SITE CLOSEOUT REPORT REV 2 –
APPENDIX I DISPOSAL DOCUMENTATION

U.S. DEPARTMENT OF ENERGY

HIGH FLUX BEAM REACTOR STACK (BLDG 705)
DECOMMISSIONING AND DEMOLITION (D&D)
BROOKHAVEN NATIONAL LABORATORY
UPTON, NY
CERCLIS NUMBER NY 789008975

APPENDIX I
DISPOSAL DOCUMENTATION

IMC WASTE TOTALS

	TOTAL		Gross lbs.	Net lbs.	FIRST SHIPMENT LBS	FIRST SHIPMENT TONS
FIRST SHIPMENT	1	BFLU 000122	53360	45560	2,762,188	1381.09
	2	ERRU 000297	55880	48080		
	3	ERRU 000255	50380	42580		
	4	AWIU 000216	57640	49840		
	5	AWIU 000225	44500	36700		
	6	BFLU 000265	47360	39560		
	7	AWIU 000271	47680	39880		
	8	ERRU 000220	54440	46640		
	9	AMIU 000175	55100	47300		
	10	BFLU 000031	48100	40300		
	11	AWIU 000182	59560	51760		
	12	BFLU 000209	61580	53780		
	13	ERRU 000175	58340	50540		
	14	ERRU 000247	50860	43060		
	15	ERRU 000314	58240	50440		
	16	ERRU 000152	55960	48160		
	17	ERRU 000245	54780	46980		
	18	ERRU 000285	49980	42180		
	19	ERRU 000302	66280	58480		
	20	AWIU 000224	49060	41260		
	21	BFLU 000386	52960	45160		
	22	BFLU 000089	54680	46880		
	23	ERRU 000193	50340	42540		
	24	ERRU 000287	56180	48380		
	25	ERRU 000194	59140	51340		
	26	ERRU 000151	55600	47800		
	27	ERRU 000155	43220	35420		
	28	ERRU 000202	49320	41520		
	29	BFLU 000187	54180	46380		
	30	BFLU 000213	51620	43820		
	31	ERRU 000263	39560	31760		
	32	BFLU 00291	55000	47200		
	33	ERRU 000276	58980	51180		
	34	ERRU 000207	46700	38900		
	35	ERRU 000270	51380	43580		
	36	BFLU 000306	49980	42180		
	37	ERRU 000272	30100	22300		
	38	AWIU 000261	51180	43380		
	39	ERRU 000256	45480	37680		
	40	ERRU 000159	48600	40800		
	41	ERRU000269	38640	30840		
	42	ERRU 000291	58100	50300		
	43	AWIU 000196	54800	47000		
	44	ERRU 000227	43440	35640		
	45	ERRU 000173	37988	30188		
	46	AWIU 000226	57100	49300		
	47	ERRU 000307	51020	43220		
	48	ERRU 00294	43380	35580		
	49	AWIU 000136	48500	40700		

	50	AWIU 000249	54020	46220	
	51	BFLU 000246	42440	34640	
	52	BFLU 000381	41500	33700	
	53	AWIU 000158	36700	28900	
	54	AWIU 000282	50200	42400	
	55	ERRU 000312	53660	45860	
	56	AWIU 000242	56000	48200	
	57	ERRU 000141	47620	39820	
	58	ERRU 000266	37620	29820	
	59	ERRU 000286	34700	26900	
	60	BFLU 000270	53380	45580	
	61	ERRU 000181	43820	36020	
	62	BFLU 000074	46060	38260	
	63	ERRU 000288	47020	39220	
	64	ERRU 000205	53320	45520	**SECOND SHIPMENT**
	65	ERRU 000174	54880	47080	**LBS** **TONS**
SECOND SHIPMENT	66	ERRU000218	68700	60900	1,664,820 832.41
	67	ERRU000237	63240	55440	
	68	ERRU000248	59120	51320	
	69	ERRU000296	53040	45240	
	70	AWIU000192	50600	42800	
	71	AWIU000205	39300	31500	
	72	ERRU000160	68520	60720	
	73	AWIU000148	63100	55300	
	74	ERRU000299	58280	50480	
	75	ERRU000149	52900	45100	
	76	ERRU000284	47820	40020	
	77	BFLU000392	32660	24860	
	78	AWIU000292	66640	58840	
	79	ERRU000271	62840	55040	
	80	BFLU000259	56960	49160	
	81	AWIU000213	52540	44740	
	82	ERRU000147	46560	38760	
	83	BFLU 000183	29,540	21740	
	84	ERRU000188	66440	58640	
	85	AWIU000207	62300	54500	
	86	AWIU000186	56520	48720	
	87	ERRU000233	52320	44520	
	88	ERRU000144	44940	37140	
	89	ERRU000265	41780	33980	
	90	BFLU000200	64060	56260	
	91	BFLU000269	60580	52780	
	92	ERRU000162	53840	46040	
	93	AWIU000159	50280	42480	
	94	ERRU000231	49840	42040	
	95	ERRU000164	41720	33920	
	96	ERRU000143	64760	56960	
	97	AWIU000176	60940	53140	
	98	ERRU000166	55360	47560	
	99	ERRU000163	54700	46900	
	100	BFLU000308	49620	41820	**THIRD SHIPMENT**
	101	ERRU000283	43260	35460	**LBS** **TONS**
THIRD SHIPMENT	102	ERRU000224	65000	57200	598,120 299.06
	103	ERRU000165	62500	54700	
	104	ERRU000142	56560	48760	

	105	AWIU000117	64380	56580	
	106	AWIU000278	51300	43500	
	107	ERRU000276	56540	48740	
	108	BFLU000172	60640	52840	
	109	AWIU000159	50280	42480	
	110	AWIU000263	64420	56620	
	111	ERRU000169	55580	47780	
	112	AWIU000293	53420	45620	**FOURTH SHIPMENT**
	113	ERRU000270	51100	43300	**LBS** **TONS**
FOURTH SHIPMENT	114	ERRU000186	44640	36840	537,860 268.9
	115	ERRU000272	67260	59460	
	116	ERRU000202	56220	48420	
	117	BFLU000306	48320	40520	
	118	ERRU000263	49200	41400	
	119	ERRU000155	49940	42140	
	120	BFLU000291	59400	51600	
	121	BFLU000187	64200	56400	
	122	BFLU000213	52560	44760	
	123	ERRU000207	51660	43860	
	124	ERRU000194	60720	52920	
	125	ERRU000151	27340	19540	
				5562988	

SUPERSACK WASTE TOTALS

	Total	Bag ID	Bag Serial #	Weight (LBS)
2ND SHIPMENT	1	001	20SM16845	20520
	2	002	20SM16847	22740
	3	003	20SM16833	19780
	4	004	20SM16849	21300
	5	005	20SM16799	20480
	6	006	20SM16840	21580
	7	007	20SM16838	20700
	8	008	20SM16822	21620
	9	009	20SM16808	19600
	10	010	20SM16835	20840
	11	011	20SM16846	21060
	12	012	20SM16844	20460
	13	013	20SM16801	19560
	14	014	20SM16831	22140
	15	015	20SM16811	22220
	16	016	20SM16809	20760
	17	017	20SM16827	20820
	18	018	20SM16843	20140
	19	019	20SM16787	14180
	20	020	20SM16837	22260
	21	021	20SM16815	19580
	22	022	20SM16821	19420
	23	023	20SM16813	20660
	24	024	20SM16814	20900
	25	025	20SM16810	20100
	26	026	20SM16768	20080
	27	027	20SM16759	18780
	28	028	20SM16777	19300
	29	029	20SM16770	19640
	30	030	20SM16803	20260
	31	031	20SM16812	21640
	32	032	20SM16820	18820
	33	033	20SM16793	18740
	34	034	20SM16841	19460
	35	035	20SM16842	21180
	36	036	20SM16839	21780
	37	037	20SM16816	18840
	38	038	20SM16785	20460
	39	039	20SM16848	21260
	40	040	20SM16828	20920
	41	041	20SM16817	20560
	42	042	20SM16832	20660
	43	043	20SM16796	19420
	44	044	20SM16826	20700
	45	045	20SM16824	18900
	46	046	20SM16834	21080
	47	047	20SM16825	19520

SECOND SHIPMENT	
LBS	TONS
1,410,820	705.41

	48	048	20SM16800	19500	
	49	049	20SM16789	18840	
	50	050	20SM16788	19720	
	51	051	20SM16750	18700	
	52	052	20SM16766	19240	
	53	053	20SM16805	20180	
	54	054	20SM16802	22860	
	55	055	20SM16781	19700	
	56	056	20SM16804	21640	
	57	057	20SM16792	20340	
	58	058	20SM16776	19240	
	59	059	20SM16771	20100	
	60	060	20SM16795	19840	
	61	061	20SM16763	20300	
	62	062	20SM16791	19360	
	63	063	20SM16794	18700	
	64	064	20SM16806	19960	
	65	065	20SM16751	19060	
	66	066	20SM16774	19660	
	67	067	20SM16773	20160	
	68	068	20SM16798	19960	
	69	069	20SM16797	19640	
	70	070	20SM16758	18700	
3RD SHIPMENT	71	071	20SM16767	19940	
	72	072	20SM16790	21260	
	73	073	20SM16752	19860	
	74	074	20SM16775	19200	
	75	075	20SM16829	21300	
	76	076	20SM16772	19200	
	77	077	20SM16823	21480	
	78	078	20SM16830	21200	
	79	079	20SM16786	18460	
	80	080	20SM16778	19400	
	81	081	20SM16761	19240	
	82	141	20SM17152	19980	
	83	142	20SM17160	21180	
	84	143	20SM17151	20260	
	85	085	20SM16784	20260	
	86	086	20SM16779	20480	
	87	087	20SM16760	20440	
	88	088	20SM16769	20320	
	89	089	20SM16782	19240	
	90	090	20SM16630	19300	
	91	091	20SM16623	17320	
	92	092	20SM16631	16000	
	93	093	20SM17089	17680	
	94	094	20SM17091	17780	
	95	095	20SM17095	17540	
	96	096	20SM17094	16700	
	97	097	20SM17092	17600	
	98	098	20SM17098	19520	
	99	099	20SM17099	18720	

THIRD SHIPMENT	
LBS	**TONS**
1,419,520	709.76

	100	100	20SM17097	18340
	101	101	20SM17104	18760
	102	102	20SM17100	20220
	103	103	20SM17103	20720
	104	104	20SM17083	19340
	105	105	20SM17085	19440
	106	106	20SM17080	20200
	107	107	20SM17084	18140
	108	108	20SM17082	18000
	109	109	20SM17086	18660
	110	110	20SM17081	17440
	111	111	20SM17090	18460
	112	112	20SM17087	18160
	113	113	20SM17088	19480
	114	114	20SM17096	20300
	115	115	20SM17093	20900
	116	116	20SM17062	19400
	117	117	20SM17078	18940
	118	118	20SM17064	18680
	119	119	20SM17066	18980
	120	120	20SM17068	18280
	121	121	20SM17063	18240
	122	122	20SM17060	17960
	123	123	20SM17061	17880
	124	124	20SM17059	18100
	125	125	20SM17055	18180
	126	126	20SM17056	18880
	127	127	20SM17075	19840
	128	128	20SM17079	17820
	129	129	20SM17071	19060
	130	130	20SM17070	17860
	131	131	20SM 17073	17720
	132	132	20SM17072	18980
	133	133	20SM17069	19740
	134	134	20SM17065	18920
	135	135	20SM17067	19940
	136	136	20SM17074	20340
	137	137	20SM17077	19740
	138	138	20SM17076	18920
	139	139	20SM17154	19440
	140	140	20SM17155	19120
	141	082	20SM16783	20440
	142	083	20SM16780	21180
	143	084	20SM16762	20260
	144	161	20SM17156	19260
4TH SHIPMENT	145	144	20SM17165	18220
	146	145	20SM17164	17020
	147	146	20SM17169	18220
	148	147	20SM17170	18920
	149	148	20SM17174	18960
	150	149	20SM17157	18580
	151	150	20SM17150	18620

FOURTH SHIPMENT	
LBS	**TONS**
1,450,840	725.42

152	151	20SM17153	19980
153	152	20SM17159	18080
154	153	20SM17161	17980
155	154	20SM17158	18640
156	155	20SM17166	19280
157	156	20SM17175	18980
158	157	20SM17167	19220
159	158	20SM17163	16920
160	159	20SM17162	18340
161	160	20SM17136	17880
162	162	20SM17187	16300
163	163	20SM17190	16940
164	164	20SM17189	17800
165	165	20SM17186	18780
166	166	20SM17180	19260
167	167	20SM17178	17220
168	168	20SM17179	14480
169	169	20SM17172	18020
170	170	20SM17184	17960
171	171	20SM17176	17600
172	172	20SM17185	17600
173	173	20SM17181	18720
174	174	20SM17194	18480
175	175	20SM17195	18220
176	176	20SM17182	18600
177	177	20SM17192	18640
178	178	20SM17188	18280
179	179	20SM17171	16520
180	180	20SM17183	16640
181	181	20SM17191	18780
182	182	20SM17173	18360
183	183	20SM17177	18420
184	184	20SM17168	16700
185	185	20SM17014	18580
186	186	20SM17031	18240
187	187	20SM17030	18460
188	188	20SM17026	17340
189	189	20SM17011	17500
190	190	20SM17033	17460
191	191	20SM17029	18180
192	192	20SM17032	20140
193	193	20SM17013	18480
194	194	20SM17023	18340
195	195	20SM17024	18020
196	196	20SM17028	18580
197	197	20SM17012	15420
198	198	20SM17022	18420
199	199	20SM17015	16620
200	200	20SM17027	17580
201	201	20SM17025	18200
202	202	20SM17021	18280
203	203	20SM17020	17460

204	204	20SM17016	16860
205	205	20SM17019	16180
206	206	20SM17017	16460
207	207	20SM17018	17760
208	208	20SM17036	17240
209	209	20SM17042	17000
210	210	20SM17041	17700
211	211	20SM17043	18500
212	212	20SM17044	18460
213	213	20SM17039	18620
214	214	20SM17040	18360
215	215	20SM17037	18420
216	216	20SM17038	18780
217	217	20SM17034	18920
218	218	20SM17051	20120
219	219	20SM17057	19240
220	220	20SM17058	18020
221	221	20SM17049	18000
222	222	20SM17054	17860
223	223	20SM17052	16540
224	224	20SM17046	17480
225	225	20SM17053	10860

TOTE WASTE TOTALS

		Tote ID	lbs.
2ND SHIPMENT	1	T-001	2355
	2	T-002	2355
	3	T-003	2355
	4	T-004	2355
	5	T-005	2355
	6	T-007	2355
	7	T-008	2355
	8	T-009	2355
	9	T-010	2355
	10	T-011	2355
	11	T-012	2355
	12	T-013	2355
	13	T-021	2355
	14	T-022	2355
	15	T-023	2355
3RD SHIPMENT	16	T-006	2355
	17	T-014	2355
	18	T-015	2355
	19	T-016	2355
	20	T-017	2355
	21	T-018	2355
	22	T-019	2355
	23	T-020	2355
4th SHIPMENT	24	T-024	2355
	25	T-025	2355
	26	T-026	2355
	27	T-027	2355
	28	T-028	2355
	29	T-029	2355
	30	T-030	2355
	31	T-031	2355
	32	T-032	2355
	33	T-033	2355
	34	T-034	2355
	35	T-035	2355
	36	T-036	2355
	37	T-037	2355
	38	T-038	2355
	39	T-039	2355
	40	T-040	2355
	41	T-041	2355
	42	T-042	2355
	43	T-043	2355
	44	T-044	2355

SECOND SHIPMENT	
LBS	TONS
35,325	17.66

SECOND SHIPMENT	
LBS	TONS
18,840	9.42

SECOND SHIPMENT	
LBS	TONS
49,455	24.73

ABATEMENT WASTE TOTALS

	ID	QTY	
TANKER TRUCKS	92801	4795	GAL
	97139	4795	GAL
	97049	4795	GAL
FLAT BED	469	4000	LBS
	471	4000	LBS
	472	4000	LBS
	473	4000	LBS
	V1205	21400	LBS
	V1102	24280	LBS
	V386	17580	LBS

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **NA**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER: **GIMX99606**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — ~~None~~ 1 PAGE(S) WC 9354

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Keri Cartwright
DATE: 3-30-21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 09:23:53 -06'00')
TITLE: Manifester
DATE: 2 Mar 2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.2047E+01**	**(1.4067E+00)**	**NA**	**57640 LBS; 675 FT3**	**AWIU000216**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.7849E+01**	**(1.0229E+00)**	**NA**	**57640 LBS; 675 FT3**	**AWIU000225**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

Does Not Contain PCB's

GIMX995016

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-001

Page 2 of 2

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.8539E+01	(1.8524E+00)	NA	53360 LBS; 675 FT3	BFLU000122
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	5.7082E+01	(1.5427E+00)	NA	47360 LBS; 675 FT3	BFLU000265
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2338E+01	(8.7400E-01)	NA	50380 LBS; 675 FT3	ERRU000255
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9667E+01	(8.0181E-01)	NA	55880 LBS; 675 FT3	ERRU000297
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834	kg 124946.562	NP	2.0702E-01	3.0950E-03	2.1012E-01
	ft3 4050.0000	lb 275460.000		6 Containers	6 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.7752E+02	2.3433E+01	2.9460E+01	NP	NP	(kg)	3.8768E-02
mCi	7.5006E+00	6.3332E-01	7.9621E-01	NP	NP	(lb)	8.5469E-02

2. MANIFEST NUMBER: WP-9333-001

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: NA

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000216/R5-0022-01	19 Intermodal Container	19.1139	26145.0659	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.75668E-01	2.3058E-01	6.2320E-03	AU
		675.0000	57640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.69264E+00	5.5981E+00	1.5130E-01	
												Co-60	8.64779E-03	7.2335E-03	1.9550E-04	
												Cs-137	2.83586E+01	2.3721E+01	6.4110E-01	
												Eu-152	3.99877E-02	3.3448E-02	9.0400E-04	
												Eu-154	1.72425E-02	1.4423E-02	3.8980E-04	
												Eu-155	3.77185E-03	3.1550E-03	8.5270E-05	
												H-3	4.50304E+00	3.7666E+00	1.0180E-01	
												Na-22	2.47844E-07	2.0731E-07	5.6030E-09	
												Ni-63	7.25884E-01	6.0717E-01	1.6410E-02	
												Pm-147	2.63459E-05	2.2037E-05	5.9560E-07	
												Pu-238 [2.4400E-08 g]	1.83484E-02	1.5348E-02	4.1480E-04	
												Pu-239 [4.6323E-04 g]	1.27041E+00	1.0626E+00	2.8720E-02	
												Pu-240 [1.2487E-04 g]	1.27041E+00	1.0626E+00	2.8720E-02	
												Pu-241 [6.2890E-09 g]	2.78189E-02	2.3269E-02	6.2890E-04	
												Ra-226	2.73235E-03	2.2855E-03	6.1770E-05	
												Sr-90	1.88571E+01	1.5773E+01	4.2630E-01	
												Th-232 [2.7773E-03 kg]	1.35136E-02	1.1304E-02	3.0550E-04	
												U-234 [2.4403E-07 kg]	6.69264E-02	5.5981E-02	1.5130E-03	
												U-235 [3.9341E-02 g]	3.82847E-03	3.2024E-03	8.6550E-05	
												U-238 [4.4500E-03 kg]	6.69264E-02	5.5981E-02	1.5130E-03	
												Zn-65	2.83586E-19	2.3721E-19	6.4110E-21	
												Subtotal		5.2047E+01	1.4067E+00	
												Total		5.2047E+01	1.4067E+00	
												SNM [3.9929E-02 g]				
												Source [7.2275E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S," and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-001

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000225/R5-0022-01	19 Intermodal Container	19.1139	26145.0659	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.94586E-01	1.6276E-01	4.3990E-03	AU
		675.0000	57640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.72422E+00	3.9516E+00	1.0680E-01	
												Co-60	6.10432E-03	5.1060E-03	1.3800E-04	
												Cs-137	2.00160E+01	1.6743E+01	4.5250E-01	
												Eu-152	2.82259E-02	2.3610E-02	6.3810E-04	
												Eu-154	1.21688E-02	1.0179E-02	2.7510E-04	
												Eu-155	2.66246E-03	2.2270E-03	6.0190E-05	
												H-3	4.50304E+00	3.7666E+00	1.0180E-01	
												Na-22	1.74946E-07	1.4634E-07	3.9550E-09	
												Ni-63	5.12675E-01	4.2883E-01	1.1590E-02	
												Pm-147	1.85961E-05	1.5555E-05	4.2040E-07	
												Pu-238 [1.7224E-08 g]	1.29518E-02	1.0834E-02	2.9280E-04	
												Pu-239 [3.2694E-04 g]	8.96628E-01	7.4999E-01	2.0270E-02	
												Pu-240 [8.8130E-05 g]	8.96628E-01	7.4999E-01	2.0270E-02	
												Pu-241 [4.4390E-09 g]	1.96356E-02	1.6424E-02	4.4390E-04	
												Ra-226	2.73235E-03	2.2855E-03	6.1770E-05	
												Sr-90	1.33101E+01	1.1133E+01	3.0090E-01	
												Th-232 [2.7773E-03 kg]	1.35136E-02	1.1304E-02	3.0550E-04	
												U-234 [1.7226E-07 kg]	4.72422E-02	3.9516E-02	1.0680E-03	
												U-235 [2.7768E-02 g]	2.70227E-03	2.2603E-03	6.1090E-05	
												U-238 [3.1412E-03 kg]	4.72422E-02	3.9516E-02	1.0680E-03	
												Zn-65	2.00160E-19	1.6743E-19	4.5250E-21	
												Subtotal		3.7849E+01	1.0229E+00	
												Total		3.7849E+01	1.0229E+00	
												SNM [2.8183E-02 g]				
												Source [5.9186E-03 kg]				
BFLU000122/R5-0022-01	19 Intermodal Container	19.1139	24203.6905	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.97279E-01	3.0377E-01	8.2100E-03	AU
		675.0000	53360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	9.64406E+00	7.3741E+00	1.9930E-01	
												Co-60	1.24652E-02	9.5312E-03	2.5760E-04	
												Cs-137	4.08699E+01	3.1250E+01	8.4460E-01	
												Eu-152	5.76321E-02	4.4067E-02	1.1910E-03	
												Eu-154	2.48481E-02	1.9000E-02	5.1350E-04	
												Eu-155	5.43416E-03	4.1551E-03	1.1230E-04	
												H-3	6.45518E+00	4.9358E+00	1.3340E-01	
												Na-22	3.57213E-07	2.7313E-07	7.3820E-09	
												Ni-63	1.04619E+00	7.9994E-01	2.1620E-02	
												Pm-147	3.79665E-05	2.9030E-05	7.8460E-07	
												Pu-238 [3.2147E-08 g]	2.64450E-02	2.0221E-02	5.4650E-04	
												Pu-239 [6.1032E-04 g]	1.83107E+00	1.4001E+00	3.7840E-02	
												Pu-240 [1.6452E-04 g]	1.83107E+00	1.4001E+00	3.7840E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-001

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.2860E-09 g]	4.00957E-02	3.0658E-02	8.2860E-04	
												Ra-226	2.73257E-03	2.0894E-03	5.6470E-05	
												Sr-90	2.71805E+01	2.0783E+01	5.6170E-01	
												Th-232 [2.5382E-03 kg]	1.35104E-02	1.0330E-02	2.7920E-04	
												U-234 [3.2145E-07 kg]	9.64406E-02	7.3741E-02	1.9930E-03	
												U-235 [5.1818E-02 g]	5.51642E-03	4.2180E-03	1.1400E-04	
												U-238 [5.8618E-03 kg]	9.64406E-02	7.3741E-02	1.9930E-03	
												Zn-65	4.08699E-19	3.1250E-19	8.4460E-21	
												Subtotal		6.8539E+01	1.8524E+00	
												Total		6.8539E+01	1.8524E+00	
												SNM [5.2593E-02 g]				
												Source [8.4003E-03 kg]				
BFLU000265/R5-0022-01	19 Intermodal Container	19.1139	21482.1361	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.81018E-01	2.5297E-01	6.8370E-03	AU
												C-14	9.25099E+00	6.1420E+00	1.6600E-01	
												Co-60	1.19594E-02	7.9402E-03	2.1460E-04	
		675.0000	47360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	3.91997E+01	2.6026E+01	7.0340E-01	
												Eu-152	5.52775E-02	3.6700E-02	9.9190E-04	
												Eu-154	2.38352E-02	1.5825E-02	4.2770E-04	
												Eu-155	5.21399E-03	3.4617E-03	9.3560E-05	
												H-3	6.19148E+00	4.1107E+00	1.1110E-01	
												Na-22	3.42621E-07	2.2748E-07	6.1480E-09	
												Ni-63	1.00368E+00	6.6637E-01	1.8010E-02	
												Pm-147	3.64188E-05	2.4180E-05	6.5350E-07	
												Pu-238 [2.6771E-08 g]	2.53622E-02	1.6839E-02	4.5510E-04	
												Pu-239 [5.0823E-04 g]	1.75602E+00	1.1659E+00	3.1510E-02	
												Pu-240 [1.3700E-04 g]	1.75602E+00	1.1659E+00	3.1510E-02	
												Pu-241 [6.9010E-09 g]	3.84585E-02	2.5534E-02	6.9010E-04	
												Ra-226	2.73239E-03	1.8141E-03	4.9030E-05	
												Sr-90	2.60700E+01	1.7309E+01	4.6780E-01	
												Th-232 [2.2046E-03 kg]	1.35143E-02	8.9725E-03	2.4250E-04	
												U-234 [2.6774E-07 kg]	9.25099E-02	6.1420E-02	1.6600E-03	
												U-235 [4.3164E-02 g]	5.29201E-03	3.5135E-03	9.4960E-05	
												U-238 [4.8824E-03 kg]	9.25099E-02	6.1420E-02	1.6600E-03	
												Zn-65	3.91997E-19	2.6026E-19	7.0340E-21	
												Subtotal		5.7082E+01	1.5427E+00	
												Total		5.7082E+01	1.5427E+00	
												SNM [4.3809E-02 g]				
												Source [7.0872E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9333-001

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000255/R5-0022-01	19 Intermodal Container	19.1139	22851.9851	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.94575E-01	1.3905E-01	3.7580E-03	AU
		675.0000	50380.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.72407E+00	3.3759E+00	9.1240E-02	
												Co-60	6.10442E-03	4.3623E-03	1.1790E-04	
												Cs-137	2.00167E+01	1.4304E+01	3.8660E-01	
												Eu-152	2.82233E-02	2.0169E-02	5.4510E-04	
												Eu-154	1.21726E-02	8.6987E-03	2.3510E-04	
												Eu-155	2.66234E-03	1.9025E-03	5.1420E-05	
												H-3	4.50402E+00	3.2186E+00	8.6990E-02	
												Na-22	1.74952E-07	1.2502E-07	3.3790E-09	
												Ni-63	5.12482E-01	3.6623E-01	9.8980E-03	
												Pm-147	1.85980E-05	1.3290E-05	3.5920E-07	
												Pu-238 [1.4712E-08 g]	1.29492E-02	9.2537E-03	2.5010E-04	
												Pu-239 [2.7936E-04 g]	8.96765E-01	6.4084E-01	1.7320E-02	
												Pu-240 [7.5304E-05 g]	8.96765E-01	6.4084E-01	1.7320E-02	
												Pu-241 [3.7930E-09 g]	1.96387E-02	1.4034E-02	3.7930E-04	
												Ra-226	2.73223E-03	1.9525E-03	5.2770E-05	
												Sr-90	1.33117E+01	9.5127E+00	2.5710E-01	
												Th-232 [2.3727E-03 kg]	1.35136E-02	9.6570E-03	2.6100E-04	
												U-234 [1.4716E-07 kg]	4.72407E-02	3.3759E-02	9.1240E-04	
												U-235 [2.3723E-02 g]	2.70220E-03	1.9310E-03	5.2190E-05	
												U-238 [2.6835E-03 kg]	4.72407E-02	3.3759E-02	9.1240E-04	
												Zn-65	2.00167E-19	1.4304E-19	3.8660E-21	
												Subtotal		3.2338E+01	8.7400E-01	
												Total		3.2338E+01	8.7400E-01	
												SNM [2.4077E-02 g]				
												Source [5.0564E-03 kg]				
ERRU000297/R5-0022-01	19 Intermodal Container	19.1139	25346.7433	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.54022E-01	1.2428E-01	3.3590E-03	AU
		675.0000	55880.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.74027E+00	3.0181E+00	8.1570E-02	
												Co-60	4.83295E-03	3.8998E-03	1.0540E-04	
												Cs-137	1.58470E+01	1.2787E+01	3.4560E-01	
												Eu-152	2.23444E-02	1.8030E-02	4.8730E-04	
												Eu-154	9.63381E-03	7.7737E-03	2.1010E-04	
												Eu-155	2.10788E-03	1.7009E-03	4.5970E-05	
												H-3	4.50418E+00	3.6345E+00	9.8230E-02	
												Na-22	1.38523E-07	1.1178E-07	3.0210E-09	
												Ni-63	4.05711E-01	3.2738E-01	8.8480E-03	
												Pm-147	1.47235E-05	1.1881E-05	3.2110E-07	
												Pu-238 [1.3153E-08 g]	1.02528E-02	8.2732E-03	2.2360E-04	
												Pu-239 [2.4968E-04 g]	7.09811E-01	5.7276E-01	1.5480E-02	
												Pu-240 [6.7304E-05 g]	7.09811E-01	5.7276E-01	1.5480E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-001**

3. PAGE **5** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.3900E-09 g]	1.55443E-02	1.2543E-02	3.3900E-04	
												Ra-226	2.73241E-03	2.2048E-03	5.9590E-05	
												Sr-90	1.05371E+01	8.5026E+00	2.2980E-01	
												Th-232 [2.6791E-03 kg]	1.35130E-02	1.0904E-02	2.9470E-04	
												U-234 [1.3157E-07 kg]	3.74027E-02	3.0181E-02	8.1570E-04	
												U-235 [2.1209E-02 g]	2.13952E-03	1.7264E-03	4.6660E-05	
												U-238 [2.3991E-03 kg]	3.74027E-02	3.0181E-02	8.1570E-04	
												Zn-65	1.58470E-19	1.2787E-19	3.4560E-21	
												Subtotal		2.9667E+01	8.0181E-01	
												Total		2.9667E+01	8.0181E-01	
												SNM [2.1526E-02 g]				
												Source [5.0783E-03 kg]				
Shipment Totals		**114.6834**	**146174.6869**									SNM [2.1012E-01 g]		2.7752E+02	7.5006E+00	
		4050.0000	**322260.0000**									Source [3.8768E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists ADDITIONAL NOTES	Manifest Number WP-9333-001 PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 6

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: na
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: na
SHIPMENT NUMBER: **GIMX516116**
☑ GENERATOR TYPE (Specify) G

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: NA
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE – *Authorized consignee acknowledging waste receipt*
MC 4.9.21

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-002**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 4/4/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 14:20:13 -05'00')
TITLE: Manifester
DATE: 3 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - ~~WP-9333~~ 9450 PV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	5.2576E+01	(1.4210E+00)	NA	59560 LBS; 675 FT3	AWIU000182
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - ~~WP-9333~~ 9450 PV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.1199E+01	(5.7296E-01)	NA	47680 LBS; 675 FT3	AWIU000271
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20. GIMX516116

Does NOT contain PCB's

FORM 540 (03-06)

2412-0021

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PW 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.2084E+01	(1.1374E+00)	NA	48100 LBS; 675 FT3	BFLU000031
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PW 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	7.4305E+01	(2.0083E+00)	NA	61580 LBS; 675 FT3	BFLU000209
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PW 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.5585E+01	(1.2320E+00)	NA	58340 LBS; 675 FT3	ERRU000175
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PW 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.4437E+01	(1.7415E+00)	NA	54440 LBS; 675 FT3	ERRU000220
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834	kg 128321.2898	NP	2.2521E-01	3.3670E-03	2.2858E-01
	ft3 4050.0000	lb 282900.0000		6 Containers	6 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	3.0019E+02	2.3791E+01	3.2048E+01	NP	NP	(kg)	4.1240E-02
mCi	8.1131E+00	6.4300E-01	8.6617E-01	NP	NP	(lb)	9.0918E-02

2. MANIFEST NUMBER: **WP-9333-002**

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **na**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU0001B2/R5-0022-01	19 Intermodal Container	19.1139	27015.9633	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	AU
		675.0000	59560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				

INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT

RADIONUCLIDES		pCi/gm	MBq	mCi
Am-241		2.67529E-01	2.3240E-01	6.2810E-03
C-14		6.49549E+00	5.6425E+00	1.5250E-01
Co-60		8.39516E-03	7.2927E-03	1.9710E-04
Cs-137		2.75239E+01	2.3909E+01	6.4620E-01
Eu-152		3.88111E-02	3.3714E-02	9.1120E-04
Eu-154		1.67349E-02	1.4537E-02	3.9290E-04
Eu-155		3.66090E-03	3.1802E-03	8.5950E-05
H-3		4.50212E+00	3.9109E+00	1.0570E-01
Na-22		2.40567E-07	2.0898E-07	5.6480E-09
Ni-63		7.04495E-01	6.1198E-01	1.6540E-02
Pm-147		2.55688E-05	2.2211E-05	6.0030E-07
Pu-238	[2.4594E-08 g]	1.78083E-02	1.5470E-02	4.1810E-04
Pu-239	[4.6694E-04 g]	1.23308E+00	1.0712E+00	2.8950E-02
Pu-240	[1.2587E-04 g]	1.23308E+00	1.0712E+00	2.8950E-02
Pu-241	[6.3390E-09 g]	2.70000E-02	2.3454E-02	6.3390E-04
Ra-226		2.73237E-03	2.3736E-03	6.4150E-05
Sr-90		1.83024E+01	1.5899E+01	4.2970E-01
Th-232	[2.8836E-03 kg]	1.35106E-02	1.1736E-02	3.1720E-04
U-234	[2.4597E-07 kg]	6.49549E-02	5.6425E-02	1.5250E-03
U-235	[3.9655E-02 g]	3.71585E-03	3.2279E-03	8.7240E-05
U-238	[4.4853E-03 kg]	6.49549E-02	5.6425E-02	1.5250E-03
Zn-65		2.75239E-19	2.3909E-19	6.4620E-21
Subtotal			5.2576E+01	1.4210E+00
Total			5.2576E+01	1.4210E+00
SNM	[4.0247E-02 g]			
Source	[7.3692E-03 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-002

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION				CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000271/R5-0022-01	19 Intermodal Container	19.1139	21627.2856	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.29691E-01	8.6802E-02	2.3460E-03	AU
		675.0000	47680.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.14940E+00	2.1079E+00	5.6970E-02	
												Co-60	4.07039E-03	2.7243E-03	7.3630E-05	
												Cs-137	1.33450E+01	8.9318E+00	2.4140E-01	
												Eu-152	1.88179E-02	1.2595E-02	3.4040E-04	
												Eu-154	8.11535E-03	5.4316E-03	1.4680E-04	
												Eu-155	1.77510E-03	1.1881E-03	3.2110E-05	
												H-3	4.50380E+00	3.0144E+00	8.1470E-02	
												Na-22	1.16644E-07	7.8070E-08	2.1100E-09	
												Ni-63	3.41641E-01	2.2866E-01	6.1800E-03	
												Pm-147	1.23997E-05	8.2991E-06	2.2430E-07	
												Pu-238 [9.1882E-09 g]	8.63500E-03	5.7794E-03	1.5620E-04	
												Pu-239 [1.7452E-04 g]	5.98148E-01	4.0034E-01	1.0820E-02	
												Pu-240 [4.7044E-05 g]	5.98148E-01	4.0034E-01	1.0820E-02	
												Pu-241 [2.3680E-09 g]	1.30907E-02	8.7616E-03	2.3680E-04	
												Ra-226	2.73257E-03	1.8289E-03	4.9430E-05	
												Sr-90	8.87271E+00	5.9385E+00	1.6050E-01	
												Th-232 [2.2218E-03 kg]	1.35108E-02	9.0428E-03	2.4440E-04	
												U-234 [9.1887E-08 kg]	3.14940E-02	2.1079E-02	5.6970E-04	
												U-235 [1.4814E-02 g]	1.80163E-03	1.2058E-03	3.2590E-05	
												U-238 [1.6756E-03 kg]	3.14940E-02	2.1079E-02	5.6970E-04	
												Zn-65	1.33450E-19	8.9318E-20	2.4140E-21	
												Subtotal		2.1199E+01	5.7296E-01	
												Total		2.1199E+01	5.7296E-01	
												SNM [1.5035E-02 g]				
												Source [3.8975E-03 kg]				
BFLU000031/R5-0022-01	19 Intermodal Container	19.1139	21817.7944	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.75661E-01	1.8644E-01	5.0390E-03	AU
		675.0000	48100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.69049E+00	4.5251E+00	1.2230E-01	
												Co-60	8.64895E-03	5.8497E-03	1.5810E-04	
												Cs-137	2.83594E+01	1.9181E+01	5.1840E-01	
												Eu-152	3.99843E-02	2.7043E-02	7.3090E-04	
												Eu-154	1.72432E-02	1.1662E-02	3.1520E-04	
												Eu-155	3.77195E-03	2.5512E-03	6.8950E-05	
												H-3	4.50391E+00	3.0462E+00	8.2330E-02	
												Na-22	2.47871E-07	1.6765E-07	4.5310E-09	
												Ni-63	7.25943E-01	4.9099E-01	1.3270E-02	
												Pm-147	2.63462E-05	1.7819E-05	4.8160E-07	
												Pu-238 [1.9729E-08 g]	1.83482E-02	1.2410E-02	3.3540E-04	
												Pu-239 [3.7452E-04 g]	1.27026E+00	8.5914E-01	2.3220E-02	
												Pu-240 [1.0096E-04 g]	1.27026E+00	8.5914E-01	2.3220E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-002**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.0850E-09 g]	2.78178E-02	1.8815E-02	5.0850E-04	
												Ra-226	2.73254E-03	1.8482E-03	4.9950E-05	
												Sr-90	1.88570E+01	1.2754E+01	3.4470E-01	
												Th-232 [2.2455E-03 kg]	1.35123E-02	9.1390E-03	2.4700E-04	
												U-234 [1.9726E-07 kg]	6.69049E-02	4.5251E-02	1.2230E-03	
												U-235 [3.1809E-02 g]	3.82830E-03	2.5893E-03	6.9980E-05	
												U-238 [3.5971E-03 kg]	6.69049E-02	4.5251E-02	1.2230E-03	
												Zn-65	2.83594E-19	1.9181E-19	5.1840E-21	
												Subtotal		4.2084E+01	1.1374E+00	
												Total		4.2084E+01	1.1374E+00	
												SNM [3.2285E-02 g]				
												Source [5.8427E-03 kg]				
BFLU000209/R5-0022-01	19 Intermodal Container	19.1139	27932.2200	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.64843E-01	3.2930E-01	8.9000E-03	AU
												C-14	8.85871E+00	7.9957E+00	2.1610E-01	
												Co-60	1.14495E-02	1.0334E-02	2.7930E-04	
		675.0000	61580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	3.75337E+01	3.3877E+01	9.1560E-01	
												Eu-152	5.29227E-02	4.7767E-02	1.2910E-03	
												Eu-154	2.28211E-02	2.0598E-02	5.5670E-04	
												Eu-155	4.99302E-03	4.5066E-03	1.2180E-04	
												H-3	5.93177E+00	5.3539E+00	1.4470E-01	
												Na-22	3.28031E-07	2.9607E-07	8.0020E-09	
												Ni-63	9.60889E-01	8.6728E-01	2.3440E-02	
												Pm-147	3.48691E-05	3.1472E-05	8.5060E-07	
												Pu-238 [3.4847E-08 g]	2.42846E-02	2.1919E-02	5.9240E-04	
												Pu-239 [6.6161E-04 g]	1.68156E+00	1.5177E+00	4.1020E-02	
												Pu-240 [1.7835E-04 g]	1.68156E+00	1.5177E+00	4.1020E-02	
												Pu-241 [8.9820E-09 g]	3.68204E-02	3.3233E-02	8.9820E-04	
												Ra-226	2.73263E-03	2.4664E-03	6.6660E-05	
												Sr-90	2.49610E+01	2.2529E+01	6.0890E-01	
												Th-232 [2.9964E-03 kg]	1.35115E-02	1.2195E-02	3.2960E-04	
												U-234 [3.4855E-07 kg]	8.85871E-02	7.9957E-02	2.1610E-03	
												U-235 [5.6182E-02 g]	5.06681E-03	4.5732E-03	1.2360E-04	
												U-238 [6.3559E-03 kg]	8.85871E-02	7.9957E-02	2.1610E-03	
												Zn-65	3.75337E-19	3.3877E-19	9.1560E-21	
												Subtotal		7.4305E+01	2.0083E+00	
												Total		7.4305E+01	2.0083E+00	
												SNM [5.7022E-02 g]				
												Source [9.3526E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-002**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
ERRU000175/R5-0022-01	19 Intermodal Container	19.1139	28462.5806	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.35120E-01	1.9943E-01	5.3900E-03	AU
		675.0000	58340.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14		5.71006E+00	4.8433E+00	1.3090E-01	
												Co-60		7.37641E-03	6.2567E-03	1.6910E-04	
												Cs-137		2.41882E+01	2.0517E+01	5.5450E-01	
												Eu-152		3.41077E-02	2.8930E-02	7.8190E-04	
												Eu-154		1.47048E-02	1.2473E-02	3.3710E-04	
												Eu-155		3.21709E-03	2.7288E-03	7.3750E-05	
												H-3		4.50611E+00	3.8221E+00	1.0330E-01	
												Na-22		2.11390E-07	1.7930E-07	4.8460E-09	
												Ni-63		6.19426E-01	5.2540E-01	1.4200E-02	
												Pm-147		2.24695E-05	1.9059E-05	5.1510E-07	
												Pu-238	[2.1106E-08 g]	1.56514E-02	1.3276E-02	3.5880E-04	
												Pu-239	[4.0065E-04 g]	1.08356E+00	9.1908E-01	2.4840E-02	
												Pu-240	[1.0800E-04 g]	1.08356E+00	9.1908E-01	2.4840E-02	
												Pu-241	[5.4400E-09 g]	2.37301E-02	2.0128E-02	5.4400E-04	
												Ra-226		2.73246E-03	2.3177E-03	6.2640E-05	
												Sr-90		1.60833E+01	1.3642E+01	3.6870E-01	
												Th-232	[2.8164E-03 kg]	1.35140E-02	1.1463E-02	3.0980E-04	
												U-234	[2.1113E-07 kg]	5.71006E-02	4.8433E-02	1.3090E-03	
												U-235	[3.4027E-02 g]	3.26551E-03	2.7698E-03	7.4860E-05	
												U-238	[3.8500E-03 kg]	5.71006E-02	4.8433E-02	1.3090E-03	
												Zn-65		2.41882E-19	2.0517E-19	5.5450E-21	
												Subtotal			4.5585E+01	1.2320E+00	
												Total			4.5585E+01	1.2320E+00	
												SNM	[3.4536E-02 g]				
												Source	[6.6666E-03 kg]				
ERRU000220/R5-0022-01	19 Intermodal Container	19.1139	24693.5703	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241		3.64823E-01	2.8557E-01	7.7180E-03	AU
		675.0000	54440.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14		8.85824E+00	6.9338E+00	1.8740E-01	
												Co-60		1.14486E-02	8.9614E-03	2.4220E-04	
												Cs-137		3.75317E+01	2.9378E+01	7.9400E-01	
												Eu-152		5.29415E-02	4.1440E-02	1.1200E-03	
												Eu-154		2.28216E-02	1.7864E-02	4.8280E-04	
												Eu-155		4.99162E-03	3.9072E-03	1.0560E-04	
												H-3		5.93228E+00	4.6435E+00	1.2550E-01	
												Na-22		3.28048E-07	2.5678E-07	6.9400E-09	
												Ni-63		9.60982E-01	7.5221E-01	2.0330E-02	
												Pm-147		3.48705E-05	2.7295E-05	7.3770E-07	
												Pu-238	[3.0218E-08 g]	2.42822E-02	1.9007E-02	5.1370E-04	
												Pu-239	[5.7371E-04 g]	1.68136E+00	1.3161E+00	3.5570E-02	
												Pu-240	[1.5465E-04 g]	1.68136E+00	1.3161E+00	3.5570E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9333-002

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [7.7900E-09 g]	3.68227E-02	2.8823E-02	7.7900E-04	
												Ra-226	2.73263E-03	2.1390E-03	5.7810E-05	
												Sr-90	2.49581E+01	1.9536E+01	5.2800E-01	
												Th-232 [2.5991E-03 kg]	1.35143E-02	1.0578E-02	2.8590E-04	
												U-234 [3.0226E-07 kg]	8.85824E-02	6.9338E-02	1.8740E-03	
												U-235 [4.8727E-02 g]	5.06726E-03	3.9664E-03	1.0720E-04	
												U-238 [5.5118E-03 kg]	8.85824E-02	6.9338E-02	1.8740E-03	
												Zn-65	3.75317E-19	2.9378E-19	7.9400E-21	
												Subtotal		6.4437E+01	1.7415E+00	
												Total		6.4437E+01	1.7415E+00	
												SNM [4.9456E-02 g]				
												Source [8.1112E-03 kg]				
Shipment Totals		114.6834	149549.4142									SNM [2.2858E-01 g]		3.0019E+02	8.1131E+00	
		4050.0000	329700.0000									Source [4.1240E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists ADDITIONAL NOTES	Manifest Number WP-9333-002 PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 6

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: na
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: na
SHIPMENT NUMBER: GIMX516231

CONTACT: Wade Fillingame
TELEPHONE NUMBER (Include Area Code): 865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: NA
SHIPPING DATE: 03/06/2021

CONTACT: James P. Nunes
TELEPHONE (Include Area Code): (718) 928-2304

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A 5 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION 1 Name PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE

8. MANIFEST NUMBER (Use this number on all continuation pages)
WP-9333-003

CONTACT: Keri Gonzalez
TELEPHONE (Include Area Code): (432)525-8500
DATE: 4.14.21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 14:21:56 -05'00')
TITLE: Manifester
DATE: 3 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.9705E+01**	**(1.8839E+00)**	**NA**	**55100 LBS; 675 FT3**	**AWIU000175**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.3583E+01**	**(1.7184E+00)**	**NA**	**55960 LBS; 675 FT3**	**ERRU000152**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

GIMX516231

Does Not Contain PCB's

FORM 540 (03-06)

2412-0022

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-003

Page 2 of 2

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.1039E+01	(1.1092E+00)	NA	54780 LBS; 675 FT3	ERRU000245
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.6569E+01	(7.1808E-01)	NA	50860 LBS; 675 FT3	ERRU000247
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	5.8277E+01	(1.5750E+00)	NA	49980 LBS; 675 FT3	ERRU000285
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.0394E+01	(1.6323E+00)	NA	58240 LBS; 675 FT3	ERRU000314
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 126153.1183 / lb 278120.0000	NP	2.4010E-01 6 Containers	3.5890E-03 6 Containers	2.4369E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	3.1957E+02	2.4958E+01	3.4160E+01	NP	NP	(kg)	4.2651E-02
mCi	8.6369E+00	6.7455E-01	9.2325E-01	NP	NP	(lb)	9.4030E-02

2. MANIFEST NUMBER: **WP-9333-003**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **na**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000175/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	24992.9412 / 55100.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np	AU

15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT		RADIONUCLIDES	pCi/gm	MBq	mCi
		Am-241	3.89144E-01	3.0891E-01	8.3490E-03
		C-14	9.44777E+00	7.4999E+00	2.0270E-01
		Co-60	1.22117E-02	9.6940E-03	2.6200E-04
		Cs-137	4.00376E+01	3.1783E+01	8.5900E-01
		Eu-152	5.64442E-02	4.4807E-02	1.2110E-03
		Eu-154	2.43442E-02	1.9325E-02	5.2230E-04
		Eu-155	5.32282E-03	4.2254E-03	1.1420E-04
		H-3	6.32492E+00	5.0209E+00	1.3570E-01
		Na-22	3.49898E-07	2.7776E-07	7.5070E-09
		Ni-63	1.02495E+00	8.1363E-01	2.1990E-02
		Pm-147	3.71945E-05	2.9526E-05	7.9800E-07
		Pu-238 [3.2694E-08 g]	2.59056E-02	2.0565E-02	5.5580E-04
		Pu-239 [6.2065E-04 g]	1.79354E+00	1.4238E+00	3.8480E-02
		Pu-240 [1.6730E-04 g]	1.79354E+00	1.4238E+00	3.8480E-02
		Pu-241 [8.4260E-09 g]	3.92733E-02	3.1176E-02	8.4260E-04
		Ra-226	2.73225E-03	2.1689E-03	5.8620E-05
		Sr-90	2.66234E+01	2.1134E+01	5.7120E-01
		Th-232 [2.6355E-03 kg]	1.35121E-02	1.0726E-02	2.8990E-04
		U-234 [3.2694E-07 kg]	9.44777E-02	7.4999E-02	2.0270E-03
		U-235 [5.2727E-02 g]	5.40671E-03	4.2920E-03	1.1600E-04
		U-238 [5.9618E-03 kg]	9.44777E-02	7.4999E-02	2.0270E-03
		Zn-65	4.00376E-19	3.1783E-19	8.5900E-21
		Subtotal		6.9705E+01	1.8839E+00
		Total		6.9705E+01	1.8839E+00
		SNM [5.3515E-02 g]			
		Source [8.5975E-03 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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)
36. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-003**

3. PAGE **2** OF **5** PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000152/R5-0022-01	19 Intermodal Container	19.1139	25383.0307	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.48594E-01	2.8176E-01	7.6150E-03	AU
		675.0000	55960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	8.46422E+00	6.8413E+00	1.8490E-01	
												Co-60	1.09408E-02	8.8430E-03	2.3900E-04	
												Cs-137	3.58665E+01	2.8990E+01	7.8350E-01	
												Eu-152	5.05839E-02	4.0885E-02	1.1050E-03	
												Eu-154	2.18083E-02	1.7627E-02	4.7640E-04	
												Eu-155	4.76999E-03	3.8554E-03	1.0420E-04	
												H-3	5.66723E+00	4.5806E+00	1.2380E-01	
												Na-22	3.13483E-07	2.5338E-07	6.8480E-09	
												Ni-63	9.18292E-01	7.4222E-01	2.0060E-02	
												Pm-147	3.33213E-05	2.6932E-05	7.2790E-07	
												Pu-238 [2.9818E-08 g]	2.32045E-02	1.8755E-02	5.0690E-04	
												Pu-239 [5.6613E-04 g]	1.60678E+00	1.2987E+00	3.5100E-02	
												Pu-240 [1.5261E-04 g]	1.60678E+00	1.2987E+00	3.5100E-02	
												Pu-241 [7.6860E-09 g]	3.51844E-02	2.8438E-02	7.6860E-04	
												Ra-226	2.73245E-03	2.2085E-03	5.9690E-05	
												Sr-90	2.38500E+01	1.9277E+01	5.2100E-01	
												Th-232 [2.6836E-03 kg]	1.35135E-02	1.0922E-02	2.9520E-04	
												U-234 [2.9823E-07 kg]	8.46422E-02	6.8413E-02	1.8490E-03	
												U-235 [4.8091E-02 g]	4.84324E-03	3.9146E-03	1.0580E-04	
												U-238 [5.4382E-03 kg]	8.46422E-02	6.8413E-02	1.8490E-03	
												Zn-65	3.58665E-19	2.8990E-19	7.8350E-21	
												Subtotal		6.3583E+01	1.7184E+00	
												Total		6.3583E+01	1.7184E+00	
												SNM [4.8810E-02 g]				
												Source [8.1222E-03 kg]				
ERRU000245/R5-0022-01	19 Intermodal Container	19.1139	24847.7917	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.26986E-01	1.7897E-01	4.8370E-03	AU
		675.0000	54780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.51393E+00	4.3475E+00	1.1750E-01	
												Co-60	7.12353E-03	5.6166E-03	1.5180E-04	
												Cs-137	2.33556E+01	1.8415E+01	4.9770E-01	
												Eu-152	3.29287E-02	2.5963E-02	7.0170E-04	
												Eu-154	1.42001E-02	1.1196E-02	3.0260E-04	
												Eu-155	3.10610E-03	2.4490E-03	6.6190E-05	
												H-3	4.50406E+00	3.5513E+00	9.5980E-02	
												Na-22	2.04133E-07	1.6095E-07	4.3500E-09	
												Ni-63	5.97851E-01	4.7138E-01	1.2740E-02	
												Pm-147	2.16944E-05	1.7105E-05	4.6230E-07	
												Pu-238 [1.8941E-08 g]	1.51105E-02	1.1914E-02	3.2200E-04	
												Pu-239 [3.5968E-04 g]	1.04647E+00	8.2510E-01	2.2300E-02	
												Pu-240 [9.6957E-05 g]	1.04647E+00	8.2510E-01	2.2300E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-003**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.8820E-09 g]	2.29098E-02	1.8063E-02	4.8820E-04	
												Ra-226	2.73256E-03	2.1545E-03	5.8230E-05	
												Sr-90	1.55329E+01	1.2247E+01	3.3100E-01	
												Th-232 [2.6173E-03 kg]	1.35103E-02	1.0652E-02	2.8790E-04	
												U-234 [1.8952E-07 kg]	5.51393E-02	4.3475E-02	1.1750E-03	
												U-235 [3.0541E-02 g]	3.15303E-03	2.4860E-03	6.7190E-05	
												U-238 [3.4559E-03 kg]	5.51393E-02	4.3475E-02	1.1750E-03	
												Zn-65	2.33556E-19	1.8415E-19	4.9770E-21	
												Subtotal		4.1039E+01	1.1092E+00	
												Total		4.1039E+01	1.1092E+00	
												SNM [3.0998E-02 g]				
												Source [6.0733E-03 kg]				
ERRU000247/R5-0022-01	19 Intermodal Container	19.1139	23069.7095	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.54058E-01	1.1133E-01	3.0090E-03	AU
		675.0000	50860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.74010E+00	2.7029E+00	7.3050E-02	
												Co-60	4.83371E-03	3.4932E-03	9.4410E-05	
												Cs-137	1.58461E+01	1.1452E+01	3.0950E-01	
												Eu-152	2.23433E-02	1.6147E-02	4.3640E-04	
												Eu-154	9.63567E-03	6.9634E-03	1.8820E-04	
												Eu-155	2.10787E-03	1.5233E-03	4.1170E-05	
												H-3	4.50399E+00	3.2549E+00	8.7970E-02	
												Na-22	1.38494E-07	1.0009E-07	2.7050E-09	
												Ni-63	4.05702E-01	2.9319E-01	7.9240E-03	
												Pm-147	1.47249E-05	1.0641E-05	2.8760E-07	
												Pu-238 [1.1782E-08 g]	1.02552E-02	7.4111E-03	2.0030E-04	
												Pu-239 [2.2371E-04 g]	7.10132E-01	5.1319E-01	1.3870E-02	
												Pu-240 [6.0304E-05 g]	7.10132E-01	5.1319E-01	1.3870E-02	
												Pu-241 [3.0360E-09 g]	1.55441E-02	1.1233E-02	3.0360E-04	
												Ra-226	2.73250E-03	1.9747E-03	5.3370E-05	
												Sr-90	1.05368E+01	7.6146E+00	2.0580E-01	
												Th-232 [2.3991E-03 kg]	1.35114E-02	9.7643E-03	2.6390E-04	
												U-234 [1.1782E-07 kg]	3.74010E-02	2.7029E-02	7.3050E-04	
												U-235 [1.8996E-02 g]	2.13961E-03	1.5462E-03	4.1790E-05	
												U-238 [2.1485E-03 kg]	3.74010E-02	2.7029E-02	7.3050E-04	
												Zn-65	1.58461E-19	1.1452E-19	3.0950E-21	
												Subtotal		2.6569E+01	7.1808E-01	
												Total		2.6569E+01	7.1808E-01	
												SNM [1.9280E-02 g]				
												Source [4.5477E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-003**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000285/R5-0022-01	19 Intermodal Container	19.1139	22670.5482	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.64826E-01	2.5826E-01	6.9800E-03	AU
		675.0000	49980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	8.85931E+00	6.2715E+00	1.6950E-01	
												Co-60	1.14465E-02	8.1030E-03	2.1900E-04	
												Cs-137	3.75331E+01	2.6570E+01	7.1810E-01	
												Eu-152	5.29468E-02	3.7481E-02	1.0130E-03	
												Eu-154	2.28199E-02	1.6154E-02	4.3660E-04	
												Eu-155	4.99205E-03	3.5339E-03	9.5510E-05	
												H-3	5.93234E+00	4.1995E+00	1.1350E-01	
												Na-22	3.28029E-07	2.3221E-07	6.2760E-09	
												Ni-63	9.60673E-01	6.8006E-01	1.8380E-02	
												Pm-147	3.48675E-05	2.4683E-05	6.6710E-07	
												Pu-238 [2.7329E-08 g]	2.42834E-02	1.7190E-02	4.6460E-04	
												Pu-239 [5.1887E-04 g]	1.68144E+00	1.1903E+00	3.2170E-02	
												Pu-240 [1.3987E-04 g]	1.68144E+00	1.1903E+00	3.2170E-02	
												Pu-241 [7.0450E-09 g]	3.68223E-02	2.6067E-02	7.0450E-04	
												Ra-226	2.73253E-03	1.9344E-03	5.2280E-05	
												Sr-90	2.49576E+01	1.7668E+01	4.7750E-01	
												Th-232 [2.3500E-03 kg]	1.35111E-02	9.5645E-03	2.5850E-04	
												U-234 [2.7339E-07 kg]	8.85931E-02	6.2715E-02	1.6950E-03	
												U-235 [4.4068E-02 g]	5.06731E-03	3.5872E-03	9.6950E-05	
												U-238 [4.9853E-03 kg]	8.85931E-02	6.2715E-02	1.6950E-03	
												Zn-65	3.75331E-19	2.6570E-19	7.1810E-21	
												Subtotal		5.8277E+01	1.5750E+00	
												Total		5.8277E+01	1.5750E+00	
												SNM [4.4727E-02 g]				
												Source [7.3356E-03 kg]				
ERRU000314/R5-0022-01	19 Intermodal Container	19.1139	26417.2214	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.16184E-01	2.6766E-01	7.2340E-03	AU
		675.0000	58240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	7.67513E+00	6.4972E+00	1.7560E-01	
												Co-60	9.92173E-03	8.3990E-03	2.2700E-04	
												Cs-137	3.25275E+01	2.7535E+01	7.4420E-01	
												Eu-152	4.58497E-02	3.8813E-02	1.0490E-03	
												Eu-154	1.97779E-02	1.6743E-02	4.5250E-04	
												Eu-155	4.32622E-03	3.6623E-03	9.8980E-05	
												H-3	5.14007E+00	4.3512E+00	1.1760E-01	
												Na-22	2.84321E-07	2.4069E-07	6.5050E-09	
												Ni-63	8.32638E-01	7.0485E-01	1.9050E-02	
												Pm-147	3.02197E-05	2.5582E-05	6.9140E-07	
												Pu-238 [2.8324E-08 g]	2.10454E-02	1.7816E-02	4.8150E-04	
												Pu-239 [5.3774E-04 g]	1.45723E+00	1.2336E+00	3.3340E-02	
												Pu-240 [1.4496E-04 g]	1.45723E+00	1.2336E+00	3.3340E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-003**

