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MS-16

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REGION 1

2007 OCT 18 PM 12: 15

October 15, 2007

U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415
ATTN: Dennis R. Lawyer, Health Physicist
Mail Control No 140908

RE: NRC License Termination (License No. 06-30667-02) 03036257

Dear Dr. Lawyer:

Please find CuraGen Corporation's response to the queries in your letter dated September 24, 2007 below (query in bold text; CuraGen response in normal text).

1) **As stated in NUREG-1757 Volume 1, Rev.2, Consolidated NMSS Guidance, Decommissioning Process for Materials Licensees, please provide a copy of the written confirmation from Radiac Research Corporation of Brooklyn that they have received your materials.**
The requested copy of the written confirmation from Radiac Research Corporation of Brooklyn of final radiaoactive waste removed from 322 East Main Street is provided in Attachment 1 (shipping manifest, disposal record and receipt of materials). Removal of the scintillation counter and Faxitron was performed by ALL Sciences (see Attachment 2).

2) **As stated in NUREG-1757 Volume 1, Rev.2, Consolidated NMSS Guidance, Decommissioning Process for Materials Licensees, please provide the name and address where any future correspondence may be sent if necessary**
The requested name and address for future correspondence is Timothy Shannon, M.D., CuraGen Corporation, 322 East Main Street, Branford, CT 06405.

3) **Prior to termination of a license, 10CFR 30.35(g), 30.36(k)(4) and 30.51 require that you submit to the NRC certain records. Please submit the following records, or explain why such records are not applicable.**

H0908

NMSS/RGN1 MATERIALS-002

a. **For unsealed materials with half-lives greater than 120 days, records for disposal made pursuant to 10 CFR 20.2002 (alternate disposal procedures, including burial authorized prior to January 28, 1991), 20.2003 (disposal to the sanitary sewerage system), 20.2004 (incineration of wastes), 20.2005 (disposal of specific wastes including liquid scintillation cocktail and animal tissue) and 20.2103(b)(4), evaluation of effluent releases.**
Records for disposal of materials with half-lives greater than 120 days are not applicable as all radioactive waste was removed by contracted shipping from the premises. CuraGen did not dispose of radioactive wastes by burial, to the sanitary sewage system, by incineration, nor use radioactive animal tissue. Additionally, liquid scintillation fluids were also removed by shipment from the premises.

b. **Records important for decommissioning as described in 30.35(g), 40.36(f) and 70.25(g). Examples of such records include but are not limited to: records of contamination, identifying the radionuclides, quantities and concentrations; as-built drawings and modifications of structures and equipment in restricted areas and locations of inaccessible contaminations such as buried pipes; a single list, updated at least every 2 years, of areas to which access is limited for the purpose of radiation protection (restricted areas); and records related to the provision of financial assurance.**
Records of the decommissioning report are provided in Attachment 3. No radioactive contamination remains at 322 East Main Street, Branford, CT 06405.

4) **In support of an environmental assessment related for the release of your facility:**

a) **Describe the type of building use such as "general office and laboratory"**
Building: mixed general office and laboratory

b) **Describe the surrounding area, such as "residential", "industrial", "commercial", "mixed residential/commercial", etc.**
Surrounding area: mixed residential/commercial

c) **Describe the general type of activities authorized on the license such as "laboratory procedures typically performed on bench tops and in hoods".**
Activities authorized: laboratory procedures preformed on bench tops, hoods and incubators such as tritiated thymidine uptake.

No licensed radioactive material or source equipment remains at the licensed facility.

If you have any questions or require any additional information, please contact me at (203)871-4288.

Sincerely,

William LaRochelle, Ph.D.
Acting Radiation Safety Officer
Director of Oncology

Enclosures
Attachment 1 - Shipping manifest, disposal record and receipt of materials
Attachment 2 - ALL Sciences receipt of radioactive source containing equipment
Attachment 3 - Decommissioning Report

#1 CURAGEN

FORM 540 RADIAC RESEARCH CORP.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER *(Include Area Code)*
(800) 424 - 9300

ORGANIZATION
CHEMTREC

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
☐ YES
☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 1

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? If "Yes," provide Manifest Number =====>
☐ YES
☑ NO

EPA MANIFEST NUMBER
NA

5. SHIPPER -- NAME AND FACILITY
CURAGEN CORP.
322 EAST MAIN STREET
BRANFORD, CT 06405

SHIPPER I.D. NUMBER
NA

☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE
(Specify) M

US EPA ID No.
CTR000502880

SHIPMENT NUMBER

CONTACT
EDWARD SHARKEY

TELEPHONE NUMBER (Include Area Code)
203.871.4288

6. CARRIER -- Name and Address
RADIAC RESEARCH CORP.
261 KENT AVE.
BROOKLYN, NY 11211

Truck #: RP 8613
Trailer #:

EPA I.D. NUMBER
NYD049178296

SHIPPING DATE
07/27/2007

CONTACT
ARTHUR GREEN

TELEPHONE (Include Area Code)
718 963 - 2233

SIGNATURE -- *Authorized carrier acknowledging waste receipt* [signature]

DATE 7/31/07

7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A 1 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
77234-R

9. CONSIGNEE - Name and Facility
RADIAC RESEARCH CORP.
261 KENT AVENUE
BROOKLYN, NY 11211

CONTACT
JOSEPH SPEKTOR

TELEPHONE (Include Area Code)
(800) 640 - 7511

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE [signature] TITLE Director DATE 7-31-07

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, excepted package-limited quantity of material, 7, UN 2910 DAW-PAPER,PLASTIC	NA	NA	SOLID OXIDE	C-14 H-3	7.4000E-02	(2.0000E-03)	NA	10 LBS; 0.68 FT3	77234-01

FOR CONSIGNEE USE ONLY

TENNESSEE "LICENSE FOR DELIVERY" NO ____________

SOUTH CAROLINA TRANSPORT PERMIT NO ____________

US ECOLOGY GENERATOR NO ____________

US ECOLOGY PERMIT NO ____________

20. Certification is hereby made to Radiac Research Corp., that this shipment of low - level radioactive waste is accurately described in the above manifest. The waste described above has been prepared in accordance with current "RADIAC Acceptance Criteria", federal and state regulations, including those of the NRC, DOT, EPA and applicable agreement state agencies. Unless specifically included or excluded in writing, the shipper authorizes RADIAC to select the "best authorized treatment and / or disposal method".

FORM 540 (10-96)

FORM 541

RADIAC RESEARCH CORP.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3	0.0193	kg	4.5359	NP	NP	NP	NP
	ft3	0.6800	lb	10.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	7.4000E-02	3.7000E-02	3.7000E-02	NP	NP	(kg)	NA
mCi	2.0000E-03	1.0000E-03	1.0000E-03	NP	NP	(lbs)	NA

2. MANIFEST NUMBER **77234-R**

3. PAGE **1** OF **1** PAGE(S)

4. SHIPPER NAME **CURAGEN CORP.**

SHIPMENT ID NUMBER **NA**

DISPOSAL CONTAINER DESCRIPTION / WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
77234-01/CC	3 DI	0.0193	4.5359	<5.0000E-03	<3.6740E-06	<3.6740E-05	39	0.0193	NA	OXIDE/NP	NP	C-14	3.7000E-02	1.0000E-03	NA
		0.6800	10.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		0.6800				H-3	3.7000E-02	1.0000E-03	
												Subtotal	7.4000E-02	2.0000E-03	
												Total	7.4000E-02	2.0000E-03	
Shipment Totals		0.0193	4.5359										7.4000E-02	2.0000E-03	
		0.6800	10.0000												

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page

Note 1A: Process Requested

C	Compaction
SR	Steam Reforming
DI	Direct Incineration
SI	Sort & Incinerate
D	Decon
G	Green is Clean
M	Metal Melt
T	Trans-Ship
LI	Liquid for Incineration
OI	Oil for Incineration
O	Other (describe)

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Burial/Disposition Site

B	Barnwell Waste Management
E	Envirocare
R	Richland, WA
PR	Process and Return
O	Other

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume. For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 13, or additional page
100. None Required.

