

## CLOSE-OUT RADIATION SURVEY REPORT

For: Kay Ray, Inc.  
506 West Campus Drive  
Arlington Heights, Illinois 60004-9985

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January 5, 1987 close-out report for the 516 West Campus facility)
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### APPENDIX A

#### 1. Radiation Survey Personnel

Al Peterson, Radiation Safety Officer of Kay Ray, Inc., with Kay Ray personnel under his direct supervision, performed preliminary radiation surveys of the 506 West Campus Drive building. A detailed follow-up survey was performed by Stan A. Huber of S. A. Huber Consultants, Inc. (NRC License #12-17503-01) and Herb Huber, Decon Services Manager of ADCO Services, Inc., (NRC License #12-11286-01) on January 26, 1987.

#### 2. Instruments Used and Methods

- a) One (1) Ludlum Model 19 Micro R meter, serial #42966, calibrated August 1, 1986 (ADCO) was used for building walk through survey and outside building survey to detect any sealed sources or major contamination.
- b) Two (2) Ludlum Model 2 multiprobe floor monitors, serial #43162 and #43179, (ADCO) were used in detailed overlapping sweep paths throughout every room in the Kay Ray building, to detect any contamination on the floors. Normal background on these instruments registers about 2 K CPM and a 7 uCi Cesium-137 standard produced about 200 K CPM, so minimum detectable activity would be about 0.1 uCi for Cesium-137.
- c) Two (2) Ludlum Model 14-C survey meters with 44-9 thin window pancake probes (ADCO), were used to survey surfaces of walls and materials, and to confirm clean up of any contaminated spots.
- d) One (1) Packard Model 5230 Auto Gamma well counter (SAHCI) with a 26.7% counting efficiency for Cs-137, was used for counting soil samples of the polar coordinates of the Kay Ray buildings. See Appendix C of the Kay Ray Close-out Report dated January 5, 1987, which includes the soil sample results for both the 506 and 516 West Campus Drive facilities.

All survey instruments used were last calibrated by SAHCI in August 1986. These instruments and all detection/sample counting instruments were operationally checked prior to each use.

Planned action levels for decontamination were as indicated in the 1982 NRC Draft Guide for Decontaminating and Decommissioning of Facilities, with an intent to remove any contamination to ALARA levels, or as near normal background as possible.