3. PAGE **5** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [7.3010E-09 g]	3.19112E-02	2.7014E-02	7.3010E-04	
												Ra-226	2.73263E-03	2.3132E-03	6.2520E-05	
												Sr-90	2.16311E+01	1.8311E+01	4.9490E-01	
												Th-232 [2.8100E-03 kg]	1.35102E-02	1.1437E-02	3.0910E-04	
												U-234 [2.8323E-07 kg]	7.67513E-02	6.4972E-02	1.7560E-03	
												U-235 [4.5682E-02 g]	4.39266E-03	3.7185E-03	1.0050E-04	
												U-238 [5.1647E-03 kg]	7.67513E-02	6.4972E-02	1.7560E-03	
												Zn-65	3.25275E-19	2.7535E-19	7.4420E-21	
												Subtotal		6.0394E+01	1.6323E+00	
												Total		6.0394E+01	1.6323E+00	
												SNM [4.6365E-02 g]				
												Source [7.9750E-03 kg]				
Shipment Totals		**114.6834**	**147381.2427**									SNM [2.4369E-01 g]		3.1957E+02	8.6369E+00	
		4050.0000	**324920.0000**									Source [4.2651E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9333-003
	PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 6

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: na

☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: na
SHIPMENT NUMBER: GIMX9704

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

MC 4.9.21

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-004**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 4/4/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 15:12:45 -05'00')
TITLE: Manifester
DATE: 2 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9480 PDV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.4865E+01**	**(9.4228E-01)**	**NA**	**49060 LBS; 675 FT3**	**AWIU000224**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9480 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.8929E+01**	**(7.8187E-01)**	**NA**	**54680 LBS; 675 FT3**	**BFLU000089**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

GIMX9704

Does NOT contain PCB's

FORM 540 (03-06)

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-004

Page 2 of 2

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PSV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.0731E+01	(1.1008E+00)	NA	52960 LBS; 675 FT3	BFLU000386
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PSV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.4424E+01	(1.2007E+00)	NA	50340 LBS; 675 FT3	ERRU000193
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PSV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.2259E+01	(1.1421E+00)	NA	56180 LBS; 675 FT3	ERRU000287
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 PSV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	7.9001E+01	(2.1351E+00)	NA	66280 LBS; 675 FT3	ERRU000302
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 128230.5715 / lb 282700.0000	NP	2.0170E-01 6 Containers	3.0156E-03 6 Containers	2.0472E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.7021E+02	2.2640E+01	2.8701E+01	NP	NP	(kg)	3.8567E-02
mCi	7.3029E+00	6.1188E-01	7.7570E-01	NP	NP	(lb)	8.5025E-02

2. MANIFEST NUMBER: WP-9333-004

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: na

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000224/R5-0022-01	19 Intermodal Container	19.1139	22253.2431	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.18914E-01	1.5159E-01	4.0970E-03	AU
		675.0000	49060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.31495E+00	3.6804E+00	9.9470E-02	
												Co-60	6.86610E-03	4.7545E-03	1.2850E-04	
												Cs-137	2.25219E+01	1.5596E+01	4.2150E-01	
												Eu-152	3.17551E-02	2.1989E-02	5.9430E-04	
												Eu-154	1.36948E-02	9.4831E-03	2.5630E-04	
												Eu-155	2.99544E-03	2.0742E-03	5.6060E-05	
												H-3	4.50384E+00	3.1187E+00	8.4290E-02	
												Na-22	1.96846E-07	1.3631E-07	3.6840E-09	
												Ni-63	5.76539E-01	3.9923E-01	1.0790E-02	
												Pm-147	2.09189E-05	1.4486E-05	3.9150E-07	
												Pu-238 [1.6041E-08 g]	1.45711E-02	1.0090E-02	2.7270E-04	
												Pu-239 [3.0452E-04 g]	1.00881E+00	6.9856E-01	1.8880E-02	
												Pu-240 [8.2087E-05 g]	1.00881E+00	6.9856E-01	1.8880E-02	
												Pu-241 [4.1350E-09 g]	2.20944E-02	1.5300E-02	4.1350E-04	
												Ra-226	2.73255E-03	1.8922E-03	5.1140E-05	
												Sr-90	1.49772E+01	1.0371E+01	2.8030E-01	
												Th-232 [2.2991E-03 kg]	1.35131E-02	9.3573E-03	2.5290E-04	
												U-234 [1.6044E-07 kg]	5.31495E-02	3.6804E-02	9.9470E-04	
												U-235 [2.5864E-02 g]	3.04032E-03	2.1053E-03	5.6900E-05	
												U-238 [2.9256E-03 kg]	5.31495E-02	3.6804E-02	9.9470E-04	
												Zn-65	2.25219E-19	1.5596E-19	4.2150E-21	
												Subtotal		3.4865E+01	9.4228E-01	
												Total		3.4865E+01	9.4228E-01	
												SNM [2.6250E-02 g]				
												Source [5.2248E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-004**

3. PAGE **2** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000089/R5-0022-01	19 Intermodal Container	19.1139	24802.4324	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.54061E-01	1.2121E-01	3.2760E-03	AU
												C-14	3.74007E+00	2.9426E+00	7.9530E-02	
												Co-60	4.83439E-03	3.8036E-03	1.0280E-04	
												Cs-137	1.58482E+01	1.2469E+01	3.3700E-01	
		675.0000	54680.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Eu-152	2.23473E-02	1.7582E-02	4.7520E-04	
												Eu-154	9.63587E-03	7.5813E-03	2.0490E-04	
												Eu-155	2.10776E-03	1.6583E-03	4.4820E-05	
												H-3	4.50426E+00	3.5439E+00	9.5780E-02	
												Na-22	1.38495E-07	1.0897E-07	2.9450E-09	
												Ni-63	4.05703E-01	3.1920E-01	8.6270E-03	
												Pm-147	1.47242E-05	1.1585E-05	3.1310E-07	
												Pu-238 [1.2824E-08 g]	1.02519E-02	8.0660E-03	2.1800E-04	
												Pu-239 [2.4355E-04 g]	7.10110E-01	5.5870E-01	1.5100E-02	
												Pu-240 [6.5652E-05 g]	7.10110E-01	5.5870E-01	1.5100E-02	
												Pu-241 [3.3060E-09 g]	1.55472E-02	1.2232E-02	3.3060E-04	
												Ra-226	2.73228E-03	2.1497E-03	5.8100E-05	
												Sr-90	1.05388E+01	8.2917E+00	2.2410E-01	
												Th-232 [2.6118E-03 kg]	1.35109E-02	1.0630E-02	2.8730E-04	
												U-234 [1.2827E-07 kg]	3.74007E-02	2.9426E-02	7.9530E-04	
												U-235 [2.0677E-02 g]	2.13927E-03	1.6831E-03	4.5490E-05	
												U-238 [2.3391E-03 kg]	3.74007E-02	2.9426E-02	7.9530E-04	
												Zn-65	1.58482E-19	1.2469E-19	3.3700E-21	
												Subtotal		2.8929E+01	7.8187E-01	
												Total		2.8929E+01	7.8187E-01	
												SNM [2.0987E-02 g]				
												Source [4.9511E-03 kg]				
BFLU000386/R5-0022-01	19 Intermodal Container	19.1139	24022.2535	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.35109E-01	1.7819E-01	4.8160E-03	AU
												C-14	5.70686E+00	4.3253E+00	1.1690E-01	
												Co-60	7.37644E-03	5.5907E-03	1.5110E-04	
												Cs-137	2.41895E+01	1.8334E+01	4.9550E-01	
		675.0000	52960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Eu-152	3.41045E-02	2.5848E-02	6.9860E-04	
												Eu-154	1.47090E-02	1.1148E-02	3.0130E-04	
												Eu-155	3.21713E-03	2.4383E-03	6.5900E-05	
												H-3	4.50398E+00	3.4136E+00	9.2260E-02	
												Na-22	2.11383E-07	1.6021E-07	4.3300E-09	
												Ni-63	6.19016E-01	4.6916E-01	1.2680E-02	
												Pm-147	2.24711E-05	1.7031E-05	4.6030E-07	
												Pu-238 [1.8859E-08 g]	1.56511E-02	1.1862E-02	3.2060E-04	
												Pu-239 [3.5807E-04 g]	1.08377E+00	8.2140E-01	2.2200E-02	
												Pu-240 [9.6522E-05 g]	1.08377E+00	8.2140E-01	2.2200E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-004**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.8610E-09 g]	2.37306E-02	1.7986E-02	4.8610E-04	
												Ra-226	2.73236E-03	2.0709E-03	5.5970E-05	
												Sr-90	1.60856E+01	1.2192E+01	3.2950E-01	
												Th-232 [2.5164E-03 kg]	1.35129E-02	1.0242E-02	2.7680E-04	
												U-234 [1.8855E-07 kg]	5.70686E-02	4.3253E-02	1.1690E-03	
												U-235 [3.0405E-02 g]	3.26546E-03	2.4749E-03	6.6890E-05	
												U-238 [3.4382E-03 kg]	5.70686E-02	4.3253E-02	1.1690E-03	
												Zn-65	2.41895E-19	1.8334E-19	4.9550E-21	
												Subtotal		4.0731E+01	1.1008E+00	
												Total		4.0731E+01	1.1008E+00	
												SNM [3.0859E-02 g]				
												Source [5.9548E-03 kg]				
ERRU000193/R5-0022-01	19 Intermodal Container	19.1139	22833.8414	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.75657E-01	1.9680E-01	5.3190E-03	AU
												C-14	6.69060E+00	4.7767E+00	1.2910E-01	
												Co-60	8.64959E-03	6.1753E-03	1.6690E-04	
		675.0000	50340.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.83586E+01	2.0246E+01	5.4720E-01	
												Eu-152	3.99881E-02	2.8549E-02	7.7160E-04	
												Eu-154	1.72422E-02	1.2310E-02	3.3270E-04	
												Eu-155	3.77182E-03	2.6929E-03	7.2780E-05	
												H-3	4.50411E+00	3.2157E+00	8.6910E-02	
												Na-22	2.47879E-07	1.7697E-07	4.7830E-09	
												Ni-63	7.26068E-01	5.1837E-01	1.4010E-02	
												Pm-147	2.63478E-05	1.8811E-05	5.0840E-07	
												Pu-238 [2.0824E-08 g]	1.83460E-02	1.3098E-02	3.5400E-04	
												Pu-239 [3.9532E-04 g]	1.27023E+00	9.0687E-01	2.4510E-02	
												Pu-240 [1.0657E-04 g]	1.27023E+00	9.0687E-01	2.4510E-02	
												Pu-241 [5.3680E-09 g]	2.78196E-02	1.9862E-02	5.3680E-04	
												Ra-226	2.73221E-03	1.9506E-03	5.2720E-05	
												Sr-90	1.88591E+01	1.3464E+01	3.6390E-01	
												Th-232 [2.3700E-03 kg]	1.35108E-02	9.6459E-03	2.6070E-04	
												U-234 [2.0823E-07 kg]	6.69060E-02	4.7767E-02	1.2910E-03	
												U-235 [3.3577E-02 g]	3.82831E-03	2.7332E-03	7.3870E-05	
												U-238 [3.7971E-03 kg]	6.69060E-02	4.7767E-02	1.2910E-03	
												Zn-65	2.83586E-19	2.0246E-19	5.4720E-21	
												Subtotal		4.4424E+01	1.2007E+00	
												Total		4.4424E+01	1.2007E+00	
												SNM [3.4079E-02 g]				
												Source [6.1673E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-004**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
ERRU000287/R5-0022-01	19 Intermodal Container	19.1139	25482.6210	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.27025E-01	1.8433E-01	4.9820E-03	AU
												C-14	5.51386E+00	4.4770E+00	1.2100E-01	
												Co-60	7.12245E-03	5.7831E-03	1.5630E-04	
												Cs-137	2.33542E+01	1.8963E+01	5.1250E-01	
												Eu-152	3.29282E-02	2.6736E-02	7.2260E-04	
		675.0000	56180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000								
												Eu-154	1.41993E-02	1.1529E-02	3.1160E-04	
												Eu-155	3.10599E-03	2.5219E-03	6.8160E-05	
												H-3	4.50405E+00	3.6571E+00	9.8840E-02	
												Na-22	2.04104E-07	1.6572E-07	4.4790E-09	
												Ni-63	5.97867E-01	4.8544E-01	1.3120E-02	
												Pm-147	2.16955E-05	1.7616E-05	4.7610E-07	
												Pu-238 [1.9506E-08 g]	1.51107E-02	1.2269E-02	3.3160E-04	
												Pu-239 [3.7032E-04 g]	1.04627E+00	8.4952E-01	2.2960E-02	
												Pu-240 [9.9826E-05 g]	1.04627E+00	8.4952E-01	2.2960E-02	
												Pu-241 [5.0280E-09 g]	2.29122E-02	1.8604E-02	5.0280E-04	
												Ra-226	2.73232E-03	2.2185E-03	5.9960E-05	
												Sr-90	1.55300E+01	1.2610E+01	3.4080E-01	
												Th-232 [2.6955E-03 kg]	1.35112E-02	1.0971E-02	2.9650E-04	
												U-234 [1.9516E-07 kg]	5.51386E-02	4.4770E-02	1.2100E-03	
												U-235 [3.1450E-02 g]	3.15293E-03	2.5600E-03	6.9190E-05	
												U-238 [3.5588E-03 kg]	5.51386E-02	4.4770E-02	1.2100E-03	
												Zn-65	2.33542E-19	1.8963E-19	5.1250E-21	
												Subtotal		4.2259E+01	1.1421E+00	
												Total		4.2259E+01	1.1421E+00	
												SNM [3.1920E-02 g]				
												Source [6.2545E-03 kg]				
ERRU000302/R5-0022-01	19 Intermodal Container	19.1139	30064.1043	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.56707E-01	3.5009E-01	9.4620E-03	AU
												C-14	8.65945E+00	8.4989E+00	2.2970E-01	
												Co-60	1.11928E-02	1.0985E-02	2.9690E-04	
												Cs-137	3.66999E+01	3.6020E+01	9.7350E-01	
												Eu-152	5.17606E-02	5.0801E-02	1.3730E-03	
		675.0000	66280.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000								
												Eu-154	2.23140E-02	2.1900E-02	5.9190E-04	
												Eu-155	4.88201E-03	4.7915E-03	1.2950E-04	
												H-3	5.79810E+00	5.6906E+00	1.5380E-01	
												Na-22	3.20743E-07	3.1480E-07	8.5080E-09	
												Ni-63	9.39458E-01	9.2204E-01	2.4920E-02	
												Pm-147	3.40949E-05	3.3463E-05	9.0440E-07	
												Pu-238 [3.7053E-08 g]	2.37466E-02	2.3306E-02	6.2990E-04	
												Pu-239 [7.0339E-04 g]	1.64405E+00	1.6136E+00	4.3610E-02	
												Pu-240 [1.8961E-04 g]	1.64405E+00	1.6136E+00	4.3610E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-004**

3. PAGE **5** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [9.5500E-09 g]	3.60025E-02	3.5335E-02	9.5500E-04	
												Ra-226	2.73242E-03	2.6818E-03	7.2480E-05	
												Sr-90	2.44063E+01	2.3954E+01	6.4740E-01	
												Th-232 [3.2582E-03 kg]	1.35113E-02	1.3261E-02	3.5840E-04	
												U-234 [3.7048E-07 kg]	8.65945E-02	8.4989E-02	2.2970E-03	
												U-235 [5.9727E-02 g]	4.95364E-03	4.8618E-03	1.3140E-04	
												U-238 [6.7559E-03 kg]	8.65945E-02	8.4989E-02	2.2970E-03	
												Zn-65	3.66999E-19	3.6020E-19	9.7350E-21	
												Subtotal		7.9001E+01	2.1351E+00	
												Total		7.9001E+01	2.1351E+00	
												SNM [6.0620E-02 g]				
												Source [1.0014E-02 kg]				
Shipment Totals		**114.6834**	**149458.6957**									SNM [2.0472E-01 g]		2.7021E+02	7.3029E+00	
		4050.0000	**329500.0000**									Source [3.8567E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists ADDITIONAL NOTES	Manifest Number WP-9333-004 PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: April 14, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9333-005, WP-9333-006**
Received On:	**April 09, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **April 13, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> **6**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **na**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **na**
SHIPMENT NUMBER: **GIMX9717**
☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-005**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 4921

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.02 09:56:14 -05'00')
TITLE: Manifester
DATE: 2 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - ~~WP-9333~~ 9450 PDV 4.8.21	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**5.2686E+01**	**(1.4240E+00)**	**NA**	**54180 LBS; 675 FT3**	**BFLU000187**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - ~~WP-9333~~ 9450 PDV 4.8.21	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**4.2018E+01**	**(1.1356E+00)**	**NA**	**51620 LBS; 675 FT3**	**BFLU000213**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20. GIMX9717

Does Not Contain PCB's

FORM 540 (03-06)

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-005

Page 2 of 2

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP ~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.4473E+01	(1.2019E+00)	NA	55600 LBS; 675 FT3	ERRU000151
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP ~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.8919E+01	(7.8159E-01)	NA	43220 LBS; 675 FT3	ERRU000155
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP ~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.4628E+01	(1.7467E+00)	NA	59140 LBS; 675 FT3	ERRU000194
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP ~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.4621E+01	(1.2060E+00)	NA	49320 LBS; 675 FT3	ERRU000202
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 120782.5842 / lb 266280.0000	NP	2.0865E-01 6 Containers	3.1196E-03 6 Containers	2.1177E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.7734E+02	2.1268E+01	2.9690E+01	NP	NP	(kg)	3.8440E-02
mCi	7.4958E+00	5.7481E-01	8.0243E-01	NP	NP	(lb)	8.4747E-02

2. MANIFEST NUMBER: WP-9333-005

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: na

DISPOSAL CONTAINER DESCRIPTION

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA
BFLU000187/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	24575.6362 / 54180.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np	AU

15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT

RADIONUCLIDES		pCi/gm	MBq	mCi
Am-241		2.99988E-01	2.3351E-01	6.3110E-03
C-14		7.28223E+00	5.6684E+00	1.5320E-01
Co-60		9.41176E-03	7.3260E-03	1.9800E-04
Cs-137		3.08592E+01	2.4020E+01	6.4920E-01
Eu-152		4.35128E-02	3.3870E-02	9.1540E-04
Eu-154		1.87617E-02	1.4604E-02	3.9470E-04
Eu-155		4.10457E-03	3.1950E-03	8.6350E-05
H-3		4.87700E+00	3.7962E+00	1.0260E-01
Na-22		2.69709E-07	2.0994E-07	5.6740E-09
Ni-63		7.90018E-01	6.1494E-01	1.6620E-02
Pm-147		2.86678E-05	2.2315E-05	6.0310E-07
Pu-238	[2.4712E-08 g]	1.99691E-02	1.5544E-02	4.2010E-04
Pu-239	[4.6919E-04 g]	1.38277E+00	1.0763E+00	2.9090E-02
Pu-240	[1.2648E-04 g]	1.38277E+00	1.0763E+00	2.9090E-02
Pu-241	[6.3690E-09 g]	3.02745E-02	2.3565E-02	6.3690E-04
Ra-226		2.73226E-03	2.1268E-03	5.7480E-05
Sr-90		2.05205E+01	1.5973E+01	4.3170E-01
Th-232	[2.5846E-03 kg]	1.35140E-02	1.0519E-02	2.8430E-04
U-234	[2.4710E-07 kg]	7.28223E-02	5.6684E-02	1.5320E-03
U-235	[3.9841E-02 g]	4.16637E-03	3.2431E-03	8.7650E-05
U-238	[4.5059E-03 kg]	7.28223E-02	5.6684E-02	1.5320E-03
Zn-65		3.08592E-19	2.4020E-19	6.4920E-21
Subtotal			5.2686E+01	1.4240E+00
Total			5.2686E+01	1.4240E+00
SNM	[4.0437E-02 g]			
Source	[7.0907E-03 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-005**

3. PAGE **2** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL, OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000213/R5-0022-01	19 Intermodal Container	19.1139	23414.4397	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.51304E-01	1.8482E-01	4.9950E-03	AU
		675.0000	51620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.10274E+00	4.4881E+00	1.2130E-01	
												Co-60	7.88879E-03	5.8016E-03	1.5680E-04	
												Cs-137	2.58549E+01	1.9014E+01	5.1390E-01	
												Eu-152	3.64555E-02	2.6810E-02	7.2460E-04	
												Eu-154	1.57222E-02	1.1563E-02	3.1250E-04	
												Eu-155	3.43877E-03	2.5290E-03	6.8350E-05	
												H-3	4.50385E+00	3.3122E+00	8.9520E-02	
												Na-22	2.25998E-07	1.6620E-07	4.4920E-09	
												Ni-63	6.62095E-01	4.8692E-01	1.3160E-02	
												Pm-147	2.40185E-05	1.7664E-05	4.7740E-07	
												Pu-238 [1.9559E-08 g]	1.67285E-02	1.2303E-02	3.3250E-04	
												Pu-239 [3.7129E-04 g]	1.15816E+00	8.5174E-01	2.3020E-02	
												Pu-240 [1.0009E-04 g]	1.15816E+00	8.5174E-01	2.3020E-02	
												Pu-241 [5.0420E-09 g]	2.53669E-02	1.8655E-02	5.0420E-04	
												Ra-226	2.73240E-03	2.0095E-03	5.4310E-05	
												Sr-90	1.71963E+01	1.2647E+01	3.4180E-01	
												Th-232 [2.4418E-03 kg]	1.35136E-02	9.9382E-03	2.6860E-04	
												U-234 [1.9565E-07 kg]	6.10274E-02	4.4881E-02	1.2130E-03	
												U-235 [3.1536E-02 g]	3.49059E-03	2.5671E-03	6.9380E-05	
												U-238 [3.5677E-03 kg]	6.10274E-02	4.4881E-02	1.2130E-03	
												Zn-65	2.58549E-19	1.9014E-19	5.1390E-21	
												Subtotal		4.2018E+01	1.1356E+00	
												Total		4.2018E+01	1.1356E+00	
												SNM [3.2008E-02 g]				
												Source [6.0097E-03 kg]				
ERRU000151/R5-0022-01	19 Intermodal Container	19.1139	25219.7374	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.43202E-01	1.9510E-01	5.2730E-03	AU
		675.0000	55600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.90362E+00	4.7360E+00	1.2800E-01	
												Co-60	7.63320E-03	6.1235E-03	1.6550E-04	
												Cs-137	2.50212E+01	2.0073E+01	5.4250E-01	
												Eu-152	3.52834E-02	2.8305E-02	7.6500E-04	
												Eu-154	1.52157E-02	1.2206E-02	3.2990E-04	
												Eu-155	3.32817E-03	2.6699E-03	7.2160E-05	
												H-3	4.50428E+00	3.6134E+00	9.7660E-02	
												Na-22	2.18711E-07	1.7545E-07	4.7420E-09	
												Ni-63	6.40635E-01	5.1393E-01	1.3890E-02	
												Pm-147	2.32455E-05	1.8648E-05	5.0400E-07	
												Pu-238 [2.0647E-08 g]	1.61888E-02	1.2987E-02	3.5100E-04	
												Pu-239 [3.9210E-04 g]	1.12123E+00	8.9947E-01	2.4310E-02	
												Pu-240 [1.0570E-04 g]	1.12123E+00	8.9947E-01	2.4310E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-005

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.3220E-09 g]	2.45462E-02	1.9691E-02	5.3220E-04	
												Ra-226	2.73227E-03	2.1919E-03	5.9240E-05	
												Sr-90	1.66408E+01	1.3350E+01	3.6080E-01	
												Th-232 [2.6636E-03 kg]	1.35138E-02	1.0841E-02	2.9300E-04	
												U-234 [2.0645E-07 kg]	5.90362E-02	4.7360E-02	1.2800E-03	
												U-235 [3.3291E-02 g]	3.37798E-03	2.7099E-03	7.3240E-05	
												U-238 [3.7647E-03 kg]	5.90362E-02	4.7360E-02	1.2800E-03	
												Zn-65	2.50212E-19	2.0073E-19	5.4250E-21	
												Subtotal		4.4473E+01	1.2019E+00	
												Total		4.4473E+01	1.2019E+00	
												SNM [3.3789E-02 g]				
												Source [6.4286E-03 kg]				
ERRU000155/R5-0022-01	19 Intermodal Container	19.1139	19604.2635	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.10816E-01	1.2532E-01	3.3870E-03	AU
		675.0000	43220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.11821E+00	3.0425E+00	8.2230E-02	
												Co-60	6.61639E-03	3.9331E-03	1.0630E-04	
												Cs-137	2.16853E+01	1.2891E+01	3.4840E-01	
												Eu-152	3.05798E-02	1.8178E-02	4.9130E-04	
												Eu-154	1.31830E-02	7.8366E-03	2.1180E-04	
												Eu-155	2.88432E-03	1.7146E-03	4.6340E-05	
												H-3	4.50388E+00	2.6773E+00	7.2360E-02	
												Na-22	1.89529E-07	1.1267E-07	3.0450E-09	
												Ni-63	5.55142E-01	3.3000E-01	8.9190E-03	
												Pm-147	2.01479E-05	1.1977E-05	3.2370E-07	
												Pu-238 [1.3259E-08 g]	1.40295E-02	8.3398E-03	2.2540E-04	
												Pu-239 [2.5177E-04 g]	9.71608E-01	5.7757E-01	1.5610E-02	
												Pu-240 [6.7870E-05 g]	9.71608E-01	5.7757E-01	1.5610E-02	
												Pu-241 [3.4180E-09 g]	2.12745E-02	1.2647E-02	3.4180E-04	
												Ra-226	2.73245E-03	1.6243E-03	4.3900E-05	
												Sr-90	1.44216E+01	8.5729E+00	2.3170E-01	
												Th-232 [1.9736E-03 kg]	1.35129E-02	8.0327E-03	2.1710E-04	
												U-234 [1.3263E-07 kg]	5.11821E-02	3.0425E-02	8.2230E-04	
												U-235 [2.1382E-02 g]	2.92789E-03	1.7405E-03	4.7040E-05	
												U-238 [2.4185E-03 kg]	5.11821E-02	3.0425E-02	8.2230E-04	
												Zn-65	2.16853E-19	1.2891E-19	3.4840E-21	
												Subtotal		2.8919E+01	7.8159E-01	
												Total		2.8919E+01	7.8159E-01	
												SNM [2.1701E-02 g]				
												Source [4.3923E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-005**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000194/R5-0022-01	19 Intermodal Container	19.1139	26825.4545	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	69 - Wastelock 770 100	Oxides/None	np	Am-241	3.32413E-01	2.8642E-01	7.7410E-03	AU
												C-14	8.06877E+00	6.9523E+00	1.8790E-01	
		675.0000	59140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Co-60	1.04306E-02	8.9873E-03	2.4290E-04	
												Cs-137	3.41989E+01	2.9467E+01	7.9640E-01	
												Eu-152	4.82237E-02	4.1551E-02	1.1230E-03	
												Eu-154	2.07924E-02	1.7915E-02	4.8420E-04	
												Eu-155	4.54754E-03	3.9183E-03	1.0590E-04	
												H-3	5.40208E+00	4.6546E+00	1.2580E-01	
												Na-22	2.98875E-07	2.5752E-07	6.9600E-09	
												Ni-63	8.75584E-01	7.5443E-01	2.0390E-02	
												Pm-147	3.17684E-05	2.7373E-05	7.3980E-07	
												Pu-238 [3.0312E-08 g]	2.21279E-02	1.9066E-02	5.1530E-04	
												Pu-239 [5.7548E-04 g]	1.53216E+00	1.3202E+00	3.5680E-02	
												Pu-240 [1.5513E-04 g]	1.53216E+00	1.3202E+00	3.5680E-02	
												Pu-241 [7.8120E-09 g]	3.35462E-02	2.8904E-02	7.8120E-04	
												Ra-226	2.73239E-03	2.3543E-03	6.3630E-05	
												Sr-90	2.27420E+01	1.9595E+01	5.2960E-01	
												Th-232 [2.8609E-03 kg]	1.35138E-02	1.1644E-02	3.1470E-04	
												U-234 [3.0307E-07 kg]	8.06877E-02	6.9523E-02	1.8790E-03	
												U-235 [4.8864E-02 g]	4.61625E-03	3.9775E-03	1.0750E-04	
												U-238 [5.5265E-03 kg]	8.06877E-02	6.9523E-02	1.8790E-03	
												Zn-65	3.41989E-19	2.9467E-19	7.9640E-21	
												Subtotal		6.4628E+01	1.7467E+00	
												Total		6.4628E+01	1.7467E+00	
												SNM [4.9594E-02 g]				
												Source [8.3877E-03 kg]				
ERRU000202/R5-0022-01	19 Intermodal Container	19.1139	22371.1772	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	69 - Wastelock 770 100	Oxides/None	np	Am-241	2.83756E-01	1.9773E-01	5.3440E-03	AU
												C-14	6.89214E+00	4.8026E+00	1.2980E-01	
		675.0000	49320.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Co-60	8.90456E-03	6.2049E-03	1.6770E-04	
												Cs-137	2.91933E+01	2.0343E+01	5.4980E-01	
												Eu-152	4.11617E-02	2.8682E-02	7.7520E-04	
												Eu-154	1.77507E-02	1.2369E-02	3.3430E-04	
												Eu-155	3.88253E-03	2.7054E-03	7.3120E-05	
												H-3	4.61263E+00	3.2142E+00	8.6870E-02	
												Na-22	2.55136E-07	1.7779E-07	4.8050E-09	
												Ni-63	7.47091E-01	5.2059E-01	1.4070E-02	
												Pm-147	2.71225E-05	1.8900E-05	5.1080E-07	
												Pu-238 [2.0924E-08 g]	1.88870E-02	1.3161E-02	3.5570E-04	
												Pu-239 [3.9726E-04 g]	1.30781E+00	9.1131E-01	2.4630E-02	
												Pu-240 [1.0709E-04 g]	1.30781E+00	9.1131E-01	2.4630E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-005

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	PHYSICAL DESCRIPTION 12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	PHYSICAL DESCRIPTION 13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	14. CHEMICAL DESCRIPTION WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.3930E-09 g]	2.86358E-02	1.9954E-02	5.3930E-04	
												Ra-226	2.73243E-03	1.9040E-03	5.1460E-05	
												Sr-90	1.94127E+01	1.3527E+01	3.6560E-01	
												Th-232 [2.3136E-03 kg]	1.35135E-02	9.4165E-03	2.5450E-04	
												U-234 [2.0936E-07 kg]	6.89214E-02	4.8026E-02	1.2980E-03	
												U-235 [3.3736E-02 g]	3.94094E-03	2.7461E-03	7.4220E-05	
												U-238 [3.8177E-03 kg]	6.89214E-02	4.8026E-02	1.2980E-03	
												Zn-65	2.91933E-19	2.0343E-19	5.4980E-21	
												Subtotal		4.4621E+01	1.2060E+00	
												Total		4.4621E+01	1.2060E+00	
												SNM [3.4241E-02 g]				
												Source [6.1315E-03 kg]				
Shipment Totals		114.6834	142010.7085									SNM [2.1177E-01 g]		2.7734E+02	7.4958E+00	
		4050.0000	313080.0000									Source [3.8440E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9333-005
	PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: April 14, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9333-005, WP-9333-006**
Received On:	**April 09, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **April 13, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **7**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **na**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **na**
SHIPMENT NUMBER: **GIMX516165**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 6 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-006**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 4.9.21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 — Digitally signed by ORTEGA.MICHAEL.12583448 27 Date: 2021.03.09 17:02:55 -05'00'
TITLE: Manifester
DATE: 9 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9480 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5070E+01**	**(1.4884E+00)**	**NA**	**55000 LBS; 675 FT3**	**BFLU000291**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9480 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.4437E+01**	**(9.3074E-01)**	**NA**	**49980 LBS; 675 FT3**	**BFLU000306**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

GIMX516165

Does NOT contain PCB's.

2412-0025

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.1789E+01**	**(5.8890E-01)**	**NA**	**46700 LBS; 675 FT3**	**ERRU000207**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.3168E+01**	**(8.9643E-01)**	**NA**	**39560 LBS; 675 FT3**	**ERRU000263**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6197E+01**	**(1.5188E+00)**	**NA**	**51380 LBS; 675 FT3**	**ERRU000270**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.5665E+01**	**(4.2337E-01)**	**NA**	**30100 LBS; 675 FT3**	**ERRU000272**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5000E+01**	**(1.4865E+00)**	**NA**	**58980 LBS; 675 FT3**	**ERRU000276**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 BV 4.8.24 9450	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**5.5000E+01**	**(1.4865E+00)**	**NA**	**58980 LBS; 675 FT3**	**ERRU000276**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
7	m3 133.7973 ft3 4725.0000	kg 125690.454 lb 277100.000	NP	2.0300E-01 7 Containers	3.0347E-03 7 Containers	2.0603E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.7133E+02	2.2192E+01	2.8882E+01	NP	NP	(kg)	3.8400E-02
mCi	7.3331E+00	5.9979E-01	7.8059E-01	NP	NP	(lb)	8.4657E-02

2. MANIFEST NUMBER **WP-9333-006**

3. PAGE **1** OF **6** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **na**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000291/R5-0022-01	19 Intermodal Container	19.1139	24947.5820	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.08088E-01	2.4405E-01	6.5960E-03	AU
		675.0000	55000.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	7.47801E+00	5.9237E+00	1.6010E-01	
												Co-60	9.66863E-03	7.6590E-03	2.0700E-04	
												Cs-137	3.16963E+01	2.5108E+01	6.7860E-01	
												Eu-152	4.46905E-02	3.5402E-02	9.5680E-04	
												Eu-154	1.92719E-02	1.5266E-02	4.1260E-04	
												Eu-155	4.21543E-03	3.3393E-03	9.0250E-05	
												H-3	5.00714E+00	3.9664E+00	1.0720E-01	
												Na-22	2.77027E-07	2.1945E-07	5.9310E-09	
												Ni-63	8.11324E-01	6.4269E-01	1.7370E-02	
												Pm-147	2.94449E-05	2.3325E-05	6.3040E-07	
												Pu-238 [2.5824E-08 g]	2.05050E-02	1.6243E-02	4.3900E-04	
												Pu-239 [4.9032E-04 g]	1.41993E+00	1.1248E+00	3.0400E-02	
												Pu-240 [1.3217E-04 g]	1.41993E+00	1.1248E+00	3.0400E-02	
												Pu-241 [6.6570E-09 g]	3.10937E-02	2.4631E-02	6.6570E-04	
												Ra-226	2.73244E-03	2.1645E-03	5.8500E-05	
												Sr-90	2.10795E+01	1.6698E+01	4.5130E-01	
												Th-232 [2.6300E-03 kg]	1.35127E-02	1.0704E-02	2.8930E-04	
												U-234 [2.5823E-07 kg]	7.47801E-02	5.9237E-02	1.6010E-03	
												U-235 [4.1641E-02 g]	4.27895E-03	3.3896E-03	9.1610E-05	
												U-238 [4.7088E-03 kg]	7.47801E-02	5.9237E-02	1.6010E-03	
												Zn-65	3.16963E-19	2.5108E-19	6.7860E-21	
												Subtotal		5.5070E+01	1.4884E+00	
												Total		5.5070E+01	1.4884E+00	
												SNM [4.2263E-02 g]				
												Source [7.3391E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-006**

3. PAGE **2** OF **6** PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
BFLU000306/R5-0022-01	19 Intermodal Container	19.1139	22670.5482	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.10794E-01	1.4922E-01	4.0330E-03	AU
		675.0000	49980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.11801E+00	3.6230E+00	9.7920E-02	
												Co-60	6.61181E-03	4.6805E-03	1.2650E-04	
												Cs-137	2.16857E+01	1.5351E+01	4.1490E-01	
												Eu-152	3.05764E-02	2.1645E-02	5.8500E-04	
												Eu-154	1.31870E-02	9.3351E-03	2.5230E-04	
												Eu-155	2.88411E-03	2.0417E-03	5.5180E-05	
												H-3	4.50387E+00	3.1883E+00	8.6170E-02	
												Na-22	1.89521E-07	1.3416E-07	3.6260E-09	
												Ni-63	5.55079E-01	3.9294E-01	1.0620E-02	
												Pm-147	2.01490E-05	1.4264E-05	3.8550E-07	
												Pu-238 [1.5788E-08 g]	1.40285E-02	9.9308E-03	2.6840E-04	
												Pu-239 [2.9984E-04 g]	9.71649E-01	6.8783E-01	1.8590E-02	
												Pu-240 [8.0826E-05 g]	9.71649E-01	6.8783E-01	1.8590E-02	
												Pu-241 [4.0700E-09 g]	2.12728E-02	1.5059E-02	4.0700E-04	
												Ra-226	2.73253E-03	1.9344E-03	5.2280E-05	
												Sr-90	1.44205E+01	1.0208E+01	2.7590E-01	
												Th-232 [2.3500E-03 kg]	1.35111E-02	9.5645E-03	2.5850E-04	
												U-234 [1.5794E-07 kg]	5.11801E-02	3.6230E-02	9.7920E-04	
												U-235 [2.5459E-02 g]	2.92749E-03	2.0724E-03	5.6010E-05	
												U-238 [2.8800E-03 kg]	5.11801E-02	3.6230E-02	9.7920E-04	
												Zn-65	2.16857E-19	1.5351E-19	4.1490E-21	
												Subtotal		3.4437E+01	9.3074E-01	
												Total		3.4437E+01	9.3074E-01	
												SNM [2.5840E-02 g]				
												Source [5.2302E-03 kg]				
ERRU000207/R5-0022-01	19 Intermodal Container	19.1139	21182.7651	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.37832E-01	8.9984E-02	2.4320E-03	AU
		675.0000	46700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.34662E+00	2.1849E+00	5.9050E-02	
												Co-60	4.32482E-03	2.8235E-03	7.6310E-05	
												Cs-137	1.41799E+01	9.2574E+00	2.5020E-01	
												Eu-152	1.99947E-02	1.3054E-02	3.5280E-04	
												Eu-154	8.62018E-03	5.6277E-03	1.5210E-04	
												Eu-155	1.88612E-03	1.2314E-03	3.3280E-05	
												H-3	4.50391E+00	2.9404E+00	7.9470E-02	
												Na-22	1.23947E-07	8.0919E-08	2.1870E-09	
												Ni-63	3.63000E-01	2.3699E-01	6.4050E-03	
												Pm-147	1.31711E-05	8.5988E-06	2.3240E-07	
												Pu-238 [9.5235E-09 g]	9.17559E-03	5.9903E-03	1.6190E-04	
												Pu-239 [1.8081E-04 g]	6.35320E-01	4.1477E-01	1.1210E-02	
												Pu-240 [4.8739E-05 g]	6.35320E-01	4.1477E-01	1.1210E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-006**

3. PAGE **3** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.4540E-09 g]	1.39079E-02	9.0798E-03	2.4540E-04	
												Ra-226	2.73227E-03	1.7838E-03	4.8210E-05	
												Sr-90	9.43062E+00	6.1568E+00	1.6640E-01	
												Th-232 [2.1673E-03 kg]	1.35112E-02	8.8208E-03	2.3840E-04	
												U-234 [9.5242E-08 kg]	3.34662E-02	2.1849E-02	5.9050E-04	
												U-235 [1.5355E-02 g]	1.91446E-03	1.2499E-03	3.3780E-05	
												U-238 [1.7368E-03 kg]	3.34662E-02	2.1849E-02	5.9050E-04	
												Zn-65	1.41799E-19	9.2574E-20	2.5020E-21	
												Subtotal		2.1789E+01	5.8890E-01	
												Total		2.1789E+01	5.8890E-01	
												SNM [1.5584E-02 g]				
												Source [3.9041E-03 kg]				
ERRU000263/R5-0022-01	19 Intermodal Container	19.1139	17944.1153	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.75649E-01	1.4693E-01	3.9710E-03	AU
												C-14	6.69304E+00	3.5675E+00	9.6420E-02	
												Co-60	8.64916E-03	4.6102E-03	1.2460E-04	
		675.0000	39560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.83562E+01	1.5115E+01	4.0850E-01	
												Eu-152	3.99833E-02	2.1312E-02	5.7600E-04	
												Eu-154	1.72428E-02	9.1908E-03	2.4840E-04	
												Eu-155	3.77203E-03	2.0106E-03	5.4340E-05	
												H-3	4.50437E+00	2.4009E+00	6.4890E-02	
												Na-22	2.47883E-07	1.3213E-07	3.5710E-09	
												Ni-63	7.26085E-01	3.8702E-01	1.0460E-02	
												Pm-147	2.63432E-05	1.4042E-05	3.7950E-07	
												Pu-238 [1.5547E-08 g]	1.83465E-02	9.7791E-03	2.6430E-04	
												Pu-239 [2.9516E-04 g]	1.27030E+00	6.7710E-01	1.8300E-02	
												Pu-240 [7.9565E-05 g]	1.27030E+00	6.7710E-01	1.8300E-02	
												Pu-241 [4.0080E-09 g]	2.78217E-02	1.4830E-02	4.0080E-04	
												Ra-226	2.73219E-03	1.4563E-03	3.9360E-05	
												Sr-90	1.88602E+01	1.0053E+01	2.7170E-01	
												Th-232 [1.7700E-03 kg]	1.35152E-02	7.2039E-03	1.9470E-04	
												U-234 [1.5552E-07 kg]	6.69304E-02	3.5675E-02	9.6420E-04	
												U-235 [2.5068E-02 g]	3.82826E-03	2.0406E-03	5.5150E-05	
												U-238 [2.8359E-03 kg]	6.69304E-02	3.5675E-02	9.6420E-04	
												Zn-65	2.83562E-19	1.5115E-19	4.0850E-21	
												Subtotal		3.3168E+01	8.9643E-01	
												Total		3.3168E+01	8.9643E-01	
												SNM [2.5443E-02 g]				
												Source [4.6060E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-006

3. PAGE 4 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000270/R5-0022-01	19 Intermodal Container	19.1139	23305.5775	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.40509E-01	2.4905E-01	6.7310E-03	AU
		675.0000	51380.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	8.26611E+00	6.0458E+00	1.6340E-01	
												Co-60	1.06842E-02	7.8144E-03	2.1120E-04	
												Cs-137	3.50323E+01	2.5623E+01	6.9250E-01	
												Eu-152	4.93943E-02	3.6127E-02	9.7640E-04	
												Eu-154	2.12976E-02	1.5577E-02	4.2100E-04	
												Eu-155	4.65917E-03	3.4077E-03	9.2100E-05	
												H-3	5.53435E+00	4.0478E+00	1.0940E-01	
												Na-22	3.06160E-07	2.2392E-07	6.0520E-09	
												Ni-63	8.96929E-01	6.5601E-01	1.7730E-02	
												Pm-147	3.25434E-05	2.3802E-05	6.4330E-07	
												Pu-238 [2.6353E-08 g]	2.26635E-02	1.6576E-02	4.4800E-04	
												Pu-239 [5.0032E-04 g]	1.56925E+00	1.1477E+00	3.1020E-02	
												Pu-240 [1.3487E-04 g]	1.56925E+00	1.1477E+00	3.1020E-02	
												Pu-241 [6.7930E-09 g]	3.43646E-02	2.5134E-02	6.7930E-04	
												Ra-226	2.73227E-03	1.9984E-03	5.4010E-05	
												Sr-90	2.32959E+01	1.7039E+01	4.6050E-01	
												Th-232 [2.4282E-03 kg]	1.35121E-02	9.8827E-03	2.6710E-04	
												U-234 [2.6355E-07 kg]	8.26611E-02	6.0458E-02	1.6340E-03	
												U-235 [4.2496E-02 g]	4.72949E-03	3.4591E-03	9.3490E-05	
												U-238 [4.8059E-03 kg]	8.26611E-02	6.0458E-02	1.6340E-03	
												Zn-65	3.50323E-19	2.5623E-19	6.9250E-21	
												Subtotal		5.6197E+01	1.5188E+00	
												Total		5.6197E+01	1.5188E+00	
												SNM [4.3131E-02 g]				
												Source [7.2343E-03 kg]				
ERRU000272/R5-0022-01	19 Intermodal Container	19.1139	13653.1312	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.78348E-01	6.6748E-02	1.8040E-03	AU
		675.0000	30100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.33018E+00	1.6206E+00	4.3800E-02	
												Co-60	5.59661E-03	2.0946E-03	5.6610E-05	
												Cs-137	1.83489E+01	6.8672E+00	1.8560E-01	
												Eu-152	2.58723E-02	9.6829E-03	2.6170E-04	
												Eu-154	1.11616E-02	4.1773E-03	1.1290E-04	
												Eu-155	2.44092E-03	9.1353E-04	2.4690E-05	
												H-3	4.50418E+00	1.6857E+00	4.5560E-02	
												Na-22	1.60355E-07	6.0014E-08	1.6220E-09	
												Ni-63	4.69795E-01	1.7582E-01	4.7520E-03	
												Pm-147	1.70439E-05	6.3788E-06	1.7240E-07	
												Pu-238 [7.0647E-09 g]	1.18734E-02	4.4437E-03	1.2010E-04	
												Pu-239 [1.3411E-04 g]	8.22042E-01	3.0766E-01	8.3150E-03	
												Pu-240 [3.6152E-05 g]	8.22042E-01	3.0766E-01	8.3150E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-006**

3. PAGE **5** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8210E-09 g]	1.80029E-02	6.7377E-03	1.8210E-04	
												Ra-226	2.73256E-03	1.0227E-03	2.7640E-05	
												Sr-90	1.21996E+01	4.5658E+00	1.2340E-01	
												Th-232 [1.2427E-03 kg]	1.35145E-02	5.0579E-03	1.3670E-04	
												U-234 [7.0645E-08 kg]	4.33018E-02	1.6206E-02	4.3800E-04	
												U-235 [1.1391E-02 g]	2.47749E-03	9.2722E-04	2.5060E-05	
												U-238 [1.2882E-03 kg]	4.33018E-02	1.6206E-02	4.3800E-04	
												Zn-65	1.83489E-19	6.8672E-20	1.8560E-21	
												Subtotal		1.5665E+01	4.2337E-01	
												Total		1.5665E+01	4.2337E-01	
												SNM [1.1561E-02 g]				
												Source [2.5310E-03 kg]				
ERRU000276/R5-0022-01	19 Intermodal Container	19.1139	26752.8798	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.83742E-01	2.4372E-01	6.5870E-03	AU
												C-14	6.88787E+00	5.9163E+00	1.5990E-01	
												Co-60	8.90383E-03	7.6479E-03	2.0670E-04	
		675.0000	58980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.91927E+01	2.5075E+01	6.7770E-01	
												Eu-152	4.11635E-02	3.5357E-02	9.5560E-04	
												Eu-154	1.77473E-02	1.5244E-02	4.1200E-04	
												Eu-155	3.88288E-03	3.3352E-03	9.0140E-05	
												H-3	4.61345E+00	3.9627E+00	1.0710E-01	
												Na-22	2.55140E-07	2.1915E-07	5.9230E-09	
												Ni-63	7.47370E-01	6.4195E-01	1.7350E-02	
												Pm-147	2.71207E-05	2.3295E-05	6.2960E-07	
												Pu-238 [2.5794E-08 g]	1.88889E-02	1.6225E-02	4.3850E-04	
												Pu-239 [4.8968E-04 g]	1.30779E+00	1.1233E+00	3.0360E-02	
												Pu-240 [1.3200E-04 g]	1.30779E+00	1.1233E+00	3.0360E-02	
												Pu-241 [6.6480E-09 g]	2.86370E-02	2.4598E-02	6.6480E-04	
												Ra-226	2.73232E-03	2.3469E-03	6.3430E-05	
												Sr-90	1.94144E+01	1.6676E+01	4.5070E-01	
												Th-232 [2.8518E-03 kg]	1.35130E-02	1.1607E-02	3.1370E-04	
												U-234 [2.5790E-07 kg]	6.88787E-02	5.9163E-02	1.5990E-03	
												U-235 [4.1586E-02 g]	3.94103E-03	3.3851E-03	9.1490E-05	
												U-238 [4.7029E-03 kg]	6.88787E-02	5.9163E-02	1.5990E-03	
												Zn-65	2.91927E-19	2.5075E-19	6.7770E-21	
												Subtotal		5.5000E+01	1.4865E+00	
												Total		5.5000E+01	1.4865E+00	
												SNM [4.2208E-02 g]				
												Source [7.5550E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-006**

3. PAGE **6** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**133.7973** **4725.0000**	**150456.5991** **331700.0000**									**SNM [2.0603E-01 g]** **Source [3.8400E-02 kg]**		**2.7133E+02**	**7.3331E+00**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9333-006
PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **7**

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **na**
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **na**
SHIPMENT NUMBER: **GIMX516224**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 6 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — 1 ~~None~~ PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-007**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

mc 33021

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE: 33021

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.155123 2367 — Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.03.02 11:01:24 -05'00'
TITLE: Manifester
DATE: 02 MAR 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.9165E+01**	**(1.5990E+00)**	**NA**	**54800 LBS; 675 FT3**	**AWIU000196**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.3061E+01**	**(6.2326E-01)**	**NA**	**51180 LBS; 675 FT3**	**AWIU000261**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

Does Not Contain PCB's.

