	11.00	-3.80	9.00	0.00	240
56	4-2	1.00	16.00	-3.17	8.00	-7.59	9.00	0.00	240
57	4-3	1.00	22.00	6.35	5.00	-11.39	10.00	1.02	240
58	4-4	1.00	21.00	4.76	14.00	0.00	6.00	-3.06	240
59	4-5	1.00	21.00	4.76	11.00	-3.80	9.00	0.00	240
60	4-6	1.00	14.00	-6.35	15.00	1.27	9.00	0.00	240
61	4-7	1.00	18.00	0.00	14.00	0.00	3.00	-1.02	240
62	4-8	1.00	15.00	-4.76	10.00	-5.06	12.00	3.06	240
63	4-9	1.00	13.00	-7.94	14.00	0.00	9.00	0.00	240
64	4-10	1.00	19.00	1.59	11.00	-3.80	16.00	7.14	240
65	4-11	1.00	14.00	-6.35	10.00	-5.06	5.00	-4.08	240
66	4-12	1.00	26.00	12.70	10.00	-5.06	9.00	0.00	240
67	4-13	1.00	31.00	20.63	9.00	-6.33	13.00	4.08	240
68	4-14	1.00	26.00	12.70	8.00	-7.59	10.00	1.02	240
69	4-15	1.00	27.00	14.29	16.00	2.53	5.00	-4.08	240
70	4-16	1.00	22.00	6.35	7.00	-8.86	8.00	-1.02	240
71	4-17	1.00	18.00	0.00	14.00	0.00	12.00	3.06	240
72	4-18	1.00	13.00	-7.94	11.00	-3.80	9.00	0.00	240
73	5-1	1.00	23.00	7.94	3.00	-13.92	8.00	-1.02	240
74	5-2	1.00	13.00	-7.94	8.00	-7.59	8.00	-1.02	240
75	5-3	1.00	21.00	4.76	18.00	5.06	8.00	-1.02	240
76	5-4	1.00	29.00	17.46	16.00	2.53	11.00	2.04	240
77	5-5	1.00	12.00	-9.52	7.00	-8.86	7.00	-2.04	240
78	5-6	1.00	19.00	1.59	7.00	-8.86	10.00	1.02	240
79	5-7	1.00	18.00	0.00	11.00	-3.80	11.00	2.04	240
80	5-8	1.00	19.00	1.59	8.00	-7.59	10.00	1.02	240
81	5-9	1.00	20.00	3.17	9.00	-6.33	10.00	1.02	240
82	5-10	1.00	23.00	7.94	18.00	5.06	7.00	-2.04	240
83	5-11	1.00	24.00	9.52	16.00	2.53	10.00	1.02	240
84	5-12	1.00	20.00	3.17	15.00	1.27	13.00	4.08	240
85	5-13	1.00	24.00	9.52	12.00	-2.53	7.00	-2.04	240
86	5-14	1.00	23.00	7.94	15.00	1.27	5.00	-4.08	240
87	5-15	1.00	21.00	4.76	11.00	-3.80	5.00	-4.08	240
88	5-16	1.00	22.00	6.35	14.00	0.00	5.00	-4.08	240
89	5-17	1.00	25.00	11.11	16.00	2.53	9.00	0.00	240
90	5-18	1.00	35.00	19.05	11.00	-3.80	10.00	1.02	240
91	6-1	1.00	27.00	14.29	13.00	-1.27	7.00	-2.04	240
92	6-2	1.00	17.00	-1.59	11.00	-3.80	7.00	-2.04	240
93	6-3	1.00	24.00	9.52	9.00	-6.33	11.00	2.04	240
94	6-4	1.00	20.00	3.17	4.00	-12.66	12.00	3.06	240
95	6-5	1.00	16.00	-3.17	7.00	-8.86	16.00	7.14	240
96	6-6	1.00	20.00	3.17	12.00	-2.53	14.00	5.10	240
97	6-7	1.00	22.00	6.35	12.00	-2.53	9.00	0.00	240
98	6-8	1.00	28.00	15.87	12.00	-2.53	9.00	0.00	240
99	6-9	1.00	21.00	4.76	16.00	2.53	9.00	0.00	240
100	6-10	1.00	20.00	3.17	12.00	-2.53	13.00	4.08	240
101	6-11	1.00	16.00	-3.17	12.00	-2.53	8.00	-1.02	240
102	6-12	1.00	26.00	12.70	14.00	0.00	9.00	0.00	240
103	6-13	1.00	19.00	1.59	12.00	-2.53	9.00	0.00	240
104	6-14	1.00	27.00	14.29	6.00	-10.13	9.00	0.00	240
105	6-15	1.00	25.00	11.11	14.00	0.00	19.00	10.20	240
106	6-16	1.00	9.00	-14.29	9.00	-6.33	13.00	4.08	240
107	6-17	1.00	24.00	9.52	9.00	-6.33	7.00	-2.04	240
108	6-18	1.00	16.00	-3.17	10.00	-5.06	4.00	-5.10	240
109	7-1	1.00	19.00	1.59	18.00	5.06	14.00	5.10	240
110	7-2	1.00	18.00	0.00	7.00	-8.86	11.00	2.04	240
111	7-3	1.00	18.00	0.00	11.00	-3.80	10.00	1.02	240
112	7-4	1.00	20.00	3.17	17.00	3.80	14.00	5.10	240
113	7-5	1.00	11.00	-11.11	15.00	1.27	8.00	-1.02	240
114	7-6	1.00	24.00	9.52	5.00	-11.39	13.00	4.08	240
115	7-7	1.00	20.00	3.17	8.00	-7.59	8.00	-1.02	240
116	7-8	1.00	19.00	1.59	15.00	1.27	9.00	0.00	240

117	7-9	1.00	22.00	6.35	19.00	6.33	10.00	1.02	240
118	7-10	1.00	15.00	-4.76	15.00	1.27	11.00	2.04	240
119	7-11	1.00	28.00	15.07	5.00	-11.39	16.00	7.14	240
120	7-12	1.00	18.00	0.00	17.00	3.80	10.00	1.02	240
121	7-13	1.00	30.00	9.05	12.00	-2.53	14.00	5.10	240
122	7-14	1.00	19.00	1.59	12.00	-2.53	10.00	1.02	240
123	7-15	1.00	14.00	-6.35	10.00	-5.06	6.00	-3.06	240
124	7-16	1.00	21.00	4.76	10.00	-5.06	11.00	2.04	240
125	7-17	1.00	17.00	-1.59	17.00	3.80	8.00	-1.02	240
126	7-18	1.00	22.00	6.35	6.00	-10.13	5.00	-4.08	240

Rm 240, Bldg 4, Final Survey

✓ Floors = F1 - F51

✓ Shelves = S1 - S5 ✓

Cabinets = Cb1a & b ✓

✓ Walls = w1 - w9

Cb2c

✓ Lights = L1 - L4

Cb3c

ceiling Vent = CV ✓

Cb4c

Cb5c

Doors = Dr1 (i) -

Cb6c

Dr1 (o) ✓

Cb7c

Dr2 (i) -

Cb8c

Dr2 (o) ✓

Cb9c

Sink ✓ ext.

Cb10 ✓

Benches & Drawers

✓ B1A

✓ B1B

✓ D1A - D1E

✓ B2

✓ B3

✓ D3A - D3E

✓ B4

✓ D4A - D4E

✓ B5

✓ D5A - D5E

✓ B6

✓ B7

✓ D7A - D7E

✓ B8

✓ B9

✓ B10

Jean Holland
12/24/96

Instrument Type: LS 6000
 Data Capture Date: 6 Jan 1997 16:51:11
 User Filename: A:\USER03\U0310601.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: HALLWAYS

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

3-H = 63%

			3H		14C		32P			
Sam	Rack	Time	CPM iso1	DPM	CPM iso2	DPM	CPM iso3	DPM	Rm No	Descrip
1	1-1	1.00	8686.00		39220.00		310.00			14C STD
2	1-2	1.00	62173.00		637.00		9.00			3H STD
3	1-3	1.00	20.00		17.00		16.00			BKG 1
4	1-4	1.00	18.00		12.00		7.00			BKG 2
5	1-5	1.00	20.00		8.00		14.00			BKG 3
6	1-6	1.00	67.00	76.19	17.00	5.06	4.00	-8.16	Ducts	V1A
7	1-7	1.00	59.00	63.49	15.00	2.53	7.00	-5.10	Ducts	V1B
8	1-8	1.00	37.00	28.57	16.00	3.80	8.00	-4.08	Ducts	V2A
9	1-9	1.00	40.00	33.33	12.00	-1.27	12.00	0.00	Ducts	V2B
10	1-10	1.00	48.00	46.03	11.00	-2.53	8.00	-4.08	Ducts	V3A
11	1-11	1.00	38.00	30.16	15.00	2.53	8.00	-4.08	Ducts	V3B
12	1-12	1.00	42.00	36.51	16.00	3.80	5.00	-7.14	Ducts	V4A
13	1-13	1.00	42.00	36.51	20.00	8.86	15.00	3.06	Ducts	V4B
14	1-14	1.00	31.00	19.05	14.00	1.27	7.00	-5.10	Ducts	V5A
15	1-15	1.00	18.00	-1.59	11.00	-2.53	12.00	0.00	Ducts	V5B
16	1-16	1.00	37.00	28.57	9.00	-5.06	13.00	1.02	Ducts	V6A
17	1-17	1.00	40.00	33.33	11.00	-2.53	8.00	-4.08	Ducts	V6B
18	1-18	1.00	49.00	47.62	5.00	-5.06	9.00	-3.06	Ducts	V7A
19	2-1	1.00	48.00	46.03	7.00	-7.59	11.00	-1.02	Ducts	V7B
20	2-2	1.00	60.00	65.08	16.00	3.80	13.00	1.02	Ducts	V8A
21	2-3	1.00	56.00	58.73	17.00	5.06	8.00	-4.08	Ducts	V8B
22	2-4	1.00	43.00	38.10	15.00	2.53	3.00	-9.18	Ducts	V9A
23	2-5	1.00	34.00	23.81	4.00	-11.39	14.00	2.04	Ducts	V9B
24	2-6	1.00	26.00	11.11	17.00	5.06	13.00	1.02	Ducts	V10A
25	2-7	1.00	29.00	15.87	10.00	-3.80	9.00	-3.06	Ducts	V10B
26	2-8	1.00	33.00	22.22	19.00	7.59	9.00	-3.06	Ducts	V11A
27	2-9	1.00	38.00	30.16	8.00	-6.33	12.00	0.00	Ducts	V11B
28	2-10	1.00	27.00	12.70	11.00	-2.53	7.00	-5.10	Ducts	V12A
29	2-11	1.00	26.00	11.11	13.00	0.00	10.00	-2.04	Ducts	V12B
30	2-12	1.00	35.00	25.40	28.00	18.99	16.00	4.08	Ducts	V13A
31	2-13	1.00	77.00	92.06	31.00	22.78	10.00	-2.04	Ducts	V13B
32	2-14	1.00	41.00	34.92	17.00	5.06	6.00	-6.12	Ducts	V14A
33	2-15	1.00	30.00	17.46	7.00	-7.59	6.00	-6.12	Ducts	V14B
34	2-16	1.00	30.00	17.46	14.00	1.27	9.00	-3.06	Ducts	V15A
35	2-17	1.00	33.00	22.22	14.00	1.27	17.00	5.10	Ducts	V15B
36	2-18	1.00	27.00	12.70	11.00	-2.53	10.00	-2.04	HALL	F1-1A
37	3-1	1.00	20.00	1.59	5.00	-10.13	16.00	4.08	HALL	F1-1B
38	3-2	1.00	18.00	-1.59	13.00	0.00	9.00	-3.06	HALL	F1-2A
39	3-3	1.00	31.00	19.05	6.00	-8.86	12.00	0.00	HALL	F1-2B
40	3-4	1.00	25.00	9.52	9.00	-5.06	6.00	-6.12	HALL	F1-3A
41	3-5	1.00	11.00	-12.70	12.00	-1.27	11.00	-1.02	HALL	F1-3B
42	3-6	1.00	22.00	4.76	18.00	6.33	13.00	1.02	HALL	F1-4A
43	3-7	1.00	25.00	9.52	7.00	-7.59	4.00	-8.16	HALL	F1-4B
44	3-8	1.00	27.00	12.70	8.00	-6.33	12.00	0.00	HALL	F1-5A
45	3-9	1.00	25.00	9.52	13.00	0.00	10.00	-2.04	HALL	F1-5B
46	3-10	1.00	29.00	15.87	12.00	-1.27	8.00	-4.08	HALL	F1-6A
47	3-11	1.00	25.00	9.52	9.00	-5.06	13.00	1.02	HALL	F1-6B
48	3-12	1.00	29.00	15.87	11.00	-2.53	14.00	2.04	HALL	F1-7A
49	3-13	1.00	26.00	11.11	5.00	-10.13	11.00	-1.02	HALL	F1-7B
50	3-14	1.00	27.00	12.70	9.00	-5.06	11.00	-1.02	HALL	F1-8A

