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Title: Flanged Tritium Waste Containers Waste Characterization Information for Container FTWC-226

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Flanged Tritium Waste Containers

Waste Characterization

Information for Container

FTWC-226

December 1, 2020

Managed by Triad National Security, LLC for the U.S. Department of Energy's NNSA

Abstract

The following information packages present the radiological data as well as physical properties of the four Flanged Tritium Waste Containers currently stored at TA-54, Area G. Also included are summaries of the contents of each container (including waste logs) as well as photographs of the inner and outer portions of each container.

FTWC 226

Tritium curies	83,600

per year decay fraction for tritium	0.94531
Ci/gram	9619

		Duration years	Tritium curies
Start Date	Aug-07		83,600
Target date	Jan-11	3.36	69,214
	Feb-11	3.44	68,891
	Mar-11	3.52	68,569
	Apr-11	3.61	68,248
	May-11	3.69	67,929
	Jun-11	3.77	67,611
	Jul-11	3.86	67,295
	Aug-11	3.94	66,980
	Sep-11	4.02	66,667
	Oct-11	4.11	66,355
	Nov-11	4.19	66,045
	Dec-11	4.27	65,736
	Jan-12	4.36	65,429
	Feb-12	4.44	65,123
	Mar-12	4.52	64,819
	Apr-12	4.61	64,515
	May-12	4.69	64,214
	Jun-12	4.77	63,914
	Jul-12	4.86	63,615
	Aug-12	4.94	63,317
	Sep-12	5.02	63,021
	Oct-12	5.11	62,727
	Nov-12	5.19	62,433
	Dec-12	5.27	62,141
	Jan-13	5.36	61,851
	Feb-13	5.44	61,562
	Mar-13	5.52	61,274
	Apr-13	5.61	60,987
	May-13	5.69	60,702
	Jun-13	5.77	60,418
	Jul-13	5.86	60,136
	Aug-13	5.94	59,854
	Sep-13	6.02	59,575
	Oct-13	6.11	59,296
	Nov-13	6.19	59,019
	Dec-13	6.27	58,743

Los Alamos National Laboratory

Chemical Waste Disposal Request

Waste Services Use Only: 3021428

This form is used to request disposal of chemical and low-level radioactive wastes. Fill out electronically, then print and sign. Mail completed form to Waste Services at MS J595.

Account Information	Z Number	Name (Print)	Telephone	Date
7N030A JUB7 LGCY 3101	095169	Ward Rupprecht / WMC Albert Stadelmaier	7-9747	7-16-07

Waste Pick-up Location and Storage Type:	TA	Building	Room	☐ Security Area	☐ Direct Off-Site Shipment
	16	205	116		

☐ < 90 Day Accumulation Area
☐ Universal Waste Area
☐ TSDF (Start Date:)

☐ Satellite Accumulation Area (Approx. vol:)
☐ PCB Waste (Start Date:)
☐ NM Special Waste (<90 days) (Start Date:)

☐ Rad Staging Area (<90 days)
☐ Rad Storage Area (<1 year) (Start Date:)

☐ Rad Dumpster (No:)
☐ Other (describe in description)

Item Id	Waste Profile Number	Shipping Container Information					Waste Information				*S=Solid L=Liquid G=Gas P=Powder	Description
		Type	Volume	Unit	Tare Weight	Unit	Volume	Unit	Weight	Unit		
2337239	27981	02	85	g	82	p	85	g	851	P	s	Tritium contaminated mole sieve packed in AL-M1
#226												stainless steel containers. Containers are then packed in
												special flanged tritium waste containers. (see attached
												photos). Flanged containers are final packed in 85 gallon
												DOT stainless steel drums. (WETF-FTWC-226-OP).
												See attached photos and inventory sheets. Waste stream
												also contains fired actuators from WPF 40283
2337240	27981	02	85	g	82	p	85	g	831	P	s	Tritium contaminated mole sieve packed in AL-M1
#229?												stainless steel containers. Containers are then packed in
												special flanged tritium waste containers. (see attached
												photos). Flanged containers are final packed in 85 gallon
												DOT stainless steel drums. (WETF-FTWC-229-OP).
												See attached photos and inventory sheets. Waste stream
												Contains fired actuators from WPF 40283.

