

MATERIALS LICENSE

Amendment No. 45

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, 36, 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		In accordance with letter dated September 25, 1996	
1. Pharmacia & Upjohn Company		3. License Number 21-00182-03 is amended in its entirety to read as follows:	
2. 7000 Portage Road Kalamazoo, MI 49001		4. Expiration Date January 31, 2005	
		5. Docket or Reference No. 030-04781	
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 Nos. 1-83, inclusive	A. Any	A. Not to exceed 1 curie per radionuclide. Total possession not to exceed 10 curies.	
B. Any byproduct material with Atomic Numbers 1 through 83	B. Any	B. Not to exceed 1 curie per radionuclide. Total possession not to exceed 25 curies, except as listed below:	
		Hydrogen-3 150 curies; Carbon-14 20 curies; Iodine-125 3 curies	
C. Americium-241	C. Sealed sources (An evaluated source which has been registered with the NRC or an Agreement State in accordance with 10 CFR 32.210)	C. Not to exceed 150 millicuries per source. Not to exceed 1 curie total.	

260061

9702260084 970207
PDR ADOCK 03004781
C PDR

COPY

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

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

D. Nickel-63

E. Cesium-137

F. Cesium-137

G. Cesium-137

H. Californium-252

I. Cesium-137

7. Chemical and/or physical form

D. Plated or foil sources (Any source which has been evaluated by the NRC or an Agreement State in accordance with 10 CFR 32.210)

E. Sealed sources (Any source which has been evaluated by the NRC or an Agreement State in accordance with 10 CFR 32.210)

F. Sealed source (Any source which has been evaluated and approved by the NRC or an Agreement State for use in J.L. Shepherd Model 28-5 calibrator)

G. Sealed sources (AECL Model C-161 Type 8)

H. Sealed sources (Isotopes Products Laboratories Model FF252/SK362)

I. Sealed source (Amersham-Searle Model No. CDC-700)

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

D. No single source to exceed 25 millicuries. Not to exceed 5 curies total

E. No single source to exceed 100 millicuries. Not to exceed 2 curies total

F. One source not to exceed 100 millicuries

G. Two sources not to exceed 4200 curies each

H. Three sources not to exceed 20 microcuries each

I. One source not to exceed 100 millicuries

9. Authorized Use:

A. To be used in human research as approved by the FDA approved Research Drug Research Committee.

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- B. For pharmaceutical research and development as defined in Section 30.4, 10 CFR Part 30, including animal studies.
- C. To be used as sources for calibration and standardization of radiation detection instrumentation, and in NRC approved source holders for measurements of flow, level and/or density of materials.
- D. To be used in gas chromatographs for sample analysis.
- E. To be used in NRC approved source holders for measurements of flow, level and/or density of materials.
- F. To be used for in-house calibration of the licensee's radiation detection instrumentation.
- G. For research and development as defined in 30.4 of 10 CFR Part 30, excluding irradiation of flammables and/or explosives.
- H. To be used in applied Biosystems BioIon 20 for time of flight measurements.
- I. To be used in Victoreen Calibration Kit, Model No. 848-8 for calibration of area radiation monitors.

CONDITIONS

- 10. Licensed material shall be used only at the licensee's facilities located at 301 Henrietta Street, 2605 East Kilgore Road and Upjohn Research Center - Jasper, 526 Jasper Street, Kalamazoo, Michigan, 5300 N. 28th Street, Richland, Michigan and 7000 Portage Road, Portage, Michigan.
- 11.
 - A. Licensed material shall be used by, or under the supervision of, individuals designated by the Upjohn Company Radiation Control Committee, Clark W. Smith, Ph.D., Chairman.
 - B. The Radiation Safety Officer for this license is Lawrence J. Kenaga.
- 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 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.

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- E. 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.
- F. 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 30.50(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 III, ATTN: Chief, Nuclear Materials Safety Branch, 801 Warrenville Road, Lisle, Illinois 60532-4351. The report shall specify the source involved, the test results, and corrective action taken.
- H. 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. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
14. The licensee shall assure that the shutter mechanism is locked in the closed position during periods when a portion of an individual's body may be subject to the direct radiation from the gauges. The licensee shall also modify their "lock-out" procedures whenever a new gauge is obtained for use other than purposes for which they are currently authorized to incorporate the device manufacturer's recommendations.
15. The licensee shall not use licensed material in or on human beings except as provided otherwise by specific condition of this license.
16. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

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17. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
18. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
19. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
20. 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. Application dated March 31, 1993; and
- B. Letters dated September 6, 1994 (with attachments), April 7, 1995 (with attachments), August 17, 1995, September 22, 1995, November 3, 1995 (excluding reference to an alternative method for incinerating radioactive liquid waste), May 20, 1996, June 11, 1996 and September 25, 1996.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date

February 7, 1997

By

Crawford F. Trojer
Nuclear Materials Licensing Branch, Region III

COPY

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03211
Status Code: 0
Fee Category: 7B 3E
Exp. Date: 20050131
Fee Comments: 3E ADDED 2/29/88
Decom Fin Assur Req'd: Y

58

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: PHARMACIA & UPJOHN COMPANY
Received Date: 960930
Docket No: 3004781
Control No.: 301895
License No.: 21-00182-03
Action Type: Amendment

2. FEE ATTACHED

Amount: _____
Check No.: X

X ADDL INFO
301423-58

3. COMMENTS

Signed D. Hershey
Date 10-3-96

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /)

1. Fee Category and Amount

FEE NOT REQUIRED

2. Correct Fee Paid. Application may be processed for:

Amendment /
Renewal _____
License _____

3. OTHER

Signed SC
Date 10/7/96

OCT 15 1996

RECEIVED BY LFDCB	
Date	<u>Oct. 7, 1996</u>
Log	<u>Oct 3 III</u>
By	<u>SC</u>
Date Completed	<u>10/7/96</u>

1996 OCT -7 PM 1:42



PHARMACIA & UPJOHN COMPANY

301 Henrietta Street
Kalamazoo, MI 49007
License No. 21-000182-03

Upjohn Laboratories
Clark W. Smith, Ph.D.
Director, Biochemistry
7240-209-638
Telephone No. (616) 833-0924
Fax. No.: (616) 833-2500

September 25, 1996

Dr. Charles F. Gill
US Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

re: US NRC Region III letter from CFGill to CWSmith
dated August 28, 1996 and NRC Control # 301423.

Dear Dr. Gill,

Here are the responses to your comments relating to the above referenced document.

NRC Comment 1 -

You stated in Attachment 1 that the current facilities layouts for the locations where licensed material will be used or possessed was in Attachment 3B. However, this document was not in your submittal.

Response -

Attachment 3B, "NRC License Requirements" section, was submitted as part of a license amendment dated April 7, 1995. Although the information has not changed since that submittal, a copy of 3B has been included as Appendix 1 to this letter.

NRC Comment 2 -

We cannot authorize you to release your BCIU space for unrestricted use until we have received and reviewed a copy of the results of your revised close-out survey. This revised survey should consist of exposure rate measurements to show that all sources of radioactive material have been removed, and contamination checks of areas where radioactive materials were used or stored.

Response -

Please see our response to NRC Comment 5 below, for results of our contamination surveys.

We have concluded that no radioactive material remains in the BCIU and a formal radiation survey (i.e., dose rate determination in uR/hr) of the BCIU is not warranted. This conclusion is based upon:

- a) I-125 used in RIA kits and human use protocols has not occurred since 1990 and any residual material has long since decayed to background levels.

RECEIVED

SEP 30 1996

REGION III

SEP 30 1996

PM: 9-27 Continuation of 301423
FEE NOT REQUIRED

301895

- b) Human use metabolism studies using H-3 and C-14 were conducted in a manner which ensured a high percentage of the radioisotope (usually > 95%) was recovered in blood samples or excreta, and,
- c) The results of a pancake probe survey (HP 265 probe) and a wipe test survey, of surfaces in the BCIU, are essentially \leq background.

NRC Comment 3 -

Please submit... a history of all radionuclides used at BCIU located at Bronson Methodist Hospital, 252 E. Lovell St., Center Building - Fifth Floor, Kalamazoo, Michigan.

Response -

Appendix 2 lists the dates, types and amounts of radioactive material that were used at the BCIU.

NRC Comment 4 -

Please submit... a current copy of the leak test results for the sealed sources used at your BCIU space. Also a history of leaking sealed sources (if any).

Response -

There were no sealed sources used at BCIU, thus no leak test records exist.

NRC Comments 5-10 -

Please submit... a diagram of your old facility with survey and wipe test results keyed to specific locations. Please record your survey results using the appropriate units as described in 10CFR30.36(j)(2)(i). (Records should include) the name of the person performing the survey, the date the survey was performed, the instrument(s) used for exposure rate measurements and for analysis of the wipes, background readings, and the date that the survey instrument was last calibrated.

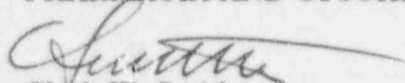
Response -

Appendix 3 provides the revised records of the wipe test results and direct surveys for areas in BCIU where radioactive material was used or stored. As far as can be determined, radioactive material was transported in the hallways and use in 13 specific rooms. Surveys for these areas are enclosed.

If you have any further questions relating to our request to remove the BCIU from our byproduct material license, please contact Mr. L.J. Kenaga at 616-833-9383.