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51	3-15	1.00	36.00	26.98	9.00	-5.06	13.00	1.02	HALL	F1-8B
52	3-16	1.00	27.00	12.70	12.00	-1.27	15.00	3.06	HALL	F1-9A
53	3-17	1.00	31.00	19.05	11.00	-2.53	8.00	-4.08	HALL	F1-9B
54	3-18	1.00	23.00	6.35	10.00	-3.80	8.00	-4.08	HALL	F1-10A
55	4-1	1.00	13.00	-9.52	17.00	5.06	9.00	-3.06	HALL	F1-10B
56	4-2	1.00	24.00	7.94	10.00	-3.80	7.00	-5.10	HALL	F1-11A
57	4-3	1.00	19.00	0.00	9.00	-5.06	8.00	-4.08	HALL	F1-11B
58	4-4	1.00	28.00	14.29	15.00	2.53	6.00	-6.12	HALL	F1-12A
59	4-5	1.00	23.00	6.35	10.00	-3.80	14.00	2.04	HALL	F1-12B
60	4-6	1.00	20.00	1.59	7.00	-7.59	9.00	-3.06	HALL	F1-13A
61	4-7	1.00	22.00	4.76	12.00	-1.27	12.00	0.00	HALL	F1-13B
62	4-8	1.00	19.00	0.00	6.00	-8.86	8.00	-4.08	HALL	F1-14A
63	4-9	1.00	21.00	3.17	14.00	1.27	9.00	-3.06	HALL	F1-14B
64	4-10	1.00	23.00	6.35	16.00	3.80	15.00	3.06	HALL	F1-15A
65	4-11	1.00	22.00	4.76	9.00	-5.06	8.00	-4.08	HALL	F1-15B
66	4-12	1.00	33.00	22.22	9.00	-5.06	9.00	-3.06	HALL	F1-16A
67	4-13	1.00	17.00	-3.17	15.00	2.53	9.00	-3.06	HALL	F1-16B
68	4-14	1.00	21.00	3.17	8.00	-6.33	9.00	-3.06	HALL	F1-17A
69	4-15	1.00	23.00	6.35	13.00	0.00	14.00	2.04	HALL	F1-17B
70	4-16	1.00	19.00	0.00	16.00	3.80	10.00	-2.04	HALL	F1-18A
71	4-17	1.00	19.00	0.00	12.00	-1.27	14.00	2.04	HALL	F1-18B
72	4-18	1.00	25.00	9.52	11.00	-2.53	6.00	-6.12	HALL	F1-19A
73	5-1	1.00	15.00	-6.35	11.00	-2.53	10.00	-2.04	HALL	F1-19B
74	5-2	1.00	30.00	17.46	14.00	1.27	6.00	-6.12	HALL	F1-20A
75	5-3	1.00	15.00	-6.35	8.00	-6.33	5.00	-7.14	HALL	F1-20B
76	5-4	1.00	28.00	14.29	8.00	-6.33	6.00	-6.12	HALL	F1-21A
77	5-5	1.00	13.00	-9.52	12.00	-1.27	11.00	-1.02	HALL	F1-21B
78	5-6	1.00	18.00	-1.59	7.00	-7.59	14.00	2.04	HALL	F1-22A
79	5-7	1.00	21.00	3.17	13.00	0.00	12.00	0.00	HALL	F1-22B
80	5-8	1.00	22.00	4.76	12.00	-1.27	18.00	6.12	HALL	F1-23A
81	5-9	1.00	29.00	15.87	11.00	-2.53	10.00	-2.04	HALL	F1-23B
82	5-10	1.00	22.00	4.76	8.00	-6.33	15.00	3.06	HALL	F1-24A
83	5-11	1.00	25.00	9.52	9.00	-5.06	7.00	-5.10	HALL	F1-24B
84	5-12	1.00	18.00	-1.59	13.00	0.00	12.00	0.00	HALL	F1-25A
85	5-13	1.00	19.00	0.00	9.00	-5.06	6.00	-6.12	HALL	F1-25B
86	5-14	1.00	19.00	0.00	14.00	1.27	11.00	-1.02	HALL	F1-26A
87	5-15	1.00	23.00	6.35	8.00	-6.33	10.00	-2.04	HALL	F1-26B
88	5-16	1.00	16.00	-6.35	7.00	-7.59	12.00	0.00	HALL	F1-27A
89	5-17	1.00	23.00	6.35	12.00	-1.27	12.00	0.00	HALL	F1-27B
90	5-18	1.00	26.00	11.11	7.00	-7.59	9.00	-3.06	HALL	F1-28A
91	6-1	1.00	17.00	-3.17	12.00	-1.27	11.00	-1.02	HALL	F1-28B
92	6-2	1.00	21.00	3.17	10.00	-3.80	12.00	0.00	HALL	F1-29A
93	6-3	1.00	19.00	0.00	11.00	-2.53	13.00	1.02	HALL	F1-29B
94	6-4	1.00	19.00	0.00	14.00	1.27	6.00	-6.12	HALL	F1-30A
95	6-5	1.00	25.00	9.52	18.00	6.33	12.00	0.00	HALL	F1-30B
96	6-6	1.00	32.00	20.63	10.00	-3.80	6.00	-6.12	HALL	F1-31A
97	6-7	1.00	29.00	15.87	8.00	-6.33	13.00	1.02	HALL	F1-31B
98	6-8	1.00	34.00	23.81	8.00	-6.33	12.00	0.00	HALL	F1-32A
99	6-9	1.00	24.00	7.94	9.00	-5.06	8.00	-4.08	HALL	F1-32B
100	6-10	1.00	24.00	7.94	11.00	-2.53	9.00	-3.06	HALL	F1-33A
101	6-11	1.00	15.00	-6.35	6.00	-8.86	6.00	-6.12	HALL	F1-33B
102	6-12	1.00	18.00	-1.59	10.00	-3.80	10.00	-2.04	HALL	F1-34A
103	6-13	1.00	21.00	3.17	8.00	-6.33	9.00	-3.06	HALL	F1-34B
104	6-14	1.00	36.00	26.98	15.00	2.53	4.00	-8.16	HALL	F1-35A
105	6-15	1.00	23.00	6.35	19.00	7.59	18.00	6.12	HALL	F1-35B
106	6-16	1.00	27.00	12.70	8.00	-6.33	9.00	-3.06	HALL	F1-36A
107	6-17	1.00	26.00	11.11	12.00	-1.27	10.00	-2.04	HALL	F1-36B
108	6-18	1.00	20.00	1.59	14.00	1.27	14.00	2.04	HALL	F1-37A
109	7-1	1.00	31.00	19.05	12.00	-1.27	5.00	-7.14	HALL	F1-37B
110	7-2	1.00	27.00	12.70	4.00	-11.39	8.00	-4.08	HALL	F1-38A
111	7-3	1.00	36.00	26.98	8.00	-6.33	11.00	-1.02	HALL	F1-38B
112	7-4	1.00	28.00	14.29	12.00	-1.27	11.00	-1.02	HALL	F1-39A
113	7-5	1.00	27.00	12.70	10.00	-3.80	11.00	-1.02	HALL	F1-39B
114	7-6	1.00	25.00	9.52	10.00	-3.80	7.00	-5.10	HALL	F1-40A
115	7-7	1.00	44.00	39.68	6.00	-8.86	11.00	-1.02	HALL	F1-40B
116	7-8	1.00	37.00	28.57	15.00	2.53	7.00	-5.10	HALL	F1-41A