FORM 541 (10-96)

RADIAC

FORM 540 — RADIAC RESEARCH CORP.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
   (800) 424 - [illegible]

ORGANIZATION
   CHEMTREC

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
   ☐ YES
   ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST → 1

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
   If "Yes," provide Manifest Number →

EPA MANIFEST NUMBER
   NA

5. SHIPPER – NAME AND FACILITY
   CURAGEN CORP.
   322 EAST MAIN STREET
   BRANFORD, CT 06405

US EPA ID No.
   CT[illegible]

SHIPMENT NUMBER

CONTACT
   EDWARD SHARKEY

6. CARRIER – Name and Address
   RADIAC RESEARCH CORP.
   261 KENT AVE.
   BROOKLYN, NY 11211
   Truck # RP 3813
   Trailer #

CONTACT
   ARTHUR GREEN

SIGNATURE – Authorized carrier acknowledging waste receipt: [signature]

SHIPPER I.D. NUMBER
   NA

☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) M

TELEPHONE NUMBER (Include Area Code)
   203.671.4[illegible]

EPA I.D. NUMBER
   NYD[illegible]

SHIPPING DATE
   07/27/2007

TELEPHONE (Include Area Code)
   718 [illegible] - [illegible]

DATE 7/31/07

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
   FORM 541 AND 541A — 1 PAGE(S)
   FORM 542 AND 542A — None PAGE(S)
   ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages)
   77234-R

9. CONSIGNEE – Name and Facility
   RADIAC RESEARCH CORP.
   261 KENT AVENUE
   BROOKLYN, NY 11211

CONTACT
   JOSEPH SPEKTOR

TELEPHONE (Include Area Code)
   (800) 849 - 7911

SIGNATURE – Authorized consignee acknowledging waste receipt: [signature]

DATE 8-2-07

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: [signature] TITLE: Director DATE: 7-31-07

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, excepted package-limited quantity of material, 7, UN 2910 DAW-PAPER,PLASTIC	NA	NA	SOLID OXIDE	C-14	H-3		7.4000E-02	(2.0000E-03)	NA	10 LBS; 0.88 FT3	77234-01

FOR CONSIGNEE USE ONLY

TENNESSEE "LICENSE FOR DELIVERY" NO ______

SOUTH CAROLINA TRANSPORT PERMIT NO ______

US ECOLOGY GENERATOR NO ______

US ECOLOGY PERMIT NO ______

20. Certification is hereby made to Radiac Research Corp., that this shipment of low - level radioactive waste is accurately described in the above manifest. The waste described above has been prepared in accordance with current "RADIAC Acceptance Criteria", federal and state regulations, including those of the NRC, DOT, EPA and applicable agreement state agencies. Unless specifically included or excluded in writing, the shipper authorizes RADIAC to select the "best authorized treatment and / or disposal method".

FORM 540 (10-96)

203-315-3301

FORM 541 — RADIAC RESEARCH CORP.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. UNIFORM TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3	0.8193	kg	4.8359	NP	NP	NP	NP
	ft3	8.5800	lb	10.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	7.4000E-02	3.7000E-02	3.7000E-02	NP	NP	(kg)	NA
mCi	2.0000E-03	1.0000E-03	1.0000E-03	NP	NP	(lbs)	NA

2. MANIFEST NUMBER 77234-R

3. PAGE 1 **OF** 1 **PAGE(S)**

4. SHIPPER NAME CURARIEN CORP.

SHIPMENT ID NUMBER NA

DISPOSAL CONTAINER DESCRIPTION / WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr), (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. PHYSICAL DESCRIPTION WASTE DESCRIPTION (See Note 3)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION A3-Class A Stable A4-Class A Unstable B-Class B C-Class C
77234-RRCC	3 DI	0.8193	4.8359	<3.0000E-03	<3.87415-05	<3.87405-05	31	0.8193	NA	DRDS/NP	NP	C-14	3.7000E-02	1.0000E-03	NA
		8.5800	10.0000	<1.0000E-01	<2.2910E+02	<2.2910E+02		8.5800				H-3	3.7000E-02	1.0000E-03	
												Subtotal	7.4000E-02	2.0000E-03	
												Total	7.4000E-02	2.0000E-03	
Shipment Totals		0.8193	4.8359										7.4000E-02	2.0000E-03	
		8.5800	10.0000												

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural overpacks the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Steel Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethylene Tank or Liner
8. Fiberglass Tank or Liner
9. Demonstrator
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 9. or additional page

Note 1A: Process Requested

C	Compaction
SR	Steam Reforming
DI	Direct Incineration
SI	Sort & Incinerate
D	Decon
G	Grout in Drum
M	Metal Melt
T	Trans-Ship
U	Liquid for Incineration
DI	Oil for Incineration
O	Other (describe)

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plates
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
99. Other. Describe in Item 11, or additional page

NOTE 2A: Solidification Site

B	Bunwell Waste Management
E	Envirocare
R	Richland, WA
P/R	Process and Return
O	Other

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume. For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S" and the media vendor and brand name must also be identified in Item 13. Code 100-NONE REQUIRED

Solidification

00. Cement	94. Vinyl Ester Styrene
01. Concrete (encapsulation)	99. Other. Describe in Item 13, or additional page
02. Bitumen	
03. Vinyl Chloride	100. None Required.

FORM 541 (10-96)

203 516 5301

RWSD No. ____________

RADIAC RESEARCH CORP.

261 KENT AVENUE
BROOKLYN, NEW YORK 11211
718 - 963-2233
FAX 718 - 388-5107

No. 77234

DATE 7/31/07
BLDG. NO. ____________
ROOM NO. ____________
DEPT. NO. ____________

RADIOACTIVE WASTE DISPOSAL RECORD

COMPANY/INSTITUTION CURAGEN

CONTAINERS NUMBER

TYPE	P/U	DEL
5 ~~5~~ Gallon Dry	1	1
30 Gallon Dry		
30 Gallon A/P		
30 Gallon S/P		
30 Gallon LSV		
55 Gallon Dry		
55 Gallon LSV		
De Reg LSV		
Cases 1 Gallon		
5 Gallon Liners		
55 Gallon Liners		
Security Seals		
Labels (Roll)		
Preservative		
Absorbent Material		
Miscellaneous		

I hereby certify that the above listed radioactive wastes are properly described, packaged marked and labeled, in accordance with D.O.T. Regulations and RADIAC'S General Terms and Conditions.

CUSTOMER REP. [signature] R.R.C. REP [signature]

ISOTOPE	ACTIVITY	ISOTOPE	ACTIVITY

ID # ____________ Site # ________ Expiration Date ____________ Instrument ____________

WHITE COPY - OFFICE CANARY - CUSTOMER PINK - BILLING YELLOW - DUPLICATE

#2

A.L.L. Sciences

8/22/2007

39 Meadowridge Dr.
Shelton, CT. 06484

To Whom It May Concern,

ALL Sciences has taken physical possession of the following items. They are no longer located at 322 East Main Street in Branford, CT.

(1) Wallac Trilux Scintillation Counter – SN # 4502 308
(2) Faxitron – SN# 2318A00264

These units will be resold and the proper authorities will be notified as to their respective locations.

Sincerely,
Leif Tregger Jr.
A.L.L Sciences
(203) 623-2999

X _____ Date: 8/22/07

#3

RADIOLOGICAL ASSESSMENT REPORT

CuraGen Corportaiton
322 East Main Street
Branford, CT 06405

July 16, 2007

Performed by
Radcor, LLC
345 Laurelwood Drive
Salem, CT 06420
(860) 887-1538

EXECUTIVE SUMMARY

On July 2 and July 3, 2007, a radiological assessment for the purpose of decommissioning was performed of the CuraGen Corporation facility located at 322 East Main Street, Branford, Connecticut. This assessment was conducted by Radcor, LLC of Salem, Connecticut.

After performing a radiological assessment and decontamination of the use and storage areas designated by the licensee, it is the opinion of Radcor, LLC that the areas assessed do not present any significant radiological hazard to facility personnel, the public, or the environment, and that these areas may be released for unrestricted use.

SCOPE

Radcor, LLC of Salem, Connecticut was contracted to perform a radiological assessment of selected areas of the CuraGen Corporation (hereinafter referred to as CuraGen) facility located at 322 East Main Street, Branford, Connecticut. This facility is licensed by the Nuclear Regulatory Commission (NRC) for the possession and use of radioactive materials for research and development under license No. 06-30667-02.

FACILITY DESCRIPTION

The facility at 322 East Main Street consists of a 52,000 square foot, steel-framed, brick, three-story medical research facility located on approximately 3.5 acres. CuraGen leases all but 400 square feet of this facility. Licensed material use and storage was limited to three (3) adjacent rooms of the facility, with a total area of approximately 300 square feet.

CuraGen had ceased working with licensed material prior to the assessment. Radioactive material had been removed from the facility for disposal by Radiac Research Corporation of Brooklyn, New York.

Since it is the intent of CuraGen to terminate their NRC license, the areas where licensed radioactive material had been used and/or stored were to be surveyed in order to allow the facility to be released for unrestricted use. Floor plans of the facility are provided in Appendix A to this report.

Site Conditions at Time of Final Survey

The areas that were assessed had been vacated prior to the radiological assessment.

Identity of Potential Contaminants

CuraGen is licensed for the possession and use of hydrogen-3, carbon-14, phosphorus-32, phosphorus-33, and sulpher-35. According to facility personnel, only H-3 and C-14 had been used at the facility. This work was limited to designated areas of the facility.

The last reported use of loose licensed material at the facility was in October of 2004.

RELEASE CRITERIA

The applicable release criteria were based upon Appendix Q of NUREG-1556, Vol. 7, "Consolidated Guidance about Materials Licenses: Program–Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope." The criteria used are presented in Table 1 below.

Table 1. Acceptable Surface Contamination Levels

NUCLIDES	AVERAGE (dpm/100 cm^2)	MAXIMUM (dpm/100 cm^2)	REMOVABLE (dpm/100 cm^2)
H-3, C-14	5,000 βγ	15,000 βγ	1,000 βγ

These chosen values will ensure that the annual total effective dose equivalent (TEDE) to any individual after the site is released for unrestricted use will not exceed 25 millirem above background, in accordance with 10 CFR 20.1402.

