U.S. Environmental Protection Agency
Western Ecology Division

Final Status Summary Report for Decommissioning the Corvallis and Newport Research Facilities and the Termination of NRC Radioactive Materials License

No. 36-12343-02

NOVEMBER 30, 2004
(Revised December 27, 2005)

Docket No:
030-05976

License No:
36-12343-02

Mail Control No:
470287

U.S. Environmental Protection Agency
Western Ecology Division

Final Status Summary Report for Decommissioning the Corvallis and Newport Research Facilities and the Termination of NRC Radioactive Materials License No. 36-12343-02

The Environmental Protection Agency's Western Ecology Division (WED) has ceased all licensed activities and wishes to terminate our Radioactive Materials License No. 36-12343-02 (docket no. 030-5976). As per the instructions provided in your letter dated July 19, 2004 and the audit exit briefing (November 17, 2005), we have completed all decommissioning activities and have found our facilities to be free from any significant contamination and ready to be designated for unrestricted use. The final status of the radioactive materials held under our license, the status of the facilities, the process used to determine that the facility is clean and ready for unrestricted use, the instruments used for the surveys, and the status of our records, is discussed in this report.

A. Disposition of Radioactive Materials

In March of 2004 we commenced the process of decommissioning the WED facilities. At that time we identified five classes of radioactive materials on-site: 1) Sealed-sources (Electron Capture Detectors - ECD) to be returned to the manufacturers; 2) radiolabeled tracers and radioactive waste; 3) contaminated liquid scintillation cocktail; 4) radiolabeled standards necessary for LSC survey counting; and 5) non-regulated or exempt check sources and a source operated under a general license.

1) Sealed Sources – Electron capture detectors. We possessed four nickel-63 sealed sources (2.22 GBq) under our license. These four sources were returned to the manufacturers in 2004 for disposal: Hewlett-Packard (2) and Perkin-Elmer (2). The return authorizations are found listed under their respective serial numbers in the volume *U.S. Environmental Protection Agency, Western Ecology Division: Sealed Sources, NRC Radioactive Materials License No. 36-12343-02.*

2) Radiolabeled tracers and solid radioactive waste. Our radiotracers as well as six small sources were shipped to Hanford (Richland, Washington), as 834.472 MBq solid waste for proper disposal. The radiotracers were properly processed, treated, and stabilized in preparation for disposal. The material was shipped on October 20, 2004 for disposal. The State of Washington burial disposal permit and the shipping manifests are enclosed with this report. The waste was brokered and transported from our facility by Thomas Gray and Associates, Inc., Orange, California.

3) Liquid Scintillation Cocktail contaminated with 1.7978 MBq of carbon-14 or hydrogen-3 was packaged and shipped to NSSI/Sources and Services, Inc., Huston, Texas for proper destruction and disposal. The waste was brokered and transported from our facility by Thomas Gray and Associates, Inc., Orange, California.

ENVIRONMENTAL MANAGEMENT AND CONTROLS, INC.

3106 SOUTH FAITH HOME ROAD
TURLOCK, CALIFORNIA 95380
E-MAIL:emctga@aol.com

PHONE (800) 552-6121
PHONE (209) 667-1102
FAX (209) 667-1593

March 4, 2005

Mr. Phil Monaco
US EPA/Western Ecology Division
200 SW 35th St
Corvallis, OR 97333

Dear Mr. Monaco:

The following is a list of the radioactive waste drum(s) that were sent for disposal to the Richland, Washington disposal site on our shipment 04-W-3. Enclosed is the NRC Form 542 and acknowledgement of receipt.

Manifest	Drum #
7107	04-01

If you require any further information, please do not hesitate to contact me.

Sincerely,

Gaye Nelson

Gaye Nelson
Assistant Manager
Environmental Management & Controls, Inc.

US ECOLOGY Washington, Inc.
1777 Terminal Drive
Richland, Washington 99354

509.377-2411
Fax: 509.377-2244
www.americanecology.com

US Ecology

an American Ecology company

ENVIRONMENTAL MANAGEMENT & CONTROLS
RON WILCOX
3106 S FAITH HOME ROAD
TURLOCK CA 95380

This is to certify that the waste shipment described below was received for disposal at the US Ecology Richland, Low-Level Radioactive Waste Disposal Facility. This certification satisfies the Acknowledgment of Receipt of Waste Conditions of the State of Washington Radioactive Materials License WN-I019-2 issued to US Ecology, Inc.

BATES NUMBER: 23760

GENERATOR NUMBER: CAT-08-001-1828

SHIPMENT NUMBER: 04-W-3

DATE RECEIVED: 2/24/05

SIGNATURE: DATE: 3/01/05

Discrepancies (if any) between wastes listed on the manifest and waste materials received in the shipment:

SEE ATTACHED MANIFEST CORRECTION FORM

NOTE: This certification does not necessarily imply that the waste has been buried. You will be advised if any problems with the shipment are encountered during the burial process.

Any inquiries to this acknowledgment should be directed to Michael Ault, Facility Manager.

NRC FORM 541A

US NUCLEAR REGULATORY COMMISSION

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

MANIFEST INDEX AND REGIONAL COMPACT TABULATION (CONTINUATON)

2. MANIFEST NUMBER 01480

3. PAGE 4 OF 5 PAGE(S)

4. GENERATOR IDENTIFICATION NUMBER	5. GENERATOR NAME PERMIT NUMBER (IF APPLICABLE) AND TELEPHONE NUMBER	6. GENERATOR FACILITY ADDRESS	7. PREPROCESSED WASTE (OR MATERIAL) VOLUME (m3)	8. MANIFEST NUMBER(S) WHICH WASTE (OR MATERIAL) RECEIVED AND DATE OF RECEIPT	9. WASTE CODES P= PROCESSED C= COLLECTED	10 ORIGINATING COMPACT REGION OR STATE	11. AS PROCESSED/COLLECTED TOTAL A. SOURCE MATERIAL (kg)	B. SNM (g)	C. ACTIVITY (MBq and Ci)	D. VOLUME (m3 and ft3)
ORR990016339	US EPA/Western Ecology Division G2048 541-754-4787	200 SW 35th St Corvallis, OR 97333	0.2124	7107 10/20/04	P	OR	0	0	834.4721 22.5533	0.0716496 2.53
HIR999752701 US Navy RASO JMC Hawaii Run	US Navy (Hawaii Sites) G2087 309-782-2988	Attn: AMSFS-SF 1 Rock Island Arsenal Rock Island, IL 61299-6000	5.771616	USN2004-004 5/5/04 Hawaii-EMC-2003 4/3/03 Seal Team, Navy Prev., Fuel Labs	P	HI	0	0	42346.87 1144.51	4.1981568 148.24
UTD000651653	Utah State University G2014 423-797-2856	8315 Old Mill Hill Logan, UT 84322	0.075898	6638 5/10/04	P	UT	0.38394	0	1619.22878 43.76294	0.0549408 1.94
WAR990012940	VA Puget Sound Healthcare Systems G1045 206-762-1010	1660 S Columbia Way Seattle, WA 98108	0.463598	7098 10/19/04 6661 6/8/04	P	WA	0	0	1200.654107 32.450111	0.109032 3.85
WAR990014664	Washington State University G1033 509-335-4555	PO Box 641302 Pullman, WA 99164	1.4868	1101804 10/19/04 1071204 7/12/04	P	WA	0.3076064	0	5703.7928862957 155.7781861161	1.0070592 35.56
UTR009905636	Weber State University G2150 801-626-7823	2508 University Circle Ogden, UT 84408	0.018974	6888 10/13/04	P	UT	0	0	9.578079 0.258867	0.0019744 0.07
ORR009905495	GE Interlogix G2138 503-694-7619	12345 SW Leveton Dr Tualatin, ~~WA~~ OR 97062	0.4248	6310 11/5/03	P	~~WA~~ OR	0	0	233.1 6.3	0.0719328 2.54
ORR990037665	Lewis & Clark College G2028 503-709-0811	0615 W Palatine Hill Road Portland, OR 97219	0.038798	6306 11/5/03	P	OR	0	0	130.9 3.7	0.0178416 0.63
AKR999751645 Fort Richardson Fort Wainwright	US Army (Alaska Sites) G2042 309-782-2988	Attn: AMSFS-SF 1 Rock Island Arsenal Rock Island, IL 61299-6000	0.037949	USA2001-058 4/16/03	P	AK	0	0	573.5 15.5	0.010992 0.4

RC FORM 540 U.S. NUCLEAR REGULATORY COMMISSION
UPIRES 7/31/2004 rev. 08.04

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

EMERGENCY TELEPHONE NUMBER (Include Area Code)
M-F 8-5pm (714) 997-8090 / After Hours (714) 745-5211

ORGANIZATION
Thomas Gray & Associates, Inc.

