Razo, Jason

From: Zhongde Wang [zwang@hematech.com]
Sent: Thursday, December 15, 2011 11:13 AM
To: Razo, Jason
Cc: Hiroaki Matsushita; Brenda Hershman
Subject: RE: NRC License Termination Request
Attachments: 3H Check-in and usage record.pdf; Contamination Meter.pdf; Memo for the disposal of 3H.pdf; NRC form 540 541 and 542.pdf; Safety-Kleen.pdf

Hi Jason,

Per our discussion over the phone on Tuesday, attached please find the documents you requested for license termination. Please let us know if you have any further questions.

As I am leaving Hematech at the end of this month, please direct any future communications that you may have with Hematech regarding this matter to Mr. Hiroaki Matsushita. Thanks!

Regards,

Zhongde

From: Razo, Jason [mailto:Jason.Razo@nrc.gov]
Sent: Tuesday, November 22, 2011 10:31 AM
To: Zhongde Wang
Subject: NRC License Termination Request

Dr. Wang,

In order to complete the license termination as requested in Mr. Matsushita's letter dated September 26, 2011, please provide the following information.

1) Documentation showing that the 2 batches of 3H tritium were disposed/transferred on March 4, 2010, as stated in your letter.

2) For the survey meter and scintillation counter:
   a. calibration date
   b. manufacturer's name
   c. model number
   d. efficiency

Thank you for your help in this matter and please let me know if you have any questions.

Jason Razo

US NRC Region IV

817-276-6589

Check-in Data

Radioisotope ^{3}H Quantity 1.0 mCi

Date Received 21st May 2004 Purchase Order 052004A

NOTE: If the contents indicated on the packing slip are not what was ordered, do not open the package. Immediately notify the Radiation Safety Officer.

Visual Inspeciton: (OK) NOT OK (Circle one)

Wipe Results: (OK) NOT OK (Circle one)

Radiation Dose Rates:

One Meter 0 mrem/hour

Contact 0 mrem/hour

Net DPM on surface wipe is 0 DPM/100 cm^2

Check-in performed by: Sathi

This section is to be completed only by Radiation Safety and only for shipments that fail the initial check-in.

Contact dose rate is _____ mrem/hour

T.I. is _____ mrem/hour

The RSO will notify the NRC, transporter, and shipper of contamination or dose rates in excess of limits.

HEMATECH INDIVIDUAL SHIPMENT INVENTORY SHEET

Date Received: 21st May 2004

Radioisotope: ^{3}H

Quantity: 1.0 mCi

Concentration: 1.0 mCi/ml

Chemical Form: [Me-^{3}H] Thymidine

BE CERTAIN THAT THE RADIOISOTOPE RECEIVEING FORM IS COMPLETE

DATE	Volume (µl) REMOVED	Activity (µCi) REMOVED	Volume (µl) REMAINING	Activity (µCi) REMAINING

Carrier: Federal Express	MOT: PO	Billing: Sender/FOB - Origin

Ship To: HEMATECH
4401 S TECHNOLOGY DR
TECH III
SATHI
SIOUX FALLS SD 57106

Bill To: HEMATECH
A/P
33 RIVERSIDE AVE
2ND FL
WESTPORT CT 06880

Page 1

Sales Order: 1552669

Customer #: 52900

Pick Slip #: 9906905

Customer Service Rep: WILKINS

Print Date: 05/20/04

Caller Name: JODY WILSON 605-361-6793
Phone #: N/A

P.O. #: 052004A

Item#	Qty	B/O	Product #	Batch/ Lot #	Description	Store Temp	Ship Condition
1.000	1		TRK758-1MCI	B272	(METHYL-3H)THYMIDINE, 70-86Ci/ MMOL, AQUEOUS SOLN, STERILIZED	2 C	RAM-Ambient

Received 21 May 2004 (Sathi)

In Emergency Call (800)-584-9333

Amersham Biosciences
F/K/A Amersham Pharmacia Biotech

Addresses for ordering:

In the United States

800 Centennial Ave.
Piscataway, NJ 08855

For ordering and information in the United States:
Toll free: (800) 526-3593

In Canada

500 Boul. Morgan Blvd.
Baie D'Urfe (Quebec)
Canada H9X 3V1

For ordering and information in Canada:
Toll free: (800) 463-5800

Get rewarded for shopping with us! Use the number below (so# + po#) to collect points and get cool gifts by logging onto www.biorewards.com.