Sincerely,

PHARMACIA AND UPJOHN

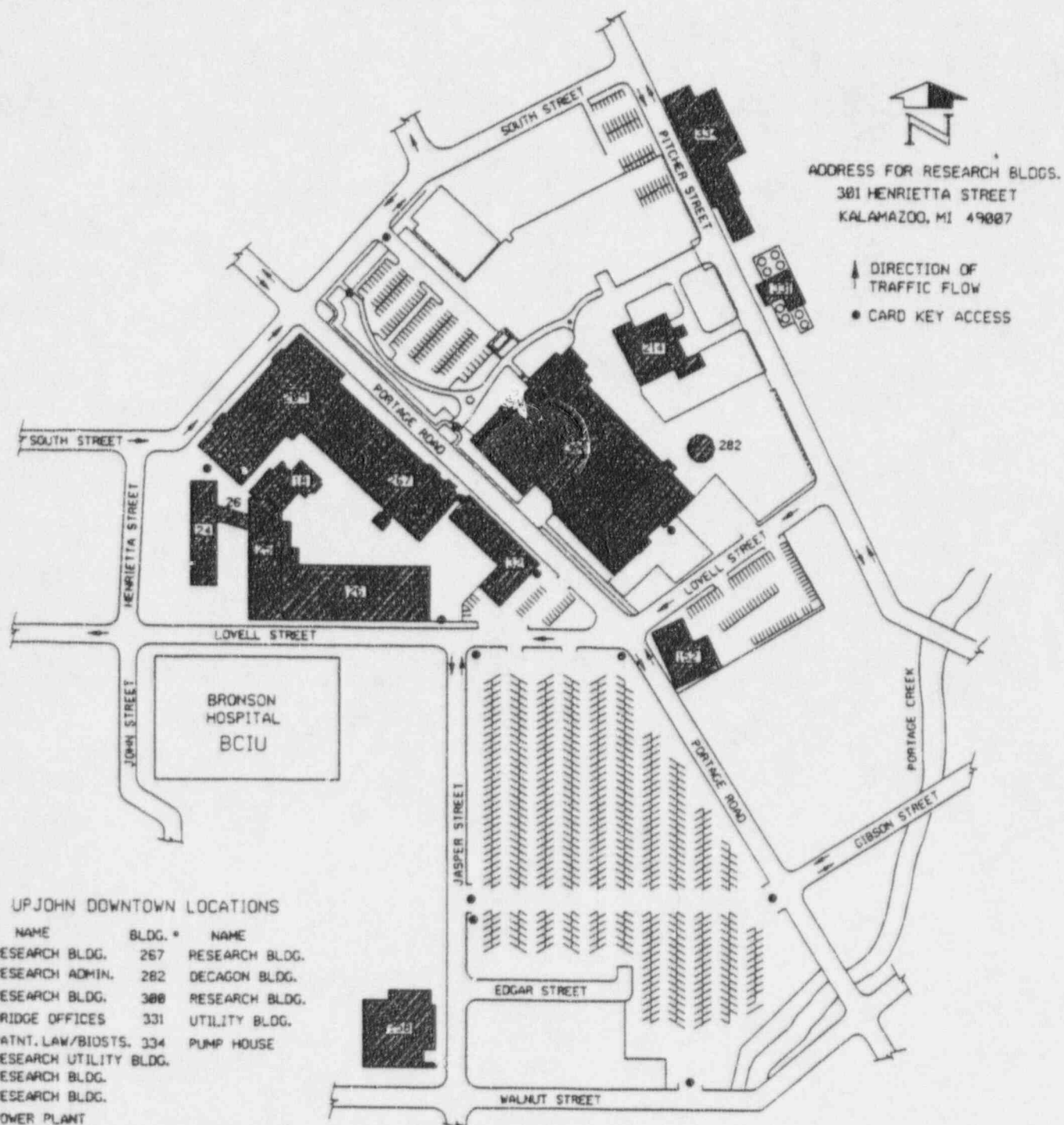


Clark W. Smith
Chairman, Radiation Safety Committee

enclosure

Appendix 1

DOWNTOWN KALAMAZOO BUILDINGS



UPJOHN FARMS RICHLAND

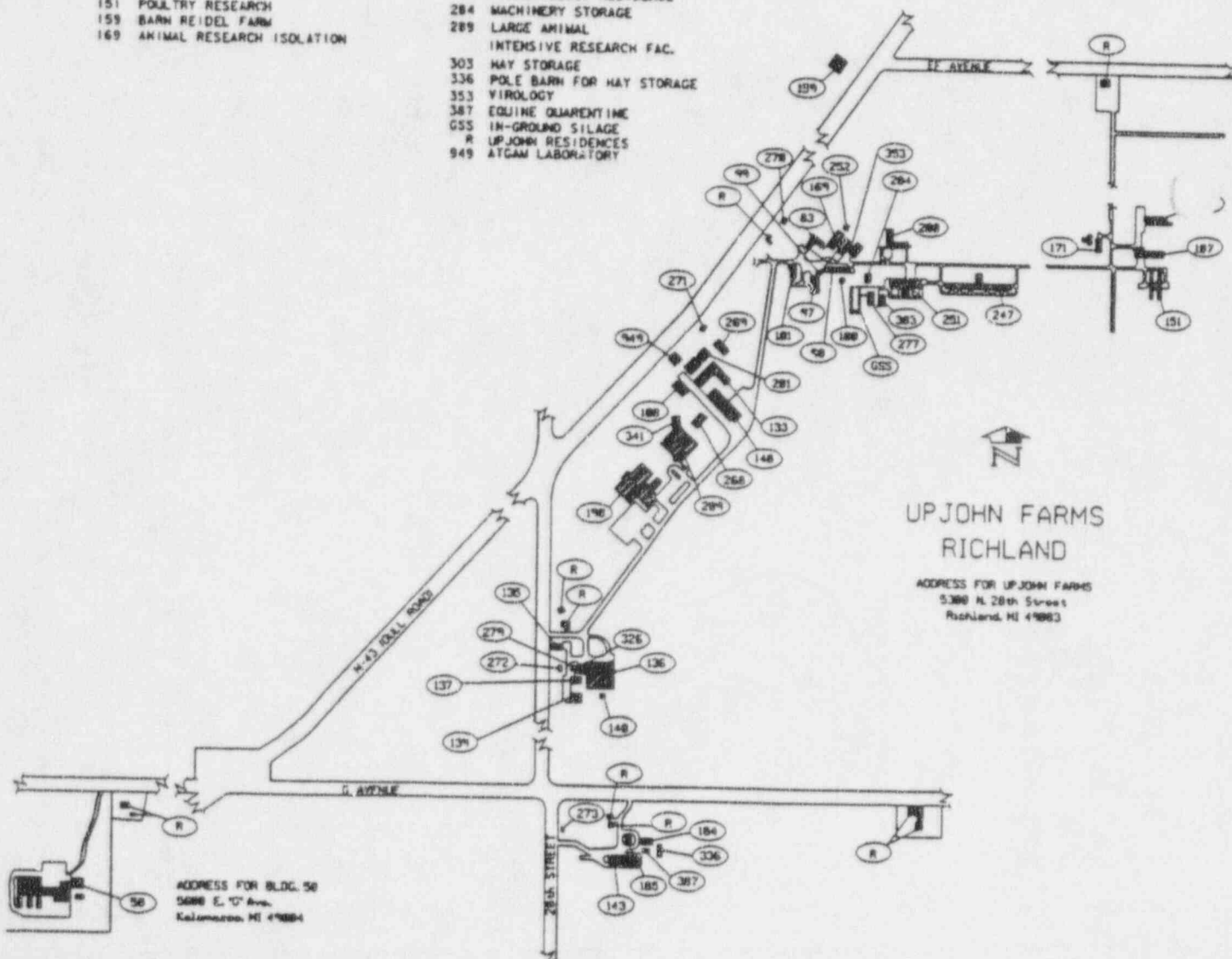
UPJOHN FARM LOCATIONS

BLOC. #

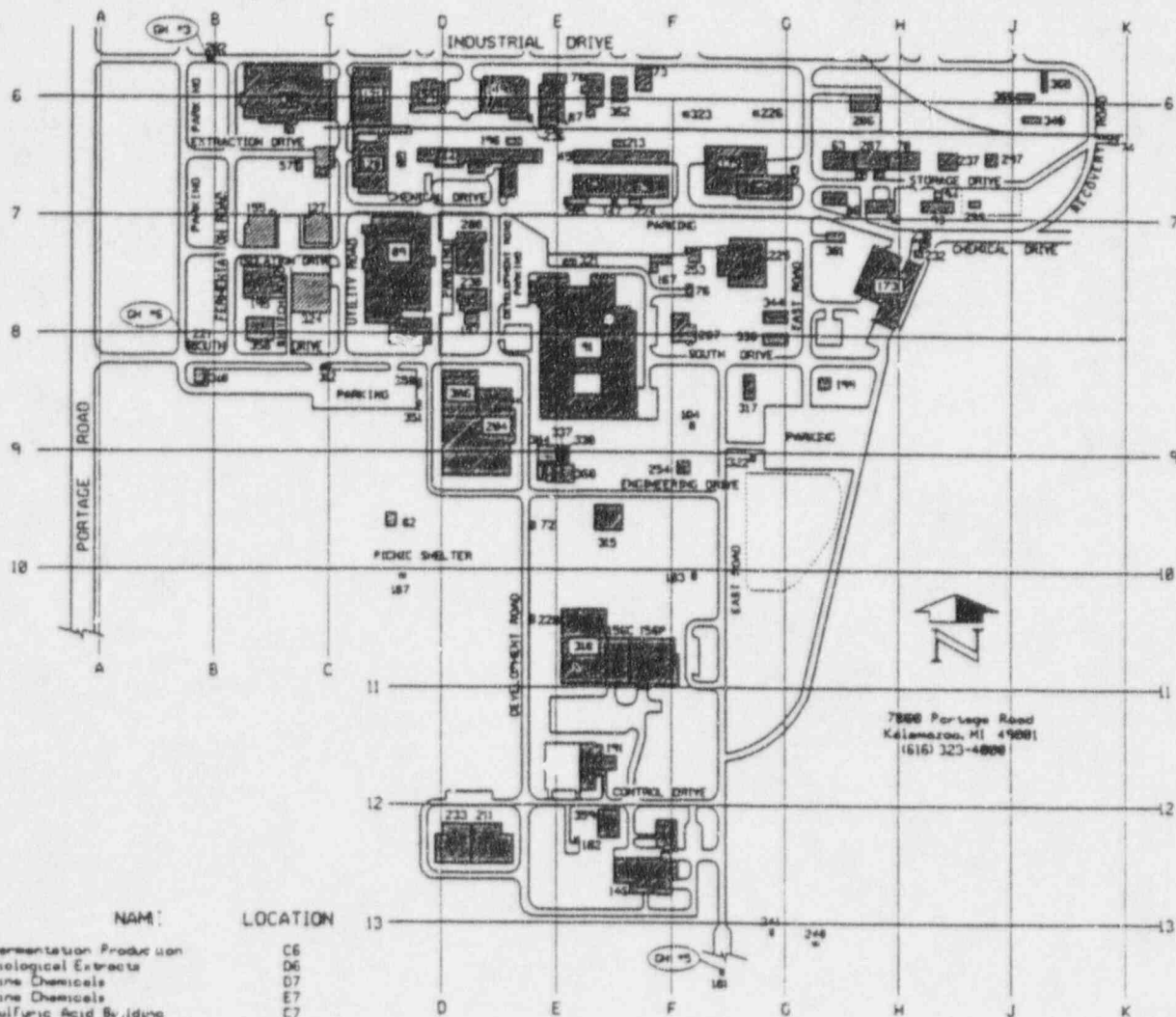
50 AGRICULTURAL STATION
83 THERAPEUTICS RESEARCH
97 LARGE ANIMAL RESEARCH BARN
98 LARGE ANIMAL RESEARCH BARN
99 LARGE ANIMAL RESEARCH BARN
100 SILO
101 SMALL ANIMAL RESEARCH
107 SWINE RESEARCH
108 EQUIPMENT STORAGE
123 SWINE RESEARCH
133 FARM MAINTENANCE SHOP
135 FARM OFFICE
136 ANIMAL ENDOCRINE RESEARCH
137 PARASITOLOGY RESEARCH
139 PARASITOLOGY RESEARCH
140 SCALE HOUSE
143 POULTRY & SMALL ANIMAL RESEARCH
148 FEED MILL
151 POULTRY RESEARCH
159 BARN REIDEL FARM
169 ANIMAL RESEARCH ISOLATION

BLOC. #

171 RODENT RESEARCH
184 EQUINE RESEARCH
185 EQUINE LABORATORY
190 AGRICULTURAL DIV. OFFICE BLDG.
200 LARGE ANIMAL RESEARCH
201 VEHICLE STORAGE
247 BEEF RESEARCH
251 ATGAM BUILDING
252 CATTLE SHELTER
268 RESEARCH DIET PREP.
269 MAINTENANCE STORAGE
270 WATER METER HOUSE #1
271 WATER METER HOUSE #2
272 WATER METER HOUSE #3
273 WATER METER HOUSE #4
277 HAY STORAGE
279 PARASITOLOGY RESIDENCE
284 MACHINERY STORAGE
289 LARGE ANIMAL
INTENSIVE RESEARCH FAC.
303 HAY STORAGE
336 POLE BARN FOR HAY STORAGE
353 VIROLOGY
387 EQUINE QUARENTINE
GSS IN-GROUND SILAGE
R UPJOHN RESIDENCES
949 ATGAM LABORATORY



PORTAGE ROAD BUILDINGS EAST SIDE South of Industrial Drive



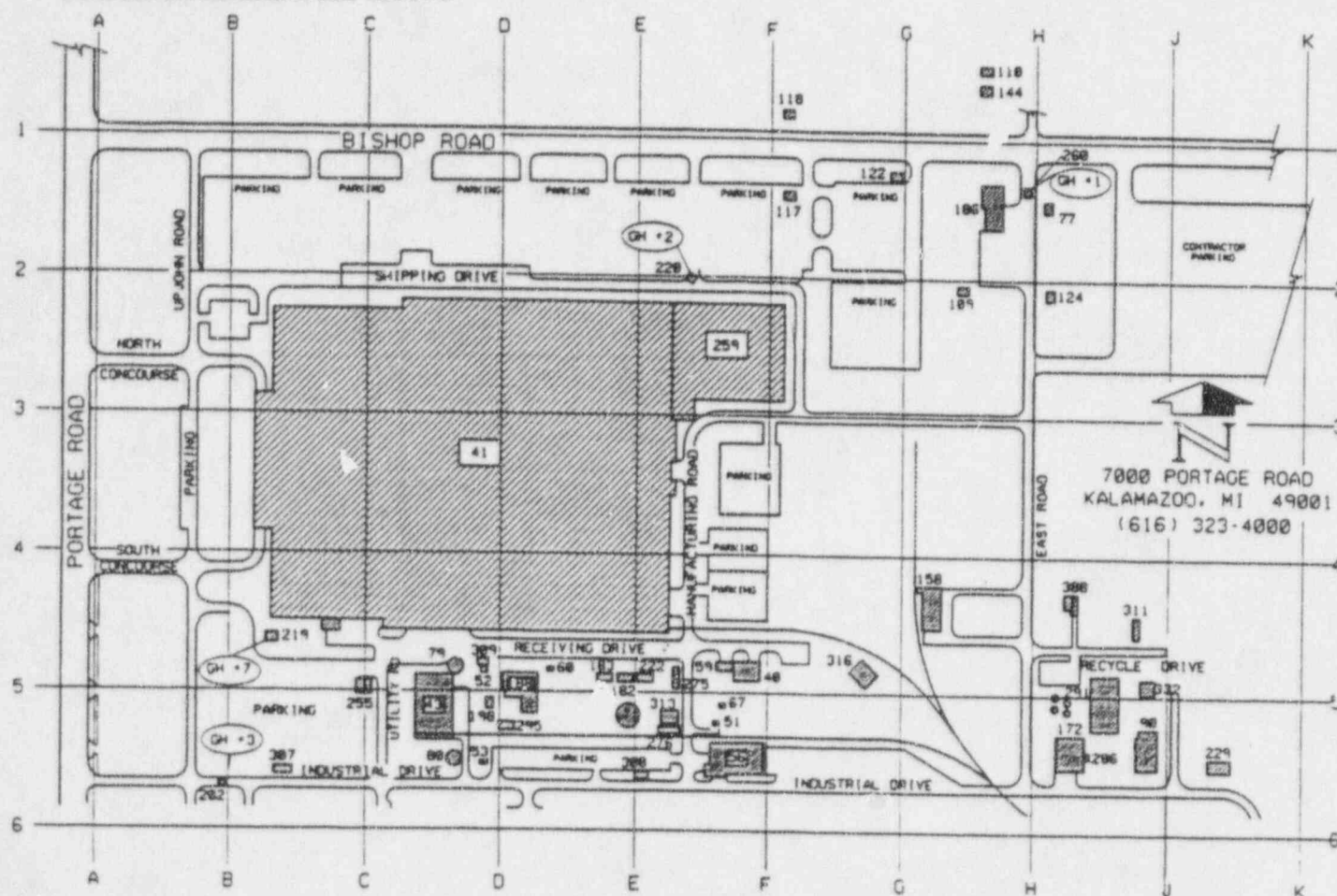
BLDG.*	NAME	LOCATION
38	Fermentation Production	C6
39	Biological Extracts	D6
44	Fine Chemicals	D7
45	Fine Chemicals	E7
57	Sulfuric Acid Building	C7
61	Wellhouse	D7
63	Solvent Storage	C6
66	Specialty Chemical Production	C7
68	Fine Chemicals	E7
69	Fine Chemicals	F7
78	Solvent Storage	H7
72	Pumphouse Well #16	E18
73	Solvent Recovery	F6
74	Incinerator	K6
76	Fine Chemical Waste Disposal	F8
78	Fine Chemicals	E6
82	Picnic Shelter	D18
86	Chemical Dev. Storage Building	G7
87	Fine Chemicals	E6
89	Fermentation Development	D7
91	Chemical Development	E8
92	Chemical Storage	H7
93	Chemical Storage	H7
94	LAM Storage	H7
182	Pumphouse Well #21	E12
183	Pumphouse Well #22	F18
184	Pumphouse Well #23	F9
128	Fermentation Warehouse	C7
121	Fermentation Structure	C6
127	Fermentation Production	C7
146	Animal Rearing Building	F13
147	Scale House-Dibel	E7
149	Fine Chemicals	E6
155	Ferm. Prod. Crystallization	B7
156c	Cephalosporin Processing	F11
156e	Penicillin Processing	F11
166	Rotary Filter Building	C7
167	Chlorine Storage	F7