ASSESSMENT PERSONNEL

A professional health physicist, Mr. David J. Durkee, performed the radiological assessment. Mr. Durkee's resume is included as Appendix B to this report.

INSTRUMENTATION

Table 2 lists the instruments used in the performance of the surveys, along with other parameters and detection sensitivities for the instrumentation, and survey techniques. All instruments used had been calibrated using NIST-traceable standards. The calibration isotopes used for these instruments included H-3, C-14, and/or Cs-137. Minimum detectable activities were calculated in accordance with the *Manual for Conducting Radiological Surveys in Support of License Termination, NUREG/CR-5849* and the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), NUREG-1575*. These calculations are included as Appendix C.

Operational and background checks were performed at least once each day of instrument use.

Table 2. Instrumentation for Radiological Surveys

Type of Measurement	Instrumentation		Bkgd.[a]	2π[a] Eff & Cal Isotope	Detection Sensitivity
	Detector	Meter			
Surface scans - β	Gas Prop. Det. Ludlum model 43-68	Count-rate meter[b] Ludlum mod. 2241-2	260 cpm	7.1% C-14	4,577 dpm/100 cm^2
Integrated meas. of surfaces - β	Gas Prop. Det. Ludlum model 43-68	Count-rate meter[b] Ludlum mod. 2241-2	260 cpm	7.1% C-14	1,094 dpm/100 cm^2
Smears, β/γ	Packard 1600TR	(same as detector)	9 cpm 8 cpm 20 cpm (wide)	40% H-3 75% C-14 75% (wide)	42 dpm/100 cm^2 21 dpm/100 cm^2 31 dpm/100 cm^2
Exposure rates	Scintillation	Bicron Microrem LE	3 – 6 μrem/h	NA	1 μrem/h

[a]Nominal Values
[b]Monitoring audible signal
[d]Instrument on slow response, positioned until steady reading obtained

SURVEY PROCEDURES

Survey planning and procedures were based upon the *Manual for Conducting Radiological Surveys in Support of License Termination, NUREG/CR-5849* and the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), NUREG-1575*. Actual procedures are described below.

Area Classification
Areas in which licensed materials were used and/or stored, as determined by CuraGen personnel, were designated as Affected Areas for the purpose of this assessment. The rooms where licensed material were used/and stored were designated Area 311B. This area consisted of two (2) small laboratory areas and one (1) small radioactive waste storage closet.

All other areas were designated Unaffected Areas.

A facility floor plan clearly identifying the above referenced area has been included as Attachment A to this report.

Reference Grids
The Affected Areas were gridded at approximately 1-meter intervals, up to a height of 2 meters. Unaffected Areas were not gridded.

Dose-equivalent Measurements
A survey was performed within the designated areas for general area photon radiation levels. Photon dose-equivalent rates were measured at 1 m above the floor using the gamma scintillation instrument identified in Table 2. Recorded measurements in Affected Areas were spaced at approximately one measurement per 4 m^2.

Surface Activity Measurements
Removable Contamination Measurements
In the Affected Areas, wipe samples for removable contamination were taken in each grid area (every 1 m^2 of lower surfaces and walls up to a height of 2 meters). Samples were also obtained from areas where activity would have been likely to collect (i.e., sink drain, horizontal surfaces, inside cabinets, etc.).

In Unaffected Areas, wipe samples were obtained just outside the Affected Area. Samples were not obtained from other Unaffected Areas.

Surface Scans for Total Contamination
Scanning is an initial evaluation technique performed by moving the detection device over a surface at a constant speed and at a fixed distance above the surface to identify areas having elevated radiation levels. Areas thus identified are followed up by integrated measurements.

Instrumentation used for scanning is listed in Table 2. Scanning speeds did not exceed 1 detector-width per second. Audible indicators were used to help identify locations having elevated (>1.25 times ambient) levels of direct radiation.

Scanning of surfaces to identify locations of residual surface and near-surface activity was performed according to the following schedule:

- Affected Area Surfaces: 100% of accessible lower surfaces (all floors, countertops, cabinets and walls up to 2 meters above the floor);

- Unaffected Area Surfaces: Spot check of lower surfaces just outside Affected Area.

Background Level Determinations
Background count rates were determined initially for the building interior by taking measurements in different unaffected locations near the Affected Areas.

Sample Analysis
Wipe samples for removable contamination were analyzed for beta/gamma activity using the Liquid Scintillation Counter (LSC) specified in Table 2. The wide channel was used so that any potential radioactive contamination would be identified.

Data Interpretation
Data conversions and evaluations were performed following guidance specified in NUREG/CR-5849. Measurement data were converted to units of dpm/100 cm^2 (surface activity) for comparison with guidelines. Average values for survey levels were determined and compared with established release criteria.

Records
A copy of the survey documentation is enclosed as Appendix D to this report.

SURVEY FINDINGS AND RESULTS

Background Levels
Background count rates for the instrumentation used are listed in Table 2.

Dose-equivalent Measurements
No areas in excess of normal background levels were identified at the facility.

Surface Activity Measurements
Removable Contamination Measurements
A total of 155 wipes samples were obtained and analyzed. Wipe samples did not identify any area of activity in excess of the minimum detectable activity.

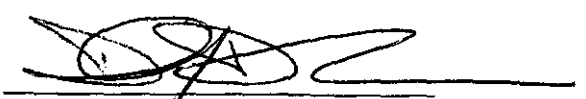
Surface Scans and Integrated Measurements
Surface scans of the Affected Areas identified one (1) area to be in excess of normal background levels. An area of approximately 100 cm^2 on the floor in front of the bio-safety cabinet was found to be contaminated to a level of 14,225 dpm/100 cm^2 (C-14). This area was decontaminated to a level indistinguishable from normal background levels.

No areas in excess of normal background levels were identified in Unaffected Areas.

SUMMARY

On July 2 and July 3, 2007, a radiological assessment for the purpose of decommissioning was performed of the CuraGen Corporation facility located at 322 East Main Street, Branford, Connecticut. This assessment was conducted by Radcor, LLC of Salem, Connecticut.

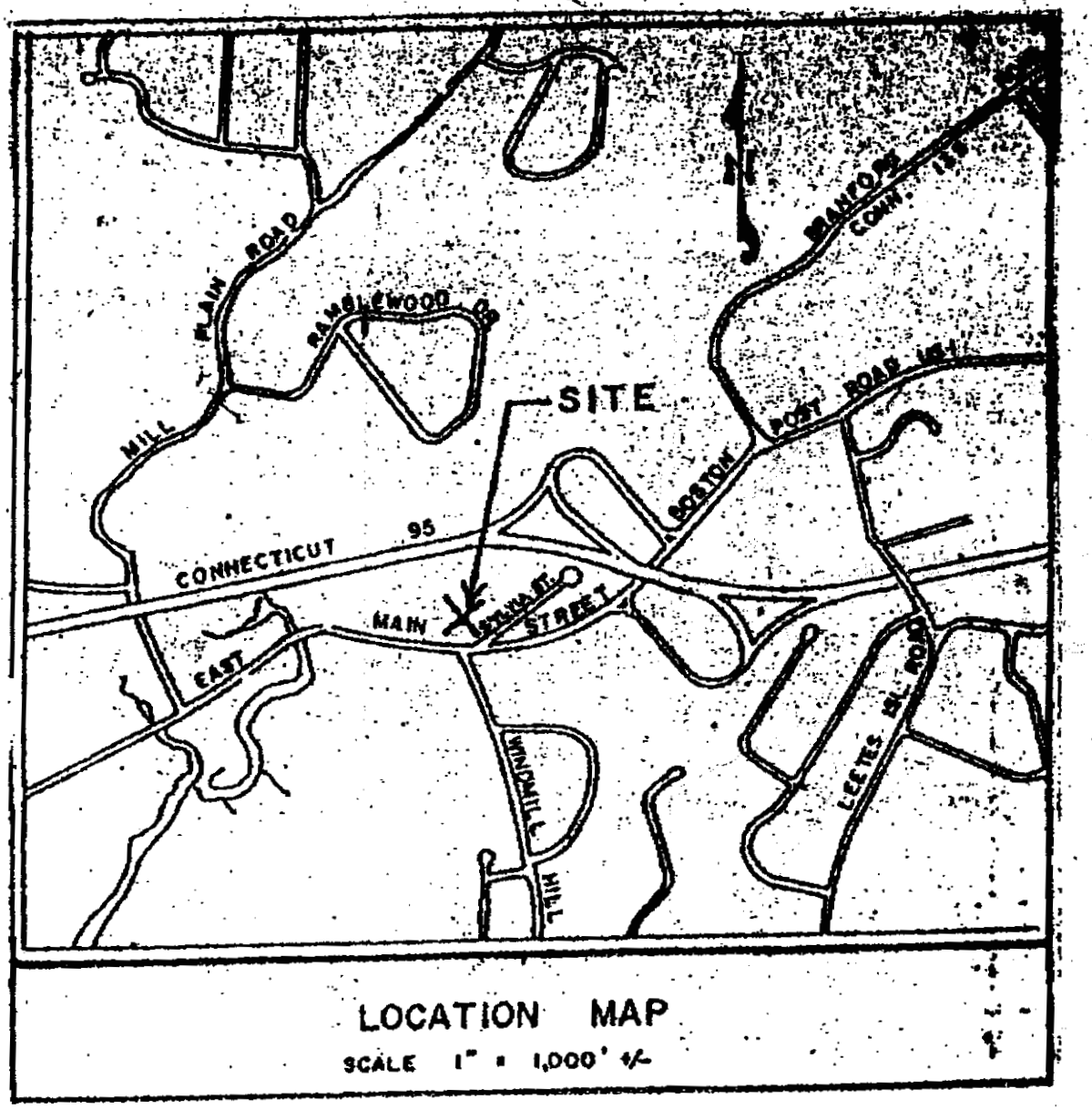
After performing a radiological assessment and decontamination of the use and storage areas designated by the licensee, it is the opinion of Radcor, LLC that the areas assessed do not present any significant radiological hazard to facility personnel, the public, or the environment, and that these areas may be released for unrestricted use.