IS THIS AN "EXCLUSIVE USE" SHIPMENT?
[ ] YES
[ ] NO

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

DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT?
If "Yes" provide Manifest Number ----> NO

EPA MANIFEST NUMBER

5. SHIPPER - *NAME AND FACILITY*
Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333

USER PERMIT NUMBER: G2048
SHIPMENT NUMBER:

CONTACT: Phil Monaco EXT

6. CARRIER - *Name and Address*
Thomas Gray & Associates, Inc.
1205 W. Barkley Ave
Orange, CA 92868

CONTACT: Rich Gallego

SIGNATURE - *Authorized carrier acknowledging waste receipt*

SHIPPER EPA I.D. NUMBER: OR8 680 019 991

[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR
TYPE (Specify)

TELEPHONE NUMBER: 541-754-4787

EPA I.D. NUMBER: CAD 066 151 648

SHIPPING DATE: 10/20/04

TELEPHONE NUMBER: 714-997-8090

DATE: 10.20.04

7. NRC FORM 540 AND 540A PAGE 1 OF 1 PAGES(S)
NRC FORM 541 AND 541A PAGE 1 OF 1 PAGES(S)
NRC FORM 542 AND 542A PAGE 0 OF 0 PAGES(S)
ADDITIONAL INFORMATION PAGE 1 OF _____ PAGES(S)

8. MANIFEST NUMBER
7107

9. CONSIGNEE - *Name and Facility Address*
Environmental Management & Controls
3106 S. Faith Home Road
Turlock, CA 95380

CONTACT: Ron Wilcox
TELEPHONE NUMBER: 209-667-1102

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 packaged, marked, and labeled and are in proper condition for transportation disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE | TITLE | DATE

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. TRANS. INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY (SI)	17. LSA / SCO CLASS	18. TOTAL WEIGHT (kg/lbs)	19. PACKAGE I.D. NUMBER
Radioactive material, excepted package - limited quantity of material, 7, UN2910	N/A	N/A	solid / p.p.g., check sources	H3, C14, Ni63, Tl204, Ru206, Po210, Am241, Co60	834.4721 MBq 22.5533 mCi	N/A	108.8 240.0	04-01

FOR CONSIGNEE USE ONLY

NRC FORM 541
EXPIRES 7/31/2004
rev. 06.04

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME (m³/ft³)	NET WASTE WEIGHT (kg/lbs)	SPECIAL NUCLEAR MATERIAL (grams) U233	U235	Pu	TOTAL (g)
1	0.2124 7.50	108.8 240.0	0	0	0	0

ACTIVITY (MBq/mCi) ALL NUCLIDES	TRITIUM	C14	Tc-99	I129	SOURCE (kg)
834.4721 MBq 22.5533 mCi	13.394 0.362	819.18 22.14	0 0	0 0	0.0E+00

2. MANIFEST NUMBER: 7107

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: Environmental Protection Agency

SHIPPER ID NUMBER: OR8 680 019 991 G2048

5. CONTAINER ID NUMBER / GENERATOR ID NUMBERS(S)	6. CONTAINER DESCRIPTION (SEE NOTE 1)	7. VOLUME (m³/ft³)	8. WASTE & CONTAINER WEIGHT (kg/lbs)	9. SURFACE RADIATION LEVEL		10. SURFACE CONTAMINATION MBq / 100 cm² ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (SEE NOTE 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m³/ft³)	13. SORBENT, SOLIDIFICATION, STABILIZATION MEDIA (SEE NOTE 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM / CHELATING AGENT	WEIGHT % CHELATING AGENT IF ≥ 0.1%
04-01	4	0.2124 7.5	108.86 240.0	0.02 0.0002	mR/h mSv/h	<1.67e-6	<1.67e-5	39	0.2124 7.5	100	p.p.g., check sources	NP
					X							
					X						check source --->	
											--->	
											--->	
											--->	

15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITIES (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND ISOTOPE	(MBq)	(mCi)	kg	gm	16. WASTE CLASSIFICATION A/B, A/U, B, C
H3	13.394	0.362			AU
C14	819.18	22.14			
Ni63	1.665	0.045			
Tl204	0.0037	0.0001			
Ru106	0.0037	0.0001			
Po210	0.0037	0.0001			
Am241	0.037	0.001			
Co60	0.185	0.005			
Drum Total	**834.4721**	**22.5533**			

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

Wooden Box or Crate
Metal Box
Plastic Drum or Pail
Metal Drum or Pail
Metal Tank or Liner
Concrete Tank or Liner
Polyethylene Tank or Liner
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 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/Sludge/ 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.

Sorbent
60. Speedi Dri
61. Certelom
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. Dicapen HP200
73. Dicapen 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 Ether Styrene
99. Other, Describe in item 13. or additional page

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

SITE USE PERMIT

for the Commercial Low-Level Radioactive Waste Disposal Site

PERMIT NUMBER: G2048

EXPIRATION DATE: 2/28/2005

Registrant: U.S. E.P.A./WESTERN ECOLOGY DIVISION
200 SW 35TH ST
CORVALLIS, OR 97333-4996

For Waste Generated in the State of: OR

The person or organization to whom this certificate is issued must comply with applicable federal and state regulations related to the safe management of low-level radioactive waste.

Permit Does Not Imply Approval

ECY 010-2-78-G (2/93)

LOW-LEVEL AND NATURALLY OCCURRING OR ACCELERATOR PRODUCED RADIOACTIVE WASTE SHIPMENT CERTIFICATION FOR COMMERCIAL GENERATORS/PACKAGERS, BROKERS, AND CARRIERS

The following certification, completed as applicable, is made to the state of Washington:

Certification is hereby made to the state of Washington that Radiation Shipment Record No. 7107 of radioactive waste has been inspected in accordance with requirements of the Governor of Washington's Executive Order dated November 19, 1979, prior to its shipment. Further certification is made that the inspection has revelaed no items of noncompliance with all applicable laws, rules, and regulations.

The undersigned shall indemnify and hold harmless the state of Washington, in an amount not to exceed $1,000,000.00 per individual who may be injured, provided that indemnification shall not exceed $5,000,000.00 in total, for each occurrence, from any and all claims, suits, losses, damage, injury, and expenses to any person whomsoever or to property arising or growing out of or in any manner connected with the activities performed under this order.

Except for any violation of applicable existing state or federal statute or regulation respecting packaging and shipment, inspection and acceptance of any items or container or material covered by this certification by the state of Washington or a duly authorized contactor shall release the party who executed this certificate from any and all indemnificaiton from injury or loss.

SECTION A:

FOR THE GENERATOR/PACKAGER: Environmental Protection Agency
(Company Name)

PERMIT NUMBER: G2048

VOLUME OF WASTE IN THIS SHIPMENT: 0.2124 m^3

DATE: 10/20/2004 BY: _____

TITLE: _____

SECTION B:

FOR THE BROKER: Thomas Gray & Associates, Inc.
(Company Name)

PERMIT NUMBER: B400

VOLUME OF WASTE IN THIS SHIPMENT: 0.2124 m^3

DATE: 10/20/2004 BY: _____

TITLE: _____

SECTION C:

FOR THE CARRIER: _____
(Company Name)

VOLUME OF WASTE IN THIS SHIPMENT: _____

DATE: _____ BY: _____

TITLE: _____

DOH RHF-31A
Updated 3/00

NSSI/SOURCES & SERVICES, INC.
P.O. BOX 34042 HOUSTON, TEXAS 77234
PH: (713) 641-0391 www.nssihouston.com FAX: (713) 641-6153

November 05, 2004

Attn: Phil Monaco
Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333

Dear Mr. Monaco:

I am returning the original copy of the manifest used for shipping hazardous wastes to our facility for treatment.

In compliance with 40 CFR 264.12(b), NSSI is permitted to receive your waste, has received your waste and will continue to receive future shipment of this waste.

Please retain the manifest in your files for possible review by Regulatory Agencies to show proper disposal.

Your use of NSSI/Recovery Services, Inc. for treatment is appreciated.

Sincerely,

Robert D. Gallagher
President

RDG/vla
Ref. #manifest.frm

Cc : Kevin Lucey
Thomas Gray & Associates
1205 W. Barkley Avenue
Orange, CA 92868

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is to inform the generator of the waste shipped on this manifest, that NSSI has the appropriate permits for, and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. OR8680019991 Manifest Document No. 1027 07

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333

4. Generator's Phone (541) 754-4787

A. State Manifest Document Number 2987286

B. State Generator's ID 00053

5. Transporter 1 Company Name: Thomas Gray & Associates, Inc.

6. US EPA ID Number: CAD066151648

C. State Transporter's ID

D. Transporter's Phone 714-997-[illegible]

7. Transporter 2 Company Name: Tri-State Motor Transit Company

8. US EPA ID Number: MOD095038998

E. State Transporter's ID 40355

F. Transporter's Phone 800-4[illegible]

9. Designated Facility Name and Site Address
NSSI Recovery Services, Inc.
5711 Etheridge
Houston, TX 77087

10. US EPA ID Number: TXD982560294

G. State Facility's ID 38669

H. Facility's Phone 713-641-[illegible]

11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
X	a. RQ Waste Flammable Liquid, n.o.s. (toluene), 3, (7), UN1993, PG II (Ltd. Qty of Radioactive Material)	001	DM	00204	P	D001, F005 OUTS[illegible]
	b.					
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
11a) scintillation fluid in vials containing toluene

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Wear appropriate protective clothing and respirators.
See NRC Form 540, 541 #7106
EMERGENCY CONTACT NUMBER: 1-800-Chemtrec

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked, and labelled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
Jay D. Gile	[signature]	10 20 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Harold I. Sims	[signature]	10 20 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Thomas E. Francis	Thomas E. Fran[illegible]	10 28 04

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year
Gregory Johnson	Gregory Johnson	11 1 04

RC FORM 540 U.S. NUCLEAR REGULATORY COMMISSION
EXPIRES 7/31/2004 rev. 06.04

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
M-F 8-5pm (714) 997-8090 / After Hours (714) 745-5211

ORGANIZATION
Thomas Gray & Associates, Inc.