BN# 1552669 - 052004A

Label Category	Transport Index	Total Activity		Isotopes
LTD. QTY.		37.200	MBq	T /
		1.005	mCi	

☐ RQ

☒ Passenger & Cargo Aircraft ☐ Dry Ice, 9, UN1845, III

☒ This package conforms to the conditions and limitations specified on 49 CFR 173.421 for radioactive material, excepted package - limited quantity of material, UN2910

Customer Copy

Claims/Returns

ALL CLAIMS MUST BE MADE WITHIN 10 DAYS OF RECEIPT OF GOODS. All products to be returned must have prior authorization from our Customer Service Department. Items manufactured to customers' specifications cannot be returned for credit

control 576127

40-27743-01
030 36160

Check-in Data

Radioisotope ^{3}H Quantity 1.0 mCi

Date Received 3rd Nov 2005 Purchase Order [illegible]

NOTE: If the contents indicated on the packing slip are not what was ordered, do not open the package. Immediately notify the Radiation Safety Officer.

Visual Inspeciton: (OK) NOT OK (Circle one)

Wipe Results: (OK) NOT OK (Circle one)

Radiation Dose Rates:

One Meter 0 mrem/hour

Contact 0 mrem/hour

Net DPM on surface wipe is 0 DPM/100 cm^2

Check-in performed by: Sathi

This section is to be completed only by Radiation Safety and only for shipments that fail the initial check-in.

Contact dose rate is _____ mrem/hour

T.I. is _____ mrem/hour

The RSO will notify the NRC, transporter, and shipper of contamination or dose rates in excess of limits.

HEMATECH INDIVIDUAL SHIPMENT INVENTORY SHEET

Date Received: 03 Nov 2005

Radioisotope: H^3 · Tritiated Thymidine

Quantity: 01 mCi

Concentration: 01 mCi/ml

Chemical Form: Liquid.

BE CERTAIN THAT THE RADIOISOTOPE RECEIVEING FORM IS COMPLETE

DATE	Volume (µl) REMOVED	Activity (µCi) REMOVED	Volume (µl) REMAINING	Activity (µCi) REMAINING	
04 Nov 2005	250µl	250µCi.	750µl	750µCi.	LSalth
09 Mar 2006	150µl	150µCi.	600µl	600µCi.	LSalth
10 Mar 2006	150µl	150µCi	450µl	450µCi.	LSalth

Carrier: Federal Express	MOT: PO	Billing: Sender/FOB - Origin

Ship To: HEMATECH
4401 S TECHNOLOGY DR
TECH III
SATHI
SIOUX FALLS SD 57106

Bill To: HEMATECH
A/P
33 RIVERSIDE AVE
2ND FL
WESTPORT CT 06880

Page 1

Sales Order: 2027051

Customer #: 52900

Pick Slip #: 10002825

Customer Service Rep: UNKEL

Print Date: 11/02/05

Caller Name: JODY WILSON 605-361-6793
Phone #: SATHI

P.O. #: 110205E

Item#	Qty	B/O	Product #	Batch/ Lot #	Description	Store Temp	Ship Condition
1.000	1		TRK758-1MCI	B283	(METHYL-3H)THYMIDINE, 70-86Ci/ MMOL, AQUEOUS SOLN, STERILIZED	2 C	RAM-Ambient