David J. Durkee
Health Physicist, RRPT

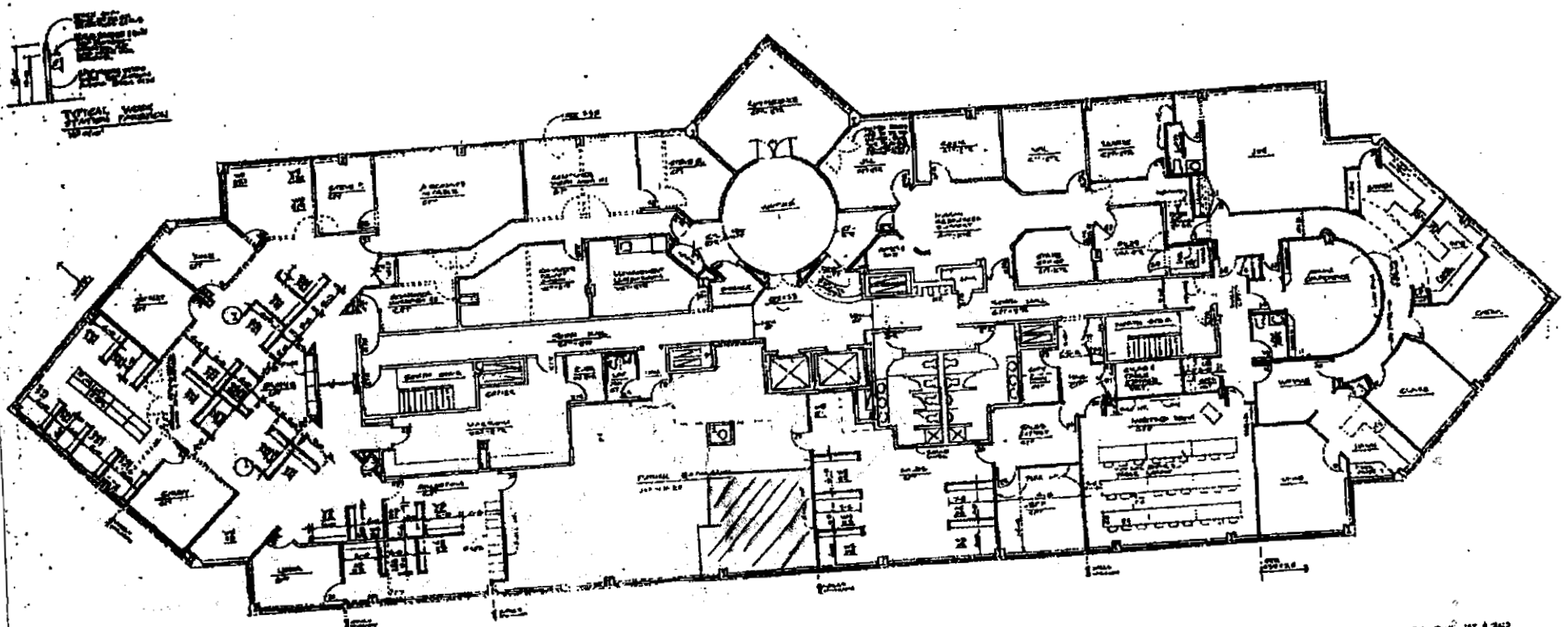
Appendix A

Floor Plans



LOCATION MAP

SCALE 1" = 1,000' +/-



THIRD FLOOR PLAN

RAM Use/Storage Areas

Appendix B

Resume

RADCOR, LLC
345 Laurelwood Drive
Salem, CT 06420
(860) 887-1538

David J. Durkee

EDUCATION:
Regents College, NY. - B.S. Technology (Nuclear/Health Physics)
University of Phoenix, AZ. - A.A. Nuclear Technology
Health Physics Technician Level I Basic - Radiation Safety Associates, Inc.
Health Physics Technician Level II - Radiation Safety Associates, Inc.
Respiratory Protection at Nuclear Facilities - Radiation Safety Associates, Inc.
Environmental Monitoring for Radioactivity - Oak Ridge Associated Universities.
Liquid Scintillation and Gamma Spectrum Analysis - Rutgers University
Health Physics Audits - Radiation Safety Associates, Inc.
Navy

Naval Nuclear Power School (24 wks)	Diesel Operator/Maint. School
Nuclear Prototype Training Unit (26 wks)	Scuba Diver School
Engineering Laboratory Technician School	Advanced Auxiliary Package Course
Machinist Mate "A" School	Quality Assurance Inspector School

EXPERIENCE:
December 1996 to Present
Radcor, LLC, Salem, Connecticut
Health Physicist/Owner. Responsible for providing radiological consulting services to general industry, academic institutions, and companies involved in research and development. These services include: development and presentation of professional training; performance of program audits; performance of radiological surveys, decontamination and decommissioning; development of license applications, amendments and safety procedures; radiation protection program oversite; and, regulatory compliance. Served as the Radiation Safety Officer for ExxonMobil Research and Eng. Co., Paulsboro, New Jersey.

March 1994 to December 1996
Radiation Safety Associates, Inc., Hebron Connecticut
Vice President-Technical Services. Responsible for the preparation of job proposals and operating budgets; making technical and manpower recommendations; supervising workers at job sites; performing technical evaluations as required; writing, editing, and developing course materials, working procedures and technical articles; and, performed duties as a health physicist.

Responsible for oversite of various site decontamination/decommissioning projects. These involved: the development of decommissioning plans; hiring and oversite of workers; hands-on performance of radiological surveys and site decontamination efforts; and the development and submittal of final reports.

Instructor for the following professional training courses: Fundamentals of Radiological Protection; Health Physics Technician Level I and II; Radiation Safety Officer; Radiation Safety Officer Refresher; and, Basic Radiation Worker.

Assistant Editor of *Radiation Protection Management*, the Journal of Applied Health Physics. Assistant RSO and Quality Control Officer for a radioanalytical laboratory.

October 1991 to March 1994
Radiation Safety Associates, Inc., Hebron, Connecticut
Health Physicist. Responsible for providing consulting services to the nuclear industry; general industry; local, state, and federal governments; and academic institutions. These services included performing audits, radiological surveys, instrument calibrations, site decontamination services, writing license applications and amendments, maintaining radiological safety programs, providing technical advice and performing training.

September 1983 to October 1991
United States Navy, Submarine Qualified. Served on-board two nuclear-powered submarines. Qualified as Leading Engineering Laboratory Technician, Engineroom Supervisor, Quality Assurance Inspector, Duty Section Leading Mechanic and Ship's Diver.

Supervised and performed chemistry and radiological controls on reactor plant primary and secondary systems. Sampled primary coolant and secondary water chemistry and analyzed results to detect abnormal trends and out of specification conditions. Established and certified radiologically controlled areas, conducted radiation and contamination surveys, evaluated man-rem exposure and processed radioactive waste. Calibrated and operated radiation detectors and chemistry analytical equipment.

Directed the day-to-day efforts of five junior Laboratory Technicians. Awarded a Navy Achievement Medal for being "the driving force behind a dramatic turnaround in the professionalism of the (Reactor Laboratory) division." Instituted a training program that significantly upgraded the level of knowledge of the division.

Drafted detailed work procedures and quality assurance work packages for nuclear and non-nuclear maintenance efforts. Performed in-process inspections to verify that materials and procedures met required specifications.

PROFESSIONAL ACTIVITIES:
Registered Radiation Protection Technologist (NRRPT)
Plenary Member, Health Physics Society

PUBLICATIONS
"NRC License Application, Renewal, or Amendment for Byproduct Material" *RSO Magazine*, 1:6: pp. 25-30; Nov/Dec, 1996.

"Personal Whole-Body Dosimetry" *RSO Magazine*, 1:4: pp. 26-28; Jul/Aug, 1996.

"Prenatal Radiation Exposure," *RSO Magazine*, 1:2: pp. 12-13; Mar/Apr, 1996.

"Loose Contamination Survey Methods," *RSO Magazine*, 1:1: pp. 19-20; Jan/Feb, 1996.