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

EPA MANIFEST NUMBER: 3272961

5. SHIPPER - NAME AND FACILITY
Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333

USER PERMIT NUMBER: G2046 | SHIPMENT NUMBER:

CONTACT: Phil Monaco EXT:

6. CARRIER - Name and Address
Thomas Gray & Associates, Inc.
1205 W Barkley Ave
Orange, CA 92868

CONTACT: Rich Gallego

SIGNATURE - Authorized Carrier acknowledging waste receipt

SHIPPER EPA I.D. NUMBER: OR8 680 019 991
[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR TYPE (Specify)

TELEPHONE NUMBER: 541-754-4787

EPA I.D. NUMBER: CAD 066 151 648

SHIPPING DATE: 10/20/04

TELEPHONE NUMBER: 714-997-8090

DATE: 10-20-04

7. NRC FORM 540 AND 540A PAGE 1 OF 1 PAGES(S)
NRC FORM 541 AND 541A PAGE 1 OF 1 PAGES(S)
NRC FORM 542 AND 542A PAGE 0 OF 0 PAGES(S)
ADDITIONAL INFORMATION PAGE 1 OF _____ PAGES(S)

8. MANIFEST NUMBER: 7106

9. CONSIGNEE - Name and Facility Address
Thomas Gray & Associates, Inc.
1205 W. Barkley Ave
Orange, CA 92868

CONTACT: Rich Gallego
TELEPHONE NUMBER: 714-997-8090

SIGNATURE - Authorized consignee acknowledging waste receipt

DATE: 10-28-04

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 packaged, marked, and labeled and are in proper condition for transportation disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE

TITLE: For Safety Mgr

DATE: 10-20-04

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. CHEM. INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY (SI)	17. ESA / SCO - CLASS	18. TOTAL WEIGHT (kg/lbs)	19. PACKAGE I.D. NUMBER
Q Waste Flammable Liquid, n.o.s. (toluene), 3, (7), UN1993, PG II (Limited Quantity of Radioactive Material)	N/A	N/A	liq / scint vials, bulk scint fluid	H3, C14	1.7978 MBq 0.04859 mCi	N/A	103.4 228.0	04-02 N43

FOR CONSIGNEE USE ONLY

This is to inform the generator of the waste shipped on this manifest, that NSSI has the appropriate permits for, and will accept, the waste the generator is shipping.

RC FORM 541
[illegible] 7/31/2004 rev. 08 04

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

MANIFEST TOTALS

NUMBER OF PACKAGES/DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (g/gm): U233	U235	Pu	TOTAL (g)
1	0.2124 7.50	103.4 228.0	0	0	0	0

ACTIVITY (MBq/mCi)

ALL NUCLIDES	TRITIUM	C14	Tc99	I129	SOURCE (kg)
1.79783 MBq 0.04859 mCi	1.6761 0.0453	0.12173 0.00329	0	0	0.00+00

2. MANIFEST NUMBER: 7106

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: Environmental Protection Agency

SHIPPER ID NUMBER: CR8 630 019 991 G2048

CONTAINER ID NUMBER / GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (SEE NOTE 1)	7. VOLUME (m³/ft³)	8. WASTE & CONTAINER WEIGHT (kg/lbs)	9. SURFACE RADIATION LEVEL (mSv/hr [X] / μSv/hr / R/hr [X])	10. SURFACE CONTAMINATION (Bq/100 cm²): ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION: 11. WASTE DESCRIPTOR (SEE NOTE 2)	12. APPROXIMATE WASTE VOLUME IN CONTAINER (m³/ft³)	13. SORBENT / SOLIDIFICATION / STABILIZATION MEDIA (SEE NOTE 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM / CHELATING AGENT	WEIGHT % CHELATING AGENT	15. RADIOLOGICAL DESCRIPTION: ISOTOPE	(MBq)	(mCi)	kg	gm	16. WASTE CLASSIFICATION
04-02 N43	4	0.2124 7.5	103.42 228.0	0.02 mrem 0.0002 mSv/hr	<1.67e-6	<1.67e-5	28	0.2124 7.5	62	scint vials, bulk scint fluid	NP	H3 C14 Drum Total	1.6761 0.12173 1.79783	0.0453 0.00329 0.04859			AU

NOTE 1: Container Description Code. For containers [illegible] in approved structural overpacks [illegible] must be followed by "-OP"
Wooden Box or Crate — 1 [illegible]; Metal Box — 10 Gas Cylinder; Plastic Drum or Pail — 11 Bulk, Unpackaged Waste; Metal Drum or Pail — 12 Unpackaged Components; Metal Tank or Liner — 13 High Integrity Container; Concrete Tank or Liner — 19 Other, Describe in Item 5 [illegible]; Polyethylene Tank or Liner; Fiberglass Tank or Liner

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 Decontamination [illegible]
30 [illegible]; 31 Anion Ion-Exchange Media; 32 Mixed Bed Ion-Exchange Media; 33 Contaminated Equipment; 34 Organic Liquid [illegible]; 35 [illegible]; 36 [illegible]; 37 [illegible]; 38 [illegible]
[illegible]

NOTE 3: For solidification media that meet disposal site structural stability requirements, the numerical [illegible]
[illegible]
73 [illegible]; 74 [illegible]; 75 [illegible]; 76 Aquaset; 77 Aquaset II; 89 Other, Describe [illegible]
Solidification: 90 Cement; 91 Concrete [illegible]; 92 Bitumen; 93 Vinyl Chloride; 94 Vinyl Ester Styrene; 99 Other, Describe [illegible]

NOTIFICATION FOR WASTE RESTRICTED FROM LAND DISPOSAL

Generator's name: Environmental Protection Agency

Generator's EPA I.D. #: OR8 680 019 991

State Manifest Document Number:

Manifest Document #: 7106

Generator's mailing address:

200 SW 35th Street, Corvallis, OR

LAND DISPOSAL RESTRICTION TABLE

Manifest (line number)	RCRA Waste Codes	Subcategory (from Table 1)	F-solvent or UHC Codes (from Tables III & IV)	Treatability Group Wastewater (W W) or Nonwastewater (N W W)	CA List Code (from Table 11)
11a)	D001	A	215	NWW	N/A
	F005	N/A	26	NWW	N/A

I am supplying this notification to NSSI Recovery Services, Inc. in accordance with the provisions of 40 CFR 268.7. 1 have determined that the material described above either: contains spent solvents (40 CFR 268.30), is a "California List" waste (CFR 268.32); a "First, Second, or Third/Third" waste (40 CFR 268.33, 268,34, and 268.35 respectively); a "Newly Listed" waste (40 CFR 268.36); an ignitable or corrosive characteristic waste (40 CFR 268.37); or a newly identified organic toxicity characteristic, coke by-product or chlorotoluene production waste (40 CFR 268.38), and is restricted from land disposal unless first treated to conformance with the treatment standards specified in 40 CFR 268.40 and 268.48.

I hereby certify that all the information above Is complete and accurate to the best or my knowledge and ability to determine that no omissions or errors exist,

(Signature) (Title) (Date)

4) Radiolabeled Standards for LS counting. The following liquid radiolabeled tracers (loose form) are being retained for use as standards/references for LS counting while decommissioning is pending: hydrogen-3 (0.07 MBq), carbon-14 (0.15 MBq); and nickel-63 (<2.0 kBq). These standards will be transferred to another license or disposed into the sanitary sewer when final approval from the NRC for decommissioning is obtained.

5) Non-regulated (exempt quantities and exempt concentrations) reference standards and check sources, and a 7.4 GBq tritium sealed source operated under a State of Washington General License (ScienTech, Inc). The instrument references and check sources in exempt quantities and concentrations are: 4 x 37 kBq cesium-137 G-M check sources, 1 x 6.2 kBq carbon-14 reference standard, and 1 x 33 kBq nickel-63 reference standard, all solid form; and several sets of hydrogen-3 and carbon-14 LSC quench standards ranging up to 0.04 kBq/ml, x 20 mL, liquid form. These standards will be secured and retained with the radiation instruments. We are in the process of transferring the ScienTech Instrument to the U.S. Department of Energy.

In summary, the radioactive sources identified in (4) and (5) above are the only radioactive materials presently on site. The radiolabled materials identified in (4) will be disposed when the NRC license is terminated and the facility officially decommissioned.

B. Sealed Sources

The four sealed sources in our possession at the beginning of 2004 were transferred back to the manufacturer as discussed in Section A. above. A record of all sealed sources used under the license, including transfer records and most recent leak tests is found in *U.S. Environmental Protection Agency, Western Ecology Division: Sealed Sources, NRC Radioactive Materials License No. 36-12343-02*, included in this report. The table below, Disposition of EPA WED Sealed Sources, is a historical summary of the status of our sealed sources.

The history of the early (pre-1980) tritium:Sc electron capture detectors is a little unclear. There were eight tritium sources we could identify in the records –all prior to 1982. Of these eight sources we can account for no specific disposals. However there are eight references to the disposal of tritium foils. During this same time period (prior to 1982), there are five nickel-63 detectors for which we do not have definite records of disposal. However, given the history of this laboratory and based upon the knowledge of the need for proper disposal, we propose there is every reason to believe that all the detectors were handled properly and were appropriately disposed or transferred to another license. We have records of all sources possessed after 1982 being properly transferred or disposed.