Received 1 mCi
1 mCi
03 Nov 2005

In Emergency Call (800)-584-9333

Amersham Biosciences
F/K/A Amersham Pharmacia Biotech

Addresses for ordering:

In the United States

800 Centennial Ave.
Piscataway, NJ 08855

For ordering and information in the United States:
Toll free: (800) 526-3593

In Canada

500 Boul. Morgan Blvd.
Baie D'Urfe (Quebec)
Canada H9X 3V1

For ordering and information in Canada:
Toll free: (800) 463-5800

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BN# 2027051 - 110205E

Label Category	Transport Index	Total Activity		Isotopes
LTD. QTY.		37.000	MBq	T /
		1.000	mCi	

☐ RQ

☒ Passenger & Cargo Aircraft ☐ Dry Ice, 9, UN1845, III

☒ This package conforms to the conditions and limitations specified on 49 CFR 173.421 for radioactive material, excepted package - limited quantity of material, UN2910

Customer Copy

Claims/Returns

ALL CLAIMS MUST BE MADE WITHIN 10 DAYS OF RECEIPT OF GOODS. All products to be returned must have prior authorization from our Customer Service Department. Items manufactured to customers' specifications cannot be returned for credit

control 576127

40-27743-01
030-36160

4th Mar 2010

Memo for the disposal of 3H

The following two batchs of 3H [Me3H]Thymidine were picked up for disposal on 4th Mar 2010. As the results, we have no 3H in Hematech facilities.

Batch (1) 450µl of [Me3H]Thymidine, 0.45mCi, Received on 3rd Nov 2005 by Sathi. (Originally 1mCi received and Sathi used 0.55mCi. 0.45mCi is the amount we had on 4th Mar 2010.

Batch (2) 1ml of [Me3H]Thymidine, 1.0mCi, received on 21st May 2004 by Sathi.

Note: This 0.55 m Ci 3H waste was stored in a plastic isotope waste container which was later also used by another scientist at Hematech for P^{32} waste. It's likely that this 0.55 m Ci 3H waste was disposed along with the decaded P^{32} waste.

Confirmation for Pickup

40-27743-01
030-36160

control 576127

NRC FORM 540

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBE (INCLUDE AREA CODE)	800-424-9300
ORGANIZATION	Chemtrec WSDS #: CHEN01RAD
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?	[ ] YES [x] NO
3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST	1
4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT?	[ ] YES [x] NO
EPA MANIFEST NUMBER	NA

5. SHIPPER- NAME AND FACILITY	Chase Environmental Group, Inc. 11450 Watterson Court Louisville, KY 40299
SHIPPER ID #	N/A
	X COLLECTOR PROCESSOR
USER PERMIT NUMBER	T-KY003-L10
SHIPMENT #	N/A
GENERATOR TYPE (SPECIFY)	
CONTACT	Janet Baker
TELEPHONE #	865-481-8801
6. CARRIER NAME AND ADDRESS	R & R Trucking PO Box 545 Duenweg, MO 64841
EPA ID #	MOR000501973
SHIPPING DATE	3/4/2010
CONTACT	Don Richey
TELEPHONE #	417-623-6885
SIGNATURE	
DATE	3/4/10

7. NRC FORM 540 AND 540A	PAGE 1 __1__ PAGE(S)
NRC FORM 541 AND 541A	OF __1__ PAGE(S)
NRC FORM 542 AND 542A	__1__ PAGE(S)
ADDITIONAL INFORMATION	None PAGE(S)
8. Manifest Number (Use this number on all continuation pages)	TO-2010-037
9. CONSIGNEE-NAME AND FACILITY ADDRESS	TOXCO, Inc. 109 Flint Road Oak Ridge, TN 37830
Contact	Rick Low
Telephone Number (Include area code)	(865) 482-5532
SIGNATURE-Authorized consignee acknowledging waste reciept	
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 10CFR parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE | TITLE: Technician | DATE: 3/4/10

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 IN MBq	17 LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME m^3	19. ID NUMBER OF PACKAGE
Non DOT Regulated Material One drum with H-3 waste for disposal	NA	NA	Solid/oxide	H-3	5.37E+01	N/A	0.019	TO-CT-E-10-143

Generator Certification Statement:
The constituents of the waste manifested herein are known to the generator. There are no EPA RCRA, pathogenic or other hazards present other than those specifically listed on the Form 541.