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### APPENDIX B

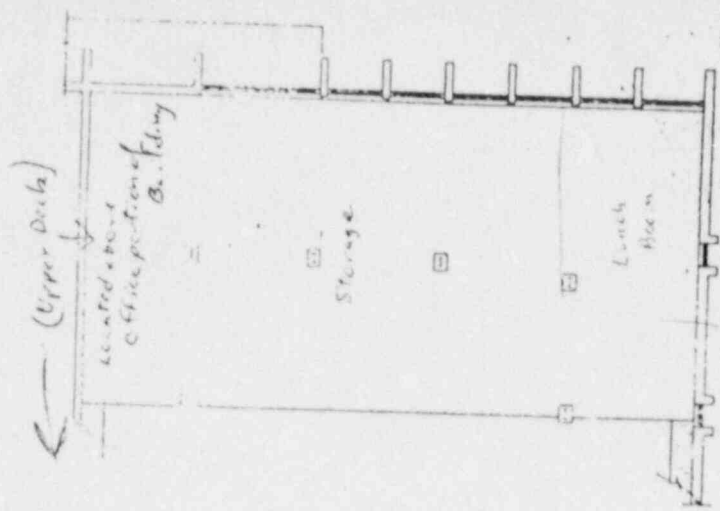
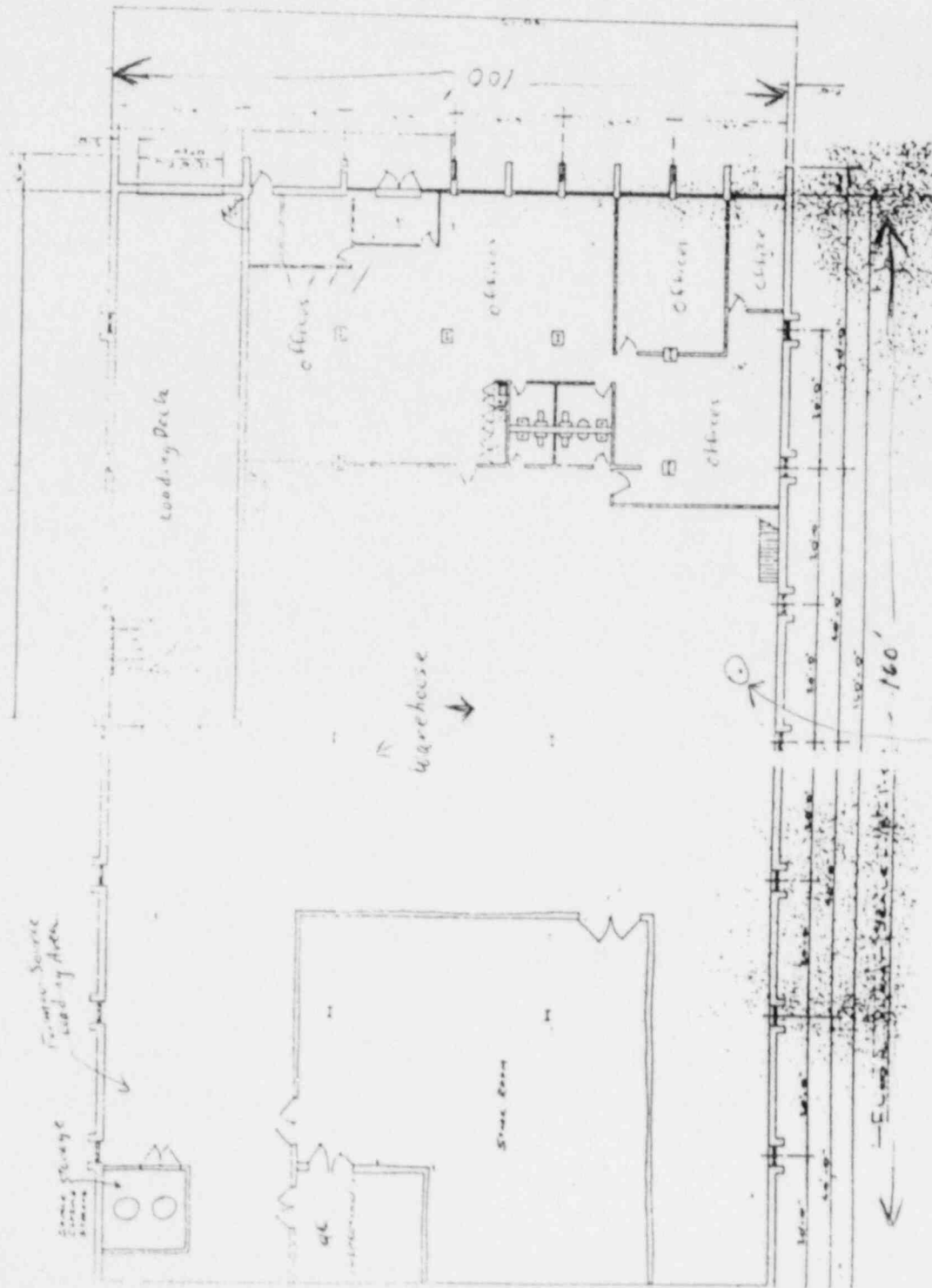
#### FACILITY SKETCH and DESCRIPTION

The next page (sketch) shows the layout of the 506 West Campus Drive warehouse/office building, which is about 160 feet long by about 100 feet wide (16,000 ft<sup>2</sup>). The Administration and carpeted office areas face West Campus Drive and comprise about one third of the building. The back half of the building is primarily open warehouse type rooms (Q.C. Inspection, Stock Room, etc.) with concrete slab floors. The walls are concrete with exterior brick facing. There is an upper deck with concrete slab floor, as shown on the attached facility sketch (next page herein).