There is one sealed source incident which occurred in MB 125 (now MB 129/131/133), 1979. Tritium contamination was detected in these rooms and believed to have its origin with a tritium:Sc ECD. There was no other known source for the tritium. The venting for the detector had been disconnected with out the operator's knowledge. The room was successfully decontaminated. The notes from this incident are found in with the discussion of MB 129 in *U.S. Environmental Protection Agency, Western Ecology Division:*

Disposition of EPA -WED Sealed Sources

Source Serial Number	Manufacturer	Isotope	Activity	Disposed	Record of Disposal (Yes/No)	Record of Disposal	Swipe Records (Yes/No)	Disposal Test <0.005 uCi (185 Bq)	Notes
ST95-420	ScienceTech	H-3	200mCi	In-Use	NA	NA	NA	NA	State of Washington Radioacive Materials General License
M2198	HP	Ni-63	15mCi	2/24/2004	Yes	2/24/2004	Y	Y	
S8735	HP	Ni-63	15mCi	6/26/1905	Yes	2/24/2004	Y	Y	
F4571	HP	Ni-63	15mCi	2/24/2004	Yes	2/24/2004	Y	Y	
1437	PE	Ni-63	15mCi	2/5/2004	Yes	2/5/2004	Y	Y	
276	Troxler	Am-241:Be	200mCi	12/11/1998	Yes	12/11/1998	Y	Y	
F641	Varian	Ni-63	8mCi	4/30/1997	Yes	4/30/1997	Y	Y	
F506	Varian	Ni-63	8 mCi	4/30/1997	Yes	4/30/1997	Y	Y	
C0154	HP	Ni-63	15mCi	4/23/1997	Yes	4/23/1997	Y	Y	
H2098	HP	Ni-63	15mCi	4/23/1997	Yes	4/23/1997	Y	Y	
H1230	HP	Ni-63	14.5mCi	4/23/1997	Yes	4/23/1997	Y	Y	
S8829	HP	Ni-63	15mCi	6/19/1905	Yes	4/23/1997	Y	Y	
S10157	HP	Ni-63	15mCi	4/14/1997	Yes	4/23/1997	Y	Y	
4803	Tracor	Ni-63	14.5mCi	4/10/1997	Yes	5/1/1997	Y	Y	
F4487	HP	Ni-63	15mCi	12/5/1994	Yes	12/5/1994	Y	Y	
79451		Pb-210	5.6uCi	9/28/1994	Yes	9/29/1994	N/A	N/A	
79450		Sr-90	6.5uCi	9/28/1994	Yes	9/29/1994	N/A	N/A	
3845	PE	Ni-63	15mCi	5/11/1994	Yes	5/11/1994	Y	Y	
676	PE	Ni-63	15mCi	12/23/1992	Yes	12/23/1992	Y	Y	
089	PE	Ni-63	15mCi	12/23/1992	Yes	12/23/1992	Y	Y	
439	PE	Ni-63	10mCi	12/23/1992	Yes	12/23/1992	Y	Y	
4493	Tracor	Ni-63	14.5mCi	11/14/1986	Yes	11/14/1986	Y	Y	
3214	Tracor	Ni-63	14.5mCi	11/14/1986	Yes	11/14/1986	Y	Y	
2960	Tracor	Ni-63	14.5mCi	11/14/1986	Yes	11/14/1986	Y	Y	
3177	Tracor	Ni-63	14.5mCi	12/1/1982	Yes	12/1/1982	Y	No Record	
6697	Varian	H-3	250 mCi	1979	No		Y	No Record	Notes indicating disposal of source. No specific record.
119308	HP	Ni-63	15 mCi	No record	No		Y	No Record	No specific record.
	Varian	H-3/Sc	1 Ci	7/15/1982	No		N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
	Varian	H-3/Sc	1 Ci	7/15/1982	No		N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/1/1982	No		N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.

Note: **** Sources acquired in early 1970s Records exist for these detectors/foils and notes that many were disposed. In general, ID/SN were not assigned; the receipt and disposal of specific sources cannot be tracked.

Disposition of EPA -WED Sealed Sources

		H-3/Sc	1 Ci	1/8/1980	No	N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
**** Notes		H-3/Sc	1 Ci	8/29/1979	No	N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/29/1979	No	N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/29/1979	No	N/A	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		Ni-63	14.5mCi	No record	No	N/A	No Record	No serial numbers available. No specific record.
		Ni-63	14.5mCi	No record	No	N/A	No Record	No serial numbers available. No specific record.
		Ni-63	14.5mCi	No record	No	N/A	No Record	No serial numbers available. No specific record.
		Ni-63	10mCi	No record	No	N/A	No Record	No serial numbers available. No specific record.

Note: **** Sources acquired in early 1970s Records exist for these detectors/foils and notes that many were disposed. In general, ID/SN were not assigned; the receipt and disposal of specific sources cannot be tracked.

Radiological Surveys and Facilities Decommissioning, NRC Radioactive Materials License No. 36-12343-02.

A second incident allegedly occurred in 1982 in MB 266. At first it was believed a nickel-63 ECD leaked. However, upon full investigation, it was believed the contamination was tritium, not nickel-63, coming from contaminated columns. The source of the tritium was never fully determined. MB 266 was fully and successfully decontaminated. Notes from this incident are found in the discussion of MB 266 in *U.S. Environmental Protection Agency, Western Ecology Division: Radiological Surveys and Facilities Decommissioning, NRC Radioactive Materials License No. 36-12343-02.*

There are no other incidents or anomalies to report or discuses regarding sealed sources possessed under this license.

C. Facility Surveys, Instrumentation, and Survey Details

We determined the extent of any contamination of all WED facilities covered by our license. As indicated by the enclosed radiological survey records, we determined that the residual radioactive contamination present in all of our facilities meets the provisions of 10CFR20.1402, "Radiological Criteria for Unrestricted Use". All facilities were surveyed and cleaned to the extent necessary to permit release of the facility (see the enclosed radiological survey records and monitoring data volumes I and II). There are no portions or areas of the U.S. EPA Western Ecology Division facilities that is contaminated in excess of the release guidelines for unrestricted use.

A table, EPA WED Isotopes, Locations, and Quantities, of the radiological isotopes used in our facilities over the past 29 years as well as the physical form of these isotopes is included in this report. There were no major spills of radioactive material in our facilities during the course of this license. We also have not experienced any confirmed major events or incidents with leaking sealed sources. A summary table, Summary of EPA WED Contamination Surveys, listing the results of the radiological contamination surveys is enclosed.

The final radiological surveys for WED were performed in the manner described below.

First, over the course of the last 18 years, restricted rooms and areas, when it became clear that radioactive materials would no longer be stored or used in those areas, were decommissioned in a timely fashion and returned to unrestricted use. These decommissioning records and the most recent area surveys prior to decommissioning are included in this report (see *U.S. Environmental Protection Agency, Western Ecology Division: Radiological Surveys and Facilities Decommissioning, NRC Radioactive Materials License No. 36-12343-02).* During the decommissioning process, the records for these decommissioned areas were reviewed. Based upon the review and the use of areas since decommissioning, we decided what type of additional survey was appropriate to establish that the space met the criteria for unrestricted use. Twelve spaces (MB 129, 130, 131, 133, 159, 226, 256, 266, 270, 282, TERF 113, and WRS 11) that were previously

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
2004	MB 190	Tracer	C-14	10.245	0.000
			H-3	1.217	0.000
			Ni-63	0.040	0.000
		Sealed Sources	Ni-63	60.000	N/A
		Check Sources	Assorted*	0.001	N/A
	L108	Tracer	C-14	2.795	0.000
			H-3	1.026	0.000
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
2003	MB 190	Tracer	C-14	7.706	0.000
			H-3	0.251	0.000
			Ni-63	0.040	0.000
		Sealed Sources	Ni-63	60.000	N/A
		Check Sources	Assorted*	0.001	N/A
	L108	Tracer	C-14	3.220	0.000
			H-3	1.026	0.000
			S-35	1.258	1.258
	S118	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	1.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
2002	MB 190	Tracer	C-14	7.706	0.000
			H-3	0.251	0.000
			Ni-63	0.040	0.000
		Sealed Sources	Ni-63	45.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	3.220	0.000
			H-3	1.026	0.000
	S118	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	1.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
2001	MB 190	Tracer	C-14	7.706	0.000
			H-3	0.251	0.000
			Ni-63	0.040	0.000
		Check Sources	Assorted*	0.001	N/A
		Sealed Sources	Ni-63	30.000	N/A
	MB 256	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	3.220	0.000
			H-3	1.026	0.000
	L123	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	1.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
2000	MB 190	Tracer	H-3	5.225	0.000
			Ni-63	0.053	0.000
			C-14	12.333	0.000
		Check Sources	Assorted*	0.001	N/A
		Sealed Sources	Ni-63		N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 256	Sealed Sources	Ni-63	15.000	N/A
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	8.317	0.000
			H-3	6.026	0.000
	S118	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	1.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1999	MB 190	Tracer	C-14	7.231	0.000
			H-3	0.225	0.000
			Ni-63	0.053	0.000
		Check Sources	Assorted*	0.001	N/A
		Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 256	Sealed Sources	Ni-63	15.000	N/A
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	8.267	0.000
			H-3	6.026	0.000
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	0.316	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1998	MB 190	Tracer	C-14	7.252	0.000
			H-3	0.251	0.000
			Ni-63	0.053	0.000
		Check Sources	Assorted*	0.001	N/A
		Sealed Sources	Am-243:Be	10.000	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 256	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	8.267	0.000
			H-3	6.026	0.000
	L142	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	0.316	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
1997	MB 190	Tracer	C-14	7.498	0.000
			H-3	0.282	0.000
			Ni-63	0.053	0.000
		Sealed Sources	Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 256	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	15.000	N/A
	L106	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	8.267	0.000
			H-3	6.026	0.000
	L142	Tracer	C-14	Not Available	Not Available
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	0.316	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1996	MB 190	Tracer	C-14	8.810	0.000
			H-3	3.714	0.000
			Ni-63	0.053	0.000
		Sealed Sources	Ni-63	60.500	N/A
		Sealed Sources	Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	C-14	3.645	0.000
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Tracer	C-14	0.005	0.000
	MB 282	Sealed Sources	Ni-63	15.000	N/A
	MB 284	Sealed Sources	Ni-63	29.500	N/A
	L106	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	8.357	0.000
			H-3	6.026	0.000
	TERA	Sealed Sources	H-3	200.000	N/A
	Waste Store (CEB)	Tracer	H-3/C-14	0.316	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1995	MB 134/270	Tracer	C-14	0.248	0.002
	MB 190	Tracer	C-14	21.310	0.000
			H-3	3.714	0.000
			Ni-63	0.053	0.000
		Sealed Sources	Ni-63	60.500	N/A
		Sealed Sources	Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	C-14	4.865	0.600
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Tracer	C-14	0.636	0.004
	MB 282	Sealed Sources	Ni-63	15.000	N/A
	MB 284	Sealed Sources	Ni-63	29.500	N/A
	L106	Sealed Sources	Ni-63	15.000	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
	L108	Tracer	C-14	8.060	N/A
			H-3	5.026	N/A
	L142	Tracer	C-14	Not Available	Not Available
	Waste Store (CEB)	Tracer	H-3/C-14	0.093	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1994	MB 190	Tracer	C-14	19.342	0.000
			H-3	5.657	0.000
			Ni-63	0.053	0.000
		Sealed Sources	Ni-63	43.000	N/A
		Sealed Sources	Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 204	Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	C-14	4.865	0.240
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Tracer	C-14	0.636	0.000
	MB 284	Sealed Sources	Ni-63	29.500	N/A
	MB290	Sealed Sources	Ni-63	8.000	N/A
	L108	Tracer	C-14	13574.000	N/A
			H-3	5.026	N/A
	L142	Tracer	C-14	Not Available	Not Available
	Waste Store (CEB)	Tracer	H-3/C-14	0.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1993	MB 190	Tracer	C-14	19.953	0.000
			H-3	5.657	0.000
			Ni-63	0.053	0.000
		Sealed Sources	Ni-63	23.000	N/A
			Ru-106	0.001	N/A
			Tl-204	0.001	N/A
			Sr-90	0.004	N/A
			Pb-210	0.006	N/A
			Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 204	Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	H-3	0.384	0.000
			C-14	0.367	0.000
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 258	Sealed Sources	Ni-63	15.000	N/A
	MB 270	Sealed Sources	Ni-63	8.000	N/A
	MB 270/266	Tracer	C-14	0.499	0.136
	MB 284	Sealed Sources	Ni-63	29.500	N/A
	L108	Tracer	C-14	9778.000	
			H-3	5026.000	
	TERF HB	Tracer	H-3	29.500	0.050