BLDG.*	NAME	LOCATION	BLDG.*	NAME	LOCATION
173	Specialty Chemical Production	H8	253	Wellhouse for Disposal Well #3	F7
181	Guard House #5	F13	254	Wellhouse for Disposal Well #4	F9
187	Picnic Area Rest Room	D18	287	Chemical Receiving Barn	H6
191	Animal Quarantine Facilities	E12	297	Cooler Bldg. for Minoxidil	J7
195	Ferm. Prod. Crystallization	B8	299	Freezer Building	J7
196	Fine Chemicals Office	D6	301	Maintenance Shop Building	G7
199	Fine Reservoir #2 Pumphouse	G8	306	Chemical Engineering Building	D9
282	Guard House #3	B6	318	Beckflow Preventer Bldg. #4	B8
284	Welding Shop	D9	312	Instrumentation Building	C8
285	Fine Chem. Office & Classroom	E7	315	Chilled Water General Facility	E18
287	Chemical Production	F8	317	Instrument Shop	G8
288	Pharmaceutical Chem. Cafeteria	D7	318	Cephalosporin Building	E11
211	Chronic Toxicology Building	D12	321	Brine Building	E7
213	Portable Office Unit	F6	322	Instrumentation Building	C9
221	Guard House #6	B8	323	Motor Control Building	F6
224	Methanol Brine Chiller Bldg.	F7	324	RBST	C8
225	Pharm. Chem. Prod. Facility	C7	335	Office Trailer	F7
226	Sodium Hydroxide Pumphouse	C6	337	Office Trailer	E9
228	Chlorinator House Well #18	E18	338	Office Trailer	G8
230	Analytical Laboratory Building	D8	344	Office Trailer	G8
232	Emergency Generator Building	H7	350	Office Trailer	D8
233	Biological Control Facilities	D12	351	Office Trailer	D8
236	Chiller Bldg. DPGII	E6	358	Refrigerated Equipment Building	B6
237	Cyanide Storage Building	H7	359	Airco Nitrogen Plant	E12
238	Acetylene Storage & Supply Bldg.	H7	362	18/Moc Room	E6
248	Pumphouse Well #39	G13	366	Office Trailer	E9
241	Pumphouse Well #40	G13	384	Office trailer	E9

PORTAGE ROAD BUILDINGS

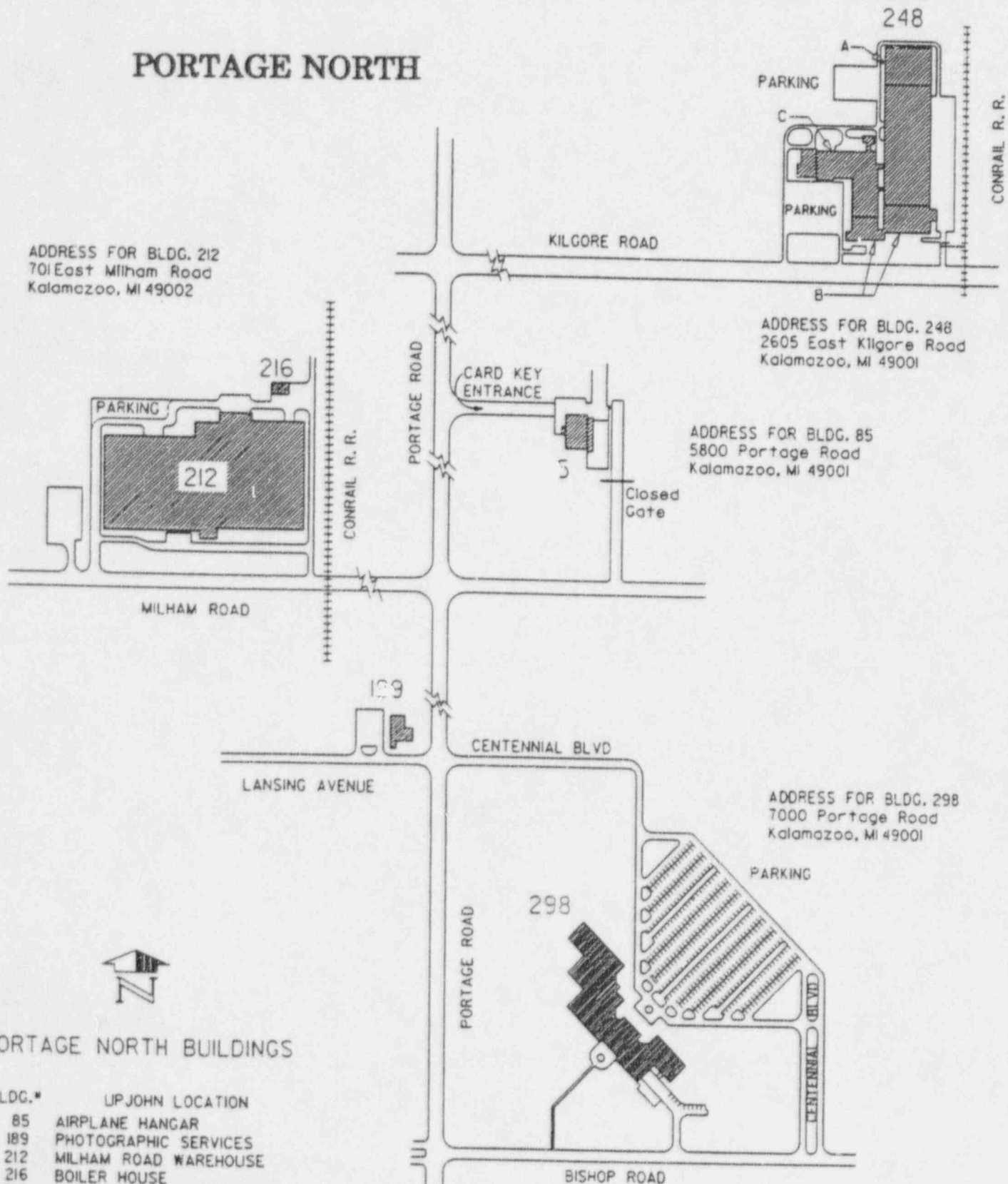
EAST SIDE

North of Industrial Drive



BLDG. *	NAME	LOCATION	BLDG. *	NAME	LOCATION
48	GROUND SERV. & WATER UTILITIES	F5	186	FIRE STATION	H1
41	PHARMACEUTICAL MANUFACTURING	C4	188	CENTRAL UTILITIES FACILITY	D5
43	POWER HOUSE	C5	198	COOLING TOWER FIRE PROT. BLDG.	D5
51	SWITCHGEAR HOUSE	F5	202	GUARDHOUSE *3	B6
52	PUMPHOUSE *1	D5	219	GUARDHOUSE *7	B5
53	PUMPHOUSE *2	D6	220	GUARDHOUSE *2	E2
56	GARAGE	F6	222	EAST RELOCATABLE CLASSROOM	E5
59	YARD CREW & WATER DEPT. OFFICE	F5	229	ENGINEERING STORAGE BUILDING	J5
60	PUMPHOUSE *4	D5	255	OIL PUMPHOUSE FOR BOILERS	C5
67	METER HOUSE	F5	259	LAB & TECHNICAL SERV. FACILITY	F3
77	PUMPHOUSE *17	H1	260	GUARDHOUSE *1	H1
79	WATERSPHERE	D5	275	OFFICE TRAILER	E5
88	WATERSPHERE	D6	276	OFFICE TRAILER	E5
90	CONSTRUCTION CONTRACTORS SHOP	J5	286	POLE BARN	H5
109	WELLHOUSE	G2	291	WASTE CONTROL BUILDING	H5
110	PUMP HOUSE WELL *25	H1	295	METAL BUILDING	D5
117	CHLORINATED WELL *7	F1	307	BACKFLOW PREVENTER BLDG *1	B6
118	CHLORINATED WELL *8	F1	308	BACKFLOW PREVENTER BLDG *2	E6
122	CHLORINATED WELL *19	G1	309	BACKFLOW PREVENTER BLDG *3	D5
124	FIRE TRAINING BUILDING	H2	311	INSTRUMENTATION BUILDING	J4
144	PUMPHOUSE WELL *27	H1	313	WATER BOOSTER PUMP STATION	E5
158	PRE-MIX PRODUCTS	G4	316	STORAGE GARAGE	G5
172	INCINERATOR BUILDING	H5	332	UTILITY STORAGE	J5
182	CENTER RELOCATABLE CLASSROOM	E5	388	HAZARDOUS SOLVENT WASTE STORAGE	H4
183	WEST RELOCATABLE CLASSROOM	E5			

PORTAGE NORTH



PORTAGE NORTH BUILDINGS

BLDG.*	UPJOHN LOCATION
85	AIRPLANE HANGAR
189	PHOTOGRAPHIC SERVICES
212	MILHAM ROAD WAREHOUSE
216	BOILER HOUSE
248A	PLASTIC BOTTLE PLANT
248B	CONSUMER PRODUCTS
248C	FLUIDS PRODUCTS
298	BISHOP ROAD OFFICE COMPLEX

Appendix 2

**Protocols Involving the Use of Radioactive Material in
Humans - Bronson Clinical Investigation Unit**

1983 - 1995

Date	Protocol	Isotope	Quantity (uCi)
4/83	BC 404	C-14	240
4/83	BC 456	C-14	300
8/83	BC 312	H-3	540
3/84	BC 336	H-3	1200
2/87	BC 590	C-14	275
1/89	BC 812	C-14	300
3/89	BC 628	I-125 I-131	1470 1260
5/91	BC 911	C-14	300
6/92	BC 978	C-14	300
3/94	BC 1042	C-14	600
8/95	BC 1080	C-14	800

**Experiments Involving the Use of Radioactive Material -
Bronson Clinical Investigation Unit**

1983 - 1995

Date	Experiment	Isotope	Quantity (uCi)
5/90	RIA Kit	I-125	12
6/90	RIA Kit	I-125	20
7/90	RIA Kit	I-125	12
7/90	RIA Kit	I-125	24
7/90	RIA Kit	I-125	12
7/90	RIA Kit	I-125	20
8/90	RIA Kit	I-125	24
8/90	RIA Kit	I-125	24

Appendix 3

UPJOHN

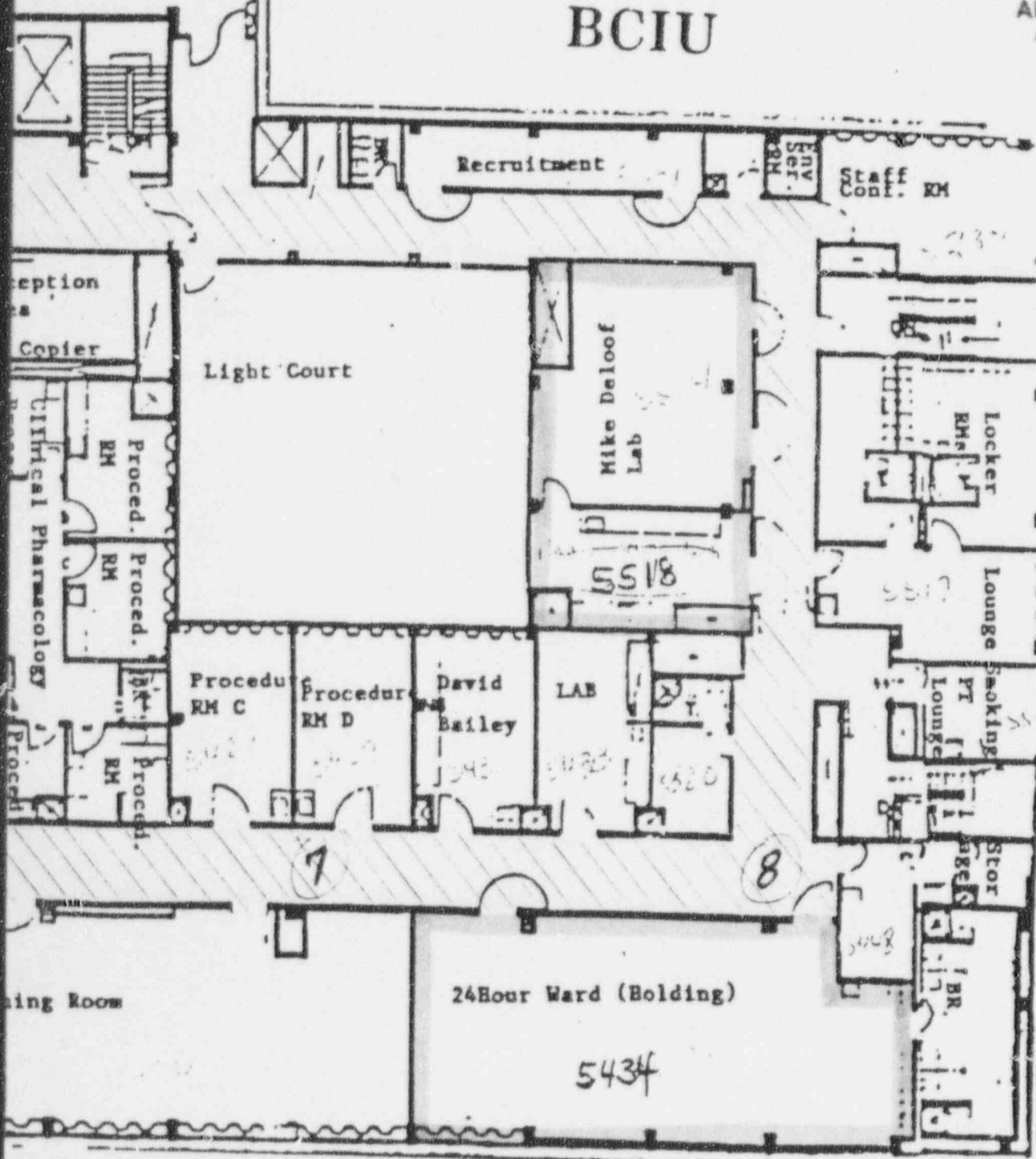
RESEARCH CLINIC

BCIU

ANSTEC
APERTURE
CARD

Also Available on
Aperture Card

(background - 50
cpm)
Performed by -
DLClement
Instrument -
Johnson GSM-210
#2038
Cal Date 12/28/95