117	7-9	1.00	25.00	9.52	11.00	-2.53	11.00	-1.02	HALL	F1-41B
118	7-10	1.00	30.00	17.46	17.00	5.06	9.00	-3.06	HALL	F1-42A
119	7-11	1.00	22.00	4.76	15.00	2.53	10.00	-2.04	HALL	F1-42B
120	7-12	1.00	29.00	15.87	8.00	-6.33	6.00	-6.12	HALL	F1-43A
121	7-13	1.00	16.00	-4.76	14.00	1.27	11.00	-1.02	HALL	F1-43B
122	7-14	1.00	21.00	3.17	8.00	-6.33	14.00	2.04	HALL	Closet
123	7-15	1.00	22.00	4.76	9.00	-5.06	10.00	-2.04	HALL	1W1
124	7-16	1.00	16.00	-4.76	15.00	2.53	9.00	-3.06	HALL	1W2
125	7-17	1.00	17.00	-3.17	8.00	-6.33	13.00	1.02	HALL	1W3
126	7-18	1.00	29.00	15.87	9.00	-5.06	13.00	1.02	HALL	1W4
127	8-1	1.00	25.00	9.52	11.00	-2.53	13.00	1.02	HALL	1W5
128	8-2	1.00	25.00	9.52	15.00	2.53	10.00	-2.04	HALL	1W6
129	8-3	1.00	29.00	15.87	12.00	-1.27	11.00	-1.02	HALL	1W7
130	8-4	1.00	13.00	-9.52	12.00	-1.27	7.00	-5.10	HALL	1W8
131	8-5	1.00	18.00	-1.59	12.00	-1.27	17.00	5.10	HALL	1W9
132	8-6	1.00	24.00	7.94	3.00	-12.66	7.00	-5.10	HALL	1W10
133	8-7	1.00	27.00	12.70	9.00	-5.06	5.00	-7.14	HALL	1W11
134	8-8	1.00	25.00	9.52	6.00	-8.86	12.00	0.00	HALL	1W12
135	8-9	1.00	25.00	9.52	8.00	-6.33	5.00	-7.14	HALL	1W13
136	8-10	1.00	29.00	15.87	8.00	-6.33	12.00	0.00	HALL	1W14
137	8-11	1.00	24.00	7.94	9.00	-5.06	9.00	-3.06	HALL	1W15
138	8-12	0	23.00	6.35	7.00	-7.59	8.00	-4.08	HALL	1W16
139	8-13	0	27.00	12.70	18.00	6.33	8.00	-4.08	HALL	1W17
140	8-14	1.00	23.00	6.35	16.00	3.80	9.00	-3.06	HALL	1W18
141	8-15	1.00	38.00	30.16	8.00	-6.33	8.00	-4.08	HALL	1W19
142	8-16	1.00	38.00	30.16	9.00	-5.06	11.00	-1.02	HALL	1W20
143	8-17	1.00	51.00	50.79	12.00	-1.27	12.00	0.00	HALL	1W21
144	8-18	1.00	39.00	31.75	10.00	-3.80	6.00	-6.12	HALL	1W22
145	9-1	1.00	38.00	30.16	12.00	-1.27	7.00	-5.10	HALL	1W23
146	9-2	1.00	48.00	46.03	15.00	2.53	8.00	-4.08	HALL	1W24
147	9-3	1.00	50.00	49.21	13.00	0.00	15.00	3.06	HALL	1W25
148	9-4	1.00	32.00	20.63	15.00	2.53	7.00	-5.10	HALL	1W26
149	9-5	1.00	39.00	31.75	5.00	-10.13	9.00	-3.06	HALL	1W27
150	9-6	1.00	32.00	20.63	12.00	-1.27	12.00	0.00	HALL	1W28
151	9-7	1.00	28.00	14.29	11.00	-2.53	14.00	2.04	HALL	1W29
152	9-8	1.00	37.00	28.57	9.00	-5.06	11.00	-1.02	HALL	1W30
153	9-9	1.00	38.00	30.16	11.00	-2.53	13.00	1.02	HALL	1W31
154	9-10	1.00	30.00	17.46	17.00	5.06	10.00	-2.04	HALL	1W32
155	9-11	1.00	20.00	1.59	8.00	-6.33	11.00	-1.02	HALL	1W33
156	9-12	1.00	26.00	11.11	10.00	-3.80	9.00	-3.06	HALL	1W34
157	9-13	1.00	32.00	20.63	10.00	-3.80	7.00	-5.10	HALL	1W35
158	9-14	1.00	23.00	6.35	9.00	-5.06	7.00	-5.10	HALL	1W36
159	9-15	1.00	18.00	-1.59	12.00	-1.27	11.00	-1.02	HALL	1W37
160	9-16	1.00	25.00	9.52	10.00	-3.80	6.00	-6.12	HALL	1W38
161	9-17	1.00	24.00	7.94	11.00	-2.53	9.00	-3.06	HALL	1W39
162	9-18	1.00	24.00	7.94	12.00	-1.27	15.00	3.06	HALL	1W40
163	10-1	1.00	19.00	0.00	11.00	-2.53	11.00	-1.02	HALL	1W41
164	10-2	1.00	21.00	3.17	10.00	-3.80	14.00	2.04	HALL	1W42
165	10-3	1.00	23.00	6.35	4.00	-11.39	10.00	-2.04	HALL	1W43
166	10-4	1.00	24.00	7.94	7.00	-7.59	7.00	-5.10	HALL	1W44
167	10-5	1.00	29.00	15.87	12.00	-1.27	9.00	-3.06	HALL	Ramp
168	10-6	1.00	20.00	1.59	13.00	0.00	9.00	-3.06	HALL	C101Do
169	10-7	1.00	23.00	6.35	7.00	-7.59	12.00	0.00	HALL	C101Di
170	10-8	1.00	20.00	1.59	10.00	-3.80	8.00	-4.08	HALL	C101F1
171	10-9	1.00	24.00	7.94	9.00	-5.06	12.00	0.00	HALL	C101F2
172	10-10	1.00	29.00	15.87	5.00	-10.13	7.00	-5.10	HALL	C101W1
173	10-11	1.00	28.00	14.29	15.00	2.53	10.00	-2.04	HALL	C101W2
174	10-12	1.00	33.00	22.22	17.00	5.0	10.00	-2.04	HALL	C101W3
175	10-13	1.00	47.00	44.44	16.00	3.80	12.00	0.00	HALL	C101W4
176	10-14	1.00	31.00	19.05	13.00	0.00	15.00	3.06	HALL	C101W5
177	10-15	1.00	35.00	25.40	5.00	-10.13	14.00	2.04	HALL	C101W6
178	10-16	1.00	29.00	15.87	16.00	3.80	10.00	-2.04	HALL	C101W7
179	10-17	1.00	29.00	15.87	7.00	-7.59	9.00	-3.06	HALL	C101W8
180	10-18	1.00	22.00	4.76	10.00	-3.80	10.00	-2.04	HALL	C101S1
181	11-1	1.00	34.00	23.81	12.00	-1.27	10.00	-2.04	HALL	C101S2
182	11-2	1.00	25.00	9.52	14.00	1.27	12.00	0.00	HALL	C101S3

183	11-3	1.00	39.00	31.75	14.00	1.27	10.00	-2.04	HALL	C101S4
184	11-4	1.00	27.00	12.70	8.00	-6.33	10.00	-2.04	HALL	C101S5
185	11-5	1.00	16.00	-4.76	17.00	5.06	11.00	-1.02	HALL	C101S6
186	11-6	1.00	24.00	7.94	14.00	1.27	8.00	-4.08	HALL	C101S7
187	11-7	1.00	26.00	11.11	7.00	-7.59	7.00	-5.10	HALL	C101S8
188	11-8	1.00	31.00	19.05	11.00	-2.53	7.00	-5.10	HALL	C101S9
189	11-9	1.00	20.00	1.59	7.00	-7.59	12.00	0.00	HALL	C101S10
190	11-10	1.00	24.00	7.94	4.00	-11.39	7.00	-5.10	HALL	2F1
191	11-11	1.00	21.00	3.17	8.00	-6.33	8.00	-4.08	HALL	2F2
192	11-12	1.00	26.00	11.11	14.00	1.27	11.00	-1.02	HALL	2F3
193	11-13	1.00	15.00	-6.35	11.00	-2.53	9.00	-3.06	HALL	2F4
194	11-14	1.00	20.00	1.59	8.00	-6.33	6.00	-6.12	HALL	2F5
195	11-15	1.00	19.00	0.00	14.00	1.27	8.00	-4.08	HALL	2F6
196	11-16	1.00	14.00	-7.94	9.00	-5.06	12.00	0.00	HALL	2F7
197	11-17	1.00	21.00	3.17	7.00	-7.59	11.00	-1.02	HALL	2F8
198	11-18	1.00	21.00	3.17	10.00	-3.80	11.00	-1.02	HALL	2F9
199	12-1	1.00	21.00	3.17	10.00	-3.80	8.00	-4.08	HALL	2F10
200	12-2	1.00	22.00	4.76	15.00	2.53	11.00	-1.02	HALL	2F11
201	12-3	1.00	22.00	4.76	12.00	-1.27	11.00	-1.02	HALL	2F12
202	12-4	1.00	21.00	3.17	11.00	-2.53	7.00	-5.10	HALL	2F13
203	12-5	1.00	22.00	4.76	11.00	-2.53	4.00	-8.16	HALL	2F14
204	12-6	1.00	24.00	7.94	10.00	-3.80	13.00	1.02	HALL	2F15
205	12-7	1.00	27.00	12.70	5.00	-10.13	12.00	0.00	HALL	2F16
206	12-8	1.00	22.00	4.76	19.00	7.59	9.00	-3.06	HALL	2F17
207	12-9	1.00	12.00	-11.11	9.00	-5.06	11.00	-1.02	HALL	2F18
208	12-10	1.00	24.00	7.94	1.00	-3.80	12.00	0.00	HALL	2F19
209	12-11	1.00	23.00	6.35	12.00	-1.27	14.00	2.04	HALL	2F20
210	12-12	1.00	20.00	1.59	6.00	-8.86	6.00	-6.12	HALL	2F21
211	12-13	1.00	28.00	14.29	15.00	2.53	9.00	-3.06	HALL	2F22
212	12-14	1.00	24.00	7.94	15.00	2.53	6.00	-6.12	HALL	2F23
213	12-15	1.00	28.00	14.29	13.00	0.00	10.00	-2.04	HALL	2F24
214	12-16	1.00	20.00	1.59	8.00	-6.33	9.00	-3.06	HALL	2F25
215	12-17	1.00	22.00	4.76	9.00	-5.06	13.00	1.02	HALL	2F26
216	12-18	1.00	26.00	11.11	9.00	-5.06	14.00	2.04	HALL	2F27
217	13-1	1.00	22.00	4.76	11.00	-2.53	11.00	-1.02	HALL	2F28
218	13-2	1.00	16.00	-4.76	14.00	1.27	10.00	-2.04	HALL	2F29
219	13-3	1.00	19.00	0.00	8.00	-6.33	11.00	-1.02	HALL	2F30
220	13-4	1.00	26.00	11.11	11.00	-2.53	14.00	2.04	HALL	2F31
221	13-5	1.00	17.00	-3.17	12.00	-1.27	12.00	0.00	HALL	2F32
222	13-6	1.00	21.00	3.17	9.00	-5.06	12.00	0.00	HALL	2F33
223	13-7	1.00	16.00	-4.76	10.00	-3.80	13.00	1.02	HALL	2F34
224	13-8	1.00	17.00	-3.17	14.00	1.27	13.00	1.02	HALL	2F35
225	13-9	1.00	23.00	6.35	19.00	7.59	9.00	-3.06	HALL	2F36
226	13-10	1.00	18.00	-1.59	9.00	-5.06	9.00	-3.06	HALL	2F37
227	13-11	1.00	24.00	7.94	7.00	-7.59	8.00	-4.08	HALL	2F38
228	13-12	1.00	24.00	7.94	5.00	-10.13	9.00	-3.06	HALL	2F39
229	13-13	1.00	16.00	-4.76	12.00	-1.27	6.00	-6.12	HALL	2F40
230	13-14	1.00	9.00	0.00	9.00	-5.06	10.00	-2.04	HALL	2F41
231	13-15	1.00	19.00	0.00	11.00	-2.53	12.00	0.00	HALL	2F42
232	13-16	1.00	25.00	9.52	8.00	-6.33	8.00	-4.08	HALL	2F43
233	13-17	1.00	13.00	-9.52	13.00	0.00	12.00	0.00	HALL	2F44
234	13-18	1.00	27.00	12.70	17.00	5.06	8.00	-4.08	HALL	2F45
235	14-1	1.00	16.00	-4.76	4.00	-11.39	10.00	-2.04	HALL	2F46
236	14-2	1.00	21.00	3.17	14.00	1.27	12.00	0.00	HALL	2F47
237	14-3	1.00	30.00	17.46	7.00	-7.59	13.00	1.02	HALL	2F48
238	14-4	1.00	9.00	-15.87	13.00	0.00	5.00	-7.14	HALL	2F49
239	14-5	1.00	15.00	-6.35	16.00	3.80	2.00	-10.20	HALL	2F50
240	14-6	1.00	22.00	4.76	16.00	3.80	9.00	-3.06	HALL	2F51
241	14-7	1.00	14.00	-7.94	19.00	7.59	9.00	-3.06	HALL	2F52
242	14-8	1.00	18.00	-1.59	8.00	-6.33	10.00	-2.04	HALL	2F53
243	14-9	1.00	26.00	11.11	15.00	2.53	10.00	-2.04	HALL	2F54
244	14-10	1.00	28.00	14.29	17.00	5.06	9.00	-3.06	HALL	2F55
245	14-11	1.00	20.00	1.59	16.00	3.80	7.00	-5.10	HALL	2F56
246	14-12	1.00	31.00	19.05	9.00	-5.06	15.00	3.06	HALL	2F57
247	14-13	1.00	12.00	-11.11	7.00	-7.59	10.00	-2.04	HALL	2F58
248	14-14	1.00	23.00	6.35	13.00	0.00	11.00	-1.02	HALL	2F59