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
	Waste Store (CEB)	Tracer	H-3/C-14	0.093	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1992	MB 130	Tracer	H-3	0.198	1.401
			Cr-51	0.100	0.500
		Tracer	C-14	19.175	0.000
			H-3	6.474	0.000
			C-51	1.000	0.000
			P-32	0.250	0.000
	MB 190		Ni-63	48.000	N/A
			Ru-106	0.001	N/A
			Tl-204	0.001	N/A
			Sr-90	0.004	N/A
			Pb-210	0.006	N/A
			Am-243:Be	10.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 204	Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	H-3	0.384	0.000
			C-14	0.367	0.000
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 256/258	Sealed Sources	Ni-63	15.000	N/A
		Tracer	C-14	3.228	0.000
			H-3	0.016	0.000
	MB 266/270	Sealed Sources	Ni-63	8.000	N/A
		Tracer	C-14	0.506	0.506
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	MB 290	Sealed Sources	Ni-63	15.000	N/A
	L108	Tracer	C-14	9778.000	
			H-3	5026.000	
	L142	Tracer	C-14	Not Available	Not Available
	L143	Tracer	C-14	Not Available	Not Available
	Waste Store (CEB)	Tracer	H-3/C-14	0.225	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
	WRS 11	Tracer	P-32	0.256	0.000
1991	MB 130	Tracer	Cr-51	1.000	3.000
			H-3	1.280	1.995
	MB 190	Tracer	C-14	15.855	0.000
			H-3	12.115	0.000
			Cr-51	1.000	0.000
			Ni-63	0.056	0.000
			P-32	0.250	0.000
			S-35	0.250	0.000
		Sealed Sources	Ru-106	0.001	N/A
			Tl-204	0.001	N/A
			Sr-90	0.004	N/A
			Ni-63	48.000	N/A
			Pb-210	0.006	N/A
			Am-243:Be	10.000	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
		Check Sources	Assorted*	0.001	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	C-14	0.367	0.000
		Tracer	H-3	0.384	0.000
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 256/258	Tracer	C-14	0.421	0.000
			C-14	2.808	0.000
			H-3	0.016	0.000
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	MB 290	Sealed Sources	Ni-63	23.000	N/A
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
	WRS 11	Tracer	P-32	0.143	0.000
	MB 130	Tracer	Cr-51	2.205	5.430
			H-3	5.341	1.445
	MB 190	Tracer	C-14	15.854	0.000
			Cr-51	0.290	0.000
			S-35	0.280	0.000
			H-3	1.113	0.000
			Ni-63	0.056	0.000
		Sealed Sources	Ru-106	0.001	N/A
			Tl-204	0.001	N/A
			Sr-90	0.004	N/A
			Pb-210	0.006	N/A
			Ni-63	48.000	N/A
1990		Check Sources	Assorted*	0.001	N/A
	MB 232	Sealed Sources	Ni-63	15.000	N/A
	MB 236	Tracer	C-14	0.367	0.000
			H-3	0.784	0.416
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 258/256	Tracer	C-14	3.230	0.008
			H-3	0.017	0.000
	MB 270	Tracer	P-32	0.308	0.000
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	MB 290	Sealed Sources	Ni-63	23.000	N/A
	MB 292/294	Tracer	S-35	1.248	1.700
	TERF HB	Tracer	C-14	0.000	0.950
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
	Annex	Sealed Sources	Ni-63	15.000	N/A
	MB 130	Tracer	Cr-51	5.360	2.900
			H-3	5.228	0.092
	MB 190	Tracer	C-14	15.856	0.000
			H-3	1.901	0.000
			Ni-63	0.056	0.000
			P-32	0.250	0.000
			S-35	1.000	0.000
			Cr-51	0.250	0.000
		Check Sources	Assorted*	0.001	N/A
		Sealed Sources	Ni-63	33.000	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
1989	MB 228	Sealed Sources	Ni-63	30.000	N/A
	MB 236	Tracer	C-14	0.391	0.000
			H-3	1.085	1.744
	MB 246	Sealed Sources	Ni-63	15.000	N/A
	MB 256/258	Tracer	C-14	3.232	0.006
			H-3	0.018	0.000
	MB 270	Tracer	P-32	0.240	0.063
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	MB 290	Sealed Sources	Ni-63	8.000	N/A
	MB 292/294	Tracer	S-35	1.058	1.058
	TERF HB	Tracer	C-14	0.000	1.700
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1988	Annex	Sealed Sources	Ni-63	15.000	N/A
	MB 130	Tracer	H-3	16.977	16.970
		Sealed Sources	Ni-63	15.000	N/A
	MB 132	Sealed Sources	Ni-63	8.000	N/A
	MB 190	Tracer	C-14	16.354	0.000
			H-3	1.142	0.000
			Ni-63	0.059	0.007
			P-32	0.250	0.000
		Sealed Sources	Ni-63	18.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	30.000	N/A
	MB 256/258	Tracer	C-14	2.912	1.292
			H-3	1.063	0.867
	MB 270	Tracer	P-32	0.160	0.160
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	TERF 113	Tracer	C-14	0.000	0.500
	WILD 115/118	Tracer	H-3	0.000	16.970
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1987	Annex	Sealed Sources	Ni-63	15.000	N/A
	MB 130	Sealed Sources	Ni-63	15.000	N/A
	MB 132	Sealed Sources	Ni-63	8.000	N/A
	MB 134	Sealed Sources	Ni-63	0.000	N/A
	MB 190	Tracer	C-14	16.536	0.000
			H-3	9.558	0.000
			N-63	0.059	0.000
			Rb-86	1.000	0.000
			P-32	0.250	0.000
		Sealed Sources	Ni-63	18.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	30.000	N/A
	MB 232	Sealed Sources	Ni-63	0.000	N/A
	MB 256/258	Tracer	C-14	4.819	1.082
	MB 266	Tracer	P-32	1.500	1.205
	MB 284	Sealed Sources	Ni-63	44.000	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
	TERF 113	Tracer	C-14	0.000	0.500
			Rb-86	0.000	0.630
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1986	MB 130	Sealed Sources	Ni-63	15.000	N/A
	MB 132	Sealed Sources	Ni-63	8.000	N/A
	MB 134	Sealed Sources	Ni-63	15.000	N/A
	MB 190	Tracer	P-32	0.250	0.000
			C-14	18.082	0.000
			H-3	0.018	0.000
			H-3	1.366	0.000
			N--63	0.059	0.000
			Rb-86	0.316	0.000
			Ni-63	0.059	0.000
		Sealed Sources	Ni-63	18.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Tracer	H-3	0.001	0.000
	MB 232	Sealed Sources	Ni-63	30.000	N/A
	MB 258	Tracer	C-14	10.932	0.939
	MB 270	Tracer	P-32	0.250	0.510
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	TERF 113	Tracer	Rb-86	0.000	0.990
			C-14	0.000	0.500
	Waste Store (CSB)	Tracer	Assorted*	----	N/A
1985	MB 130	Sealed Sources	Ni-63	15.000	N/A
	MB 132	Sealed Sources	Ni-63	8.000	N/A
	MB 190		C-14	18.647	0.000
			H-3	0.024	0.003
			Ni-63	0.059	0.000
			P-32	0.250	0.000
		Sealed Sources	Ni-63	52.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Tracer	H-3	0.005	0.000
		Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	25.000	N/A
	MB 256/258	Tracer	C-14	3.506	0.708
	MB 266/270	Tracer	P-32	0.250	0.000
	MB 284	Sealed Sources	Ni-63	44.000	N/A
	TERF 113	Tracer	C-14		0.500
	Waste Store (CSB)	Tracer	Assorted*	----	----
1984**	**MB 126,129 130,131,132,133,134, 149,150,190,226,228, 236,248,250,256,258, 266,270,282, TERF 113, WFTS 10, 11, 112, 44	Tracers and Sealed Sources	H-3 sources, C-14 tracers, Ni-63 sources	See Note	See Note