GIMX516224

24112-0026

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.6338E+01**	**(7.1183E-01)**	**NA**	**48600 LBS; 675 FT3**	**ERRU000159**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.5037E+01**	**(6.7669E-01)**	**NA**	**43440 LBS; 675 FT3**	**ERRU000227**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.9692E+01**	**(8.0248E-01)**	**NA**	**45480 LBS; 675 FT3**	**ERRU000256**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.6939E+01**	**(7.2808E-01)**	**NA**	**38640 LBS; 675 FT3**	**ERRU000269**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6773E+01**	**(9.9386E-01)**	**NA**	**58100 LBS; 675 FT3**	**ERRU000291**
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**3.6773E+01**	**(9.9386E-01)**	**NA**	**58100 LBS; 675 FT3**	**ERRU000291**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
7	m3 133.7973 / ft3 4725.0000	kg 129564.1338 / lb 285640.0000	NP	1.6677E-01 7 Containers	2.4934E-03 7 Containers	1.6927E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2700E+02	2.2303E+01	2.3734E+01	NP	NP	(kg)	3.4783E-02
mCi	6.1352E+00	6.0278E-01	6.4145E-01	NP	NP	(lb)	7.6683E-02

2. MANIFEST NUMBER: WP-9333-007

3. PAGE 1 OF 6 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: na

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000196/R5-0022-01	19 Intermodal Container	19.1139	24856.8635	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.32384E-01	2.6218E-01	7.0860E-03	AU
		675.0000	54800.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	8.07271E+00	6.3677E+00	1.7210E-01	
												Co-60	1.04321E-02	8.2288E-03	2.2240E-04	
												Cs-137	3.41953E+01	2.6973E+01	7.2900E-01	
												Eu-152	4.82205E-02	3.8036E-02	1.0280E-03	
												Eu-154	2.07939E-02	1.6402E-02	4.4330E-04	
												Eu-155	4.54811E-03	3.5875E-03	9.6960E-05	
												H-3	5.40370E+00	4.2624E+00	1.1520E-01	
												Na-22	2.98892E-07	2.3576E-07	6.3720E-09	
												Ni-63	8.75287E-01	6.9042E-01	1.8660E-02	
												Pm-147	3.17702E-05	2.5060E-05	6.7730E-07	
												Pu-238 [2.7747E-08 g]	2.21261E-02	1.7453E-02	4.7170E-04	
												Pu-239 [5.2677E-04 g]	1.53199E+00	1.2084E+00	3.2660E-02	
												Pu-240 [1.4200E-04 g]	1.53199E+00	1.2084E+00	3.2660E-02	
												Pu-241 [7.1520E-09 g]	3.35480E-02	2.6462E-02	7.1520E-04	
												Ra-226	2.73234E-03	2.1553E-03	5.8250E-05	
												Sr-90	2.27406E+01	1.7938E+01	4.8480E-01	
												Th-232 [2.6191E-03 kg]	1.35139E-02	1.0660E-02	2.8810E-04	
												U-234 [2.7758E-07 kg]	8.07271E-02	6.3677E-02	1.7210E-03	
												U-235 [4.4736E-02 g]	4.61660E-03	3.6415E-03	9.8420E-05	
												U-238 [5.0618E-03 kg]	8.07271E-02	6.3677E-02	1.7210E-03	
												Zn-65	3.41953E-19	2.6973E-19	7.2900E-21	
												Subtotal		5.9165E+01	1.5990E+00	
												Total SNM [4.5405E-02 g] Source [7.6811E-03 kg]		5.9165E+01	1.5990E+00	

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-007**

3. PAGE **2** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000261/R5-0022-01	19 Intermodal Container	19.1139	23214.8590	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.29696E-01	9.4424E-02	2.5520E-03	AU
												C-14	3.14940E+00	2.2929E+00	6.1970E-02	
												Co-60	4.07029E-03	2.9633E-03	8.0090E-05	
		675.0000	51180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.33457E+01	9.7162E+00	2.6260E-01	
												Eu-152	1.88192E-02	1.3701E-02	3.7030E-04	
												Eu-154	8.11618E-03	5.9089E-03	1.5970E-04	
												Eu-155	1.77468E-03	1.2920E-03	3.4920E-05	
												H-3	4.50430E+00	3.2793E+00	8.8630E-02	
												Na-22	1.16635E-07	8.4915E-08	2.2950E-09	
												Ni-63	3.41622E-01	2.4871E-01	6.7220E-03	
												Pm-147	1.23953E-05	9.0243E-06	2.4390E-07	
												Pu-238 [9.9941E-09 g]	8.63456E-03	6.2863E-03	1.6990E-04	
												Pu-239 [1.8968E-04 g]	5.97660E-01	4.3512E-01	1.1760E-02	
												Pu-240 [5.1130E-05 g]	5.97660E-01	4.3512E-01	1.1760E-02	
												Pu-241 [2.5760E-09 g]	1.30916E-02	9.5312E-03	2.5760E-04	
												Ra-226	2.73267E-03	1.9895E-03	5.3770E-05	
												Sr-90	8.87342E+00	6.4602E+00	1.7460E-01	
												Th-232 [2.4173E-03 kg]	1.35134E-02	9.8383E-03	2.6590E-04	
												U-234 [9.9952E-08 kg]	3.14940E-02	2.2929E-02	6.1970E-04	
												U-235 [1.6114E-02 g]	1.80162E-03	1.3117E-03	3.5450E-05	
												U-238 [1.8227E-03 kg]	3.14940E-02	2.2929E-02	6.1970E-04	
												Zn-65	1.33457E-19	9.7162E-20	2.6260E-21	
												Subtotal		2.3061E+01	6.2326E-01	
												Total		2.3061E+01	6.2326E-01	
												SNM [1.6354E-02 g]				
												Source [4.2400E-03 kg]				
ERRU000159/R5-0022-01	19 Intermodal Container	19.1139	22044.5906	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.62159E-01	1.1104E-01	3.0010E-03	AU
												C-14	3.93700E+00	2.6958E+00	7.2860E-02	
												Co-60	5.08795E-03	3.4839E-03	9.4160E-05	
		675.0000	48600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.66807E+01	1.1422E+01	3.0870E-01	
												Eu-152	2.35215E-02	1.6106E-02	4.3530E-04	
												Eu-154	1.01424E-02	6.9449E-03	1.8770E-04	
												Eu-155	2.21868E-03	1.5192E-03	4.1060E-05	
												H-3	4.50383E+00	3.0840E+00	8.3350E-02	
												Na-22	1.45787E-07	9.9826E-08	2.6980E-09	
												Ni-63	4.27040E-01	2.9241E-01	7.9030E-03	
												Pm-147	1.54973E-05	1.0612E-05	2.8680E-07	
												Pu-238 [1.1747E-08 g]	1.07908E-02	7.3889E-03	1.9970E-04	
												Pu-239 [2.2307E-04 g]	7.47306E-01	5.1171E-01	1.3830E-02	
												Pu-240 [6.0130E-05 g]	7.47306E-01	5.1171E-01	1.3830E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-007

3. PAGE 3 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.0290E-09 g]	1.63672E-02	1.1207E-02	3.0290E-04	
												Ra-226	2.73256E-03	1.8711E-03	5.0570E-05	
												Sr-90	1.10934E+01	7.5961E+00	2.0530E-01	
												Th-232 [2.2736E-03 kg]	1.35142E-02	9.2537E-03	2.5010E-04	
												U-234 [1.1752E-07 kg]	3.93700E-02	2.6958E-02	7.2860E-04	
												U-235 [1.8946E-02 g]	2.25219E-03	1.5422E-03	4.1680E-05	
												U-238 [2.1429E-03 kg]	3.93700E-02	2.6958E-02	7.2860E-04	
												Zn-65	1.66807E-19	1.1422E-19	3.0870E-21	
												Subtotal		2.6338E+01	7.1183E-01	
												Total		2.6338E+01	7.1183E-01	
												SNM [1.9229E-02 g]				
												Source [4.4167E-03 kg]				
ERRU000227/R5-0022-01	19 Intermodal Container	19.1139	19704.0539	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.78338E-01	1.0667E-01	2.8830E-03	AU
												C-14	4.33071E+00	2.5904E+00	7.0010E-02	
												Co-60	5.59695E-03	3.3478E-03	9.0480E-05	
		675.0000	43440.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.83472E+01	1.0974E+01	2.9660E-01	
												Eu-152	2.58754E-02	1.5477E-02	4.1830E-04	
												Eu-154	1.11593E-02	6.6748E-03	1.8040E-04	
												Eu-155	2.44031E-03	1.4597E-03	3.9450E-05	
												H-3	4.50391E+00	2.6940E+00	7.2810E-02	
												Na-22	1.60399E-07	9.5941E-08	2.5930E-09	
												Ni-63	4.69753E-01	2.8098E-01	7.5940E-03	
												Pm-147	1.70482E-05	1.0197E-05	2.7560E-07	
												Pu-238 [1.1288E-08 g]	1.18706E-02	7.1003E-03	1.9190E-04	
												Pu-239 [2.1436E-04 g]	8.22098E-01	4.9173E-01	1.3290E-02	
												Pu-240 [5.7783E-05 g]	8.22098E-01	4.9173E-01	1.3290E-02	
												Pu-241 [2.9100E-09 g]	1.80008E-02	1.0767E-02	2.9100E-04	
												Ra-226	2.73229E-03	1.6343E-03	4.4170E-05	
												Sr-90	1.22047E+01	7.3001E+00	1.9730E-01	
												Th-232 [1.9855E-03 kg]	1.35099E-02	8.0808E-03	2.1840E-04	
												U-234 [1.1292E-07 kg]	4.33071E-02	2.5904E-02	7.0010E-04	
												U-235 [1.8205E-02 g]	2.47743E-03	1.4819E-03	4.0050E-05	
												U-238 [2.0591E-03 kg]	4.33071E-02	2.5904E-02	7.0010E-04	
												Zn-65	1.83472E-19	1.0974E-19	2.9660E-21	
												Subtotal		2.5037E+01	6.7669E-01	
												Total		2.5037E+01	6.7669E-01	
												SNM [1.8477E-02 g]				
												Source [4.0447E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-007**

3. PAGE **4** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000256/R5-0022-01	19 Intermodal Container	19.1139	20629.3824	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.02677E-01	1.2817E-01	3.4640E-03	AU
												C-14	4.92123E+00	3.1121E+00	8.4110E-02	
												Co-60	6.35997E-03	4.0219E-03	1.0870E-04	
		675.0000	45480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.08527E+01	1.3187E+01	3.5640E-01	
												Eu-152	2.94010E-02	1.8593E-02	5.0250E-04	
												Eu-154	1.26790E-02	8.0179E-03	2.1670E-04	
												Eu-155	2.77335E-03	1.7538E-03	4.7400E-05	
												H-3	4.50405E+00	2.8483E+00	7.6980E-02	
												Na-22	1.82257E-07	1.1526E-07	3.1150E-09	
												Ni-63	5.33840E-01	3.3759E-01	9.1240E-03	
												Pm-147	1.93725E-05	1.2251E-05	3.3110E-07	
												Pu-238 [1.3565E-08 g]	1.34923E-02	8.5322E-03	2.3060E-04	
												Pu-239 [2.5758E-04 g]	9.34395E-01	5.9089E-01	1.5970E-02	
												Pu-240 [6.9435E-05 g]	9.34395E-01	5.9089E-01	1.5970E-02	
												Pu-241 [3.4960E-09 g]	2.04549E-02	1.2935E-02	3.4960E-04	
												Ra-226	2.73239E-03	1.7279E-03	4.6700E-05	
												Sr-90	1.38667E+01	8.7690E+00	2.3700E-01	
												Th-232 [2.0991E-03 kg]	1.35098E-02	8.5433E-03	2.3090E-04	
												U-234 [1.3566E-07 kg]	4.92123E-02	3.1121E-02	8.4110E-04	
												U-235 [2.1868E-02 g]	2.81489E-03	1.7801E-03	4.8110E-05	
												U-238 [2.4738E-03 kg]	4.92123E-02	3.1121E-02	8.4110E-04	
												Zn-65	2.08527E-19	1.3187E-19	3.5640E-21	
												Subtotal		2.9692E+01	8.0248E-01	
												Total		2.9692E+01	8.0248E-01	
												SNM [2.2195E-02 g]				
												Source [4.5730E-03 kg]				
ERRU000269/R5-0022-01	19 Intermodal Container	19.1139	17526.8103	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJL	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.27040E-01	1.1751E-01	3.1760E-03	AU
												C-14	5.51159E+00	2.8527E+00	7.7100E-02	
												Co-60	7.12288E-03	3.6867E-03	9.9640E-05	
		675.0000	38640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.33545E+01	1.2088E+01	3.2670E-01	
												Eu-152	3.29265E-02	1.7042E-02	4.6060E-04	
												Eu-154	1.41972E-02	7.3482E-03	1.9860E-04	
												Eu-155	3.10608E-03	1.6077E-03	4.3450E-05	
												H-3	4.50434E+00	2.3314E+00	6.3010E-02	
												Na-22	2.04093E-07	1.0564E-07	2.8550E-09	
												Ni-63	5.97839E-01	3.0943E-01	8.3630E-03	
												Pm-147	2.16961E-05	1.1230E-05	3.0350E-07	
												Pu-238 [1.2435E-08 g]	1.51122E-02	7.8218E-03	2.1140E-04	
												Pu-239 [2.3613E-04 g]	1.04656E+00	5.4168E-01	1.4640E-02	
												Pu-240 [6.3652E-05 g]	1.04656E+00	5.4168E-01	1.4640E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-007**

3. PAGE **5** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.2050E-09 g]	2.29113E-02	1.1859E-02	3.2050E-04	
												Ra-226	2.73220E-03	1.4141E-03	3.8220E-05	
												Sr-90	1.55339E+01	8.0401E+00	2.1730E-01	
												Th-232 [1.7182E-03 kg]	1.35109E-02	6.9930E-03	1.8900E-04	
												U-234 [1.2436E-07 kg]	5.51159E-02	2.8527E-02	7.7100E-04	
												U-235 [2.0046E-02 g]	3.15254E-03	1.6317E-03	4.4100E-05	
												U-238 [2.2677E-03 kg]	5.51159E-02	2.8527E-02	7.7100E-04	
												Zn-65	2.33545E-19	1.2088E-19	3.2670E-21	
												Subtotal		2.6939E+01	7.2808E-01	
												Total		2.6939E+01	7.2808E-01	
												SNM [2.0345E-02 g]				
												Source [3.9860E-03 kg]				
ERRU000291/R5-0022-01	19 Intermodal Container	19.1139	26353.7184	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.86452E-01	1.5740E-01	4.2540E-03	AU
												C-14	4.52761E+00	3.8221E+00	1.0330E-01	
												Co-60	5.85127E-03	4.9395E-03	1.3350E-04	
		675.0000	58100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.91843E+01	1.6195E+01	4.3770E-01	
												Eu-152	2.70473E-02	2.2833E-02	6.1710E-04	
												Eu-154	1.16631E-02	9.8457E-03	2.6610E-04	
												Eu-155	2.55133E-03	2.1538E-03	5.8210E-05	
												H-3	4.50569E+00	3.8036E+00	1.0280E-01	
												Na-22	1.67649E-07	1.4153E-07	3.8250E-09	
												Ni-63	4.90893E-01	4.1440E-01	1.1200E-02	
												Pm-147	1.78212E-05	1.5044E-05	4.0660E-07	
												Pu-238 [1.6659E-08 g]	1.24126E-02	1.0478E-02	2.8320E-04	
												Pu-239 [3.1629E-04 g]	8.59501E-01	7.2557E-01	1.9610E-02	
												Pu-240 [8.5261E-05 g]	8.59501E-01	7.2557E-01	1.9610E-02	
												Pu-241 [4.2940E-09 g]	1.88205E-02	1.5888E-02	4.2940E-04	
												Ra-226	2.73234E-03	2.3066E-03	6.2340E-05	
												Sr-90	1.27588E+01	1.0771E+01	2.9110E-01	
												Th-232 [2.8027E-03 kg]	1.35127E-02	1.1407E-02	3.0830E-04	
												U-234 [1.6661E-07 kg]	4.52761E-02	3.8221E-02	1.0330E-03	
												U-235 [2.6859E-02 g]	2.58990E-03	2.1863E-03	5.9090E-05	
												U-238 [3.0382E-03 kg]	4.52761E-02	3.8221E-02	1.0330E-03	
												Zn-65	1.91843E-19	1.6195E-19	4.3770E-21	
												Subtotal		3.6773E+01	9.9386E-01	
												Total		3.6773E+01	9.9386E-01	
												SNM [2.7261E-02 g]				
												Source [5.8411E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-007**

3. PAGE **6** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**133.7973**	**154330.2781**									**SNM [1.6927E-01 g]**		**2.2700E+02**	**6.1352E+00**	
		4725.0000	**340240.0000**									**Source [3.4783E-02 kg]**				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9333-007
	PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: April 20, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9333-008, WP-9333-009, WP-9333-010**
Received On:	**April 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **April 16, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 7

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **na**

WCS Generator Certification ID: **na**

SHIPMENT NUMBER: **GIMX009708**

☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 6 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-008**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Gowan

DATE: 4.15.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 14:31:21 -05'00'

TITLE: Manifester

DATE: 3 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.4393E+01**	**(9.2953E-01)**	**NA**	**48500 LBS; 675 FT3**	**AWIU000136**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**7.6292E+01**	**(2.0620E+00)**	**NA**	**57100 LBS; 675 FT3**	**AWIU000226**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

GIMX009708

Does NOT Contain PCB's.

FORM 540 (03-06)

24112-0027

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2469E+01	(8.7755E-01)	NA	54020 LBS; 675 FT3	AWIU000249
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.4204E+01	(9.2444E-01)	NA	42440 LBS; 675 FT3	BFLU000246
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5900E+00	(1.7811E-01)	NA	37988 LBS; 675 FT3	ERRU000173
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2447E+01	(8.7693E-01)	NA	36700 LBS; 675 FT3	ERRU000294
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.6520E+01	(9.8702E-01)	NA	51020 LBS; 675 FT3	ERRU000307
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - ~~WP-9333~~ 9450	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**3.6520E+01**	**(9.8702E-01)**	**NA**	**51020 LBS; 675 FT3**	**ERRU000307**
BJ.8.21				**Pu-239**	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
7	m3 133.7973 ft3 4725.0000	kg 126936.9259 lb 279848.0000	NP	1.9025E-01 7 Containers	2.8445E-03 7 Containers	1.9309E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.5292E+02	2.0299E+01	2.7075E+01	NP	NP	(kg)	3.7117E-02
mCi	6.8355E+00	5.4862E-01	7.3176E-01	NP	NP	(lb)	8.1829E-02

2. MANIFEST NUMBER **WP-9333-008**

3. PAGE 1 OF 6 PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **na**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000136/R5-0022-01	19 Intermodal Container	19.1139	21999.2314	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.18893E-01	1.4952E-01	4.0410E-03	AU
		675.0000	48500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.31496E+00	3.6304E+00	9.8120E-02	
												Co-60	6.86849E-03	4.6916E-03	1.2680E-04	
												Cs-137	2.25230E+01	1.5385E+01	4.1580E-01	
												Eu-152	3.17532E-02	2.1689E-02	5.8620E-04	
												Eu-154	1.36936E-02	9.3536E-03	2.5280E-04	
												Eu-155	2.99494E-03	2.0457E-03	5.5290E-05	
												H-3	4.50406E+00	3.0766E+00	8.3150E-02	
												Na-22	1.96846E-07	1.3446E-07	3.6340E-09	
												Ni-63	5.76347E-01	3.9368E-01	1.0640E-02	
												Pm-147	2.09196E-05	1.4289E-05	3.8620E-07	
												Pu-238 [1.5824E-08 g]	1.45712E-02	9.9530E-03	2.6900E-04	
												Pu-239 [3.0048E-04 g]	1.00915E+00	6.8931E-01	1.8630E-02	
												Pu-240 [8.1000E-05 g]	1.00915E+00	6.8931E-01	1.8630E-02	
												Pu-241 [4.0790E-09 g]	2.20951E-02	1.5092E-02	4.0790E-04	
												Ra-226	2.73223E-03	1.8663E-03	5.0440E-05	
												Sr-90	1.49774E+01	1.0231E+01	2.7650E-01	
												Th-232 [2.2682E-03 kg]	1.35149E-02	9.2315E-03	2.4950E-04	
												U-234 [1.5826E-07 kg]	5.31496E-02	3.6304E-02	9.8120E-04	
												U-235 [2.5514E-02 g]	3.04045E-03	2.0768E-03	5.6130E-05	
												U-238 [2.8859E-03 kg]	5.31496E-02	3.6304E-02	9.8120E-04	
												Zn-65	2.25230E-19	1.5385E-19	4.1580E-21	
												Subtotal		3.4393E+01	9.2953E-01	
												Total		3.4393E+01	9.2953E-01	
												SNM [2.5895E-02 g]				
												Source [5.1542E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-008

3. PAGE 2 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000226/R5-0022-01	19 Intermodal Container	19.1139	25900.1260	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.13470E-01	3.4210E-01	9.2460E-03	AU
												C-14	1.00394E+01	8.3065E+00	2.2450E-01	
												Co-60	1.29729E-02	1.0734E-02	2.9010E-04	
		675.0000	57100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	4.25365E+01	3.5194E+01	9.5120E-01	
												Eu-152	5.99678E-02	4.9617E-02	1.3410E-03	
												Eu-154	2.58653E-02	2.1401E-02	5.7840E-04	
												Eu-155	5.65692E-03	4.6805E-03	1.2650E-04	
												H-3	6.72123E+00	5.5611E+00	1.5030E-01	
												Na-22	3.71792E-07	3.0762E-07	8.3140E-09	
												Ni-63	3.95180E-05	3.2697E-05	8.8370E-07	
												Pm-147	3.95180E-05	3.2697E-05	8.8370E-07	
												Pu-238 [3.6206E-08 g]	2.75244E-02	2.2774E-02	6.1550E-04	
												Pu-239 [6.8742E-04 g]	1.90591E+00	1.5769E+00	4.2620E-02	
												Pu-240 [1.8530E-04 g]	1.90591E+00	1.5769E+00	4.2620E-02	
												Pu-241 [9.3320E-09 g]	4.17315E-02	3.4528E-02	9.3320E-04	
												Ra-226	2.73232E-03	2.2607E-03	6.1100E-05	
												Sr-90	2.82891E+01	2.3406E+01	6.3260E-01	
												Th-232 [2.7473E-03 kg]	1.35140E-02	1.1181E-02	3.0220E-04	
												U-234 [3.6210E-07 kg]	1.00394E-01	8.3065E-02	2.2450E-03	
												U-235 [5.8364E-02 g]	5.74189E-03	4.7508E-03	1.2840E-04	
												U-238 [6.6029E-03 kg]	1.00394E-01	8.3065E-02	2.2450E-03	
												Zn-65	4.25365E-19	3.5194E-19	9.5120E-21	
												Subtotal		7.6292E+01	2.0620E+00	
												Total		7.6292E+01	2.0620E+00	
												SNM [5.9236E-02 g]				
												Source [9.3506E-03 kg]				
AWIU000249/R5-0022-01	19 Intermodal Container	19.1139	24503.0614	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.78345E-01	1.3834E-01	3.7390E-03	AU
												C-14	4.33057E+00	3.3592E+00	9.0790E-02	
												Co-60	5.59506E-03	4.3401E-03	1.1730E-04	
		675.0000	54020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.83497E+01	1.4234E+01	3.8470E-01	
												Eu-152	2.58718E-02	2.0069E-02	5.4240E-04	
												Eu-154	1.11567E-02	8.6543E-03	2.3390E-04	
												Eu-155	2.44074E-03	1.8933E-03	5.1170E-05	
												H-3	4.50419E+00	3.4939E+00	9.4430E-02	
												Na-22	1.60363E-07	1.2439E-07	3.3620E-09	
												Ni-63	4.69737E-01	3.6438E-01	9.8480E-03	
												Pm-147	1.70475E-05	1.3224E-05	3.5740E-07	
												Pu-238 [1.4641E-08 g]	1.18722E-02	9.2093E-03	2.4890E-04	
												Pu-239 [2.7790E-04 g]	8.21849E-01	6.3751E-01	1.7230E-02	
												Pu-240 [7.4913E-05 g]	8.21849E-01	6.3751E-01	1.7230E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9333-008

3. PAGE 3 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.7740E-09 g]	1.80015E-02	1.3964E-02	3.7740E-04	
												Ra-226	2.73266E-03	2.1197E-03	5.7290E-05	
												Sr-90	1.22013E+01	9.4646E+00	2.5580E-01	
												Th-232 [2.5755E-03 kg]	1.35130E-02	1.0482E-02	2.8330E-04	
												U-234 [1.4644E-07 kg]	4.33057E-02	3.3592E-02	9.0790E-04	
												U-235 [2.3609E-02 g]	2.47747E-03	1.9218E-03	5.1940E-05	
												U-238 [2.6703E-03 kg]	4.33057E-02	3.3592E-02	9.0790E-04	
												Zn-65	1.83497E-19	1.4234E-19	3.8470E-21	
												Subtotal		3.2469E+01	8.7755E-01	
												Total		3.2469E+01	8.7755E-01	
												SNM [2.3962E-02 g]				
												Source [5.2459E-03 kg]				
BFLU000246/R5-0022-01	19 Intermodal Container	19.1139	19250.4615	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.59414E-01	1.5081E-01	4.0760E-03	AU
												C-14	6.29886E+00	3.6619E-02	9.8970E-02	
												Co-60	8.14009E-03	4.7323E-03	1.2790E-04	
		675.0000	42440.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.66924E+01	1.5518E+01	4.1940E-01	
												Eu-152	3.76328E-02	2.1878E-02	5.9130E-04	
												Eu-154	1.62293E-02	9.4350E-03	2.5500E-04	
												Eu-155	3.55007E-03	2.0639E-03	5.5780E-05	
												H-3	4.50410E+00	2.6185E+00	7.0770E-02	
												Na-22	2.33256E-07	1.3561E-07	3.6650E-09	
												Ni-63	6.83538E-01	3.9738E-01	1.0740E-02	
												Pm-147	2.47958E-05	1.4415E-05	3.8960E-07	
												Pu-238 [1.5959E-08 g]	1.72667E-02	1.0038E-02	2.7130E-04	
												Pu-239 [3.0307E-04 g]	1.19587E+00	6.9523E-01	1.8790E-02	
												Pu-240 [8.1696E-05 g]	1.19587E+00	6.9523E-01	1.8790E-02	
												Pu-241 [4.1140E-09 g]	2.61832E-02	1.5222E-02	4.1140E-04	
												Ra-226	2.73224E-03	1.5884E-03	4.2930E-05	
												Sr-90	1.77504E+01	1.0319E+01	2.7890E-01	
												Th-232 [1.9300E-03 kg]	1.35117E-02	7.8551E-03	2.1230E-04	
												U-234 [1.5963E-07 kg]	6.29886E-02	3.6619E-02	9.8970E-04	
												U-235 [2.5736E-02 g]	3.60353E-03	2.0949E-03	5.6620E-05	
												U-238 [2.9109E-03 kg]	6.29886E-02	3.6619E-02	9.8970E-04	
												Zn-65	2.66924E-19	1.5518E-19	4.1940E-21	
												Subtotal		3.4204E+01	9.2444E-01	
												Total		3.4204E+01	9.2444E-01	
												SNM [2.6121E-02 g]				
												Source [4.8410E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9333-008

3. PAGE 4 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000173/R5-0022-01	19 Intermodal Container	19.1139	17231.0681	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.05390E-02	2.0539E-02	5.5510E-04	AU
		675.0000	37988.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	9.84446E-01	4.9876E-01	1.3480E-02	
												Co-60	1.27219E-03	6.4454E-04	1.7420E-05	
												Cs-137	4.17075E+00	2.1131E+00	5.7110E-02	
												Eu-152	5.88039E-03	2.9792E-03	8.0520E-05	
												Eu-154	2.53561E-03	1.2846E-03	3.4720E-05	
												Eu-155	5.54664E-04	2.8102E-04	7.5950E-06	
												H-3	4.50377E+00	2.2818E+00	6.1670E-02	
												Na-22	3.64493E-08	1.8467E-08	4.9910E-10	
												Ni-63	1.06770E-01	5.4094E-02	1.4620E-03	
												Pm-147	3.87425E-06	1.9629E-06	5.3050E-08	
												Pu-238 [2.1735E-09 g]	2.69846E-03	1.3672E-03	3.6950E-05	
												Pu-239 [4.1258E-05 g]	1.86811E-01	9.4646E-02	2.5580E-03	
												Pu-240 [1.1122E-05 g]	1.86811E-01	9.4646E-02	2.5580E-03	
												Pu-241 [5.6020E-10 g]	4.09115E-03	2.0727E-03	5.6020E-05	
												Ra-226	2.73279E-03	1.3845E-03	3.7420E-05	
												Sr-90	2.77369E+00	1.4053E+00	3.7980E-02	
												Th-232 [1.6818E-03 kg]	1.35106E-02	6.8450E-03	1.8500E-04	
												U-234 [2.1742E-08 kg]	9.84446E-03	4.9876E-03	1.3480E-04	
												U-235 [3.5041E-03 g]	5.62989E-04	2.8523E-04	7.7090E-06	
												U-238 [3.9647E-04 kg]	9.84446E-03	4.9876E-03	1.3480E-04	
												Zn-65	4.17075E-20	2.1131E-20	5.7110E-22	
												Subtotal		6.5900E+00	1.7811E-01	
												Total		6.5900E+00	1.7811E-01	
												SNM [3.5565E-03 g]				
												Source [2.0783E-03 kg]				
ERRU000294/R5-0022-01	19 Intermodal Container	19.1139	16646.8411	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.59438E-01	1.5492E-01	4.1870E-03	AU
		675.0000	36700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.30161E+00	3.7629E+00	1.0170E-01	
												Co-60	8.14190E-03	4.8618E-03	1.3140E-04	
												Cs-137	2.66935E+01	1.5940E+01	4.3080E-01	
												Eu-152	3.76362E-02	2.2474E-02	6.0740E-04	
												Eu-154	1.62280E-02	9.6903E-03	2.6190E-04	
												Eu-155	3.54985E-03	2.1197E-03	5.7290E-05	
												H-3	2.33290E-07	1.3931E-07	3.7650E-09	
												Na-22	2.33290E-07	1.3931E-07	3.7650E-09	
												Ni-63	6.83449E-01	4.0811E-01	1.1030E-02	
												Pm-147	2.47975E-05	1.4807E-05	4.0020E-07	
												Pu-238 [1.6394E-08 g]	1.72690E-02	1.0312E-02	2.7870E-04	
												Pu-239 [3.1129E-04 g]	1.19588E+00	7.1410E-01	1.9300E-02	
												Pu-240 [8.3913E-05 g]	1.19588E+00	7.1410E-01	1.9300E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-008**

3. PAGE **5** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.2260E-09 g]	2.61855E-02	1.5636E-02	4.2260E-04	
												Ra-226	2.73256E-03	1.6317E-03	4.4100E-05	
												Sr-90	1.77523E+01	1.0601E+01	2.8650E-01	
												Th-232 [1.9827E-03 kg]	1.35141E-02	8.0697E-03	2.1810E-04	
												U-234 [1.6403E-07 kg]	6.30161E-02	3.7629E-02	1.0170E-03	
												U-235 [2.6432E-02 g]	3.60313E-03	2.1516E-03	5.8150E-05	
												U-238 [2.9912E-03 kg]	6.30161E-02	3.7629E-02	1.0170E-03	
												Zn-65	2.66935E-19	1.5940E-19	4.3080E-21	
												Subtotal		3.2447E+01	8.7693E-01	
												Total		3.2447E+01	8.7693E-01	
												SNM [2.6827E-02 g]				
												Source [4.9741E-03 kg]				
ERRU000307/R5-0022-01	19 Intermodal Container	19.1139	23142.2842	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.18882E-01	1.5877E-01	4.2910E-03	AU
												C-14	5.31520E+00	3.8554E+00	1.0420E-01	
												Co-60	6.87099E-03	4.9839E-03	1.3470E-04	
		675.0000	51020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.25207E+01	1.6336E+01	4.4150E-01	
												Eu-152	3.17535E-02	2.3033E-02	6.2250E-04	
												Eu-154	1.36910E-02	9.9308E-03	2.6840E-04	
												Eu-155	2.99528E-03	2.1726E-03	5.8720E-05	
												H-3	4.50415E+00	3.2671E+00	8.8300E-02	
												Na-22	1.96846E-07	1.4278E-07	3.8590E-09	
												Ni-63	5.76408E-01	4.1810E-01	1.1300E-02	
												Pm-147	2.09190E-05	1.5174E-05	4.1010E-07	
												Pu-238 [1.6800E-08 g]	1.45683E-02	1.0567E-02	2.8560E-04	
												Pu-239 [3.1903E-04 g]	1.00897E+00	7.3186E-01	1.9780E-02	
												Pu-240 [8.6000E-05 g]	1.00897E+00	7.3186E-01	1.9780E-02	
												Pu-241 [4.3310E-09 g]	2.20923E-02	1.6025E-02	4.3310E-04	
												Ra-226	2.73258E-03	1.9821E-03	5.3570E-05	
												Sr-90	1.49764E+01	1.0863E+01	2.9360E-01	
												Th-232 [2.4082E-03 kg]	1.35124E-02	9.8013E-03	2.6490E-04	
												U-234 [1.6807E-07 kg]	5.31520E-02	3.8554E-02	1.0420E-03	
												U-235 [2.7091E-02 g]	3.04017E-03	2.2052E-03	5.9600E-05	
												U-238 [3.0647E-03 kg]	5.31520E-02	3.8554E-02	1.0420E-03	
												Zn-65	2.25207E-19	1.6336E-19	4.4150E-21	
												Subtotal		3.6520E+01	9.8702E-01	
												Total		3.6520E+01	9.8702E-01	
												SNM [2.7496E-02 g]				
												Source [5.4731E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-008

3. PAGE 6 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
Shipment Totals		**133.7973** **4725.0000**	**148673.0737** **327768.0000**									**SNM [1.9309E-01 g]** **Source [3.7117E-02 kg]**		**2.5292E+02**	**6.8355E+00**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9333-008

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: April 20, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9333-008, WP-9333-009, WP-9333-010**
Received On:	**April 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **April 16, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **7**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **na**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **na**

SHIPMENT NUMBER: **GACX009715**

☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **03/06/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 6 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — 1 None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-009**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Collins

DATE: 4.15.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.03.03 14:32:08 -05'00'

TITLE: Manifester

DATE: 3 Mar 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2893E+01**	**(3.4845E-01)**	**NA**	**36700 LBS; 675 FT3**	**AWIU000158**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3472E+01**	**(1.1749E+00)**	**NA**	**56000 LBS; 675 FT3**	**AWIU000242**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

Does NOT contain PCB's

GACX009715

2412-0028

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.0998E+01**	**(8.3779E-01)**	**NA**	**50200 LBS; 675 FT3**	**AWIU000282**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.2762E+00**	**(2.5070E-01)**	**NA**	**41500 LBS; 675 FT3**	**BFLU000381**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.2302E+01**	**(6.0276E-01)**	**NA**	**47620 LBS; 675 FT3**	**ERRU000141**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.1199E+01**	**(1.1135E+00)**	**NA**	**37620 LBS; 675 FT3**	**ERRU000266**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.9284E+01**	**(1.3320E+00)**	**NA**	**53660 LBS; 675 FT3**	**ERRU000312**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**4.9284E+01**	**(1.3320E+00)**	**NA**	**53660 LBS; 675 FT3**	**ERRU000312**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
7	m3 133.7973	kg 121880.2781	NP	1.5342E-01	2.2937E-03	1.5572E-01
	ft3 4725.0000	lb 268700.0000		7 Containers	7 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.0942E+02	2.1108E+01	2.1831E+01	NP	NP	(kg)	3.2326E-02
mCi	5.6601E+00	5.7049E-01	5.9002E-01	NP	NP	(lb)	7.1267E-02

2. MANIFEST NUMBER: WP-9333-009

3. PAGE 1 OF 6 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: na

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000158/R5-0022-01	19 Intermodal Container	19.1139	16846.8411	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.05426E-01	5.1134E-02	1.3820E-03	AU
		675.0000	36700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	2.55936E+00	1.2414E+00	3.3550E-02	
												Co-60	3.30695E-03	1.6040E-03	4.3350E-05	
												Cs-137	1.08401E+01	5.2577E+00	1.4210E-01	
												Eu-152	1.52875E-02	7.4148E-03	2.0040E-04	
												Eu-154	6.59254E-03	3.1975E-03	8.6420E-05	
												Eu-155	1.44178E-03	6.9930E-04	1.8900E-05	
												H-3	4.50386E+00	2.1845E+00	5.9040E-02	
												Na-22	9.47459E-08	4.5954E-08	1.2420E-09	
												Ni-63	2.77601E-01	1.3464E-01	3.6390E-03	
												Pm-147	1.00696E-05	4.8840E-06	1.3200E-07	
												Pu-238 [5.4094E-09 g]	7.01516E-03	3.4025E-03	9.1960E-05	
												Pu-239 [1.0271E-04 g]	4.85782E-01	2.3562E-01	6.3680E-03	
												Pu-240 [2.7687E-05 g]	4.85782E-01	2.3562E-01	6.3680E-03	
												Pu-241 [1.3940E-09 g]	1.06341E-02	5.1578E-03	1.3940E-04	
												Ra-226	2.73253E-03	1.3253E-03	3.5820E-05	
												Sr-90	7.21045E+00	3.4972E+00	9.4520E-02	
												Th-232 [1.6100E-03 kg]	1.35101E-02	6.5527E-03	1.7710E-04	
												U-234 [5.4113E-08 kg]	2.55936E-02	1.2414E-02	3.3550E-04	
												U-235 [8.7227E-03 g]	1.46391E-03	7.1003E-04	1.9190E-05	
												U-238 [9.8677E-04 kg]	2.55936E-02	1.2414E-02	3.3550E-04	
												Zn-65	1.08401E-19	5.2577E-20	1.4210E-21	
												Subtotal		1.2893E+01	3.4845E-01	
												Total		1.2893E+01	3.4845E-01	
												SNM [8.8531E-03 g]				
												Source [2.5968E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-009

3. PAGE 2 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000242/R5-0022-01	19 Intermodal Container	19.1139	25401.1744	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.35100E-01	1.9018E-01	5.1400E-03	AU
												C-14	5.70826E+00	4.6176E+00	1.2480E-01	
												Co-60	7.37775E-03	5.9681E-03	1.6130E-04	
		675.0000	56000.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.41869E+01	1.9566E+01	5.2880E-01	
												Eu-152	3.41078E-02	2.7591E-02	7.4570E-04	
												Eu-154	1.47052E-02	1.1896E-02	3.2150E-04	
												Eu-155	3.21684E-03	2.6022E-03	7.0330E-05	
												H-3	4.50395E+00	3.6434E+00	9.8470E-02	
												Na-22	2.11407E-07	1.7101E-07	4.6220E-09	
												Ni-63	6.19310E-01	5.0098E-01	1.3540E-02	
												Pm-147	2.24717E-05	1.8178E-05	4.9130E-07	
												Pu-238 [2.0129E-08 g]	1.56520E-02	1.2661E-02	3.4220E-04	
												Pu-239 [3.8210E-04 g]	1.08356E+00	8.7653E-01	2.3690E-02	
												Pu-240 [1.0300E-04 g]	1.08356E+00	8.7653E-01	2.3690E-02	
												Pu-241 [5.1880E-09 g]	2.37295E-02	1.9196E-02	5.1880E-04	
												Ra-226	2.73247E-03	2.2104E-03	5.9740E-05	
												Sr-90	1.60865E+01	1.3013E+01	3.5170E-01	
												Th-232 [2.6855E-03 kg]	1.35114E-02	1.0930E-02	2.9540E-04	
												U-234 [2.0129E-07 kg]	5.70826E-02	4.6176E-02	1.2480E-03	
												U-235 [3.2450E-02 g]	3.26533E-03	2.6414E-03	7.1390E-05	
												U-238 [3.6706E-03 kg]	5.70826E-02	4.6176E-02	1.2480E-03	
												Zn-65	2.41869E-19	1.9566E-19	5.2880E-21	
												Subtotal		4.3472E+01	1.1749E+00	
												Total		4.3472E+01	1.1749E+00	
												SNM [3.2935E-02 g]				
												Source [6.3562E-03 kg]				
AWIU000282/R5-0022-01	19 Intermodal Container	19.1139	22770.3385	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.86458E-01	1.3268E-01	3.5860E-03	AU
												C-14	4.52730E+00	3.2216E+00	8.7070E-02	
												Co-60	5.84956E-03	4.1625E-03	1.1250E-04	
		675.0000	50200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.91866E+01	1.3653E+01	3.6900E-01	
												Eu-152	2.70484E-02	1.9247E-02	5.2020E-04	
												Eu-154	1.16627E-02	8.2991E-03	2.2430E-04	
												Eu-155	2.55145E-03	1.8156E-03	4.9070E-05	
												H-3	4.50390E+00	3.2049E+00	8.6620E-02	
												Na-22	1.67687E-07	1.1933E-07	3.2250E-09	
												Ni-63	4.91103E-01	3.4947E-01	9.4450E-03	
												Pm-147	1.78243E-05	1.2684E-05	3.4280E-07	
												Pu-238 [1.4041E-08 g]	1.24115E-02	8.8319E-03	2.3870E-04	
												Pu-239 [2.6661E-04 g]	8.59495E-01	6.1161E-01	1.6530E-02	
												Pu-240 [7.1870E-05 g]	8.59495E-01	6.1161E-01	1.6530E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-009**

3. PAGE **3** OF **6** PAGE(S)

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												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.6190E-09 g]	1.88174E-02	1.3390E-02	3.6190E-04	
												Ra-226	2.73239E-03	1.9444E-03	5.2550E-05	
												Sr-90	1.27598E+01	9.0798E+00	2.4540E-01	
												Th-232 [2.3627E-03 kg]	1.35138E-02	9.6163E-03	2.5990E-04	
												U-234 [1.4044E-07 kg]	4.52730E-02	3.2216E-02	8.7070E-04	
												U-235 [2.2641E-02 g]	2.58993E-03	1.8430E-03	4.9810E-05	
												U-238 [2.5609E-03 kg]	4.52730E-02	3.2216E-02	8.7070E-04	
												Zn-65	1.91866E-19	1.3653E-19	3.6900E-21	
												Subtotal		3.0998E+01	8.3779E-01	
												Total		3.0998E+01	8.3779E-01	
												SNM [2.2979E-02 g]				
												Source [4.9238E-03 kg]				
BFLU000381/R5-0022-01	19 Intermodal Container	19.1139	18824.0846	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	5.67513E-02	3.2098E-02	8.6750E-04	AU
		675.0000	41500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	1.37773E+00	7.7922E-01	2.1060E-02	
												Co-60	1.78072E-03	1.0071E-03	2.7220E-05	
												Cs-137	5.83868E+00	3.3023E+00	8.9250E-02	
												Eu-152	8.22976E-03	4.6546E-03	1.2580E-04	
												Eu-154	3.54966E-03	2.0076E-03	5.4260E-05	
												Eu-155	7.76528E-04	4.3919E-04	1.1870E-05	
												H-3	4.50413E+00	2.5475E+00	6.8850E-02	
												Na-22	5.10271E-08	2.8860E-08	7.8000E-10	
												Ni-63	1.49483E-01	8.4545E-02	2.2850E-03	
												Pm-147	5.42392E-06	3.0677E-06	8.2910E-08	
												Pu-238 [3.3965E-09 g]	3.77732E-03	2.1364E-03	5.7740E-05	
												Pu-239 [6.4484E-05 g]	2.61547E-01	1.4793E-01	3.9980E-03	
												Pu-240 [1.7383E-05 g]	2.61547E-01	1.4793E-01	3.9980E-03	
												Pu-241 [8.7550E-10 g]	5.72747E-03	3.2394E-03	8.7550E-05	
												Ra-226	2.73257E-03	1.5455E-03	4.1770E-05	
												Sr-90	3.88264E+00	2.1960E+00	5.9350E-02	
												Th-232 [1.8773E-03 kg]	1.35091E-02	7.6405E-03	2.0650E-04	
												U-234 [3.3968E-08 kg]	1.37773E-02	7.7922E-03	2.1060E-04	
												U-235 [5.4773E-03 g]	7.88304E-04	4.4585E-04	1.2050E-05	
												U-238 [6.1941E-04 kg]	1.37773E-02	7.7922E-03	2.1060E-04	
												Zn-65	5.83868E-20	3.3023E-20	8.9250E-22	
												Subtotal		9.2762E+00	2.5070E-01	
												Total		9.2762E+00	2.5070E-01	
												SNM [5.5591E-03 g]				
												Source [2.4967E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-009**

3. PAGE **4** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000141/R5-0022-01	19 Intermodal Container	19.1139	21600.0701	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.37803E-01	9.2093E-02	2.4890E-03	AU
		675.0000	47620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.34626E+00	2.2363E+00	6.0440E-02	
												Co-60	4.32456E-03	2.8901E-03	7.8110E-05	
												Cs-137	1.41790E+01	9.4757E+00	2.5610E-01	
												Eu-152	1.99923E-02	1.3361E-02	3.6110E-04	
												Eu-154	8.62033E-03	5.7609E-03	1.5570E-04	
												Eu-155	1.88573E-03	1.2602E-03	3.4060E-05	
												H-3	4.50394E+00	3.0100E+00	8.1350E-02	
												Na-22	1.23907E-07	8.2806E-08	2.2380E-09	
												Ni-63	3.62973E-01	2.4257E-01	6.5560E-03	
												Pm-147	1.31713E-05	8.8023E-06	2.3790E-07	
												Pu-238 [9.7471E-09 g]	9.17398E-03	6.1309E-03	1.6570E-04	
												Pu-239 [1.8500E-04 g]	6.35037E-01	4.2439E-01	1.1470E-02	
												Pu-240 [4.9870E-05 g]	6.35037E-01	4.2439E-01	1.1470E-02	
												Pu-241 [2.5120E-09 g]	1.39077E-02	9.2944E-03	2.5120E-04	
												Ra-226	2.73226E-03	1.8260E-03	4.9350E-05	
												Sr-90	9.42866E+00	6.3011E+00	1.7030E-01	
												Th-232 [2.2191E-03 kg]	1.35146E-02	9.0317E-03	2.4410E-04	
												U-234 [9.7484E-08 kg]	3.34626E-02	2.2363E-02	6.0440E-04	
												U-235 [1.5714E-02 g]	1.91397E-03	1.2791E-03	3.4570E-05	
												U-238 [1.7777E-03 kg]	3.34626E-02	2.2363E-02	6.0440E-04	
												Zn-65	1.41790E-19	9.4757E-20	2.5610E-21	
												Subtotal		2.2302E+01	6.0276E-01	
												Total		2.2302E+01	6.0276E-01	
												SNM [1.5948E-02 g]				
												Source [3.9968E-03 kg]				
ERRU000266/R5-0022-01	19 Intermodal Container	19.1139	17064.1461	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.64851E-01	1.8260E-01	4.9350E-03	AU
		675.0000	37620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	8.85698E+00	4.4326E+00	1.1980E-01	
												Co-60	1.14446E-02	5.7276E-03	1.5480E-04	
												Cs-137	3.75350E+01	1.8785E+01	5.0770E-01	
												Eu-152	5.29201E-02	2.6485E-02	7.1580E-04	
												Eu-154	2.28226E-02	1.1422E-02	3.0870E-04	
												Eu-155	4.99185E-03	2.4982E-03	6.7520E-05	
												H-3	5.93004E+00	2.9678E+00	8.0210E-02	
												Na-22	3.28034E-07	1.6417E-07	4.4370E-09	
												Ni-63	9.61108E-01	4.8100E-01	1.3000E-02	
												Pm-147	3.48660E-05	1.7449E-05	4.7160E-07	
												Pu-238 [1.9324E-08 g]	2.42865E-02	1.2155E-02	3.2850E-04	
												Pu-239 [3.6677E-04 g]	1.68120E+00	8.4138E-01	2.2740E-02	
												Pu-240 [9.8870E-05 g]	1.68120E+00	8.4138E-01	2.2740E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9333-009

3. PAGE 5 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.9800E-09 g]	3.68178E-02	1.8426E-02	4.9800E-04	
												Ra-226	2.73250E-03	1.3675E-03	3.6960E-05	
												Sr-90	2.49592E+01	1.2491E+01	3.3760E-01	
												Th-232 [1.6618E-03 kg]	1.35147E-02	6.7636E-03	1.8280E-04	
												U-234 [1.9323E-07 kg]	8.85698E-02	4.4326E-02	1.1980E-03	
												U-235 [3.1155E-02 g]	5.06726E-03	2.5360E-03	6.8540E-05	
												U-238 [3.5235E-03 kg]	8.85698E-02	4.4326E-02	1.1980E-03	
												Zn-65	3.75350E-19	1.8785E-19	5.0770E-21	
												Subtotal		4.1199E+01	1.1135E+00	
												Total		4.1199E+01	1.1135E+00	
												SNM [3.1620E-02 g]				
												Source [5.1855E-03 kg]				
ERRU000312/R5-0022-01	19 Intermodal Container	19.1139	24339.7682	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.83776E-01	2.1841E-01	5.9030E-03	AU
		675.0000	53660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.88888E+00	5.3021E+00	1.4330E-01	
												Co-60	8.90315E-03	6.8524E-03	1.8520E-04	
												Cs-137	2.91948E+01	2.2470E+01	6.0730E-01	
												Eu-152	4.11602E-02	3.1679E-02	8.5620E-04	
												Eu-154	1.77486E-02	1.3660E-02	3.6920E-04	
												Eu-155	3.88287E-03	2.9885E-03	8.0770E-05	
												H-3	4.61262E+00	3.5502E+00	9.5950E-02	
												Na-22	2.55124E-07	1.9636E-07	5.3070E-09	
												Ni-63	7.47537E-01	5.7535E-01	1.5550E-02	
												Pm-147	2.71181E-05	2.0872E-05	5.6410E-07	
												Pu-238 [2.3112E-08 g]	1.88879E-02	1.4537E-02	3.9290E-04	
												Pu-239 [4.3887E-04 g]	1.30807E+00	1.0068E+00	2.7210E-02	
												Pu-240 [1.1830E-04 g]	1.30807E+00	1.0068E+00	2.7210E-02	
												Pu-241 [5.9570E-09 g]	2.86372E-02	2.2041E-02	5.9570E-04	
												Ra-226	2.73248E-03	2.1031E-03	5.6840E-05	
												Sr-90	1.94119E+01	1.4941E+01	4.0380E-01	
												Th-232 [2.5555E-03 kg]	1.35134E-02	1.0401E-02	2.8110E-04	
												U-234 [2.3113E-07 kg]	6.88888E-02	5.3021E-02	1.4330E-03	
												U-235 [3.7264E-02 g]	3.94104E-03	3.0333E-03	8.1980E-05	
												U-238 [4.2147E-03 kg]	6.88888E-02	5.3021E-02	1.4330E-03	
												Zn-65	2.91948E-19	2.2470E-19	6.0730E-21	
												Subtotal		4.9284E+01	1.3320E+00	
												Total		4.9284E+01	1.3320E+00	
												SNM [3.7821E-02 g]				
												Source [6.7704E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-009**

3. PAGE **6** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**133.7973** **4725.0000**	**146646.4230** **323300.0000**									**SNM [1.5572E-01 g]** **Source [3.2326E-02 kg]**		**2.0942E+02**	**5.6601E+00**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9333-009
PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: April 20, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9333-008, WP-9333-009, WP-9333-010**
Received On:	**April 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **April 16, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 7

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: na
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: na
SHIPMENT NUMBER: GIMX516124
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: NA
SHIPPING DATE: **03/06/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 6 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9333-010**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Lavan
DATE: 4.15.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.1551232367 Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.03.02 11:26:12 -05'00'
TITLE: Manifester
DATE: 02 MAR 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.6882E+01**	**(7.2654E-01)**	**NA**	**46060 LBS; 675 FT3**	**BFLU000074**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.6273E+01**	**(1.2506E+00)**	**NA**	**53380 LBS; 675 FT3**	**BFLU000270**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

Does NOT contain PCB's

GIMX516124

2412-0029

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.0391E+01**	**(8.2138E-01)**	**NA**	**54880 LBS; 675 FT3**	**ERRU000174**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.1460E+01**	**(8.5027E-01)**	**NA**	**43820 LBS; 675 FT3**	**ERRU000181**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.1981E+01**	**(8.6436E-01)**	**NA**	**53320 LBS; 675 FT3**	**ERRU000205**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.3497E+01**	**(6.3506E-01)**	**NA**	**34700 LBS; 675 FT3**	**ERRU000286**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-~~9333~~ 9450 BV 4.8.21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.2024E+01**	**(8.6550E-01)**	**NA**	**47020 LBS; 675 FT3**	**ERRU000288**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9333-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT Demolition rubble, soil, and metal - WP-9333 9450 BV 4.4.21	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**3.2024E+01**	**(8.6550E-01)**	**NA**	**47020 LBS; 675 FT3**	**ERRU000288**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
7	m3 133.7973 ft3 4725.0000	kg 126361.7707 lb 278580.0000	NP	1.6414E-01 7 Containers	2.4539E-03 7 Containers	1.6659E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2251E+02	2.1059E+01	2.3358E+01	NP	NP	(kg)	3.4092E-02
mCi	6.0137E+00	5.6915E-01	6.3129E-01	NP	NP	(lb)	7.5160E-02

2. MANIFEST NUMBER **WP-9333-010**

3. PAGE **1** OF **6** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **na**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT		pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
BFLU000074/R5-0022-01	19 Intermodal Container	19.1139	20892.4659	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.78341E-01	1.1452E-01	3.0950E-03	AU
		675.0000	46060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14		4.33033E+00	2.7806E+00	7.5150E-02	
												Co-60		5.59687E-03	3.5938E-03	9.7130E-05	
												Cs-137		1.83527E+01	1.1785E+01	3.1850E-01	
												Eu-152		2.58725E-02	1.6613E-02	4.4900E-04	
												Eu-154		1.11557E-02	7.1632E-03	1.9360E-04	
												Eu-155		2.44031E-03	1.5670E-03	4.2350E-05	
												H-3		4.50435E+00	2.8923E+00	7.8170E-02	
												Na-22		1.60363E-07	1.0297E-07	2.7830E-09	
												Ni-63		4.69738E-01	3.0162E-01	8.1520E-03	
												Pm-147		1.70447E-05	1.0945E-05	2.9580E-07	
												Pu-238	[1.2118E-08 g]	1.18702E-02	7.6220E-03	2.0600E-04	
												Pu-239	[2.3016E-04 g]	8.22272E-01	5.2799E-01	1.4270E-02	
												Pu-240	[6.2044E-05 g]	8.22272E-01	5.2799E-01	1.4270E-02	
												Pu-241	[3.1240E-09 g]	1.80012E-02	1.1559E-02	3.1240E-04	
												Ra-226		2.73246E-03	1.7545E-03	4.7420E-05	
												Sr-90		1.22044E+01	7.8366E+00	2.1180E-01	
												Th-232	[2.1318E-03 kg]	1.35125E-02	8.6765E-03	2.3450E-04	
												U-234	[1.2121E-07 kg]	4.33033E-02	2.7806E-02	7.5150E-04	
												U-235	[1.9541E-02 g]	2.47719E-03	1.5906E-03	4.2990E-05	
												U-238	[2.2103E-03 kg]	4.33033E-02	2.7806E-02	7.5150E-04	
												Zn-65		1.83527E-19	1.1785E-19	3.1850E-21	
												Subtotal			2.6882E+01	7.2654E-01	
												Total			2.6882E+01	7.2654E-01	
												SNM	[1.9833E-02 g]				
												Source	[4.3422E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-010**

3. PAGE **2** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000270/R5-0022-01	19 Intermodal Container	19.1139	24212.7623	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.67526E-01	2.0465E-01	5.5310E-03	AU
		675.0000	53380.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.49588E+00	4.9691E+00	1.3430E-01	
												Co-60	8.39676E-03	6.4232E-03	1.7360E-04	
												Cs-137	2.75265E+01	2.1057E+01	5.6910E-01	
												Eu-152	0.00000E+00	0.0000E+00	0.0000E+00	
												Eu-154	1.67355E-02	1.2802E-02	3.4600E-04	
												Eu-155	3.66101E-03	2.8005E-03	7.5690E-05	
												H-3	4.50407E+00	3.4454E+00	9.3120E-02	
												Na-22	2.40585E-07	1.8404E-07	4.9740E-09	
												Ni-63	7.04728E-01	5.3909E-01	1.4570E-02	
												Pm-147	2.55724E-05	1.9562E-05	5.2870E-07	
												Pu-238 [2.1659E-08 g]	1.78093E-02	1.3623E-02	3.6820E-04	
												Pu-239 [4.1113E-04 g]	1.23291E+00	9.4313E-01	2.5490E-02	
												Pu-240 [1.1083E-04 g]	1.23291E+00	9.4313E-01	2.5490E-02	
												Pu-241 [5.5830E-09 g]	2.70041E-02	2.0657E-02	5.5830E-04	
												Ra-226	2.73233E-03	2.0901E-03	5.6490E-05	
												Sr-90	1.83026E+01	1.4001E+01	3.7840E-01	
												Th-232 [2.5400E-03 kg]	1.35141E-02	1.0338E-02	2.7940E-04	
												U-234 [2.1661E-07 kg]	6.49588E-02	4.9691E-02	1.3430E-03	
												U-235 [3.4918E-02 g]	3.71566E-03	2.8423E-03	7.6820E-05	
												U-238 [3.9500E-03 kg]	6.49588E-02	4.9691E-02	1.3430E-03	
												Zn-65	2.75265E-19	2.1057E-19	5.6910E-21	
												Subtotal		4.6273E+01	1.2506E+00	
												Total		4.6273E+01	1.2506E+00	
												SNM [3.5440E-02 g]				
												Source [6.4902E-03 kg]				
ERRU000174/R5-0022-01	19 Intermodal Container	19.1139	24893.1509	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.62163E-01	1.2813E-01	3.4630E-03	AU
		675.0000	54880.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.93678E+00	3.1106E+00	8.4070E-02	
												Co-60	5.09014E-03	4.0219E-03	1.0870E-04	
												Cs-137	1.66799E+01	1.3179E+01	3.5620E-01	
												Eu-152	2.35214E-02	1.8585E-02	5.0230E-04	
												Eu-154	1.01428E-02	8.0142E-03	2.1660E-04	
												Eu-155	2.21868E-03	1.7531E-03	4.7380E-05	
												H-3	4.50386E+00	3.5587E+00	9.6180E-02	
												Na-22	1.45821E-07	1.1522E-07	3.1140E-09	
												Ni-63	4.27066E-01	3.3744E-01	9.1200E-03	
												Pm-147	1.54952E-05	1.2243E-05	3.3090E-07	
												Pu-238 [1.3559E-08 g]	1.07937E-02	8.5285E-03	2.3050E-04	
												Pu-239 [2.5742E-04 g]	7.47365E-01	5.9052E-01	1.5960E-02	
												Pu-240 [6.9391E-05 g]	7.47365E-01	5.9052E-01	1.5960E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9333-010

