

2/15 #4131 P.002/005  
 2014 January 24 02:03 PM 13014975624-630-515-1078  
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<b>FORM 540</b> <b>UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER</b>		<b>ADCO SERVICES, INC.</b> US GEOLOGICAL SURVEY FOR THE ACCT OF ADCO SERVICES 4300 NEW HAVEN ROAD COLUMBIA, MO 65201		SHIPPER ID NUMBER <b>3988</b> <input type="checkbox"/> COLLECTOR <input type="checkbox"/> PROCESSOR	7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S) FORM 541 AND 541A PAGE 1 OF 1 PAGE(S) FORM 542 AND 542A PAGE 1 OF 1 PAGE(S) ADDITIONAL INFORMATION None PAGE(S)	8. MANIFEST NUMBER (Use this number on all continuation pages) <b>14-0008 L</b>											
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) <b>1-800-424-9300 CCN23493</b>		5. SHIPPER - NAME AND FACILITY US GEOLOGICAL SURVEY FOR THE ACCT OF ADCO SERVICES 4300 NEW HAVEN ROAD COLUMBIA, MO 65201		SHIPMENT NUMBER <b>14-0008 L</b>	9. CONSIGNEE - Name and Facility <b>ENERGY SOLUTIONS          BEAR CREEK OPERATIONS          1580 BEAR CREEK ROAD          OAK RIDGE, TN 37830</b>	CONTACT SHIPPING AND RECEIVING TELEPHONE (Include Area Code) <b>865-481-0222</b> DATE											
ORGANIZATION <b>US GEOLOGICAL SURVEY</b>		CONTACT <b>RANDAL CLARK</b>		TELEPHONE NUMBER (Include Area Code) <b>873-878-1835</b>	SIGNATURE - Authorized consignee acknowledging waste receipt <i>[Signature]</i>												
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST <b>1</b>		6. CARRIER - Name and Address <b>Adcoas Express, Inc.          12990 Driven Drive          Tinley Park, IL 60477</b>		EPA I.D. NUMBER <b>IL0 047287384</b>											
4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		EPA MANIFEST NUMBER		CONTACT <b>JAMES BELL</b>		SHIPPING DATE <b>01/23/14</b>											
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"		13. TRANSPORT INDEX		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq mCi		17. LSASCO CLASS		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE	
UN 2810, Radioactive material, excepted package-limited quantity of material, 7		NA		NA		SOLID DRY PLASTIC / GLASS VIALS		Cs-137 Cs-134 I-129 P-32 8e-71		3.0229E+01 8.1700E-01		NA		10 LBS; 0.7 FT3		14-0008-01	
FOR CONSIGNEE USE ONLY				20.				AUTHORIZED SIGNATURE <i>[Signature]</i>				TITLE <b>RSO</b>		DATE <b>1/23/14</b>			

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#4131 P. 003/005

FORM 641

ADCO SERVICES, INC.

# UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

## CONTAINER AND WASTE DESCRIPTION

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

### 1. MANIFEST TOTALS

NUMBER OF PACKAGES/DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams)			
	ml	gal	kg	lb	U-233	U-235	Pu	Total
1	0.0198		4.5389		NP	NP	NP	NP
	0.7000		10.0000					
ACTIVITY								
ALL NUCLIDES		TRITIUM		C-14		Tc-99		I-129
MBq		3.0229E+01		NP		NP		NP
mCi		8.1700E-01		NP		NP		NP
								SOURCE (g)
								(kg) NA
								(lb) NA

### 2. MANIFEST NUMBER

14-0000 L

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

### 4. SHIPPER NAME

US GEOLOGICAL SURVEY

### SHIPMENT ID NUMBER

3308

### DISPOSAL CONTAINER DESCRIPTION

### WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

CONTAINER IDENTIFICATION NUMBER, U.S.C. TRANSPORT PERMIT NUMBER	CONTAINER DESCRIPTION (See Note 1 & Note 1A)	VOLUME (m3) (G)	WASTE AND CONTAINER WEIGHT (kg) (Lb)	SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	SURFACE CONTAMINATION (dpm/100 cm2) (dpm/100 cm2)		WASTE DESCRIPTION (See Note 2 & Note 2A)	APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT (F>0.5%)	RADIOLOGICAL DESCRIPTION			WASTE CLASSIFICATION AS-Class A Stable AU-Class A U-stable B-Class B C-Class C	
					ALPHA	BETA-GAMMA						INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	MBq	mCi		
4-0000-013308	18 FIBER DRUM	0.0198	4.5389	4.0000E-04	NP	NP	NON-RECOVERABLE DRY WASTE-H	0.0198	100 100	DRY PLASTIC GLASS VIALS/RIP	0	Cd-109	0.0000E+00	0.0000E+00	AU	
		0.7000	10.0000	4.0000E-02	NP	NP		0.7000				Cs-134	0.0000E+00	0.0000E+00		
													I-125	0.0000E+00	0.0000E+00	
													Pb-210	3.0229E+01	8.1700E-01	
													Sr-75	0.0000E+00	0.0000E+00	
													Subtotal	3.0229E+01	8.1700E-01	
													Total	3.0229E+01	8.1700E-01	
Shipment Totals		0.0198	4.5389											3.0229E+01	8.1700E-01	
		0.7000	10.0000													

Note 1: Container Description Codes. For containers not requiring disposal in approved structural overpacks the numerical code must be followed by "OP".