Zhongde Wang — Print name | Signature | 04 March 2010 — Date

CONSIGNEE ORIGINAL (MUST ACCOMPANY WASTE IN TRANSIT)

40-27743-01
030-36160

control 576127

NRC FORM 541 — US NUCLEAR REGULATORY COMMISSION

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
CONTAINER AND WASTE DESCRIPTION

1. MANIFEST TOTALS

NUMBER OF PACKAGES	NET WASTE VOL. m3	NET WASTE WGHT kg	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	TOTAL
1	0.019	2.5	NP	NP	NP	NP

ACTIVITY (MBq/mCi)	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)
	5.37E+01 MBq	5.37E+01	NP	NP	NP	NP
	1.45E+00 mCi	1.45E+00				

2. MANIFEST NUMBER: TO-2010-037

3 PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: Chase Env. Group

SHIPPER ID NUMBER: N/A

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR NUMBER	6 CONTAINER DESCRIPTION (See Note 1)	7 VOLUME (m3)	8 WASTE AND CONTAINER WEIGHT (kg)	9. SURFACE RADIATION LEVEL _X_ uSv/hr ___ mSv/hr	10. SURFACE CONTAMINATION MBq/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. Approximate WASTE VOLUME(S) IN CONTAINER (m3)	13. SORBENT SOLIDIFICATION 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 Nuclide	MBq	mCi	16. WASTE CLASS AS-A STABLE AU-A UNSTABLE B-CLASS B C-CLASS C
TO-CT-E-10-143/ 0830	4	0.019	2.5	<5.00	<3.67E-6	<3.67E-5	39	0.019	100	Oxide/NP	NP	H-3	5.37E+01	1.45E+00	N/A
												Package total	**5.37E+01**	**1.45E+00**	

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. Metal 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. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other, describe in Item 8, or additional page

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 3: For solidification media that meet disposal site structural stability requirements, the numerical code must be followed by "-S."

For all solidification media, the vendor (manufacturer) and brand name must also be identified in Item 13. Code 100 = NONE REQUIRED.

Sorption

60. Speedi Dri
61. Celatom
62. Floor Dry/ Superfine
63. Hi Dri
64. Safe-T-Sorb
65. Safe-N-Dri
66. Florco
67 Florco X
68. Solid-A-Sorb
69. Chemsil 30
70. Chemsil 50
71. Chemsil 3030
72. Dicapert HP200
73. Dicapert HP500
74. Petroset
75. Petroset II
76. Aquaset
77. Aquaset II
89. Other. Describe in Item 13, or additional page

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

40-27743-01
030-36160

NRC FORM 542 (5-1998) U.S. NUCLEAR REGULATORY COMMISSION

UNIFORM NARM RADIOACTIVE WASTE MANIFEST

MANIFEST INDEX AND REGIONAL COMPACT TABULATION

List all original "PROCESSED WASTE" before "COLLECTED WASTE".

1. WASTE COLLECTOR/PROCESSOR
NAME: Chase Environmental Group, Inc.
IDENTIFICATION NUMBER: T-KY003-L10
SHIPPING DATE: 3/4/2010