Container Types
01-Bulk (Unpackaged) 02-Metal Drum 03-Fiber or Plastic Drum 04-Plastic Bottle or Container 05-Glass Bottle or Container 06-Plastic Bag 07-Fiber or Plastic Box 08-Wooden Box 09-Metal Box 10-Portable Tank 11-Cylinder 12-Shield Cask 13-Other (specify in description) 14-Compactor Box 15-Aerosol Can

Units for Volume
G-Gallon L-Liters F-Cubic Feet Q-Quart M-Cubic Meters O-Fluid Ounce P-Pint

Units for Weight
P-Pound K-Kilograms G-Grams O-Ounce T-Tons

CERTIFICATION STATEMENT: To the best of my knowledge, I certify that the information on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Printed Name	Signature	Z Number	Date
Albert Stadelmaier	Albert Stadelmaier	095169	87-08-07

*For new and unused chemicals

Low- level Radiological Information

Item ID	S/V/B[1]	C/NC[2]	Health Physics Container/Package Information: Container Surface (mrem/hr)	1 Meter Dose (mrem/hr)	Package Surface Contamination (DPM/100 sq. cm): Alpha	Beta-Gamma	Radionuclide	Amount (Double Click +/- column to activate selection box)				Unit	Uncertainty			
								8.4 E+4								
2337239	B	n	0	0	0	100	H-3	83600	E	-	0.0	C		E		
2336240	B	N	0	0	0	100	H-3	34000	E	-	0.0	C		E		
								3.4 E+4	E	-				E		
									E	-				E		
									E	-				E		
									E					E		
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[1] S = Surface, V = Volume, B = Both Surface and Volume [2] C = Compactible, NC = Non-compactible

Units for Activity C – curies M – grams L - curies/liter

ATTACHMENT B. TSE MODERATE/HIGH-ACTIVITY TRITIUM-CONTAMINATED WASTE LOG

Circle one: Type A (< 500 Ci/container) Type A (< 1080 Ci) Type B (> 1080 Ci) Non Compliant

Container ID #: WETF-FTWC-226 Pre-Inspection: (signature) Ward Ruppert Date: 8/1/07

Container Description/Model/Type: Flanged Tritium Waste Container (FTWC)

Container Barcode #: 2337239 Tare Weight: 264.00 Kg

Container Capacity (m³): .195 Total Weight: 386.0 Kg 850#

Date	TA/Bldg/Rm.	Bag/Item #	Description	Weight (kg)	Accum. Weight (kg)	Item Activity (Ci)	Inventory Method	Cumulative Activity (Ci)	Waste Packager
8/1/07	16/205/116	1	AL-MI-L0011	22.0	286.0	51500	A	51500	WR
		2	AL-MI-L0015	22.0	308.0	13500	A	65000	
		3	AL-MI-L0018	21.5	329.5	3800	A	68800	
		4	AL-MI-L0020	20.5	350.0	700	A	69500	
		5	AL-MI-L0021	22.5	372.5	12300	A	81800	
		6	MSD2-1	8.0	380.5	200	A	82000	
		7	Cryo-1	2.5	383.0	1600	A	83600	
		8	Actuators: 311557-18A	3.0	386.0*				
			15Z-01036422745-00,						
			IDT-565633, 31157-19A			N/A			
			15ZX118, E40, 20331157						
			0BA, 028-1B-08, X-001						
			112, IDT565633						

Total Activity: 83600 Ci Total Accum. Weight: 386.0 kg

Container Closed by: Ward Ruppert Date: 8/6/07

OI/WI/Tech Manual used to close container: WETF-TM-335 Rev A

Verification of closure by WMC: Albert Stadelmaier Date: 8-8-~~08~~ 07 [illegible]

Container ready for shipment: (signature) Date:

Unique ID of torque wrench used (if needed): 034741 Calibration Expiration Date: 1/2/0

$\frac{83600}{122} = 685$ Ci/kg

Estimated and Actual Contents Data

		Inventory Amount (cg) per DOE memo	Re-calorimeter required?	Current Mass Amount (cg)	Contents volume (Liters)	Comments	Curies (10,000/g)	Cummulative curies	Weight Estimate (kg)	Weight Actual (kg)
	MASS Items	1/31/06		5/23/2007						
1	AL-M1-L0011	518	NO	515	13.5	intact	51500	51500	21.4	22.0
2	AL-M1-L0015	136	NO	135	13.5	intact	13500	65000	21.4	22.0
3	AL-M1-L0018	39	NO	38	13.5	intact	3800	68800	21.4	21.5
4	AL-M1-L0020	7	NO	7	13.5	intact	700	69500	21.4	20.5
5	AL-M1-L0021	124	NO	123	13.5	intact	12300	81800	21.4	22.5
6	MSD2-1	2	NO	2	5.2	5dx16L	200	82000	8.0	8.0
7	CRYO1	16	NO	16	7.6	gallon cans (2)	1600	83600	2.3	2.5
	Total	842		836	80.30		83600	83600	117.3	119.0
	Actuators									
1	S/N 311557-18A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
2	15Z-01036422 745-00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
3	1DT-565633	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
4	S/N 311557-19A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
5	15Z X118	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
6	EUO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
7	203	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
8	S/N 311557-03A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
9	028-1B-08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
10	X-001 11Z	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
11	1DT 565633	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	
								total	5.5	3.0