6/31/96

BCIU Hallway Survey

9702260084-01

5/31/96

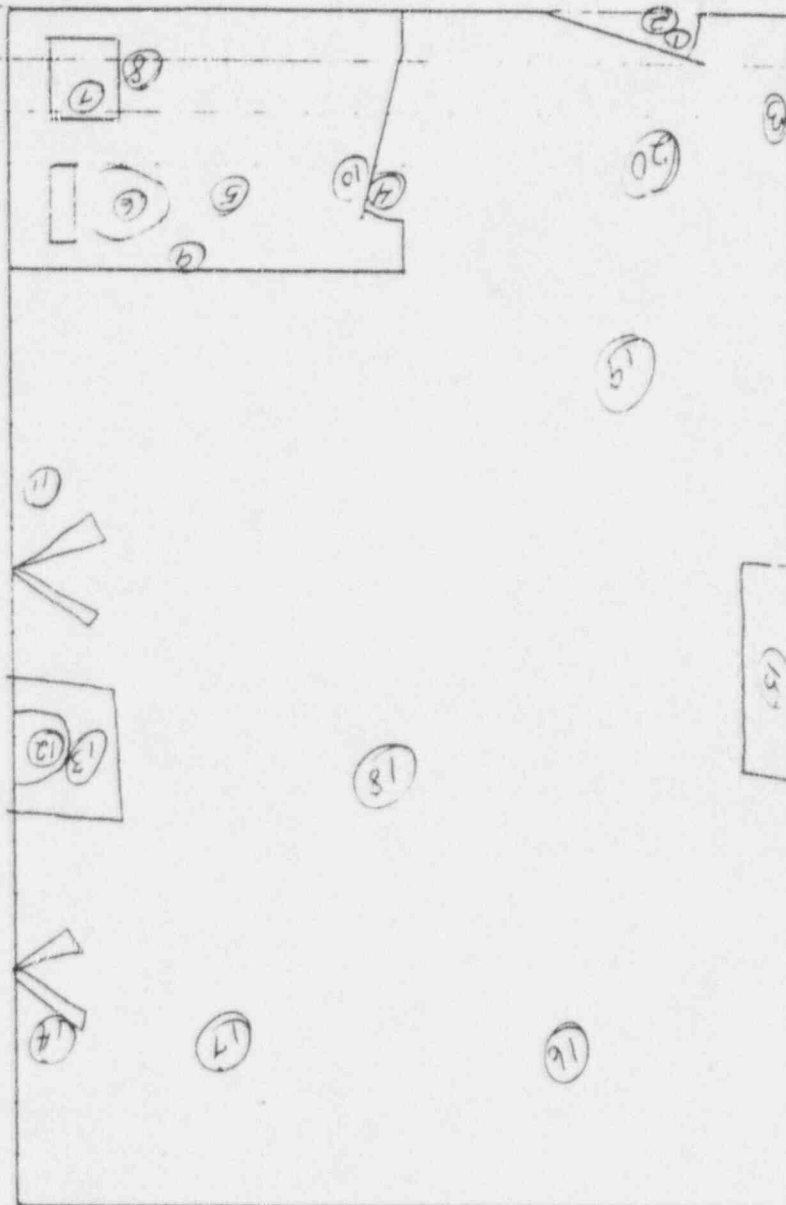
UNIT 1C

12.25"

BCIU Room # 5112

PT Room

- ① Door
- ② Floor
- ③ Needle Rack
- ④ Door
- ⑤ Floor
- ⑥ Toilet
- ⑦ Sink
- ⑧ Soap Dish
- ⑨ Rail
- ⑩ Light switch
- ⑪ Handles
- ⑫ Sink
- ⑬ Handle
- ⑭ Handle
- ⑮ Desk
- ⑯ Floor
- ⑰ Floor
- ⑱ Floor
- ⑲ Floor
- ⑳ Floor



SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 30 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEarnold

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings ≤ background (background ~ 50 cpm)

Performed by -
PAtlayer
SMunger
DLClement

Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

5/31/96

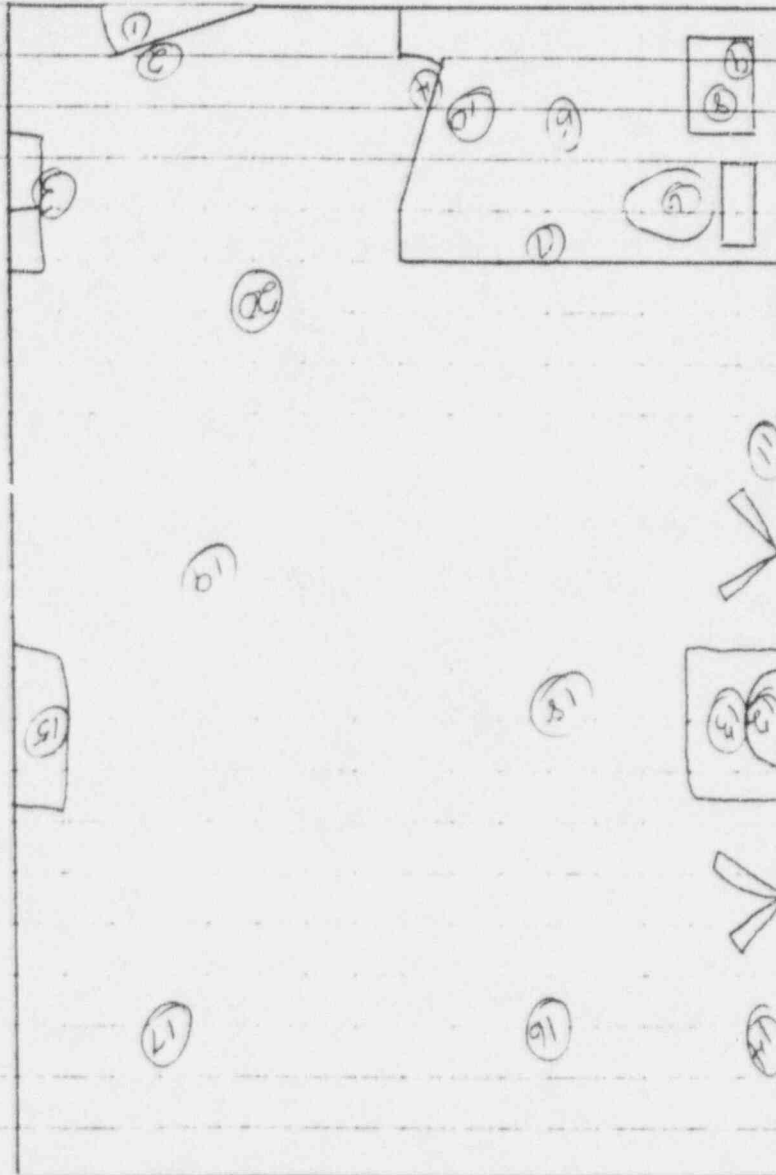
UNIT NO

SUBJECT

BCIU Room # 5114

PT Room

- ① Door
- ② Floor
- ③ Handle
- ④ Handle (Door)
- ⑤ Floor
- ⑥ Toilet
- ⑦ Handrail
- ⑧ Sink
- ⑨ Soap Dish
- ⑩ Light Switch
- ⑪ Handle
- ⑫ Sink
- ⑬ Door on Sink
- ⑭ Handle
- ⑮ Desk
- ⑯ Floor
- ⑰ Floor
- ⑱ Floor
- ⑳ Floor



SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 36 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEArnold

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe.
All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings ≤ background (background - 50 cpm)

Performed by -
PATHayer
SMUnger
DLClement

Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

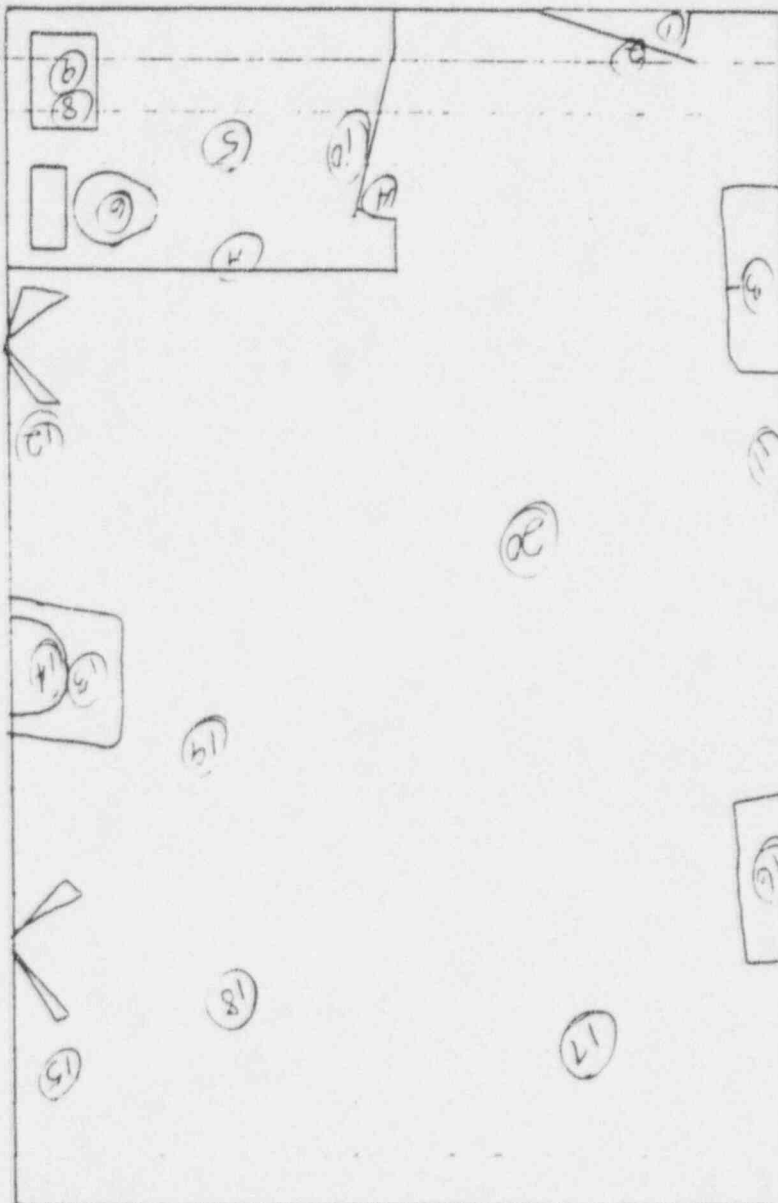
Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

5/31/96

BCIU Room # 5116

PT Room

- ① Door
- ② Floor
- ③ Handle
- ④ Door
- ⑤ Floor
- ⑥ Toilet
- ⑦ BAR
- ⑧ Sink
- ⑨ Soap Dish
- ⑩ Light switch
- ⑪ Needle Disp.
- ⑫ Handle
- ⑬ Handle
- ⑭ Sink
- ⑮ Handle
- ⑯ Desk
- ⑰ Floor
- ⑱ Floor
- ⑲ Floor
- ⑳ Floor



SURVEY RESULTS

Wipe Testing

Location -

1-20, noted on map

Results -

Highest net reading 31 dpm/100 cm²
See attached LSC print-out

Performed by -

CSSmith
GEArnold

Instrument -

Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -

Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -

All readings \leq background (background - 50 cpm)

Performed by -

PATHayer
SMUnger
DLClement

Instrument -

Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

5/31/94

BCIU Room #5118

PT Room

SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 25 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEArnold

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings ≤ background (background - 50 cpm)

Performed by -
PATHayer
SMUnger
DLClement

Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

- ① Door
- ② Floor
- ③ Door
- ④ Floor
- ⑤ Toilet
- ⑥ Handrail
- ⑦ Sink
- ⑧ Soap Dish
- ⑨ Light Switch
- ⑩ Handle
- ⑪ Needle Holder
- ⑫ Handle
- ⑬ Handle/Sink
- ⑭ Handle
- ⑮ Desk
- ⑯ Floor
- ⑰ Floor
- ⑱ Floor
- ⑳ Floor



5/31/96

UNIT NO

SUBJECT

BCIU Room # 5120

PT Room

- ① Door
- ② Floor
- 3 closet
- 4 Door
- 5 Floor
- 6 Toilet
- 7 Handle
- 8 Sink
- 9 Soap Dish
- 10 Light switch
- 11 Handle
- 12 Handle
- 13 Sink
- 14 Handle
- 15 Desk
- 16 Needle Rack
- 17 Floor
- 18 Floor
- 19 Floor
- 20 Floor



SURVEY RESULTS

Wipe Testing

Location -

1-20, noted on map

Results -

Highest net reading 26 dpm/100 cm²
See attached LSC print-out

Performed by -

CSSmith
GEArnold

Instrument -

Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -

Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -

All readings ≤ background (background ~ 50 cpm)

Performed by -

PATHayer
SMUnger
DLClement

Instrument -

Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

5/31/96

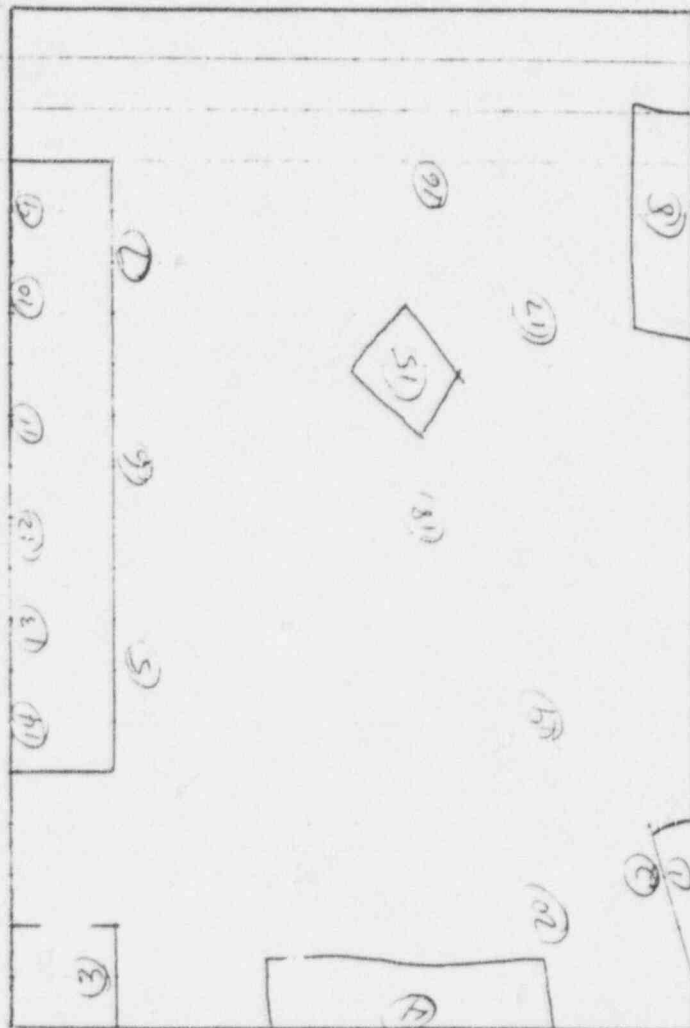
INT NO

SUBJECT

BCIU Room # 5201

Procedure Rm A

- 1 Door
- 2 Floor
- 3 Sink
- 4 Switch
- 5 Bench
- 6 Bench
- 7 Bench
- 8 Bench
- 9 cabinet
- 10 cabinet
- 11 cabinet
- 12 cabinet
- 13 cabinet
- 14 cabinet
- 15 handle
- 16 Floor
- 17 Floor
- 18 Floor
- 19 Floor
- 20 Floor



SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 28 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEArnold

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings ≤ background (background - 50 cpm)

Performed by -
PAThayer
SMUnger
DLClement

Instrument -
Johnson GSM-110 w/ HP-265 probe
#6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe
#5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor
#2038
Cal Date 12/28/95

5/31/96

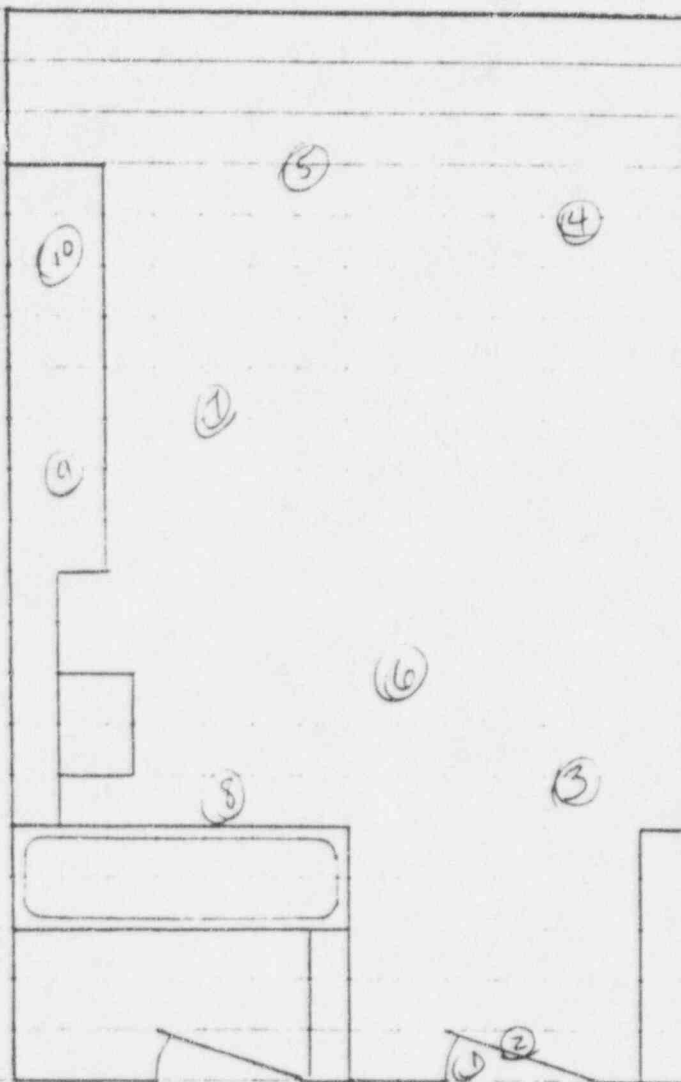
UNIT NO

SUBJECT

BCIU Room # 5123

Dirty Utility Room

- 1 Door
- 2 Floor
- 3 Floor
- 4 Floor
- 5 Floor
- 6 Floor
- 7 Table
- 8 Sink
- 9 Sink
- 10 Bench



SURVEY RESULTS

Wipe Testing

Location -

1-10, noted on map

Results -

Highest net reading 18 dpm/100 cm²
See attached LSC print-out

Performed by - MR Franz

Instrument -

Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -

Locations 1-10 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -

All readings \leq background (background ~ 50 cpm)

Performed by -

PA Thayer
SM Unger
DL Clement

Instrument -

Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

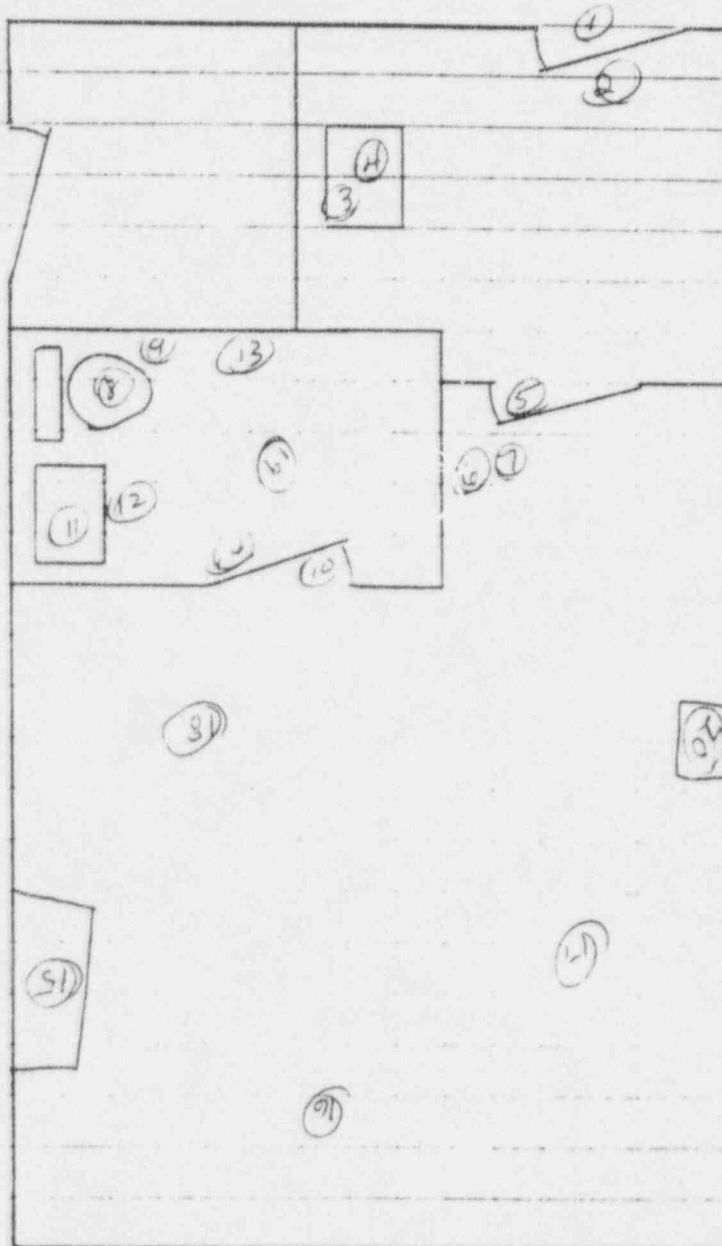
5/31/96

UNIT NO

SUBJECT

BCIU Room #5414
Allergen Room

- 1 Door
- 2 Floor
- 3 Sink
- 4 Soap Dish
- 5 Door
- 6 Light switch
- 7 Floor
- 8 T. Bowl
- 9 Handle
- 10 Door
- 11 Sink
- 12 Soap Dish
- 13 Hand Driail
- 14 Light switch
- 15 Table top
- 16 Floor
- 17 Floor
- 18 Floor
- 19 B.R. Floor
- 20 Needle Rack



SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 21 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEArnold

Instrument -
Packard LSC
Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings ≤ background (background - 50 cpm)

Performed by -
PATHayer
SMUnger
DLClement

Instrument -
Johnson GSM-110
w/ HP-265 probe
#6130
Cal Date 2/21/96

Johnson GSM-110
w/ HP-265 probe
#5033
Cal Date 5/23/96

Johnson GSM-210
Floor Monitor
#2038
Cal Date 12/28/95

5/31/96

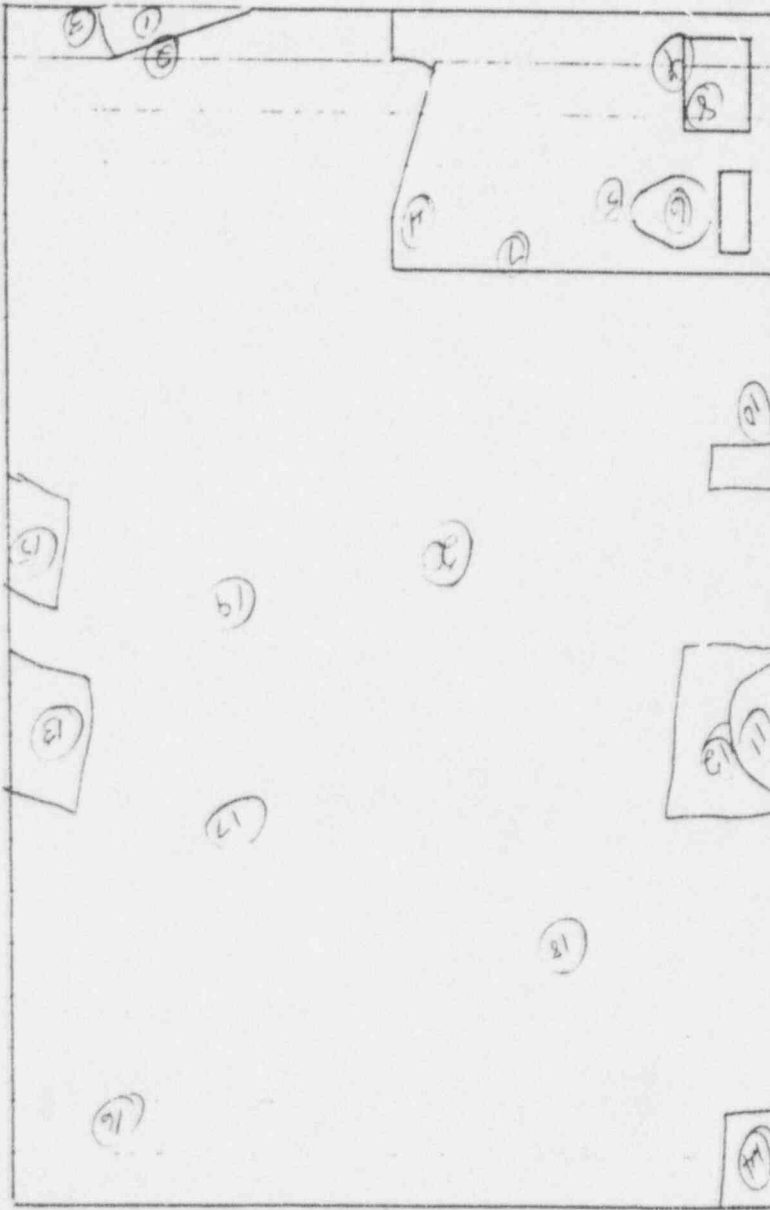
DATE

SUBJECT

BCIU Room #5404

PT Room

- 1 Door
- 2 Floor
- 3 Light Switch
- 4 Door
- 5 Floor
- 6 Toilet
- 7 Hand Rail
- 8 Sink
- 9 Soap Dish
- 10 Handle
- 11 Sink
- 12 Handle
- 13 Desk
- 14 Handle
- 15 Needle Box
- 16 Floor
- 17 Floor
- 18 Floor
- 19 Floor
- 20 Floor



SURVEY RESULTS

Wipe Testing

Location -
1-20, noted on map

Results -
Highest net reading 54/46 dpm/100 cm²
See attached LSC print-out

Performed by -
CSSmith
GEArnold

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings \leq background (background ~ 50 cpm)

Performed by -
PATHayer
SMUnger
DLClement

Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

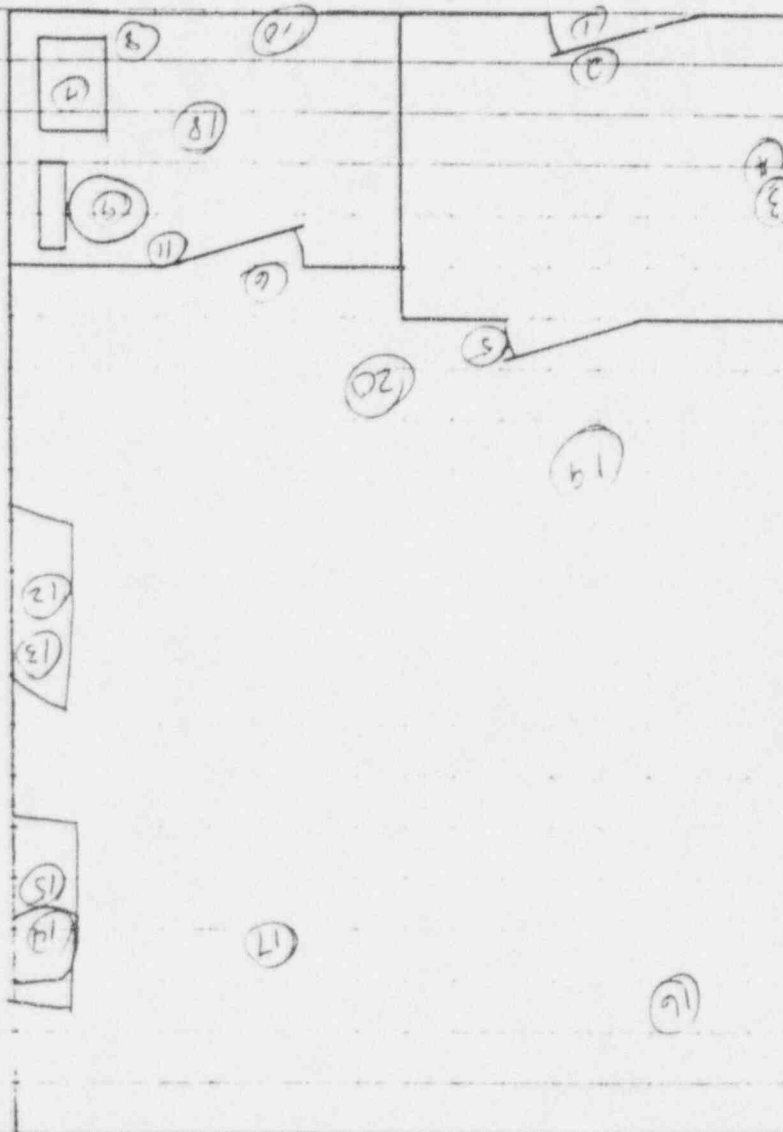
5/31/96

UNIT NO

SUBJECT

BCIU Room # 5406
PT Room

- 1 Door
- 2 Floor
- 3 Sink
- 4 Soap Dish
- 5 Door
- 6 Door
- 7 Sink
- 8 Soap Dish
- 9 Toilet
- 10 Bar
- 11 Light switch
- 12 Handle
- 13 Knob
- 14 Sink
- 15 Handle
- 16 Floor
- 17 Floor
- 18 Floor
- 19 Floor
- 20 Floor



SURVEY RESULTS

Wipe Testing

Location -

1-20, noted on map

Results -

Highest net reading 18 dpm/100 cm²
See attached LSC print-out

Performed by -

CSSmith
GEArnold

Instrument -

Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -

Locations 1-20 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -

All readings \leq background (background - 50 cpm)

Performed by -

PATHayer
SMUnger
DLClement

Instrument -

Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

UNIT NO

SUBJECT

BC11L Room #5413
Pharmacy

- 1 Door
- 2 Floor
- 3 Floor
- 4 Sink
- 5 Ref.
- 6 Floor
- 7 Floor
- 8 Floor
- 9 Cabinet
- 10 Cabinet
- 11 Floor
- 12 Floor
- 13 Shelf
- 14 Shelf
- 15 Floor
- 16 Shelf



SURVEY RESULTS

Wipe Testing

Location -
1-16, noted on map

Results -
Highest net reading 25 dpm/100 cm²
See attached LSC print-out

Performed by -
MR Franz

Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date 6/1/96

Direct Survey

Location -
Locations 1-16 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.