3. PAGE 3 OF 6 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.4950E-09 g]	1.63662E-02	1.2932E-02	3.4950E-04	
												Ra-226	2.73238E-03	2.1590E-03	5.8350E-05	
												Sr-90	1.10934E+01	8.7653E+00	2.3690E-01	
												Th-232 [2.6236E-03 kg]	1.35144E-02	1.0678E-02	2.8860E-04	
												U-234 [1.3560E-07 kg]	3.93678E-02	3.1106E-02	8.4070E-04	
												U-235 [2.1859E-02 g]	2.25193E-03	1.7793E-03	4.8090E-05	
												U-238 [2.4727E-03 kg]	3.93678E-02	3.1106E-02	8.4070E-04	
												Zn-65	1.66799E-19	1.3179E-19	3.5620E-21	
												Subtotal		3.0391E+01	8.2138E-01	
												Total		3.0391E+01	8.2138E-01	
												SNM [2.2186E-02 g]				
												Source [5.0964E-03 kg]				
ERRU000181/R5-0022-01	19 Intermodal Container	19.1139	19876.4190	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.27012E-01	1.3723E-01	3.7090E-03	AU
												C-14	5.51159E+00	3.3319E+00	9.0050E-02	
												Co-60	7.12436E-03	4.3068E-03	1.1640E-04	
		675.0000	43820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.33561E+01	1.4119E+01	3.8160E-01	
												Eu-152	3.29287E-02	1.9906E-02	5.3800E-04	
												Eu-154	1.41998E-02	8.5840E-03	2.3200E-04	
												Eu-155	3.10620E-03	1.8778E-03	5.0750E-05	
												H-3	4.50414E+00	2.7228E+00	7.3590E-02	
												Na-22	2.04121E-07	1.2340E-07	3.3350E-09	
												Ni-63	5.97859E-01	3.6142E-01	9.7680E-03	
												Pm-147	2.16975E-05	1.3117E-05	3.5450E-07	
												Pu-238 [1.4524E-08 g]	1.51117E-02	9.1353E-03	2.4690E-04	
												Pu-239 [2.7565E-04 g]	1.04601E+00	6.3233E-01	1.7090E-02	
												Pu-240 [7.4304E-05 g]	1.04601E+00	6.3233E-01	1.7090E-02	
												Pu-241 [3.7430E-09 g]	2.29093E-02	1.3849E-02	3.7430E-04	
												Ra-226	2.73223E-03	1.6517E-03	4.4640E-05	
												Sr-90	1.55279E+01	9.3869E+00	2.5370E-01	
												Th-232 [2.0073E-03 kg]	1.35142E-02	8.1696E-03	2.2080E-04	
												U-234 [1.4524E-07 kg]	5.51159E-02	3.3319E-02	9.0050E-04	
												U-235 [2.3414E-02 g]	3.15271E-03	1.9059E-03	5.1510E-05	
												U-238 [2.6485E-03 kg]	5.51159E-02	3.3319E-02	9.0050E-04	
												Zn-65	2.33561E-19	1.4119E-19	3.8160E-21	
												Subtotal		3.1460E+01	8.5027E-01	
												Total		3.1460E+01	8.5027E-01	
												SNM [2.3764E-02 g]				
												Source [4.6559E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-010**

3. PAGE **4** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000205/R5-0022-01	19 Intermodal Container	19.1139	24185.5468	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.78376E-01	1.3627E-01	3.6830E-03	AU
												C-14	4.33081E+00	3.3085E+00	8.9420E-02	
												Co-60	5.59876E-03	4.2772E-03	1.1560E-04	
		675.0000	53320.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.83510E+01	1.4019E+01	3.7890E-01	
												Eu-152	2.58725E-02	1.9765E-02	5.3420E-04	
												Eu-154	1.11588E-02	8.5248E-03	2.3040E-04	
												Eu-155	2.44050E-03	1.8644E-03	5.0390E-05	
												H-3	4.50420E+00	3.4410E+00	9.3000E-02	
												Na-22	1.60359E-07	1.2251E-07	3.3110E-09	
												Ni-63	4.69744E-01	3.5886E-01	9.6990E-03	
												Pm-147	1.70481E-05	1.3024E-05	3.5200E-07	
												Pu-238 [1.4418E-08 g]	1.18707E-02	9.0687E-03	2.4510E-04	
												Pu-239 [2.7371E-04 g]	8.21895E-01	6.2789E-01	1.6970E-02	
												Pu-240 [7.3783E-05 g]	8.21895E-01	6.2789E-01	1.6970E-02	
												Pu-241 [3.7170E-09 g]	1.80023E-02	1.3753E-02	3.7170E-04	
												Ra-226	2.73255E-03	2.0875E-03	5.6420E-05	
												Sr-90	1.22049E+01	9.3240E+00	2.5200E-01	
												Th-232 [2.5364E-03 kg]	1.35126E-02	1.0323E-02	2.7900E-04	
												U-234 [1.4423E-07 kg]	4.33081E-02	3.3085E-02	8.9420E-04	
												U-235 [2.3250E-02 g]	2.47731E-03	1.8926E-03	5.1150E-05	
												U-238 [2.6300E-03 kg]	4.33081E-02	3.3085E-02	8.9420E-04	
												Zn-65	1.83510E-19	1.4019E-19	3.7890E-21	
												Subtotal		3.1981E+01	8.6436E-01	
												Total		3.1981E+01	8.6436E-01	
												SNM [2.3598E-02 g]				
												Source [5.1665E-03 kg]				
ERRU000286/R5-0022-01	19 Intermodal Container	19.1139	15739.6563	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJL	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.27020E-01	1.0249E-01	2.7700E-03	AU
												C-14	5.51159E+00	2.4883E+00	6.7250E-02	
												Co-60	7.12285E-03	3.2157E-03	8.6910E-05	
		675.0000	34700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.33576E+01	1.0545E+01	2.8500E-01	
												Eu-152	3.29302E-02	1.4867E-02	4.0180E-04	
												Eu-154	1.42031E-02	6.4121E-03	1.7330E-04	
												Eu-155	3.10616E-03	1.4023E-03	3.7900E-05	
												H-3	4.50434E+00	2.0335E+00	5.4960E-02	
												Na-22	2.04154E-07	9.2167E-08	2.4910E-09	
												Ni-63	5.97874E-01	2.6992E-01	7.2950E-03	
												Pm-147	2.16939E-05	9.7939E-06	2.6470E-07	
												Pu-238 [1.0847E-08 g]	1.51128E-02	6.8228E-03	1.8440E-04	
												Pu-239 [2.0597E-04 g]	1.04659E+00	4.7249E-01	1.2770E-02	
												Pu-240 [5.5522E-05 g]	1.04659E+00	4.7249E-01	1.2770E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9333-010**

3. PAGE **5** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT					
												RADIONUCLIDES		pCi/gm	MBq	mCi	
												Pu-241	[2.7950E-09 g]	2.29069E-02	1.0342E-02	2.7950E-04	
												Ra-226		2.73244E-03	1.2336E-03	3.3340E-05	
												Sr-90		1.55308E+01	7.0115E+00	1.8950E-01	
												Th-232	[1.4991E-03 kg]	1.35147E-02	6.1013E-03	1.6490E-04	
												U-234	[1.0847E-07 kg]	5.51159E-02	2.4883E-02	6.7250E-04	
												U-235	[1.7486E-02 g]	3.15287E-03	1.4234E-03	3.8470E-05	
												U-238	[1.9779E-03 kg]	5.51159E-02	2.4883E-02	6.7250E-04	
												Zn-65		2.33576E-19	1.0545E-19	2.8500E-21	
												Subtotal			2.3497E+01	6.3506E-01	
												Total			2.3497E+01	6.3506E-01	
												SNM	[1.7748E-02 g]				
												Source	[3.4771E-03 kg]				
ERRU000288/R5-0022-01	19 Intermodal Container	19.1139	21327.9146	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.10795E-01	1.3875E-01	3.7500E-03	AU
												C-14		5.11810E+00	3.3689E+00	9.1050E-02	
												Co-60		6.61615E-03	4.3549E-03	1.1770E-04	
		675.0000	47020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137		2.16866E+01	1.4275E+01	3.8580E-01	
												Eu-152		3.05793E-02	2.0128E-02	5.4400E-04	
												Eu-154		1.31873E-02	8.6802E-03	2.3460E-04	
												Eu-155		2.88424E-03	1.8985E-03	5.1310E-05	
												H-3		4.50427E+00	2.9648E+00	8.0130E-02	
												Na-22		1.89547E-07	1.2476E-07	3.3720E-09	
												Ni-63		5.55150E-01	3.6541E-01	9.8760E-03	
												Pm-147		2.01464E-05	1.3261E-05	3.5840E-07	
												Pu-238	[1.4682E-08 g]	1.40305E-02	9.2352E-03	2.4960E-04	
												Pu-239	[2.7871E-04 g]	9.71343E-01	6.3936E-01	1.7280E-02	
												Pu-240	[7.5130E-05 g]	9.71343E-01	6.3936E-01	1.7280E-02	
												Pu-241	[3.7850E-09 g]	2.12762E-02	1.4005E-02	3.7850E-04	
												Ra-226		2.73246E-03	1.7986E-03	4.8610E-05	
												Sr-90		1.44240E+01	9.4942E+00	2.5660E-01	
												Th-232	[2.1855E-03 kg]	1.35134E-02	8.8948E-03	2.4040E-04	
												U-234	[1.4686E-07 kg]	5.11810E-02	3.3689E-02	9.1050E-04	
												U-235	[2.3673E-02 g]	2.92752E-03	1.9270E-03	5.2080E-05	
												U-238	[2.6779E-03 kg]	5.11810E-02	3.3689E-02	9.1050E-04	
												Zn-65		2.16866E-19	1.4275E-19	3.8580E-21	
												Subtotal			3.2024E+01	8.6550E-01	
												Total			3.2024E+01	8.6550E-01	
												SNM	[2.4027E-02 g]				
												Source	[4.8635E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9333-010**

3. PAGE **6** OF **6** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**133.7973** **4725.0000**	**151127.9158** **333180.0000**									**SNM [1.6659E-01 g]** **Source [3.4092E-02 kg]**		**2.2251E+02**	**6.0137E+00**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9333-010
PAGE 1

Railroads moving cars:

NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385

CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **13**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803947**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF **4** PAGE(S)
FORM 541 AND 541A — **10** PAGE(S)
FORM 542 AND 542A — **None** PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 7/2/1

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:37:12 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 9415 MC 7-1-21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.9375E+02**	**(7.9391E+00)**	**NA**	**19600 LBS; 81 FT3**	**009**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris MC 7-1-21 9514	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4192E+02**	**(6.5384E+00)**	**NA**	**20840 LBS; 81 FT3**	**010**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2235E+02	(8.7121E+00)	NA	21060 LBS; 81 FT3	011
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.6142E+02	(9.7681E+00)	NA	20460 LBS; 81 FT3	012
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19560 LBS; 81 FT3	013
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 MC 7-1-21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	22140 LBS; 81 FT3	014
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3169E+02	(1.1667E+01)	NA	22220 LBS; 81 FT3	015
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	4.3169E+02	(1.1667E+01)	NA	22220 LBS; 81 FT3	015
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	20760 LBS; 81 FT3	016
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	21080 LBS; 81 FT3	046
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	18840 LBS; 81 FT3	049
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Sorbed water 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-010
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-010
Material not regulated by USDOT WP-~~9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-011
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-012
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
13	m3 26.0801 ft3 921.0000	kg 96563.0180 lb 212885.0000	NP	NP	2.0556E-03 13 Containers	2.0556E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2904E+03	2.0875E+03	1.9557E+01	NP	NP	(kg)	3.8299E-01
mCi	6.1902E+01	5.6419E+01	5.2858E-01	NP	NP	(lb)	8.4436E-01

2. MANIFEST NUMBER: WP-9334-001

3. PAGE 1 OF 10 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803947

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
009/R5-0022-01	19 Lift Liner	2.2937	8890.4110	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.09598E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.51590E+00	2.4660E+00	6.6649E-02	
												Co-60	9.70549E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.18764E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.49121E-02	1.4736E-02	3.9827E-04	
		81.0000	19600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-154	1.93499E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.23660E-03	1.3901E-03	3.7569E-05	
												H-3	8.17787E+02	2.6832E+02	7.2519E+00	
												Na-22	2.78027E-07	9.1224E-08	2.4655E-09	
												Ni-63	8.14731E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.95340E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	2.05720E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.42578E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.42578E+00	4.6779E-01	1.2643E-02	
												Pu-241 [2.7725E-09 g]	3.12653E-02	1.0258E-02	2.7725E-04	
												Ra-226	7.14927E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.27929E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.37918E-01	1.4368E-01	3.8833E-03	
												U-nat [6.5200E-04 kg]	5.25504E-02	1.7242E-02	4.6600E-04	
												Zn-65	3.18764E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9375E+02	7.9391E+00	
												Total		2.9375E+02	7.9391E+00	
												SNM Source [2.5891E-04 g] [3.5955E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **2** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
010/R5-0022-01	19 Lift Liner	2.2937	9452.8656	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.39260E-01	8.3483E-02	2.2563E-03	AU
		81.0000	20840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.80919E+00	2.0269E+00	5.4781E-02	
												Co-60	7.51256E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.46152E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.47567E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.49660E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.27874E-03	1.1440E-03	3.0919E-05	
												H-3	6.33103E+02	2.2090E+02	5.9702E+00	
												Na-22	2.15629E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.30149E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.28429E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.59506E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.10276E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.10276E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.41229E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.91195E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.54029E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.23381E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.36795E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.46152E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
011/R5-0022-01	19 Lift Liner	2.2937	9552.6559	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.16000E-01	1.1143E-01	3.0115E-03	AU
		81.0000	21060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	7.67000E+00	2.7045E+00	7.3095E-02	
												Co-60	9.91000E-03	3.4944E-03	9.4442E-05	
												Cs-137	3.25000E+01	1.1460E+01	3.0972E-01	
												Eu-152	4.58000E-02	1.6149E-02	4.3647E-04	
												Eu-154	1.98000E-02	6.9815E-03	1.8869E-04	
												Eu-155	4.32000E-03	1.5233E-03	4.1169E-05	
												H-3	8.35000E+02	2.9443E+02	7.9575E+00	
												Na-22	2.84000E-07	1.0014E-07	2.7065E-09	
												Ni-63	8.32000E-01	2.9337E-01	7.9289E-03	
												Pm-147	3.02000E-05	1.0649E-05	2.8780E-07	
												Pu-238 [1.1772E-08 g]	2.10000E-02	7.4048E-03	2.0013E-04	
												Pu-239 [2.2441E-04 g]	1.46000E+00	5.1482E-01	1.3914E-02	
												Pu-240 [6.0494E-05 g]	1.46000E+00	5.1482E-01	1.3914E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-001

3. PAGE 3 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [3.0401E-09 g]	3.19000E-02	1.1248E-02	3.0400E-04
												Ra-226	7.02000E-01	2.4753E-01	6.6900E-03
												Sr-90	3.35000E+01	1.1812E+01	3.1925E-01
												Th-232 [3.7253E-02 kg]	4.30000E-01	1.5162E-01	4.0979E-03
												U-nat [2.4000E-03 kg]	1.79435E-01	6.3270E-02	1.7100E-03
												Zn-65	3.25000E-19	1.1460E-19	3.0972E-21
												Subtotal		3.2235E+02	8.7121E+00
												Total		3.2235E+02	8.7121E+00
												SNM [2.8492E-04 g]			
												Source [3.9653E-02 kg]			
012/R5-0022-01	19 Lift Liner	2.2937	9280.5005	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.65000E-01	1.2503E-01	3.3791E-03
												C-14	8.85000E+00	3.0314E+00	8.1931E-02
												Co-60	1.14000E-02	3.9050E-03	1.0554E-04
		81.0000	20460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	3.75000E+01	1.2845E+01	3.4717E-01
												Eu-152	5.29000E-02	1.8120E-02	4.8974E-04
												Eu-154	2.28000E-02	7.8100E-03	2.1108E-04
												Eu-155	4.99000E-03	1.7093E-03	4.6196E-05
												H-3	9.64000E+02	3.3021E+02	8.9245E+00
												Na-22	3.28000E-07	1.1235E-07	3.0365E-09
												Ni-63	9.60000E-01	3.2884E-01	8.8875E-03
												Pm-147	3.48000E-05	1.1920E-05	3.2217E-07
												Pu-238 [1.3233E-08 g]	2.43000E-02	8.3235E-03	2.2496E-04
												Pu-239 [2.5086E-04 g]	1.68000E+00	5.7546E-01	1.5553E-02
												Pu-240 [6.7622E-05 g]	1.68000E+00	5.7546E-01	1.5553E-02
												Pu-241 [3.4069E-09 g]	3.68000E-02	1.2606E-02	3.4069E-04
												Ra-226	7.02000E-01	2.4046E-01	6.4990E-03
												Sr-90	3.86000E+01	1.3222E+01	3.5735E-01
												Th-232 [3.6190E-02 kg]	4.30000E-01	1.4729E-01	3.9808E-03
												U-nat [2.6800E-03 kg]	2.07393E-01	7.1040E-02	1.9200E-03
												Zn-65	3.75000E-19	1.2845E-19	3.4717E-21
												Subtotal		3.6142E+02	9.7681E+00
												Total		3.6142E+02	9.7681E+00
												SNM [3.1849E-04 g]			
												Source [3.8870E-02 kg]			

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **4** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
013/R5-0022-01	19 Lift Liner	2.2937	8872.2673	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.90818E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.64258E+00	1.5201E+00	4.1085E-02	
												Co-60	5.99995E-03	1.9646E-03	5.3097E-05	
		81.0000	19560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.96720E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.77375E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.19999E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.61637E-03	8.5670E-04	2.3154E-05	
												H-3	5.05569E+02	1.6554E+02	4.4741E+00	
												Na-22	1.72130E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.03602E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.82949E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.26884E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.81304E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.81304E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	1.92785E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.90486E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.02621E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.22947E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.08706E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.96720E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
014/R5-0022-01	19 Lift Liner	2.2937	10042.5357	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.26569E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.06885E+00	1.1377E+00	3.0749E-02	
												Co-60	3.97044E-03	1.4720E-03	3.9783E-05	
		81.0000	22140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.30036E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.83785E-02	6.8136E-03	1.8415E-04	
												Eu-154	7.90620E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.73382E-03	6.4276E-04	1.7372E-05	
												H-3	3.34627E+02	1.2406E+02	3.3529E+00	
												Na-22	1.13565E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.32893E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.20500E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.41768E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	5.82562E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	5.82562E-01	2.1598E-01	5.8372E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **5** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.27435E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.08569E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.34371E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.72770E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.18577E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.30036E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
015/R5-0022-01	19 Lift Liner	2.2937	10078.8231	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.4920E-01	4.0325E-03	AU
												C-14	9.74000E+00	3.6240E+00	9.7946E-02	
												Co-60	1.26000E-02	4.6883E-03	1.2671E-04	
												Cs-137	4.13000E+01	1.5367E+01	4.1532E-01	
		81.0000	22220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.82000E-02	2.1655E-02	5.8526E-04	
												Eu-154	2.51000E-02	9.3392E-03	2.5241E-04	
												Eu-155	5.49000E-03	2.0427E-03	5.5208E-05	
												H-3	1.06000E+03	3.9438E+02	1.0659E+01	
												Na-22	3.61000E-07	1.3432E-07	3.6302E-09	
												Ni-63	1.06000E+00	3.9438E-01	1.0659E-02	
												Pm-147	3.83000E-05	1.4251E-05	3.8515E-07	
												Pu-238 [1.5794E-08 g]	2.67000E-02	9.9345E-03	2.6850E-04	
												Pu-239 [3.0006E-04 g]	1.85000E+00	6.8835E-01	1.8604E-02	
												Pu-240 [8.0886E-05 g]	1.85000E+00	6.8835E-01	1.8604E-02	
												Pu-241 [4.0727E-09 g]	4.05000E-02	1.5069E-02	4.0727E-04	
												Ra-226	7.02000E-01	2.6120E-01	7.0594E-03	
												Sr-90	4.25000E+01	1.5813E+01	4.2738E-01	
												Th-232 [3.9310E-02 kg]	4.30000E-01	1.5999E-01	4.3241E-03	
												U-nat [3.2100E-03 kg]	2.27723E-01	8.4730E-02	2.2900E-03	
												Zn-65	4.13000E-19	1.5367E-19	4.1532E-21	
												Subtotal		4.3167E+02	1.1667E+01	
												Total		4.3167E+02	1.1667E+01	
												SNM [3.8097E-04 g]				
												Source [4.2520E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **6** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
016/R5-0022-01	19 Lift Liner	2.2937	9416.5782	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.60186E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.11732E+00	3.8835E-01	1.0496E-02	
												Co-60	1.44873E-03	5.0353E-04	1.3609E-05	
		81.0000	20760.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.73443E+00	1.6455E+00	4.4474E-02	
												Eu-152	6.67554E-03	2.3202E-03	6.2709E-05	
												Eu-154	2.87853E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.29679E-04	2.1886E-04	5.9151E-06	
												H-3	4.13789E-08	1.4382E-08	3.8871E-10	
												Na-22	4.13789E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.21201E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.40302E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.06791E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.12102E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.12102E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.64921E-03	1.6159E-03	4.3674E-05	
												Ra-226	6.64714E-01	2.3104E-01	6.2442E-03	
												Sr-90	4.87646E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.07161E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.61873E-02	9.1020E-03	2.4600E-04	
												Zn-65	4.73443E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
046/R5-0022-01	19 Lift Liner	2.2937	9561.7278	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.77026E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.30703E+00	1.5201E+00	4.1085E-02	
												Co-60	5.56629E-03	1.9646E-03	5.3097E-05	
		81.0000	21080.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.82501E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.57327E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.11326E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.42727E-03	8.5670E-04	2.3154E-05	
												H-3	4.69028E+02	1.6554E+02	4.4741E+00	
												Na-22	1.59689E-07	5.6362E-08	1.5233E-09	
												Ni-63	4.67203E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.69726E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.17713E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.17605E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.17605E-01	2.8857E-01	7.7991E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **7** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.78851E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.40579E-01	2.2609E-01	6.1105E-03	
												Sr-90	1.87976E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	3.92378E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.00849E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.82501E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
049/R5-0022-01	19 Lift Liner	2.2937	8545.6808	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.48797E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.60782E+00	1.1377E+00	3.0749E-02	
												Co-60	4.66775E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.52874E+01	4.8207E+00	1.3029E-01	
		81.0000	18840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.16062E-02	6.8136E-03	1.8415E-04	
												Eu-154	9.29473E-03	2.9311E-03	7.9219E-05	
												Eu-155	2.03832E-03	6.4276E-04	1.7372E-05	
												H-3	3.93395E+02	1.2406E+02	3.3529E+00	
												Na-22	1.33510E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.91357E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.41663E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.89604E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.84875E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.84875E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.49816E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.15450E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.57970E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.38238E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.44777E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.52874E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **8** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-010/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-011/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-001**

3. PAGE **9** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-012/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-001**

3. PAGE **10** OF **10** PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**26.0801** **921.0000**	**96898.6762** **213625.0000**									**SNM [2.0556E-03 g]** **Source [3.8299E-01 kg]**		**2.2904E+03**	**6.1902E+01**	

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9334-001
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: July 06, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9334**
Manifest(s):	**WP-9334-002**
Received On:	**June 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 02, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803967**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-002**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Cavan
DATE: 6·15·21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 Digitally signed by ORTEGA.MICHAEL.12583448 27 Date: 2021.05.21 07:33:31 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**20520 LBS; 81 FT3**	**001**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.7517E+02**	**(1.0140E+01)**	**NA**	**22740 LBS; 81 FT3**	**002**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.2169E+03	(3.2888E+01)	NA	21300 LBS; 81 FT3	004
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	20820 LBS; 81 FT3	017
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	20140 LBS; 81 FT3	018
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	4.2331E+02	(1.1440E+01)	NA	19420 LBS; 81 FT3	022
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	18900 LBS; 81 FT3	045
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	8.9256E+01	(2.4123E+00)	NA	18900 LBS; 81 FT3	045
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	NA	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	19520 LBS; 81 FT3	047
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19500 LBS; 81 FT3	048
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19720 LBS; 81 FT3	050
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-001
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed water	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-001**
Material not regulated by USDOT WP-9334 Sorbed water	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-022**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 93725.7975 lb 206630.0000	NP	NP	2.7567E-03 12 Containers	2.7567E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	3.1312E+03	2.8604E+03	2.6232E+01	NP	NP	(kg)	3.8364E-01
mCi	8.4626E+01	7.7307E+01	7.0896E-01	NP	NP	(lb)	8.4579E-01

2. MANIFEST NUMBER **WP-9334-002**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX803967**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
001/R5-0022-01	19 Lift Liner	2.2937	9307.7160	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.43000E-01	8.3483E-02	2.2563E-03	AU
												C-14		5.90000E+00	2.0269E+00	5.4781E-02	
												Co-60		7.63000E-03	2.6212E-03	7.0844E-05	
												Cs-137		2.50000E+01	8.5884E+00	2.3212E-01	
												Eu-152		3.53000E-02	1.2127E-02	3.2776E-04	
		81.0000	20520.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-154		1.52000E-02	5.2218E-03	1.4113E-04	
												Eu-155		3.33000E-03	1.1440E-03	3.0919E-05	
												H-3		6.43000E+02	2.2090E+02	5.9702E+00	
												Na-22		2.19000E-07	7.5236E-08	2.0334E-09	
												Ni-63		6.40000E-01	2.1987E-01	5.9424E-03	
												Pm-147		2.32000E-05	7.9702E-06	2.1541E-07	
												Pu-238	[8.8481E-09 g]	1.62000E-02	5.5655E-03	1.5042E-04	
												Pu-239	[1.6773E-04 g]	1.12000E+00	3.8476E-01	1.0399E-02	
												Pu-240	[4.5214E-05 g]	1.12000E+00	3.8476E-01	1.0399E-02	
												Pu-241	[2.2748E-09 g]	2.45000E-02	8.4168E-03	2.2748E-04	
												Ra-226		7.02000E-01	2.4117E-01	6.5181E-03	
												Sr-90		2.58000E+01	8.8634E+00	2.3955E-01	
												Th-232	[3.6296E-02 kg]	4.30000E-01	1.4772E-01	3.9925E-03	
												U-nat	[4.8000E-04 kg]	3.69414E-02	1.2691E-02	3.4300E-04	
												Zn-65		2.50000E-19	8.5884E-20	2.3212E-21	
												Subtotal			2.4189E+02	6.5375E+00	
												Total			2.4189E+02	6.5375E+00	
												SNM Source	[2.1295E-04 g] [3.6776E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
002/R5-0022-01	19 Lift Liner	2.2937	10314.6912	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.40000E-01	1.2947E-01	3.4993E-03	AU
		81.0000	22740.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	8.26000E+00	3.1454E+00	8.5012E-02	
												Co-60	1.07000E-02	4.0744E-03	1.1012E-04	
												Cs-137	3.50000E+01	1.3328E+01	3.6022E-01	
												Eu-152	4.94000E-02	1.8812E-02	5.0842E-04	
												Eu-154	2.13000E-02	8.1111E-03	2.1922E-04	
												Eu-155	4.66000E-03	1.7746E-03	4.7961E-05	
												H-3	9.00000E+02	3.4272E+02	9.2628E+00	
												Na-22	3.06000E-07	1.1652E-07	3.1493E-09	
												Ni-63	8.96000E-01	3.4120E-01	9.2216E-03	
												Pm-147	3.25000E-05	1.2376E-05	3.3449E-07	
												Pu-238 [1.3682E-08 g]	2.26000E-02	8.6062E-03	2.3260E-04	
												Pu-239 [2.6062E-04 g]	1.57000E+00	5.9785E-01	1.6158E-02	
												Pu-240 [7.0254E-05 g]	1.57000E+00	5.9785E-01	1.6158E-02	
												Pu-241 [3.5301E-09 g]	3.43000E-02	1.3061E-02	3.5301E-04	
												Ra-226	7.02000E-01	2.6733E-01	7.2250E-03	
												Sr-90	3.61000E+01	1.3747E+01	3.7154E-01	
												Th-232 [4.0232E-02 kg]	4.30000E-01	1.6374E-01	4.4255E-03	
												U-nat [2.7900E-03 kg]	1.94326E-01	7.4000E-02	2.0000E-03	
												Zn-65	3.50000E-19	1.3328E-19	3.6022E-21	
												Subtotal		3.7517E+02	1.0140E+01	
												Total		3.7517E+02	1.0140E+01	
												SNM [3.3089E-04 g]				
												Source [4.3022E-02 kg]				
004/R5-0022-01	19 Lift Liner	2.2937	9661.5181	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.18000E+00	4.2084E-01	1.1374E-02	AU
		81.0000	21300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.86000E+01	1.0200E+01	2.7567E-01	
												Co-60	3.70000E-02	1.3196E-02	3.5664E-04	
												Cs-137	1.21000E+02	4.3153E+01	1.1663E+00	
												Eu-152	1.71000E-01	6.0983E-02	1.6482E-03	
												Eu-154	7.37000E-02	2.6284E-02	7.1038E-04	
												Eu-155	1.61000E-02	5.7417E-03	1.5518E-04	
												H-3	3.12000E+03	1.1127E+03	3.0073E+01	
												Na-22	1.06000E-06	3.7803E-07	1.0217E-08	
												Ni-63	3.10000E+00	1.1056E+00	2.9880E-02	
												Pm-147	1.13000E-04	4.0300E-05	1.0892E-06	
												Pu-238 [4.4452E-08 g]	7.84000E-02	2.7960E-02	7.5568E-04	
												Pu-239 [8.4417E-04 g]	5.43000E+00	1.9365E+00	5.2339E-02	
												Pu-240 [2.2756E-04 g]	5.43000E+00	1.9365E+00	5.2339E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.1470E-08 g]	1.19000E-01	4.2439E-02	1.1470E-03	
												Ra-226	7.02000E-01	2.5036E-01	6.7664E-03	
												Sr-90	1.25000E+02	4.4578E+01	1.2048E+00	
												Th-232 [3.7679E-02 kg]	4.30000E-01	1.5335E-01	4.1447E-03	
												U-nat [9.0400E-03 kg]	6.70209E-01	2.3902E-01	6.4600E-03	
												Zn-65	1.21000E-18	4.3153E-19	1.1663E-20	
												Subtotal		1.2168E+03	3.2888E+01	
												Total		1.2168E+03	3.2888E+01	
												SNM [1.0718E-03 g]				
												Source [4.6719E-02 kg]				
017/R5-0022-01	19 Lift Liner	2.2937	9443.7938	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.34612E-01	4.6923E-02	1.2682E-03	AU
		81.0000	20820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.26389E+00	1.1377E+00	3.0749E-02	
												Co-60	4.22277E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.38300E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.95465E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.40867E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.84401E-03	6.4276E-04	1.7372E-05	
												H-3	3.55893E+02	1.2406E+02	3.3529E+00	
												Na-22	1.20782E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.54049E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.28158E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.95265E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.19586E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.19586E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.35534E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.47246E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.42910E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.96461E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.64245E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.38300E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-002**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
018/R5-0022-01	19 Lift Liner	2.2937	9135.3509	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.12006E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.21434E+00	7.4659E-01	2.0178E-02	
												Co-60	2.86175E-03	9.6489E-04	2.6078E-05	
		81.0000	20140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	9.38278E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.32297E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.70473E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.24791E-03	4.2076E-04	1.1372E-05	
												H-3	2.41137E+02	8.1304E+01	2.1974E+00	
												Na-22	8.20055E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.40199E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.71660E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.07066E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.20348E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.20348E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.20450E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.58671E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.66426E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.03459E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.19060E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.38278E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
022/R5-0022-01	19 Lift Liner	2.2937	8808.7644	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.50000E-01	1.4629E-01	3.9537E-03	AU
												C-14	1.09000E+01	3.5434E+00	9.5768E-02	
												Co-60	1.41000E-02	4.5836E-03	1.2388E-04	
		81.0000	19420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.63000E+01	1.5051E+01	4.0679E-01	
												Eu-152	6.52000E-02	2.1195E-02	5.7285E-04	
												Eu-154	2.81000E-02	9.1349E-03	2.4689E-04	
												Eu-155	6.15000E-03	1.9993E-03	5.4034E-05	
												H-3	1.19000E+03	3.8684E+02	1.0455E+01	
												Na-22	4.04000E-07	1.3134E-07	3.5496E-09	
												Ni-63	1.18000E+00	3.8362E-01	1.0368E-02	
												Pm-147	4.30000E-05	1.3979E-05	3.7780E-07	
												Pu-238 [1.5453E-08 g]	2.99000E-02	9.7199E-03	2.6270E-04	
												Pu-239 [2.9334E-04 g]	2.07000E+00	6.7292E-01	1.8187E-02	
												Pu-240 [7.9074E-05 g]	2.07000E+00	6.7292E-01	1.8187E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.9889E-09 g]	4.54000E-02	1.4759E-02	3.9889E-04	
												Ra-226	7.02000E-01	2.2821E-01	6.1678E-03	
												Sr-90	4.76000E+01	1.5474E+01	4.1822E-01	
												Th-232 [3.4345E-02 kg]	4.30000E-01	1.3979E-01	3.7780E-03	
												U-nat [3.1400E-03 kg]	2.54950E-01	8.2880E-02	2.2400E-03	
												Zn-65	4.63000E-19	1.5051E-19	4.0679E-21	
												Subtotal		4.2330E+02	1.1440E+01	
												Total		4.2330E+02	1.1440E+01	
												SNM [3.7243E-04 g]				
												Source [3.7485E-02 kg]				
045/R5-0022-01	19 Lift Liner	2.2937	8572.8964	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.72000E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.36000E+00	7.4659E-01	2.0178E-02	
												Co-60	3.05000E-03	9.6489E-04	2.6078E-05	
		81.0000	18900.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.00000E+01	3.1636E+00	8.5502E-02	
												Eu-152	1.41000E-02	4.4607E-03	1.2056E-04	
												Eu-154	6.08000E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.33000E-03	4.2076E-04	1.1372E-05	
												H-3	2.57000E+02	8.1304E+01	2.1974E+00	
												Na-22	8.74000E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.56000E-01	8.0986E-02	2.1888E-03	
												Pm-147	9.29000E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.47000E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.48000E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.48000E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.81000E-03	3.1034E-03	8.3877E-05	
												Ra-226	7.02000E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.03000E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.30000E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.53205E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.00000E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
047/R5-0022-01	19 Lift Liner	2.2937	8854.1236	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.43600E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.48182E+00	1.1377E+00	3.0749E-02	
												Co-60	4.50473E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.47535E+01	4.8207E+00	1.3029E-01	
		81.0000	19520.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.08516E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.97011E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.96713E-03	6.4276E-04	1.7372E-05	
												H-3	3.79656E+02	1.2406E+02	3.3529E+00	
												Na-22	1.28847E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.77689E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.36715E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.55041E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.60955E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.60955E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.44584E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.90462E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.52452E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.22933E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.15273E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.47535E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
048/R5-0022-01	19 Lift Liner	2.2937	8845.0518	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.91407E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.65690E+00	1.5201E+00	4.1085E-02	
												Co-60	6.01846E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.97326E+01	6.4413E+00	1.7409E-01	
		81.0000	19500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.78230E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.20369E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.62444E-03	8.5670E-04	2.3154E-05	
												H-3	5.07129E+02	1.6554E+02	4.4741E+00	
												Na-22	1.72661E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.05156E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.83514E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.27276E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.84023E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.84023E-01	2.8857E-01	7.7991E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.93380E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.92616E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.03246E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.24252E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09042E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.97326E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
050/R5-0022-01	19 Lift Liner	2.2937	8944.8421	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.52883E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.13996E+00	2.0269E+00	5.4781E-02	
												Co-60	7.94032E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.60168E+01	8.5884E+00	2.3212E-01	
		81.0000	19720.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.67357E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.58182E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.46543E-03	1.1440E-03	3.0919E-05	
												H-3	6.69151E+02	2.2090E+02	5.9702E+00	
												Na-22	2.27907E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.66029E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.41436E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.68589E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.16555E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.16555E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.54964E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.30551E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.68493E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.47489E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.44585E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.60168E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-001/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-022/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-002**

3. PAGE **9** OF **9** PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		**25.0324**	**94025.1685**									**SNM [2.7567E-03 g]**		**3.1312E+03**	**8.4626E+01**	
		884.0000	**207290.0000**									**Source [3.8364E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-002
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803383**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-003**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 7/21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:35:37 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9314 Soil and debris MC 7121	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4192E+02**	**(6.5384E+00)**	**NA**	**20340 LBS; 81 FT3**	**057**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ 9314 Soil and debris MC 7121	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19240 LBS; 81 FT3**	**058**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334-~~Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	20100 LBS; 81 FT3	059
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334-~~Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19840 LBS; 81 FT3	060
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334-~~Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	20300 LBS; 81 FT3	061
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334-~~Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19360 LBS; 81 FT3	062
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
9514 Material not regulated by USDOT WP-~~9334-~~Soil and debris WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	19060 LBS; 81 FT3	065
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 ME7121	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	1.3601E+02	(3.6759E+00)	NA	19060 LBS; 81 FT3	065
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 7121 ME	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	19960 LBS; 81 FT3	068
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 ME7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	18460 LBS; 81 FT3	079
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 ME7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19400 LBS; 81 FT3	080
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Sorbed liquid 9514 ME7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-013
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 Sorbed liquid mc-7121	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-013
Material not regulated by USDOT WP-~~9334~~ 9514 Sorbed Liquid 9514 mc7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-021
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 90768.3751 lb 200110.0000	NP	NP	1.6371E-03 12 Containers	1.6371E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE
MBq	1.7755E+03	1.6130E+03	1.5585E+01	NP	NP	(kg) 3.7286E-01
mCi	4.7987E+01	4.3595E+01	4.2123E-01	NP	NP	(lb) 8.2201E-01

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803383

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
057/R5-0022-01	19 Lift Liner	2.2937	9226.0694	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.45156E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.95234E+00	2.0269E+00	5.4781E-02	
												Co-60	7.69769E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.52218E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.56132E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.53348E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.35954E-03	1.1440E-03	3.0919E-05	
												H-3	6.48704E+02	2.2090E+02	5.9702E+00	
												Na-22	2.20943E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.45678E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.34058E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.63437E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.12994E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.12994E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.47173E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.08228E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.60289E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.33815E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.40166E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.52218E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
058/R5-0022-01	19 Lift Liner	2.2937	8727.1178	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		4.96637E-02	1.5995E-02	4.3229E-04	AU
												C-14		1.20583E+00	3.8835E-01	1.0496E-02	
												Co-60		1.56349E-03	5.0353E-04	1.3609E-05	
		81.0000	19240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137		5.10943E+00	1.6455E+00	4.4474E-02	
												Eu-152		7.20430E-03	2.3202E-03	6.2709E-05	
												Eu-154		3.10653E-03	1.0005E-03	2.7040E-05	
												Eu-155		6.79554E-04	2.1886E-04	5.9151E-06	
												H-3		4.46564E-08	1.4382E-08	3.8871E-10	
												Na-22		4.46564E-08	1.4382E-08	3.8871E-10	
												Ni-63		1.30801E-01	4.2125E-02	1.1385E-03	
												Pm-147		4.75177E-06	1.5304E-06	4.1361E-08	
												Pu-238	[1.6953E-09 g]	3.31091E-03	1.0663E-03	2.8819E-05	
												Pu-239	[3.2136E-05 g]	2.28903E-01	7.3723E-02	1.9925E-03	
												Pu-240	[8.6629E-06 g]	2.28903E-01	7.3723E-02	1.9925E-03	
												Pu-241	[4.3674E-10 g]	5.01746E-03	1.6159E-03	4.3674E-05	
												Ra-226		7.17364E-01	2.3104E-01	6.2442E-03	
												Sr-90		5.26271E+00	1.6949E+00	4.5809E-02	
												Th-232	[3.4771E-02 kg]	4.39411E-01	1.4152E-01	3.8248E-03	
												U-nat	[3.4400E-04 kg]	2.82616E-02	9.1020E-03	2.4600E-04	
												Zn-65		5.10943E-20	1.6455E-20	4.4474E-22	
												Subtotal			4.3227E+00	1.1683E-01	
												Total			4.3227E+00	1.1683E-01	
												SNM	[4.0801E-05 g]				
												Source	[3.5115E-02 kg]				
059/R5-0022-01	19 Lift Liner	2.2937	9117.2072	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		4.75335E-02	1.5995E-02	4.3229E-04	AU
												C-14		1.15410E+00	3.8835E-01	1.0496E-02	
												Co-60		1.49642E-03	5.0353E-04	1.3609E-05	
		81.0000	20100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137		4.89027E+00	1.6455E+00	4.4474E-02	
												Eu-152		6.89529E-03	2.3202E-03	6.2709E-05	
												Eu-154		2.97329E-03	1.0005E-03	2.7040E-05	
												Eu-155		6.50406E-04	2.1886E-04	5.9151E-06	
												H-3		4.27410E-08	1.4382E-08	3.8871E-10	
												Na-22		4.27410E-08	1.4382E-08	3.8871E-10	
												Ni-63		1.25191E-01	4.2125E-02	1.1385E-03	
												Pm-147		4.54796E-06	1.5304E-06	4.1361E-08	
												Pu-238	[1.6953E-09 g]	3.16890E-03	1.0663E-03	2.8819E-05	
												Pu-239	[3.2136E-05 g]	2.19084E-01	7.3723E-02	1.9925E-03	
												Pu-240	[8.6629E-06 g]	2.19084E-01	7.3723E-02	1.9925E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												Pu-241 [4.3674E-10 g]	4.80225E-03	1.6159E-03	4.3674E-05	
												Ra-226	6.86595E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.03698E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.20564E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.70494E-02	9.1020E-03	2.4600E-04	
												Zn-65	4.89027E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
060/R5-0022-01	19 Lift Liner	2.2937	8999.2732	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.51350E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.10273E+00	2.0269E+00	5.4781E-02	
												Co-60	7.89217E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.58590E+01	8.5884E+00	2.3212E-01	
		81.0000	19840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.65129E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.57223E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.44442E-03	1.1440E-03	3.0919E-05	
												H-3	6.65094E+02	2.2090E+02	5.9702E+00	
												Na-22	2.26525E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.61991E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.39972E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.67566E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.15848E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.15848E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.53418E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.26121E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.66865E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.44775E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.43708E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.58590E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
061/R5-0022-01	19 Lift Liner	2.2937	9207.9257	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.98896E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.25609E+00	2.4660E+00	6.6649E-02	
		81.0000	20300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	9.36999E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.07745E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.33596E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.86810E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.09015E-03	1.3901E-03	3.7569E-05	
												H-3	7.89518E+02	2.6832E+02	7.2519E+00	
												Na-22	2.68416E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.86568E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.85131E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.98608E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.37649E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.37649E+00	4.6779E-01	1.2643E-02	
												Pu-241 [2.7725E-09 g]	3.01845E-02	1.0258E-02	2.7725E-04	
												Ra-226	6.90213E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.16594E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.22780E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.69838E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.07745E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
062/R5-0022-01	19 Lift Liner	2.2937	8781.5489	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.92794E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.69067E+00	1.5201E+00	4.1085E-02	
		81.0000	19360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	6.06209E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.98757E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.80248E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.21242E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.64347E-03	8.5670E-04	2.3154E-05	
												H-3	5.10806E+02	1.6554E+02	4.4741E+00	
												Na-22	1.73912E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.08818E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.84844E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.28198E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.90432E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.90432E-01	2.8857E-01	7.7991E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.94782E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.97637E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.04720E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.27328E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09832E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.98757E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
065/R5-0022-01	19 Lift Liner	2.2937	8645.4711	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.47075E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.56607E+00	1.1377E+00	3.0749E-02	
												Co-60	4.61373E-03	1.4720E-03	3.9783E-05	
		81.0000	19060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.51105E+01	4.8207E+00	1.3029E-01	
												Eu-152	2.13561E-02	6.8136E-03	1.8415E-04	
												Eu-154	9.18716E-03	2.9311E-03	7.9219E-05	
												Eu-155	2.01473E-03	6.4276E-04	1.7372E-05	
												H-3	3.88843E+02	1.2406E+02	3.3529E+00	
												Na-22	1.31965E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.86828E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.40024E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.78151E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.76949E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.76949E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.48083E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.07170E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.56142E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.33167E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.35001E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.51105E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
068/R5-0022-01	19 Lift Liner	2.2937	9053.7043	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		3.04000E-01	1.0158E-01	2.7454E-03	AU
		81.0000	19960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		7.38000E+00	2.4660E+00	6.6649E-02	
												Co-60		9.53000E-03	3.1844E-03	8.6065E-05	
												Cs-137		3.13000E+01	1.0459E+01	2.8267E-01	
												Eu-152		4.41000E-02	1.4736E-02	3.9827E-04	
												Eu-154		1.90000E-02	6.3488E-03	1.7159E-04	
												Eu-155		4.16000E-03	1.3901E-03	3.7569E-05	
												H-3		8.03000E+02	2.6832E+02	7.2519E+00	
												Na-22		2.73000E-07	9.1224E-08	2.4655E-09	
												Ni-63		8.00000E-01	2.6732E-01	7.2248E-03	
												Pm-147		2.90000E-05	9.6903E-06	2.6190E-07	
												Pu-238	[1.0731E-08 g]	2.02000E-02	6.7499E-03	1.8243E-04	
												Pu-239	[2.0393E-04 g]	1.40000E+00	4.6779E-01	1.2643E-02	
												Pu-240	[5.4971E-05 g]	1.40000E+00	4.6779E-01	1.2643E-02	
												Pu-241	[2.7725E-09 g]	3.07000E-02	1.0258E-02	2.7725E-04	
												Ra-226		7.02000E-01	2.3457E-01	6.3397E-03	
												Sr-90		3.22000E+01	1.0760E+01	2.9080E-01	
												Th-232	[3.5303E-02 kg]	4.30000E-01	1.4368E-01	3.8833E-03	
												U-nat	[2.1800E-03 kg]	1.72739E-01	5.7720E-02	1.5600E-03	
												Zn-65		3.13000E-19	1.0459E-19	2.8267E-21	
												Subtotal			2.9379E+02	7.9402E+00	
												Total			2.9379E+02	7.9402E+00	
												SNM	[2.5891E-04 g]				
												Source	[3.7483E-02 kg]				
079/R5-0022-01	19 Lift Liner	2.2937	8373.3157	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.51869E-01	4.6923E-02	1.2682E-03	AU
		81.0000	18460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		3.68229E+00	1.1377E+00	3.0749E-02	
												Co-60		4.76410E-03	1.4720E-03	3.9783E-05	
												Cs-137		1.56029E+01	4.8207E+00	1.3029E-01	
												Eu-152		2.20521E-02	6.8136E-03	1.8415E-04	
												Eu-154		9.48658E-03	2.9311E-03	7.9219E-05	
												Eu-155		2.08039E-03	6.4276E-04	1.7372E-05	
												H-3		4.01515E+02	1.2406E+02	3.3529E+00	
												Na-22		1.36266E-07	4.2102E-08	1.1379E-09	
												Ni-63		3.99435E-01	1.2341E-01	3.3355E-03	
												Pm-147		1.44587E-05	4.4674E-06	1.2074E-07	
												Pu-238	[4.9614E-09 g]	1.01003E-02	3.1207E-03	8.4343E-05	
												Pu-239	[9.4148E-05 g]	6.99011E-01	2.1598E-01	5.8372E-03	
												Pu-240	[2.5379E-05 g]	6.99011E-01	2.1598E-01	5.8372E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.52909E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.30217E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.61230E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.47284E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.62214E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.56029E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
080/R5-0022-01	19 Lift Liner	2.2937	8799.6926	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.57065E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.24150E+00	2.0269E+00	5.4781E-02	
												Co-60	8.07163E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.64470E+01	8.5884E+00	2.3212E-01	
		81.0000	19400.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.73432E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.60798E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.52274E-03	1.1440E-03	3.0919E-05	
												H-3	6.80218E+02	2.2090E+02	5.9702E+00	
												Na-22	2.31676E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.77044E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.45428E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.71377E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.18483E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.18483E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.59181E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.42633E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.72933E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.54889E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.46976E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.64470E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
T-013/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-021/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-003**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		**25.0324**	**91067.7461**									**SNM [1.6371E-03 g]**		**1.7755E+03**	**4.7987E+01**	
		884.0000	**200770.0000**									**Source [3.7286E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-003
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> ~~13~~ 12 MC 7.1.21

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX804003**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**

SHIPMENT NUMBER:

☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-004**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE: 7/2/1

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.20 14:30:28 -04'00'

TITLE: Manifester

DATE: 20 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
NA	**NA**	**NA**								**NA**		
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSK 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.8442E+02**	**(1.0390E+01)**	**NA**	**18700 LBS; 81 FT3**	**051**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSK 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19700 LBS; 81 FT3**	**055**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	8.9256E+01	(2.4123E+00)	NA	19700 LBS; 81 FT3	055
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	21640 LBS; 81 FT3	056
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	18700 LBS; 81 FT3	063
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	19660 LBS; 81 FT3	066
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	20160 LBS; 81 FT3	067
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19640 LBS; 81 FT3**	**069**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8137E+02**	**(4.9019E+00)**	**NA**	**18700 LBS; 81 FT3**	**070**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.9379E+02**	**(7.9402E+00)**	**NA**	**19940 LBS; 81 FT3**	**071**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8137E+02**	**(4.9019E+00)**	**NA**	**21260 LBS; 81 FT3**	**072**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Sorbed Water 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-003**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Sorbed Water 9514 CR 7/1/21	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-003**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Sorbed water 9514 7/1/21 CR	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-023**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 91693.7038 lb 202150.0000	NP	NP	1.5832E-03 12 Containers	1.5832E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.7121E+03	1.5544E+03	1.5054E+01	NP	NP	(kg)	3.7031E-01
mCi	4.6272E+01	4.2011E+01	4.0687E-01	NP	NP	(lb)	8.1639E-01