Steinmeyer, K. Paul, David J. Durkee and Paul R. Steinmeyer. *Mathematics Review for Health Physics Technicians.* Hebron, CT: RSA Publications, 1994. (393 pages).

Appendix C

Minimum Detectable Activity
Calculations and Calibration Information

The equations used for determining the MDAs are as follows:

Variables: MDA = Minimum Detectable Activity in dpm/100 cm^2
R_b = Background count rate in cpm
t = Counting time when $t_b = t_s$
τ = Detector time constant in minutes
E = Detector efficiency in cpm/dpm
A = Active detector area in cm^2
X = Multiple of background audibly discernable to tech. as increase

MDA for surface scans using Ludlum Model 43-68:

$$MDA = (X)(R_b) \div (E)(A/100)$$

$$MDA = (1.25)(260 \text{ cpm}) \div (0.071)(100/100) = 4{,}577 \text{ dpm}/100 \text{ cm}^2$$

MDA for integrated measurement using Ludlum Model 43-68:

$$MDA = [2.71 + 4.65\sqrt{(R_b)(t)}] \div (t)(E)(A/100)$$

$$MDA = [2.71 + 4.65\sqrt{(260 \text{ cpm})(1 \text{ min.})}] \div (1 \text{ min.})(0.071)(100/100) = 1{,}094 \text{ dpm}/100 \text{ cm}^2$$

MDA for counting 100 cm^2 wipe samples on LSC:

$$MDA = [2.71 + 4.65\sqrt{(R_b)(t)}] \div (t)(E)$$

$$MDA \text{ (For H-3)} = [2.71 + 4.65\sqrt{(9 \text{ cpm})(1 \text{ min.})}] \div (1 \text{ min.})(0.4) = 42 \text{ dpm}/100 \text{ cm}^2$$

$$MDA \text{ (For C-14)} = [2.71 + 4.65\sqrt{(8 \text{ cpm})(1 \text{ min.})}] \div (1 \text{ min.})(0.75) = 21 \text{ dpm}/100 \text{ cm}^2$$

$$MDA \text{ (Wide)} = [2.71 + 4.65\sqrt{(20 \text{ cpm})(1 \text{ min.})}] \div (1 \text{ min.})(0.75) = 31 \text{ dpm}/100 \text{ cm}^2$$

Instrument Calibration Information

Bicron MicroRem. Calibrated by RSCS (CTI) of Stratham, NH on 1/2/07.

Ludlum Model 2241-2 with 43-68. Calibrated by RSCS (CTI) of Stratham, NH on 9/13/06.

Packard 1600TR. Calibrated using manufacturer's standards on 1/8/07.

Calibration Certificate
ID Number: B466Y9319-0

Calibration Technology
A Division of RSCS, Inc.

Customer: David J Durkee
Radcor, LLC.
345 Laurelwood Drive
Salem, CT 06420-

Instrument
Bicron Model MicroRem

Serial Number
B466Y

Precision Check				
Test 1	Test 2	Test 3	Mean	Results
4.00 mrem/hr	4.00 mrem/hr	4.00 mrem/hr	4.00 mrem/hr	Satisfactory

Accuracy Check			
Range	Target Value	As Found	As Left
X1000	160 mrem/hr	150 mrem/hr	150 mrem/hr
X1000	40 mrem/hr	40 mrem/hr	40 mrem/hr
X100	16 mrem/hr	15 mrem/hr	15 mrem/hr
X100	4 mrem/hr	4 mrem/hr	4 mrem/hr
X10	1.6 mrem/hr	1.6 mrem/hr	1.6 mrem/hr
X10	0.4 mrem/hr	0.4 mrem/hr	0.40 mrem/hr
X1	160 µrem/hr	150 µrem/hr	150 µrem/hr
X1	40 µrem/hr	40 µrem/hr #	40 µrem/hr #
X0.1	16 µrem/hr	15 µrem/hr #	16.5 µrem/hr #
X0.1	4 µrem/hr	3 µrem/hr # *	4 µrem/hr #

*Readings with * indicate ranges where As-Found readings are >20% of Target value. Readings with ** indicate As-left readings are >10% of Target value*
Readings with # indicate ranges where pulser was used.

MTE Instrument Type	Model	CalDueDate
Pulser	Ludlum 500-4 SN: 66151	01/03/2007

Outer Physical Check: *Pass*
Internal Check: *Pass*
Geotropism Check: *Pass*
Mechanical Zero: *Pass*
Tap Test: *Pass*

Calibrated by: QA Review:

Calibration Date: 01/02/2007
Expires: 01/02/2008

Atmospheric Conditions - Temperature: 76°F Humidity: 25% Barometric Pressure: 29.73"hg
This calibration was performed by RSCS Inc. using a NIST Traceable radiation source, in conformance to the following standards: ANSI N323A (1997). RSCS New Hampshire Radioactive Material License Number: 381R. RSCS calibration services are performed in accordance with the RSCS Radiation Protection Program Manual and Standard Operating Procedure 2.4. This calibration certificate shall not be reproduced except in full without the express written consent of RSCS, Inc

Radiation Safety and Control Services, Inc.
91 Portsmouth Ave. Stratham, NH 03885
1-800-525-8339 (603) 778-2871 Fax (603) 778-6879 www.radsafety.com

Calibration Technology
A Division of RSCS, Inc.

Calibration Certificate
ID Number: 1377517289-0

Customer: David J Durkee
Radcor, LLC.
345 Laurelwood Drive
Salem, CT 06420-

Instrument
Ludlum Model 2241-2

Serial Number
137751

Probe Model
Ludlum 43-68

Serial Number
140899

Precision Check				
Test 1	Test 2	Test 3	Mean	Results
15.90 Kcpm	16.00 Kcpm	15.90 Kcpm	15.93 Kcpm	Satisfactory

Accuracy Check			
Range	Target Value	As Found	As Left
X100	640 Kcpm	644 Kcpm #	644 Kcpm #
X100	160 Kcpm	165 Kcpm #	165 Kcpm #
X10	64 Kcpm	64 Kcpm #	64 Kcpm #
X10	16 Kcpm	15.9 Kcpm #	15.9 Kcpm #
X1	6.4 Kcpm	6.42 Kcpm #	6.42 Kcpm #
X1	1.6 Kcpm	1.6 Kcpm #	1.6 Kcpm #

Readings with * indicate ranges where As-Found readings are >20% of Target value. Readings with ** indicate As-left readings are >10% of Target value
Readings with # indicate ranges where pulser was used.

Probe Model & SN	Isotope	Efficiency	NIST Source ID	Geometry
43-68 140899	C-14	0.0707 C/D	C-14 (SN: 488-10-9)	On Flat Surface
43-68 140899	Cl-36	0.1788 C/D	Cl-36 (SN: 8933)	On Flat Surface

MTE Instrument Type	Model	CalDueDate
Pulser	Ludlum 500-4 SN: 66151	01/03/2007

Outer Physical Check: *Pass*
Internal Check: *Pass* Tap Test: *Pass*

Electronics Checks	As Found	As Left
High Voltage	1662 Volts	1662 Volts

Comments: Calibrated Using Det 2

Calibrated by: QA Review:

Calibration Date: 09/13/2006
Expires: 09/13/2007

Atmospheric Conditions - Temperature: 77°F Humidity: 36% Barometric Pressure: 25.70"hg
This calibration was performed by RSCS Inc. using a NIST Traceable radiation source, in conformance to the following standards: ANSI N323A (1997). RSCS New Hampshire Radioactive Material License Number: 381R. RSCS calibration services are performed in accordance with the RSCS Radiation Protection Program Manual and Standard Operating Procedure 2.4. This calibration certificate shall not be reproduced except in full without the express written consent of RSCS, Inc

Appendix D

Survey Documentation

SURVEY FORM

Job Location: CURAGEN CORPORATION BRANFORD CT Page: 1 of 13
Survey Purpose: DECOMMISSIONING 311 B Date: 7/2/07
Performed By: DAVID BURKE
Print Signature

Inst. No. 1 (Model/SN)	Inst. No. 2 (Model/SN)	Inst. No. 3 (Model/SN)
PACKARD 1600 TR # 401915	LUDLUM MODEL 2241-2 # 137757	BICRON MICROREM LE # 64664
Detector (Model/SN) INTERNAL	Detector (Model/SN) LUDLUM 43-68 # 140899	Detector (Model/SN) INTERNAL
Efficiency: 40% H-3 / 25% OTHERS	Efficiency: 7.1 % C-14	Efficiency: 100%
Type Rad.: B/γ	Type Rad.: B	Type Rad.: γ
Bkgd.: SEE #1 BELOW	Bkgd.: 260 cpm	Bkgd.: 4-5 mrem/hr
Cal. Due: 1/8/08	Cal. Due: 9/13/07	Cal. Due: 1/2/08

Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
1	0820	BACKGROUND	1	20cpm	
2		COUNTER	1	12	
3		COUNTER	1	20	
4		COUNTER	1	12	
5		SINK	1	0	
6		SINK DRAIN	1	0	
7		FAUCET	1	27	
8		UPPER WALL	1	1	
9		UPPER WALL	1	0	
10		UPPER WALL	1	6	
11		UPPER WALL	1	0	
12		UPPER WALL	1	0	
13		BOTTOM SHELF	1	5	
14		BOTTOM SHELF	1	4	
15		SHELF	1	3	
16		SHELF	1	0	
17		TOP SHELF	1	1	
18		TOP SHELF	1	0	
19		FRONT OF CABINET	1	13	
20		INSIDE CABINET	1	0	

Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
21		FRONT OF CABINET	1	0	
22		INSIDE TOP SHELF	1	0	
23		INSIDE BOTTOM SHELF	1	7	
24		SIDE OF CABINET	1	0	
25		Lower WALL	1	8	
26		Lower WALL	1	5	
27		Floor	1	3	
28		Floor	1	0	
29		Floor	1	0	
30		Floor	1	0	
31		Floor	1	11	
32		Floor	1	11	
33		Floor	1	0	
34		Floor	1	1	
35		Floor	1	5	
36		Floor	1	0	
37		Floor	1	5	
38		Floor	1	0	
39		UPPER WALL	1	0	
40		Lower WALL	1	9	
41		UPPER WALL	1	9	
42		Lower WALL	1	0	
43		UPPER WALL	1	0	
44		Lower WALL	1	0	
45		UPPER WALL	1	7	
46		Lower WALL	1	3	
47		UPPER WALL	1	9	
48		Lower WALL	1	0	

Date: 7/2/07

Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
49		UPPER WALL	1	3	
50		LOWER WALL	1	0	
51		UPPER WALL	1	5	
52		LOWER WALL	1	0	
53		UPPER DOOR	1	0	
54		LOWER DOOR	1	15	
55		FLOOR	1	3	
56		FLOOR	1	5	
57		BIOSAFETY CABINET (BSC) TOP FRONT	1	1	
58		BSC SASH OUT	1	5	
59		BSC OUTSIDE RIGHT SIDE	1	0	
60		BSC OUTSIDE LEFT SIDE	1	1	
61		BSC OUTSIDE SIDES/BSC FRONT	1	4	
62		BSC COUNTER	1	0	
63		BSC LEFT SIDE	1	0	
64		BSC TOP	1	0	
65		BSC BACK	1	7	
66		BSC RIGHT SIDE	1	4	
67		BSC INSIDE SASH	1	0	
68		VENT HOSE	1	4	
69		COUNTER	1	4	
70		COUNTER	1	7	
71		COUNTER	1	11	
72		UPPER WALL	1	1	
73		UPPER WALL	1	0	
74		SIDE OF CABINET	1	7	
75		LOWER WALL	1	0	
76		UPPER WALL	1	0	

Date: 7/2/07

Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
77		FRONT OF DRAWERS	1	0	
78		TOP DRAWER	1	0	
79		DRAWER	1	0	
80		DRAWER	1	0	
81		BOTTOM DRAWER	1	11	
82		SIDE OF CABINET	1	0	
83		LOWER WALL	1	1	
84		LOWER WALL	1	0	
85		LOWER WALL	1	9	
86		UPPER WALL	1	0	
87		UPPER WALL	1	5	
88		UPPER WALL	1	8	
89		LOWER WALL	1	5	
90		LOWER WALL	1	0	
91		FRONT OF DRAWERS	1	13	
92		TOP DRAWER	1	3	
93		DRAWER	1	15	
94		BOTTOM DRAWER	1	12	
95		SIDE OF CABINET	1	0	
96		SIDE OF CABINETS	1	1	
97		FRONT OF CABINET	1	7	
98		INSIDE CABINET TOP SHELF	1	0	
99		INSIDE CABINET BOT. SHELF	1	3	
100		UPPER FRONT HOOD	1	0	
101		SIDES FRONT HOOD	1	8	
102		OUTSIDE SASH	1	1	
103		HOOD LIP	1	5	
104	↓	OUTSIDE LEFT SIDE HOOD	1	9	

Date: 7/2/07

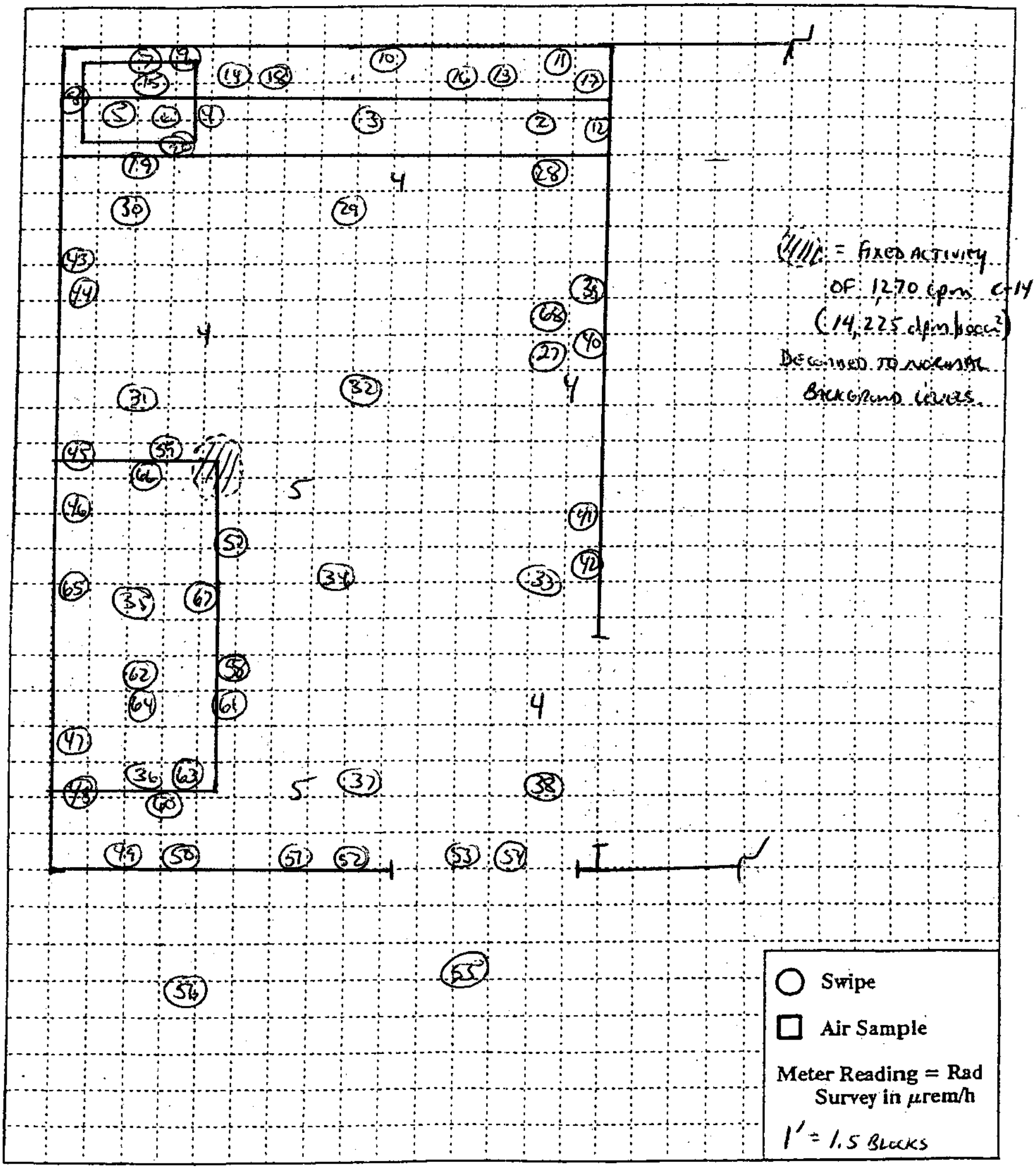
Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
105		SIDE OF CABINET	1	4	
106		OUTSIDE HOOD RIGHT SIDE	1	0	
107		HOOD COUNTER	1	3	
108		INSIDE SASH	1	3	
109		LEFT SIDE (IN)	1	0	
110		BACK (IN)	1	4	
111		RIGHT SIDE (IN)	1	4	
112		HOOD FLOW PATH	1	0	
113		HOOD DUCT	1	0	
114		BOTTOM SHELF	1	5	
115		TOP SHELF	1	8	
116		UPPER WALL	1	5	
117		LOWER WALL	1	0	
118		UPPER WALL	1	0	
119		LOWER WALL	1	0	
120		UPPER WALL	1	11	
121		LOWER WALL	1	8	
122		UPPER DOOR	1	1	
123		LOWER DOOR	1	0	
124		UPPER WALL	1	0	
125		LOWER WALL	1	1	
126		TABLE TOP	1	0	
127		SHELF TABLE	1	0	
128		FLOOR	1	1	
129		FLOOR	1	9	
130		FLOOR	1	4	
131		FLOOR	1	1	
132	↓	FLOOR	1	0	