The facility sketch also shows the approximate location along the west wall (Warehouse) where a pin-point area reading was obtained with the floor monitor. The pancake Ludlum 14-C (with pancake detector) at surface of this area gave a maximum reading of 0.15 mr/hr. The spot was not removable with decon solution, so the spot was chiseled out and placed in rad waste and transferred to ADCO Services, Inc. The area was resurveyed and wipe-tested to confirm no reading above normal background (<0.04 mr/hr).

# Facility Sketch

KAY RAY, Inc.  
506 West Campus Drive  
Arlington Heights, IL.



Building size: 100' x 160'

One pin-point spot, reading 0.15 m/hr on floor (fixed)  
at surface, with portable probe, low  
found and removed as red-washable.

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### APPENDIX C

#### DESCRIPTION OF SOIL SAMPLES TAKEN

Our previous close-out radiation survey (dated December 29, 1986) for the 516 West Campus building included soil sample analysis for both the 516 building environs and for the 506 West Campus facility. That data will not be repeated in this documentation. Those results showed normal and uniform background radiation levels for low, medium, and high energy levels.

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### APPENDIX D

#### DESCRIPTION OF BUILDING RADIATION SURVEY and PRINTOUT RESULTS AFTER DECONTAMINATION

Appendix A of this report describes the personnel, instruments, and methods used in performing the radiation survey of the 506 West Campus Drive building and its immediate environs.

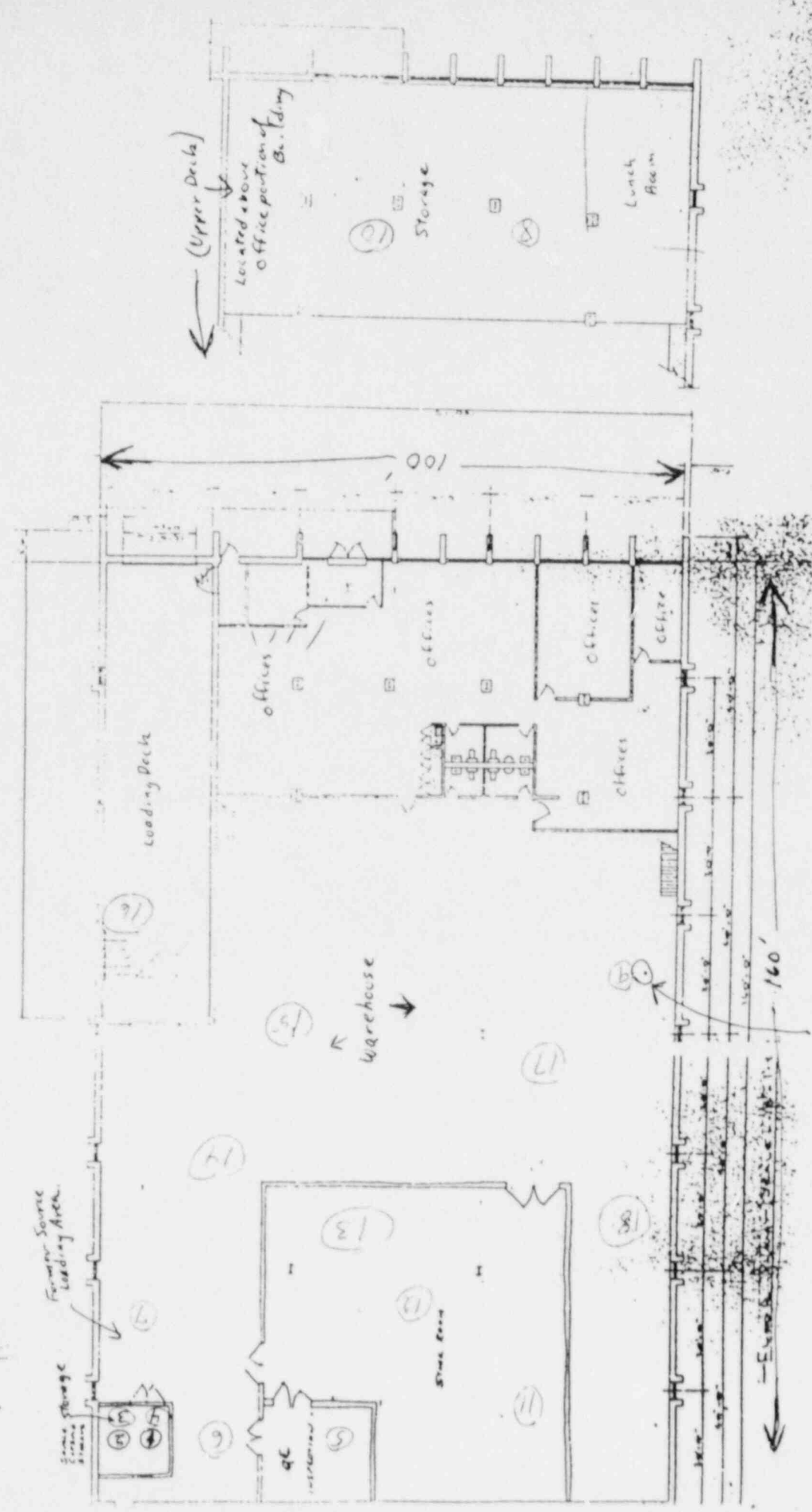
The survey of floors and wall surfaces throughout the building, as well as ground surface and exterior walls, showed uniform normal background radiation readings (less than 0.04 mr/hr), except for one pin-point spot as shown on the facility sketch and description in Appendix B herein. The contaminated spot was removed and retested to confirm normal background, as previously described (Appendix B).