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
	MB 130	Sealed Sources	Ni-63	15.000	N/A
	MB 132	Sealed Sources	Ni-63	8.000	N/A
	MB 190	Sealed Sources	Ni-63	52.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	15.000	N/A
	MB 232	Sealed Sources	Ni-63	10.000	N/A
	MB 284	Sealed Sources	Ni-63	29.000	N/A
	TERF 113	Tracers			
1983**	**	Tracers	See Note	See Note	See Note
	MB 190	Sealed Sources	Ni-63	53.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	38.000	N/A
	MB 284	Sealed Sources	Ni-63	30.000	N/A
	TERF 105	Sealed Sources	Ni-63	10.000	N/A
	TERF 113				
1982**	**	Tracers	See Note	See Note	See Note
	MB 190	Sealed Sources	Ni-63	53.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	38.000	N/A
	MB 284	Sealed Sources	Ni-63	30.000	N/A
	TERF 105	Sealed Sources	Ni-63	10.000	N/A
1981**	**	Tracers	See Note	See Note	See Note
	MB 150	Sealed Sources	H-3/Sc	250.000	N/A
	MB 190	Sealed Sources	Ni-63	8.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	8.000	N/A
	MB 266	Sealed Sources	Ni-63	29.000	N/A
	MB 284	Sealed Sources	Ni-63	29.000	N/A
	TERF 105	Sealed Sources	Ni-63	10.000	N/A
1980**	**	Tracers	See Note	See Note	See Note
	MB 130	Sealed Sources	H-3/Sc	2000.000	N/A
	MB 190	Sealed Sources	Ni-63	30.000	N/A
		Check Sources	Assorted*	0.001	N/A
	WFTS	Sealed Sources	Ni-63	58.000	N/A
1979**	**	Tracers	See Note	See Note	See Note
	MB/WFTS	Sealed Sources	H-3/Sc	3500.000	N/A
		Sealed Sources	Ni-63	30.000	N/A
	MB 190	Check Sources	Assorted*	0.001	N/A
1978**	**	Tracers	See Note	See Note	See Note
	MB 130	Sealed Sources	H-3/Sc	2000.000	N/A
	MB 190	Sealed Sources	H-3/Sc	2000.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 266	Sealed Sources	H-3/Sc	4000.000	N/A
			Ni-63	29.000	N/A
	MB 270	Sealed Sources	Ni-63	14.500	N/A
	TERF 105	Sealed Sources	Ni-63	10.000	N/A
	WFTS	Sealed Sources	Ni-63	14.500	N/A

EPA-WED Isotopes, Locations, and Quantities

Year	Room	Form	Isotope	Stored mCi	Used mCi
1977**		Tracers	See Note	See Note	See Note
	MB 190	Sealed Sources	Ni-63	43.500	N/A
		Sealed Sources	H-3/Sc	7000.000	N/A
		Check Sources	Assorted*	0.001	N/A
	MB 228	Sealed Sources	Ni-63	29.000	N/A
			H-3/Sc	2000.000	N/A
	MB 270	Sealed Sources	Ni-63	14.500	N/A
	WFTS	Sealed Sources	Ni-63	15.000	N/A
1976**		Tracers	See Note	See Note	See Note
	MB 130	Sealed Sources	H-3/Sc	1000.000	N/A
	MB 190	Check Sources	Assorted*	0.001	N/A
	MB 284	Sealed Sources	H-3/Sc	6000.000	N/A
			Ni-63	29.000	N/A
	WFTS	Sealed Sources	Ni-63	15.000	N/A

EPA-WED Isotopes, Locations, and Quantities

Cell: A428
Comment: *Assorted= Solid form. Assorted instrument check sources, standards, and anti-static devices of 0.1 - 1.0 uCi (H-3, C-14, Co-60, Ni-63,Cs-137, Ra-226, Am-243)

Cell: D428
Comment: **YEAR = Isotopes (H-3 sources, C-14 tracers, and Ni-63 sources) were used in MB 136, 130, 131, 132, 133, 134, 150, 190, 228, 236, 250, 256, 254, 266, 270, 282, TERF 113, and WFTS 10, 11, 12, 44 prior to 1985.

Summary of EPA-WED Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Total (Fixed or Static) Contamination Survey**		Removable Contamination Survey		Mechanical Surveys (Yes/No)	Supporting Surveys (Yes/No)	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
				#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$				
CSB	1	2004	Tracer/ S Source	23	<LLD*	23	0 - 41 (0 - 0.68)	Yes	Yes	Yes	
MB	General Surveys	N/A	N/A	5	<LLD*	----	----	N/A	N/A	Yes	
MB	126	1983	Tracer/ S Source	16	<LLD*	16	0 - 55 (0 - 0.92)	Yes	Yes	Yes	
MB	129	1981	Tracer/ S Source	6	<LLD*	----	----	No	Yes	Yes	
MB	130	1994	Tracer/ S Source	13	<LLD*	20	0 - 31 (0 - 0.52)	Yes	Yes	Yes	
MB	131	1984	Tracer/ S Source	6	<LLD*	----	----	No	Yes	Yes	
MB	132	1990	Tracer/ S Source	12	<LLD*	12	0 - 24 (0 - 0.40)	Yes	Yes	Yes	
MB	133	1984	Tracer/ S Source	6	<LLD*	----	----	No	Yes	Yes	
MB	134	1996	Tracer/ S Source	23	<LLD*	33	0 - 14 (0 - 0.23)	Yes	Yes	Yes	
MB	138	1990	Tracer	12	<LLD*	12	0 - 22 (0 - 0.36)	Yes	Yes	Yes	
MB	149	1982	Sealed Source	4	<LLD*	4	<LLD*	No	No	Yes	
MB	150	1981	Sealed Source	4	<LLD*	4	0 - 21 (0 - 0.35)	No	Yes	Yes	
MB	155	N/A	N/A	6	<LLD*	----	----	No	No	Yes	
MB	159	1980	Tracer/ S Source	4	<LLD*	----	----	No	Yes	Yes	
MB	173	N/A	N/A	8	<LLD*	----	----	No	No	Yes	

Summary of EPA-WED Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Total (Fixed or Static) Contamination Survey**		Removable Contamination Survey		Mechanical Surveys (Yes/No)	Supporting Surveys (Yes/No)	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
				#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$				
MB	190	2004	Tracer/ S Source	38	<LLD*	38	0 - 239 (0 - 5.08)	Yes	Yes	Yes	Note 1
MB	204	1989	Tracer/ S Source	5	<LLD*	----	----	No	Yes	Yes	
MB	226	1980	Tracer	9	<LLD*	9	0 - 23 (0 - 0.38)	No	Yes	Yes	
MB	228	1990	Tracer/ S Source	16	<LLD*	16	0 - 53 (0 - 0.88)	Yes	Yes	Yes	
MB	232	1999	Tracer/ S Source	48	0-2,222 (0-185) Final Survey <LLD	34	0 - 36 (0 - 0.6) Final Survey <LLD	Yes	Yes	Yes	
MB	236	1999	Tracer/ S Source	92	0 - 7,235 (0 - 680)	83	0 - 772 (0 - 12.9)	No	Yes	Yes	Notes 2
MB	246	2004	Tracer/ S Source	45	<LLD*	60	0 - 2 (0 - 0.03)	Yes	Yes	Yes	
MB	248	1981	Tracer/ S Source	8	<LLD*	8	<LLD*	No	Yes	Yes	
MB	250	1981	Tracer/ S Source	9	<LLD*	9	0 - 36 (0 - 0.6)	No	Yes	Yes	
MB	256	2001	Tracer/ S Source	34	<LLD*	46	0 - 139 (0 - 2.3)	Yes	Yes	Yes	
MB	258	1999	Tracer/ S Source	9	<LLD*	47	0 - 143 (0 - 2.4)	Yes	Yes	Yes	
MB	262	1986	Tracer	6	<LLD*	6	<LLD*	Yes	Yes	Yes	
MB	266	1996	Tracer/ S Source	27	<LLD*	35	<LLD*	Yes	Yes	Yes	
MB	270	1996	Tracer/ S Source	17	0 - 200 (0 - 3.0)	55	0 - 285 (0 - 4.8)	Yes	Yes	Yes	

Summary of EPA-WED Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Total (Fixed or Static) Contamination Survey**		Removable Contamination Survey		Mechanical Surveys (Yes/No)	Supporting Surveys (Yes/No)	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
				#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$				
MB	282	1982	Tracer/ S Source	11	<LLD*	11	0 - 61 (0 - 1.02)	No	Yes	Yes	
MB	284	1996	Tracer/ S Source	25	0 - 520 (0 - 8.7)	25	<LLD*	Yes	Yes	Yes	
MB	290	1992	Sealed Source	----	----	10	0 - 14 (0 - 0.23)	No	Yes	Yes	
MB	292	1990	Tracer	10	<LLD*	10	0 -21 (0 - 0.35)	No	Yes	Yes	
MB	294	1990	Tracer	15	<LLD*	15	0 - 26 (0 - 0.43)	No	Yes	Yes	
NEW	General Surveys	N/A	N/A			7	*LLD	N/A	N/A	Yes	
NEW	CT 2-3	Not Available	Not Available	5	<LLD*	10	0 -10 (0 - 0.17)	No	No	Yes	
NEW	L106	1997	Sealed Source	6	<LLD*	9	<LLD*	No	No	Yes	
NEW	L108	2004	Tracer/ S Source	10	<LLD*	31	<LLD*	Yes	Yes	Yes	
NEW	L123	2001	Tracer	10	<LLD*	29	<LLD*	Yes	No	Yes	
NEW	L142	1999	Tracer	5	<LLD*	10	0 - 10 (0 - 0.17)	No	Yes	Yes	
NEW	L143	2003	Tracer	5	<LLD*	10	0 - 11 (0 - 0.18)	No	Yes	Yes	
NEW	S118	2003	Tracer	7	<LLD*	30	<LLD*	Yes	No	Yes	
NEW	Waste	2004	Tracer	5	<LLD*	10	<LLD*	Yes	Yes	Yes	
NEW	General	N/A	N/A	----	----	13	<LLD*	No	No	Yes	