SHIPPER USE ONLY

2. MANIFEST NUMBER: TO-2010-037

3. PAGE_1_OF _1_PAGE(S)

4. GENERATOR IDENTIFICATION NUMBER	5. GENERATOR NAME PERMIT NUMBER AND TELEPHONE NUMBER	6. GENERATOR FACILITY ADDRESS	7. PREPROCESSED WASTE (OR MATERIAL) VOLUME (m3)	8. MANIFEST NUMBER UNDER WHICH WASTE (OR MATERIAL) RECEIVED AND DATE OF RECEIPT	9. WASTE CODE (P=PROCESSED C=COLLECTED)	10. ORIGINATING COMPACT OR STATE	11. AS PROCESSED/COLLECTED TOTAL A. SOURCE MATERIAL (kg)	B. SNM (g)	C. ACTIVITY (MBq)	D. VOLUME (m3)
0830	Hematech, Inc. 605-361-6793	4401 So. Technology Drive Sioux Falls, SD 57106	0.019	NA	C	SD	NP	NP	5.37E+01	0.019
TOTALS OF ALL PAGES (NRC FORMS 542 AND 542A)							0.00E+00	0.000	5.37E+01	0.019

NRC FORM 542 (5-1998)

control 576127

Contamination Meter

Techninal Associates

7051 ETON AVENUE * CANOGA PARK, CA 91303
TELEPHONE (818) 883-7043 * FAX(818) 883-6103

Model # TBM-3S

SPECIFICATIONS:

- **Meter:**
  TBM-3: 2-1/2" Rectangle.
  TBM-3S & TBM-3SR: 2-1/2" Ruggedized.
- **Ranges:** 3 ranges, linear: 0-500; 0-5,000; 0-50,000 cpm (0-;15; 1.5; 15 mR/h).*
- **Switch Positions:** Off, Battery Test, X100, X10, X1.
- **Audio:**
  TBM-3: internally mounted speaker.
  TBM-3s & TBM-3SR: Sonalert with Volume Control.
- **Detector:** T-1190 ``pancake GM tube".
- **Diameter:** 2"; 5cm.
- **Window Diameter:** 1-3/4"; 4.5 cm.
- **Window Thickness:** 1.5 mg/cm^2.
- **Quench Gas:** Halogen for long life.
- **Background:** Typical 50 cpm. Thin Profile of tube (13mm) gives low background.
- **Efficiency:** 100% for all **Betas** and **Alphas** that have the energy to penetrate the thin window. **Gamma** sensitivity nominal is 3 cpm/μ R/h (based on Cs 137).
- **Physical dimensions:**
  3" Wide x 5-1/4" Long x 2-1/4" High. Excluding meter and handle.
  (7.6 cm x 13.3 cm x 6 cm)
- **Beta Shield: TBM-3SR Model Only.** Methacrylate 0.125", 3.1 mm.
- **Calibration:** Single master calibration pot as well as individual cal pots for each range.
- **Power:** 9 volt ``transistor" battery; Eveready 1222, or equivalent.
- **Battery Life:** 100 hours in normal operation.
- **Handle:**
  Swivel type, polished anodized aluminum.
  (**Optional** Detachable Handle **TBM-3SR(DL)** Upon Request.)
- **Weight:** 22 oz; 625 gm

Calibration date :3rd Nov 2010

Quick-count Benchtop Radioisotope counter

Bioscan, Inc.
4590 MacArthur Blvd., NW
Washington, DC 20007
Tel: 1-800-255-7226
Tel: 1-202-338-0974
Fax: 1-202-333-8514
Email: sales@bioscan.com

Model # QC-4000 XER

The Quick-Count QC-4000 is an easy to use bench-top instrument for counting samples labeled with Phosphorus-32 (32P) and Iodine-125 (125I). Samples with activities ranging from several DPM up to 5 x 109 DPM can be counted with efficiencies in the 2-20% range depending on the type, wall thickness, and filling fraction of the sample container. The device accept 10 mm diameter tubes for measurements.
Accurate quantitative results are obtained in working vials and tubes with no sample preparation, dilution, or transfer. the manual for QC2000 (previous model) is located at http://biomed-fse.com/PM_QA/Lab%20PMQA%20Procedures/counters,%20radiation/BioScan/QC-2000/QC2000MAN94.pdf