Results -
All readings < background (background ~ 50 cpm)

Performed by -
P A Thayer
S M Unger
D L Clement
Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

5/31/96

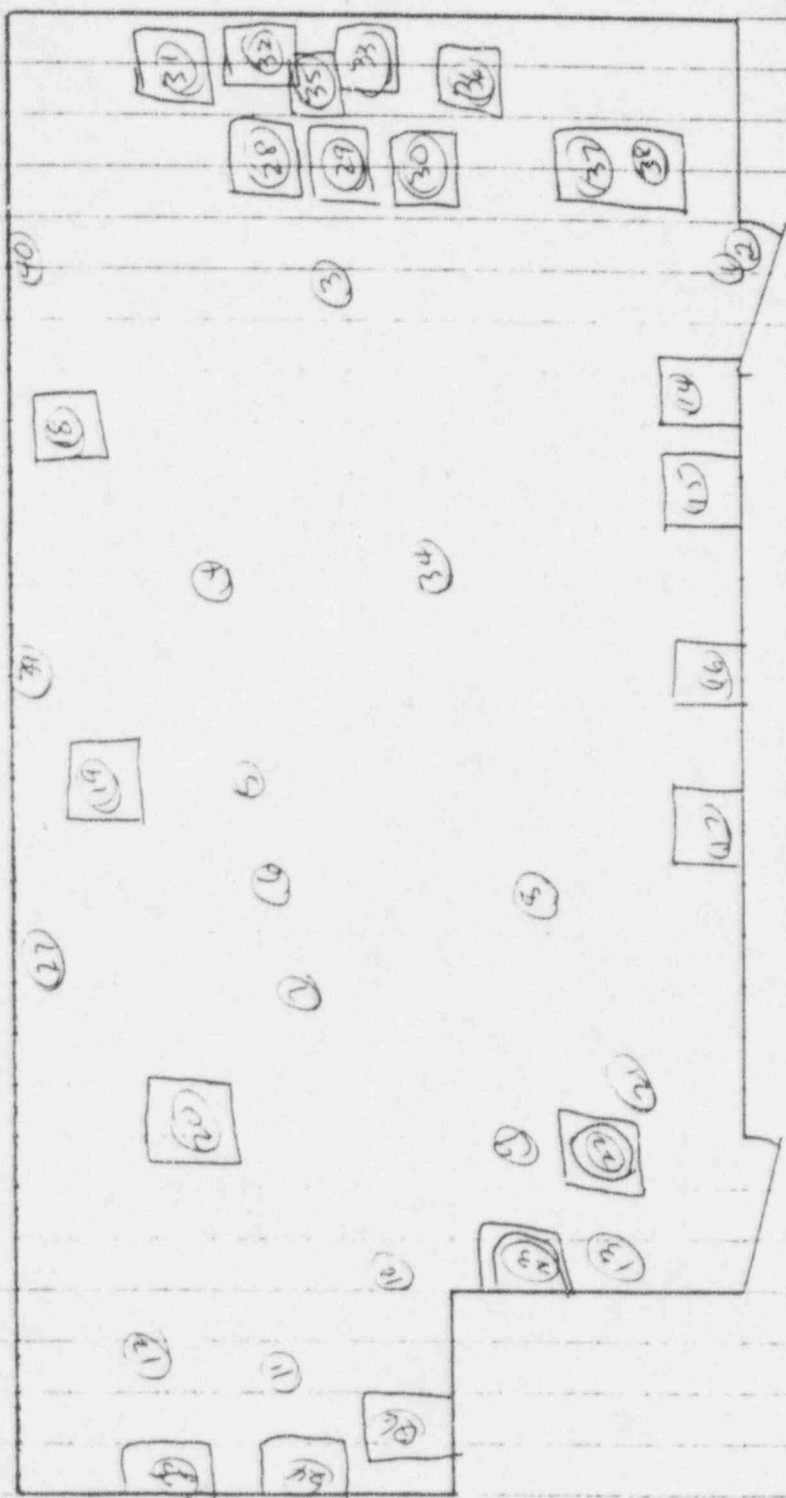
THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN

JCB NO _____
PAGE NO _____ OF _____
DATE _____
BY _____
CHECKED BY _____

UNIT NO _____
SUBJECT _____

BCIU Room # 5434
24 Hr Ward

- 1-13 Floor
- 14-20 Bed
- 21 CART
- 22-26 Sink
- 27 - Scale
- 28-36 - Table
- 37-38 stands
- 39-40 Ledge



SURVEY RESULTS

Wipe Testing

Location -
1-40, noted on map
Results -
Highest net reading 24 dpm/100 cm²
See attached LSC print-out
Performed by -
CSSmith
GEArnold
Instrument -
Packard LSC, Model 1900
#LSC-1
Cal (IPA) Date: 6/1/96

Direct Survey

Location -
Locations 1-40 surveyed with a pancake probe. All floor surfaces were surveyed with a pancake probe or floor monitor.
Results -
All readings \leq background (background ~ 50 cpm)
Performed by -
PATHayer
SMUnger
DLClement
Instrument -
Johnson GSM-110 w/ HP-265 probe #6130
Cal Date 2/21/96

Johnson GSM-110 w/ HP-265 probe #5033
Cal Date 5/23/96

Johnson GSM-210 Floor Monitor #2038
Cal Date 12/28/95

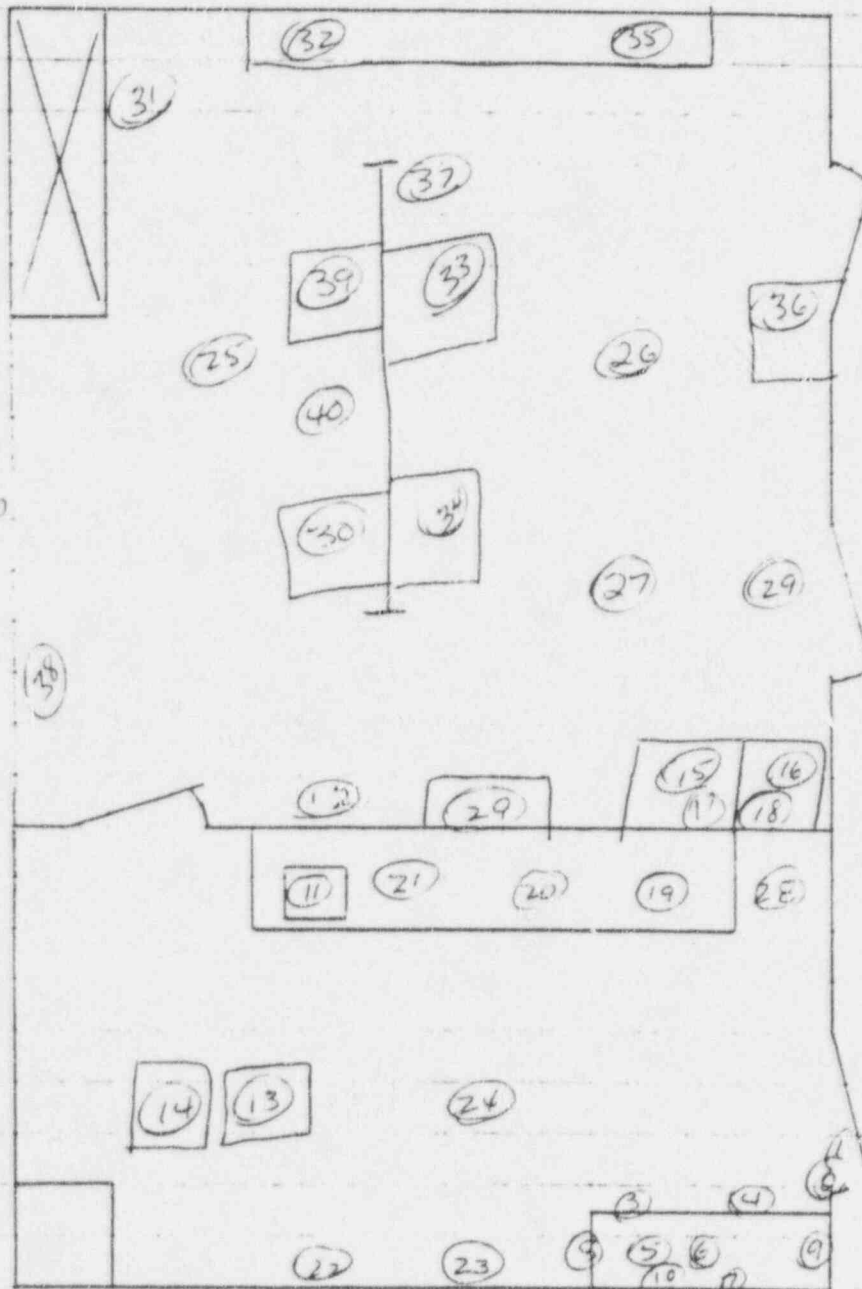
12/28/95

PCIU

LAB #5518

Delos Lab

- 1 Door
- 2 Floor
- 3 Feil
- 4 Feil
- 5 Bench
- 6 Bench
- 7 Raffle
- 8 Vaseline
- 9 Sink
- 10 Sink
- 11 Sink
- 12 Sink
- 13-18 Rot/reader
- 19-22 Bench top
- 23 LSC
- 24 Floor
- 25 Floor
- 26 Floor
- 27 Floor
- 28 cent top
- 29-36 B Top
- 37 table
- 38 table
- 39- BT
- 40 Sink



SURVEY RESULTS

Wipe Testing

Location -
1-40, noted on map

Results -
Highest net
reading 26
dpm/100 cm²
See attached
LSC print-out

Performed by -
M Franz

Instrument -
Packard LSC,
Model 1900
#LSC-1
Cal (IPA) Date
12/28/95

Direct Surveys

Location -
Locations 1-40
and all floor
surfaces were
surveyed with a
pancake probe

Results -
All readings
≤ background
(background ~ 50
cpm)

Performed by -
J Umbra
GE Arnold

Instrument -
Johnson GSM-110
w/ HP-265 probe
#6098
Cal Date 2/21/95

Johnson GSM-110
w/ HP-265 probe
#5092
Cal Date 10/12/95

Protocol #: 3 Name: DIRECT DPM LSC 1 03-JUL-96 08:09
 Region A: LL-UL= 0.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Direct DPM
 SNC DPM = 109400

BCIU

Luminescence Correction On

Sample Number

PID	S#	TIME	CPMA	DPM1	tSIE	LUM	FLAG	DPM/100 cm ²
(1 missing vial)								
10	2	1.00	30.00	36.47	693.	7	Background	
*11 missing vials)								
35	14	1.00	40.00	1	50.68	669.	0	
35	15	1.00	52.00	2	63.89	646.	0	
35	16	1.00	34.00	3	40.47	662.	3	
35	17	1.00	28.00	4	35.37	673.	0	
35	18	1.00	44.00	5	58.72	638.	5	
35	19	1.00	46.00	6	66.26	668.	9	
35	20	1.00	29.00	7	37.42	638.	4	
35	21	1.00	33.00	8	47.10	673.	6	
35	22	1.00	27.00	9	36.25	648.	7	
35	23	1.00	37.00	10	48.99	673.	6	
35	24	1.00	39.00	11	51.17	670.	3	
7	25	1.00	37.00	12	49.86	584.	0	
7	26	1.00	41.00	13	52.71	670.	3	
7	27	1.00	36.00	14	53.54	672.	8	
7	28	1.00	31.00	15	42.62	594.	0	
7	29	1.00	46.00	16	64.49	652.	0	
7	30	1.00	42.00	17	55.59	661.	0	
7	31	1.00	28.00	18	41.00	635.	7	
7	32	1.00	35.00	19	46.93	631.	9	
7	33	1.00	40.00	20	56.76	650.	5	
*4 missing vials)								
11	38	1.00	32.00	1	53.99	654.	3	
11	39	1.00	44.00	2	65.58	649.	7	
11	40	1.00	41.00	3	54.40	668.	3	
11	41	1.00	30.00	4	43.40	673.	4	
11	42	1.00	40.00	5	56.44	637.	5	
11	43	1.00	36.00	6	44.28	658.	0	
11	44	1.00	32.00	7	48.63	658.	0	
11	45	1.00	42.00	8	72.08	628.	5	
11	46	1.00	27.00	9	40.71	668.	4	
11	47	1.00	37.00	10	55.13	667.	0	
11	48	1.00	37.00	11	55.01	669.	6	
29	49	1.00	43.00	12	57.15	604.	0	
29	50	1.00	22.00	13	32.89	668.	9	
29	51	1.00	32.00	14	48.46	658.	12	
29	52	1.00	41.00	15	56.79	590.	3	
29	53	1.00	19.00	16	26.02	639.	5	
29	54	1.00	31.00	17	40.76	638.	3	
29	55	1.00	37.00	18	49.30	652.	5	
29	56	1.00	36.00	19	42.82	644.	0	
29	57	1.00	41.00	20	53.92	673.	1	

5112

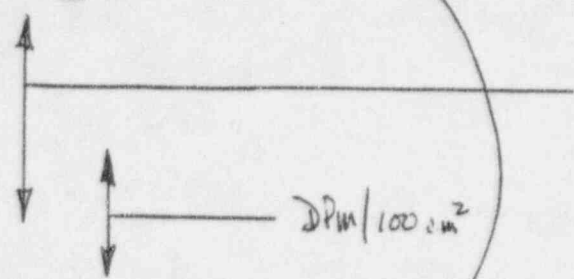
Room
5112

5114

Room
5114

[Signature]