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CIGX804003**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
051/R5-0022-01	19 Lift Liner	2.2937 81.0000	8482.1779 18700.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.3303E-01	3.5953E-03	AU
												C-14	1.03000E+01	3.2239E+00	8.7132E-02	
												Co-60	1.33000E-02	4.1629E-03	1.1251E-04	
												Cs-137	4.38000E+01	1.3709E+01	3.7052E-01	
												Eu-152	6.17000E-02	1.9312E-02	5.2195E-04	
												Eu-154	2.66000E-02	8.3257E-03	2.2502E-04	
												Eu-155	5.82000E-03	1.8217E-03	4.9234E-05	
												H-3	1.12000E+03	3.5056E+02	9.4746E+00	
												Na-22	3.82000E-07	1.1957E-07	3.2315E-09	
												Ni-63	1.12000E+00	3.5056E-01	9.4746E-03	
												Pm-147	2.83000E-02	8.8578E-03	2.3940E-04	
												Pu-238 [9.7533E-07 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-239 [2.6743E-04 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-240 [7.2089E-05 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-241 [3.6291E-09 g]	4.29000E-02	1.3428E-02	3.6291E-04	
												Ra-226	7.02000E-01	2.1972E-01	5.9385E-03	
												Sr-90	4.51000E+01	1.4116E+01	3.8152E-01	
												Th-232 [3.3069E-02 kg]	4.30000E-01	1.3459E-01	3.6376E-03	
												U-nat [2.8700E-03 kg]	2.42332E-01	7.5850E-02	2.0500E-03	
												Zn-65	4.38000E-19	1.3709E-19	3.7052E-21	
												Subtotal		3.8442E+02	1.0390E+01	
												Total		3.8442E+02	1.0390E+01	
												SNM [3.4050E-04 g]				
												Source [3.5939E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
055/R5-0022-01	19 Lift Liner	2.2937	8935.7703	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.32427E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.26392E+00	7.4659E-01	2.0178E-02	
												Co-60	2.92583E-03	9.6489E-04	2.6078E-05	
		81.0000	19700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	9.59288E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.35260E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.83247E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.27585E-03	4.2076E-04	1.1372E-05	
												H-3	2.46537E+02	8.1304E+01	2.1974E+00	
												Na-22	8.38417E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.45578E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.91178E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.20659E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.29761E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.29761E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.41061E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.73420E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.88066E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.12494E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.30683E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.59288E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
056/R5-0022-01	19 Lift Liner	2.2937	9815.7395	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.30394E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.59393E+00	2.0269E+00	5.4781E-02	
												Co-60	7.23419E-03	2.6212E-03	7.0844E-05	
		81.0000	21640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.37031E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.34688E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.44115E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.15725E-03	1.1440E-03	3.0919E-05	
												H-3	6.09644E+02	2.2090E+02	5.9702E+00	
												Na-22	2.07639E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.06799E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.19965E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.53596E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.06190E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.06190E+00	3.8476E-01	1.0399E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.2748E-09 g]	2.32290E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.65583E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.44616E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.07693E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.31727E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.37031E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
063/R5-0022-01	19 Lift Liner	2.2937	8482.1779	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	5.11017E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.24074E+00	3.8835E-01	1.0496E-02	
												Co-60	1.60876E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.25737E+00	1.6455E+00	4.4474E-02	
		81.0000	18700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	7.41290E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.19648E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.99231E-04	2.1886E-04	5.9151E-06	
												H-3	4.59494E-08	1.4382E-08	3.8871E-10	
												Na-22	4.59494E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.34589E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.88936E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.40678E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.35530E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.35530E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	5.16274E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.38135E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.41509E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.52134E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.90799E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.25737E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
066/R5-0022-01	19 Lift Liner	2.2937	8917.6266	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		4.86000E-02	1.5995E-02	4.3229E-04	AU
		81.0000	19660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		1.18000E+00	3.8835E-01	1.0496E-02	
												Co-60		1.53000E-03	5.0353E-04	1.3609E-05	
												Cs-137		5.00000E+00	1.6455E+00	4.4474E-02	
												Eu-152		7.05000E-03	2.3202E-03	6.2709E-05	
												Eu-154		3.04000E-03	1.0005E-03	2.7040E-05	
												Eu-155		6.65000E-04	2.1886E-04	5.9151E-06	
												H-3		4.37000E-08	1.4382E-08	3.8871E-10	
												Na-22		4.37000E-08	1.4382E-08	3.8871E-10	
												Ni-63		1.28000E-01	4.2125E-02	1.1385E-03	
												Pm-147		4.65000E-06	1.5304E-06	4.1361E-08	
												Pu-238	[1.6953E-09 g]	3.24000E-03	1.0663E-03	2.8819E-05	
												Pu-239	[3.2136E-05 g]	2.24000E-01	7.3723E-02	1.9925E-03	
												Pu-240	[8.6629E-06 g]	2.24000E-01	7.3723E-02	1.9925E-03	
												Pu-241	[4.3674E-10 g]	4.91000E-03	1.6159E-03	4.3674E-05	
												Ra-226		7.02000E-01	2.3104E-01	6.2442E-03	
												Sr-90		5.15000E+00	1.6949E+00	4.5809E-02	
												Th-232	[3.4771E-02 kg]	4.30000E-01	1.4152E-01	3.8248E-03	
												U-nat	[3.4400E-04 kg]	2.76563E-02	9.1020E-03	2.4600E-04	
												Zn-65		5.00000E-20	1.6455E-20	4.4474E-22	
												Subtotal			4.3227E+00	1.1683E-01	
												Total			4.3227E+00	1.1683E-01	
												SNM	[4.0801E-05 g]				
												Source	[3.5115E-02 kg]				
067/R5-0022-01	19 Lift Liner	2.2937	9144.4228	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.47350E-01	8.3483E-02	2.2563E-03	AU
		81.0000	20160.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		6.00562E+00	2.0269E+00	5.4781E-02	
												Co-60		7.76659E-03	2.6212E-03	7.0844E-05	
												Cs-137		2.54475E+01	8.5884E+00	2.3212E-01	
												Eu-152		3.59319E-02	1.2127E-02	3.2776E-04	
												Eu-154		1.54721E-02	5.2218E-03	1.4113E-04	
												Eu-155		3.38961E-03	1.1440E-03	3.0919E-05	
												H-3		6.54511E+02	2.2090E+02	5.9702E+00	
												Na-22		2.22920E-07	7.5236E-08	2.0334E-09	
												Ni-63		6.51457E-01	2.1987E-01	5.9424E-03	
												Pm-147		2.36153E-05	7.9702E-06	2.1541E-07	
												Pu-238	[8.8481E-09 g]	1.64900E-02	5.5655E-03	1.5042E-04	
												Pu-239	[1.6773E-04 g]	1.14005E+00	3.8476E-01	1.0399E-02	
												Pu-240	[4.5214E-05 g]	1.14005E+00	3.8476E-01	1.0399E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	2.49386E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.14567E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.62619E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.37698E-01	1.4772E-01	3.9925E-03	
												U-nat [3.7941E-03 kg]	1.41421E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.54475E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [4.0090E-02 kg]				
069/R5-0022-01	19 Lift Liner	2.2937	8908.5547	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.35283E-02	3.0750E-02	8.3108E-04	AU
		81.0000	19640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.27085E+00	7.4659E-01	2.0178E-02	
												Co-60	2.93479E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.62226E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.35674E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.85033E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.27976E-03	4.2076E-04	1.1372E-05	
												H-3	2.47292E+02	8.1304E+01	2.1974E+00	
												Na-22	8.40985E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.46330E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.93908E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.22560E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.31077E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.31077E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.43943E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.75482E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.91092E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.13757E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.32308E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.62226E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
070/R5-0022-01	19 Lift Liner	2.2937	8482.1779	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.99617E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.85666E+00	1.5201E+00	4.1085E-02	
												Co-60	6.27662E-03	1.9646E-03	5.3097E-05	
		81.0000	18700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.05791E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.90165E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.25532E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.73702E-03	8.5670E-04	2.3154E-05	
												H-3	5.28883E+02	1.6554E+02	4.4741E+00	
												Na-22	1.80067E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.26825E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.91386E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.32735E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	9.21943E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	9.21943E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	2.01675E-02	6.3126E-03	1.7061E-04	
												Ra-226	7.22326E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.11965E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.42450E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.13719E-01	3.5594E-02	9.6200E-04	
												Zn-65	2.05791E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
071/R5-0022-01	19 Lift Liner	2.2937	9044.6325	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.04306E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.38742E+00	2.4660E+00	6.6649E-02	
												Co-60	9.53958E-03	3.1844E-03	8.6065E-05	
		81.0000	19940.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	3.13315E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.41443E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.90191E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.16418E-03	1.3901E-03	3.7569E-05	
												H-3	8.03807E+02	2.6832E+02	7.2519E+00	
												Na-22	2.73275E-07	9.1224E-08	2.4655E-09	
												Ni-63	8.00804E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.90292E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	2.02203E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.40141E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.40141E+00	4.6779E-01	1.2643E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7725E-09 g]	3.07309E-02	1.0258E-02	2.7725E-04	
												Ra-226	7.02706E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.22324E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.30432E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.72912E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.13315E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
072/R5-0022-01	19 Lift Liner	2.2937	9643.3744	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.75524E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.27048E+00	1.5201E+00	4.1085E-02	
												Co-60	5.51905E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.80952E+01	6.4413E+00	1.7409E-01	
		81.0000	21260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.55143E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.10381E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.40667E-03	8.5670E-04	2.3154E-05	
												H-3	4.65048E+02	1.6554E+02	4.4741E+00	
												Na-22	1.58333E-07	5.6362E-08	1.5233E-09	
												Ni-63	4.63238E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.68286E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.16714E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.10667E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.10667E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	1.77333E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.35143E-01	2.2609E-01	6.1105E-03	
												Sr-90	1.86381E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	3.89048E-01	1.3849E-01	3.7429E-03	
												U-nat [2.8294E-03 kg]	9.99933E-02	3.5594E-02	9.6200E-04	
												Zn-65	1.80952E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.6856E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-004**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
T-003/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14		4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60		6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137		2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152		2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154		1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155		2.78000E-06	1.0614E-07	2.8687E-09	
												H-3		5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22		1.83000E-10	6.9871E-12	1.8884E-13	
												NI-63		5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147		1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238	[8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239	[8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240	[2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241	[2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226		7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90		2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232	[4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat	[1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65		2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal			6.5689E-02	1.7754E-03	
												Total			6.5689E-02	1.7754E-03	
												SNM	[1.1390E-08 g]				
												Source	[4.0340E-03 kg]				
T-023/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14		4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60		6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137		2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152		2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154		1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155		2.78000E-06	1.0614E-07	2.8687E-09	
												H-3		5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22		1.83000E-10	6.9871E-12	1.8884E-13	
												NI-63		5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147		1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238	[8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239	[8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240	[2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324	91993.0747									SNM [1.5832E-03 g]		1.7121E+03	4.6272E+01	
		884.0000	202810.0000									Source [3.7031E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists ADDITIONAL NOTES	Manifest Number WP-9334-004 PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803413**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-005**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 7/1/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:30:14 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.3967E-01**	**(1.4586E-02)**	**NA**	**18740 LBS; 81 FT3**	**033**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19460 LBS; 81 FT3**	**034**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**21180 LBS; 81 FT3**	**035**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4196E+02**	**(6.5395E+00)**	**NA**	**21780 LBS; 81 FT3**	**036**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.9379E+02**	**(7.9402E+00)**	**NA**	**21260 LBS; 81 FT3**	**039**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.0638E+02**	**(1.0983E+01)**	**NA**	**20920 LBS; 81 FT3**	**040**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.0210E+02**	**(1.0867E+01)**	**NA**	**20700 LBS; 81 FT3**	**044**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**4.0210E+02**	**(1.0867E+01)**	**NA**	**20700 LBS; 81 FT3**	**044**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.9492E+02**	**(1.0673E+01)**	**NA**	**19240 LBS; 81 FT3**	**052**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.1360E+02**	**(1.1178E+01)**	**NA**	**20180 LBS; 81 FT3**	**053**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**22860 LBS; 81 FT3**	**054**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Sorbed Water 9514 CAF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-002**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed Water 9514 CGF 7/1/21	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-002**
Material not regulated by USDOT WP-9334 Sorbes Water 9514 CGF 7/1/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-009**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 95422.2333 lb 210370.0000	NP	NP	1.8514E-03 12 Containers	1.8514E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.3830E+03	2.1725E+03	2.0351E+01	NP	NP	(kg)	3.7635E-01
mCi	6.4405E+01	5.8716E+01	5.5004E-01	NP	NP	(lb)	8.2972E-01

2. MANIFEST NUMBER **WP-9334-005**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX803413**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
033/R5-0022-01	19 Lift Liner	2.2937 81.0000	8500.3216 18740.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	6.3988E-05	1.7294E-06	AU
												C-14	4.96000E-03	1.5558E-03	4.2049E-05	
												Co-60	6.39000E-06	2.0044E-06	5.4172E-08	
												Cs-137	2.10000E-02	6.5871E-03	1.7803E-04	
												Eu-152	2.95000E-05	9.2533E-06	2.5009E-07	
												Eu-154	1.28000E-05	4.0149E-06	1.0851E-07	
												Eu-155	2.78000E-06	8.7202E-07	2.3568E-08	
												H-3	5.39000E-01	1.6907E-01	4.5694E-03	
												Na-22	1.83000E-10	5.7402E-11	1.5514E-12	
												Ni-63	5.36000E-04	1.6813E-04	4.5440E-06	
												Pm-147	1.95000E-08	6.1165E-09	1.6531E-10	
												Pu-238 [6.7821E-12 g]	1.36000E-05	4.2661E-06	1.1530E-07	
												Pu-239 [7.3700E-08 g]	5.39000E-04	1.6907E-04	4.5694E-06	
												Pu-240 [1.9867E-08 g]	5.39000E-04	1.6907E-04	4.5694E-06	
												Pu-241 [1.7464E-12 g]	2.06000E-05	6.4617E-06	1.7464E-07	
												Ra-226	7.02000E-01	2.2020E-01	5.9513E-03	
												Sr-90	2.15000E-02	6.7440E-03	1.8227E-04	
												Th-232 [3.3140E-02 kg]	4.30000E-01	1.3488E-01	3.6454E-03	
												U-nat [1.3800E-06 kg]	1.15953E-04	3.6371E-05	9.8300E-07	
												Zn-65	2.10000E-22	6.5871E-23	1.7803E-24	
												Subtotal		5.3967E-01	1.4586E-02	
												Total		5.3967E-01	1.4586E-02	
												SNM [9.3576E-08 g]				
												Source [3.3141E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
034/R5-0022-01	19 Lift Liner	2.2937	8826.9081	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.91008E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.19216E+00	3.8835E-01	1.0496E-02	
		81.0000	19460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	1.54577E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.05152E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.12264E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.07132E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.71852E-04	2.1886E-04	5.9151E-06	
												H-3	4.41503E-08	1.4382E-08	3.8871E-10	
												Na-22	4.41503E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.29319E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.69791E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.27338E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.26308E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.26308E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.96059E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.09233E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.20307E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.34431E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.79413E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.05152E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
035/R5-0022-01	19 Lift Liner	2.2937	9607.0870	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.32319E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.20828E+00	1.1377E+00	3.0749E-02	
		81.0000	21180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	4.15083E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.35944E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.92134E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.26540E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.81259E-03	6.4276E-04	1.7372E-05	
												H-3	3.49830E+02	1.2406E+02	3.3529E+00	
												Na-22	1.18725E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.48017E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.25975E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.80012E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.09030E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.09030E-01	2.1598E-01	5.8372E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.33225E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.36219E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.40476E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.89707E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.51224E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.35944E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
036/R5-0022-01	19 Lift Liner	2.2937	9879.2425	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.28910E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.55789E+00	2.0269E+00	5.4781E-02	
												Co-60	7.18758E-03	2.6212E-03	7.0844E-05	
		81.0000	21780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.35504E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.32532E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.43186E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.13691E-03	1.1440E-03	3.0919E-05	
												H-3	6.05716E+02	2.2090E+02	5.9702E+00	
												Na-22	2.06301E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.02890E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.18548E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.52607E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.05506E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.05506E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.30794E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.61295E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.43040E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.05067E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	2.41465E-01	8.8060E-02	2.3800E-03	
												Zn-65	2.35504E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4196E+02	6.5395E+00	
												Total		2.4196E+02	6.5395E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
039/R5-0022-01	19 Lift Liner	2.2937	9643.3744	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.85367E-01	1.0158E-01	2.7454E-03	AU
												C-14	6.92767E+00	2.4660E+00	6.6649E-02	
												Co-60	8.94589E-03	3.1844E-03	8.6065E-05	
		81.0000	21260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.93816E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.13970E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.78355E-02	6.3488E-03	1.7159E-04	
												Eu-155	3.90503E-03	1.3901E-03	3.7569E-05	
												H-3	7.53783E+02	2.6832E+02	7.2519E+00	
												Na-22	2.56267E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.50967E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.72225E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.89619E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.31419E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.31419E+00	4.6779E-01	1.2643E-02	
												Pu-241 [2.7725E-09 g]	2.88183E-02	1.0258E-02	2.7725E-04	
												Ra-226	6.58973E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.02264E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.03645E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.62151E-01	5.7720E-02	1.5600E-03	
												Zn-65	2.93816E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
040/R5-0022-01	19 Lift Liner	2.2937	9489.1530	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.4045E-01	3.7960E-03	AU
												C-14	9.74000E+00	3.4115E+00	9.2203E-02	
												Co-60	1.26000E-02	4.4134E-03	1.1928E-04	
		81.0000	20920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.13000E+01	1.4466E+01	3.9096E-01	
												Eu-152	5.82000E-02	2.0385E-02	5.5095E-04	
												Eu-154	2.51000E-02	8.7916E-03	2.3761E-04	
												Eu-155	5.49000E-03	1.9229E-03	5.1971E-05	
												H-3	1.06000E+03	3.7126E+02	1.0034E+01	
												Na-22	3.61000E-07	1.2644E-07	3.4174E-09	
												Ni-63	1.06000E+00	3.7126E-01	1.0034E-02	
												Pm-147	3.83000E-05	1.3415E-05	3.6256E-07	
												Pu-238 [1.4868E-08 g]	2.67000E-02	9.3518E-03	2.5275E-04	
												Pu-239 [2.8247E-04 g]	1.85000E+00	6.4798E-01	1.7513E-02	
												Pu-240 [7.6143E-05 g]	1.85000E+00	6.4798E-01	1.7513E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.8339E-09 g]	4.05000E-02	1.4185E-02	3.8339E-04	
												Ra-226	7.02000E-01	2.4588E-01	6.6454E-03	
												Sr-90	4.25000E+01	1.4886E+01	4.0232E-01	
												Th-232 [3.7005E-02 kg]	4.30000E-01	1.5061E-01	4.0706E-03	
												U-nat [3.0200E-03 kg]	2.28175E-01	7.9920E-02	2.1600E-03	
												Zn-65	4.13000E-19	1.4466E-19	3.9096E-21	
												Subtotal		4.0637E+02	1.0983E+01	
												Total		4.0637E+02	1.0983E+01	
												SNM [3.5863E-04 g]				
												Source [4.0025E-02 kg]				
044/R5-0022-01	19 Lift Liner	2.2937	9389.3627	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.3897E-01	3.7560E-03	AU
												C-14	9.74000E+00	3.3755E+00	9.1231E-02	
												Co-60	1.26000E-02	4.3667E-03	1.1802E-04	
												Cs-137	4.13000E+01	1.4313E+01	3.8684E-01	
		81.0000	20700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.82000E-02	2.0170E-02	5.4514E-04	
												Eu-154	2.51000E-02	8.6987E-03	2.3510E-04	
												Eu-155	5.49000E-03	1.9027E-03	5.1423E-05	
												H-3	1.06000E+03	3.6736E+02	9.9286E+00	
												Na-22	3.61000E-07	1.2511E-07	3.3814E-09	
												Ni-63	1.06000E+00	3.6736E-01	9.9286E-03	
												Pm-147	3.83000E-05	1.3273E-05	3.5874E-07	
												Pu-238 [1.4711E-08 g]	2.67000E-02	9.2533E-03	2.5009E-04	
												Pu-239 [2.7949E-04 g]	1.85000E+00	6.4114E-01	1.7328E-02	
												Pu-240 [7.5340E-05 g]	1.85000E+00	6.4114E-01	1.7328E-02	
												Pu-241 [3.7935E-09 g]	4.05000E-02	1.4036E-02	3.7935E-04	
												Ra-226	7.02000E-01	2.4329E-01	6.5754E-03	
												Sr-90	4.25000E+01	1.4729E+01	3.9808E-01	
												Th-232 [3.6615E-02 kg]	4.30000E-01	1.4902E-01	4.0277E-03	
												U-nat [2.9900E-03 kg]	2.28471E-01	7.9180E-02	2.1400E-03	
												Zn-65	4.13000E-19	1.4313E-19	3.8684E-21	
												Subtotal		4.0210E+02	1.0867E+01	
												Total		4.0210E+02	1.0867E+01	
												SNM [3.5485E-04 g]				
												Source [3.9605E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
052/R5-0022-01	19 Lift Liner	2.2937	8727.1178	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.3688E-01	3.6994E-03	AU
												C-14	1.03000E+01	3.3172E+00	8.9655E-02	
												Co-60	1.33000E-02	4.2835E-03	1.1577E-04	
		81.0000	19240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.38000E+01	1.4106E+01	3.8125E-01	
												Eu-152	6.17000E-02	1.9871E-02	5.3706E-04	
												Eu-154	2.66000E-02	8.5670E-03	2.3154E-04	
												Eu-155	5.82000E-03	1.8744E-03	5.0660E-05	
												H-3	1.12000E+03	3.6071E+02	9.7489E+00	
												Na-22	3.82000E-07	1.2303E-07	3.3251E-09	
												Ni-63	1.12000E+00	3.6071E-01	9.7489E-03	
												Pm-147	4.06000E-05	1.3076E-05	3.5340E-07	
												Pu-238 [1.4490E-08 g]	2.83000E-02	9.1142E-03	2.4633E-04	
												Pu-239 [2.7517E-04 g]	1.96000E+00	6.3126E-01	1.7061E-02	
												Pu-240 [7.4177E-05 g]	1.96000E+00	6.3126E-01	1.7061E-02	
												Pu-241 [3.7342E-09 g]	4.29000E-02	1.3817E-02	3.7342E-04	
												Ra-226	7.02000E-01	2.2609E-01	6.1105E-03	
												Sr-90	4.51000E+01	1.4525E+01	3.9257E-01	
												Th-232 [3.4026E-02 kg]	4.30000E-01	1.3849E-01	3.7429E-03	
												U-nat [2.9500E-03 kg]	2.42406E-01	7.8070E-02	2.1100E-03	
												Zn-65	4.38000E-19	1.4106E-19	3.8125E-21	
												Subtotal		3.9492E+02	1.0673E+01	
												Total		3.9492E+02	1.0673E+01	
												SNM [3.4937E-04 g]				
												Source [3.6976E-02 kg]				
053/R5-0022-01	19 Lift Liner	2.2937	9153.4946	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.4358E-01	3.8806E-03	AU
												C-14	1.03000E+01	3.4797E+00	9.4047E-02	
												Co-60	1.33000E-02	4.4933E-03	1.2144E-04	
		81.0000	20180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.38000E+01	1.4797E+01	3.9993E-01	
												Eu-152	6.17000E-02	2.0845E-02	5.6337E-04	
												Eu-154	2.66000E-02	8.9866E-03	2.4288E-04	
												Eu-155	5.82000E-03	1.9662E-03	5.3141E-05	
												H-3	1.12000E+03	3.7836E+02	1.0226E+01	
												Na-22	3.82000E-07	1.2906E-07	3.4880E-09	
												Ni-63	1.12000E+00	3.7836E-01	1.0226E-02	
												Pm-147	4.06000E-05	1.3716E-05	3.7071E-07	
												Pu-238 [1.5200E-08 g]	2.83000E-02	9.5608E-03	2.5840E-04	
												Pu-239 [0.0000E+00 g]	0.00000E+00	0.0000E+00	0.0000E+00	
												Pu-240 [7.7810E-05 g]	1.96000E+00	6.6215E-01	1.7896E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.9171E-09 g]	4.29000E-02	1.4493E-02	3.9171E-04	
												Ra-226	7.02000E-01	2.3716E-01	6.4098E-03	
												Sr-90	4.51000E+01	1.5237E+01	4.1180E-01	
												Th-232 [3.5693E-02 kg]	4.30000E-01	1.4527E-01	3.9262E-03	
												U-nat [3.1000E-03 kg]	2.42039E-01	8.1770E-02	2.2100E-03	
												Zn-65	4.38000E-19	1.4797E-19	3.9993E-21	
												Subtotal		4.1358E+02	1.1178E+01	
												Total		4.1358E+02	1.1178E+01	
												SNM [7.7829E-05 g]				
												Source [3.8793E-02 kg]				
054/R5-0022-01	19 Lift Liner	2.2937	10369.1223	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	8.03253E-02	3.0750E-02	8.3108E-04	AU
		81.0000	22860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.95028E+00	7.4659E-01	2.0178E-02	
												Co-60	2.52050E-03	9.6489E-04	2.6078E-05	
												Cs-137	8.26392E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.16521E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.02446E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.09910E-03	4.2076E-04	1.1372E-05	
												H-3	2.12383E+02	8.1304E+01	2.1974E+00	
												Na-22	7.22267E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.11556E-01	8.0986E-02	2.1888E-03	
												Pm-147	7.67718E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	5.34676E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	3.70224E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	3.70224E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	8.10690E-03	3.1034E-03	8.3877E-05	
												Ra-226	5.80127E-01	2.2208E-01	6.0022E-03	
												Sr-90	8.51184E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.55349E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	4.57164E-02	1.7501E-02	4.7300E-04	
												Zn-65	8.26392E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-002/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-009/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-005**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		**25.0324**	**95721.6042**									SNM [1.8514E-03 g]		**2.3830E+03**	**6.4405E+01**	
		884.0000	**211030.0000**									Source [3.7635E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9334-005
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803983**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**

SHIPMENT NUMBER

☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-006**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE: 7/21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:32:21 -04'00'

TITLE: Manifester

DATE: 21 May 2021

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	16. mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris 7/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.7928E+02**	**(1.0251E+01)**	**NA**	**20100 LBS; 81 FT3**	**025**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris 7/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8137E+02**	**(4.9019E+00)**	**NA**	**18780 LBS; 81 FT3**	**027**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	19300 LBS; 81 FT3	028
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	19640 LBS; 81 FT3	029
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	20260 LBS; 81 FT3	030
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.9575E+02	(1.3398E+01)	NA	21640 LBS; 81 FT3	031
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2136E+02	(8.6855E+00)	NA	18820 LBS; 81 FT3	032
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOT21	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	3.2136E+02	(8.6855E+00)	NA	18820 LBS; 81 FT3	032
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOT21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	18840 LBS; 81 FT3	037
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOT21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	20660 LBS; 81 FT3	042
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOT21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19420 LBS; 81 FT3	043
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water 9514 NOT21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-004
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 Sorbed water	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-004
Material not regulated by USDOT WP-~~9334~~ 9514 Sorbed Water MK 4/11	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-008
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 91403.4045 lb 201510.0000	NP	NP	2.3570E-03 12 Containers	2.3570E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.6350E+03	2.4027E+03	2.2455E+01	NP	NP	(kg)	3.8110E-01
mCi	7.1216E+01	6.4937E+01	6.0689E-01	NP	NP	(lb)	8.4018E-01

2. MANIFEST NUMBER **WP-9334-006**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX803983**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
025/R5-0022-01	19 Lift Liner	2.2937	9117.2072	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.89000E-01	1.3090E-01	3.5378E-03	AU
		81.0000	20100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	9.44000E+00	3.1765E+00	8.5852E-02	
												Co-60	1.22000E-02	4.1052E-03	1.1095E-04	
												Cs-137	4.00000E+01	1.3460E+01	3.6378E-01	
												Eu-152	5.64000E-02	1.8978E-02	5.1293E-04	
												Eu-154	2.43000E-02	8.1770E-03	2.2100E-04	
												Eu-155	5.32000E-03	1.7902E-03	4.8383E-05	
												H-3	1.03000E+03	3.4659E+02	9.3673E+00	
												Na-22	3.50000E-07	1.1777E-07	3.1831E-09	
												Ni-63	1.02000E+00	3.4323E-01	9.2764E-03	
												Pm-147	3.72000E-05	1.2517E-05	3.3831E-07	
												Pu-238 [1.3856E-08 g]	2.59000E-02	8.7154E-03	2.3555E-04	
												Pu-239 [2.6257E-04 g]	1.79000E+00	6.0232E-01	1.6279E-02	
												Pu-240 [7.0779E-05 g]	1.79000E+00	6.0232E-01	1.6279E-02	
												Pu-241 [3.5650E-09 g]	3.92000E-02	1.3191E-02	3.5650E-04	
												Ra-226	7.02000E-01	2.3622E-01	6.3843E-03	
												Sr-90	4.12000E+01	1.3864E+01	3.7469E-01	
												Th-232 [3.5551E-02 kg]	4.30000E-01	1.4469E-01	3.9106E-03	
												U-nat [2.8200E-03 kg]	2.21013E-01	7.4370E-02	2.0100E-03	
												Zn-65	4.00000E-19	1.3460E-19	3.6378E-21	
												Subtotal		3.7928E+02	1.0251E+01	
												Total		3.7928E+02	1.0251E+01	
												SNM [3.3336E-04 g]				
												Source [3.8371E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
027/R5-0022-01	19 Lift Liner	2.2937	8518.4653	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.98765E-01	6.2482E-02	1.6887E-03	AU
												C-14		4.83592E+00	1.5201E+00	4.1085E-02	
												Co-60		6.24981E-03	1.9646E-03	5.3097E-05	
		81.0000	18780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137		2.04912E+01	6.4413E+00	1.7409E-01	
												Eu-152		2.88926E-02	9.0820E-03	2.4546E-04	
												Eu-154		1.24996E-02	3.9290E-03	1.0619E-04	
												Eu-155		2.72533E-03	8.5670E-04	2.3154E-05	
												H-3		5.26624E+02	1.6554E+02	4.4741E+00	
												Na-22		1.79298E-07	5.6362E-08	1.5233E-09	
												Ni-63		5.24574E-01	1.6489E-01	4.4566E-03	
												Pm-147		1.90568E-05	5.9903E-06	1.6190E-07	
												Pu-238	[6.6051E-09 g]	1.32168E-02	4.1547E-03	1.1229E-04	
												Pu-239	[1.2579E-04 g]	9.18005E-01	2.8857E-01	7.7991E-03	
												Pu-240	[3.3909E-05 g]	9.18005E-01	2.8857E-01	7.7991E-03	
												Pu-241	[1.7061E-09 g]	2.00814E-02	6.3126E-03	1.7061E-04	
												Ra-226		7.19241E-01	2.2609E-01	6.1105E-03	
												Sr-90		2.11059E+01	6.6345E+00	1.7931E-01	
												Th-232	[3.4026E-02 kg]	4.40561E-01	1.3849E-01	3.7429E-03	
												U-nat	[1.3500E-03 kg]	1.13233E-01	3.5594E-02	9.6200E-04	
												Zn-65		2.04912E-19	6.4413E-20	1.7409E-21	
												Subtotal			1.8137E+02	4.9019E+00	
												Total			1.8137E+02	4.9019E+00	
												SNM	[1.5971E-04 g]				
												Source	[3.5376E-02 kg]				
028/R5-0022-01	19 Lift Liner	2.2937	8754.3333	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		3.14423E-01	1.0158E-01	2.7454E-03	AU
												C-14		7.63303E+00	2.4660E+00	6.6649E-02	
												Co-60		9.85674E-03	3.1844E-03	8.6065E-05	
		81.0000	19300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137		3.23731E+01	1.0459E+01	2.8267E-01	
												Eu-152		4.56120E-02	1.4736E-02	3.9827E-04	
												Eu-154		1.96514E-02	6.3488E-03	1.7159E-04	
												Eu-155		4.30263E-03	1.3901E-03	3.7569E-05	
												H-3		8.30531E+02	2.6832E+02	7.2519E+00	
												Na-22		2.82360E-07	9.1224E-08	2.4655E-09	
												Ni-63		8.27429E-01	2.6732E-01	7.2248E-03	
												Pm-147		2.99943E-05	9.6903E-06	2.6190E-07	
												Pu-238	[1.0731E-08 g]	2.08926E-02	6.7499E-03	1.8243E-04	
												Pu-239	[2.0393E-04 g]	1.44800E+00	4.6779E-01	1.2643E-02	
												Pu-240	[5.4971E-05 g]	1.44800E+00	4.6779E-01	1.2643E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7725E-09 g]	3.17526E-02	1.0258E-02	2.7725E-04	
												Ra-226	7.26069E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.33040E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.44743E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.78661E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.23731E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
029/R5-0022-01	19 Lift Liner	2.2937	8908.5547	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.86496E-02	1.5995E-02	4.3229E-04	AU
		81.0000	19640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.18120E+00	3.8835E-01	1.0496E-02	
												Co-60	1.53156E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.00510E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.05720E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.04310E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.65679E-04	2.1886E-04	5.9151E-06	
												H-3	4.37446E-08	1.4382E-08	3.8871E-10	
												Na-22	4.37446E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.28131E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.65475E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.24331E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.24229E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.24229E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.91501E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.02717E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.15526E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.30439E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.76845E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.00510E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
030/R5-0022-01	19 Lift Liner	2.2937	9189.7820	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.46126E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.97590E+00	2.0269E+00	5.4781E-02	
												Co-60	7.72816E-03	2.6212E-03	7.0844E-05	
		81.0000	20260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.53216E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.57541E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.53955E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.37284E-03	1.1440E-03	3.0919E-05	
												H-3	6.51272E+02	2.2090E+02	5.9702E+00	
												Na-22	2.21817E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.48234E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.34985E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.64084E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.13441E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.13441E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.48152E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.11031E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.61319E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.35532E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.40721E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.53216E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
031/R5-0022-01	19 Lift Liner	2.2937	9815.7395	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.74000E-01	1.7175E-01	4.6419E-03	AU
												C-14	1.15000E+01	4.1669E+00	1.1262E-01	
												Co-60	1.49000E-02	5.3990E-03	1.4592E-04	
		81.0000	21640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.88000E+01	1.7682E+01	4.7790E-01	
												Eu-152	6.87000E-02	2.4893E-02	6.7278E-04	
												Eu-154	2.96000E-02	1.0725E-02	2.8987E-04	
												Eu-155	6.48000E-03	2.3480E-03	6.3459E-05	
												H-3	1.25000E+03	4.5292E+02	1.2241E+01	
												Na-22	4.26000E-07	1.5436E-07	4.1718E-09	
												Ni-63	1.25000E+00	4.5292E-01	1.2241E-02	
												Pm-147	4.53000E-05	1.6414E-05	4.4362E-07	
												Pu-238 [1.8146E-08 g]	3.15000E-02	1.1414E-02	3.0848E-04	
												Pu-239 [3.4434E-04 g]	2.18000E+00	7.8991E-01	2.1349E-02	
												Pu-240 [9.2821E-05 g]	2.18000E+00	7.8991E-01	2.1349E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.6811E-09 g]	4.78000E-02	1.7320E-02	4.6811E-04	
												Ra-226	7.02000E-01	2.5436E-01	6.8747E-03	
												Sr-90	5.02000E+01	1.8190E+01	4.9161E-01	
												Th-232 [3.8282E-02 kg]	4.30000E-01	1.5581E-01	4.2110E-03	
												U-nat [3.6900E-03 kg]	2.69580E-01	9.7680E-02	2.6400E-03	
												Zn-65	4.88000E-19	1.7682E-19	4.7790E-21	
												Subtotal		4.9574E+02	1.3398E+01	
												Total		4.9574E+02	1.3398E+01	
												SNM [4.3718E-04 g]				
												Source [4.1972E-02 kg]				
032/R5-0022-01	19 Lift Liner	2.2937	8536.6090	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.52000E-01	1.1089E-01	2.9969E-03	AU
												C-14	8.56000E+00	2.6965E+00	7.2879E-02	
												Co-60	1.11000E-02	3.4966E-03	9.4504E-05	
												Cs-137	3.63000E+01	1.1435E+01	3.0905E-01	
		81.0000	18820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.11000E-02	1.6097E-02	4.3506E-04	
												Eu-154	2.20000E-02	6.9305E-03	1.8731E-04	
												Eu-155	4.82000E-03	1.5184E-03	4.1037E-05	
												H-3	9.32000E+02	2.9359E+02	7.9349E+00	
												Na-22	3.17000E-07	9.9859E-08	2.6989E-09	
												Ni-63	9.28000E-01	2.9233E-01	7.9009E-03	
												Pm-147	3.37000E-05	1.0616E-05	2.8692E-07	
												Pu-238 [1.1769E-08 g]	2.35000E-02	7.4030E-03	2.0008E-04	
												Pu-239 [2.2246E-04 g]	1.62000E+00	5.1030E-01	1.3792E-02	
												Pu-240 [5.9967E-05 g]	1.62000E+00	5.1030E-01	1.3792E-02	
												Pu-241 [3.0309E-09 g]	3.56000E-02	1.1214E-02	3.0309E-04	
												Ra-226	7.02000E-01	2.2114E-01	5.9767E-03	
												Sr-90	3.73000E+01	1.1750E+01	3.1757E-01	
												Th-232 [3.3282E-02 kg]	4.30000E-01	1.3546E-01	3.6610E-03	
												U-nat [2.3800E-03 kg]	1.99674E-01	6.2900E-02	1.7000E-03	
												Zn-65	3.63000E-19	1.1435E-19	3.0905E-21	
												Subtotal		3.2136E+02	8.6855E+00	
												Total		3.2136E+02	8.6855E+00	
												SNM [2.8244E-04 g]				
												Source [3.5662E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
037/R5-0022-01	19 Lift Liner	2.2937	8545.6808	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.64726E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.42751E+00	2.0269E+00	5.4781E-02	
												Co-60	8.31219E-03	2.6212E-03	7.0844E-05	
		81.0000	18840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.72352E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.84561E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.65590E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.62773E-03	1.1440E-03	3.0919E-05	
												H-3	7.00490E+02	2.2090E+02	5.9702E+00	
												Na-22	2.38581E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.97222E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.52743E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.76484E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.22014E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.22014E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.66905E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.64765E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.81068E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.68446E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.51356E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.72352E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
042/R5-0022-01	19 Lift Liner	2.2937	9371.2190	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.93675E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.12934E+00	2.4660E+00	6.6649E-02	
												Co-60	9.20632E-03	3.1844E-03	8.6065E-05	
		81.0000	20660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	3.02369E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.26022E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.83547E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.01871E-03	1.3901E-03	3.7569E-05	
												H-3	7.75727E+02	2.6832E+02	7.2519E+00	
												Na-22	2.63728E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.72829E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.80150E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.95139E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.35245E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.35245E+00	4.6779E-01	1.2643E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-006

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7725E-09 g]	2.96573E-02	1.0258E-02	2.7725E-04	
												Ra-226	6.78157E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.11064E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.15395E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.66872E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.02369E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
043/R5-0022-01	19 Lift Liner	2.2937	8808.7644	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.92197E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.67614E+00	1.5201E+00	4.1085E-02	
												Co-60	6.04331E-03	1.9646E-03	5.3097E-05	
		81.0000	19420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.98141E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.79379E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.20866E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.63528E-03	8.5670E-04	2.3154E-05	
												H-3	5.09224E+02	1.6554E+02	4.4741E+00	
												Na-22	1.73374E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.07242E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.84272E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.27801E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.87674E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.87674E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	1.94179E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.95477E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.04086E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.26004E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09492E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.98141E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-006

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-004/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05	1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07	
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	
												Pu-241 [2.1258E-13 g] Ra-226 Sr-90 Th-232 [4.0339E-03 kg]	2.06000E-05 7.02000E-01 2.15000E-02 4.30000E-01	7.8651E-07 2.6803E-02 8.2088E-04 1.6418E-02	2.1257E-08 7.2441E-04 2.2186E-05 4.4372E-04	
												U-nat [1.6700E-07 kg] Zn-65 Subtotal Total	1.16288E-04 2.10000E-22	4.4400E-06 8.0179E-24 6.5689E-02 6.5689E-02	1.2000E-07 2.1670E-25 1.7754E-03 1.7754E-03	
												SNM [1.1390E-08 g] Source [4.0340E-03 kg]				
T-008/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05	1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07	
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-006**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		**25.0324**	**91702.7754**									**SNM [2.3570E-03 g]**		**2.6350E+03**	**7.1216E+01**	
		884.0000	**202170.0000**									**Source [3.8110E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9334-006
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803995**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-007**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 7/21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 — Digitally signed by ORTEGA.MICHAEL.12583448 Date: 2021.05.21 07:31:17 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 7/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19780 LBS; 81 FT3**	**003**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 7/21	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**20480 LBS; 81 FT3**	**005**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.8063E+02	(7.5846E+00)	NA	20700 LBS; 81 FT3	007
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	14180 LBS; 81 FT3	019
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	22260 LBS; 81 FT3	020
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.5734E+02	(9.6577E+00)	NA	19580 LBS; 81 FT3	021
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2834E+02	(8.8739E+00)	NA	20660 LBS; 81 FT3	023
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**3.2834E+02**	**(8.8739E+00)**	**NA**	**20660 LBS; 81 FT3**	**023**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.4474E+02**	**(9.3174E+00)**	**NA**	**20900 LBS; 81 FT3**	**024**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**20460 LBS; 81 FT3**	**038**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**20560 LBS; 81 FT3**	**041**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Sorbed water 9514 WC7124	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5856E-02**	**(1.7799E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-005**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9314 Sorbed water	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5856E-02	(1.7799E-03)	NA	2355 LBS; 37 FT3	T-005
Material not regulated by USDOT WP-~~9334~~ 9314 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-007
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 92355.9486 lb 203610.0000	NP	NP	1.6717E-03 12 Containers	1.6717E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.8983E+03	1.7326E+03	1.5908E+01	NP	NP	(kg)	3.7068E-01
mCi	5.1305E+01	4.6826E+01	4.2995E-01	NP	NP	(lb)	8.1721E-01

2. MANIFEST NUMBER **WP-9334-007**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX803995**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
003/R5-0022-01	19 Lift Liner	2.2937 81.0000	8972.0577 19780.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.04000E-04	6.7551E-05	1.8257E-06	AU
												C-14		4.96000E-03	1.6424E-03	4.4389E-05	
												Co-60		6.39000E-06	2.1159E-06	5.7186E-08	
												Cs-137		2.10000E-02	6.9538E-03	1.8794E-04	
												Eu-152		2.95000E-05	9.7684E-06	2.6401E-07	
												Eu-154		1.28000E-05	4.2384E-06	1.1455E-07	
												Eu-155		2.78000E-06	9.2052E-07	2.4879E-08	
												H-3		5.39000E-01	1.7848E-01	4.8237E-03	
												Na-22		1.83000E-10	6.0595E-11	1.6377E-12	
												Ni-63		5.36000E-04	1.7748E-04	4.7968E-06	
												Pm-147		1.95000E-08	6.4569E-09	1.7451E-10	
												Pu-238	[7.1595E-12 g]	1.36000E-05	4.5033E-06	1.2171E-07	
												Pu-239	[7.7801E-08 g]	5.39000E-04	1.7848E-04	4.8237E-06	
												Pu-240	[2.0973E-08 g]	5.39000E-04	1.7848E-04	4.8237E-06	
												Pu-241	[1.8436E-12 g]	2.06000E-05	6.8213E-06	1.8436E-07	
												Ra-226		7.02000E-01	2.3245E-01	6.2824E-03	
												Sr-90		2.15000E-02	7.1192E-03	1.9241E-04	
												Th-232	[3.4984E-02 kg]	4.30000E-01	1.4238E-01	3.8482E-03	
												U-nat	[1.4500E-06 kg]	1.16210E-04	3.8480E-05	1.0400E-06	
												Zn-65		2.10000E-22	6.9538E-23	1.8794E-24	
												Subtotal			5.6969E-01	1.5397E-02	
												Total			5.6969E-01	1.5397E-02	
												SNM	[9.8783E-08 g]				
												Source	[3.4985E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-007**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
005/R5-0022-01	19 Lift Liner	2.2937	9289.5724	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.36853E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.31821E+00	1.1377E+00	3.0749E-02	
												Co-60	4.29305E-03	1.4720E-03	3.9783E-05	
		81.0000	20480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.40602E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.98718E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.54860E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.87469E-03	6.4276E-04	1.7372E-05	
												H-3	3.61816E+02	1.2406E+02	3.3529E+00	
												Na-22	1.22792E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.59941E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.30291E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.10164E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.29897E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.29897E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.37790E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.58018E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.45289E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.03059E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.76964E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.40602E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
007/R5-0022-01	19 Lift Liner	2.2937	9389.3627	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.79716E-01	9.6940E-02	2.6200E-03	AU
												C-14	6.79113E+00	2.3536E+00	6.3610E-02	
												Co-60	8.77690E-03	3.0418E-03	8.2210E-05	
		81.0000	20700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.87723E+01	9.9715E+00	2.6950E-01	
												Eu-152	4.05695E-02	1.4060E-02	3.8000E-04	
												Eu-154	1.74983E-02	6.0643E-03	1.6390E-04	
												Eu-155	3.82742E-03	1.3265E-03	3.5850E-05	
												H-3	7.39540E+02	2.5630E+02	6.9270E+00	
												Na-22	2.51531E-07	8.7172E-08	2.3560E-09	
												Ni-63	7.36657E-01	2.5530E-01	6.9000E-03	
												Pm-147	2.67332E-05	9.2648E-06	2.5040E-07	
												Pu-238 [1.0259E-08 g]	1.86193E-02	6.4528E-03	1.7440E-04	
												Pu-239 [1.9484E-04 g]	1.28968E+00	4.4696E-01	1.2080E-02	
												Pu-240 [5.2522E-05 g]	1.28968E+00	4.4696E-01	1.2080E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-007**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.6440E-09 g]	2.82279E-02	9.7828E-03	2.6440E-04	
												Ra-226	7.02600E-01	2.4350E-01	6.5810E-03	
												Sr-90	2.96371E+01	1.0271E+01	2.7760E-01	
												Th-232 [3.6646E-02 kg]	4.30357E-01	1.4915E-01	4.0310E-03	
												U-nat [2.0900E-03 kg]	1.59075E-01	5.5130E-02	1.4900E-03	
												Zn-65	2.87723E-19	9.9715E-20	2.6950E-21	
												Subtotal		2.8063E+02	7.5846E+00	
												Total		2.8063E+02	7.5846E+00	
												SNM [2.4737E-04 g]				
												Source [3.8736E-02 kg]				
019/R5-0022-01	19 Lift Liner	2.2937	6431.9402	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.29669E-01	3.0750E-02	8.3108E-04	AU
												C-14	3.14834E+00	7.4659E-01	2.0178E-02	
												Co-60	4.06883E-03	9.6489E-04	2.6078E-05	
												Cs-137	1.33404E+01	3.1636E+00	8.5502E-02	
		81.0000	14180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.88100E-02	4.4607E-03	1.2056E-04	
												Eu-154	8.11097E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.77427E-03	4.2076E-04	1.1372E-05	
												H-3	3.42849E+02	8.1304E+01	2.1974E+00	
												Na-22	1.16595E-07	2.7649E-08	7.4728E-10	
												Ni-63	3.41515E-01	8.0986E-02	2.1888E-03	
												Pm-147	1.23932E-05	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	8.63125E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	5.97650E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	5.97650E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	1.30869E-02	3.1034E-03	8.3877E-05	
												Ra-226	9.36497E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.37406E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	5.73638E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	7.37999E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.33404E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-007**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
020/R5-0022-01	19 Lift Liner	2.2937	10096.9668	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.25885E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.05228E+00	1.1377E+00	3.0749E-02	
		81.0000	22260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	3.94899E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.29334E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.82792E-02	6.8136E-03	1.8415E-04	
												Eu-154	7.86349E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.72445E-03	6.4280E-04	1.7373E-05	
												H-3	3.32819E+02	1.2406E+02	3.3529E+00	
												Na-22	1.12951E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.31094E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.19849E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.37220E-03	3.1207E-03	8.4344E-05	
												Pu-239 [9.4148E-05 g]	5.79415E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	5.79415E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.26747E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.05282E-01	2.2562E-01	6.0978E-03	
												Sr-90	1.33645E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.70757E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.14695E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.29334E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
021/R5-0022-01	19 Lift Liner	2.2937	8881.3392	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.77000E-01	1.2357E-01	3.3397E-03	AU
												C-14	9.15000E+00	2.9991E+00	8.1056E-02	
		81.0000	19580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	1.18000E-02	3.8676E-03	1.0453E-04	
												Cs-137	3.88000E+01	1.2717E+01	3.4371E-01	
												Eu-152	5.46000E-02	1.7896E-02	4.8368E-04	
												Eu-154	2.36000E-02	7.7352E-03	2.0906E-04	
												Eu-155	5.15000E-03	1.6880E-03	4.5622E-05	
												H-3	9.96000E+02	3.2646E+02	8.8232E+00	
												Na-22	3.39000E-07	1.1111E-07	3.0031E-09	
												Ni-63	9.92000E-01	3.2514E-01	8.7877E-03	
												Pm-147	3.60000E-05	1.1800E-05	3.1891E-07	
												Pu-238 [1.3080E-08 g]	2.51000E-02	8.2270E-03	2.2235E-04	
												Pu-239 [2.4861E-04 g]	1.74000E+00	5.7032E-01	1.5414E-02	
												Pu-240 [6.7017E-05 g]	1.74000E+00	5.7032E-01	1.5414E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-007**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.3663E-09 g]	3.80000E-02	1.2455E-02	3.3663E-04	
												Ra-226	7.02000E-01	2.3009E-01	6.2187E-03	
												Sr-90	3.99000E+01	1.3078E+01	3.5346E-01	
												Th-232 [3.4629E-02 kg]	4.30000E-01	1.4094E-01	3.8092E-03	
												U-nat [2.6500E-03 kg]	2.14481E-01	7.0300E-02	1.9000E-03	
												Zn-65	3.88000E-19	1.2717E-19	3.4371E-21	
												Subtotal		3.5734E+02	9.6577E+00	
												Total		3.5734E+02	9.6577E+00	
												SNM [3.1565E-04 g]				
												Source [3.7279E-02 kg]				
023/R5-0022-01	19 Lift Liner	2.2937	9371.2190	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.28000E-01	1.1345E-01	3.0663E-03	AU
												C-14	7.97000E+00	2.7568E+00	7.4507E-02	
												Co-60	1.03000E-02	3.5627E-03	9.6289E-05	
												Cs-137	3.38000E+01	1.1691E+01	3.1598E-01	
		81.0000	20660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	4.76000E-02	1.6465E-02	4.4499E-04	
												Eu-154	2.05000E-02	7.0907E-03	1.9164E-04	
												Eu-155	4.49000E-03	1.5531E-03	4.1975E-05	
												H-3	8.67000E+02	2.9989E+02	8.1051E+00	
												Na-22	2.95000E-07	1.0204E-07	2.7578E-09	
												Ni-63	8.64000E-01	2.9885E-01	8.0771E-03	
												Pm-147	3.14000E-05	1.0861E-05	2.9354E-07	
												Pu-238 [1.1988E-08 g]	2.18000E-02	7.5406E-03	2.0380E-04	
												Pu-239 [2.2768E-04 g]	1.51000E+00	5.2229E-01	1.4116E-02	
												Pu-240 [6.1375E-05 g]	1.51000E+00	5.2229E-01	1.4116E-02	
												Pu-241 [3.0944E-09 g]	3.31000E-02	1.1449E-02	3.0944E-04	
												Ra-226	7.02000E-01	2.4282E-01	6.5626E-03	
												Sr-90	3.48000E+01	1.2037E+01	3.2533E-01	
												Th-232 [3.6544E-02 kg]	4.30000E-01	1.4874E-01	4.0199E-03	
												U-nat [2.4500E-03 kg]	1.87196E-01	6.4750E-02	1.7500E-03	
												Zn-65	3.38000E-19	1.1691E-19	3.1598E-21	
												Subtotal		3.2834E+02	8.8739E+00	
												Total		3.2834E+02	8.8739E+00	
												SNM [2.8907E-04 g]				
												Source [3.8994E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-007**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
024/R5-0022-01	19 Lift Liner	2.2937	9480.0812	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.40000E-01	1.1897E-01	3.2155E-03	AU
												C-14	8.26000E+00	2.8904E+00	7.8118E-02	
												Co-60	1.07000E-02	3.7440E-03	1.0119E-04	
		81.0000	20900.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	3.50000E+01	1.2247E+01	3.3101E-01	
												Eu-152	4.94000E-02	1.7286E-02	4.6719E-04	
												Eu-154	2.13000E-02	7.4533E-03	2.0144E-04	
												Eu-155	4.66000E-03	1.6306E-03	4.4071E-05	
												H-3	9.00000E+02	3.1493E+02	8.5116E+00	
												Na-22	3.06000E-07	1.0707E-07	2.8939E-09	
												Ni-63	8.96000E-01	3.1353E-01	8.4738E-03	
												Pm-147	3.25000E-05	1.1372E-05	3.0736E-07	
												Pu-238 [1.2573E-08 g]	2.26000E-02	7.9084E-03	2.1374E-04	
												Pu-239 [2.3949E-04 g]	1.57000E+00	5.4938E-01	1.4848E-02	
												Pu-240 [6.4557E-05 g]	1.57000E+00	5.4938E-01	1.4848E-02	
												Pu-241 [3.2439E-09 g]	3.43000E-02	1.2002E-02	3.2439E-04	
												Ra-226	7.02000E-01	2.4565E-01	6.6391E-03	
												Sr-90	3.61000E+01	1.2632E+01	3.4141E-01	
												Th-232 [3.6970E-02 kg]	4.30000E-01	1.5047E-01	4.0667E-03	
												U-nat [2.5700E-03 kg]	1.93500E-01	6.7710E-02	1.8300E-03	
												Zn-65	3.50000E-19	1.2247E-19	3.3101E-21	
												Subtotal		3.4474E+02	9.3174E+00	
												Total		3.4474E+02	9.3174E+00	
												SNM [3.0406E-04 g]				
												Source [3.9540E-02 kg]				
038/R5-0022-01	19 Lift Liner	2.2937	9280.5005	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	8.97707E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.17962E+00	7.4659E-01	2.0178E-02	
												Co-60	2.81688E-03	9.6489E-04	2.6078E-05	
		81.0000	20460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	9.23567E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.30223E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.61529E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.22834E-03	4.2076E-04	1.1372E-05	
												H-3	2.37357E+02	8.1304E+01	2.1974E+00	
												Na-22	8.07197E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.36433E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.57994E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	5.97548E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.13758E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.13758E-01	1.4173E-01	3.8305E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	9.06019E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.48344E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.51274E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.97134E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.10922E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.23567E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
041/R5-0022-01	19 Lift Liner	2.2937	9325.8597	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.36319E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.30527E+00	1.1377E+00	3.0749E-02	
												Co-60	4.27630E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.40054E+01	4.8207E+00	1.3029E-01	
		81.0000	20560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.97942E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.51526E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.86738E-03	6.4276E-04	1.7372E-05	
												H-3	3.60405E+02	1.2406E+02	3.3529E+00	
												Na-22	1.22314E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.58537E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.29783E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.06614E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.27440E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.27440E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.37253E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.55451E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.44722E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.01487E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.73933E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.40054E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
T-005/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04518E-04	7.8089E-06	2.1105E-07	AU
												C-14	4.97259E-03	1.8986E-04	5.1313E-06	
												Co-60	6.40622E-06	2.4460E-07	6.6107E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10533E-02	8.0383E-04	2.1725E-05	
												Eu-152	2.95749E-05	1.1292E-06	3.0519E-08	
												Eu-154	1.28325E-05	4.8995E-07	1.3242E-08	
												Eu-155	2.78705E-06	1.0641E-07	2.8760E-09	
												H-3	5.40368E-01	2.0632E-02	5.5761E-04	
												Na-22	1.83464E-10	7.0048E-12	1.8932E-13	
												Ni-63	5.37360E-04	2.0517E-05	5.5451E-07	
												Pm-147	1.95495E-08	7.4640E-10	2.0173E-11	
												Pu-238 [8.2763E-13 g]	1.36345E-05	5.2059E-07	1.4070E-08	
												Pu-239 [8.9938E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-240 [2.4244E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-241 [2.1311E-13 g]	2.06523E-05	7.8851E-07	2.1311E-08	
												Ra-226	7.03782E-01	2.6871E-02	7.2624E-04	
												Sr-90	2.15546E-02	8.2299E-04	2.2243E-05	
												Th-232 [4.0441E-03 kg]	4.31091E-01	1.6459E-02	4.4485E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10533E-22	8.0383E-24	2.1725E-25	
												Subtotal		6.5856E-02	1.7799E-03	
												Total		6.5856E-02	1.7799E-03	
												SNM [1.1419E-08 g]				
												Source [4.0443E-03 kg]				
T-007/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324	92655.3196									SNM [1.6717E-03 g]		1.8983E+03	5.1305E+01	
		884.0000	204270.0000									Source [3.7068E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9334-007
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 11, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9450-001, WP-9450-002, WP-9450-003**
Received On:	**June 10, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 10, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX 9723**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**

SHIPMENT NUMBER:

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **05/15/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — 1 None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE: 6.10.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 — Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.12 08:07:54 -04'00'

TITLE: Manifester

DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.1043E+01**	**(1.1093E+00)**	**NA**	**50600 LBS; 675 FT3**	**AWIU000192**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.3852E+01**	**(9.1492E-01)**	**NA**	**39300 LBS; 675 FT3**	**AWIU000205**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**68700 LBS; 675 FT3**	**ERRU000218**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**63240 LBS; 675 FT3**	**ERRU000237**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**59120 LBS; 675 FT3**	**ERRU000248**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - Does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**53040 LBS; 675 FT3**	**ERRU000296**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 ft3 4050.0000	kg 130271.737 6 lb 287200.000 0	NP	1.6516E-01 6 Containers	2.4712E-03 6 Containers	1.6763E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2150E+02	1.8778E+01	2.3490E+01	NP	NP	(kg)	3.2473E-02
mCi	5.9865E+00	5.0752E-01	6.3486E-01	NP	NP	(lb)	7.1591E-02

2. MANIFEST NUMBER: **WP-9450-001**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **GIMX 9723**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000192/R5-0022-01	19 Intermodal Container	19.1139 675.0000	22951.7754 50600.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	29-HJ	19.1139 675.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.51318E-01	1.8052E-01	4.8790E-03	AU
												C-14	6.10395E+00	4.3845E+00	1.1850E-01	
												Co-60	7.88620E-03	5.6647E-03	1.5310E-04	
												Cs-137	2.58581E+01	1.8574E+01	5.0200E-01	
												Eu-152	3.64589E-02	2.6189E-02	7.0780E-04	
												Eu-154	1.57209E-02	1.1292E-02	3.0520E-04	
												Eu-155	3.43882E-03	2.4701E-03	6.6760E-05	
												H-3	4.50405E+00	3.2353E+00	8.7440E-02	
												Na-22	2.25975E-07	1.6232E-07	4.3870E-09	
												Ni-63	6.61905E-01	4.7545E-01	1.2850E-02	
												Pm-147	2.40192E-05	1.7253E-05	4.6630E-07	
												Pu-238 [1.9106E-08 g]	1.67305E-02	1.2018E-02	3.2480E-04	
												Pu-239 [3.6274E-04 g]	1.15846E+00	8.3213E-01	2.2490E-02	
												Pu-240 [9.7783E-05 g]	1.15846E+00	8.3213E-01	2.2490E-02	
												Pu-241 [4.9240E-09 g]	2.53636E-02	1.8219E-02	4.9240E-04	
												Ra-226	2.73261E-03	1.9629E-03	5.3050E-05	
												Sr-90	1.71941E+01	1.2351E+01	3.3380E-01	
												Th-232 [2.3846E-03 kg]	1.35111E-02	9.7051E-03	2.6230E-04	
												U-234 [1.9113E-07 kg]	6.10395E-02	4.3845E-02	1.1850E-03	
												U-235 [3.0805E-02 g]	3.49084E-03	2.5075E-03	6.7770E-05	
												U-238 [3.4853E-03 kg]	6.10395E-02	4.3845E-02	1.1850E-03	
												Zn-65	2.58581E-19	1.8574E-19	5.0200E-21	
												Subtotal		4.1043E+01	1.1093E+00	
												Total		4.1043E+01	1.1093E+00	
												SNM [3.1265E-02 g]				
												Source [5.8700E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-001