249	14-15	1.00	20.00	1.59	8.00	-6.33	6.00	-6.12	HALL	2F60
250	14-16	1.00	20.00	1.59	18.00	6.33	13.00	1.02	HALL	2F61
251	14-17	1.00	15.00	-6.35	10.00	-3.80	9.00	-3.06	HALL	2F62
252	14-18	1.00	15.00	-6.35	10.00	-3.80	12.00	0.00	HALL	2F63
253	15-1	1.00	25.00	9.52	13.00	0.00	11.00	-1.02	HALL	2F64
254	15-2	1.00	15.00	-6.35	16.00	3.80	13.00	1.02	HALL	2F65
255	15-3	1.00	21.00	3.17	14.00	1.27	13.00	1.02	HALL	2F66
256	15-4	1.00	18.00	-1.59	15.00	2.53	13.00	1.02	HALL	2F67
257	15-5	1.00	24.00	7.94	16.00	3.80	6.00	-6.12	HALL	2F68
258	15-6	1.00	29.00	15.87	15.00	2.53	5.00	-7.14	HALL	2F69
259	15-7	1.00	37.00	28.57	9.00	-5.06	12.00	0.00	HALL	2F70
260	15-8	1.00	21.00	3.17	5.00	-10.13	4.00	-8.16	HALL	2F71
261	15-9	1.00	21.00	3.17	5.00	-10.13	6.00	-6.12	HALL	2F72
262	15-10	1.00	24.00	7.94	9.00	-5.06	11.00	-1.02	HALL	2F73
263	15-11	1.00	26.00	11.11	7.00	-7.59	7.00	-5.10	HALL	2F74
264	15-12	1.00	19.00	0.00	11.00	-2.53	9.00	-3.06	HALL	2F75
265	15-13	1.00	14.00	-7.94	14.00	1.27	10.00	-2.04	HALL	2W1
266	15-14	1.00	15.00	-6.35	7.00	-7.59	8.00	-4.08	HALL	2W2
267	15-15	1.00	22.00	4.76	12.00	-1.27	10.00	-2.04	HALL	2W3
268	15-16	1.00	16.00	-4.76	16.00	3.80	5.00	-7.14	HALL	2W4
269	15-17	1.00	27.00	12.70	14.00	1.27	14.00	2.04	HALL	2W5
270	15-18	1.00	15.00	-6.35	13.00	0.00	10.00	-2.04	HALL	2W6
271	16-1	1.00	12.00	-11.11	14.00	1.27	11.00	-1.02	HALL	2W
272	16-2	1.00	14.00	-7.94	11.00	-2.53	16.00	4.08	HALL	2W8
273	16-3	1.00	30.00	17.46	6.00	-8.86	12.00	0.00	HALL	2W9
274	16-4	1.00	23.00	6.35	11.00	-2.53	14.00	2.04	HALL	2W10
275	16-5	1.00	19.00	0.00	15.00	2.53	13.00	1.02	HALL	2W11
276	16-6	1.00	22.00	4.76	14.00	1.27	7.00	-5.10	HALL	2W12
277	16-7	1.00	15.00	-6.35	11.00	-2.53	12.00	0.00	HALL	2W13
278	16-8	1.00	20.00	1.59	2.00	-13.92	9.00	-3.06	HALL	2W14
279	16-9	1.00	22.00	4.76	8.00	-6.33	15.00	3.06	HALL	2W15
280	16-10	1.00	18.00	-1.59	14.00	1.27	9.00	-3.06	HALL	2W16
281	16-11	1.00	19.00	0.00	14.00	1.27	9.00	-3.06	HALL	2W17
282	16-12	1.00	22.00	4.76	9.00	-5.06	7.00	-5.10	HALL	2W18
283	16-13	1.00	17.00	-3.17	10.00	-3.80	6.00	-6.12	HALL	2W19
284	16-14	1.00	27.00	12.70	9.00	-5.06	16.00	4.08	HALL	2W20
285	16-15	1.00	18.00	-1.59	12.00	-1.27	8.00	-4.08	HALL	2W21
286	16-16	1.00	18.00	-1.59	10.00	-3.80	9.00	-3.06	HALL	2W22
287	16-17	1.00	13.00	-9.52	10.00	-3.80	14.00	2.04	HALL	2W23
288	16-18	1.00	22.00	4.76	11.00	-2.53	17.00	5.10	HALL	2W24
289	17-1	1.00	21.00	3.17	14.00	1.27	12.00	0.00	HALL	2W25
290	17-2	1.00	22.00	4.76	12.00	-1.27	8.00	-4.08	HALL	2W26
291	17-3	1.00	12.00	-11.11	14.00	1.27	10.00	-2.04	HALL	2W27
292	17-4	1.00	20.00	1.59	14.00	1.27	10.00	-2.04	HALL	2W28
293	17-5	1.00	23.00	6.35	12.00	-1.27	10.00	-2.04	HALL	2W29
294	17-6	1.00	21.00	3.17	11.00	-2.53	9.00	-3.06	HALL	2W30
295	17-7	1.00	22.00	4.76	14.00	1.27	9.00	-3.06	HALL	2W31
296	17-8	1.00	15.00	-6.35	10.00	-3.80	11.00	-1.02	HALL	2W32
297	17-9	1.00	24.00	7.94	10.00	-3.80	11.00	-1.02	HALL	2W33
298	17-10	1.00	19.00	0.00	7.00	-7.59	7.00	-5.10	HALL	2W34
299	17-11	1.00	16.00	-4.76	7.00	-7.59	8.00	-4.08	HALL	2W35

Building 4, Lab Decomm, Final Survey

Exhaust Ducts (Extensor)

VIA, B through V15 A, B

First Floor Hallway

1A, B through 43A, B ; closet

First Floor Walls (Hallway)

W1 through W44

First Floor Walk-In Closet

Ramp

Door (outside) - D out

Door (inside) - D in

Floor - F1 & F2

Walls - W1 - W8

Shelves - S1 - S10

2nd Floor Hallway

F1 - F75

2nd Floor Walls (Hallway)

W1 - W35

Total Sample = $150 + 144 = 294$

Steve Holland
1/6/96

Final Survey, Exhaust Ducts, Bldg 4

1/3/97

South Side

2nd Floor:

V1A,B

V2A,B

1st Floor:

V3 A,B

V4 A,B

V5

V6

North Side

2nd Floor:

V7 A,B

V8

V9

V10

V11

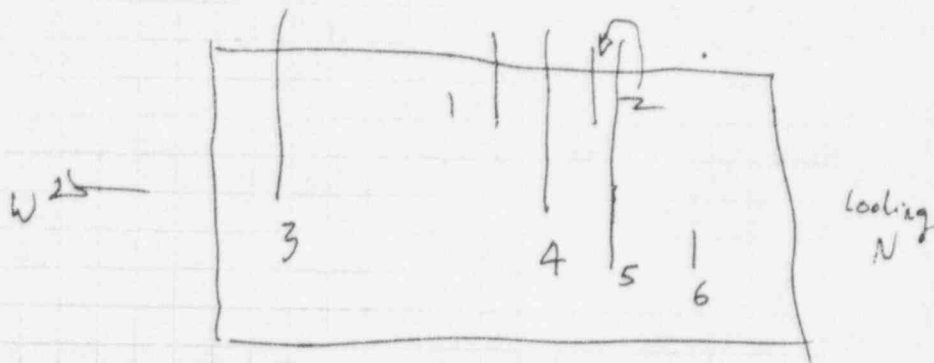
V12

1st Floor

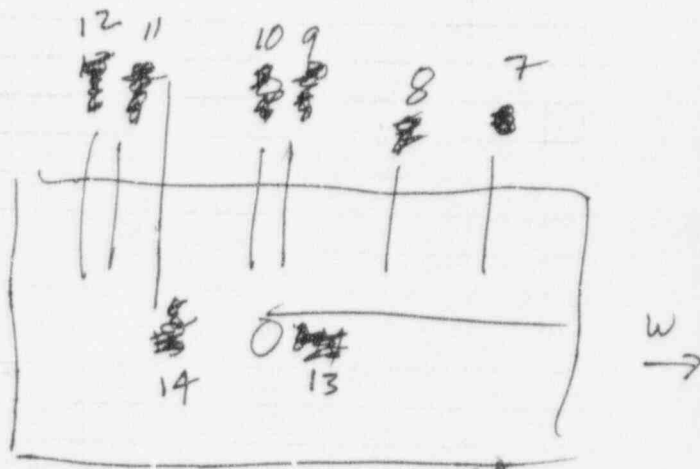
V13 ~~TH~~ A,B

V14 ~~TH~~ A,B

Roof



Ducting in 2nd floor Hallway: ~~V15~~ A & B



Two samples (A & B) taken @ each elbow.

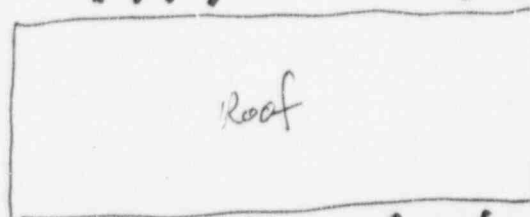
(TH)

Wore North 1/2-F APR w/ HEPA/OVC CC; safety glasses; lab coat; latex gloves.

(TH)

5R 2R 4R 1R

3R



1st Floor Millway Bldg - 2nd Floor

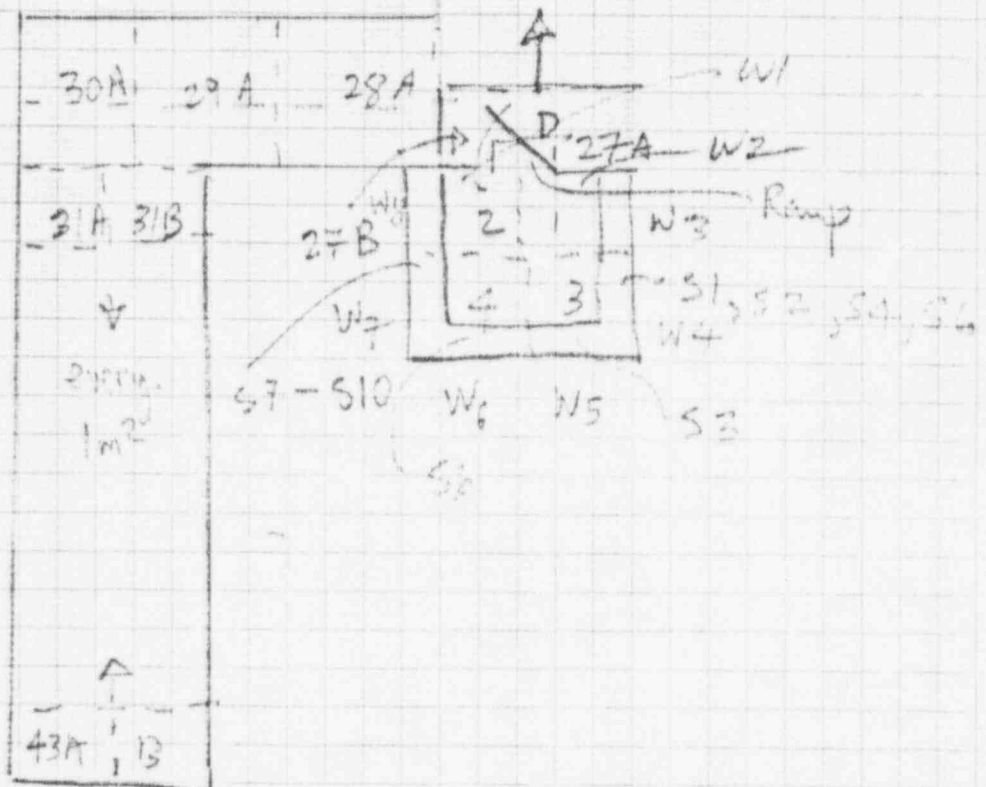
W
↑

B 1A
↓
every
1 m²

X & B scans were
equivalent to background.