The attached sketch with numbered circles show the approximate locations where wipe test samples were taken for counting on the Packard auto-gamma (described on the page of print-out results in this Appendix D). Additional wipes were taken throughout the building and immediately counted on the Ludlum 14-C with pancake detector, and showed no readings above normal background ( $< 0.04$  mr/hr) and no removable activity. Since no liquid radioactive materials were used in this building, the auto-gamma wipe samples were taken primarily for supporting documentation as supplemental to the Ludlum 14-C pancake probe detector readings (without printouts).

Facility Sketch

KAY RAY, Inc.  
506 West Campus Drive  
Arlington Heights, IL.

Waste  
Location  
(Approximate)



Building size: 100' x 160'

KAY RAY INC. ARLINGTON HEIGHTS, ILLINOIS  
01-26-87

PAGE 1

KEV RANGE  
250 - 750

BACKGROUND

63

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HIGH ENERGY COUNTS

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PACKARD AUTO GAMMA WELL COUNTER  
MODEL 5X30, SERIAL #A5230-05-22408

WIPE #	MAX. CPM	/EFF.0.267 EQUALS DPM	ACTIVITY (uCi)
-----			
1	44	0	.000001
2	48	0	.000001
3	53	0	.000001
4	51	0	.000001
5	45	0	.000001
6	50	0	.000001
7	48	0	.000001
8	53	0	.000001
9	52	0	.000001
10	69	6	.000002703
11	51	0	.000001
12	49	0	.000001
13	49	0	.000001
14	58	0	.000001
15	54	0	.000001
16	51	0	.000001
17	58	0	.000001
18	63	0	.000001





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### APPENDIX E

#### CONCLUSION

This report shows that a thorough radiation survey was performed and one pin-point spot of minor activity was successfully removed. Final radiation survey readings were less than 0.05 mr/hr and final wipe test readings showed maximum removable contamination at 6 DPM per 100 cm<sup>2</sup>, which is well below permissible levels in the NRC Draft Guidelines for Decontamination and Decommissioning of Facilities.

It is our conclusion that this facility is now acceptable for release for unrestricted use and that the license for the 506 West Campus Drive location can be terminated.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Stan A. Huber".

Stan A. Huber  
President

January 28, 1987