Wooden Box or Crates  
Metal Box  
Fiber Drum or Pail  
Metal Drum or Pail  
Metal Tank or Cask  
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  
14. Other. Describe in Item 5, or additional page

Note (A): Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A. High Integrity Container - Poly  
B. High Integrity Container - Poly with Steel SH of  
C. High Integrity Drum Overpack - Poly  
D. High Integrity Container - Stainless Steel  
E. High Integrity Container - Fiberglass  
F. Liner - Steel

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

20. Charcoal  
21. Incinerator Ash  
22. Soil  
23. Gas  
24. Oil  
25. Aqueous Liquid  
26. EPA or State Hazardous  
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. Gases or Liquors  
36. Sealed Source Device  
37. Paint or Plating

38. Evaporator Bottoms/Sludges/ Concentrates  
39. Combustible Trash  
40. Noncombustible Trash  
41. Animal Carcass  
42. Biological Material (except animal carcasses)  
43. Activated Material  
44. Other. Describe in Item 11, or additional page

NOTE 2A: Barnwell Specific Waste Descriptor Codes. (Choose all applicable codes.)

G. Dehydrated  
H. Solid  
I. Combustible  
J. Non-combustible  
K. Air Filtration Filters  
L. Activated

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

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

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes. (Choose this code if applicable.)

M. Wux Binder

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**FORM 542** **ADCO SERVICES, INC.**

## UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

MANIFEST INDEX AND REGIONAL COMPACT TABULATION

List all original "PROCESSED WASTE" generators (if any) before "COLLECTED WASTE" generators.

<b>1. WASTE COLLECTOR/PROCESSOR</b> NAME US GEOLOGICAL SURVEY IDENTIFICATION NUMBER T-8003-M4 SHIPPING DATE 1/22/2014		<b>2. MANIFEST NUMBER</b> 14-0003 L 3. PAGE 1 OF 1 PAGE(S)							
						<b>SHIPPER USE ONLY</b>			
						MANIFEST INDEX AND REGIONAL COMPACT TABULATION			

4. SO TRANSPORT PERMIT NUMBER	5. GENERATOR NAME AND TELEPHONE NUMBER	6. GENERATOR FACILITY ADDRESS	7A. WASTE DESCRIPTION (NOMENCLATURE)	7. PREPROCESSED WASTE (OR MATERIAL) VOLUME		8. MANIFEST NUMBER(S) UNDER WHICH WASTE (OR MATERIAL) RECEIVED AND DATE OF RECEIPT	9. WASTE CODE P=PROCESSED C=COLLECTED	10. ORIGINATING COMPACT REGION OR STATE	11. AS PROCESSED/COLLECTED TOTAL								
				(m <sup>3</sup> )	(kg)				A. SOURCE MATERIAL (g)	B. SNM (g)	C. ACTIVITY (MBq) (mCi)		D. VOLUME (m <sup>3</sup> ) (kg)		E. WEIGHT (kg)	F. MAXIMUM PACKAGE RADIATION LEVEL (mrem/hr)	
3309 SS	US GEOLOGICAL SURVEY 873-878-1898	#FOR THE ACCT OF ADCO SERVICES 4200 NEW HAVEN ROAD COLUMBIA, MO 65201	INCHEMABLE DRY WASTE			14-0003 L Received: 01/22/2014	C	MO	0.0000E+00	0.0000E+00	0.0000E+00	0.0228E+01	0.1700E+01	0.0188	0.7000	10	0.6000E+00
<b>TOTALS OF ALL PAGES (FORMS 542 AND 542A)</b>									0.0000E+00	0.0000E+00	0.0000E+00	0.0228E+01	0.1700E+01	0.0188	0.7000	10.0000	N/A

FORM 542 (08-03)

**UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST  
ISOTOPES REPORT****For Manifest # 14-0009 L  
ADCO SERVICES, INC.**

Isotope	Total Activity	
	(MBq)	(mCi)
Cd-109	0.0000E+00	0.0000E+00
Cs-134	0.0000E+00	0.0000E+00
I-125	0.0000E+00	0.0000E+00
Pb-210	3.0229E+01	8.1700E-01
Se-75	0.0000E+00	0.0000E+00



# Fax Cover Sheet

Date: 1-24-2014 Number of Pages (including this cover): 5

To: Dennis O'Dowd Organization: PRC Region 111  
Phone: 630-828-9573 Fax: 630-515-1078

From: Randal Clark Organization: USGS-CERC-Columbia,MO  
Phone: 573-876-1836 E-mail: rclark@usgs.gov

**Message:**

Reduced size manifest of January 23, 2014 shipment. Relates to requested amendment of NRC license 24-12728-01 on 1-23-2014.

The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

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U.S. Department of the Interior  
U.S. Geological Survey