Handwritten signature

→ N



Final Survey, 2nd Floor Hallways - Building 4

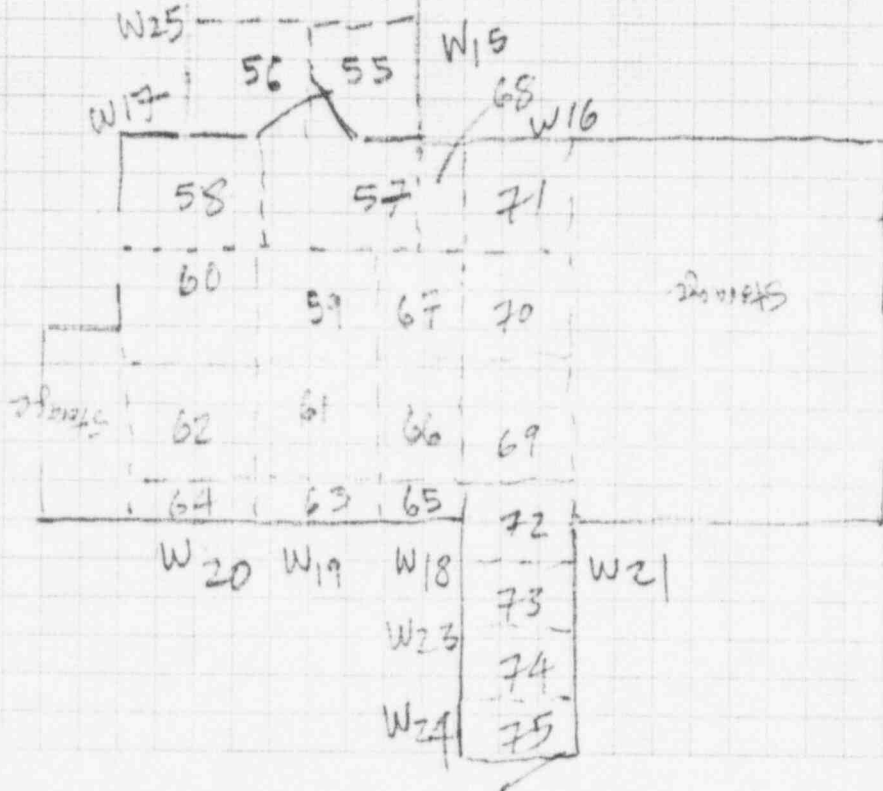
W35 W1
F2 F1

Y
even
with

χ^2 & β scans were
equivalent to background,
(7)

↑

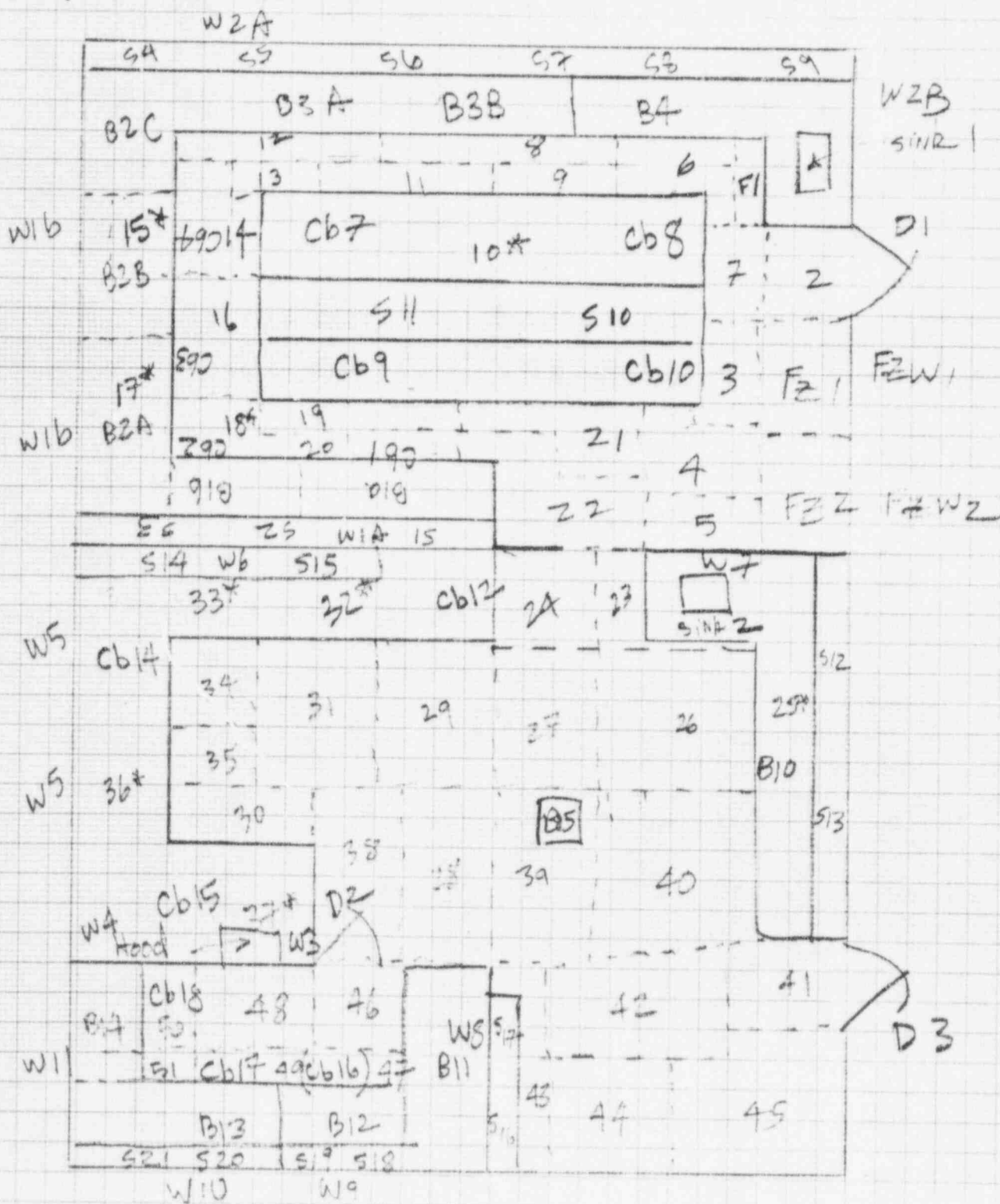
Shirley Holland



↓
W

Rms 250/251, Bldg A, Final Survey

N



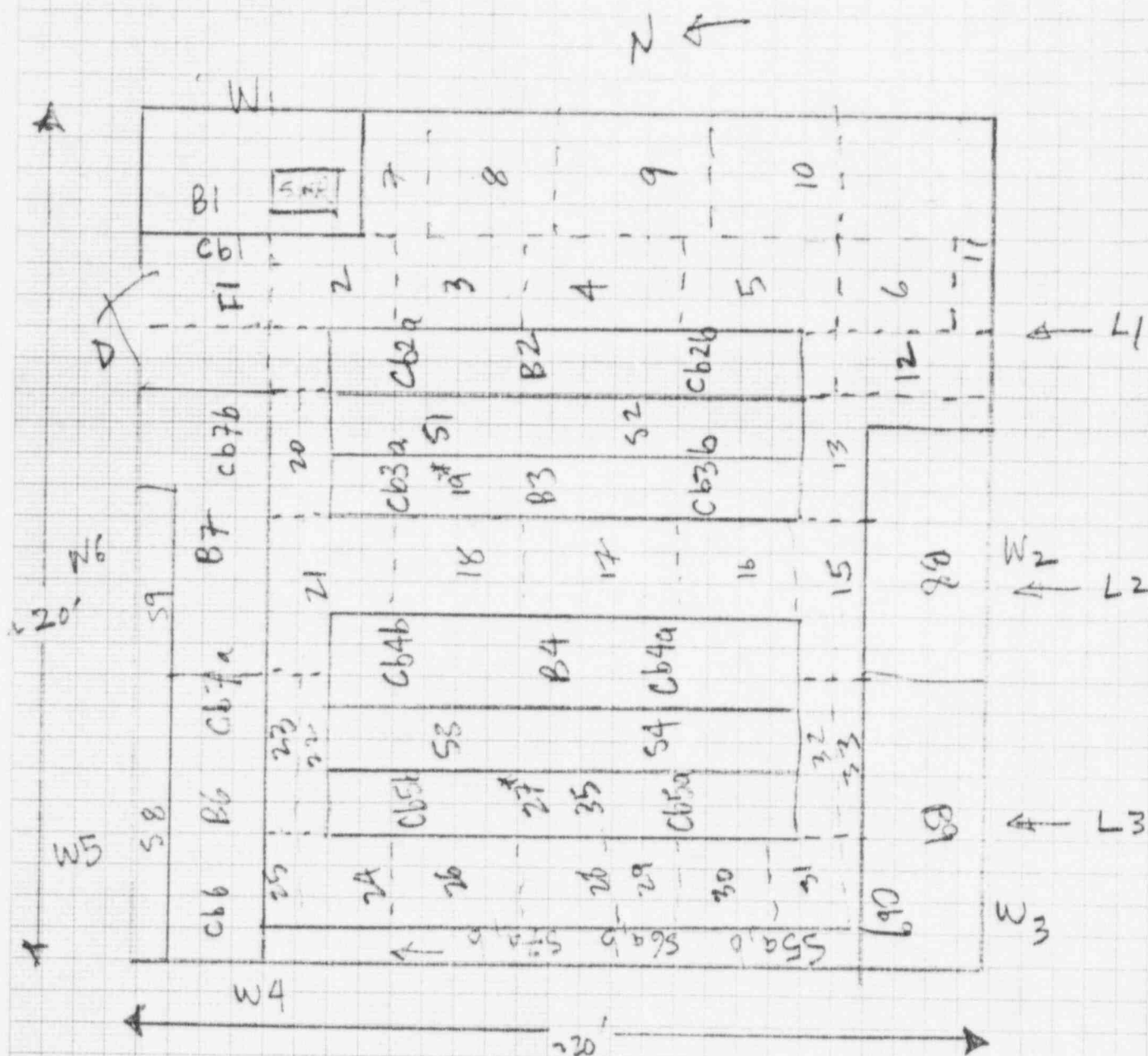
* Underneath counter

[Signature]