Date: 7/2/07

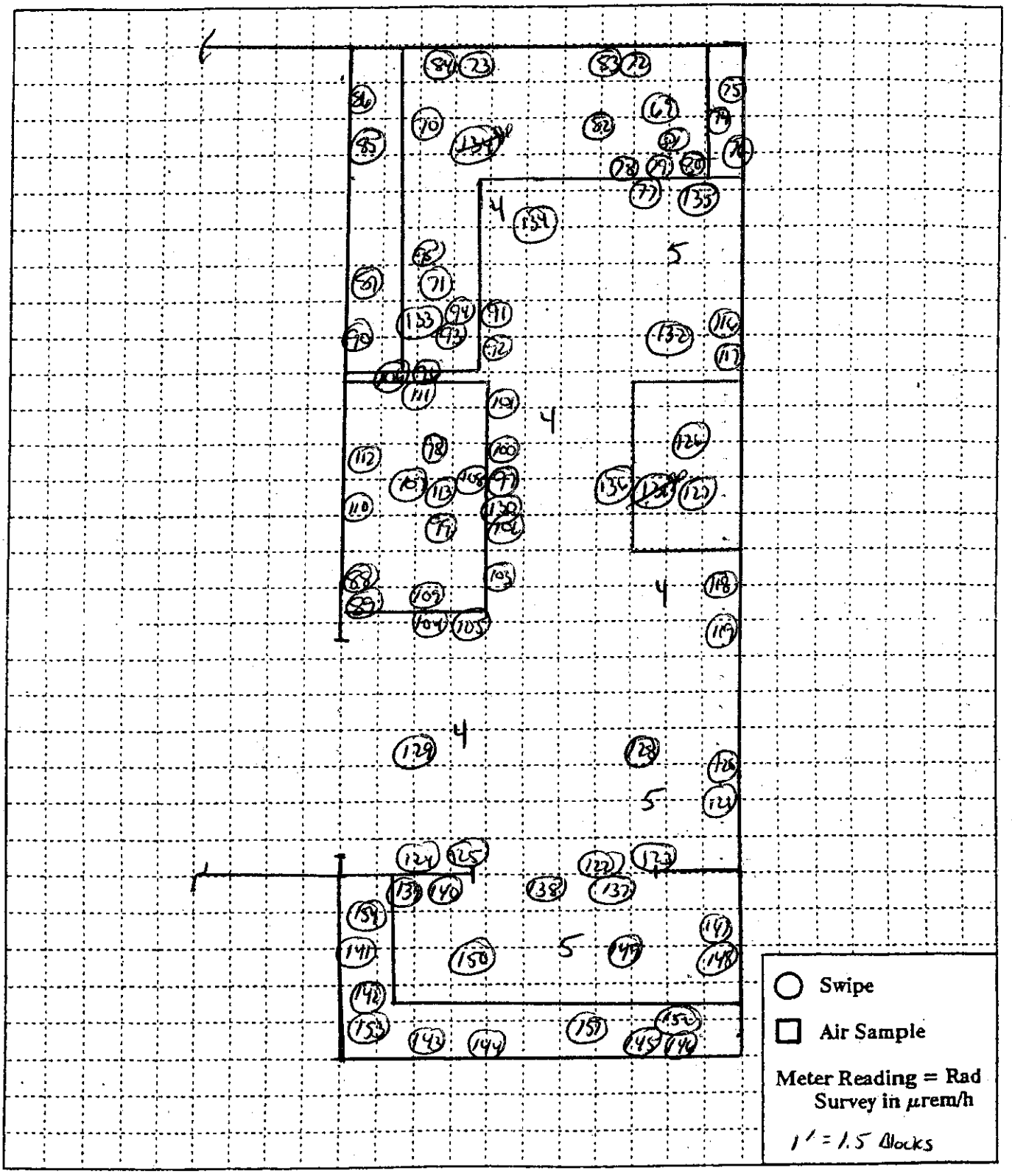
Number	Time	Location	Inst. Used	Total Activity (dpm/100 cm^2)	Comments
133		Floor	1	0	
134		Floor	1	4	
135		Floor	1	4	
136		Floor	1	5	
137		UPPER DOOR	1	7	
138		Lower Door	1	7	
139		UPPER WALL	1	6	
140		Lower WALL	1	0	
141		UPPER WALL	1	0	
142		Lower WALL	1	0	
143		UPPER WALL	1	5	
144		Lower WALL	1	7	
145		UPPER WALL	1	1	
146		Lower WALL	1	0	
147		UPPER WALL	1	5	
148		Lower WALL	1	5	
149		Floor	1	3	
150		Floor	1	0	
151		BOTTOM SHELF	1	0	
152		TOP SHELF	1	3	
153		TOP SHELF	1	1	
154		BOTTOM SHELF	1	0	
7/3/07 155	1000	Post Decon Floor	1	4	
156			1		
157			1		
			1		
			1		
			1		

Job Location: Curagen Corporation Branford, CT

Survey Purpose: Decommissioning 311B
Date: 7/2/07
Performed By: David Durkee



Job Location: CURAGON CORPORATION BRANFORD, CT Page: 8 of 13
Survey Purpose: DECOMMISSIONING 311B Date: 7/2/07
Performed By: DAVID DURGEE



Protocol #:10 Name:swipe 02-Jul-2007 15:19
Region A: LL-UL= 0.0-12.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.50
Region B: LL-UL=12.0-156. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL= 0.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = tSIE ES Terminator = Count
Conventional DPM
Nuclide 1 = 289524 Nuclide 2 = 129197

S#	TIME	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	FLAG
1	1.00	9	8.00	20.00	13.67	11.15	53.815	530.	
2	1.00	19	8.00	29.00	36.90	11.86	43.216	457.	
3	1.00	22	8.00	35.00	42.71	11.49	49.006	488.	
4	1.00	17	7.00	29.00	31.49	9.76	43.402	525.	
5	1.00	7	5.00	16.00	11.57	7.12	38.654	502.	
6	1.00	11	6.00	20.00	20.17	8.94	86.670	453.	
7	1.00	22	8.00	40.00	41.98	11.28	47.668	509.	
8	1.00	5	11.00	21.00	2.63	15.69	84.262	502.	
9	1.00	6	6.00	15.00	8.63	8.49	74.632	510.	
10	1.00	6	1.00	11.00	12.51	1.42	44.711	494.	
11	1.00	5	4.00	14.00	7.92	5.63	86.670	516.	
12	1.00	7	5.00	14.00	11.54	7.06	70.887	511.	
13	1.00	13	7.00	24.00	23.57	10.17	70.540	477.	
14	1.00	11	10.00	23.00	16.56	14.28	70.696	498.	
15	1.00	16	4.00	22.00	32.49	5.73	52.162	489.	
16	1.00	6	7.00	17.00	7.46	10.52	109.51	446.	
17	1.00	7	8.00	21.00	8.81	12.09	84.744	441.	
18	1.00	5	6.00	11.00	6.34	8.68	149.56	484.	
19	1.00	17	5.00	30.00	33.05	6.99	40.563	519.	
20	1.00	7	7.00	19.00	10.06	9.94	106.50	505.	
21	1.00	7	1.00	10.00	14.26	1.38	16.050	526.	
22	1.00	10	5.00	20.00	17.95	7.00	52.002	521.	
23	1.00	6	7.00	25.00	7.95	9.81	94.818	523.	
24	1.00	8	5.00	20.00	13.54	6.91	58.027	540.	
25	1.00	15	5.00	26.00	29.50	7.19	37.076	487.	
26	1.00	11	5.00	24.00	20.29	7.08	66.607	507.	
27	1.00	10	5.00	22.00	18.62	7.36	48.364	464.	
28	1.00	8	2.00	15.00	17.16	3.02	28.569	438.	
29	1.00	2	9.00	18.00	0.00	12.97	133.65	490.	
30	1.00	10	5.00	17.00	18.64	7.38	46.545	462.	
31	1.00	12	13.00	28.00	15.76	19.71	101.50	438.	
32	1.00	15	8.00	28.00	27.04	11.48	51.500	491.	
33	1.00	9	4.00	16.00	19.60	7.59	44.076	306.	
34	1.00	12	5.00	21.00	22.66	7.14	46.639	495.	
35	1.00	11	6.00	24.00	20.09	8.87	49.283	460.	
36	1.00	7	4.00	17.00	12.59	5.89	76.019	465.	
37	1.00	9	7.00	24.00	14.52	10.20	66.407	476.	
38	1.00	7	6.00	14.00	10.82	8.89	81.978	459.	
39	1.00	8	7.00	20.00	12.26	10.06	98.440	491.	
40	1.00	11	10.00	27.00	16.56	14.27	79.486	500.	
41	1.00	11	9.00	27.00	17.33	12.85	53.725	499.	
42	1.00	10	5.00	20.00	18.08	7.07	47.806	509.	
43	1.00	7	4.00	15.00	12.15	5.56	37.353	531.	
44	1.00	9	3.00	15.00	17.64	4.30	44.405	491.	
45	1.00	9	14.00	25.00	9.66	19.43	99.719	538.	
46	1.00	11	9.00	22.00	17.30	12.74	89.158	509.	
47	1.00	11	8.00	27.00	17.93	11.15	80.757	530.	
48	1.00	9	5.00	19.00	15.92	7.08	44.940	507.	