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000205/R5-0022-01	19 Intermodal Container	19.1139	17826.1813	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.83733E-01	1.5000E-01	4.0540E-03	AU
												C-14	6.88966E+00	3.6423E-01	9.8440E-02	
												Co-60	8.90252E-03	4.7064E-03	1.2720E-04	
		675.0000	39300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.91922E+01	1.5433E+01	4.1710E-01	
												Eu-152	4.11602E-02	2.1760E-02	5.8810E-04	
												Eu-154	1.77491E-02	9.3832E-03	2.5360E-04	
												Eu-155	3.88296E-03	2.0528E-03	5.5480E-05	
												H-3	4.61223E+00	2.4383E+00	6.5900E-02	
												Na-22	2.55178E-07	1.3490E-07	3.6460E-09	
												Ni-63	7.47476E-01	3.9516E-01	1.0680E-02	
												Pm-147	2.71205E-05	1.4338E-05	3.8750E-07	
												Pu-238 [1.5877E-08 g]	1.88899E-02	9.9863E-03	2.6990E-04	
												Pu-239 [3.0145E-04 g]	1.30808E+00	6.9153E-01	1.8690E-02	
												Pu-240 [8.1261E-05 g]	1.30808E+00	6.9153E-01	1.8690E-02	
												Pu-241 [4.0920E-09 g]	2.86392E-02	1.5140E-02	4.0920E-04	
												Ra-226	2.73235E-03	1.4445E-03	3.9040E-05	
												Sr-90	1.94148E+01	1.0264E+01	2.7740E-01	
												Th-232 [1.7555E-03 kg]	1.35148E-02	7.1447E-03	1.9310E-04	
												U-234 [1.5877E-07 kg]	6.88966E-02	3.6423E-02	9.8440E-04	
												U-235 [2.5596E-02 g]	3.94105E-03	2.0835E-03	5.6310E-05	
												U-238 [2.8953E-03 kg]	6.88966E-02	3.6423E-02	9.8440E-04	
												Zn-65	2.91922E-19	1.5433E-19	4.1710E-21	
												Subtotal		3.3852E+01	9.1492E-01	
												Total		3.3852E+01	9.1492E-01	
												SNM [2.5978E-02 g]				
												Source [4.6509E-03 kg]				
ERRU000218/R5-0022-01	19 Intermodal Container	19.1139	31161.7979	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.55998E-01	1.5944E-01	4.3092E-03	AU
												C-14	3.78241E+00	3.8658E+00	1.0448E-01	
												Co-60	4.88651E-03	4.9943E-03	1.3498E-04	
		675.0000	68700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.60272E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.25805E-02	2.3079E-02	6.2376E-04	
												Eu-154	9.75877E-03	9.9741E-03	2.6957E-04	
												Eu-155	2.12983E-03	2.1769E-03	5.8834E-05	
												H-3	3.20544E+00	3.2762E+00	8.8546E-02	
												Na-22	1.40327E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.10296E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.48875E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.03999E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.19442E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.19442E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-001

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [4.3486E-09 g]	1.57422E-02	1.6090E-02	4.3486E-04	
												Ra-226	1.94463E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.06848E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	9.61631E-03	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	3.78241E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.16545E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	3.78241E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.60272E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000237/R5-0022-01	19 Intermodal Container	19.1139	28685.1834	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.71360E-01	1.5944E-01	4.3092E-03	AU
												C-14	4.15490E+00	3.8658E+00	1.0448E-01	
												Co-60	5.36773E-03	4.9943E-03	1.3498E-04	
		675.0000	63240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.76055E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.48042E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.07198E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.33958E-03	2.1768E-03	5.8833E-05	
												H-3	3.52110E+00	3.2762E+00	8.8545E-02	
												Na-22	1.54146E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.50701E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.63536E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.14240E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.90292E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.90292E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.72925E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.13614E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.17370E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.05633E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.15490E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.37870E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.15490E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.76055E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-001

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000248/R5-0022-01	19 Intermodal Container	19.1139	26816.3827	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.85117E-01	1.5944E-01	4.3092E-03	AU
		675.0000	59120.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.48846E+00	3.8658E+00	1.0448E-01	
												Co-60	5.79865E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.90189E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.67955E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.15804E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.52740E-03	2.1768E-03	5.8833E-05	
												H-3	3.80378E+00	3.2762E+00	8.8545E-02	
												Na-22	1.66521E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.86884E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.76664E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.23412E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.53737E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.53737E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.86808E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.30763E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.26793E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.14113E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.48846E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.56966E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.48846E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.90189E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000296/R5-0022-01	19 Intermodal Container	19.1139	24058.5409	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.09996E-01	1.5944E-01	4.3092E-03	AU
		675.0000	53040.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.09168E+00	3.8658E+00	1.0448E-01	
												Co-60	6.57796E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.15749E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.03967E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.31367E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.86707E-03	2.1768E-03	5.8833E-05	
												H-3	4.31499E+00	3.2762E+00	8.8545E-02	
												Na-22	1.88901E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.52318E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.00407E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.39997E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.68475E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.68475E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-001

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [4.3486E-09 g]	2.11914E-02 / 1.6090E-02 / 4.3486E-04
												Ra-226	2.61776E-03 / 1.9875E-03 / 5.3717E-05
												Sr-90	1.43833E+01 / 1.0921E+01 / 2.9515E-01
												Th-232 [2.4149E-03 kg]	1.29450E-02 / 9.8287E-03 / 2.6564E-04
												U-234 [1.6852E-07 kg]	5.09168E-02 / 3.8658E-02 / 1.0448E-03
												U-235 [2.7190E-02 g]	2.91501E-03 / 2.2132E-03 / 5.9817E-05
												U-238 [3.0730E-03 kg]	5.09168E-02 / 3.8658E-02 / 1.0448E-03
												Zn-65	2.15749E-19 / 1.6381E-19 / 4.4273E-21
												Subtotal	3.6652E+01 / 9.9057E-01
												Total	3.6652E+01 / 9.9057E-01
												SNM [2.7597E-02 g]	
												Source [5.4881E-03 kg]	
Shipment Totals		114.6834 / 4050.0000	151499.8616 / 334000.0000									SNM [1.6763E-01 g]	2.2150E+02 / 5.9865E+00
												Source [3.2473E-02 kg]	

FORM 541A (03-06)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9450-001
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 11, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9450-001, WP-9450-002, WP-9450-003**
Received On:	**June 10, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 10, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX99547**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/15/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-002**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

BV6421

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 5/12/2021

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.12 08:09:27 -04'00'
TITLE: Manifester
DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8372E+01**	**(4.9655E-01)**	**NA**	**63100 LBS; 675 FT3**	**AWIU000148**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5745E+00**	**(1.5066E-01)**	**NA**	**32660 LBS; 675 FT3**	**BFLU000392**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9058E-01)**	**NA**	**52900 LBS; 675 FT3**	**ERRU000149**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**68520 LBS; 675 FT3**	**ERRU000160**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**47820 LBS; 675 FT3**	**ERRU000284**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**58280 LBS; 675 FT3**	**ERRU000299**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 125409.2267 / lb 276480.0000	NP	1.2225E-01 6 Containers	1.8296E-03 6 Containers	1.2408E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.7055E+02	2.0444E+01	1.7383E+01	NP	NP	(kg)	2.8888E-02
mCi	4.6095E+00	5.5254E-01	4.6981E-01	NP	NP	(lb)	6.3686E-02

2. MANIFEST NUMBER: **WP-9450-002**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **GIMX99547**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000148/R5-0022-01	19 Intermodal Container	19.1139	28621.6804	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	7.29562E-02	6.7710E-02	1.8300E-03	AU
		675.0000	63100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	1.77168E+00	1.6443E+00	4.4440E-02	
												Co-60	2.28955E-03	2.1249E-03	5.7430E-05	
												Cs-137	7.50692E+00	6.9671E+00	1.8830E-01	
												Eu-152	1.05846E-02	9.8235E-03	2.6550E-04	
												Eu-154	4.56475E-03	4.2365E-03	1.1450E-04	
												Eu-155	9.98265E-04	9.2648E-04	2.5040E-05	
												H-3	4.50495E+00	4.1810E+00	1.1300E-01	
												Na-22	6.56208E-08	6.0902E-08	1.6460E-09	
												Ni-63	1.92158E-01	1.7834E-01	4.8200E-03	
												Pm-147	6.97270E-06	6.4713E-06	1.7490E-07	
												Pu-238 [7.1647E-09 g]	4.85578E-03	4.5066E-03	1.2180E-04	
												Pu-239 [1.3607E-04 g]	3.36316E-01	3.1213E-01	8.4360E-03	
												Pu-240 [3.6678E-05 g]	3.36316E-01	3.1213E-01	8.4360E-03	
												Pu-241 [1.8470E-09 g]	7.36340E-03	6.8339E-03	1.8470E-04	
												Ra-226	2.73247E-03	2.5360E-03	6.8540E-05	
												Sr-90	4.99132E+00	4.6324E+00	1.2520E-01	
												Th-232 [3.0809E-03 kg]	1.35109E-02	1.2539E-02	3.3890E-04	
												U-234 [7.1677E-08 kg]	1.77168E-02	1.6443E-02	4.4440E-04	
												U-235 [1.1555E-02 g]	1.01341E-03	9.4054E-04	2.5420E-05	
												U-238 [1.3071E-03 kg]	1.77168E-02	1.6443E-02	4.4440E-04	
												Zn-65	7.50692E-20	6.9671E-20	1.8830E-21	
												Subtotal		1.8372E+01	4.9655E-01	
												Total		1.8372E+01	4.9655E-01	
												SNM [1.1727E-02 g]				
												Source [4.3880E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-002

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000392/R5-0022-01	19 Intermodal Container	19.1139	14814.3278	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.72520E-02	1.1370E-02	3.0730E-04	AU
												C-14	6.61113E-01	2.7583E-01	7.4549E-03	
												Co-60	8.54568E-04	3.5654E-04	9.6363E-06	
		675.0000	32660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.80931E+00	1.1721E+00	3.1678E-02	
												Eu-152	3.95322E-03	1.6493E-03	4.4577E-05	
												Eu-154	1.69904E-03	7.0888E-04	1.9159E-05	
												Eu-155	3.73453E-04	1.5581E-04	4.2111E-06	
												H-3	7.56999E+00	3.1584E+00	8.5361E-02	
												Na-22	2.45604E-08	1.0247E-08	2.7695E-10	
												Ni-63	7.18308E-02	2.9969E-02	8.0998E-04	
												Pm-147	2.60744E-06	1.0879E-06	2.9402E-08	
												Pu-238 [1.2051E-09 g]	1.81680E-03	7.5802E-04	2.0487E-05	
												Pu-239 [2.2855E-05 g]	1.25662E-01	5.2429E-02	1.4170E-03	
												Pu-240 [6.1608E-06 g]	1.25662E-01	5.2429E-02	1.4170E-03	
												Pu-241 [3.1109E-10 g]	2.75884E-03	1.1510E-03	3.1109E-05	
												Ra-226	4.59246E-03	1.9161E-03	5.1786E-05	
												Sr-90	1.91773E+00	8.0013E-01	2.1625E-02	
												Th-232 [2.3280E-03 kg]	2.27100E-02	9.4750E-03	2.5608E-04	
												U-234 [1.2024E-08 kg]	6.61113E-03	2.7583E-03	7.4549E-05	
												U-235 [1.9400E-03 g]	3.78500E-04	1.5792E-04	4.2681E-06	
												U-238 [2.1926E-04 kg]	6.61113E-03	2.7583E-03	7.4549E-05	
												Zn-65	2.80931E-20	1.1721E-20	3.1678E-22	
												Subtotal		5.5745E+00	1.5066E-01	
												Total		5.5745E+00	1.5066E-01	
												SNM [1.9690E-03 g]				
												Source [2.5473E-03 kg]				
ERRU000149/R5-0022-01	19 Intermodal Container	19.1139	23995.0380	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.10649E-01	1.5944E-01	4.3092E-03	AU
												C-14	5.10752E+00	3.8658E+00	1.0448E-01	
												Co-60	6.59841E-03	4.9943E-03	1.3498E-04	
		675.0000	52900.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.16420E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.04912E-02	2.3079E-02	6.2376E-04	
												Eu-154	1.31776E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.87598E-03	2.1769E-03	5.8834E-05	
												H-3	4.32840E+00	3.2762E+00	8.8546E-02	
												Na-22	1.89488E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.54036E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.01030E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.40433E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.71486E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.71486E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-002

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	2.12573E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.62590E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.44280E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.29852E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.10752E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.92408E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	5.10752E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.16420E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000160/R5-0022-01	19 Intermodal Container	19.1139	31080.1512	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.56459E-01	1.5944E-01	4.3092E-03	AU
												C-14	3.79361E+00	3.8658E+00	1.0448E-01	
												Co-60	4.90097E-03	4.9943E-03	1.3498E-04	
		675.0000	68520.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.60746E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.26473E-02	2.3079E-02	6.2375E-04	
												Eu-154	9.78765E-03	9.9741E-03	2.6957E-04	
												Eu-155	2.13614E-03	2.1768E-03	5.8833E-05	
												H-3	3.21492E+00	3.2762E+00	8.8545E-02	
												Na-22	1.40742E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.11510E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.49315E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.04306E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.21571E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.21571E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.57888E-02	1.6090E-02	4.3486E-04	
												Ra-226	1.95039E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.07164E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	9.64476E-03	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	3.79361E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.17186E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	3.79361E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.60746E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-002

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000284/R5-0022-01	19 Intermodal Container	19.1139	21690.7886	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.37387E-01	1.5944E-01	4.3092E-03	AU
		675.0000	47820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.75582E+00	3.8658E+00	1.0448E-01	
												Co-60	7.43595E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.43891E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.43615E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.48502E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.24103E-03	2.1768E-03	5.8833E-05	
												H-3	4.87781E+00	3.2762E+00	8.8545E-02	
												Na-22	2.13540E-07	1.4342E-07	3.8763E-09	
												Ni-63	6.24360E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.26547E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.58258E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.09480E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.09480E+00	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.39555E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.95921E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.62594E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.46334E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.75582E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.29523E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	5.75582E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.43891E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000299/R5-0022-01	19 Intermodal Container	19.1139	26435.3651	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.88198E-01	1.5944E-01	4.3092E-03	AU
		675.0000	58280.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.56315E+00	3.8658E+00	1.0448E-01	
												Co-60	5.89514E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.93354E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.72414E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.17731E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.56946E-03	2.1768E-03	5.8833E-05	
												H-3	3.86708E+00	3.2762E+00	8.8545E-02	
												Na-22	1.69292E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.94986E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.79604E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.25465E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.67944E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.67944E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-002

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	1.89916E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.34603E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.28903E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.16012E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.56315E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.61242E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.56315E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.93354E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
Shipment Totals		114.6834	146637.3511									SNM [1.2408E-01 g]		1.7055E+02	4.6095E+00	
		4050.0000	323280.0000									Source [2.8888E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-002
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 11, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9450-001, WP-9450-002, WP-9450-003**
Received On:	**June 10, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 10, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX516196**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/15/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-003**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 10.10.21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 — Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.12 08:11:58 -04'00'
TITLE: Manifester
DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**52540 LBS; 675 FT3**	**AWIU000213**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**66640 LBS; 675 FT3**	**AWIU000292**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.6982E+00**	**(2.6211E-01)**	**NA**	**29540 LBS; 675 FT3**	**BFLU000183**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**56960 LBS; 675 FT3**	**BFLU000259**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**46560 LBS; 675 FT3**	**ERRU000147**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demoition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**62840 LBS; 675 FT3**	**ERRU000271**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 121689.7691 / lb 268280.0000	NP	1.4251E-01 6 Containers	2.1329E-03 6 Containers	1.4464E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.9296E+02	1.8024E+01	2.0263E+01	NP	NP	(kg)	2.9393E-02
mCi	5.2150E+00	4.8714E-01	5.4763E-01	NP	NP	(lb)	6.4801E-02

2. MANIFEST NUMBER: WP-9450-003

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: GIMX516196

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000213/R5-0022-01	19 Intermodal Container	19.1139	23831.7447	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.12344E-01	1.5944E-01	4.3092E-03	AU
		675.0000	52540.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.14861E+00	3.8658E+00	1.0448E-01	
												Co-60	6.65151E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.18162E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.07365E-02	2.3079E-02	6.2376E-04	
												Eu-154	1.32836E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.89913E-03	2.1769E-03	5.8834E-05	
												H-3	4.36323E+00	3.2762E+00	8.8546E-02	
												Na-22	1.91013E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.58494E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.02648E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.41563E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.79303E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.79303E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.14283E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.64703E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.45441E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.30897E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.14861E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.94761E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	5.14861E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.18162E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-003

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000292/R5-0022-01	19 Intermodal Container	19.1139	30227.3975	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.61459E-01	1.5944E-01	4.3092E-03	AU
												C-14	3.91482E+00	3.8658E+00	1.0448E-01	
												Co-60	5.05756E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.65882E+01	1.6381E+01	4.4273E-01	
		675.0000	66640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Eu-152	2.33709E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.01004E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.20439E-03	2.1768E-03	5.8833E-05	
												H-3	3.31764E+00	3.2762E+00	8.8545E-02	
												Na-22	1.45239E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.24658E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.54086E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.07639E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.44626E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.44626E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.62933E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.01270E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.10588E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	9.95292E-03	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	3.91482E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.24125E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	3.91482E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.65882E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
BFLU000183/R5-0022-01	19 Intermodal Container	19.1139	13399.1195	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.05364E-01	3.8443E-02	1.0390E-03	AU
												C-14	2.55855E+00	9.3351E-01	2.5230E-02	
												Co-60	3.30695E-03	1.2066E-03	3.2610E-05	
												Cs-137	1.08406E+01	3.9553E+00	1.0690E-01	
		675.0000	29540.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Eu-152	1.52925E-02	5.5796E-03	1.5080E-04	
												Eu-154	6.59261E-03	2.4054E-03	6.5010E-05	
												Eu-155	1.44204E-03	5.2614E-04	1.4220E-05	
												H-3	4.50358E+00	1.6432E+00	4.4410E-02	
												Na-22	9.47668E-08	3.4577E-08	9.3450E-10	
												Ni-63	2.77557E-01	1.0127E-01	2.7370E-03	
												Pm-147	1.00730E-05	3.6752E-06	9.9330E-08	
												Pu-238 [4.0694E-09 g]	7.01548E-03	2.5597E-03	6.9180E-05	
												Pu-239 [7.7258E-05 g]	4.85750E-01	1.7723E-01	4.7900E-03	
												Pu-240 [2.0826E-05 g]	4.85750E-01	1.7723E-01	4.7900E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-003

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [1.0490E-09 g]	1.06378E-02	3.8813E-03	1.0490E-04
												Ra-226	2.73196E-03	9.9678E-04	2.6940E-05
												Sr-90	7.21019E+00	2.6307E+00	7.1100E-02
												Th-232 [1.2109E-03 kg]	1.35077E-02	4.9284E-03	1.3320E-04
												U-234 [4.0694E-08 kg]	2.55855E-02	9.3351E-03	2.5230E-04
												U-235 [6.5591E-03 g]	1.46333E-03	5.3391E-04	1.4430E-05
												U-238 [7.4206E-04 kg]	2.55855E-02	9.3351E-03	2.5230E-04
												Zn-65	1.08406E-19	3.9553E-20	1.0690E-21
												Subtotal		9.6982E+00	2.6211E-01
												Total		9.6982E+00	2.6211E-01
												SNM [6.6572E-03 g]			
												Source [1.9530E-03 kg]			
BFLU000259/R5-0022-01	19 Intermodal Container	19.1139	25836.6231	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.93252E-01	1.5944E-01	4.3092E-03	AU
												C-14	4.68570E+00	3.8658E+00	1.0448E-01	
												Co-60	6.05347E-03	4.9943E-03	1.3498E-04	
		675.0000	56960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.98547E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.79730E-02	2.3079E-02	6.2376E-04	
												Eu-154	1.20893E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.63846E-03	2.1769E-03	5.8834E-05	
												H-3	3.97093E+00	3.2762E+00	8.8546E-02	
												Na-22	1.73839E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.08279E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.84428E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.28835E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.91254E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.91254E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.95017E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.40903E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.32364E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.19128E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.68570E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.68259E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	4.68570E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.98547E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-003

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
ERRU000147/R5-0022-01	19 Intermodal Container	19.1139	21119.2621	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.45105E-01	1.5944E-01	4.3092E-03	AU
		675.0000	46560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	5.94296E+00	3.8658E+00	1.0448E-01	
												Co-60	7.67772E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.51820E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.54787E-02	2.3079E-02	6.2376E-04	
												Eu-154	1.53331E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.34641E-03	2.1769E-03	5.8834E-05	
												H-3	5.03640E+00	3.2762E+00	8.8546E-02	
												Na-22	2.20483E-07	1.4342E-07	3.8763E-09	
												Ni-63	6.44660E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.33913E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.63403E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.13039E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.13039E+00	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.47343E-02	1.6090E-02	4.3486E-04	
												Ra-226	3.05542E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.67880E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.51092E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.94296E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.40237E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	5.94296E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.51820E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000271/R5-0022-01	19 Intermodal Container	19.1139	28503.7464	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJL	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.72606E-01	1.5944E-01	4.3092E-03	AU
		675.0000	62840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.18510E+00	3.8658E+00	1.0448E-01	
												Co-60	5.40674E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.77335E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.49845E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.07977E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.35658E-03	2.1768E-03	5.8833E-05	
												H-3	3.54669E+00	3.2762E+00	8.8545E-02	
												Na-22	1.55266E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.53977E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.64724E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.15070E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.96036E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.96036E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-003

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	1.74182E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.15166E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.18223E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.06401E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.18510E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.39599E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.18510E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.77335E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
Shipment Totals		114.6834	142917.8933									SNM [1.4464E-01 g]		1.9296E+02	5.2150E+00	
		4050.0000	315080.0000									Source [2.9393E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-003
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 17, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9450**
Manifest(s):	**WP-9450-004**
Received On:	**June 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 16, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GACX009707**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/15/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-004**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Cowan
DATE: 6-15-21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.12 08:12:40 -04'00'
TITLE: Manifester
DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition debris - does not contain PCBs	**NA**	**NA**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**4.1171E+01**	**(1.1127E+00)**	**NA**	**56520 LBS; 675 FT3**	**AWIU000186**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**62300 LBS; 675 FT3**	**AWIU000207**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-004

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**44940 LBS; 675 FT3**	**ERRU000144**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**66440 LBS; 675 FT3**	**ERRU000188**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5745E+00**	**(1.5066E-01)**	**NA**	**52320 LBS; 675 FT3**	**ERRU000233**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**41780 LBS; 675 FT3**	**ERRU000265**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 125871.8909 / lb 277500.0000	NP	1.4124E-01 6 Containers	2.1135E-03 6 Containers	1.4335E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.9335E+02	1.9946E+01	2.0087E+01	NP	NP	(kg)	3.0670E-02
mCi	5.2257E+00	5.3907E-01	5.4287E-01	NP	NP	(lb)	6.7616E-02

2. MANIFEST NUMBER: WP-9450-004

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: GACX009707

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000186/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	25637.0424 / 56520.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np	AU

15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
RADIONUCLIDES		pCi/gm	MBq	mCi
Am-241		2.18880E-01	1.7897E-01	4.8370E-03
C-14		5.31701E+00	4.3475E+00	1.1750E-01
Co-60		6.86912E-03	5.6166E-03	1.5180E-04
Cs-137		2.25215E+01	1.8415E+01	4.9770E-01
Eu-152		3.17527E-02	2.5963E-02	7.0170E-04
Eu-154		1.36930E-02	1.1196E-02	3.0260E-04
Eu-155		2.99517E-03	2.4490E-03	6.6190E-05
H-3		4.50384E+00	3.6826E+00	9.9530E-02
Na-22		1.96842E-07	1.6095E-07	4.3500E-09
Ni-63		5.76499E-01	4.7138E-01	1.2740E-02
Pm-147		2.09196E-05	1.7105E-05	4.6230E-07
Pu-238	[1.8941E-08 g]	1.45709E-02	1.1914E-02	3.2200E-04
Pu-239	[3.5968E-04 g]	1.00910E+00	8.2510E-01	2.2300E-02
Pu-240	[9.6957E-05 g]	1.00910E+00	8.2510E-01	2.2300E-02
Pu-241	[4.8820E-09 g]	2.20916E-02	1.8063E-02	4.8820E-04
Ra-226		2.73226E-03	2.2341E-03	6.0380E-05
Sr-90		1.49781E+01	1.2247E+01	3.3100E-01
Th-232	[2.7146E-03 kg]	1.35120E-02	1.1048E-02	2.9860E-04
U-234	[1.8952E-07 kg]	5.31701E-02	4.3475E-02	1.1750E-03
U-235	[3.0541E-02 g]	3.04042E-03	2.4860E-03	6.7190E-05
U-238	[3.4559E-03 kg]	5.31701E-02	4.3475E-02	1.1750E-03
Zn-65		2.25215E-19	1.8415E-19	4.9770E-21
Subtotal			4.1171E+01	1.1127E+00
Total			4.1171E+01	1.1127E+00
SNM	[3.0998E-02 g]			
Source	[6.1706E-03 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-004

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000207/R5-0022-01	19 Intermodal Container	19.1139	28258.8065	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.74316E-01	1.5944E-01	4.3092E-03	AU
		675.0000	62300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.22657E+00	3.8658E+00	1.0448E-01	
												Co-60	5.46031E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.79092E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.52320E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.09047E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.37993E-03	2.1768E-03	5.8833E-05	
												H-3	3.58183E+00	3.2762E+00	8.8545E-02	
												Na-22	1.56805E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.58475E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.66356E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.16211E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.03923E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.03923E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.75908E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.17298E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.19394E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.07455E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.22657E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.41973E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.22657E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.79092E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000144/R5-0022-01	19 Intermodal Container	19.1139	20384.4425	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.55795E-01	1.5944E-01	4.3092E-03	AU
		675.0000	44940.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.20215E+00	3.8658E+00	1.0448E-01	
												Co-60	8.01257E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.62803E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.70260E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.60018E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.49236E-03	2.1768E-03	5.8833E-05	
												H-3	5.25606E+00	3.2762E+00	8.8545E-02	
												Na-22	2.30099E-07	1.4342E-07	3.8763E-09	
												Ni-63	6.72775E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.44115E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.70530E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.17969E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.17969E+00	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-004**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION					
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT					
												RADIONUCLIDES		pCi/gm	MBq	mCi	
												Pu-241	[4.3486E-09 g]	2.58131E-02	1.6090E-02	4.3486E-04	
												Ra-226		3.18868E-03	1.9875E-03	5.3717E-05	
												Sr-90		1.75202E+01	1.0921E+01	2.9515E-01	
												Th-232	[2.4149E-03 kg]	1.57682E-02	9.8287E-03	2.6564E-04	
												U-234	[1.6852E-07 kg]	6.20215E-02	3.8658E-02	1.0448E-03	
												U-235	[2.7190E-02 g]	3.55076E-03	2.2132E-03	5.9817E-05	
												U-238	[3.0730E-03 kg]	6.20215E-02	3.8658E-02	1.0448E-03	
												Zn-65		2.62803E-19	1.6381E-19	4.4273E-21	
												Subtotal			3.6652E+01	9.9057E-01	
												Total			3.6652E+01	9.9057E-01	
												SNM	[2.7597E-02 g]				
												Source	[5.4881E-03 kg]				
ERRU000188/R5-0022-01	19 Intermodal Container	19.1139	30136.6791	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.62009E-01	1.5944E-01	4.3092E-03	AU
												C-14		3.92817E+00	3.8658E+00	1.0448E-01	
												Co-60		5.07481E-03	4.9943E-03	1.3498E-04	
		675.0000	66440.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137		1.66448E+01	1.6381E+01	4.4273E-01	
												Eu-152		2.34506E-02	2.3079E-02	6.2375E-04	
												Eu-154		1.01348E-02	9.9741E-03	2.6957E-04	
												Eu-155		2.21191E-03	2.1768E-03	5.8833E-05	
												H-3		3.32896E+00	3.2762E+00	8.8545E-02	
												Na-22		1.45734E-07	1.4342E-07	3.8763E-09	
												Ni-63		4.26106E-01	4.1936E-01	1.1334E-02	
												Pm-147		1.54612E-05	1.5216E-05	4.1124E-07	
												Pu-238	[1.6899E-08 g]	1.08006E-02	1.0629E-02	2.8728E-04	
												Pu-239	[3.2054E-04 g]	7.47166E-01	7.3534E-01	1.9874E-02	
												Pu-240	[8.6407E-05 g]	7.47166E-01	7.3534E-01	1.9874E-02	
												Pu-241	[4.3486E-09 g]	1.63489E-02	1.6090E-02	4.3486E-04	
												Ra-226		2.01957E-03	1.9875E-03	5.3717E-05	
												Sr-90		1.10965E+01	1.0921E+01	2.9515E-01	
												Th-232	[2.4149E-03 kg]	9.98687E-03	9.8287E-03	2.6564E-04	
												U-234	[1.6852E-07 kg]	3.92817E-02	3.8658E-02	1.0448E-03	
												U-235	[2.7190E-02 g]	2.24889E-03	2.2132E-03	5.9817E-05	
												U-238	[3.0730E-03 kg]	3.92817E-02	3.8658E-02	1.0448E-03	
												Zn-65		1.66448E-19	1.6381E-19	4.4273E-21	
												Subtotal			3.6652E+01	9.9057E-01	
												Total			3.6652E+01	9.9057E-01	
												SNM	[2.7597E-02 g]				
												Source	[5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-004

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C

RADIONUCLIDES		pCi/gm	MBq	mCi	
ERRU000233/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	23731.9544 / 52320.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np					AU
												Am-241		1.52175E-02	1.1370E-02	3.0730E-04	
												C-14		3.69166E-01	2.7583E-01	7.4549E-03	
												Co-60		4.77191E-04	3.5654E-04	9.6363E-06	
												Cs-137		1.56872E+00	1.1721E+00	3.1678E-02	
												Eu-152		2.20748E-03	1.6493E-03	4.4577E-05	
												Eu-154		9.48747E-04	7.0888E-04	1.9159E-05	
												Eu-155		2.08536E-04	1.5581E-04	4.2111E-06	
												H-3		4.22709E+00	3.1584E+00	8.5361E-02	
												Na-22		1.37146E-08	1.0247E-08	2.7695E-10	
												Ni-63		4.01104E-02	2.9969E-02	8.0998E-04	
												Pm-147		1.45600E-06	1.0879E-06	2.9402E-08	
												Pu-238	[1.2051E-09 g]	1.01450E-03	7.5802E-04	2.0487E-05	
												Pu-239	[2.2855E-05 g]	7.01697E-02	5.2429E-02	1.4170E-03	
												Pu-240	[6.1608E-06 g]	7.01697E-02	5.2429E-02	1.4170E-03	
												Pu-241	[3.1109E-10 g]	1.54054E-03	1.1510E-03	3.1109E-05	
												Ra-226		2.56443E-03	1.9161E-03	5.1786E-05	
												Sr-90		1.07086E+00	8.0013E-01	2.1625E-02	
												Th-232	[2.3280E-03 kg]	1.26813E-02	9.4750E-03	2.5608E-04	
												U-234	[1.2024E-08 kg]	3.69166E-03	2.7583E-03	7.4549E-05	
												U-235	[1.9400E-03 g]	2.11354E-04	1.5792E-04	4.2681E-06	
												U-238	[2.1926E-04 kg]	3.69166E-03	2.7583E-03	7.4549E-05	
												Zn-65		1.56872E-20	1.1721E-20	3.1678E-22	
												Subtotal			5.5745E+00	1.5066E-01	
												Total			5.5745E+00	1.5066E-01	
												SNM	[1.9690E-03 g]				
												Source	[2.5473E-03 kg]				
ERRU000265/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	18951.0905 / 41780.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np					AU	
												Am-241		2.79583E-01	1.5944E-01	4.3092E-03	
												C-14		6.77892E+00	3.8658E+00	1.0448E-01	
												Co-60		8.75770E-03	4.9943E-03	1.3498E-04	
												Cs-137		2.87242E+01	1.6381E+01	4.4273E-01	
												Eu-152		4.04693E-02	2.3079E-02	6.2375E-04	
												Eu-154		1.74899E-02	9.9741E-03	2.6957E-04	
												Eu-155		3.81713E-03	2.1768E-03	5.8833E-05	
												H-3		5.74485E+00	3.2762E+00	8.8545E-02	
												Na-22		2.51497E-07	1.4342E-07	3.8763E-09	
												Ni-63		7.35341E-01	4.1936E-01	1.1334E-02	
												Pm-147		2.66816E-05	1.5216E-05	4.1124E-07	
												Pu-238	[1.6899E-08 g]	1.86388E-02	1.0629E-02	2.8728E-04	
												Pu-239	[3.2054E-04 g]	1.28940E+00	7.3534E-01	1.9874E-02	
												Pu-240	[8.6407E-05 g]	1.28940E+00	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-004

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	2.82136E-02	1.6090E-02	4.3486E-04	
												Ra-226	3.48521E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.91495E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.72345E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	6.77892E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.88097E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	6.77892E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.87242E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
Shipment Totals		114.6834	147100.0154									SNM [1.4335E-01 g]		1.9335E+02	5.2257E+00	
		4050.0000	324300.0000									Source [3.0670E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-004
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 15, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:
WCS Profile #: **WP-9450**
Manifest(s): **WP-9450-005, WP-9450-006**
Received On: **June 11, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 11, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX516168**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/15/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-005**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 6 11 21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 — Digitally signed by ORTEGA.MICHAEL.12583448 27 Date: 2021.05.12 08:14:11 -04'00'
TITLE: Manifester
DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.0483E+01**	**(2.8333E-01)**	**NA**	**50280 LBS; 675 FT3**	**AWIU000159**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**64060 LBS; 675 FT3**	**BFLU000200**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**60580 LBS; 675 FT3**	**BFLU000269**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**53840 LBS; 675 FT3**	**ERRU000162**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**41720 LBS; 675 FT3**	**ERRU000164**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**49840 LBS; 675 FT3**	**ERRU000231**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 124066.5933 / lb 273520.0000	NP	1.4187E-01 6 Containers	2.1233E-03 6 Containers	1.4399E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.9374E+02	1.9592E+01	2.0171E+01	NP	NP	(kg)	3.0477E-02
mCi	5.2362E+00	5.2952E-01	5.4516E-01	NP	NP	(lb)	6.7191E-02

2. MANIFEST NUMBER: **WP-9450-005**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **GIMX516168**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000159/R5-0022-01	19 Intermodal Container	19.1139 / 675.0000	22806.6259 / 50280.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	29-HJ	19.1139 / 675.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.86442E-02	3.4680E-02	9.3730E-04	AU
												C-14	1.18120E+00	8.4212E-01	2.2760E-02	
												Co-60	1.52633E-03	1.0882E-03	2.9410E-05	
												Cs-137	5.00454E+00	3.5679E+00	9.6430E-02	
												Eu-152	7.05815E-03	5.0320E-03	1.3600E-04	
												Eu-154	3.04279E-03	2.1693E-03	5.8630E-05	
												Eu-155	6.65853E-04	4.7471E-04	1.2830E-05	
												H-3	4.50424E+00	3.2112E+00	8.6790E-02	
												Na-22	4.37398E-08	3.1184E-08	8.4280E-10	
												Ni-63	1.28137E-01	9.1353E-02	2.4690E-03	
												Pm-147	4.64904E-06	3.3145E-06	8.9580E-08	
												Pu-238 [3.6700E-09 g]	3.23793E-03	2.3084E-03	6.2390E-05	
												Pu-239 [6.9677E-05 g]	2.24200E-01	1.5984E-01	4.3200E-03	
												Pu-240 [1.8783E-05 g]	2.24200E-01	1.5984E-01	4.3200E-03	
												Pu-241 [9.4600E-10 g]	4.90957E-03	3.5002E-03	9.4600E-05	
												Ra-226	2.73244E-03	1.9481E-03	5.2650E-05	
												Sr-90	3.32823E+00	2.3728E+00	6.4130E-02	
												Th-232 [2.3673E-03 kg]	1.35143E-02	9.6348E-03	2.6040E-04	
												U-234 [3.6710E-08 kg]	1.18120E-02	8.4212E-03	2.2760E-04	
												U-235 [5.9182E-03 g]	6.75714E-04	4.8174E-04	1.3020E-05	
												U-238 [6.6941E-04 kg]	1.18120E-02	8.4212E-03	2.2760E-04	
												Zn-65	5.00454E-20	3.5679E-20	9.6430E-22	
												Subtotal		1.0483E+01	2.8333E-01	
												Total		1.0483E+01	2.8333E-01	
												SNM [6.0066E-03 g]				
												Source [3.0367E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-005

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
BFLU000200/R5-0022-01	19 Intermodal Container	19.1139	29057.1291	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.68863E-01	1.5944E-01	4.3092E-03	AU
		675.0000	64060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.09434E+00	3.8658E+00	1.0448E-01	
												Co-60	5.28949E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.73489E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.44427E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.05636E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.30548E-03	2.1768E-03	5.8833E-05	
												H-3	3.46978E+00	3.2762E+00	8.8545E-02	
												Na-22	1.51899E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.44132E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.61152E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.12575E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.78774E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.78774E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.70405E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.10500E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.15659E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.04093E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.09434E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.34403E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.09434E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.73489E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
BFLU000269/R5-0022-01	19 Intermodal Container	19.1139	27478.6276	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.79997E-01	1.5944E-01	4.3092E-03	AU
		675.0000	60580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.36430E+00	3.8658E+00	1.0448E-01	
												Co-60	5.63825E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.84928E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.60543E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.12601E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.45749E-03	2.1768E-03	5.8833E-05	
												H-3	3.69856E+00	3.2762E+00	8.8545E-02	
												Na-22	1.61915E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.73416E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.71778E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.19998E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.30121E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.30121E-01	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-005

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [4.3486E-09 g]	1.81640E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.24379E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.23285E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.10957E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.36430E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.49858E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.36430E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.84928E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000162/R5-0022-01	19 Intermodal Container	19.1139	24421.4148	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.06348E-01	1.5944E-01	4.3092E-03	AU
												C-14	5.00324E+00	3.8658E+00	1.0448E-01	
												Co-60	6.46369E-03	4.9943E-03	1.3498E-04	
		675.0000	53840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.12002E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.98687E-02	2.3079E-02	6.2376E-04	
												Eu-154	1.29085E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.81726E-03	2.1769E-03	5.8834E-05	
												H-3	4.24003E+00	3.2762E+00	8.8546E-02	
												Na-22	1.85619E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.42724E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.96926E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.37565E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.51651E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.51651E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.08233E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.57229E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.41334E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.27201E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.00324E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.86438E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	5.00324E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.12002E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-005

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
ERRU000164/R5-0022-01	19 Intermodal Container	19.1139	18923.8749	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.80077E-01	1.5944E-01	4.3092E-03	AU
												C-14	6.79091E+00	3.8658E+00	1.0448E-01	
												Co-60	8.77320E-03	4.9943E-03	1.3498E-04	
		675.0000	41720.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.87751E+01	1.6381E+01	4.4273E-01	
												Eu-152	4.05409E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.75208E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.82389E-03	2.1768E-03	5.8833E-05	
												H-3	5.75501E+00	3.2762E+00	8.8545E-02	
												Na-22	2.51942E-07	1.4342E-07	3.8763E-09	
												Ni-63	7.36642E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.67288E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.86718E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.29168E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.29168E+00	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.82635E-02	1.6090E-02	4.3486E-04	
												Ra-226	3.49137E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.91834E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.72650E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	6.79091E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.88783E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	6.79091E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.87751E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000231/R5-0022-01	19 Intermodal Container	19.1139	22607.0452	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.25980E-01	1.5944E-01	4.3092E-03	AU
												C-14	5.47925E+00	3.8658E+00	1.0448E-01	
												Co-60	7.07866E-03	4.9943E-03	1.3498E-04	
		675.0000	49840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.32172E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.27104E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.41367E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.08530E-03	2.1768E-03	5.8833E-05	
												H-3	4.64343E+00	3.2762E+00	8.8545E-02	
												Na-22	2.03279E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.94360E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.15662E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.50654E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.04219E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.04219E+00	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9450-005

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	2.28044E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.81702E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.54781E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.39303E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.47925E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.13690E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	5.47925E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.32172E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
Shipment Totals		114.6834	145294.7175									SNM [1.4399E-01 g]		1.9374E+02	5.2362E+00	
		4050.0000	320320.0000									Source [3.0477E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-005
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: June 15, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:
WCS Profile #: **WP-9450**
Manifest(s): **WP-9450-005, WP-9450-006**
Received On: **June 11, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **June 11, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX516208**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/15/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 6/11/21

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-006**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 — Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.12 08:15:34 -04'00'
TITLE: Manifester
DATE: 12 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.3986E+01**	**(1.4591E+00)**	**NA**	**60940 LBS; 675 FT3**	**AWIU000176**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5745E+00**	**(1.5066E-01)**	**NA**	**49620 LBS; 675 FT3**	**BFLU000308**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**64760 LBS; 675 FT3**	**ERRU000143**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**54700 LBS; 675 FT3**	**ERRU000163**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**55360 LBS; 675 FT3**	**ERRU000166**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450 Demolition Debris - does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.6652E+01**	**(9.9057E-01)**	**NA**	**43260 LBS; 675 FT3**	**ERRU000283**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 / ft3 4050.0000	kg 127840.4820 / lb 281840.0000	NP	1.5141E-01 6 Containers	2.2655E-03 6 Containers	1.5368E-01

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE
MBq	2.0617E+02	2.0281E+01	2.1533E+01	NP	NP	(kg) 3.2067E-02
mCi	5.5721E+00	5.4814E-01	5.8197E-01	NP	NP	(lb) 7.0695E-02

2. MANIFEST NUMBER: **WP-9450-006**

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **GIMX516208**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
AWIU000176/R5-0022-01	19 Intermodal Container	19.1139	27641.9209	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.67551E-01	2.3861E-01	6.4490E-03	AU
		675.0000	60940.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.49691E+00	5.7942E+00	1.5660E-01	
												Co-60	8.39703E-03	7.4888E-03	2.0240E-04	
												Cs-137	2.75268E+01	2.4550E+01	6.6350E-01	
												Eu-152	3.88114E-02	3.4614E-02	9.3550E-04	
												Eu-154	1.67360E-02	1.4926E-02	4.0340E-04	
												Eu-155	3.66084E-03	3.2649E-03	8.8240E-05	
												H-3	4.50552E+00	4.0182E+00	1.0860E-01	
												Na-22	2.40585E-07	2.1456E-07	5.7990E-09	
												Ni-63	7.04454E-01	6.2826E-01	1.6980E-02	
												Pm-147	2.55686E-05	2.2803E-05	6.1630E-07	
												Pu-238 [2.5253E-08 g]	1.78105E-02	1.5884E-02	4.2930E-04	
												Pu-239 [4.7936E-04 g]	1.23300E+00	1.0996E+00	2.9720E-02	
												Pu-240 [1.2922E-04 g]	1.23300E+00	1.0996E+00	2.9720E-02	
												Pu-241 [6.5080E-09 g]	2.69999E-02	2.4080E-02	6.5080E-04	
												Ra-226	2.73235E-03	2.4368E-03	6.5860E-05	
												Sr-90	1.83042E+01	1.6324E+01	4.4120E-01	
												Th-232 [2.9609E-03 kg]	1.35124E-02	1.2051E-02	3.2570E-04	
												U-234 [2.5258E-07 kg]	6.49691E-02	5.7942E-02	1.5660E-03	
												U-235 [4.0714E-02 g]	3.71602E-03	3.3141E-03	8.9570E-05	
												U-238 [4.6059E-03 kg]	6.49691E-02	5.7942E-02	1.5660E-03	
												Zn-65	2.75268E-19	2.4550E-19	6.6350E-21	
												Subtotal		5.3986E+01	1.4591E+00	
												Total		5.3986E+01	1.4591E+00	
												SNM [4.1322E-02 g]				
												Source [7.5670E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-006

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
BFLU000308/R5-0022-01	19 Intermodal Container	19.1139	22507.2549	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.62000E-02	1.1370E-02	3.0730E-04	AU
		675.0000	49620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.93000E-01	2.7583E-01	7.4549E-03	
												Co-60	5.08000E-04	3.5654E-04	9.6363E-06	
												Cs-137	1.67000E+00	1.1721E+00	3.1678E-02	
												Eu-152	2.35000E-03	1.6493E-03	4.4577E-05	
												Eu-154	1.01000E-03	7.0888E-04	1.9159E-05	
												Eu-155	2.22000E-04	1.5581E-04	4.2111E-06	
												H-3	4.50000E+00	3.1584E+00	8.5361E-02	
												Na-22	1.46000E-08	1.0247E-08	2.7695E-10	
												Ni-63	4.27000E-02	2.9969E-02	8.0998E-04	
												Pm-147	1.55000E-06	1.0879E-06	2.9402E-08	
												Pu-238 [1.2051E-09 g]	1.08000E-03	7.5802E-04	2.0487E-05	
												Pu-239 [2.2855E-05 g]	7.47000E-02	5.2429E-02	1.4170E-03	
												Pu-240 [6.1608E-06 g]	7.47000E-02	5.2429E-02	1.4170E-03	
												Pu-241 [3.1109E-10 g]	1.64000E-03	1.1510E-03	3.1109E-05	
												Ra-226	2.73000E-03	1.9161E-03	5.1786E-05	
												Sr-90	1.14000E+00	8.0013E-01	2.1625E-02	
												Th-232 [2.3280E-03 kg]	1.35000E-02	9.4750E-03	2.5608E-04	
												U-234 [1.2024E-08 kg]	3.93000E-03	2.7583E-03	7.4549E-05	
												U-235 [1.9400E-03 g]	2.25000E-04	1.5792E-04	4.2681E-06	
												U-238 [2.1926E-04 kg]	3.93000E-03	2.7583E-03	7.4549E-05	
												Zn-65	1.67000E-20	1.1721E-20	3.1678E-22	
												Subtotal		5.5745E+00	1.5066E-01	
												Total		5.5745E+00	1.5066E-01	
												SNM [1.9690E-03 g]				
												Source [2.5473E-03 kg]				
ERRU000143/R5-0022-01	19 Intermodal Container	19.1139	29374.6438	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.66788E-01	1.5944E-01	4.3092E-03	AU
		675.0000	64760.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.04403E+00	3.8658E+00	1.0448E-01	
												Co-60	5.22449E-03	4.9943E-03	1.3498E-04	
												Cs-137	1.71357E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.41423E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.04337E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.27715E-03	2.1768E-03	5.8833E-05	
												H-3	3.42714E+00	3.2762E+00	8.8545E-02	
												Na-22	1.50033E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.38674E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.59172E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.11192E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	7.69203E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	7.69203E-01	7.3534E-01	1.9874E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-006

3. PAGE 3 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	1.68311E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.07913E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.14238E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.02814E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.04403E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.31522E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.04403E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.71357E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000163/R5-0022-01	19 Intermodal Container	19.1139	24811.5043	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.02563E-01	1.5944E-01	4.3092E-03	AU
												C-14	4.91147E+00	3.8658E+00	1.0448E-01	
												Co-60	6.34513E-03	4.9943E-03	1.3498E-04	
		675.0000	54700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.08113E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.93208E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.26718E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.76559E-03	2.1768E-03	5.8833E-05	
												H-3	4.16226E+00	3.2762E+00	8.8545E-02	
												Na-22	1.82214E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.32769E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.93314E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.35042E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.34196E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.34196E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.04413E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.52510E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.38742E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.24868E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.91147E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.81184E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.91147E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.08113E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-006

3. PAGE 4 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
ERRU000166/R5-0022-01	19 Intermodal Container	19.1139	25110.8753	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.99752E-01	1.5944E-01	4.3092E-03	AU
		675.0000	55360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	4.84331E+00	3.8658E+00	1.0448E-01	
												Co-60	6.25708E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.05225E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.89139E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.24959E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.72721E-03	2.1768E-03	5.8833E-05	
												H-3	4.10450E+00	3.2762E+00	8.8545E-02	
												Na-22	1.79686E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.25376E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.90631E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.33168E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	9.21232E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	9.21232E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.01577E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.49006E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.36817E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.23135E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.84331E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.77282E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.84331E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.05225E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000283/R5-0022-01	19 Intermodal Container	19.1139	19622.4072	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.67914E-01	1.5944E-01	4.3092E-03	AU
		675.0000	43260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.49599E+00	3.8658E+00	1.0448E-01	
												Co-60	8.39218E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.75254E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.87802E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.67599E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.65782E-03	2.1768E-03	5.8833E-05	
												H-3	5.50508E+00	3.2762E+00	8.8545E-02	
												Na-22	2.41000E-07	1.4342E-07	3.8763E-09	
												Ni-63	7.04650E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.55680E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.78609E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.23558E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.23558E+00	7.3534E-01	1.9874E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-006

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	2.70360E-02	1.6090E-02	4.3486E-04	
												Ra-226	3.33975E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.83503E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.65152E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	6.49599E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.71898E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	6.49599E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.75254E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
Shipment Totals		114.6834	149068.6064									SNM [1.5368E-01 g]		2.0617E+02	5.5721E+00	
		4050.0000	328640.0000									Source [3.2067E-02 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-006
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 07, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-003, WP-9334-005, WP-9334-006, WP-9334-007**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 06, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> **12**

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

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803383**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
TELEPHONE NUMBER (Include Area Code): **865-300-5789**
CONTACT: **Wade Fillingame**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
TELEPHONE (Include Area Code): **(718) 928-2304**
CONTACT: **James P. Nunes**
SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE: 7/21

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-003**

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 7/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 09:53:57 -05'00'
TITLE: Manifester
DATE: 21 May 2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9314 Soil and debris MC 7121	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3 Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226 Sr-90 Th-232 U-nat Zn-65	2.4192E+02	(6.5384E+00)	NA	20340 LBS; 81 FT3	057
Material not regulated by USDOT WP-~~9334~~ 9314 Soil and debris MC 7121	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3 Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226 Sr-90 Th-232 U-nat Zn-65	4.3228E+00	(1.1683E-01)	NA	19240 LBS; 81 FT3	058

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334-Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	20100 LBS; 81 FT3	059
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334-Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19840 LBS; 81 FT3	060
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334-Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	20300 LBS; 81 FT3	061
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334-Soil and debris 9514 WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19360 LBS; 81 FT3	062
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
9514 Material not regulated by USDOT WP-9334-Soil and debris WE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	19060 LBS; 81 FT3	065
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

6. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

Page 3 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 WE 7121	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	1.3601E+02	(3.6759E+00)	NA	19060 LBS; 81 FT3	065
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 7124 WE	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	19960 LBS; 81 FT3	068
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WE 7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	18460 LBS; 81 FT3	079
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WE 7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19400 LBS; 81 FT3	080
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed liquid 9514 WE 7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-013
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-003

Page 4 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Sorbed liquid 9514 WC-7121	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-013
Material not regulated by USDOT WP-~~9334~~ Sorbed Liquid 9514 WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-021
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 90768.3751 / lb 200110.0000	NP	NP	1.6371E-03 / 12 Containers	1.6371E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.7755E+03	1.6130E+03	1.5585E+01	NP	NP	(kg)	3.7286E-01
mCi	4.7987E+01	4.3595E+01	4.2123E-01	NP	NP	(lb)	8.2201E-01

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803383

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
057/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	9226.0684 / 20340.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22.29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	AU

15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT		RADIONUCLIDES	pCi/gm	MBq	mCi
		Am-241	2.45156E-01	8.3483E-02	2.2563E-03
		C-14	5.95234E+00	2.0269E+00	5.4781E-02
		Co-60	7.69769E-03	2.6212E-03	7.0844E-05
		Cs-137	2.52218E+01	8.5884E+00	2.3212E-01
		Eu-152	3.56132E-02	1.2127E-02	3.2776E-04
		Eu-154	1.53348E-02	5.2218E-03	1.4113E-04
		Eu-155	3.35954E-03	1.1440E-03	3.0919E-05
		H-3	6.48704E+02	2.2090E+02	5.9702E+00
		Na-22	2.20943E-07	7.5236E-08	2.0334E-09
		Ni-63	6.45678E-01	2.1987E-01	5.9424E-03
		Pm-147	2.34058E-05	7.9702E-06	2.1541E-07
		Pu-238 [8.8481E-09 g]	1.63437E-02	5.5655E-03	1.5042E-04
		Pu-239 [1.6773E-04 g]	1.12994E+00	3.8476E-01	1.0399E-02
		Pu-240 [4.5214E-05 g]	1.12994E+00	3.8476E-01	1.0399E-02
		Pu-241 [2.2748E-09 g]	2.47173E-02	8.4168E-03	2.2748E-04
		Ra-226	7.08228E-01	2.4117E-01	6.5181E-03
		Sr-90	2.60289E+01	8.8634E+00	2.3955E-01
		Th-232 [3.6296E-02 kg]	4.33815E-01	1.4772E-01	3.9925E-03
		U-nat [1.8000E-03 kg]	1.40166E-01	4.7730E-02	1.2900E-03
		Zn-65	2.52218E-19	8.5884E-20	2.3212E-21
		Subtotal		2.4192E+02	6.5384E+00
		Total		2.4192E+02	6.5384E+00
		SNM [2.1295E-04 g]			
		Source [3.8096E-02 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
058/R5-0022-01	19 Lift Liner	2.2937	8727.1178	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.96637E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.20583E+00	3.8835E-01	1.0496E-02	
												Co-60	1.56349E-03	5.0353E-04	1.3609E-05	
		81.0000	19240.8000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	5.10943E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.20430E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.10653E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.79554E-04	2.1886E-04	5.9151E-06	
												H-3	4.46564E-08	1.4382E-08	3.8871E-10	
												Na-22	4.46564E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.30801E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.75177E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.31091E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.28903E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.28903E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	5.01746E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.17364E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.26271E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.39411E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.82616E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.10943E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
059/R5-0022-01	19 Lift Liner	2.2937	9117.2072	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.75335E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.15410E+00	3.8835E-01	1.0496E-02	
												Co-60	1.49642E-03	5.0353E-04	1.3609E-05	
		81.0000	20100.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.89027E+00	1.6455E+00	4.4474E-02	
												Eu-152	6.89529E-03	2.3202E-03	6.2709E-05	
												Eu-154	2.97329E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.50406E-04	2.1886E-04	5.9151E-06	
												H-3	4.27410E-08	1.4382E-08	3.8871E-10	
												Na-22	4.27410E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.25191E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.54796E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.16890E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.19084E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.19084E-01	7.3723E-02	1.9925E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-003