X & P scans were equivalent to background level
Not to scale

TH

Rm 249; Bldg 4; Final Survey

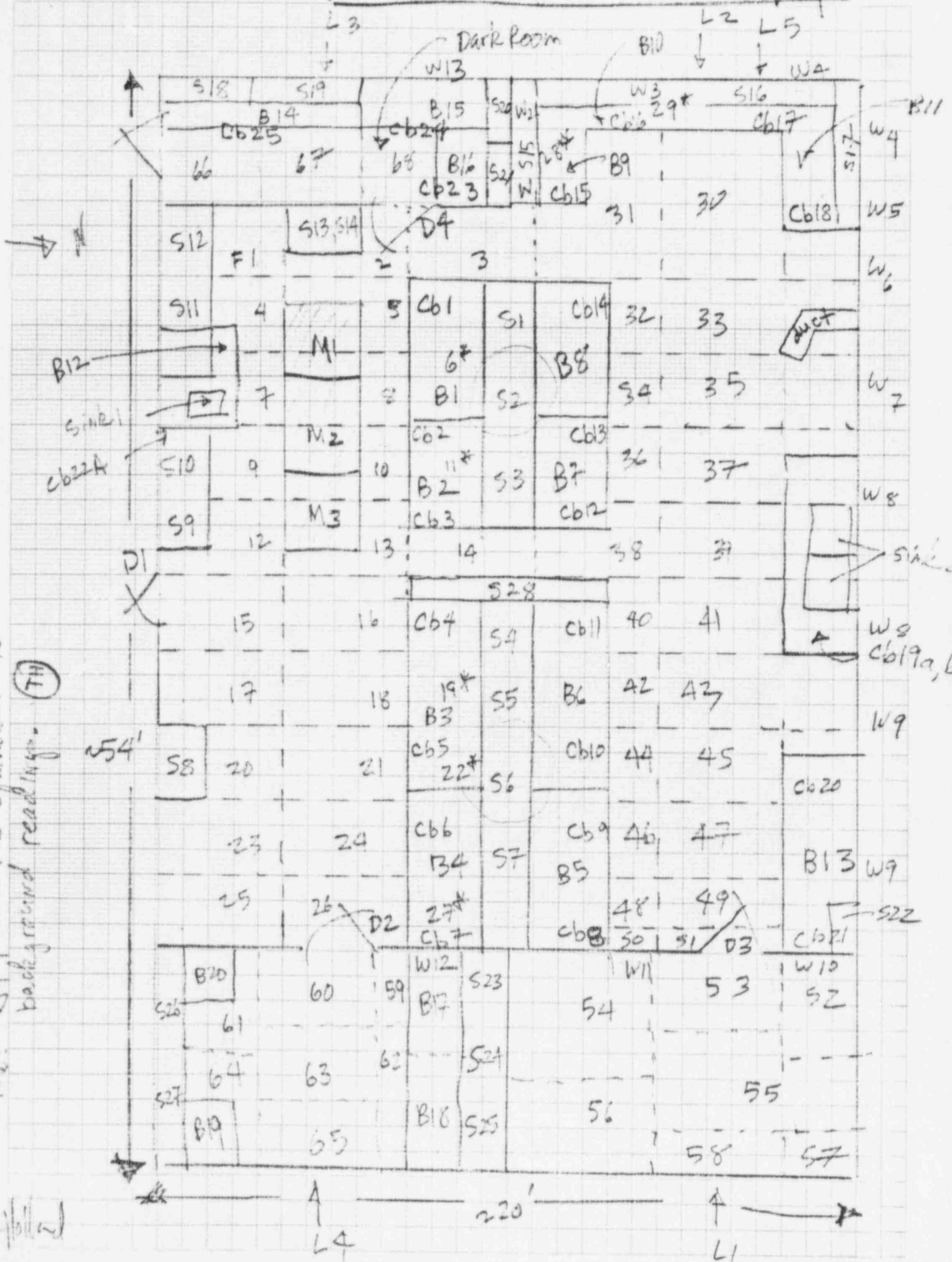


X & B scans were equivalent to background. (174)

Not to scale!

John Holland

Rm 241, Rld 4 Final Survey



Note: X-P scans are equivalent to background readings.

(TF)

Area 101

* underneath bench

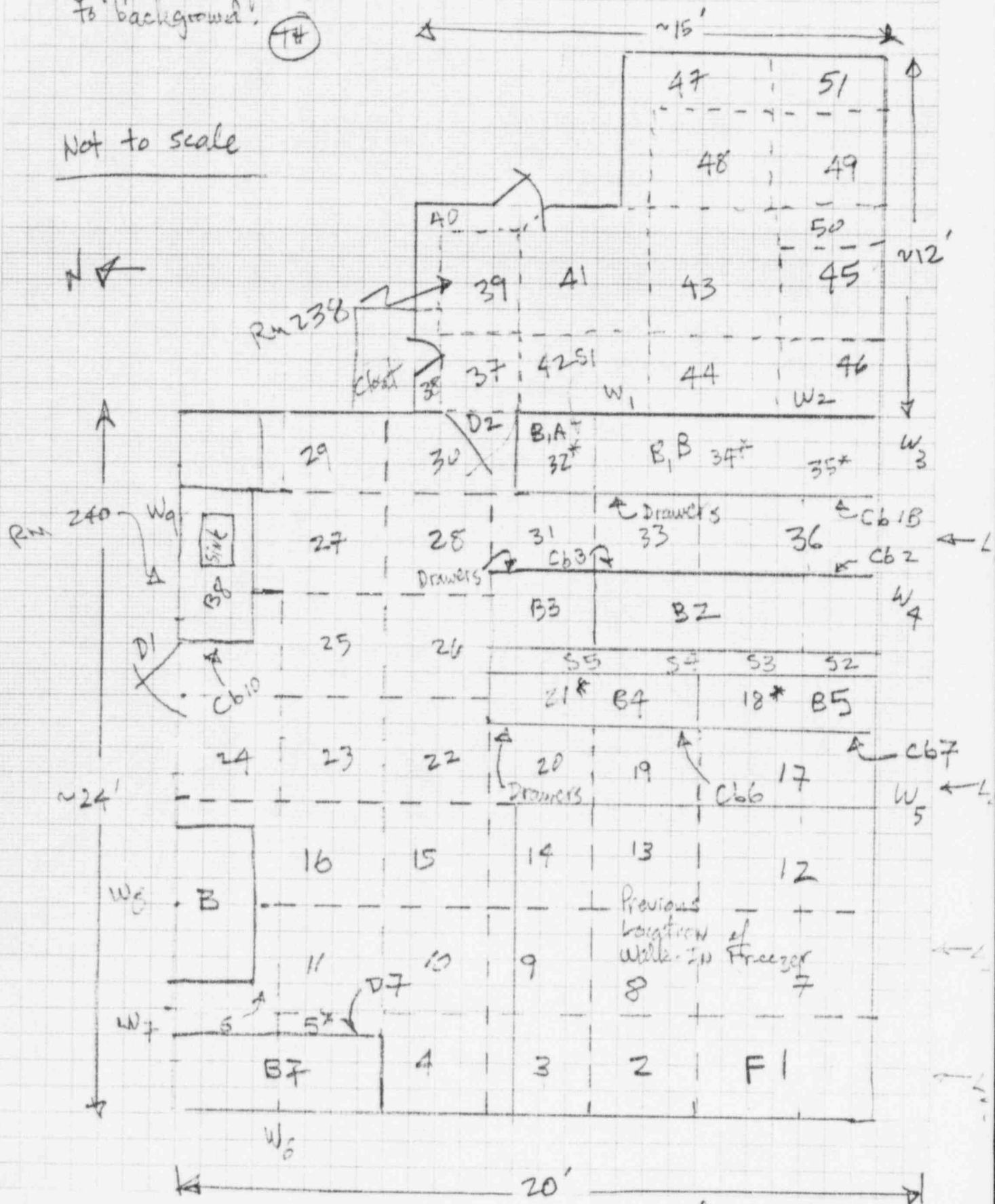
Note to reader

Map 238/240 ; Building 4; Final Survey

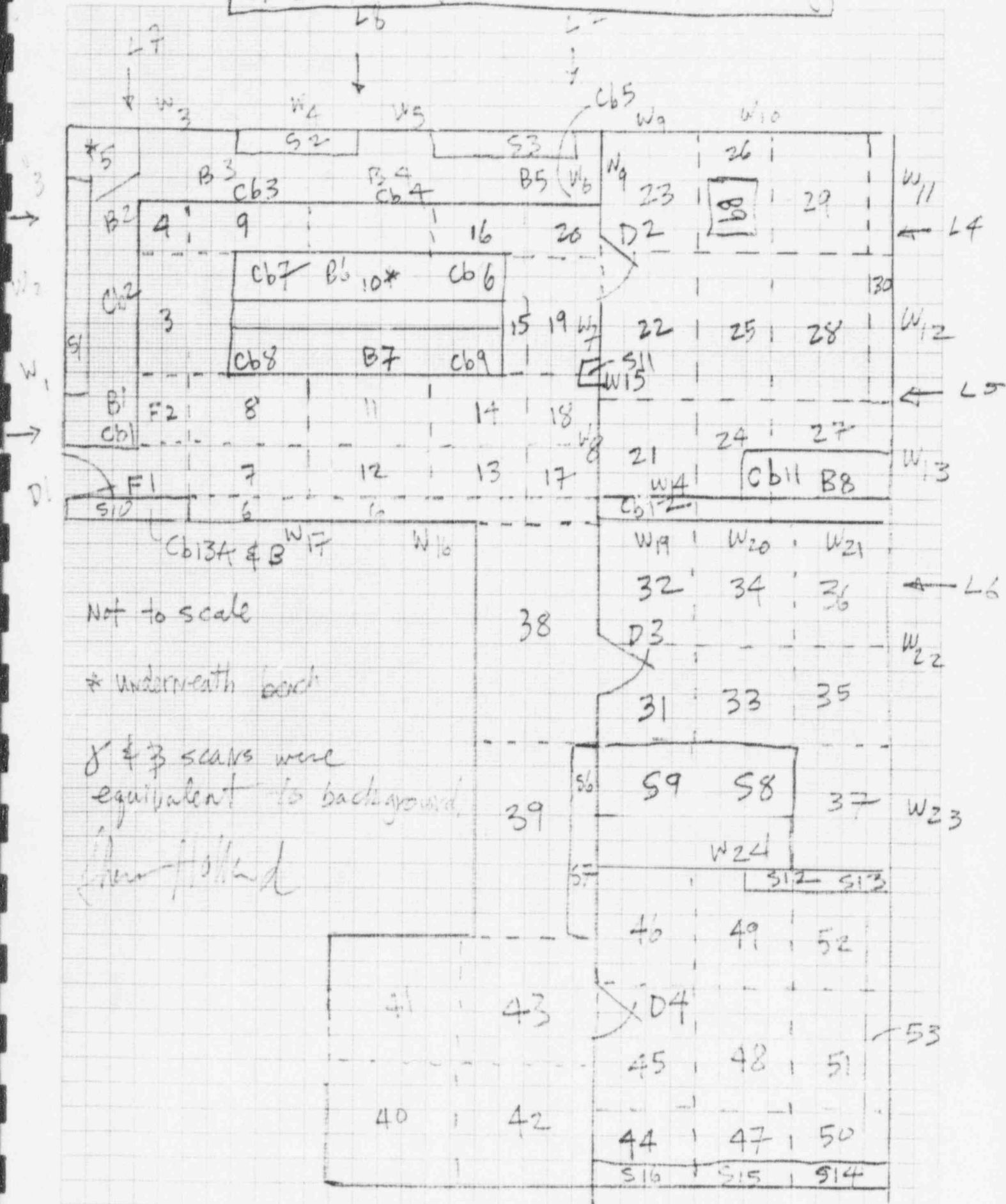
X & B scans equivalent to background.