Summary of EPA-WED Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Total (Fixed or Static) Contamination Survey**		Removable Contamination Survey		Mechanical Surveys (Yes/No)	Supporting Surveys (Yes/No)	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
				#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	#	Range dpm/100 cm^2 (Bq/100 $cm^{2)}$				
PEB/WLD	115/118	1988	Tracer	----	----	numerous	0 - 49 (0 - 0.82)	Yes	Yes	Yes	
TERA	Control Rm	2002	Sealed Source	----	----	10	0 - 26 (0 - 0.43)	No	Yes	Yes	
TERF	8-23-3/4	1990	Tracer	8	<LLD*	11	<LLD*	No	Yes	Yes	
TERF	105	1983	Sealed Source	25	<LLD*	25	<LLD*	Yes	No	Yes	
TERF	113	1993	Tracer	5	<LLD*	15	<LLD*	Yes	Yes	Yes	
TERF	HB	1993	Tracer	17	<LLD*	8	<LLD*	No	Yes	Yes	
WRS	10	1986	Tracer/ S Source	13	<LLD*	----	----	Yes	Yes	Yes	
WRS	11	1992	Tracer/ S Source	10	<LLD*	----	----	Yes	Yes	Yes	
WRS	12	1986	Tracer/ S Source	12	<LLD*	11	0 - 28 (0 - 0.46)	Yes	Yes	Yes	
WRS	43	1986	Tracer	5	<LLD*	----	----	No	No	Yes	
WRS	44	1986	Tracer	7	<LLD*	----	----	No	Yes	Yes	
MB Sink Tail Piece	MB 190	2004	Tracer	----	----	3	13,523 (225) Final Survey 943 - 2,052 (15.7 - 34.2)	Yes	No	Yes	

Summary of EPA-WED Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Total (Fixed or Static) Contamination Survey** #	Total (Fixed or Static) Contamination Survey** Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	Removable Contamination Survey #	Removable Contamination Survey Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	Mechanical Surveys (Yes/No)	Supporting Surveys (Yes/No)	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
MB Sanitary Sewer Line	MB 190	2004	Tracer	6	<LLD*	----	----	Yes	No	Yes	
MB Ventillation Survey	MB 190	2004	Tracer	4	<LLD*	7	0-792 (0 - 13) Final Survey 65 (1.1)	Yes	No	Yes	
Ventialltion Surveys	various	N/A	N/A	----	----	21	0 - 122 (0 - 13)	Yes	No	Yes	

*<LLD = survey values were less than the Lower Limits of Instrument Detection.
**Total (fixed + removable) Contamination Survey refers to a static survey contucted with a portable Geiger-Mueller counting instrument.
N/A = Not Applicable

Summary of EPA-WED Contamination Surveys

Cell: L18
Comment: Note 1: The ventillation cabinet and duct were removed in December 2004 and April 2005 respectively.

Cell: L23
Comment: Note 2: The hood was removed from the laboratory in 2003.

Summary of EPA-WED
HVAC/Mechanical Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Removable Contamination Survey Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
CSB	1	2004	Tracer/ S Source	<LLD	Yes	
MB	126	1983	Tracer/ S Source	0 - 22 (0 - 0.37)	Yes	
MB	130	1994	Tracer/ S Source	0 - 281 (0 - 0.47)	Yes	
MB	132	1990	Tracer/ S Source	0 - 50 (0 - 0.83)	Yes	
MB	134*	1996	Tracer/ S Source	0 - 14 (0 - 0.23	Yes	*Swipe made prior to 2004
MB	138	1990	Tracer	33 - 89 (0.55 - 1.48)	Yes	
MB	190 HVAC	2004	Tracer/ S Source	0 - 792 (0 - 13) Final Survey 65 (1.1)	Yes	Final survey conducted in April 2005
MB	190 Sink Tail Piece	2004	Tracer/S Sources	13,523 (225) Final Survey 943 - 2,052 (15.7 - 34.2)	Yes	Final survey conducted in April 2005
MB	190 Sewer Line	2004	Tracer/S Sources	<LLD*	Yes	Final survey conducted in April 2005
MB	228	1990	Tracer/ S Source	0 - 25 (0 - 0.42)	Yes	

Summary of EPA-WED
HVAC/Mechanical Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Removable Contamination Survey Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
MB	246	2004	Tracer/ S Source	<LLD	Yes	
MB	256	2001	Tracer/ S Source	0 - 27 (0 - 0.45)	Yes	
MB	258	1999	Tracer/ S Source	<LLD	Yes	
MB	262*	1986	Tracer	<LLD	Yes	*Swipe made prior to 2004
MB	266	1996	Tracer/ S Source	<LLD	Yes	
MB	270	1996	Tracer/ S Source	0 - 41 (0 - 0.68)	Yes	
MB	284	1996	Tracer/ S Source	<LLD	Yes	
NEW	L108	2004	Tracer/ S Source	<LLD	Yes	
NEW	L123	pre-1994	Tracer	<LLD	Yes	
NEW	S118	pre-1994	Tracer	<LLD	Yes	
NEW	Waste	2004	Tracer	<LLD	Yes	
PEB/WLD	115/118*	1988	Tracer	0 - 138 (0 - 2.3)	Yes	*Swipe made prior to 2004
TERF	105	1983	Sealed Source	0 - 3 (0 - 0.05)	Yes	
TERF	113	1993	Tracer	0 - 22 0 - 0.37	Yes	
WRS	10	1986	Tracer/ S Source	13 (0 - 0.22)	Yes	

Summary of EPA-WED
HVAC/Mechanical Contamination Surveys

Bld	Room	Last Use	Form (Tracer or Sealed Source)	Removable Contamination Survey Range dpm/100 cm^2 (Bq/100 $cm^{2)}$	Meets Decommission Criteria for H^3, C^{14},P^{32},S^{53},Ni^{63}, and Rb^{86} (Yes/No)	Notes
WRS	11	1992	Tracer/ S Source	0 - 19 (0 - 0.32)	Yes	
WRS	12	1986	Tracer/ S Source	0 - 21 (0 0.83)	Yes	
* MB 190 Sewer line was checked for fixed contamination.						

decommissioned had some additional surveys conducted during the final decommissioning process.

Areas of the facilities that were never formally decommissioned, still remaining to be decommissioned, or reference rooms were surveyed in 2004. Either total (fixed + removable) or removable contamination surveys of the rooms or HVAC system were conducted in forty-five work areas and seven hallways. Virtually every room where radioisotopes were used, including sealed sources, was either surveyed in 2004 for total and removable contamination or has records that clearly indicate that appropriate total and removable contamination surveys were conducted when the rooms were previously decommissioned.

For the final survey, once it was determined an area should be surveyed, total and or removable surveys, or both were conducted by sampling 1) targeted 100 cm^2 areas within the space. These targeted areas were selected based upon historic use of the room and the likelihood of contamination (e.g. chemical fume hoods, lab benches, cabinet handles, floors by work spaces or instruments, sinks, light switches, door handles), and 2) random 100 cm^2 areas which may be indicators of unexpected contamination (e.g. wall surveys) were surveyed.

The majority of the total contamination surveys were conducted using a Ludlum Model 2000 Scaler (S/N 83810) or a Ludlum Model 3 G-M Meter (S/N 77176) equipped with a Ludlum Model 44-9 12 cm^2 open area (15 cm^2 active area) thin-window pancake G-M detector (S/N PR070834). The sampled areas were normally counted for 0.5 minutes with the detector held at the surveyed surface. If contamination was suspected, an additional count was made and often an additional area was sampled. These total or fixed surveys were used to determine potential contamination of the facility mainly from carbon-14 but also for the very highly unlikely situation that residual phosphorus-32, chromium-51, or sulfur-35 remained. The efficiency of this system for carbon-14 is 3%. This efficiency was determined by using a reference standard. The minimal detectable activity (MDA) of this system for carbon-14 is 4.2×10^3 dpm above background. The instrument was last calibrated in September 8, 2004 (see calibration records below).

A Technical Associates TBM-3 G-M Survey Meter (S/N 11434) was employed for total or fixed surveys conducted at the Newport Facilities. Efficiency for carbon-14 is 1.6%. This instrument (certificate enclosed) was calibrated July 9, 2003. The MDA of this instrument for carbon-14 is 5.9×10^4 dpm above background.

Both instruments are capable of detecting carbon-14 contamination well below the "Radiological criteria for Unrestricted Use" (3.7×10^6 dpm/100 cm^2).

Removable contamination surveys were performed throughout the facilities. These surveys were conducted in much of the same manner as the total (fixed) surveys. For the final survey, once it was determined an area should be surveyed for removable contamination, 100 cm^2 sampling points were 1) targeted within the space based upon historic use of the room and the likelihood of contamination (e.g. chemical fume hoods, lab benches, cabinet handles, floors by work spaces or instruments, sinks, light switches, door

Radiation Center
Oregon State University, 100 Radiation, Corvallis, Oregon 97331-5903
T 541-737-2341 | F 541-737-0480 | http://ne.oregonstate.edu/facilities/radiation_center

Enviromental Protection Agency Ludlum Model 2000 Scaler S/N 83810 9/16/05

Scaler Check (Technical Associates pulser model PV-1 SN36207)

Settings (min.)	Applied Frequency (CPM)	Displayed Counts
10 X 0.1	100,000	99,981
	500,000	499,881
10 X 1	10,000	99,988
	50,000	499,937
01 X 10	10,000	99,988
	50,000	499,929
05 X 1	10,000	49,992

High Voltage Check

Measured High Voltage (V)	Dial Setting	Displayed High Voltage (KV)
485	2.00	.5
992	4.00	1
1496	6.00	1.5
2000	8.00	2
2503	10.00	2.5

Instrument Check Performed By: _____
Steve Smith

RADIATION CENTER

OREGON STATE UNIVERSITY
Instrument Calibration Facility
100 Radiation Center, Corvallis, Oregon 97331-5903
Telephone 541-737-7055 Fax 541-737-0480

Enviromental Protection Agency Ludlum Model 2000 Scaler S/N 83810 9/8/2004

Scaler Check (Technical Associates pulser model PV-1 SN36207)