17 62 1.00 34.00 1 46.90 655. 3
 19 63 1.00 39.00 2 53 654. 0



Sample Number

Room
5114

FID	S#	TIME	CPMA	DFM1	tsIE	LUM	FLAG
19	64	1.00	35.00	3	50.07	662.	0
19	65	1.00	37.00	4	52.69	672.	8
19	66	1.00	44.00	5	63.72	622.	2
19	67	1.00	28.00	6	36.68	663.	0
19	68	1.00	42.00	7	58.49	662.	5
19	69	1.00	36.00	8	50.57	629.	6
19	70	1.00	46.00	9	62.60	667.	7
19	71	1.00	25.00	10	36.93	650.	4
19	72	1.00	31.00	11	40.77	661.	3
6	73	1.00	34.00	12	47.63	669.	3
6	74	1.00	50.00	13	67.96	669.	0
6	75	1.00	38.00	14	53.00	624.	5
6	76	1.00	24.00	15	27.34	663.	4
6	77	1.00	40.00	16	55.14	630.	0
6	78	1.00	41.00	17	51.32	652.	3
6	79	1.00	36.00	18	46.36	657.	3
6	80	1.00	31.00	19	38.57	608.	3
6	81	1.00	33.00	20	42.82	665.	9
(4 missing vials)							
20	86	1.00	30.00	1	34.99	683.	4
20	87	1.00	21.00	2	33.81	675.	14
20	88	1.00	32.00	3	50.35	693.	9
20	89	1.00	32.00	4	37.27	674.	0
20	90	1.00	23.00	5	36.04	669.	13
20	91	1.00	36.00	6	47.91	685.	6
20	92	1.00	36.00	7	45.51	684.	8
20	93	1.00	25.00	8	35.61	700.	4
20	94	1.00	27.00	9	45.17	691.	14
20	95	1.00	28.00	10	32.97	695.	4
20	96	1.00	24.00	11	36.47	682.	8
30	97	1.00	20.00	12	31.42	696.	5
30	98	1.00	41.00	13	57.58	690.	10
30	99	1.00	30.00	14	40.32	698.	0
30	100	1.00	20.00	15	29.94	636.	5
30	101	1.00	44.00	16	55.35	656.	2
30	102	1.00	35.00	17	42.92	656.	0
30	103	1.00	42.00	18	54.31	682.	0
30	104	1.00	48.00	19	62.06	670.	0
30	105	1.00	38.00	20	48.07	678.	0

5116

5118

Room
5118

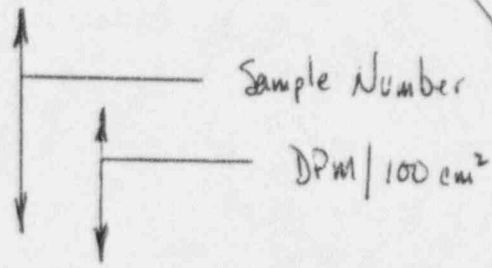
BCU Wipe Test Results

HEARNOLD
6/3/96

7 111	1.00	18.00	1	43.81	682.	8
7 112	1.00	30.00	2	71.71	664.	24
7 113	1.00	26.00	3	22	691.	4
7 114	1.00	33.00	4	30.14	693.	4
7 115	1.00	38.00	5	43.30	677.	3
7 116	1.00	41.00	6	42.47	679.	0
7 117	1.00	36.00	7	50.91	691.	0
7 118	1.00	23.00	8	52.98	689.	11
7 119	1.00	29.00	9	31.92	690.	5
7 120	1.00	32.00	10	32.65	697.	4
12 121	1.00	35.00	11	41.43	694.	6
12 122	1.00	45.00	12	41.24	695.	3
12 123	1.00	32.00	13	61.56	663.	0
12 124	1.00	17.00	14	43.31	692.	4
12 125	1.00	19.00	15	27.78	699.	21
			16	29.29	673.	0

5120

Room
2120



PID	S#	TIME	CPMA	DPM1	TSIE	LUM	FLAG
12	126	1.00	27.00	17 46.82	658.	11	
12	127	1.00	12.00	18 17.79	679.	22	
12	128	1.00	41.00	19 52.76	666.	0	
12	129	1.00	25.00	20 36.08	666.	4	

(4 missing vials)

3	134	1.00	42.00	1 56.37	659.	3	
3	135	1.00	30.00	2 41.66	660.	7	
3	136	1.00	44.00	3 59.90	571.	2	
3	137	1.00	42.00	4 48.72	663.	3	
3	138	1.00	49.00	5 64.67	663.	4	
3	139	1.00	44.00	6 64.82	667.	2	
3	140	1.00	29.00	7 45.58	640.	10	
3	141	1.00	29.00	8 44.55	635.	10	
3	142	1.00	30.00	9 40.90	670.	4	
3	143	1.00	47.00	10 61.17	670.	2	
3	144	1.00	33.00	11 50.25	672.	9	
25	145	1.00	26.00	12 41.25	666.	8	
25	146	1.00	42.00	13 54.14	669.	5	
25	147	1.00	43.00	14 64.05	670.	5	
25	148	1.00	31.00	15 41.43	670.	0	
25	149	1.00	42.00	16 53.86	662.	0	
25	150	1.00	34.00	17 47.51	661.	0	
25	151	1.00	34.00	18 43.43	665.	3	
25	152	1.00	41.00	19 55.21	662.	3	
25	153	1.00	32.00	20 42.15	663.	6	

5201

Room
5201

YE Arnold

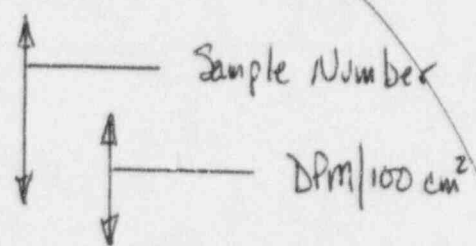
2 303	1.00	23.00	2	38.58	670.	5
2 304	1.00	24.00	3	38.55	632.	16
2 305	1.00	28.00	4	41.58	648.	4
2 306	1.00	31.00	5	41.58	638.	10
2 307	1.00	35.00	6	45.49	651.	3
2 308	1.00	37.00	7	54.62	663.	11
2 309	1.00	27.00	8	34.79	673.	7
2 310	1.00	33.00	9	50.10	660.	3
2 311	1.00	29.00	10	38.48	632.	13
(2 missing vials)						
17 314	1.00	32.00	1	38.06	645.	6
17 315	1.00	24.00	2	31.00	677.	8
17 316	1.00	31.00	3	40.19	677.	0
17 317	1.00	45.00	4	57.90	683.	7
17 318	1.00	35.00	5	49.92	689.	9
17 319	1.00	32.00	6	45.42	682.	6
17 320	1.00	17.00	7	28.42	669.	6
17 321	1.00	27.00	8	35.29	683.	4
(4 missing vials)						
15 326	1.00	30.00	1	38.03	659.	7

see next page
512

Room 5123

BCIU Hallway

BCIU Hallway



PID	S#	TIME	CFMA	DFM1	TSIE	LUM	FLAG
15	327	1.00	30.00	2	45.12	631.	7
15	328	1.00	23.00	3	32.58	629.	5
15	329	1.00	29.00	4	35.16	686.	0
15	330	1.00	31.00	5	43.40	684.	10
15	331	1.00	35.00	6	45.07	693.	3
15	332	1.00	44.00	7	57.46	660.	5
15	333	1.00	29.00	8	43.38	689.	4
15	334	1.00	33.00	9	47.42	672.	3
15	335	1.00	34.00	10	40.36	689.	3
15	336	1.00	28.00	11	38.04	666.	0
7	337	1.00	38.00	12	48.94	690.	8
7	338	1.00	29.00	13	42.85	687.	7
7	339	1.00	28.00	14	49.87	689.	19
7	340	1.00	36.00	15	52.09	682.	13
7	341	1.00	26.00	16	37.93	650.	11
7	342	1.00	26.00	17	38.45	672.	4
7	343	1.00	42.00	18	54.75	666.	3
7	344	1.00	31.00	19	39.57	665.	15
7	345	1.00	31.00	20	44.64	690.	3

5414

Room 5414

Protocol #: 3 Name: DIRECT DPM LSC 1 05-Jun-96 08:03
 Region A: LL-UL= 0.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Direct DPM
 SNC DPM = 109400
 Luminescence Correction On

PID	S#	TIME	CPMA	DPM1	tSIE	LUM	FLAG
6	1	1.00	28.00	34.52	685.	4	BKG
(1 missing vial)							
6	3	1.00	30.00	4 35.66	689.	4	#4

Re-count #4 for Room 5123

Sample Number
 DPM/100 cm²

18 158	1.00	36.00	1 41.48	675.	6
18 159	1.00	30.00	2 42.95	669.	13
18 160	1.00	34.00	3 51.40	681.	9
18 161	1.00	37.00	4 57.22	679.	13
18 162	1.00	32.00	5 58.01	620.	25
18 163	1.00	27.00	6 90.03	630.	61
18 164	1.00	14.00	7 182.06	603.	90
18 165	1.00	44.00	8 179.87	568.	66
18 166	1.00	41.00	9 50.80	686.	0
18 167	1.00	25.00	10 35.20	685.	8
18 168	1.00	39.00	11 59.65	552.	10
4 169	1.00	29.00	12 39.41	687.	4
4 170	1.00	24.00	13 28.93	564.	8
4 171	1.00	41.00	14 60.07	686.	5
4 172	1.00	27.00	15 41.50	666.	4
4 173	1.00	45.00	16 61.11	668.	5
4 174	1.00	32.00	17 41.82	667.	0
4 175	1.00	33.00	18 46.64	674.	9
4 176	1.00	40.00	19 52.86	668.	0
4 177	1.00	26.00	20 41.65	676.	8

5404

high luminescence flag

Room 5404

(4 missing vials)

15 182	1.00	25.00	1 43.89	679.	0
15 183	1.00	26.00	2 32.14	662.	14
15 184	1.00	26.00	3 35.82	604.	14
15 185	1.00	19.00	4 23.58	694.	10
15 186	1.00	35.00	5 42.63	692.	3
15 187	1.00	38.00	6 52.28	693.	5
15 188	1.00	31.00	7 54.08	580.	10
15 189	1.00	20.00	8 29.27	694.	10
15 190	1.00	30.00	9 44.26	688.	16

5406

Room 5406

BCIU Wipe Test Results

6/3/96 GEFAROLD

Sample Number
↓
CPM/100 cm²
↓

Room 5406
(cont)

PID	S#	TIME	CPMA	DFM1	TSIE	LUM	FLAG
15	191	1.00	30.00	10 34.80	689.	10	
15	192	1.00	30.00	11 45.41	682.	13	
18	193	1.00	35.00	12 45.32	686.	0	
18	194	1.00	17.00	13 27.29	648.	16	
18	195	1.00	28.00	14 40.31	635.	7	
18	196	1.00	34.00	15 39.03	689.	0	
18	197	1.00	32.00	16 41.91	665.	0	
18	198	1.00	25.00	17 41.20	662.	18	
18	199	1.00	24.00	18 36.22	658.	8	
18	200	1.00	32.00	19 40.51	652.	3	
18	201	1.00	26.00	20 37.38	649.	14	
(4 missing vials)							
11	206	1.00	32.00	1 42.43	695.	6	
11	207	1.00	41.00	2 54.88	682.	0	
11	208	1.00	26.00	3 31.68	679.	4	
11	209	1.00	22.00	4 38.02	482.	17	
11	210	1.00	28.00	5 35.46	662.	11	
11	211	1.00	37.00	6 43.12	687.	0	
11	212	1.00	38.00	7 45.76	654.	0	
11	213	1.00	29.00	8 33.36	654.	0	
11	214	1.00	34.00	9 40.15	695.	0	
11	215	1.00	33.00	10 45.30	660.	0	
11	216	1.00	36.00	11 55.90	672.	0	
11	217	1.00	46.00	12 57.41	669.	0	
11	218	1.00	44.00	13 44.67	684.	0	
11	219	1.00	45.00	14 54.01	680.	0	
11	220	1.00	41.00	15 44.56	642.	0	
11	221	1.00	41.00	16 44.56	642.	0	

5413

Room 5413

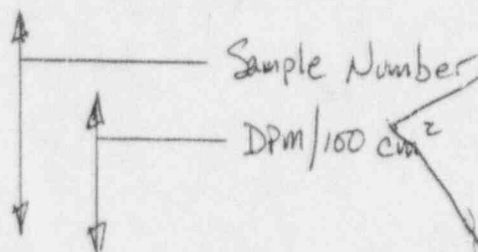
BCU Wipe Test Results

6/3/96 JEArenold

12	350	1.00	32.00	1	40.77	688.	6
12	351	1.00	29.00	2	40.85	688.	4
12	352	1.00	37.00	3	48.68	687.	3
12	353	1.00	26.00	4	31.57	692.	4
12	354	1.00	32.00	5	41.72	689.	3
12	355	1.00	36.00	6	46.82	688.	6
12	356	1.00	35.00	7	49.55	689.	3
12	357	1.00	28.00	8	31.97	690.	7
12	358	1.00	24.00	9	40.13	690.	19
12	359	1.00	20.00	10	35.22	677.	14
12	360	1.00	33.00	11	40.89	681.	3
32	361	1.00	30.00	12	39.42	682.	0
32	362	1.00	30.00	13	40.26	683.	7
32	363	1.00	36.00	14	49.92	686.	3
32	364	1.00	21.00	15	28.72	695.	14
32	365	1.00	25.00	16	30.07	690.	0
32	366	1.00	36.00	17	52.58	685.	11
32	367	1.00	24.00	18	38.42	690.	16
32	368	1.00	34.00	19	43.64	692.	6
32	369	1.00	30.00	20	41.54	690.	16
32	370	1.00	31.00	21	42.11	660.	3
32	371	1.00	28.00	22	40.03	672.	11
32	372	1.00	27.00	23	41.86	666.	4
27	373	1.00	29.00	24	30.51	692.	4
27	374	1.00	42.00	25	60.11	633.	0
27	375	1.00	23.00	26	28.64	626.	5
27	376	1.00	38.00	27	53.93	685.	3
27	377	1.00	35.00	28	44.68	685.	0
27	378	1.00	30.00	29	43.03	678.	10
27	379	1.00	39.00	30	57.07	686.	0
27	380	1.00	29.00	31	42.56	691.	7
27	381	1.00	28.00	32	37.73	689.	15
27	382	1.00	26.00	33	32.53	689.	4
27	383	1.00	39.00	34	55.46	691.	3
27	384	1.00	39.00	35	50.36	685.	0
1	385	1.00	26.00	36	35.49	664.	8