(TH)

Not to scale



Rm 255, Bldg 4, Final Status Survey



Rm 249, Building 4, Final Survey

p. 1 of 1

Floor: F1 - F3 ✓

Cabinets: cb1A ✓
cb1B ✓
cb1C ✓

cb2a ✓
cb2b ✓

cb3a ✓
cb3b ✓

cb4a ✓
cb4b ✓

cb5a ✓
cb5b ✓

cb6 ✓

cb7a ✓
cb7b ✓

cb8 ✓

cb9 ✓

Bench 5-8 → B
Drawers 3 → D

B1 ✓
B2 ✓
D2A - E ✓

B3 ✓
D3A - E ✓

B4 ✓
D4A - E ✓

B5 ✓
D5A - E ✓

B6 ✓
D6A - E

B7 ✓
D7A - E ✓

B8 ✓
D8A - E ✓

B9 ✓
Shelves

S1 - S9 (some a & b) ✓

Walls

W1 - W6 ✓

Lights

L1 - L3 ✓

Sink -

Ceiling Vent = CV ✓

Door: Dr (in) ✓
Dr (out) ✓

Shaw-Holland
12/23/96

Instrument Type: LS 6000
 Data Capture Date: 7 Jan 1997 16:33:13
 User Filename: A:\USER03\U0310701.BSF

USER#: 03
 D: 3 CHANNEL
 Comment Low-Level Recounts: Sink Traps-1 & Hood Drain, 241 Final Survey Counting Efficiency
 Isotope Name(s): 3H 14C 32P 14-C = 79%
 Scintillator Choice: LIQUID 3-H = 63%

Sam	Rack	Time	3H		14C		32P		Rm No	Descrip
			CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM		
1	1-1	1.00	8783.00		39172.00		270.00			14C STD
2	1-2	1.00	62232.00		644.00		9.00			3H STD
3	1-3	1.00	19.00		11.00		9.00			BKG 1
4	1-4	1.00	19.00		19.00		14.00			BKG 2
5	1-5	1.00	22.00		6.00		13.00			BKG 3
6	1-6	1.00	91.00	112.70	62.00	63.29	8.00	-4.08	145	W2
7	1-7	1.00	69.00	77.78	11.00	-1.27	14.00	2.04	145	D2J
8	1-8	1.00	16.00	-6.35	10.00	-2.53	6.00	-6.12	145	D4E
9	1-9	1.00	95.00	119.05	106.00	118.99	5.00	-7.14	145	SK2
10	1-10	1.00	18.00	-3.17	14.00	2.53	12.00	0.00	146	B1
11	1-11	1.00	17.00	-4.76	7.00	-6.33	12.00	0.00	146	D2D
12	1-12	1.00	32.00	19.05	9.00	-3.80	7.00	-5.10	146	D4D
13	1-13	1.00	25.00	7.94	8.00	-5.06	15.00	3.06	PURG	W4
14	1-14	1.00	8.00	-19.05	12.00	0.00	4.00	-8.16	153	W4
15	1-15	1.00	31.00	17.46	17.00	6.33	10.00	-2.04	155	S1
16	1-16	1.00	17.00	-4.76	8.00	-5.06	7.00	-5.10	241	F6B
17	1-17	1.00	13.00	-11.11	11.00	-1.27	12.00	0.00	241	CB6
18	1-18	1.00	18.00	-3.17	11.00	-1.27	8.00	-4.08	241	B20
19	2-1	1.00	13.00	-11.11	10.00	-2.53	15.00	3.06	241	D20A
20	2-2	1.00	19.00	-1.59	21.00	11.39	10.00	-2.04	241	S4
21	2-3	1.00	26.00	9.52	8.00	-5.06	8.00	-4.08	250	D19B
22	2-4	1.00	78.00	92.06	7.00	-6.33	6.00	-6.12	155	v
23	2-5	1.00	57.00	58.73	35.00	29.11	9.00	-3.06	153	ev
24	2-6	1.00	111.00	144.44	116.00	131.65	9.00	-3.06	153	EH
25	2-7	1.00	84.00	101.59	46.00	43.04	6.00	-6.12	152	SH
26	2-8	1.00	49.00	46.03	29.00	21.52	10.00	-2.04	145	SV
28	2-10	1.00	102.00	130.16	15.00	3.80	13.00	1.02	145	UCSink
29	2-11	1.00	207.00	296.83	173.00	203.80	9.00	-3.06	145	VCSink
30	2-12	1.00	186.00	263.49	115.00	130.38	11.00	-1.02	145	HCSink
31	2-13	1.00	51.00	49.21	9.00	-3.80	12.00	0.00	152	U
32	2-14	1.00	42.00	34.92	19.00	8.86	5.00	-7.14	152	V
33	2-15	1.00	57.00	58.73	36.00	30.38	15.00	3.06	152	H
34	2-16	1.00	49.00	46.03	18.00	7.59	9.00	-3.06	153	CEU
35	2-17	1.00	37.00	26.98	18.00	7.59	8.00	-4.08	153	CEV
36	2-18	1.00	371.00	557.14	120.00	136.71	11.00	-1.02	153	CEH
37	3-1	1.00	43.00	36.51	8.00	-5.06	10.00	-2.04	153	CWU
38	3-2	1.00	77.00	90.48	31.00	24.05	3.00	-9.18	153	CWV
39	3-3	1.00	128.00	171.43	63.00	64.56	7.00	-5.10	153	CWH
40	3-4	1.00	15.00	-6.35	12.00	0.00	9.00	-3.06	240	U
41	3-5	1.00	19.00	-1.59	14.00	2.53	10.00	-2.04	240	V
42	3-6	1.00	19.00	-1.59	10.00	-2.53	12.00	0.00	240	H
43	3-7	1.00	37.00	26.98	23.00	13.92	8.00	-4.08	241	HDE
44	3-8	1.00	144.00	196.83	23.00	13.92	10.00	-2.04	241	UN
45	3-9	1.00	286.00	422.22	34.00	27.85	9.00	-3.06	241	VN
46	3-10	1.00	58.00	60.32	17.00	6.33	11.00	-1.02	241	HN
47	3-11	1.00	26.00	9.52	16.00	5.06	7.00	-5.10	241	U5
48	3-12	1.00	24.00	6.35	18.00	7.59	18.00	6.12	241	V5
49	3-13	1.00	25.00	7.94	18.00	7.59	8.00	-4.08	241	H5
50	3-14	1.00	25.00	7.94	11.00	-1.27	11.00	-1.02	249	U
51	3-15	1.00	19.00	-1.59	13.00	1.27	10.00	-2.04	249	V

52	3-16	1.00	22.00	3.17	11.00	-1.27	9.00	-3.06	249	H
53	3-17	1.00	27.00	11.11	4.00	-10.13	9.00	-3.06	250	U
54	3-18	1.00	35.00	23.81	9.00	-3.80	9.00	-3.06	250	V
55	4-1	1.00	38.00	28.57	15.00	3.80	13.00	1.02	250	H
56	4-2	1.00	28.00	12.70	13.00	1.27	8.00	-4.08	250	UHot
57	4-3	1.00	30.00	15.87	17.00	6.33	12.00	0.00	250	VHot
58	4-4	1.00	59.00	61.90	10.00	-2.53	11.00	-1.02	250	HHot
59	4-5	1.00	29.00	14.29	11.00	-1.27	9.00	-3.06	255	U
60	4-6	1.00	65.00	71.43	14.00	2.53	13.00	1.02	255	V
61	4-7	1.00	36.00	25.40	7.00	-6.33	7.00	-5.10	255	H
62	4-8	1.00	27.00	11.11	4.00	-10.13	14.00	2.04	ROOF	5R
63	4-9	1.00	17.00	-4.76	12.00	0.00	6.00	-6.12	ROOF	2R
64	4-10	1.00	21.00	1.59	3.00	-11.39	8.00	-4.08	ROOF	4R
65	4-11	1.00	27.00	11.11	14.00	2.53	16.00	4.08	ROOF	1R
66	4-12	1.00	18.00	-3.17	14.00	2.53	13.00	1.02	ROOF	3R
67	4-13	1.00	23.00	4.76	11.00	-1.27	11.00	-1.02	ROOF	12R
68	4-14	1.00	25.00	7.94	9.00	-3.80	9.00	-3.06	ROOF	11R
69	4-15	1.00	27.00	11.11	11.00	-1.27	12.00	0.00	ROOF	14R
70	4-16	1.00	19.00	-1.59	13.00	1.27	14.00	2.04	ROOF	10R
71	4-17	1.00	30.00	15.87	9.00	-3.80	5.00	-7.14	ROOF	9R
72	4-18	1.00	26.00	9.52	10.00	-2.53	13.00	1.02	ROOF	8R
73	5-1	1.00	19.00	-1.59	15.00	3.80	4.00	-8.16	ROOF	7R
74	5-2	1.00	34.00	22.22	13.00	1.27	16.00	4.08	ROOF	B11
75	5-3	1.00	20.00	0.00	11.00	-1.27	7.00	-5.10	ROOF	B12
76	5-4	1.00	23.00	4.76	8.00	-5.06	8.00	-4.08	ROOF	B13

Instrument Type: LS 6000
 Data Capture Date: 8 Jan 1997 08:42:11
 User Filename: A:\USER03\U0310801.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: TRAP RESURVEY 1

Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:
 14-C = 79%
 3-H = 63%

			3H		14C		32P			
Sam	Rack	Tim	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8525.00		38933.00		317.00			14C STD
2	1-2	1.00	61787.00		620.00		10.00			3H STD
3	1-3	1.00	18.00		11.00		8.00			BKG 1
4	1-4	1.00	16.00		22.00		11.00			BKG 2
5	1-5	1.00	18.00		12.00		8.00			BKG 3
6	1-6	1.00	100.00	131.75	22.00	8.86	8.00	-1.02	145	CU
7	1-7	1.00	210.00	306.35	171.00	197.47	12.00	3.06	145	CV
8	1-8	1.00	214.00	312.70	132.00	148.10	8.00	-1.02	145	CH
9	1-9	1.00	360.00	544.44	145.00	164.56	14.00	5.10	153	ECH
10	1-10	1.00	123.00	168.25	71.00	70.89	15.00	6.12	153	WCH
11	1-11	1.00	180.00	258.73	32.00	21.52	8.00	-1.02	241	UN
12	1-12	1.00	299.00	447.62	41.00	32.91	6.00	-3.06	241	VN

Instrument Type: LS 6000
 Data Capture Date: 10 Jan 1997 16:20:45
 User Filename: A:\USER03\U0311003.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: VAULT

Isotope Name(s): 3H 14C 32P

Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 79%

3-H = 63%

Sam	Rack	Time	3H		14C		32P		Rm No	Descrip
			CPM	Iso1	CPM	Iso2	CPM	Iso3		
1	1-1	1.00	8503.00		39009.00		301.00			14C STD
2	1-2	1.00	61691.00		669.00		9.00			3H STD
3	1-3	1.00	13.00		16.00		9.00			BKG 1
4	1-4	1.00	14.00		16.00		15.00			BKG 2
5	1-5	1.00	19.00		15.00		18.00			BKG 3
6	1-6	1.00	23.00	12.70	6.00	-11.39	9.00	-5.10	VAULT	N WALL
7	1-7	1.00	31.00	25.40	7.00	-10.13	11.00	-3.06		S WALL
8	1-8	1.00	11.00	-6.35	14.00	-1.27	16.00	2.04		E WALL
9	1-9	1.00	18.00	4.76	14.00	-1.27	10.00	-4.08		W WALL
10	1-10	1.00	22.00	11.11	6.00	-11.39	9.00	-5.10		LID
11	1-11	1.00	19.00	6.35	11.00	-5.06	0.00	-14.29		H2O
12	1-12	1.00	24.00	14.29	12.00	-3.80	0.00	-14.29		H2O
13	1-13	1.00	20.00	7.94	15.00	0.00	8.00	-6.12	241 DP	S90SC
14	1-14	1.00	24.00	14.29	19.00	5.06	9.00	-5.10		S90L
15	1-15	1.00	13.00	-3.17	16.00	1.27	6.00	-8.16		S90
16	1-16	1.00	23.00	12.70	15.00	0.00	14.00	0.00		ES
17	1-17	1.00	45.00	47.62	24.00	11.39	12.00	-2.04		E2R
18	1-18	1.00	23.00	12.70	17.00	2.53	13.00	-1.02		SL
19	**1	1.00	24.00	14.29	24.00	11.39	7.00	-7.14		SO
20	**2	1.00	24.00	14.29	16.00	1.27	4.00	-10.20		90-O
21	**3	1.00	25.00	15.87	11.00	-5.06	14.00	0.00		PRE
22	**4	1.00	26.00	17.46	11.00	-5.06	11.00	-3.06		PWE
23	**5	1.00	18.00	4.76	7.00	-10.13	12.00	-2.04		SPP
24	**6	1.00	23.00	12.70	16.00	1.27	9.00	-5.10		90EP

Vault, Bldg. 1 Decomm.