Settings (min.)	Applied Frequency (CPM)	Displayed Counts
10 X 0.1	100,000	99,983
	500,000	499,913
10 X 1	10,000	99,987
	50,000	499,942
01 X 10	10,000	99,987
	50,000	499,930
05 X 1	10,000	49,994

High Voltage Check

Measured High Voltage (V)	Dial Setting	Displayed High Voltage (KV)
478	2.00	.5
982	4.00	1
1482	6.00	1.5
1979	8.00	2
2451	10.00	2.5

Instrument Check Performed By: _____
Steve Smith

Radiation Center
Oregon State University, 100 Radiation, Corvallis, Oregon 97331-5903
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Organization: EPA-Corvallis -J. Gile Date: 9/16/2005

Instrument Data:

Manufacturer: Ludlum
Instrument Type: GM
Model: 3
Serial Number: 77176

Calibration Data:

Calibration Standard: Pulser PV1,36207

Scale/ Range	1/3 Scale Applied (CPM)	1/3 Scale Inst. Reading (CPM)	2/3 Scale Applied (CPM)	2/3 Scale Inst. Reading (CPM)
X.1	200	200	400	400
X1	2,000	2,000	4,000	4,000
X10	20,000	20,000	40,000	40,000
X100	200,000	200,000	400,000	400,000

Instrument reads 3000 CPM @ 1mR/hr with Ra-226

Source	Source Activity (DPM)	Instrument Response (CPM)	Yield (%)
C-14	188,556	1,800	1
Tc-99	69,259	9,500	14
Bi-210	21,294	5,000	23

Remarks

Calibrated By: S. Smith

RADIATION CENTER

OREGON STATE UNIVERSITY
Instrument Calibration Facility
100 Radiation Center, Corvallis, Oregon 97331-5903
Telephone 541-737-7055 Fax 541-737-0480

Organization: EPA-Newport-B.Boese Date: 7/9/2003

Instrument Data:

Manufacturer: Technical Associates
Instrument Type: GM
Model: TBM-3
Serial Number: 11434

Calibration Data:

Calibration Standard: Pulser PV1,36207

Scale/ Range	1/3 Scale Applied (CPM)	1/3 Scale Inst. Reading (CPM)	2/3 Scale Applied (CPM)	2/3 Scale Inst. Reading (CPM)
X1	200	200	400	400
X10	2,000	2,000	4,000	4,000
X100	20,000	20,000	40,000	40,000

Instrument reads 3000 CPM @ 1mR/hr with Ra-226

Source	Source Activity (DPM)	Instrument Response (CPM)	Yield (%)
C-14	188,556	3,000	1.6
Cl-36	46,324	9,000	19
Bi-210	21,294	6,000	28

Remarks

Calibrated By: S. Smith

handles) and 2) random areas were selected which may be indicators of unexpected contamination (e.g. wall surveys).

Removable contamination swipes were made using filter paper wetted with methanol. 100 cm^2 areas were swiped or rubbed with the paper. These swipes were placed in LSC vials with counting cocktail. The removable contamination swipes from the Corvallis facilities were counted using a Packard Model 2200CA Dual Channel Liquid Scintillation Counter (S/N 036755). Calibration standards for the isotopes (analytes) of interest and background swipes were included with each analysis. Generally, swipes were counted for tritium (0 – 12 keV) and carbon-14 (12 – 156 k). Swipes made in areas where contamination primarily from nickel-63 detectors was a concern, were counted for hydrogen-3 and carbon-14 as well as nickel-63 (0-64 and 2-64 keV). Swipes made at the Newport facilities were either counted in Corvallis or on a Packard Model 2000CA Dual Channel Liquid Scintillation Counter (S/N 183). The counting efficiencies for these instruments are 60%, 69%, and 95% for hydrogen-3, nickel-63, and carbon-14 respectively. The MDA for contamination from these three isotopes as well as sulfur-35 is less than 25 dpm above background. Calibration information for the LS counters is on file.

The total and removable contamination surveys did not reveal any areas in the WED facilities that required more than minimal or minor decontamination efforts. We used the criteria, as described in NUREG 1757, Appendix B, Table B.1, Acceptable License Termination Screening Values of Common Radionuclides for Building-Surface Contamination, for the release as an unrestricted area. The specific criteria or levels we used for the basis of demonstrating that the site can be released for unrestricted use are found in the table below:

WED Contamination Criteria for Release as an Unrestricted Area

Isotope	Maximum level of contamination
hydrogen-3 contamination	1.2×10^8 dpm/100 cm^2
carbon-14 contamination	3.7×10^6 dpm/100 cm^2
sulfur-35 contamination	1.3×10^7 dpm/100 cm^2
nickel-63 contamination	1.8×10^6 dpm/100 cm^2

There are no portions or areas of the U.S. EPA Western Ecology Division facilities that are contaminated in excess of these or the NRC release guidelines for unrestricted use. All areas surveyed at the WED facilities are very significantly below the contamination criteria. Virtually all areas at WED are free of radioactive contamination.

Areas and substrates (water, soil) outside the facilities were not surveyed. There was no use of radioactive materials outside the facilities, no spills or transport incidents, and therefore no reason to believe any area outside the work areas in the buildings are contaminated by activities involving nuclear materials authorized for use by the WED license.

The radiological surveys at the Corvallis facilities for the final decommissioning, were performed by Phil Monaco, Health and Safety Manager, Dynamac Corporation. Mr. Monaco has functioned as the Radiation Safety Specialist at the WED facility since 1986. He has over 20 years experience in handling radioisotopes and performing radiation safety functions. He has a B.S. in Forest Management, Science Option and a thorough background in chemistry and chemical safety. His training includes several classes in radiation safety and Radiotracer Methods.

The radiological surveys at the Newport facilities for the final decommissioning, were performed by Bruce Boese, Principle Investigator, EPA. Mr. Boese has functioned as the Radiation Safety Officer at the Newport facility since 1983. He has a PhD in zoology. He completed a 4-day training class for a Radiation Specialist.

D. Maps

Maps of the facilities and the rooms used for radioisotope work and surveyed for radiological contamination are found in volumes I and II "*U.S. Environmental Protection Agency, Western Ecology Division: Radiological Surveys and Facilities Decommissioning, NRC Radioactive Materials License No. 36-12343-02*". These maps describe the general layout of each facility. There are relatively detailed maps describing each room in which isotopes were handled or stored, or in which surveys were performed. The maps describe the locations of the sampling points used for the various surveys. The facility maps are found at the front of volume I. Room maps are associated with the discussion of each specific room.

The Corvallis facilities include the following buildings: Chemical Storage Building (CSB), Main Building (MB), Plant Ecology Building (PEB or WRF), Terrestrial Ecophysiological Research Area (TERA), Terrestrial Ecology Research Facility (TERF), and the Willamette Research Station (WRS or WFTS).

The Newport facilities include rooms designated as "L", "S", and the Waste Storage building.

E. Radiation Safety Records

The Radiation Safety Office at the U.S. EPA Western Ecology Division maintains a complete historic record of the use of radioactive materials under NRC radioactive Materials License No. 36-12343-02. The records archive include: sealed source inventories, sealed source leak tests, radioactive materials inventories, regular area surveys, principle investigators daily surveys, personnel training records, personnel monitoring, radioactive materials source receipts and transfers, authorized users approval, radiation safety committee quarterly minutes, radiation safety committee semi-annual audits, waste disposal records, instrument calibration certificates, and the Radiation Safety Officer's correspondence with authorized users and the NRC. These records will remain in archives.

Included in this report under separate cover are the following supporting information and

survey results:

U.S. Environmental Protection Agency, Western Ecology Division: Radiological Surveys and Facilities Decommissioning, NRC Radioactive Materials License No. 36-12343-02.

U.S. Environmental Protection Agency, Western Ecology Division: Sealed Sources, NRC Radioactive Materials License No. 36-12343-02, Volumes I and II.

Abbreviations and Glossary

Bkgrd = Background

Bq = Becquerel

CEB = Coastal Ecology Branch (Newport Facility)

CERL- Corvallis Environmental Research Laboratory (now called WED)

Check Source = Refers to an radioisotope source that is used as a reference radioactive source or standard which is either fixed on a surface or sealed into a container.

CSB = Chemical Storage Building

CPM = counts per minute

Dpm = disintegrations per minute

E = East

ECD = Electron Capture Detector

ERL-C = Environmental Research Laboratory – Corvallis (now called WED)

Ex = Exhaust. Used to refer to a ventilation exhaust vent or duct.

GC = Gas Chromatograph

GFPC = Gas Flow Proportional Counter

G-M = Geiger-Muller

Fixed = Used to refer to non-removable contamination.

HVAC = Heating, Ventilation, and Air Conditioning

LLD_{95} = Lower Limits of Detection at he 95% confidence level

LSC = Liquid Scintillation Counter

MB = Main Building

N = North

NA = Not Applicable

ND = Not determined

NEW = Newport

Non- removable = Use to refer to contamination that can not be readily removed from surfaces without abrasion.

PCEB = Pacific Coastal Ecology Branch (Newport Facility)

PCi = picoCuries

PEB = Plant Ecology Building

Removable = Refers to contamination that can readily be removed from surfaces.

Rm = Room

S = South

S Source = Sealed Source

Std = Standard. Refers to a radioisotope source that is used for a analytical standard.

TERA = Terrestrial Ecophysiological Research Area

TERF = Terrestrial Ecology Research Facility

Tracer = A radioisotope that is in a loose form (liquid, solid, or gas).

W = West

WED = Western Ecology Division

WFTS = Western Fish Toxicology Station

WLD = Wildlife Building (also called PEB)

WRF = Wildlife Research Facility (also called PEB)

WRS = Willamette Research Station

U.S. Environmental Protection Agency, Western Ecology Division:
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