S#	TIME	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	FLAG
49	1.00	11	3.00	22.00	21.59	4.20	40.813	517.	
50	1.00	12	4.00	18.00	22.85	5.56	35.912	527.	
51	1.00	11	7.00	24.00	18.87	9.99	71.779	498.	
52	1.00	10	5.00	16.00	18.08	7.07	51.681	509.	
53	1.00	3	6.00	12.00	1.95	8.62	99.867	493.	
54	1.00	19	8.00	31.00	35.07	11.15	65.151	525.	
55	1.00	8	11.00	22.00	9.23	15.66	76.956	503.	
56	1.00	11	6.00	24.00	19.56	8.51	66.466	505.	
57	1.00	11	7.00	21.00	18.79	9.92	71.244	507.	
58	1.00	10	9.00	24.00	15.13	12.83	70.704	501.	
59	1.00	10	4.00	18.00	19.32	5.82	70.276	475.	
60	1.00	8	9.00	21.00	10.72	12.85	74.491	499.	
61	1.00	9	8.00	23.00	13.68	11.31	51.077	511.	
62	1.00	10	8.00	20.00	15.97	11.89	82.836	456.	
63	1.00	13	0.00	19.00	26.95	0.00	16.544	556.	
64	1.00	5	11.00	16.00	2.78	15.58	101.42	510.	
65	1.00	11	9.00	25.00	17.31	12.78	70.861	505.	
66	1.00	7	9.00	23.00	8.53	12.84	112.85	501.	
67	1.00	9	4.00	18.00	16.54	5.61	40.989	518.	
68	1.00	16	4.00	23.00	39.28	6.98	28.970	344.	
69	1.00	9	7.00	23.00	14.49	10.09	75.937	487.	
70	1.00	9	11.00	25.00	11.14	16.06	59.465	474.	
71	1.00	15	11.00	28.00	24.87	16.35	79.756	456.	
72	1.00	6	9.00	21.00	6.27	12.90	116.31	495.	
73	1.00	12	3.00	17.00	23.43	4.14	44.084	533.	
74	1.00	15	8.00	25.00	26.55	11.19	70.760	523.	
75	1.00	9	7.00	19.00	14.55	10.39	81.052	457.	
76	1.00	7	6.00	16.00	10.83	8.76	63.397	474.	
77	1.00	10	4.00	18.00	18.82	5.65	64.888	509.	
78	1.00	11	4.00	17.00	21.00	5.65	38.520	508.	
79	1.00	6	4.00	19.00	10.06	5.60	30.816	523.	
80	1.00	10	6.00	17.00	17.34	8.49	51.260	509.	
81	1.00	12	10.00	28.00	18.74	14.16	88.348	509.	
82	1.00	13	4.00	20.00	25.07	5.57	40.691	523.	
83	1.00	7	6.00	21.00	10.83	8.67	60.990	484.	
84	1.00	7	6.00	17.00	10.82	8.80	67.657	469.	
85	1.00	6	11.00	27.00	4.90	15.63	101.40	506.	
86	1.00	6	6.00	19.00	8.63	8.52	150.07	506.	
87	1.00	9	8.00	24.00	13.65	11.84	56.269	460.	
88	1.00	16	4.00	26.00	31.73	5.60	42.211	514.	
89	1.00	12	10.00	24.00	18.77	14.30	84.683	496.	
90	1.00	12	4.00	18.00	23.11	5.63	37.417	512.	
91	1.00	9	13.00	30.00	9.92	18.50	86.816	504.	
92	1.00	12	7.00	22.00	20.85	9.82	126.80	519.	
93	1.00	16	8.00	31.00	28.75	11.21	49.554	519.	
94	1.00	17	2.00	29.00	35.39	2.77	21.372	513.	
95	1.00	10	4.00	19.00	18.59	5.57	36.227	526.	
96	1.00	8	8.00	21.00	11.54	11.19	55.373	526.	
97	1.00	8	14.00	25.00	7.05	19.88	83.168	507.	
98	1.00	7	8.00	17.00	9.36	11.28	103.58	515.	
99	1.00	9	5.00	22.00	16.02	7.15	28.087	496.	
100	1.00	7	8.00	17.00	9.40	11.18	81.213	527.	
101	1.00	11	11.00	26.00	15.83	15.54	102.79	512.	
102	1.00	11	6.00	21.00	19.71	8.61	54.192	492.	
103	1.00	9	9.00	24.00	12.80	13.21	91.931	468.	
104	1.00	14	9.00	27.00	24.09	13.01	67.340	484.	

S#	TIME	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	FLAG
105	1.00	12	8.00	23.00	20.16	11.25	45.020	517.	
106	1.00	9	5.00	17.00	15.97	7.11	36.342	501.	
107	1.00	14	5.00	22.00	28.40	7.53	41.284	443.	
108	1.00	8	10.00	22.00	10.11	14.04	125.64	521.	
109	1.00	3	8.00	18.00	0.41	11.47	104.03	495.	
110	1.00	12	9.00	23.00	19.48	12.73	48.838	509.	
111	1.00	10	8.00	23.00	15.86	11.32	54.927	510.	
112	1.00	5	4.00	11.00	7.96	6.19	74.722	420.	
113	1.00	7	5.00	19.00	11.80	7.99	56.443	397.	
114	1.00	12	7.00	24.00	21.09	10.00	92.921	497.	
115	1.00	15	9.00	26.00	26.03	12.75	83.126	507.	
116	1.00	9	7.00	24.00	14.50	10.11	66.307	485.	
117	1.00	8	5.00	15.00	13.90	7.24	42.347	482.	
118	1.00	8	7.00	19.00	12.22	10.42	61.632	454.	
119	1.00	11	6.00	19.00	19.39	8.40	41.258	521.	
120	1.00	11	11.00	28.00	15.14	16.99	55.081	423.	
121	1.00	10	7.00	26.00	16.67	10.00	44.846	498.	
122	1.00	7	9.00	21.00	8.57	12.78	81.855	506.	
123	1.00	3	4.00	10.00	3.58	5.67	93.319	508.	
124	1.00	11	3.00	17.00	21.83	4.24	44.711	504.	
125	1.00	6	11.00	21.00	4.63	15.84	63.634	490.	
126	1.00	5	7.00	14.00	5.71	9.93	72.760	507.	
127	1.00	7	5.00	19.00	11.49	6.99	87.473	524.	
128	1.00	13	7.00	21.00	24.05	10.53	31.137	444.	
129	1.00	12	10.00	27.00	18.80	14.83	71.277	458.	
130	1.00	10	6.00	23.00	18.05	9.22	66.407	427.	
131	1.00	8	7.00	21.00	12.19	10.53	62.916	445.	
132	1.00	9	5.00	20.00	16.20	7.28	39.666	476.	
133	1.00	11	3.00	20.00	23.03	4.48	33.476	450.	
134	1.00	14	7.00	23.00	26.12	10.34	59.003	461.	
135	1.00	11	7.00	23.00	19.55	11.01	57.067	409.	
136	1.00	13	6.00	24.00	23.57	8.34	64.791	529.	
137	1.00	11	9.00	25.00	17.27	12.62	58.033	521.	
138	1.00	17	5.00	25.00	32.64	6.90	54.205	534.	
139	1.00	3	4.00	11.00	3.52	5.73	52.506	495.	
140	1.00	4	8.00	20.00	2.93	11.24	84.664	521.	
141	1.00	8	5.00	17.00	13.70	7.05	98.399	512.	
142	1.00	9	6.00	19.00	15.10	8.42	54.035	520.	
143	1.00	10	10.00	24.00	14.34	14.35	116.36	493.	
144	1.00	16	7.00	25.00	29.74	9.92	85.357	505.	
145	1.00	12	6.00	21.00	21.82	8.54	49.666	500.	
146	1.00	12	6.00	20.00	21.59	8.43	51.806	517.	
147	1.00	15	4.00	24.00	29.81	5.65	30.073	505.	
148	1.00	13	8.00	24.00	22.77	11.67	37.909	474.	
149	1.00	13	6.00	22.00	24.56	8.79	73.408	469.	
150	1.00	7	2.00	19.00	13.78	2.82	72.582	507.	
151	1.00	5	9.00	18.00	4.04	12.92	60.990	494.	
152	1.00	6	15.00	22.00	1.50	21.57	96.147	492.	
153	1.00	6	11.00	21.00	4.99	15.56	101.12	512.	
154	1.00	11	7.00	20.00	18.59	9.72	67.767	533.	

SYSTEM NORMALIZED
C14 IPA DATA PROCESSED - 03-Jul-2007 08:29
C14 Eff (0-156 keV) = 95.81 %

Protocol #:10 Name:swipe 03-Jul-2007 11:05
Region A: LL-UL= 0.0-12.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.50
Region B: LL-UL=12.0-156. Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Region C: LL-UL= 0.0-2000 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
Time = 1.00 QIP = tSIE ES Terminator = Count
Conventional DPM
Nuclide 1 = 289524 Nuclide 2 = 129197

S#	TIME	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	FLAG
155 1/30	1.00	4	10.00	23.00	4.08	11.81	90.453	915.	E