Inside Vault

α & β scans were equivalent to background levels.

N inside wall - N

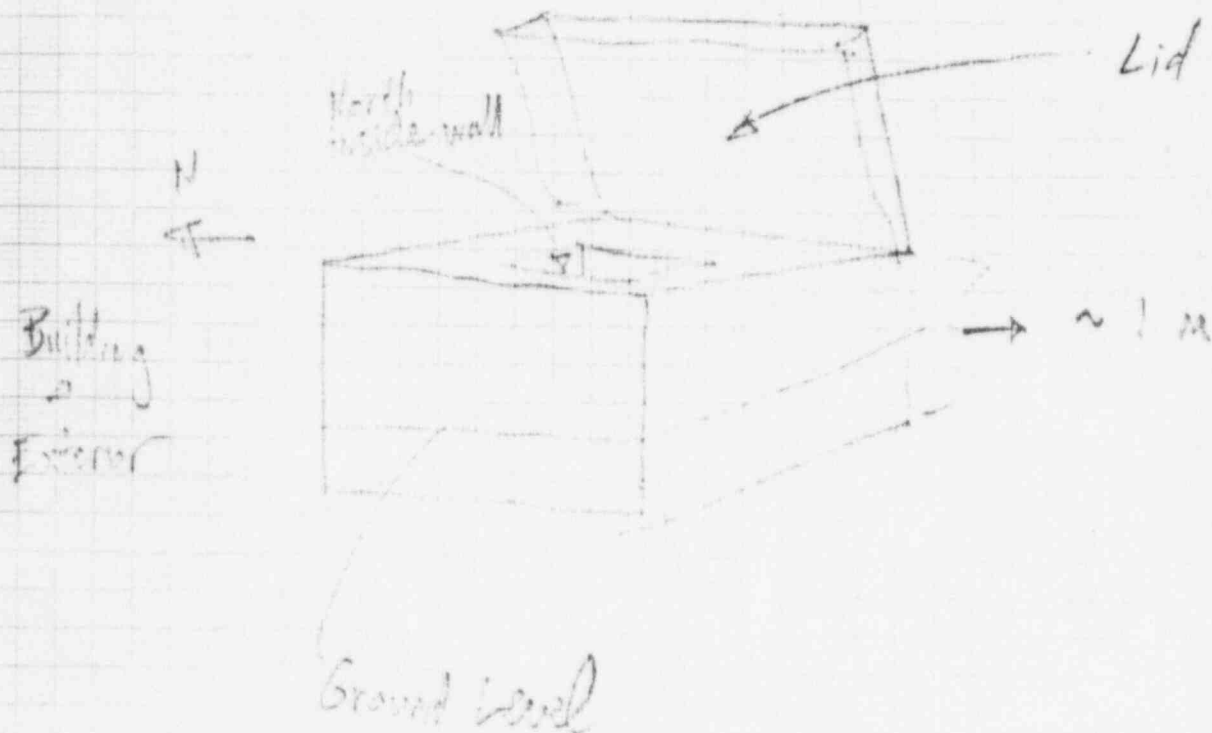
E - E

S - S

W - W

Bottom of Lid - Lid

Water sample 1 & 2 = WS1, WS2



1-10-97

Iron Pipe

Pin 241

Sink on North Wall

Description	Vial #	Count
straight piece w/90 ends	570 SC	
short end	2 10L	
long end	3 90	
elbow piece		
straight	ES	
2 rings	EAR	
straight w/90 on end		
straight long	SL	
straight outlet	50	
90 outlet	900	
Trap		
Blue elbow	PBE	
White elbow	PWE	
straight pipe w/90 plug		
plug	SPP	
90 end P	90 EP	

Instrument Type: LS 6000
 Data Capture Date: 10 Jan 1997 07:51:20
 User Filename: A:\USER03\U0311001.BSF

USER#: 03
 ID: 3 CHANNEL

Comments: RESURVEYS- 145

Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:

14-C = 80%

3-H = 63%

			3H		14C		32P			
Sam	Rack	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8737.00		39463.00		279.00			14C STD
2	1-2	1.00	62188.00		650.00		9.00			3H STD
3	1-3	1.00	27.00		17.00		7.00			BKG 1
4	1-4	1.00	24.00		19.00		7.00			BKG 2
5	1-5	1.00	21.00		13.00		8.00			BKG 3
6	1-6	1.00	17.00	-11.11	16.00	0.00	13.00	6.12	145	W2
7	1-7	1.00	25.00	1.59	15.00	-1.25	6.00	-1.02	145	D2Jo
8	1-8	1.00	147.00	195.24	6.00	-12.50	9.00	2.04	145	D2Ji
9	1-9	1.00	25.00	1.59	32.00	20.00	6.00	-1.02	145	SK2

Instrument Type: LS 6000
 Data Capture Date: 10 Jan 1997 12:12:06
 User Filename: A:\USER03\U0311002.BSF

USER#: 03
 ID: 3 CHANNEL
 Comments: Resurvey 145, 153, 2 250
 Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:
 14-C = 79%
 3-H = 63%

		3H		14C		32P				
Sam	Rack	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No	Descrip
1	1-1	1.00	8659.00		38990.00		297.00			14C STD
2	1-2	1.00	61939.00		646.00		8.00			3H STD
3	1-3	1.00	22.00		11.00		2.00			BKG 1
4	1-4	1.00	24.00		10.00		11.00			BKG 2
5	1-5	1.00	27.00		16.00		8.00			BKG 3
6	1-6	1.00	132.00	171.43	27.00	18.99	8.00	1.02	145	CU
7	1-7	1.00	1210.00	1882.54	249.00	300.00	6.00	-1.02	145	CV
8	1-8	1.00	270.00	390.48	159.00	186.08	11.00	4.08	145	CH
9	1-9	1.00	105.00	128.57	132.00	151.90	10.00	3.06	153	ECH
10	1-10	1.00	218.00	307.94	119.00	135.44	11.00	4.08	153	WCH
11	1-11	1.00	122.00	155.56	22.00	12.66	12.00	5.10	241	NH1
12	1-12	1.00	15.00	-14.29	14.00	2.53	11.00	4.08	241	NV1
13	1-13	1.00	37.00	20.63	15.00	3.80	6.00	-1.02	241	NV2
14	1-14	1.00	21.00	-4.76	7.00	-6.33	13.00	6.12	241	NH2
15	1-15	1.00	16.00	-12.70	14.00	2.53	7.00	0.00	250	FZ1
16	1-16	1.00	15.00	-14.29	6.00	-7.59	7.00	0.00	250	FZ2
17	1-17	1.00	18.00	-9.52	9.00	-3.80	13.00	6.12	250	FZW1
18	1-18	1.00	25.00	1.59	8.00	-5.06	9.00	2.04	250	FZW2

Instrument Type: LS 6000
 Data Capture Date: 17 Jan 1997 17:29:10
 User Filename: A:\USER03\U0311702.BSF

USER#: 03
 ID: 3 CHANNEL
 Comments: Rm. 145CV
 Isotope Name(s): 3H 14C 32P
 Scintillator Choice: LIQUID

Counting Efficiency:
 14-C = 79%
 3-H = 63%

3H 14C 32P

Sam	Rack	Time	CPM Iso1	DPM	CPM Iso2	DPM	CPM Iso3	DPM	Rm No.	Descrip
1	**1	1.00	8529.00		39149.00		299.00			14C STD
2	**2	1.00	61931.00		658.00		8.00			3H STD
3	**3	1.00	20.00		19.00		12.00			BKG 1
4	**4	1.00	19.00		8.00		10.00			BKG 2
5	**5	1.00	23.00		13.00		18.00			BKG 3
6	**6	1.00	33.00	20.63	14.00	1.27	9.00	-4.17	145	CV

Appendix F

Recounts Table 1
Sink Drain Counts Table 2

BLDG.4 DECOMMISSION
TABLE 1- RECOUNTS

Room	Location	Sample #	DPM				
			Initial	1/2/97	1/7/97	1/8/97	1/10/97
145	D2J	129	95		78		D2J1 147
	F5	61	122	4			
	D1H	103	195	0			
	D1P	111	122	0			
	B1CFSA	117	408	5			
	B2CFSB	133	179	0			
	D5C	206	149	0			
	S2B	222	154	3			
145	W2	6	112				0
145	SINK 2	9	119				1
146	D2D	32	106		0		
	P33	121	703	8			
241	F68	212	105		48		
	Cb24C	321	1093	0			
	Cb25B	324	492	0			
	D18B	338	628	5			
	S7	365	152	0			
	HDE	418	133	6			
	HDP	419	242	281	27		
155	F2	427	241	2			
	F6	431	304	22			
	F29	454	144	12			
	D4D	488	1303	0			
	D5E	497	348	8			
	D8B	515	187	6			
	D9B	522	328	5			
	W2	526	371	0			
	C1	531	315	8			
	C5	535	1707/120	0			
	D1i	539	2865	0			
	SINK 5	551	263	0			
250	D6C	64	898	11			
	F39	113	252	6			

BLDG. 4 DECOMMISSION
SINK TR.- TABLE 2

ROOM	LOCATION	DPM							
		12/23/96	12/31/96	1/2/97	1/7/97	1/8/97	1/10/97	1/13/97	1/17/97
145	CU		1100	1178	130	132	171		
	CV		1252	1338	297	306	1882		20
	CH		457	434	263	312	390		
145	SU		63		46				
	SV		0						
	SH		2						
145	WU		0						
	WV		0						
	WH		0						
146	RU		11						
	RV		8						
	RH		16						
146	LU		0						
	LV		44						
	LH		0						
152	Hood P.		35						
	SU		278	308	49				
	SV		190	197	35				
	SH		75		59 (101)				
152	WU		0						
	WV		0						
	WH		0						
153	EU		17						
	EV		64						
	EH		84						
153	ECU		184	217	46				
	ECV		0		27				
	ECH		176	163	557	544	128		
153	WCU		8		37				
	WCV		209	204	90				
	WCH		105	121	171	168	308		
153	WU		32						
	WV		27						
	WH		40						
155	U (302)		0						
	V (303)		54						

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	H (304)		10					
155	U (305)		0					
	V (306)		32					
	H (307)		6					
156	U (308)		0					
	V (309)		3					
	H (310)		0					
156	U (311)		0					
	V (312)		0					
	H (313)		0					
157	U		16					
	V		8					
	H		14					
241	HOOD D	243		281	27			
241	UN				197	259		
	VN				422	448	NV1 0	
							NV2 21	
	HN				60		NH1 155	
							NH2 0	
241	SU				10			
	SV				6			
	SH				8			
249	U				8			
	V				0			
	H				3			
250	U				11			
	V				24			
	H				29			
250	U(H)				13			
	V(H)				16			
	H(H)				62			
255	U				14			
	V				71			
	H				25			