5434

Room 5434



PID	S#	TIME	CFMA	DPM1	TSIE	LUM	FLAG
1	386	1.00	29.00	37	39.31	686.	4
1	387	1.00	28.00	38	36.72	684.	4
1	388	1.00	21.00	39	37.51	680.	5
1	389	1.00	23.00	40	40.30	680.	13

BCU Wipe Test Results

6/3/96 GEArenold

Protocol #:30 Name:DIRECT DPM 28-Dec-95 22:20
 Region A: LL-UL= 0.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 (ie = 5.00 QIP = tSIE/AEC ES Terminator = Count

Direct DPM

SNC DPM = 109400

Luminescence Correction On

Sample Number

DPM/100 cm²

PID	SH	TIME	CPMA	DPM1	tSIE	LUM	FLAG
(1 missing vial)							
17	2	5.00	32.60	1 46.06	689.	5	
17	3	5.00	36.40	2 52.34	682.	2	
17	4	5.00	38.60	3 47.43	690.	1	
17	5	5.00	38.20	4 52.38	689.	2	
17	6	5.00	33.20	5 44.72	688.	5	
17	7	5.00	32.60	6 43.85	695.	5	
17	8	5.00	31.20	7 40.86	690.	4	
17	9	5.00	36.80	8 50.42	685.	4	
17	10	5.00	32.00	9 44.69	681.	5	
17	11	5.00	34.40	10 44.92	691.	2	
(2 missing vials)							
20	14	5.00	39.60	11 50.34	685.	4	
20	15	5.00	36.60	12 46.72	697.	6	
20	16	5.00	36.40	13 45.13	690.	2	
20	17	5.00	38.40	14 50.94	695.	4	
20	18	5.00	36.00	15 47.15	700.	3	
20	19	5.00	34.40	16 43.14	697.	3	
20	20	5.00	37.80	17 49.24	688.	3	
20	21	5.00	40.00	18 52.83	700.	4	
20	22	5.00	39.00	19 53.66	704.	5	
20	23	5.00	37.40	20 49.10	703.	3	
(2 missing vials)							
18	26	5.00	34.40	21 45.04	700.	2	
18	27	5.00	38.60	22 49.24	678.	2	
18	28	5.00	35.20	23 45.93	684.	3	
18	29	5.00	32.20	24 44.38	700.	5	
18	30	5.00	31.20	25 43.74	694.	5	
18	31	5.00	35.20	26 46.15	693.	2	
18	32	5.00	34.60	27 45.78	702.	3	
18	33	5.00	27.80	28 39.50	686.	9	
18	34	5.00	34.00	29 46.87	697.	4	
18	35	5.00	34.60	30 45.84	698.	2	
(2 missing vials)							
20	38	5.00	29.80	31 40.38	625.	2	
20	39	5.00	36.40	32 50.85	647.	3	
20	40	5.00	28.40	33 39.95	628.	4	
20	41	5.00	38.20	34 52.15	694.	6	
20	42	5.00	36.00	35 47.38	687.	2	
20	43	5.00	34.60	36 49.39	685.	6	
20	44	5.00	36.80	37 47.56	693.	2	
20	45	5.00	32.20	38 47.42	702.	7	
20	46	5.00	32.00	39 41.19	693.	5	
20	47	5.00	32.20	40 42.22	696.	5	

994 5518

Room 5518

BCU Wipe Test Results

12/28/95 GEARNOIL

FEB 10 1997

Clark W. Smith, Ph.D.
Chairman, Radiation Safety Committee
Pharmacia and Upjohn Company
301 Henrietta Street
Kalamazoo, MI 49007

Dear Dr. Smith:

Enclosed is Amendment No. 45 to your NRC Material License No. 21-00182-03 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

Please be advised that, per your request, the Bronson Clinical Investigation Unit (BCIU) was removed as a place of use in License Condition 10. The enclosed amendment authorizes you to release your BCIU space for unrestricted use.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct 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; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
 - a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
 - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.

301895

4. Request and obtain a license amendment before you:
 - a. Change Radiation Safety Officers;
 - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
 - d. Change ownership of your organization.
5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

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, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,
Original Signed By
Charles F. Gill
Nuclear Materials Licensing Branch

License No.: 21-00182-03
Docket No.: 030-04781
Enclosure: Amendment No. 45

DOCUMENT NAME: M:\03004781.CL6

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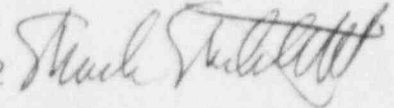
OFFICE	DNMS/RIII	E							
NAME	CGILL:jaw								
DATE	X2/7/98								

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FEB 05 1997

MEMORANDUM TO: Pharmacia and UpJohn (BCIU) File

FROM: Mark Mitchell, Radiation Specialist
Nuclear Materials Inspection Section 2



SUBJECT: CONFIRMATORY SURVEYS OF CLINICAL STUDIES AREAS ON THE FIFTH
FLOOR OF BRONSON HOSPITAL SOUTH

On December 17, 1996, I conducted surveys for removable contamination in rooms 5120 5404 and 5406 on the fifth floor of the south wing of Bronson Hospital in Kalamazoo, Michigan.

The wipes were taken from the rest room walls and floor as well as surfaces accessible to normal patient activities like bed stands and window sills.

Attached are the results of analysis of the wipes. No removable contamination was identified.

Additional surveys in these rooms, common areas and current employee work areas were conducted using a portable survey instrument (Ludlum 3 with a 44-9 probe, NRC No. 46891, calibrated 8/96). No contamination was identified.

License No. 21-00182-03
Docket No. 030-04781




UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

96-67

December 3, 1996

MEMORANDUM TO: ✓ B. J. Holt, Chief, Nuclear Materials Licensing Branch
FROM: B. L. Jorgensen, Chief, Decommissioning Branch 
SUBJECT: RESPONSE TO REQUEST FOR TECHNICAL ASSISTANCE REGARDING
PHARMACIA UPJOHN COMPANY (CONTROL NO. 301895)

In a Request For Technical Assistance dated October 23, 1996, John Madera requested our review of data and information submitted by Pharmacia & Upjohn Company regarding the unrestricted release and removal from the license of the Bronson Clinical Investigation Unit (BCIU), at the Bronson Methodist Hospital, Fifth Floor, 252 East Lovell Street, Kalamazoo, Michigan (License No. 21-00182-03). We have completed our review as requested and determined that this facility can be evaluated under the Type II Decommissioning criteria. As such, our review has concluded that the data and information submitted by the licensee were adequate to demonstrate that the BCIU at Bronson Hospital is free of radiological contamination that would pose a health and safety concern to members of the public. Although a final closeout inspection is necessary, we have determined that a confirmatory inspection of BCIU will not be required. Therefore, we will be scheduling a closeout inspection at BCIU in the near future. If the closeout inspection finds that BCIU has been adequately decommissioned, the facility will be able to be released for unrestricted use and deleted as a place of use from the license. You will be notified of the results of the inspection when it is completed so that you can take appropriate action as necessary. A summary of our technical review and subsequent conclusions for these determinations are attached.

If you have any questions regarding this review, please contact William Snell (x9871).

Attachment: As stated

PHARMACIA UPJOHN COMPANY

License No. 21-00182-03

November 20, 1996

Technical review for unrestricted release and removal from the license as a location of use, the Bronson Clinical Investigation Unit (BCIU), at the Bronson Methodist Hospital, Fifth Floor, 252 East Lovell Street, Kalamazoo, Michigan.

References:

- 1) Letter from Clark W. Smith, Pharmacia & Upjohn Company, to Charles F. Gill, US NRC, dated September 25, 1996.
- 2) Letter from Cassandra F. Frazier, US NRC, to Clark W. Smith, Pharmacia & Upjohn Company, dated August 28, 1996.
- 3) Letter from Clark W. Smith, Pharmacia & Upjohn Company, to Cassandra F. Frazier, US NRC, dated June 19, 1996.

Review:

Appendix 2 of Ref. 1 contained a line-by-line listing of each isotope used, the date of its use, and the quantity used. These isotopes were used for experiments and protocols involving the use of radioactive material in humans. The isotopes used included I-125, I-131, H-3 and C-14. For I-125 and I-131, considering the dates when they were used (1989-1990), and due to their short half-lives (I-125, $T_{1/2}=60$ days and I-131, $T_{1/2}=8$ days), both will have decayed to background levels.

For H-3, there were only 2 uses: August 1983, 540 μCi , and March 1984, 1200 μCi . With a 12.3 year half-life, these quantities would have decayed to 260 μCi and 590 μCi . These quantities are below the 10 CFR Part 20 Appendix C quantity for H-3 of 1000 μCi . The exempt quantity listed in 10 CFR Part 30, Schedule B, is also 1000 μCi . In combination this would still only equal a total of 800 μCi .

C-14 was used 8 times as follows:

<u>Date</u>	<u>Quantity (μCi)</u>	<u>Date</u>	<u>Quantity (μCi)</u>
4/83	240	5/91	300
4/83	300	6/92	300
2/87	275	3/94	600
1/89	300	8/95	800

The 10 CFR Part 20 Appendix C quantity for C-14, as well as the 10 CFR Part 30, Schedule B exempt quantity, are both 100 μCi , which is less than each of these quantities. Additionally, with a $T_{1/2}=5730$ years, the decay of the C-14 is negligible.

The licensee stated in Ref. 1, that the "Human metabolism studies using H-3 and C-14 were conducted in a manner which ensured a high percentage of the radioisotope (usually > 95%) was recovered in blood samples or excreta". For H-3, this makes the potential remaining quantity only about 40 μ Ci (assuming only 5% was unaccounted for), which is of minimal concern. For C-14, if it is also assumed that on average only 5% was unaccounted for, this would leave at most an unaccounted for quantity in each case of less than the Part 20 Appendix C and Part 30 Schedule B limits. A total for all C-14 cases would equal 156 μ Ci, which is only 56% above the Part 20 Appendix C and Part 30 Schedule B limits. From a practical standpoint, it is a very conservative assumption to add all the potential unaccounted for quantities together based on the fact the injections took place over a 12 year period, and occurred in different rooms. The licensee also stated that each room where the studies took place were surveyed at the time each study, which lessens significantly the potential for these areas to have been left contaminated.

A review of the survey data provided by the licensee indicated that the scope of the surveys was adequate. For each of the 13 rooms surveyed, the entire surface area of the floor was scanned with a pancake probe. In addition, from 10 to 40 wipes were taken in each room, with a direct measurement at each wipe location. The wipe test results identified only one room where values exceeded the 15-40 dpm/100 cm² background range, and the highest value measured in that room was 146 dpm/100 cm². This compares with the maximum allowable limit for removable beta-gamma emitters of 1000 dpm/100 cm².

Because the licensee used H-3 and C-14, which have half-lives greater than 60 days, this amendment request would normally automatically qualify as a Type III Decommissioning. However, based on the above review, it is concluded that due to the minimal quantities used and the frequency and manner in which they were used, that this can be evaluated as a Type II Decommissioning as allowed by the *NMSS Handbook for Decommissioning Fuel Cycle and Materials Licensees*, Rev. 0, October 1996.

Confirmatory Survey:

IP 83890, Section 02.03b provides the 4 criteria specifying when a confirmatory survey is required.

1. Use of unsealed radionuclides with $T_{1/2}$ > 60 days where significant residual contamination is possible.

This facility is not considered to have a potential for significant residual contamination based on the minimal levels used and the frequency and manner in which they were used.

2. A significant safety issue has occurred.

There has been no known significant safety issue identified at this facility.

3. Politically sensitive issues or other technical issues have been brought to the attention of the NRC.

We are not aware of any politically sensitive issues concerning this facility.

4. An adequate closeout survey has not been conducted by the licensee.

The final surveys provided by the licensee have been determined to be adequate.

Based on the review of these 4 items, it is determined that a confirmatory survey in support of the unrestricted release of this facility is not necessary. However, a final closeout inspection will be performed.

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REGIONAL TECHNICAL ASSISTANCE REQUEST FORM

Date: 10/21/96

Mail or E-Mail to: James R. McCormick-Barger (JWM), Chief
Decommissioning Branch

From: B. J. Holt (BJH), Chief
Nuclear Materials Licensing Branch

Licensee: Pharmacia & Upjohn Company

License No: 21-00182-03

☐ **Control No:** 301895

☐ **Letter dated:** September 25, 1996

☐ **Suggested change in licensing procedure (enclosed):** N/A

☐ **Problem/Issue:** The licensee has requested the free release, unrestricted use, and removal from the license of the Bronson Clinical Investigation Unit (BCIU), as a place of licensed material use, at the Bronson Methodist Hospital, Fifth Floor, 252 East Lovell Street, Kalamazoo, Michigan. Their application included closeout survey results and the past isotope use at this facility. On October 8, 1996, Bill Snell of your staff did a preliminary review of the supporting attached information (enclosed). Mr. Snell indicated that because two of the isotopes (H-3 and C-14) used at the facility had half-lives greater than 60 days, a Type III decommissioning appeared appropriate. He requested that our branch formally request technical assistance from your branch to ascertain whether a Type-III decommissioning would be appropriate for the licensee's specific circumstances.

☐ **Action Required:** Review the licensee's request for free release to determine if it can be granted or whether a Type-III decommissioning is necessary.

☐ **Recommended Action (with revisions):** Approve or X Reject
Since the licensee did not conduct a formal radiation survey (i.e., dose rate determination in micro R/hr) and did not describe how that waste products resulting from the human use metabolism studies, using H-3 and C-14, were dispositioned, residual contamination at the BCIU facility remains a possibility. Presently, it appears appropriate to proceed with a Type III decommissioning, reject the licensee's free release request, have the licensee conduct a formal radiation

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survey and conduct NRC confirmatory radiation and wipe-test surveys of the facility. However, the above actions may not be necessary if discussions with the licensee results in discovering that the radioactive material was appropriately removed from the facility, the surveys already conducted by the licensee were adequate and any projected releases to the environs (e.g., the sanitary sewage system) would have minimal potential dose consequences to the general public.

Remarks: It is suggested that your staff obtain a clear understanding of isotopic use and the close-out surveys at the licensee's facility to put the licensee's request for free release in the proper perspective. This discussion with the licensee may be enough to ascertain whether a Type-III decommissioning is an appropriate consideration.

Decommissioning Reviewer: _____

Regional Reviewer: Charles F. Gill

Reviewer Code: S8

Reviewer Phone No.: (630)829-9814

Fax No.: (630)515-1259

Request Needed by: 11/04/96

Enclosures: As stated

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