Grams Total = 8.42 | 8.36 **Note: 10g maximum**

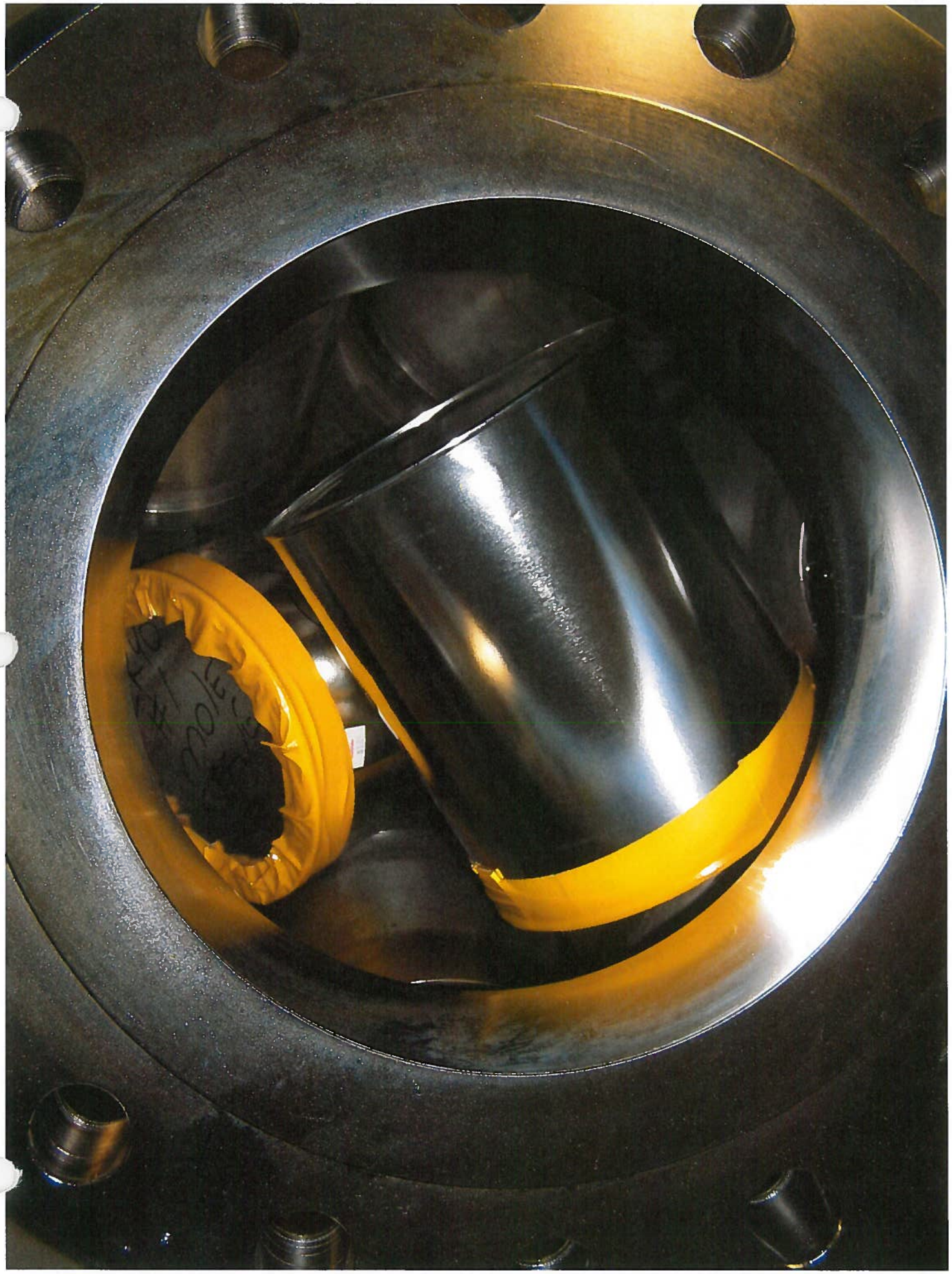
Grams Total =	8.42	8.36	**Note: 10g maximum**
Void Space calculation (liters)	Estimate	Actual	
Required void space =	109.46	108.68	
Fatwac volume =	195	195	
Contents volume =	80.3	80.3	
Void space total =	114.7	114.7	
Remaining Void Space Allowable =	5.24	**6.02**	

Weight Calculation (kg)	Estimate	Exact at Loading
FATWAC =	270	
Contents =	123	122.0
Total FATWAC + contents	393	
Wt Allowance 85 gallon drum =	440	440
Remaining Weight Allowable =	47	

Additional Considerations

MASS items approved by DOE for disposal?	Yes
All materials been characterized?	Yes
Is inerting required?	No
Classified contents?	No

WETF-FTWC-226-OP
High-Activity Tritium
Contaminated Waste
Per TSE-OP-15
Contains: WETF-FTWC-226

WETF-FTWC-226
WETF-FTWC-226

WETF-FTWC-226