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3674E-10 g]	4.80225E-03	1.6159E-03	4.3674E-05	
												Ra-226	6.86595E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.03698E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.20564E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.70494E-02	9.1020E-03	2.4600E-04	
												Zn-65	4.89027E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
060/R5-0022-01	19 Lift Liner	2.2937	8999.2732	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.51350E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.10273E+00	2.0269E+00	5.4781E-02	
												Co-60	7.89217E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.58590E+01	8.5884E+00	2.3212E-01	
		81.0000	19840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.65129E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.57223E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.44442E-03	1.1440E-03	3.0919E-05	
												H-3	6.65094E+02	2.2090E+02	5.9702E+00	
												Na-22	2.26525E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.61991E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.39972E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.67566E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.15848E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.15848E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.53418E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.26121E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.66865E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.44775E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.43708E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.58590E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-08)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
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061/R5-0822-01	19 Lift Liner	2.2937	9207.9257	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.98896E-01	1.0158E-01	2.7454E-03	AU
		81.0000	20300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	7.25609E+00	2.4660E+00	6.6649E-02	
												Co-60	9.36999E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.07745E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.33596E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.86810E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.09015E-03	1.3901E-03	3.7569E-05	
												H-3	7.89518E+02	2.6832E+02	7.2519E+00	
												Na-22	2.68416E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.86568E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.85131E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.98608E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.37649E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.37649E+00	4.6779E-01	1.2643E-02	
												Pu-241 [2.7725E-09 g]	3.01845E-02	1.0258E-02	2.7725E-04	
												Ra-226	6.90213E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.16594E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.22780E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.69838E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.07745E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
062/R5-0822-01	19 Lift Liner	2.2937	8781.5489	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.92794E-01	6.2482E-02	1.6887E-03	AU
		81.0000	19360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.69067E+00	1.5201E+00	4.1085E-02	
												Co-60	6.06209E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.98757E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.80248E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.21242E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.64347E-03	8.5670E-04	2.3154E-05	
												H-3	5.10806E+02	1.6554E+02	4.4741E+00	
												Na-22	1.73912E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.08818E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.84844E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.28198E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.90432E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.90432E-01	2.8857E-01	7.7991E-03	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.94782E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.97637E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.04720E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.27328E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09832E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.98757E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
065/R5-0022-01	19 Lift Liner	2.2937	8645.4711	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.47075E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.56607E+00	1.1377E+00	3.0749E-02	
												Co-60	4.61373E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.51105E+01	4.8207E+00	1.3029E-01	
		81.0000	19060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.13561E-02	6.8136E-03	1.8415E-04	
												Eu-154	9.18716E-03	2.9311E-03	7.9219E-05	
												Eu-155	2.01473E-03	6.4276E-04	1.7372E-05	
												H-3	3.88843E+02	1.2406E+02	3.3529E+00	
												Na-22	1.31965E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.86828E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.40024E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.78151E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.76949E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.76949E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.48083E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.07170E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.56142E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.33167E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.35001E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.51105E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
088/R5-0022-01	19 Lift Liner	2.2937	9053.7043	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		3.04000E-01	1.0158E-01	2.7454E-03	AU
		81.0000	19960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		7.38000E+00	2.4660E+00	6.6649E-02	
												Co-60		9.53000E-03	3.1844E-03	8.6065E-05	
												Cs-137		3.13000E+01	1.0459E+01	2.8267E-01	
												Eu-152		4.41000E-02	1.4736E-02	3.9827E-04	
												Eu-154		1.90000E-02	6.3488E-03	1.7159E-04	
												Eu-155		4.16000E-03	1.3901E-03	3.7569E-05	
												H-3		8.03000E+02	2.6832E+02	7.2519E+00	
												Na-22		2.73000E-07	9.1224E-08	2.4655E-09	
												Ni-63		8.00000E-01	2.6732E-01	7.2248E-03	
												Pm-147		2.90000E-05	9.6903E-06	2.6190E-07	
												Pu-238	[1.0731E-08 g]	2.02000E-02	6.7499E-03	1.8243E-04	
												Pu-239	[2.0393E-04 g]	1.40000E+00	4.6779E-01	1.2643E-02	
												Pu-240	[5.4971E-05 g]	1.40000E+00	4.6779E-01	1.2643E-02	
												Pu-241	[2.7725E-09 g]	3.07000E-02	1.0258E-02	2.7725E-04	
												Ra-226		7.02000E-01	2.3457E-01	6.3397E-03	
												Sr-90		3.22000E+01	1.0760E+01	2.9080E-01	
												Th-232	[3.5303E-02 kg]	4.30000E-01	1.4368E-01	3.8833E-03	
												U-nat	[2.1800E-03 kg]	1.72739E-01	5.7720E-02	1.5600E-03	
												Zn-65		3.13000E-19	1.0459E-19	2.8267E-21	
												Subtotal			2.9379E+02	7.9402E+00	
												Total			2.9379E+02	7.9402E+00	
												SNM Source	[2.5891E-04 g] [3.7483E-02 kg]				
079/R5-0022-01	19 Lift Liner	2.2937	8373.3157	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.51869E-01	4.6923E-02	1.2682E-03	AU
		81.0000	18460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		3.68229E+00	1.1377E+00	3.0749E-02	
												Co-60		4.76410E-03	1.4720E-03	3.9783E-05	
												Cs-137		1.56029E+01	4.8207E+00	1.3029E-01	
												Eu-152		2.20521E-02	6.8136E-03	1.8415E-04	
												Eu-154		9.48658E-03	2.9311E-03	7.9219E-05	
												Eu-155		2.08039E-03	6.4276E-04	1.7372E-05	
												H-3		4.01515E+02	1.2406E+02	3.3529E+00	
												Na-22		1.36266E-07	4.2102E-08	1.1379E-09	
												Ni-63		3.99435E-01	1.2341E-01	3.3355E-03	
												Pm-147		1.44587E-05	4.4674E-06	1.2074E-07	
												Pu-238	[4.9614E-09 g]	1.01003E-02	3.1207E-03	8.4343E-05	
												Pu-239	[9.4148E-05 g]	6.99011E-01	2.1598E-01	5.8372E-03	
												Pu-240	[2.5379E-05 g]	6.99011E-01	2.1598E-01	5.8372E-03	

FORM 541A (03-08)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.52909E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.30217E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.61230E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.47284E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.62214E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.56029E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
080/R5-0022-01	19 Lift Liner	2.2937	6798.6826	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.57065E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.24150E+00	2.0269E+00	5.4781E-02	
												Co-60	8.07163E-03	2.6212E-03	7.0844E-05	
		81.0000	19400.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.64470E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.73432E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.60798E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.52274E-03	1.1440E-03	3.0919E-05	
												H-3	6.80218E+02	2.2090E+02	5.9702E+00	
												Na-22	2.31676E-07	7.5236E-08	2.0334E-09	
												NI-63	6.77044E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.45428E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.71377E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.18483E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.18483E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.59181E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.42633E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.72933E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.54889E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.46976E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.64470E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/grm	MBq	mCi	
T-013/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-021/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-003

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324 / 884.0000	91067.7461 / 200770.0000									SNM [1.6371E-03 g]		1.7755E+03	4.7987E+01	
												Source [3.7286E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-003
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 07, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-003, WP-9334-005, WP-9334-006, WP-9334-007**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 06, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ==> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803413**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
TELEPHONE NUMBER (Include Area Code): **865-300-5789**
CONTACT: **Wade Fillingame**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
TELEPHONE (Include Area Code): **(718) 928-2304**
CONTACT: **James P. Nunes**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714
SIGNATURE -- *Authorized consignee acknowledging waste receipt*

8. MANIFEST NUMBER (Use this number on all continuation pages)
WP-9334-005

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 7/1/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 (Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:30:14 -04'00')
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.3967E-01**	**(1.4586E-02)**	**NA**	**18740 LBS; 81 FT3**	**033**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-~~9334~~ 9514 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19460 LBS; 81 FT3**	**034**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

6. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

Page 2 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CGF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	21180 LBS; 81 FT3	035
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CGF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4196E+02	(6.5395E+00)	NA	21780 LBS; 81 FT3	036
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CGF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	21260 LBS; 81 FT3	039
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CGF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.0638E+02	(1.0983E+01)	NA	20920 LBS; 81 FT3	040
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 CGF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.0210E+02	(1.0867E+01)	NA	20700 LBS; 81 FT3	044
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

Page 3 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 CAF 7/1/21	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	4.0210E+02	(1.0867E+01)	NA	20700 LBS; 81 FT3	044
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 CAF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.9492E+02	(1.0673E+01)	NA	19240 LBS; 81 FT3	052
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 CAF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.1360E+02	(1.1178E+01)	NA	20180 LBS; 81 FT3	053
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 CAF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	22860 LBS; 81 FT3	054
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed Water 9514 CAF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-002
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-005

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed Water 9514 CAF 7/1/21	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-002
Material not regulated by USDOT WP-9334 Sorbes Water 9514 CAF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-009
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 95422.2333 / lb 210370.0000	NP	NP	1.8514E-03 12 Containers	1.8514E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.3830E+03	2.1725E+03	2.0351E+01	NP	NP	(kg)	3.7635E-01
mCi	6.4405E+01	5.8716E+01	5.5004E-01	NP	NP	(lb)	8.2972E-01

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803413

DISPOSAL CONTAINER DESCRIPTION

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA
033/R5-0022-01	19 Lift Liner	2.2937	8500.3216	<1.0000E-03	3.3400E-07	3.3400E-06
		81.0000	18740.8000	<1.0000E-01	2.0000E+01	2.0000E+02

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%
22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np
	81.0000			

15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT

RADIONUCLIDES		pCi/gm	MBq	mCi
Am-241		2.04000E-04	6.3988E-05	1.7294E-06
C-14		4.96000E-03	1.5558E-03	4.2049E-05
Co-60		6.39000E-06	2.0044E-06	5.4172E-08
Cs-137		2.10000E-02	6.5871E-03	1.7803E-04
Eu-152		2.95000E-05	9.2533E-06	2.5009E-07
Eu-154		1.28000E-05	4.0149E-06	1.0851E-07
Eu-155		2.78000E-06	8.7202E-07	2.3568E-08
H-3		5.39000E-01	1.6907E-01	4.5694E-03
Na-22		1.83000E-10	5.7402E-11	1.5514E-12
Ni-63		5.36000E-04	1.6813E-04	4.5440E-06
Pm-147		1.95000E-08	6.1165E-09	1.6531E-10
Pu-238	[6.7821E-12 g]	1.36000E-05	4.2661E-06	1.1530E-07
Pu-239	[7.3700E-08 g]	5.39000E-04	1.6907E-04	4.5694E-06
Pu-240	[1.9867E-08 g]	5.39000E-04	1.6907E-04	4.5694E-06
Pu-241	[1.7464E-12 g]	2.06000E-05	6.4617E-06	1.7464E-07
Ra-226		7.02000E-01	2.2020E-01	5.9513E-03
Sr-90		2.15000E-02	6.7440E-03	1.8227E-04
Th-232	[3.3140E-02 kg]	4.30000E-01	1.3488E-01	3.6454E-03
U-nat	[1.3800E-06 kg]	1.15953E-04	3.6371E-05	9.8300E-07
Zn-65		2.10000E-22	6.5871E-23	1.7803E-24
Subtotal			5.3967E-01	1.4586E-02
Total			5.3967E-01	1.4586E-02
SNM	[9.3576E-08 g]			
Source	[3.3141E-02 kg]			

16. WASTE CLASSIFICATION: AU

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
034/R5-0022-01	19 Lift Liner	2.2937	8826.9081	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.91008E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.19216E+00	3.8835E-01	1.0496E-02	
												Co-60	1.54577E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.05152E+00	1.6455E+00	4.4474E-02	
		81.0000	19460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	7.12264E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.07132E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.71852E-04	2.1886E-04	5.9151E-06	
												H-3	4.41503E-08	1.4382E-08	3.8871E-10	
												Na-22	4.41503E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.29319E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.69791E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.27338E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.26308E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.26308E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.96059E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.09233E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.20307E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.34431E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.79413E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.05152E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
035/R5-0022-01	19 Lift Liner	2.2937	9607.0870	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.32319E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.20828E+00	1.1377E+00	3.0749E-02	
												Co-60	4.15083E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.35944E+01	4.8207E+00	1.3029E-01	
		81.0000	21180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.92134E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.26540E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.81259E-03	6.4276E-04	1.7372E-05	
												H-3	3.49830E+02	1.2406E+02	3.3529E+00	
												Na-22	1.18725E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.48017E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.25975E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.80012E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.09030E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.09030E-01	2.1598E-01	5.8372E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-005

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.33225E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.36219E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.40476E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.89707E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.51224E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.35944E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
036/R5-0022-01	19 Lift Liner	2.2937	9879.2425	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.28910E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.55789E+00	2.0269E+00	5.4781E-02	
												Co-60	7.18758E-03	2.6212E-03	7.0844E-05	
		81.0000	21780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.35504E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.32532E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.43186E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.13691E-03	1.1440E-03	3.0919E-05	
												H-3	6.05716E+02	2.2090E+02	5.9702E+00	
												Na-22	2.06301E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.02890E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.18548E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.52607E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.05506E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.05506E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.30794E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.61295E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.43040E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.05067E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	2.41465E-01	8.8060E-02	2.3800E-03	
												Zn-65	2.35504E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4196E+02	6.5395E+00	
												Total		2.4196E+02	6.5395E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2 MANIFEST NUMBER: WP-9334-005

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
039/R5-0022-01	19 Lift Liner	2.2937	9643.3744	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.85367E-01	1.0158E-01	2.7454E-03	AU
		81.0000	21260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	6.92767E+00	2.4660E+00	6.6649E-02	
												Co-60	8.94589E-03	3.1844E-03	8.6065E-05	
												Cs-137	2.93816E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.13970E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.78355E-02	6.3488E-03	1.7159E-04	
												Eu-155	3.90503E-03	1.3901E-03	3.7569E-05	
												H-3	7.53783E+02	2.6832E+02	7.2519E+00	
												Na-22	2.56267E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.50967E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.72225E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.89619E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.31419E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.31419E+00	4.6779E-01	1.2643E-02	
												Pu-241 [2.7725E-09 g]	2.88183E-02	1.0258E-02	2.7725E-04	
												Ra-226	6.58973E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.02264E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.03645E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.62151E-01	5.7720E-02	1.5600E-03	
												Zn-65	2.93816E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
040/R5-0022-01	19 Lift Liner	2.2937	9489.1530	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.4045E-01	3.7960E-03	AU
		81.0000	20920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	9.74000E+00	3.4115E+00	9.2203E-02	
												Co-60	1.26000E-02	4.4134E-03	1.1928E-04	
												Cs-137	4.13000E+01	1.4466E+01	3.9096E-01	
												Eu-152	5.82000E-02	2.0385E-02	5.5095E-04	
												Eu-154	2.51000E-02	8.7916E-03	2.3761E-04	
												Eu-155	5.49000E-03	1.9229E-03	5.1971E-05	
												H-3	1.06000E+03	3.7126E+02	1.0034E+01	
												Na-22	3.61000E-07	1.2644E-07	3.4174E-09	
												Ni-63	1.06000E+00	3.7126E-01	1.0034E-02	
												Pm-147	3.83000E-05	1.3415E-05	3.6256E-07	
												Pu-238 [1.4868E-08 g]	2.67000E-02	9.3518E-03	2.5275E-04	
												Pu-239 [2.8247E-04 g]	1.85000E+00	6.4798E-01	1.7513E-02	
												Pu-240 [7.6143E-05 g]	1.85000E+00	6.4798E-01	1.7513E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-005

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.8339E-09 g]	4.05000E-02	1.4185E-02	3.8339E-04	
												Ra-226	7.02000E-01	2.4588E-01	6.6454E-03	
												Sr-90	4.25000E+01	1.4886E+01	4.0232E-01	
												Th-232 [3.7005E-02 kg]	4.30000E-01	1.5061E-01	4.0706E-03	
												U-nat [3.0200E-03 kg]	2.28175E-01	7.9920E-02	2.1600E-03	
												Zn-65	4.13000E-19	1.4466E-19	3.9096E-21	
												Subtotal		4.0637E+02	1.0983E+01	
												Total		4.0637E+02	1.0983E+01	
												SNM [3.5863E-04 g]				
												Source [4.0025E-02 kg]				
044/R5-0022-01	19 Lift Liner	2.2937	9389.3627	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.3897E-01	3.7560E-03	AU
												C-14	9.74000E+00	3.3755E+00	9.1231E-02	
												Co-60	1.26000E-02	4.3667E-03	1.1802E-04	
		81.0000	20700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.13000E+01	1.4313E+01	3.8684E-01	
												Eu-152	5.82000E-02	2.0170E-02	5.4514E-04	
												Eu-154	2.51000E-02	8.6987E-03	2.3510E-04	
												Eu-155	5.49000E-03	1.9027E-03	5.1423E-05	
												H-3	1.06000E+03	3.6736E+02	9.9286E+00	
												Na-22	3.61000E-07	1.2511E-07	3.3814E-09	
												Ni-63	1.06000E+00	3.6736E-01	9.9286E-03	
												Pm-147	3.83000E-05	1.3273E-05	3.5874E-07	
												Pu-238 [1.4711E-08 g]	2.67000E-02	9.2533E-03	2.5009E-04	
												Pu-239 [2.7949E-04 g]	1.85000E+00	6.4114E-01	1.7328E-02	
												Pu-240 [7.5340E-05 g]	1.85000E+00	6.4114E-01	1.7328E-02	
												Pu-241 [3.7935E-09 g]	4.05000E-02	1.4036E-02	3.7935E-04	
												Ra-226	7.02000E-01	2.4329E-01	6.5754E-03	
												Sr-90	4.25000E+01	1.4729E+01	3.9808E-01	
												Th-232 [3.6615E-02 kg]	4.30000E-01	1.4902E-01	4.0277E-03	
												U-nat [2.9900E-03 kg]	2.28471E-01	7.9180E-02	2.1400E-03	
												Zn-65	4.13000E-19	1.4313E-19	3.8684E-21	
												Subtotal		4.0210E+02	1.0867E+01	
												Total		4.0210E+02	1.0867E+01	
												SNM [3.5485E-04 g]				
												Source [3.9605E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
052/R5-0022-01	19 Lift Liner	2.2937	8727.1178	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.3688E-01	3.6994E-03	AU
												C-14	1.03000E+01	3.3172E+00	8.9655E-02	
		81.0000	19240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0008				Co-60	1.33000E-02	4.2835E-03	1.1577E-04	
												Cs-137	4.38000E+01	1.4106E+01	3.8125E-01	
												Eu-152	6.17000E-02	1.9871E-02	5.3706E-04	
												Eu-154	2.66000E-02	8.5670E-03	2.3154E-04	
												Eu-155	5.82000E-03	1.8744E-03	5.0660E-05	
												H-3	1.12000E+03	3.6071E+02	9.7489E+00	
												Na-22	3.82000E-07	1.2303E-07	3.3251E-09	
												Ni-63	1.12000E+00	3.6071E-01	9.7489E-03	
												Pm-147	4.06000E-05	1.3076E-05	3.5340E-07	
												Pu-238 [1.4490E-08 g]	2.83000E-02	9.1142E-03	2.4633E-04	
												Pu-239 [2.7517E-04 g]	1.96000E+00	6.3126E-01	1.7061E-02	
												Pu-240 [7.4177E-05 g]	1.96000E+00	6.3126E-01	1.7061E-02	
												Pu-241 [3.7342E-09 g]	4.29000E-02	1.3817E-02	3.7342E-04	
												Ra-226	7.02000E-01	2.2609E-01	6.1105E-03	
												Sr-90	4.51000E+01	1.4525E+01	3.9257E-01	
												Th-232 [3.4026E-02 kg]	4.30000E-01	1.3849E-01	3.7429E-03	
												U-nat [2.9500E-03 kg]	2.42406E-01	7.8070E-02	2.1100E-03	
												Zn-65	4.38000E-19	1.4106E-19	3.8125E-21	
												Subtotal		3.9492E+02	1.0673E+01	
												Total		3.9492E+02	1.0673E+01	
												SNM [3.4937E-04 g]				
												Source [3.6976E-02 kg]				
053/R5-0022-01	19 Lift Liner	2.2937	9153.4848	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.4358E-01	3.8806E-03	AU
												C-14	1.03000E+01	3.4797E+00	9.4047E-02	
		81.0000	20180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Co-60	1.33000E-02	4.4933E-03	1.2144E-04	
												Cs-137	4.38000E+01	1.4797E+01	3.9993E-01	
												Eu-152	6.17000E-02	2.0845E-02	5.6337E-04	
												Eu-154	2.66000E-02	8.9866E-03	2.4288E-04	
												Eu-155	5.82000E-03	1.9662E-03	5.3141E-05	
												H-3	1.12000E+03	3.7836E+02	1.0226E+01	
												Na-22	3.82000E-07	1.2906E-07	3.4880E-09	
												Ni-63	1.12000E+00	3.7836E-01	1.0226E-02	
												Pm-147	4.06000E-05	1.3716E-05	3.7071E-07	
												Pu-238 [1.5200E-08 g]	2.83000E-02	9.5608E-03	2.5840E-04	
												Pu-239 [0.0000E+00 g]	0.00000E+00	0.0000E+00	0.0000E+00	
												Pu-240 [7.7810E-05 g]	1.96000E+00	6.6215E-01	1.7896E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-005

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.9171E-09 g]	4.29000E-02	1.4493E-02	3.9171E-04	
												Ra-226	7.02000E-01	2.3716E-01	6.4098E-03	
												Sr-90	4.51000E+01	1.5237E+01	4.1180E-01	
												Th-232 [3.5693E-02 kg]	4.30000E-01	1.4527E-01	3.9262E-03	
												U-nat [3.1000E-03 kg]	2.42039E-01	8.1770E-02	2.2100E-03	
												Zn-65	4.38000E-19	1.4797E-19	3.9993E-21	
												Subtotal		4.1358E+02	1.1178E+01	
												Total		4.1358E+02	1.1178E+01	
												SNM [7.7829E-05 g]				
												Source [3.8793E-02 kg]				
054/R5-0022-01	19 Lift Liner	2.2937	10369.1223	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	8.03253E-02	3.0750E-02	8.3108E-04	AU
		81.0000	22860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0800				C-14	1.95028E+00	7.4659E-01	2.0178E-02	
												Co-60	2.52050E-03	9.6489E-04	2.6078E-05	
												Cs-137	8.26392E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.16521E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.02446E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.09910E-03	4.2076E-04	1.1372E-05	
												H-3	2.12383E+02	8.1304E+01	2.1974E+00	
												Na-22	7.22267E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.11556E-01	8.0986E-02	2.1888E-03	
												Pm-147	7.67718E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	5.34676E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	3.70224E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	3.70224E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	8.10690E-03	3.1034E-03	8.3877E-05	
												Ra-226	5.80127E-01	2.2208E-01	6.0022E-03	
												Sr-90	8.51184E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.55349E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	4.57164E-02	1.7501E-02	4.7300E-04	
												Zn-65	8.26392E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-005

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-002/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-009/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER
WP-9334-005

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324 884.0000	95721.6042 211030.0000									SNM [1.8514E-03 g]		2.3830E+03	6.4405E+01	
												Source [3.7635E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists ADDITIONAL NOTES	Manifest Number WP-9334-005 PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 07, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-003, WP-9334-005, WP-9334-006, WP-9334-007**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 06, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803983**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5788**

6. CARRIER -- Name and Address
New York & Atlantic Railway
58-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714
SIGNATURE -- *Authorized consignee acknowledging waste receipt*

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-006**
CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
DATE: 7/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.05.21 07:32:21 -05'00'
TITLE: Manifester
DATE: 21 May 2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 ME7121	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	3.7928E+02	(1.0251E+01)	NA	20100 LBS; 81 FT3	025
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226					
				Sr-90 Th-232 U-nat Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 ME7121	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	1.8137E+02	(4.9019E+00)	NA	18780 LBS; 81 FT3	027
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226					
				Sr-90 Th-232 U-nat Zn-65					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-006

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	19300 LBS; 81 FT3	028
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	19640 LBS; 81 FT3	029
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	20260 LBS; 81 FT3	030
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.9575E+02	(1.3398E+01)	NA	21640 LBS; 81 FT3	031
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2136E+02	(8.6855E+00)	NA	18820 LBS; 81 FT3	032
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOFRI	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	3.2136E+02	(8.6855E+00)	NA	18820 LBS; 81 FT3	032
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOFRI	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	18840 LBS; 81 FT3	037
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOFRI	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	20660 LBS; 81 FT3	042
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NOFRI	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19420 LBS; 81 FT3	043
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water 9514 NOFRI	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-004
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-008

Page 4 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed water 9514	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-004
Material not regulated by USDOT WP-9334 Sorbed Water 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-008
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 91403.4045 lb 201510.000	NP	NP	2.3570E-03 12 Containers	2.3570E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.6350E+03	2.4027E+03	2.2455E+01	NP	NP	(kg)	3.8110E-01
mCi	7.1216E+01	6.4937E+01	6.0689E-01	NP	NP	(lb)	8.4018E-01

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CIGX803983**

DISPOSAL CONTAINER DESCRIPTION

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%
025/R5-8022-01	19 Liff Liner	2.2937 81.0000	9117.2072 20100.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	np

15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION
RADIONUCLIDES	pCi/gm	MBq	mCi	
Am-241	3.89000E-01	1.3090E-01	3.5378E-03	AU
C-14	9.44000E+00	3.1765E+00	8.5852E-02	
Co-60	1.22000E-02	4.1052E-03	1.1095E-04	
Cs-137	4.00000E+01	1.3460E+01	3.6378E-01	
Eu-152	5.64000E-02	1.8978E-02	5.1293E-04	
Eu-154	2.43000E-02	8.1770E-03	2.2100E-04	
Eu-155	5.32000E-03	1.7902E-03	4.8383E-05	
H-3	1.03000E+03	3.4659E+02	9.3673E+00	
Na-22	3.50000E-07	1.1777E-07	3.1831E-09	
Ni-63	1.02000E+00	3.4323E-01	9.2764E-03	
Pm-147	3.72000E-05	1.2517E-05	3.3831E-07	
Pu-238 [1.3856E-08 g]	2.59000E-02	8.7154E-03	2.3555E-04	
Pu-239 [2.6257E-04 g]	1.79000E+00	6.0232E-01	1.6279E-02	
Pu-240 [7.0779E-05 g]	1.79000E+00	6.0232E-01	1.6279E-02	
Pu-241 [3.5650E-09 g]	3.92000E-02	1.3191E-02	3.5650E-04	
Ra-226	7.02000E-01	2.3622E-01	6.3843E-03	
Sr-90	4.12000E+01	1.3864E+01	3.7469E-01	
Th-232 [3.5551E-02 kg]	4.30000E-01	1.4469E-01	3.9106E-03	
U-nat [2.8200E-03 kg]	2.21013E-01	7.4370E-02	2.0100E-03	
Zn-65	4.00000E-19	1.3460E-19	3.6378E-21	
Subtotal		3.7928E+02	1.0251E+01	
Total		3.7928E+02	1.0251E+01	
SNM [3.3336E-04 g]				
Source [3.8371E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-006

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
027/R5-0022-01	19 Lift Liner	2.2937	8518.4653	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.98765E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.83592E+00	1.5201E+00	4.1085E-02	
												Co-60	6.24981E-03	1.9646E-03	5.3097E-05	
												Cs-137	2.04912E+01	6.4413E+00	1.7409E-01	
		81.0000	18780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.88926E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.24996E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.72533E-03	8.5670E-04	2.3154E-05	
												H-3	5.26624E+02	1.6554E+02	4.4741E+00	
												Na-22	1.79298E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.24574E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.90568E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.32168E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	9.18005E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	9.18005E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	2.00814E-02	6.3126E-03	1.7061E-04	
												Ra-226	7.19241E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.11059E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.40561E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.13233E-01	3.5594E-02	9.6200E-04	
												Zn-65	2.04912E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
028/R5-0022-01	19 Lift Liner	2.2937	8754.3333	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.14423E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.63303E+00	2.4660E+00	6.6649E-02	
												Co-60	9.85674E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.23731E+01	1.0459E+01	2.8267E-01	
		81.0000	19306.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	4.56120E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.96514E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.30263E-03	1.3901E-03	3.7569E-05	
												H-3	8.30531E+02	2.6832E+02	7.2519E+00	
												Na-22	2.82360E-07	9.1224E-08	2.4655E-09	
												Ni-63	8.27429E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.99943E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	2.08926E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.44800E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.44800E+00	4.6779E-01	1.2643E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-006

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7725E-09 g]	3.17526E-02	1.0258E-02	2.7725E-04	
												Ra-226	7.26069E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.33040E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.44743E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.78661E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.23731E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
029/R5-0022-01	19 Lift Liner	2.2837	8908.5547	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.86496E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.18120E+00	3.8835E-01	1.0496E-02	
												Co-60	1.53156E-03	5.0353E-04	1.3609E-05	
		81.0000	19640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	5.00510E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.05720E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.04310E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.65679E-04	2.1886E-04	5.9151E-06	
												H-3	4.37446E-08	1.4382E-08	3.8871E-10	
												Na-22	4.37446E-08	1.4382E-08	3.8871E-10	
												NI-63	1.28131E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.65475E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.24331E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.24229E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.24229E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.91501E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.02717E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.15526E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.30439E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.76845E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.00510E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-006

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
030/R5-0022-01	19 Lift Liner	2.2937	9189.7820	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.46126E-01	8.3483E-02	2.2563E-03	AU
												C-14		5.97590E+00	2.0269E+00	5.4781E-02	
												Co-60		7.72816E-03	2.6212E-03	7.0844E-05	
		81.0000	20260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137		2.53216E+01	8.5884E+00	2.3212E-01	
												Eu-152		3.57541E-02	1.2127E-02	3.2776E-04	
												Eu-154		1.53955E-02	5.2218E-03	1.4113E-04	
												Eu-155		3.37284E-03	1.1440E-03	3.0919E-05	
												H-3		6.51272E+02	2.2090E+02	5.9702E+00	
												Na-22		2.21817E-07	7.5236E-08	2.0334E-09	
												Ni-63		6.48234E-01	2.1987E-01	5.9424E-03	
												Pm-147		2.34985E-05	7.9702E-06	2.1541E-07	
												Pu-238	[8.8481E-09 g]	1.64084E-02	5.5655E-03	1.5042E-04	
												Pu-239	[1.6773E-04 g]	1.13441E+00	3.8476E-01	1.0399E-02	
												Pu-240	[4.5214E-05 g]	1.13441E+00	3.8476E-01	1.0399E-02	
												Pu-241	[2.2748E-09 g]	2.48152E-02	8.4168E-03	2.2748E-04	
												Ra-226		7.11031E-01	2.4117E-01	6.5181E-03	
												Sr-90		2.61319E+01	8.8634E+00	2.3955E-01	
												Th-232	[3.6296E-02 kg]	4.35532E-01	1.4772E-01	3.9925E-03	
												U-nat	[1.8000E-03 kg]	1.40721E-01	4.7730E-02	1.2900E-03	
												Zn-65		2.53216E-19	8.5884E-20	2.3212E-21	
												Subtotal			2.4192E+02	6.5384E+00	
												Total			2.4192E+02	6.5384E+00	
												SNM	[2.1295E-04 g]				
												Source	[3.8096E-02 kg]				
031/R5-0022-01	19 Lift Liner	2.2937	9815.7395	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		4.74000E-01	1.7175E-01	4.6419E-03	AU
												C-14		1.15000E+01	4.1669E+00	1.1262E-01	
												Co-60		1.49000E-02	5.3990E-03	1.4592E-04	
												Cs-137		4.88000E+01	1.7682E+01	4.7790E-01	
		81.0000	21640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152		6.87000E-02	2.4893E-02	6.7278E-04	
												Eu-154		2.96000E-02	1.0725E-02	2.8987E-04	
												Eu-155		6.48000E-03	2.3480E-03	6.3459E-05	
												H-3		1.25000E+03	4.5292E+02	1.2241E+01	
												Na-22		4.26000E-07	1.5436E-07	4.1718E-09	
												Ni-63		1.25000E+00	4.5292E-01	1.2241E-02	
												Pm-147		4.53000E-05	1.6414E-05	4.4362E-07	
												Pu-238	[1.8146E-08 g]	3.15000E-02	1.1414E-02	3.0848E-04	
												Pu-239	[3.4434E-04 g]	2.18000E+00	7.8991E-01	2.1349E-02	
												Pu-240	[9.2821E-05 g]	2.18000E+00	7.8991E-01	2.1349E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9334-006**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [4.6811E-09 g]	4.78000E-02	1.7320E-02	4.6811E-04	
												Ra-226	7.02000E-01	2.5436E-01	6.8747E-03	
												Sr-90	5.02000E+01	1.8190E+01	4.9161E-01	
												Th-232 [3.8282E-02 kg]	4.30000E-01	1.5581E-01	4.2110E-03	
												U-nat [3.6900E-03 kg]	2.69580E-01	9.7680E-02	2.6400E-03	
												Zn-65	4.88000E-19	1.7682E-19	4.7790E-21	
												Subtotal		4.9574E+02	1.3398E+01	
												Total		4.9574E+02	1.3398E+01	
												SNM [4.3718E-04 g]				
												Source [4.1972E-02 kg]				
032/R5-0022-01	19 Lift Liner	2.2937	8536.6090	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.52000E-01	1.1089E-01	2.9969E-03	AU
												C-14	8.56000E+00	2.6965E+00	7.2879E-02	
												Co-60	1.11000E-02	3.4966E-03	9.4504E-05	
												Cs-137	3.63000E+01	1.1435E+01	3.0905E-01	
		81.0000	18820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.11000E-02	1.6097E-02	4.3506E-04	
												Eu-154	2.20000E-02	6.9305E-03	1.8731E-04	
												Eu-155	4.82000E-03	1.5184E-03	4.1037E-05	
												H-3	9.32000E+02	2.9359E+02	7.9349E+00	
												Na-22	3.17000E-07	9.9859E-08	2.6989E-09	
												Ni-63	9.28000E-01	2.9233E-01	7.9009E-03	
												Pm-147	3.37000E-05	1.0616E-05	2.8692E-07	
												Pu-238 [1.1769E-08 g]	2.35000E-02	7.4030E-03	2.0008E-04	
												Pu-239 [2.2246E-04 g]	1.62000E+00	5.1030E-01	1.3792E-02	
												Pu-240 [5.9967E-05 g]	1.62000E+00	5.1030E-01	1.3792E-02	
												Pu-241 [3.0309E-09 g]	3.56000E-02	1.1214E-02	3.0309E-04	
												Ra-226	7.02000E-01	2.2114E-01	5.9767E-03	
												Sr-90	3.73000E+01	1.1750E+01	3.1757E-01	
												Th-232 [3.3282E-02 kg]	4.30000E-01	1.3546E-01	3.6610E-03	
												U-nat [2.3800E-03 kg]	1.99674E-01	6.2900E-02	1.7000E-03	
												Zn-65	3.63000E-19	1.1435E-19	3.0905E-21	
												Subtotal		3.2136E+02	8.6855E+00	
												Total		3.2136E+02	8.6855E+00	
												SNM [2.8244E-04 g]				
												Source [3.5662E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-006

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
037/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	8545.6808 / 18840.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.64726E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.42751E+00	2.0269E+00	5.4781E-02	
												Co-60	8.31219E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.72352E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.84561E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.65590E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.62773E-03	1.1440E-03	3.0919E-05	
												H-3	7.00490E+02	2.2090E+02	5.9702E+00	
												Na-22	2.38581E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.97222E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.52743E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.76484E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.22014E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.22014E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.66905E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.64765E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.81068E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.68446E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.51356E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.72352E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
042/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	9371.2190 / 20658.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.93675E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.12934E+00	2.4660E+00	6.6649E-02	
												Co-60	9.20632E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.02369E+01	1.0459E+01	2.8267E-01	
												Eu-152	4.26022E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.83547E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.01871E-03	1.3901E-03	3.7569E-05	
												H-3	7.75727E+02	2.6832E+02	7.2519E+00	
												Na-22	2.63728E-07	9.1224E-08	2.4655E-09	
												Ni-63	7.72829E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.80150E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	1.95139E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.35245E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.35245E+00	4.6779E-01	1.2643E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-006

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.7725E-09 g]	2.96573E-02	1.0258E-02	2.7725E-04
												Ra-226	6.78157E-01	2.3457E-01	6.3397E-03
												Sr-90	3.11064E+01	1.0760E+01	2.9080E-01
												Th-232 [3.5303E-02 kg]	4.15395E-01	1.4368E-01	3.8833E-03
												U-nat [2.1800E-03 kg]	1.66872E-01	5.7720E-02	1.5600E-03
												Zn-65	3.02369E-19	1.0459E-19	2.8267E-21
												Subtotal		2.9379E+02	7.9402E+00
												Total		2.9379E+02	7.9402E+00
												SNM [2.5891E-04 g]			
												Source [3.7483E-02 kg]			
043/R5-0022-01	19 Lift Liner	2.2937	8808.7644	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.92197E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.67614E+00	1.5201E+00	4.1085E-02	
												Co-60	6.04331E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.98141E+01	6.4413E+00	1.7409E-01	
		81.0000	19420.8000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.79379E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.20866E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.63528E-03	8.5670E-04	2.3154E-05	
												H-3	5.09224E+02	1.6554E+02	4.4741E+00	
												Na-22	1.73374E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.07242E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.84272E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.27801E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.87674E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.87674E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	1.94179E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.95477E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.04086E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.26004E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09492E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.98141E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2 MANIFEST NUMBER: WP-9334-006

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-004/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3 Na-22 Ni-63 Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g] Pu-241 [2.1258E-13 g] Ra-226 Sr-90 Th-232 [4.0339E-03 kg] U-nat [1.6700E-07 kg] Zn-65 Subtotal Total SNM [1.1390E-08 g] Source [4.0340E-03 kg]	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05 1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04 1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04 2.06000E-05 7.02000E-01 2.15000E-02 4.30000E-01 1.16288E-04 2.10000E-22	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06 4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05 7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05 7.8651E-07 2.6803E-02 8.2088E-04 1.6418E-02 4.4400E-06 8.0179E-24 6.5689E-02 6.5689E-02	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08 1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07 2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07 2.1257E-08 7.2441E-04 2.2186E-05 4.4372E-04 1.2000E-07 2.1670E-25 1.7754E-03 1.7754E-03	AU
T-008/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3 Na-22 Ni-63 Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05 1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04 1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06 4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05 7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08 1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07 2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	AU

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-006

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324	91702.7754									SNM [2.3570E-03 g]		2.6350E+03	7.1216E+01	
		884.0000	202170.0000									Source [3.8110E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-006
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 07, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-003, WP-9334-005, WP-9334-006, WP-9334-007**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 06, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST: 12

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: CIGX803995
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: NA
SHIPMENT NUMBER:
CONTACT: Wade Fillingame
TELEPHONE NUMBER (Include Area Code): 865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: NA
SHIPPING DATE: 05/22/2021
CONTACT: James P. Nunes
TELEPHONE (Include Area Code): (718) 928-2304
SIGNATURE -- Authorized carrier acknowledging waste receipt
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): WP-9334-007

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714
CONTACT: Keri Gonzalez
TELEPHONE (Include Area Code): (432)525-8500
SIGNATURE -- Authorized consignee acknowledging waste receipt
DATE: 7/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 Digitally signed by ORTEGA.MICHAEL.12583448 27
TITLE: Manifester
DATE: 21 May 2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT ~~WP-9334~~ Soil and debris 9514 7/21	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	5.6969E-01	(1.5397E-02)	NA	19780 LBS; 81 FT3	003
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226 Sr-90 Th-232 U-nat Zn-65					
Material not regulated by USDOT ~~WP-9334~~ Soil and debris 9514 7/21	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	1.3601E+02	(3.6759E+00)	NA	20480 LBS; 81 FT3	005
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226 Sr-90 Th-232 U-nat Zn-65					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

6. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

Page 2 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 NE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.8063E+02	(7.5846E+00)	NA	20700 LBS; 81 FT3	007
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	14180 LBS; 81 FT3	019
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	22260 LBS; 81 FT3	020
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.5734E+02	(9.6577E+00)	NA	19580 LBS; 81 FT3	021
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 NE7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2834E+02	(8.8739E+00)	NA	20660 LBS; 81 FT3	023
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	3.2834E+02	(8.8739E+00)	NA	20660 LBS; 81 FT3	023
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.4474E+02	(9.3174E+00)	NA	20900 LBS; 81 FT3	024
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	20460 LBS; 81 FT3	038
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	20560 LBS; 81 FT3	041
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water 9514 WC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5856E-02	(1.7799E-03)	NA	2355 LBS; 37 FT3	T-005
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-007

Page 4 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed water 9334 WP7721	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5856E-02	(1.7799E-03)	NA	2355 LBS; 37 FT3	T-005
Material not regulated by USDOT WP-9334 Sorbed water 9334 WP7721	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-007
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 92355.9486 / lb 203610.0000	NP	NP	1.6717E-03 / 12 Containers	1.6717E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.8983E+03	1.7326E+03	1.5908E+01	NP	NP	(kg)	3.7068E-01
mCi	5.1305E+01	4.6826E+01	4.2995E-01	NP	NP	(lb)	8.1721E-01

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803995

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
003/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	8972.0577 / 19780.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	AU

RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
RADIONUCLIDES		pCi/gm	MBq	mCi
Am-241		2.04000E-04	6.7551E-05	1.8257E-06
C-14		4.96000E-03	1.6424E-03	4.4389E-05
Co-60		6.39000E-06	2.1159E-06	5.7186E-08
Cs-137		2.10000E-02	6.9538E-03	1.8794E-04
Eu-152		2.95000E-05	9.7684E-06	2.6401E-07
Eu-154		1.28000E-05	4.2384E-06	1.1455E-07
Eu-155		2.78000E-06	9.2052E-07	2.4879E-08
H-3		5.39000E-01	1.7848E-01	4.8237E-03
Na-22		1.83000E-10	6.0595E-11	1.6377E-12
Ni-63		5.36000E-04	1.7748E-04	4.7968E-06
Pm-147		1.95000E-08	6.4569E-09	1.7451E-10
Pu-238	[7.1595E-12 g]	1.36000E-05	4.5033E-06	1.2171E-07
Pu-239	[7.7801E-08 g]	5.39000E-04	1.7848E-04	4.8237E-06
Pu-240	[2.0973E-08 g]	5.39000E-04	1.7848E-04	4.8237E-06
Pu-241	[1.8436E-12 g]	2.06000E-05	6.8213E-06	1.8436E-07
Ra-226		7.02000E-01	2.3245E-01	6.2824E-03
Sr-90		2.15000E-02	7.1192E-03	1.9241E-04
Th-232	[3.4984E-02 kg]	4.30000E-01	1.4238E-01	3.8482E-03
U-nat	[1.4500E-06 kg]	1.16210E-04	3.8480E-05	1.0400E-06
Zn-65		2.10000E-22	6.9538E-23	1.8794E-24
Subtotal			5.6969E-01	1.5397E-02
Total			5.6969E-01	1.5397E-02
SNM	[9.8783E-08 g]			
Source	[3.4985E-02 kg]			

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-007

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi
005/R5-0022-01	19 Lift Liner	2.2937	9289.5724	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.36853E-01	4.6923E-02	1.2682E-03	AU
												C-14		3.31821E+00	1.1377E+00	3.0749E-02	
												Co-60		4.29305E-03	1.4720E-03	3.9783E-05	
												Cs-137		1.40602E+01	4.8207E+00	1.3029E-01	
		81.0800	20480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152		1.98718E-02	6.8136E-03	1.8415E-04	
												Eu-154		8.54860E-03	2.9311E-03	7.9219E-05	
												Eu-155		1.87469E-03	6.4276E-04	1.7372E-05	
												H-3		3.61816E+02	1.2406E+02	3.3529E+00	
												Na-22		1.22792E-07	4.2102E-08	1.1379E-09	
												Ni-63		3.59941E-01	1.2341E-01	3.3355E-03	
												Pm-147		1.30291E-05	4.4674E-06	1.2074E-07	
												Pu-238	[4.9614E-09 g]	9.10164E-03	3.1207E-03	8.4343E-05	
												Pu-239	[9.4148E-05 g]	6.29897E-01	2.1598E-01	5.8372E-03	
												Pu-240	[2.5379E-05 g]	6.29897E-01	2.1598E-01	5.8372E-03	
												Pu-241	[1.2769E-09 g]	1.37790E-02	4.7245E-03	1.2769E-04	
												Ra-226		6.58018E-01	2.2561E-01	6.0977E-03	
												Sr-90		1.45289E+01	4.9817E+00	1.3464E-01	
												Th-232	[3.3955E-02 kg]	4.03059E-01	1.3820E-01	3.7351E-03	
												U-nat	[1.0100E-03 kg]	7.76964E-02	2.6640E-02	7.2000E-04	
												Zn-65		1.40602E-19	4.8207E-20	1.3029E-21	
												Subtotal			1.3601E+02	3.6759E+00	
												Total			1.3601E+02	3.6759E+00	
												SNM	[1.1953E-04 g]				
												Source	[3.4965E-02 kg]				
007/R5-0022-01	19 Lift Liner	2.2937	9389.3627	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.79716E-01	9.6940E-02	2.6200E-03	AU
												C-14		6.79113E+00	2.3536E+00	6.3610E-02	
												Co-60		8.77690E-03	3.0418E-03	8.2210E-05	
												Cs-137		2.87723E+01	9.9715E+00	2.6950E-01	
		81.0000	20700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152		4.05695E-02	1.4060E-02	3.8000E-04	
												Eu-154		1.74983E-02	6.0643E-03	1.6390E-04	
												Eu-155		3.82742E-03	1.3265E-03	3.5850E-05	
												H-3		7.39540E+02	2.5630E+02	6.9270E+00	
												Na-22		2.51531E-07	8.7172E-08	2.3560E-09	
												Ni-63		7.36657E-01	2.5530E-01	6.9000E-03	
												Pm-147		2.67332E-05	9.2648E-06	2.5040E-07	
												Pu-238	[1.0259E-08 g]	1.86193E-02	6.4528E-03	1.7440E-04	
												Pu-239	[1.9484E-04 g]	1.28968E+00	4.4696E-01	1.2080E-02	
												Pu-240	[5.2522E-05 g]	1.28968E+00	4.4696E-01	1.2080E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-007

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.6440E-09 g]	2.82279E-02	9.7828E-03	2.6440E-04	
												Ra-226	7.02600E-01	2.4350E-01	6.5810E-03	
												Sr-90	2.96371E+01	1.0271E+01	2.7760E-01	
												Th-232 [3.6646E-02 kg]	4.30357E-01	1.4915E-01	4.0310E-03	
												U-nat [2.0900E-03 kg]	1.59075E-01	5.5130E-02	1.4900E-03	
												Zn-65	2.87723E-19	9.9715E-20	2.6950E-21	
												Subtotal		2.8063E+02	7.5846E+00	
												Total		2.8063E+02	7.5846E+00	
												SNM [2.4737E-04 g]				
												Source [3.8736E-02 kg]				
019/R5-0022-01	19 Lift Liner	2.2937	6431.9402	<1.0000E-03	3.3408E-07	3.3408E-06	22.29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.29669E-01	3.0750E-02	8.3108E-04	AU
		81.0000	14180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.14834E+00	7.4659E-01	2.0178E-02	
												Co-60	4.06883E-03	9.6489E-04	2.6078E-05	
												Cs-137	1.33404E+01	3.1636E+00	8.5502E-02	
												Eu-152	1.88100E-02	4.4607E-03	1.2056E-04	
												Eu-154	8.11097E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.77427E-03	4.2076E-04	1.1372E-05	
												H-3	3.42849E+02	8.1304E+01	2.1974E+00	
												Na-22	1.16595E-07	2.7649E-08	7.4728E-10	
												Ni-63	3.41515E-01	8.0986E-02	2.1888E-03	
												Pm-147	1.23932E-05	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	8.63125E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	5.97650E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	5.97650E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	1.30869E-02	3.1034E-03	8.3877E-05	
												Ra-226	9.36497E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.37406E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	5.73638E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	7.37999E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.33404E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-007

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
020/R5-0022-01	19 Lift Liner	2.2937	10696.9668	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.25885E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.05228E+00	1.1377E+00	3.0749E-02	
												Co-60	3.94899E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.29334E+01	4.8207E+00	1.3029E-01	
		81.0000	22260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.82792E-02	6.8136E-03	1.8415E-04	
												Eu-154	7.86349E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.72445E-03	6.4280E-04	1.7373E-05	
												H-3	3.32819E+02	1.2406E+02	3.3529E+00	
												Na-22	1.12951E-07	4.2102E-08	1.1379E-09	
												NI-63	3.31094E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.19849E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.37220E-03	3.1207E-03	8.4344E-05	
												Pu-239 [9.4148E-05 g]	5.79415E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	5.79415E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.26747E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.05282E-01	2.2562E-01	6.0978E-03	
												Sr-90	1.33645E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.70757E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.14695E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.29334E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
021/R5-0022-01	19 Lift Liner	2.2937	8881.3382	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.77000E-01	1.2357E-01	3.3397E-03	AU
												C-14	9.15000E+00	2.9991E+00	8.1056E-02	
												Co-60	1.18000E-02	3.8676E-03	1.0453E-04	
												Cs-137	3.88000E+01	1.2717E+01	3.4371E-01	
		81.0000	19580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.46000E-02	1.7896E-02	4.8368E-04	
												Eu-154	2.36000E-02	7.7352E-03	2.0906E-04	
												Eu-155	5.15000E-03	1.6880E-03	4.5622E-05	
												H-3	9.96000E+02	3.2646E+02	8.8232E+00	
												Na-22	3.39000E-07	1.1111E-07	3.0031E-09	
												NI-63	9.92000E-01	3.2514E-01	8.7877E-03	
												Pm-147	3.60000E-05	1.1800E-05	3.1891E-07	
												Pu-238 [1.3080E-08 g]	2.51000E-02	8.2270E-03	2.2235E-04	
												Pu-239 [2.4861E-04 g]	1.74000E+00	5.7032E-01	1.5414E-02	
												Pu-240 [6.7017E-05 g]	1.74000E+00	5.7032E-01	1.5414E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-007

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.3663E-09 g]	3.80000E-02	1.2455E-02	3.3663E-04	
												Ra-226	7.02000E-01	2.3009E-01	6.2187E-03	
												Sr-90	3.99000E+01	1.3078E+01	3.5346E-01	
												Th-232 [3.4629E-02 kg]	4.30000E-01	1.4094E-01	3.8092E-03	
												U-nat [2.6500E-03 kg]	2.14481E-01	7.0300E-02	1.9000E-03	
												Zn-65	3.88000E-19	1.2717E-19	3.4371E-21	
												Subtotal		3.5734E+02	9.6577E+00	
												Total		3.5734E+02	9.6577E+00	
												SNM [3.1565E-04 g]				
												Source [3.7279E-02 kg]				
023/R5-0022-01	19 Lift Liner	2.2937	9371.2190	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.28000E-01	1.1345E-01	3.0663E-03	AU
		81.0000	20660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	7.97000E+00	2.7568E+00	7.4507E-02	
												Co-60	1.03000E-02	3.5627E-03	9.6289E-05	
												Cs-137	3.38000E+01	1.1691E+01	3.1598E-01	
												Eu-152	4.76000E-02	1.6465E-02	4.4499E-04	
												Eu-154	2.05000E-02	7.0907E-03	1.9164E-04	
												Eu-155	4.49000E-03	1.5531E-03	4.1975E-05	
												H-3	8.67000E+02	2.9989E+02	8.1051E+00	
												Na-22	2.95000E-07	1.0204E-07	2.7578E-09	
												Ni-63	8.64000E-01	2.9885E-01	8.0771E-03	
												Pm-147	3.14000E-05	1.0861E-05	2.9354E-07	
												Pu-238 [1.1988E-08 g]	2.18000E-02	7.5406E-03	2.0380E-04	
												Pu-239 [2.2768E-04 g]	1.51000E+00	5.2229E-01	1.4116E-02	
												Pu-240 [6.1375E-05 g]	1.51000E+00	5.2229E-01	1.4116E-02	
												Pu-241 [3.0944E-09 g]	3.31000E-02	1.1449E-02	3.0944E-04	
												Ra-226	7.02000E-01	2.4282E-01	6.5626E-03	
												Sr-90	3.48000E+01	1.2037E+01	3.2533E-01	
												Th-232 [3.6544E-02 kg]	4.30000E-01	1.4874E-01	4.0199E-03	
												U-nat [2.4500E-03 kg]	1.87196E-01	6.4750E-02	1.7500E-03	
												Zn-65	3.38000E-19	1.1691E-19	3.1598E-21	
												Subtotal		3.2834E+02	8.8739E+00	
												Total		3.2834E+02	8.8739E+00	
												SNM [2.8907E-04 g]				
												Source [3.8994E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
024/R5-0022-01	19 Lift Liner	2.2937	9488.0812	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.40000E-01	1.1897E-01	3.2155E-03	AU
		81.0000	20906.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	8.26000E+00	2.8904E+00	7.8118E-02	
												Co-60	1.07000E-02	3.7440E-03	1.0119E-04	
												Cs-137	3.50000E+01	1.2247E+01	3.3101E-01	
												Eu-152	4.94000E-02	1.7286E-02	4.6719E-04	
												Eu-154	2.13000E-02	7.4533E-03	2.0144E-04	
												Eu-155	4.66000E-03	1.6306E-03	4.4071E-05	
												H-3	9.00000E+02	3.1493E+02	8.5116E+00	
												Na-22	3.06000E-07	1.0707E-07	2.8939E-09	
												NI-63	8.96000E-01	3.1353E-01	8.4738E-03	
												Pm-147	3.25000E-05	1.1372E-05	3.0736E-07	
												Pu-238 [1.2573E-08 g]	2.26000E-02	7.9084E-03	2.1374E-04	
												Pu-239 [2.3949E-04 g]	1.57000E+00	5.4938E-01	1.4848E-02	
												Pu-240 [6.4557E-05 g]	1.57000E+00	5.4938E-01	1.4848E-02	
												Pu-241 [3.2439E-09 g]	3.43000E-02	1.2002E-02	3.2439E-04	
												Ra-226	7.02000E-01	2.4565E-01	6.6391E-03	
												Sr-90	3.61000E+01	1.2632E+01	3.4141E-01	
												Th-232 [3.6970E-02 kg]	4.30000E-01	1.5047E-01	4.0667E-03	
												U-nat [2.5700E-03 kg]	1.93500E-01	6.7710E-02	1.8300E-03	
												Zn-65	3.50000E-19	1.2247E-19	3.3101E-21	
												Subtotal		3.4474E+02	9.3174E+00	
												Total		3.4474E+02	9.3174E+00	
												SNM [3.0406E-04 g]				
												Source [3.9540E-02 kg]				
038/R5-0922-01	19 Lift Liner	2.2937	9280.5085	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	8.97707E-02	3.0750E-02	8.3108E-04	AU
		81.0000	20460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.17962E+00	7.4659E-01	2.0178E-02	
												Co-60	2.81688E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.23567E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.30223E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.61529E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.22834E-03	4.2076E-04	1.1372E-05	
												H-3	2.37357E+02	8.1304E+01	2.1974E+00	
												Na-22	8.07197E-08	2.7649E-08	7.4728E-10	
												NI-63	2.36433E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.57994E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	5.97548E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.13758E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.13758E-01	1.4173E-01	3.8305E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	9.06019E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.48344E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.51274E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.97134E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.10922E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.23567E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
041/R5-0022-01	19 Lift Liner	2.2937	9325.8597	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.36319E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.30527E+00	1.1377E+00	3.0749E-02	
												Co-60	4.27630E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.40054E+01	4.8207E+00	1.3029E-01	
		81.0000	20560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.97942E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.51526E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.86738E-03	6.4276E-04	1.7372E-05	
												H-3	3.60405E+02	1.2406E+02	3.3529E+00	
												Na-22	1.22314E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.58537E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.29783E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.06614E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.27440E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.27440E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.37253E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.55451E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.44722E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.01487E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.73933E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.40054E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2 MANIFEST NUMBER: WP-9334-007

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-065/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04518E-04	7.8089E-06	2.1105E-07	AU
												C-14	4.97259E-03	1.8986E-04	5.1313E-06	
												Co-60	6.40622E-06	2.4460E-07	6.6107E-09	
												Cs-137	2.10533E-02	8.0383E-04	2.1725E-05	
												Eu-152	2.95749E-05	1.1292E-06	3.0519E-08	
												Eu-154	1.28325E-05	4.8995E-07	1.3242E-08	
												Eu-155	2.78705E-06	1.0641E-07	2.8760E-09	
												H-3	5.40368E-01	2.0632E-02	5.5761E-04	
												Na-22	1.83464E-10	7.0048E-12	1.8932E-13	
												Ni-63	5.37360E-04	2.0517E-05	5.5451E-07	
												Pm-147	1.95495E-08	7.4640E-10	2.0173E-11	
												Pu-238 [8.2763E-13 g]	1.36345E-05	5.2059E-07	1.4070E-08	
												Pu-239 [8.9938E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-240 [2.4244E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-241 [2.1311E-13 g]	2.06523E-05	7.8851E-07	2.1311E-08	
												Ra-226	7.03782E-01	2.6871E-02	7.2624E-04	
												Sr-90	2.15546E-02	8.2299E-04	2.2243E-05	
												Th-232 [4.0441E-03 kg]	4.31091E-01	1.6459E-02	4.4485E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10533E-22	8.0383E-24	2.1725E-25	
												Subtotal		6.5856E-02	1.7799E-03	
												Total		6.5856E-02	1.7799E-03	
												SNM [1.1419E-08 g]				
												Source [4.0443E-03 kg]				
T-007/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-007

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324 884.0000	92855.3196 204270.0000									SNM [1.6717E-03 g]		1.8983E+03	5.1305E+01	
												Source [3.7068E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-007
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 06, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-001, WP-9334-004**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 02, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 13

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803947**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: NA
SHIPMENT NUMBER:

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: NA
SHIPPING DATE: **05/22/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 10 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt*: Keri Gonzalez
DATE: 7/2/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.06.21 09:37:12 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 9444 MC 7/1/21	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.9375E+02**	**(7.9391E+00)**	**NA**	**19600 LBS; 81 FT3**	**009**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and debris 9514 MC 7-1-21	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.4192E+02**	**(6.5384E+00)**	**NA**	**20840 LBS; 81 FT3**	**010**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.2235E+02	(8.7121E+00)	NA	21060 LBS; 81 FT3	011
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	3.6142E+02	(9.7681E+00)	NA	20460 LBS; 81 FT3	012
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19560 LBS; 81 FT3	013
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9514 MC 7-1-21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	22140 LBS; 81 FT3	014
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris MC 7-1-21 9514	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3169E+02	(1.1667E+01)	NA	22220 LBS; 81 FT3	015
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

Page 3 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	4.3169E+02	(1.1667E+01)	NA	22220 LBS; 81 FT3	015
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	20760 LBS; 81 FT3	016
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	21080 LBS; 81 FT3	046
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and debris 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	18840 LBS; 81 FT3	049
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water 9574 MC7121	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-010
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-001

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT ~~WP-9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-010
Material not regulated by USDOT ~~WP-9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-011
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT ~~WP-9334~~ 9514 MC7121 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-012
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
13	m3 26.0801 ft3 921.0000	kg 96563.0180 lb 212885.000 0	NP	NP	2.0556E-03 13 Containers	2.0556E-03

	ACTIVITY ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2904E+03	2.0875E+03	1.9557E+01	NP	NP	(kg)	3.8299E-01
mCi	6.1902E+01	5.6419E+01	5.2858E-01	NP	NP	(lb)	8.4436E-01

2. MANIFEST NUMBER: WP-9334-001

3. PAGE 1 OF 10 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803947

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
009/R5-0022-01	19 Lift Liner	2.2937 81.0000	8890.4110 19600.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 180	Oxides/None	np	Am-241		3.09598E-01	1.0158E-01	2.7454E-03	AU
												C-14		7.51590E+00	2.4660E+00	6.6649E-02	
												Co-60		9.70549E-03	3.1844E-03	8.6065E-05	
												Cs-137		3.18764E+01	1.0459E+01	2.8267E-01	
												Eu-152		4.49121E-02	1.4736E-02	3.9827E-04	
												Eu-154		1.93499E-02	6.3488E-03	1.7159E-04	
												Eu-155		4.23660E-03	1.3901E-03	3.7569E-05	
												H-3		8.17787E+02	2.6832E+02	7.2519E+00	
												Na-22		2.78027E-07	9.1224E-08	2.4655E-09	
												Ni-63		8.14731E-01	2.6732E-01	7.2248E-03	
												Pm-147		2.95340E-05	9.6903E-06	2.6190E-07	
												Pu-238	[1.0731E-08 g]	2.05720E-02	6.7499E-03	1.8243E-04	
												Pu-239	[2.0393E-04 g]	1.42578E+00	4.6779E-01	1.2643E-02	
												Pu-240	[5.4971E-05 g]	1.42578E+00	4.6779E-01	1.2643E-02	
												Pu-241	[2.7725E-09 g]	3.12653E-02	1.0258E-02	2.7725E-04	
												Ra-226		7.14927E-01	2.3457E-01	6.3397E-03	
												Sr-90		3.27929E+01	1.0760E+01	2.9080E-01	
												Th-232	[3.5303E-02 kg]	4.37918E-01	1.4368E-01	3.8833E-03	
												U-nat	[6.5200E-04 kg]	5.25504E-02	1.7242E-02	4.6600E-04	
												Zn-65		3.18764E-19	1.0459E-19	2.8267E-21	
												Subtotal			2.9375E+02	7.9391E+00	
												Total			2.9375E+02	7.9391E+00	
												SNM	[2.5891E-04 g]				
												Source	[3.5955E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 2 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
010/R5-0022-01	19 Lift Liner	2.2937	9452.8656	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.39260E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.80919E+00	2.0269E+00	5.4781E-02	
												Co-60	7.51256E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.46152E+01	8.5884E+00	2.3212E-01	
		81.0000	20840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.47567E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.49660E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.27874E-03	1.1440E-03	3.0919E-05	
												H-3	6.33103E+02	2.2090E+02	5.9702E+00	
												Na-22	2.15629E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.30149E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.28429E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.59506E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.10276E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.10276E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.41229E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.91195E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.54029E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.23381E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.36795E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.46152E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
011/R5-0022-01	19 Lift Liner	2.2937	9552.6559	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.16000E-01	1.1143E-01	3.0115E-03	AU
												C-14	7.67000E+00	2.7045E+00	7.3095E-02	
												Co-60	9.91000E-03	3.4944E-03	9.4442E-05	
												Cs-137	3.25000E+01	1.1460E+01	3.0972E-01	
		81.0000	21060.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	4.58000E-02	1.6149E-02	4.3647E-04	
												Eu-154	1.98000E-02	6.9815E-03	1.8869E-04	
												Eu-155	4.32000E-03	1.5233E-03	4.1169E-05	
												H-3	8.35000E+02	2.9443E+02	7.9575E+00	
												Na-22	2.84000E-07	1.0014E-07	2.7065E-09	
												Ni-63	8.32000E-01	2.9337E-01	7.9289E-03	
												Pm-147	3.02000E-05	1.0649E-05	2.8780E-07	
												Pu-238 [1.1772E-08 g]	2.10000E-02	7.4048E-03	2.0013E-04	
												Pu-239 [2.2441E-04 g]	1.46000E+00	5.1482E-01	1.3914E-02	
												Pu-240 [6.0494E-05 g]	1.46000E+00	5.1482E-01	1.3914E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 3 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.0401E-09 g]	3.19000E-02	1.1248E-02	3.0400E-04	
												Ra-226	7.02000E-01	2.4753E-01	6.6900E-03	
												Sr-90	3.35000E+01	1.1812E+01	3.1925E-01	
												Th-232 [3.7253E-02 kg]	4.30000E-01	1.5162E-01	4.0979E-03	
												U-nat [2.4000E-03 kg]	1.79435E-01	6.3270E-02	1.7100E-03	
												Zn-65	3.25000E-19	1.1460E-19	3.0972E-21	
												Subtotal		3.2235E+02	8.7121E+00	
												Total		3.2235E+02	8.7121E+00	
												SNM [2.8492E-04 g]				
												Source [3.9653E-02 kg]				
812/R5-0022-81	19 Lift Liner	2.2937	9280.5005	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.65000E-01	1.2503E-01	3.3791E-03	AU
												C-14	8.85000E+00	3.0314E+00	8.1931E-02	
												Co-60	1.14000E-02	3.9050E-03	1.0554E-04	
												Cs-137	3.75000E+01	1.2845E+01	3.4717E-01	
		81.0000	20460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	5.29000E-02	1.8120E-02	4.8974E-04	
												Eu-154	2.28000E-02	7.8100E-03	2.1108E-04	
												Eu-155	4.99000E-03	1.7093E-03	4.6196E-05	
												H-3	9.64000E+02	3.3021E+02	8.9245E+00	
												Na-22	3.28000E-07	1.1235E-07	3.0365E-09	
												Ni-63	9.60000E-01	3.2884E-01	8.8875E-03	
												Pm-147	3.48000E-05	1.1920E-05	3.2217E-07	
												Pu-238 [1.3233E-08 g]	2.43000E-02	8.3235E-03	2.2496E-04	
												Pu-239 [2.5086E-04 g]	1.68000E+00	5.7546E-01	1.5553E-02	
												Pu-240 [6.7622E-05 g]	1.68000E+00	5.7546E-01	1.5553E-02	
												Pu-241 [3.4069E-09 g]	3.68000E-02	1.2606E-02	3.4069E-04	
												Ra-226	7.02000E-01	2.4046E-01	6.4990E-03	
												Sr-90	3.86000E+01	1.3222E+01	3.5735E-01	
												Th-232 [3.6190E-02 kg]	4.30000E-01	1.4729E-01	3.9808E-03	
												U-nat [2.6800E-03 kg]	2.07393E-01	7.1040E-02	1.9200E-03	
												Zn-65	3.75000E-19	1.2845E-19	3.4717E-21	
												Subtotal		3.6142E+02	9.7681E+00	
												Total		3.6142E+02	9.7681E+00	
												SNM [3.1849E-04 g]				
												Source [3.8870E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 4 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
013/R5-0022-01	19 Lift Liner	2.2937	8872.2673	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.90818E-01	6.2482E-02	1.6887E-03	AU
												C-14		4.64258E+00	1.5201E+00	4.1085E-02	
												Co-60		5.99995E-03	1.9646E-03	5.3097E-05	
												Cs-137		1.96720E+01	6.4413E+00	1.7409E-01	
												Eu-152		2.77375E-02	9.0820E-03	2.4546E-04	
		81.0000	19560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-154		1.19999E-02	3.9290E-03	1.0619E-04	
												Eu-155		2.61637E-03	8.5670E-04	2.3154E-05	
												H-3		5.05569E+02	1.6554E+02	4.4741E+00	
												Na-22		1.72130E-07	5.6362E-08	1.5233E-09	
												NI-63		5.03602E-01	1.6489E-01	4.4566E-03	
												Pm-147		1.82949E-05	5.9903E-06	1.6190E-07	
												Pu-238	[6.6051E-09 g]	1.26884E-02	4.1547E-03	1.1229E-04	
												Pu-239	[1.2579E-04 g]	8.81304E-01	2.8857E-01	7.7991E-03	
												Pu-240	[3.3909E-05 g]	8.81304E-01	2.8857E-01	7.7991E-03	
												Pu-241	[1.7061E-09 g]	1.92785E-02	6.3126E-03	1.7061E-04	
												Ra-226		6.90486E-01	2.2609E-01	6.1105E-03	
												Sr-90		2.02621E+01	6.6345E+00	1.7931E-01	
												Th-232	[3.4026E-02 kg]	4.22947E-01	1.3849E-01	3.7429E-03	
												U-nat	[1.3500E-03 kg]	1.08706E-01	3.5594E-02	9.6200E-04	
												Zn-65		1.96720E-19	6.4413E-20	1.7409E-21	
												Subtotal			1.8137E+02	4.9019E+00	
												Total			1.8137E+02	4.9019E+00	
												SNM	[1.5971E-04 g]				
												Source	[3.5376E-02 kg]				
014/R5-0022-01	19 Lift Liner	2.2937	10042.5357	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		1.26569E-01	4.6923E-02	1.2682E-03	AU
												C-14		3.06885E+00	1.1377E+00	3.0749E-02	
												Co-60		3.97044E-03	1.4720E-03	3.9783E-05	
												Cs-137		1.30036E+01	4.8207E+00	1.3029E-01	
												Eu-152		1.83785E-02	6.8136E-03	1.8415E-04	
		81.0000	22140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-154		7.90620E-03	2.9311E-03	7.9219E-05	
												Eu-155		1.73382E-03	6.4276E-04	1.7372E-05	
												H-3		3.34627E+02	1.2406E+02	3.3529E+00	
												Na-22		1.13565E-07	4.2102E-08	1.1379E-09	
												NI-63		3.32893E-01	1.2341E-01	3.3355E-03	
												Pm-147		1.20500E-05	4.4674E-06	1.2074E-07	
												Pu-238	[4.9614E-09 g]	8.41768E-03	3.1207E-03	8.4343E-05	
												Pu-239	[9.4148E-05 g]	5.82562E-01	2.1598E-01	5.8372E-03	
												Pu-240	[2.5379E-05 g]	5.82562E-01	2.1598E-01	5.8372E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-001

3. PAGE 5 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.27435E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.08569E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.34371E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.72770E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.18577E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.30036E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
015/R5-0022-01	19 Lift Liner	2.2937	10078.8231	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.01000E-01	1.4920E-01	4.0325E-03	AU
												C-14	9.74000E+00	3.6240E+00	9.7946E-02	
												Co-60	1.26000E-02	4.6883E-03	1.2671E-04	
												Cs-137	4.13000E+01	1.5367E+01	4.1532E-01	
												Eu-152	5.82000E-02	2.1655E-02	5.8526E-04	
												Eu-154	2.51000E-02	9.3392E-03	2.5241E-04	
												Eu-155	5.49000E-03	2.0427E-03	5.5208E-05	
												H-3	1.06000E+03	3.9438E+02	1.0659E+01	
												Na-22	3.61000E-07	1.3432E-07	3.6302E-09	
												Ni-63	1.06000E+00	3.9438E-01	1.0659E-02	
												Pm-147	3.83000E-05	1.4251E-05	3.8515E-07	
												Pu-238 [1.5794E-08 g]	2.67000E-02	9.9345E-03	2.6850E-04	
												Pu-239 [3.0006E-04 g]	1.85000E+00	6.8835E-01	1.8604E-02	
												Pu-240 [8.0886E-05 g]	1.85000E+00	6.8835E-01	1.8604E-02	
												Pu-241 [4.0727E-09 g]	4.05000E-02	1.5069E-02	4.0727E-04	
												Ra-226	7.02000E-01	2.6120E-01	7.0594E-03	
												Sr-90	4.25000E+01	1.5813E+01	4.2738E-01	
												Th-232 [3.9310E-02 kg]	4.30000E-01	1.5999E-01	4.3241E-03	
												U-nat [3.2100E-03 kg]	2.27723E-01	8.4730E-02	2.2900E-03	
												Zn-65	4.13000E-19	1.5367E-19	4.1532E-21	
												Subtotal		4.3167E+02	1.1667E+01	
												Total		4.3167E+02	1.1667E+01	
												SNM [3.8097E-04 g]				
												Source [4.2520E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 6 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
016/R5-0022-01	19 Lift Liner	2.2937	9416.5782	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.60186E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.11732E+00	3.8835E-01	1.0496E-02	
												Co-60	1.44873E-03	5.0353E-04	1.3609E-05	
		81.0000	20760.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	4.73443E+00	1.6455E+00	4.4474E-02	
												Eu-152	6.67554E-03	2.3202E-03	6.2709E-05	
												Eu-154	2.87853E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.29679E-04	2.1886E-04	5.9151E-06	
												H-3	4.13789E-08	1.4382E-08	3.8871E-10	
												Na-22	4.13789E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.21201E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.40302E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.06791E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.12102E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.12102E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.64921E-03	1.6159E-03	4.3674E-05	
												Ra-226	6.64714E-01	2.3104E-01	6.2442E-03	
												Sr-90	4.87646E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.07161E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.61873E-02	9.1020E-03	2.4600E-04	
												Zn-65	4.73443E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
046/R5-0022-01	19 Lift Liner	2.2937	9561.7278	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.77026E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.30703E+00	1.5201E+00	4.1085E-02	
												Co-60	5.56629E-03	1.9646E-03	5.3097E-05	
		81.0000	21088.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.82501E+01	6.4413E+00	1.7409E-01	
												Eu-152	2.57327E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.11326E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.42727E-03	8.5670E-04	2.3154E-05	
												H-3	4.69028E+02	1.6554E+02	4.4741E+00	
												Na-22	1.59689E-07	5.6362E-08	1.5233E-09	
												Ni-63	4.67203E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.69726E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.17713E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.17605E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.17605E-01	2.8857E-01	7.7991E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3 PAGE 7 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.78851E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.40579E-01	2.2609E-01	6.1105E-03	
												Sr-90	1.87976E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	3.92378E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.00849E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.82501E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
049/R5-0022-01	19 Lift Liner	2.2937	8545.6808	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.48797E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.60782E+00	1.1377E+00	3.0749E-02	
												Co-60	4.66775E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.52874E+01	4.8207E+00	1.3029E-01	
		81.0000	18840.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.16062E-02	6.8136E-03	1.8415E-04	
												Eu-154	9.29473E-03	2.9311E-03	7.9219E-05	
												Eu-155	2.03832E-03	6.4276E-04	1.7372E-05	
												H-3	3.93395E+02	1.2406E+02	3.3529E+00	
												Na-22	1.33510E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.91357E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.41663E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.89604E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.84875E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.84875E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.49816E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.15450E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.57970E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.38238E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.44777E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.52874E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 8 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-010/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-011/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-001

3. PAGE 9 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-012/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-001

3. PAGE 10 OF 10 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm	MBq	mCi
Shipment Totals		**26.0801** **921.0000**	**96898.6762** **213625.0000**									**SNM [2.0556E-03 g]** **Source [3.8299E-01 kg]**		**2.2904E+03**	**6.1902E+01**

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-001
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 06, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9334-001, WP-9334-004**
Received On:	**July 01, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 02, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> 12 MC 7-1-21

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX804003**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5788**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 9 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-004**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714
CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE: 7/2/21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.1258344827 | TITLE: Manifester | DATE: 20 May 2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
NA	NA	NA					NA		
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CM 7/1/21	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	3.8442E+02	(1.0390E+01)	NA	18700 LBS; 81 FT3	051
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226					
				Sr-90 Th-232 U-nat Zn-65					
Material not regulated by USDOT WP-~~9334~~ Soil and Debris 9514 CM 7/1/21	NA	na	Solid Oxides	Am-241 C-14 Co-60 Cs-137 Eu-152 Eu-154 Eu-155 H-3	8.9256E+01	(2.4123E+00)	NA	19700 LBS; 81 FT3	055
				Na-22 Ni-63 Pm-147 Pu-238 Pu-239 Pu-240 Pu-241 Ra-226					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

Page 2 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	8.9256E+01	(2.4123E+00)	NA	19700 LBS; 81 FT3	055
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	21640 LBS; 81 FT3	056
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	18700 LBS; 81 FT3	063
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.3228E+00	(1.1683E-01)	NA	19660 LBS; 81 FT3	066
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSF 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	20160 LBS; 81 FT3	067
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSR 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	19640 LBS; 81 FT3	069
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSR 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	18700 LBS; 81 FT3	070
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSR 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.9379E+02	(7.9402E+00)	NA	19940 LBS; 81 FT3	071
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris 9514 CSR 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	21260 LBS; 81 FT3	072
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed Water 9514 CSR 7/1/21	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-003
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-004

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed Water 9514 CR 7/1/21	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-003
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water 9514 7/1/21 CR	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-023
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 91693.7038 / lb 202150.000 0	NP	NP	1.5832E-03 12 Containers	1.5832E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.7121E+03	1.5544E+03	1.5054E+01	NP	NP	(kg)	3.7031E-01
mCi	4.6272E+01	4.2011E+01	4.0687E-01	NP	NP	(lb)	8.1639E-01

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX804003

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
051/R5-0822-01	19 Lift Liner	2.2937	8482.1779	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.25000E-01	1.3303E-01	3.5953E-03	AU
												C-14	1.03000E+01	3.2239E+00	8.7132E-02	
												Co-60	1.33000E-02	4.1629E-03	1.1251E-04	
												Cs-137	4.38000E+01	1.3709E+01	3.7052E-01	
												Eu-152	6.17000E-02	1.9312E-02	5.2195E-04	
												Eu-154	2.66000E-02	8.3257E-03	2.2502E-04	
												Eu-155	5.82000E-03	1.8217E-03	4.9234E-05	
												H-3	1.12000E+03	3.5056E+02	9.4746E+00	
												Na-22	3.82000E-07	1.1957E-07	3.2315E-09	
												Ni-63	1.12000E+00	3.5056E-01	9.4746E-03	
												Pm-147	2.83000E-02	8.8578E-03	2.3940E-04	
												Pu-238 [9.7533E-07 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-239 [2.6743E-04 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-240 [7.2089E-05 g]	1.96000E+00	6.1350E-01	1.6581E-02	
												Pu-241 [3.6291E-09 g]	4.29000E-02	1.3428E-02	3.6291E-04	
												Ra-226	7.02000E-01	2.1972E-01	5.9385E-03	
												Sr-90	4.51000E+01	1.4116E+01	3.8152E-01	
												Th-232 [3.3069E-02 kg]	4.30000E-01	1.3459E-01	3.6376E-03	
												U-nat [2.8700E-03 kg]	2.42332E-01	7.5850E-02	2.0500E-03	
												Zn-65	4.38000E-19	1.3709E-19	3.7052E-21	
												Subtotal		3.8442E+02	1.0390E+01	
												Total		3.8442E+02	1.0390E+01	
												SNM [3.4050E-04 g]				
												Source [3.5939E-02 kg]				
		81.0000	18700.0000	<1.0000E-01	2.0800E+01	2.0000E+02		81.0000								

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
055/R5-0022-01	19 Lift Liner	2.2937	8935.7703	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.32427E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.26392E+00	7.4659E-01	2.0178E-02	
												Co-60	2.92583E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.59288E+00	3.1636E+00	8.5502E-02	
		81.0000	19700.0800	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.35260E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.83247E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.27585E-03	4.2076E-04	1.1372E-05	
												H-3	2.46537E+02	8.1304E+01	2.1974E+00	
												Na-22	8.38417E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.45578E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.91178E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.20659E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.29761E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.29761E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.41061E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.73420E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.88066E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.12494E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.30683E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.59288E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
056/R5-0022-01	19 Lift Liner	2.2937	9815.7395	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.30394E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.59393E+00	2.0269E+00	5.4781E-02	
												Co-60	7.23419E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.37031E+01	8.5884E+00	2.3212E-01	
		81.0000	21640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	3.34688E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.44115E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.15725E-03	1.1440E-03	3.0919E-05	
												H-3	6.09644E+02	2.2090E+02	5.9702E+00	
												Na-22	2.07639E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.06799E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.19965E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.53596E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.06190E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.06190E+00	3.8476E-01	1.0399E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-004

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	2.32290E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.65583E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.44616E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.07693E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.31727E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.37031E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				
063/R5-0022-01	19 Lift Liner	2.2937	8482.1779	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	5.11017E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.24074E+00	3.8835E-01	1.0496E-02	
												Co-60	1.60876E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.25737E+00	1.6455E+00	4.4474E-02	
		81.0000	18700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	7.41290E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.19648E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.99231E-04	2.1886E-04	5.9151E-06	
												H-3	4.59494E-08	1.4382E-08	3.8871E-10	
												Na-22	4.59494E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.34589E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.88936E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.40678E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.35530E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.35530E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	5.16274E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.38135E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.41509E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.52134E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.90799E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.25737E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2 MANIFEST NUMBER WP-9334-004

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
066/R5-0022-01	19 Lift Liner	2.2937	8917.6266	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.86000E-02	1.5995E-02	4.3229E-04	AU
												C-14	1.18000E+00	3.8835E-01	1.0496E-02	
												Co-60	1.53000E-03	5.0353E-04	1.3609E-05	
		81.0000	19660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	5.00000E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.05000E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.04000E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.65000E-04	2.1886E-04	5.9151E-06	
												H-3	4.37000E-08	1.4382E-08	3.8871E-10	
												Na-22	4.37000E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.28000E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.65000E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.24000E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.24000E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.24000E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.91000E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.02000E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.15000E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.30000E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.76563E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.00000E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
067/R5-0022-01	19 Lift Liner	2.2937	9144.4228	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.47350E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.00562E+00	2.0269E+00	5.4781E-02	
												Co-60	7.76659E-03	2.6212E-03	7.0844E-05	
		81.0000	20160.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.54475E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.59319E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.54721E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.38961E-03	1.1440E-03	3.0919E-05	
												H-3	6.54511E+02	2.2090E+02	5.9702E+00	
												Na-22	2.22920E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.51457E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.36153E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.64900E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.14005E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.14005E+00	3.8476E-01	1.0399E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2 MANIFEST NUMBER: WP-9334-004

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	2.49386E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.14567E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.62619E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.37698E-01	1.4772E-01	3.9925E-03	
												U-nat [3.7941E-03 kg]	1.41421E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.54475E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [4.0090E-02 kg]				
069/R5-0022-01	19 Lift Liner	2.2937	8908.5547	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.35283E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.27085E+00	7.4659E-01	2.0178E-02	
												Co-60	2.93479E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.62226E+00	3.1636E+00	8.5502E-02	
		81.0000	19640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.35674E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.85033E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.27976E-03	4.2076E-04	1.1372E-05	
												H-3	2.47292E+02	8.1304E+01	2.1974E+00	
												Na-22	8.40985E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.46330E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.93908E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.22560E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.31077E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.31077E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.43943E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.75482E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.91092E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.13757E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.32308E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.62226E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
070/R5-0022-01	19 Lift Liner	2.2937	8482.1779	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.99617E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.85666E+00	1.5201E+00	4.1085E-02	
												Co-60	6.27662E-03	1.9646E-03	5.3097E-05	
												Cs-137	2.05791E+01	6.4413E+00	1.7409E-01	
		81.0000	18700.8000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.90165E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.25532E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.73702E-03	8.5670E-04	2.3154E-05	
												H-3	5.28883E+02	1.6554E+02	4.4741E+00	
												Na-22	1.80067E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.26825E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.91386E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.32735E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	9.21943E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	9.21943E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	2.01675E-02	6.3126E-03	1.7061E-04	
												Ra-226	7.22326E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.11965E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.42450E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.13719E-01	3.5594E-02	9.6200E-04	
												Zn-65	2.05791E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
071/R5-0022-01	19 Lift Liner	2.2937	9044.6325	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.04306E-01	1.0158E-01	2.7454E-03	AU
												C-14	7.38742E+00	2.4660E+00	6.6649E-02	
												Co-60	9.53958E-03	3.1844E-03	8.6065E-05	
												Cs-137	3.13315E+01	1.0459E+01	2.8267E-01	
		81.0000	19940.0080	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	4.41443E-02	1.4736E-02	3.9827E-04	
												Eu-154	1.90191E-02	6.3488E-03	1.7159E-04	
												Eu-155	4.16418E-03	1.3901E-03	3.7569E-05	
												H-3	8.03807E+02	2.6832E+02	7.2519E+00	
												Na-22	2.73275E-07	9.1224E-08	2.4655E-09	
												Ni-63	8.00804E-01	2.6732E-01	7.2248E-03	
												Pm-147	2.90292E-05	9.6903E-06	2.6190E-07	
												Pu-238 [1.0731E-08 g]	2.02203E-02	6.7499E-03	1.8243E-04	
												Pu-239 [2.0393E-04 g]	1.40141E+00	4.6779E-01	1.2643E-02	
												Pu-240 [5.4971E-05 g]	1.40141E+00	4.6779E-01	1.2643E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7725E-09 g]	3.07309E-02	1.0258E-02	2.7725E-04	
												Ra-226	7.02706E-01	2.3457E-01	6.3397E-03	
												Sr-90	3.22324E+01	1.0760E+01	2.9080E-01	
												Th-232 [3.5303E-02 kg]	4.30432E-01	1.4368E-01	3.8833E-03	
												U-nat [2.1800E-03 kg]	1.72912E-01	5.7720E-02	1.5600E-03	
												Zn-65	3.13315E-19	1.0459E-19	2.8267E-21	
												Subtotal		2.9379E+02	7.9402E+00	
												Total		2.9379E+02	7.9402E+00	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
072/R5-0022-01	19 Lift Liner	2.2937	9643.3744	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	99 - Wastelock 770 100	Oxides/None	np	Am-241	1.75524E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.27048E+00	1.5201E+00	4.1085E-02	
												Co-60	5.51905E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.80952E+01	6.4413E+00	1.7409E-01	
		81.0000	21269.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.55143E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.10381E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.40667E-03	8.5670E-04	2.3154E-05	
												H-3	4.65048E+02	1.6554E+02	4.4741E+00	
												Na-22	1.58333E-07	5.6362E-08	1.5233E-09	
												NI-63	4.63238E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.68286E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.16714E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.10667E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.10667E-01	2.8857E-01	7.7991E-03	
												Pu-241 [1.7061E-09 g]	1.77333E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.35143E-01	2.2609E-01	6.1105E-03	
												Sr-90	1.86381E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	3.89048E-01	1.3849E-01	3.7429E-03	
												U-nat [2.8294E-03 kg]	9.99933E-02	3.5594E-02	9.6200E-04	
												Zn-65	1.80952E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.6856E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-003/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08	AU
												Eu-154 Eu-155 H-3 Na-22 NI-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05	1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07	
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	
												Pu-241 [2.1258E-13 g] Ra-226 Sr-90 Th-232 [4.0339E-03 kg]	2.06000E-05 7.02000E-01 2.15000E-02 4.30000E-01	7.8651E-07 2.6803E-02 8.2088E-04 1.6418E-02	2.1257E-08 7.2441E-04 2.2186E-05 4.4372E-04	
												U-nat [1.6700E-07 kg] Zn-65 Subtotal Total	1.16288E-04 2.10000E-22	4.4400E-06 8.0179E-24 6.5689E-02 6.5689E-02	1.2000E-07 2.1670E-25 1.7754E-03 1.7754E-03	
												SNM [1.1390E-08 g] Source [4.0340E-03 kg]				
T-023/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08	AU
												Eu-154 Eu-155 H-3 Na-22 NI-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05	1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07	
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-004

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
Shipment Totals		25.0324	91993.0747									SNM [1.5832E-03 g]		1.7121E+03	4.6272E+01	
		884.0000	202810.0000									Source [3.7031E-01 kg]				

FORM 541A (03-08)

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9334-004
	PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: July 06, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9334**
Manifest(s):	**WP-9334-002**
Received On:	**June 15, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **July 02, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 12

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CIGX803967**
☐ COLLECTOR
☐ PROCESSOR
WCS Generator Certification ID: **NA**
SHIPMENT NUMBER
☑ GENERATOR TYPE (Specify) G
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **05/22/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9334-002**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Cavan
DATE: 6.15.21

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 — Digitally signed by ORTEGA.MICHAEL.12583448? Date: 2021.05.21 07:55:31 -04'00'
TITLE: Manifester
DATE: 21 May 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**2.4189E+02**	**(6.5375E+00)**	**NA**	**20520 LBS; 81 FT3**	**001**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	**3.7517E+02**	**(1.0140E+01)**	**NA**	**22740 LBS; 81 FT3**	**002**
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-08)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

Page 2 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.2169E+03	(3.2888E+01)	NA	21300 LBS; 81 FT3	004
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	20820 LBS; 81 FT3	017
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	20140 LBS; 81 FT3	018
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	4.2331E+02	(1.1440E+01)	NA	19420 LBS; 81 FT3	022
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	8.9256E+01	(2.4123E+00)	NA	18900 LBS; 81 FT3	045
				Eu-152	Eu-154	Eu-155	H-3					

FORM 540A (03-06)

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Na-22	Ni-63	Pm-147	Pu-238	8.9256E+01	(2.4123E+00)	NA	18900 LBS; 81 FT3	045
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	NA	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.3601E+02	(3.6759E+00)	NA	19520 LBS; 81 FT3	047
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	1.8137E+02	(4.9019E+00)	NA	19500 LBS; 81 FT3	048
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Soil and Debris	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	2.4192E+02	(6.5384E+00)	NA	19720 LBS; 81 FT3	050
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT WP-9334 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-001
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

DUPLICATE

FORM 540A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-002

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed water	NA	na	Solid Oxides	Sr-90	Th-232	U-nat	Zn-65	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-001
Material not regulated by USDOT WP-9334 Sorbed water	NA	na	Solid Oxides	Am-241	C-14	Co-60	Cs-137	6.5690E-02	(1.7754E-03)	NA	2355 LBS; 37 FT3	T-022
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 93725.7975 / lb 206630.000 0	NP	NP	2.7567E-03 12 Containers	2.7567E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	3.1312E+03	2.8604E+03	2.6232E+01	NP	NP	(kg) 3.8364E-01	
mCi	8.4626E+01	7.7307E+01	7.0896E-01	NP	NP	(lb) 8.4579E-01	

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CIGX803967

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
001/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	9307.7160 / 20520.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.43000E-01	8.3483E-02	2.2563E-03	AU
												C-14		5.90000E+00	2.0269E+00	5.4781E-02	
												Co-60		7.63000E-03	2.6212E-03	7.0844E-05	
												Cs-137		2.50000E+01	8.5884E+00	2.3212E-01	
												Eu-152		3.53000E-02	1.2127E-02	3.2776E-04	
												Eu-154		1.52000E-02	5.2218E-03	1.4113E-04	
												Eu-155		3.33000E-03	1.1440E-03	3.0919E-05	
												H-3		6.43000E+02	2.2090E+02	5.9702E+00	
												Na-22		2.19000E-07	7.5236E-08	2.0334E-09	
												Ni-63		6.40000E-01	2.1987E-01	5.9424E-03	
												Pm-147		2.32000E-05	7.9702E-06	2.1541E-07	
												Pu-238	[8.8481E-09 g]	1.62000E-02	5.5655E-03	1.5042E-04	
												Pu-239	[1.6773E-04 g]	1.12000E+00	3.8476E-01	1.0399E-02	
												Pu-240	[4.5214E-05 g]	1.12000E+00	3.8476E-01	1.0399E-02	
												Pu-241	[2.2748E-09 g]	2.45000E-02	8.4168E-03	2.2748E-04	
												Ra-226		7.02000E-01	2.4117E-01	6.5181E-03	
												Sr-90		2.58000E+01	8.8634E+00	2.3955E-01	
												Th-232	[3.6296E-02 kg]	4.30000E-01	1.4772E-01	3.9925E-03	
												U-nat	[4.8000E-04 kg]	3.69414E-02	1.2691E-02	3.4300E-04	
												Zn-65		2.50000E-19	8.5884E-20	2.3212E-21	
												Subtotal			2.4189E+02	6.5375E+00	
												Total			2.4189E+02	6.5375E+00	
												SNM Source	[2.1295E-04 g] [3.6776E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
002/R5-0022-01	19 Lift Liner	2.2937	10314.6912	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.40000E-01	1.2947E-01	3.4993E-03	AU
												C-14	8.26000E+00	3.1454E+00	8.5012E-02	
												Co-60	1.07000E-02	4.0744E-03	1.1012E-04	
												Cs-137	3.50000E+01	1.3328E+01	3.6022E-01	
		81.0000	22740.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	4.94000E-02	1.8812E-02	5.0842E-04	
												Eu-154	2.13000E-02	8.1111E-03	2.1922E-04	
												Eu-155	4.66000E-03	1.7746E-03	4.7961E-05	
												H-3	9.00000E+02	3.4272E+02	9.2628E+00	
												Na-22	3.06000E-07	1.1652E-07	3.1493E-09	
												Ni-63	8.96000E-01	3.4120E-01	9.2216E-03	
												Pm-147	3.25000E-05	1.2376E-05	3.3449E-07	
												Pu-238 [1.3682E-08 g]	2.26000E-02	8.6062E-03	2.3260E-04	
												Pu-239 [2.6062E-04 g]	1.57000E+00	5.9785E-01	1.6158E-02	
												Pu-240 [7.0254E-05 g]	1.57000E+00	5.9785E-01	1.6158E-02	
												Pu-241 [3.5301E-09 g]	3.43000E-02	1.3061E-02	3.5301E-04	
												Ra-226	7.02000E-01	2.6733E-01	7.2250E-03	
												Sr-90	3.61000E+01	1.3747E+01	3.7154E-01	
												Th-232 [4.0232E-02 kg]	4.30000E-01	1.6374E-01	4.4255E-03	
												U-nat [2.7900E-03 kg]	1.94326E-01	7.4000E-02	2.0000E-03	
												Zn-65	3.50000E-19	1.3328E-19	3.6022E-21	
												Subtotal		3.7517E+02	1.0140E+01	
												Total		3.7517E+02	1.0140E+01	
												SNM [3.3089E-04 g]				
												Source [4.3022E-02 kg]				
004/R5-0022-01	19 Lift Liner	2.2937	9661.5181	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.18000E+00	4.2084E-01	1.1374E-02	AU
												C-14	2.86000E+01	1.0200E+01	2.7567E-01	
												Co-60	3.70000E-02	1.3196E-02	3.5664E-04	
												Cs-137	1.21000E+02	4.3153E+01	1.1663E+00	
		81.0000	21308.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.71000E-01	6.0983E-02	1.6482E-03	
												Eu-154	7.37000E-02	2.6284E-02	7.1038E-04	
												Eu-155	1.61000E-02	5.7417E-03	1.5518E-04	
												H-3	3.12000E+03	1.1127E+03	3.0073E+01	
												Na-22	1.06000E-06	3.7803E-07	1.0217E-08	
												Ni-63	3.10000E+00	1.1056E+00	2.9880E-02	
												Pm-147	1.13000E-04	4.0300E-05	1.0892E-06	
												Pu-238 [4.4452E-08 g]	7.84000E-02	2.7960E-02	7.5568E-04	
												Pu-239 [8.4417E-04 g]	5.43000E+00	1.9365E+00	5.2339E-02	
												Pu-240 [2.2756E-04 g]	5.43000E+00	1.9365E+00	5.2339E-02	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.1470E-08 g]	1.19000E-01	4.2439E-02	1.1470E-03	
												Ra-226	7.02000E-01	2.5036E-01	6.7664E-03	
												Sr-90	1.25000E+02	4.4578E+01	1.2048E+00	
												Th-232 [3.7679E-02 kg]	4.30000E-01	1.5335E-01	4.1447E-03	
												U-nat [9.0400E-03 kg]	6.70209E-01	2.3902E-01	6.4600E-03	
												Zn-65	1.21000E-18	4.3153E-19	1.1663E-20	
												Subtotal		1.2168E+03	3.2888E+01	
												Total		1.2168E+03	3.2888E+01	
												SNM [1.0718E-03 g]				
												Source [4.6719E-02 kg]				
017/R5-0022-01	19 Lift Liner	2.2937	9443.7938	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.34612E-01	4.6923E-02	1.2682E-03	AU
												C-14	3.26389E+00	1.1377E+00	3.0749E-02	
												Co-60	4.22277E-03	1.4720E-03	3.9783E-05	
		81.0000	20820.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.38300E+01	4.8207E+00	1.3029E-01	
												Eu-152	1.95465E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.40867E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.84401E-03	6.4276E-04	1.7372E-05	
												H-3	3.55893E+02	1.2406E+02	3.3529E+00	
												Na-22	1.20782E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.54049E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.28158E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	8.95265E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.19586E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.19586E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.35534E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.47246E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.42910E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.96461E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.64245E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.38300E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

PHYSICAL DESCRIPTION

14. CHEMICAL DESCRIPTION

15. RADIOLOGICAL DESCRIPTION

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
018/R5-0022-01	19 Lift Liner	2.2937	9135.3589	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 776 100	Oxides/None	np	Am-241	9.12006E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.21434E+00	7.4659E-01	2.0178E-02	
												Co-60	2.86175E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.38278E+00	3.1636E+00	8.5502E-02	
		81.0000	20140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.32297E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.70473E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.24791E-03	4.2076E-04	1.1372E-05	
												H-3	2.41137E+02	8.1304E+01	2.1974E+00	
												Na-22	8.20055E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.40199E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.71660E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.07066E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.20348E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.20348E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.20450E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.58671E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.66426E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.03459E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.19060E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.38278E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
022/R5-0022-01	19 Lift Liner	2.2937	8808.7644	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 778 100	Oxides/None	np	Am-241	4.50000E-01	1.4629E-01	3.9537E-03	AU
												C-14	1.09000E+01	3.5434E+00	9.5768E-02	
												Co-60	1.41000E-02	4.5836E-03	1.2388E-04	
												Cs-137	4.63000E+01	1.5051E+01	4.0679E-01	
		81.0000	19420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	6.52000E-02	2.1195E-02	5.7285E-04	
												Eu-154	2.81000E-02	9.1349E-03	2.4689E-04	
												Eu-155	6.15000E-03	1.9993E-03	5.4034E-05	
												H-3	1.19000E+03	3.8684E+02	1.0455E+01	
												Na-22	4.04000E-07	1.3134E-07	3.5496E-09	
												Ni-63	1.18000E+00	3.8362E-01	1.0368E-02	
												Pm-147	4.30000E-05	1.3979E-05	3.7780E-07	
												Pu-238 [1.5453E-08 g]	2.99000E-02	9.7199E-03	2.6270E-04	
												Pu-239 [2.9334E-04 g]	2.07000E+00	6.7292E-01	1.8187E-02	
												Pu-240 [7.9074E-05 g]	2.07000E+00	6.7292E-01	1.8187E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.9889E-09 g]	4.54000E-02	1.4759E-02	3.9889E-04	
												Ra-226	7.02000E-01	2.2821E-01	6.1678E-03	
												Sr-90	4.76000E+01	1.5474E+01	4.1822E-01	
												Th-232 [3.4345E-02 kg]	4.30000E-01	1.3979E-01	3.7780E-03	
												U-nat [3.1400E-03 kg]	2.54950E-01	8.2880E-02	2.2400E-03	
												Zn-65	4.63000E-19	1.5051E-19	4.0679E-21	
												Subtotal		4.2330E+02	1.1440E+01	
												Total		4.2330E+02	1.1440E+01	
												SNM [3.7243E-04 g]				
												Source [3.7485E-02 kg]				
045/R5-0022-01	19 Lift Liner	2.2937	8572.8964	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.72000E-02	3.0750E-02	8.3108E-04	AU
												C-14	2.36000E+00	7.4659E-01	2.0178E-02	
												Co-60	3.05000E-03	9.6489E-04	2.6078E-05	
												Cs-137	1.00000E+01	3.1636E+00	8.5502E-02	
		81.0000	18900.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.41000E-02	4.4607E-03	1.2056E-04	
												Eu-154	6.08000E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.33000E-03	4.2076E-04	1.1372E-05	
												H-3	2.57000E+02	8.1304E+01	2.1974E+00	
												Na-22	8.74000E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.56000E-01	8.0986E-02	2.1888E-03	
												Pm-147	9.29000E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.47000E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.48000E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.48000E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.81000E-03	3.1034E-03	8.3877E-05	
												Ra-226	7.02000E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.03000E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.30000E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.53205E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.00000E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
047/R5-0022-01	19 Lift Liner	2.2937	8854.1236	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.43600E-01	6.6923E-02	1.2682E-03	AU
												C-14	3.48182E+00	1.1377E+00	3.0749E-02	
												Co-60	4.50473E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.47535E+01	4.8207E+00	1.3029E-01	
		81.0000	19520.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.08516E-02	6.8136E-03	1.8415E-04	
												Eu-154	8.97011E-03	2.9311E-03	7.9219E-05	
												Eu-155	1.96713E-03	6.4276E-04	1.7372E-05	
												H-3	3.79656E+02	1.2406E+02	3.3529E+00	
												Na-22	1.28847E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.77689E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.36715E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.55041E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.60955E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.60955E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.44584E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.90462E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.52452E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.22933E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.15273E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.47535E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
048/R5-0022-01	19 Lift Liner	2.2937	8845.0518	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.91407E-01	6.2482E-02	1.6887E-03	AU
												C-14	4.65690E+00	1.5201E+00	4.1085E-02	
												Co-60	6.01846E-03	1.9646E-03	5.3097E-05	
												Cs-137	1.97326E+01	6.4413E+00	1.7409E-01	
		81.0000	19500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.78230E-02	9.0820E-03	2.4546E-04	
												Eu-154	1.20369E-02	3.9290E-03	1.0619E-04	
												Eu-155	2.62444E-03	8.5670E-04	2.3154E-05	
												H-3	5.07129E+02	1.6554E+02	4.4741E+00	
												Na-22	1.72661E-07	5.6362E-08	1.5233E-09	
												Ni-63	5.05156E-01	1.6489E-01	4.4566E-03	
												Pm-147	1.83514E-05	5.9903E-06	1.6190E-07	
												Pu-238 [6.6051E-09 g]	1.27276E-02	4.1547E-03	1.1229E-04	
												Pu-239 [1.2579E-04 g]	8.84023E-01	2.8857E-01	7.7991E-03	
												Pu-240 [3.3909E-05 g]	8.84023E-01	2.8857E-01	7.7991E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9334-002

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7061E-09 g]	1.93380E-02	6.3126E-03	1.7061E-04	
												Ra-226	6.92616E-01	2.2609E-01	6.1105E-03	
												Sr-90	2.03246E+01	6.6345E+00	1.7931E-01	
												Th-232 [3.4026E-02 kg]	4.24252E-01	1.3849E-01	3.7429E-03	
												U-nat [1.3500E-03 kg]	1.09042E-01	3.5594E-02	9.6200E-04	
												Zn-65	1.97326E-19	6.4413E-20	1.7409E-21	
												Subtotal		1.8137E+02	4.9019E+00	
												Total		1.8137E+02	4.9019E+00	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
050/R5-8022-01	19 Lift Liner	2.2937	8944.8421	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.52883E-01	8.3483E-02	2.2563E-03	AU
												C-14	6.13996E+00	2.0269E+00	5.4781E-02	
												Co-60	7.94032E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.60168E+01	8.5884E+00	2.3212E-01	
		81.0000	19720.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0080				Eu-152	3.67357E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.58182E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.46543E-03	1.1440E-03	3.0919E-05	
												H-3	6.69151E+02	2.2090E+02	5.9702E+00	
												Na-22	2.27907E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.66029E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.41436E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.68589E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.16555E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.16555E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.54964E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.30551E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.68493E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.47489E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.44585E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.60168E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-001/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0808	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-022/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9334-002

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25
												Subtotal		6.5689E-02	1.7754E-03
												Total		6.5689E-02	1.7754E-03
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			
Shipment Totals		25.0324 884.0000	94825.1685 207290.0000									SNM [2.7567E-03 g]		3.1312E+03	8.4626E+01
												Source [3.8364E-01 kg]			

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-002
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-001, WP-9514-002, WP-9514-003, WP-9514-004**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> **24**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CHUX 125**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**

SHIPMENT NUMBER

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**

SHIPPING DATE: **08/29/2021**

CONTACT: **James P. Nunes**

TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 7 PAGE(S)
FORM 541 AND 541A — 17 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9514-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Renee Cowan

DATE: 9.21.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: ORTEGA.MICHAEL.12583448 27 — Digitally signed by ORTEGA.MICHAEL.12583448 27 Date: 2021.08.26 14:31:34 -04'00'

TITLE: Manifester

DATE: 26 Aug 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand, and debris	**NA**	**NA**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.7657E-01**	**(1.2880E-02)**	**NA**	**16540 LBS; 81 FT3**	**223**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand, and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.1241E-01**	**(8.4436E-03)**	**NA**	**10860 LBS; 81 FT3**	**225**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T024**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T025**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T026**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T027**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5856E-02**	**(1.7799E-03)**	**NA**	**2355 LBS; 37 FT3**	**T028**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**6.5856E-02**	**(1.7799E-03)**	**NA**	**2355 LBS; 37 FT3**	**T028**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T029**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T030**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T031**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T032**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T032**
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T033**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T034**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T035**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T036**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

Page 5 of 7

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T037**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T038**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T039**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T040**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T041**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T041**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T042**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5856E-02**	**(1.7799E-03)**	**NA**	**2355 LBS; 37 FT3**	**T043**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T044**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5860E-02**	**(1.7800E-03)**	**NA**	**2355 LBS; 37 FT3**	**T045**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-001

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Sorbed Liquid	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5860E-02**	**(1.7800E-03)**	**NA**	**2355 LBS; 37 FT3**	**T045**

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
24	m3 27.6368	kg 35085.3719	NP	NP	3.8748E-07 24 Containers	3.8748E-07
	ft3 976.0000	lb 77350.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2346E+00	7.0007E-01	6.4424E-03	NP	NP	(kg)	1.3723E-01
mCi	6.0396E-02	1.8921E-02	1.7412E-04	NP	NP	(lb)	3.0255E-01

2. MANIFEST NUMBER: **WP-9514-001**

3. PAGE **1** OF **17** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CHUX 125**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
223/R5-0022-01	19 Lift Liner	2.2937	7502.4183	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241		2.04184E-04	5.6506E-05	1.5272E-06	AU
		81.0000	16540.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		4.96448E-03	1.3739E-03	3.7133E-05	
												Co-60		6.39578E-06	1.7700E-06	4.7838E-08	
												Cs-137		2.10190E-02	5.8171E-03	1.5722E-04	
												Eu-152		2.95267E-05	8.1715E-06	2.2085E-07	
												Eu-154		1.28116E-05	3.5456E-06	9.5827E-08	
												Eu-155		2.78251E-06	7.7004E-07	2.0812E-08	
												H-3		5.39487E-01	1.4930E-01	4.0352E-03	
												Na-22		1.83165E-10	5.0690E-11	1.3700E-12	
												Ni-63		5.36485E-04	1.4847E-04	4.0127E-06	
												Pm-147		1.95176E-08	5.4016E-09	1.4599E-10	
												Pu-238	[5.9892E-12 g]	1.36123E-05	3.7673E-06	1.0182E-07	
												Pu-239	[6.5084E-08 g]	5.39487E-04	1.4930E-04	4.0352E-06	
												Pu-240	[1.7544E-08 g]	5.39487E-04	1.4930E-04	4.0352E-06	
												Pu-241	[1.5422E-12 g]	2.06186E-05	5.7061E-06	1.5422E-07	
												Ra-226		7.02635E-01	1.9445E-01	5.2555E-03	
												Sr-90		2.15194E-02	5.9555E-03	1.6096E-04	
												Th-232	[2.9265E-02 kg]	4.30389E-01	1.1911E-01	3.2192E-03	
												U-nat	[2.1689E-06 kg]	1.16005E-04	3.2104E-05	8.6768E-07	
												Subtotal			4.7657E-01	1.2880E-02	
												Total			4.7657E-01	1.2880E-02	
												SNM	[8.2636E-08 g]				
												Source	[2.9267E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 2 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
225/R5-0022-01	19 Lift Liner	2.2937	4926.0135	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.04184E-04	3.7044E-05	1.0012E-06	AU
		81.0000	10860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.96448E-03	9.0065E-04	2.4342E-05	
												Co-60	6.39578E-06	1.1603E-06	3.1360E-08	
												Cs-137	2.10190E-02	3.8132E-03	1.0306E-04	
												Eu-152	2.95267E-05	5.3569E-06	1.4478E-07	
												Eu-154	1.28116E-05	2.3243E-06	6.2819E-08	
												Eu-155	2.78251E-06	5.0483E-07	1.3644E-08	
												H-3	5.39487E-01	9.7876E-02	2.6453E-03	
												Na-22	1.83165E-10	3.3230E-11	8.9812E-13	
												Ni-63	5.36485E-04	9.7329E-05	2.6305E-06	
												Pm-147	1.95176E-08	3.5409E-09	9.5701E-11	
												Pu-238 [3.9262E-12 g]	1.36123E-05	2.4696E-06	6.6745E-08	
												Pu-239 [4.2666E-08 g]	5.39487E-04	9.7876E-05	2.6453E-06	
												Pu-240 [1.1501E-08 g]	5.39487E-04	9.7876E-05	2.6453E-06	
												Pu-241 [1.0110E-12 g]	2.06186E-05	3.7407E-06	1.0110E-07	
												Ra-226	7.02634E-01	1.2747E-01	3.4452E-03	
												Sr-90	2.15194E-02	3.9042E-03	1.0552E-04	
												Th-232 [1.9185E-02 kg]	4.30389E-01	7.8081E-02	2.1103E-03	
												U-nat [1.4218E-06 kg]	1.16005E-04	2.1046E-05	5.6881E-07	
												Subtotal		3.1241E-01	8.4436E-03	
												Total		3.1241E-01	8.4436E-03	
												SNM [5.4172E-08 g]				
												Source [1.9186E-02 kg]				
T024/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 3 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [2.1258E-13 g]	2.06000E-05 / 7.8651E-07 / 2.1257E-08
												Ra-226	7.02000E-01 / 2.6803E-02 / 7.2441E-04
												Sr-90	2.15000E-02 / 8.2088E-04 / 2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01 / 1.6418E-02 / 4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04 / 4.4400E-06 / 1.2000E-07
												Zn-65	2.10000E-22 / 8.0179E-24 / 2.1670E-25
												Subtotal	6.5689E-02 / 1.7754E-03
												Total	6.5689E-02 / 1.7754E-03
												SNM [1.1390E-08 g]	
												Source [4.0340E-03 kg]	
T025/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04 / 7.7889E-06 / 2.1051E-07
												C-14	4.96000E-03 / 1.8938E-04 / 5.1183E-06
												Co-60	6.39000E-06 / 2.4398E-07 / 6.5940E-09
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02 / 8.0179E-04 / 2.1670E-05
												Eu-152	2.95000E-05 / 1.1264E-06 / 3.0442E-08
												Eu-154	1.28000E-05 / 4.8873E-07 / 1.3209E-08
												Eu-155	2.78000E-06 / 1.0614E-07 / 2.8687E-09
												H-3	5.39000E-01 / 2.0579E-02 / 5.5620E-04
												Na-22	1.83000E-10 / 6.9871E-12 / 1.8884E-13
												Ni-63	5.36000E-04 / 2.0465E-05 / 5.5311E-07
												Pm-147	1.95000E-08 / 7.4451E-10 / 2.0122E-11
												Pu-238 [8.2553E-13 g]	1.36000E-05 / 5.1926E-07 / 1.4034E-08
												Pu-239 [8.9710E-09 g]	5.39000E-04 / 2.0579E-05 / 5.5620E-07
												Pu-240 [2.4183E-09 g]	5.39000E-04 / 2.0579E-05 / 5.5620E-07
												Pu-241 [2.1258E-13 g]	2.06000E-05 / 7.8651E-07 / 2.1257E-08
												Ra-226	7.02000E-01 / 2.6803E-02 / 7.2441E-04
												Sr-90	2.15000E-02 / 8.2088E-04 / 2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01 / 1.6418E-02 / 4.4372E-04
												U-nat [3.5294E-07 kg]	1.16288E-04 / 4.4400E-06 / 1.2000E-07
												Zn-65	2.10000E-22 / 8.0179E-24 / 2.1670E-25
												Subtotal	6.5689E-02 / 1.7754E-03
												Total	6.5689E-02 / 1.7754E-03
												SNM [1.1390E-08 g]	
												Source [4.0342E-03 kg]	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 4 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
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5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
T026/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T027/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 5 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T028/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04518E-04	7.8089E-06	2.1105E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.97259E-03	1.8986E-04	5.1313E-06	
												Co-60	6.40622E-06	2.4460E-07	6.6107E-09	
												Cs-137	2.10533E-02	8.0383E-04	2.1725E-05	
												Eu-152	2.95749E-05	1.1292E-06	3.0519E-08	
												Eu-154	1.28325E-05	4.8995E-07	1.3242E-08	
												Eu-155	2.78705E-06	1.0641E-07	2.8760E-09	
												H-3	5.40368E-01	2.0632E-02	5.5761E-04	
												Na-22	1.83464E-10	7.0048E-12	1.8932E-13	
												Ni-63	5.37360E-04	2.0517E-05	5.5451E-07	
												Pm-147	1.95495E-08	7.4640E-10	2.0173E-11	
												Pu-238 [8.2763E-13 g]	1.36345E-05	5.2059E-07	1.4070E-08	
												Pu-239 [8.9938E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-240 [2.4244E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07	
												Pu-241 [2.1311E-13 g]	2.06523E-05	7.8851E-07	2.1311E-08	
												Ra-226	7.03782E-01	2.6871E-02	7.2624E-04	
												Sr-90	2.15546E-02	8.2299E-04	2.2243E-05	
												Th-232 [4.0441E-03 kg]	4.31091E-01	1.6459E-02	4.4485E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10533E-22	8.0383E-24	2.1725E-25	
												Subtotal		6.5856E-02	1.7799E-03	
												Total		6.5856E-02	1.7799E-03	
												SNM [1.1419E-08 g]				
												Source [4.0443E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 6 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T029/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T030/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 7 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25
												Subtotal		6.5689E-02	1.7754E-03
												Total		6.5689E-02	1.7754E-03
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			
T031/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07
												C-14	4.96000E-03	1.8938E-04	5.1183E-06
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09
												H-3	5.39000E-01	2.0579E-02	5.5620E-04
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25
												Subtotal		6.5689E-02	1.7754E-03
												Total		6.5689E-02	1.7754E-03
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 8 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T032/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T033/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 9 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T034/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 10 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T035/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T036/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 11 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T037/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wasteiock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 12 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T038/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T039/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 13 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [2.1258E-13 g]	2.06000E-05 / 7.8651E-07 / 2.1257E-08
												Ra-226	7.02000E-01 / 2.6803E-02 / 7.2441E-04
												Sr-90	2.15000E-02 / 8.2088E-04 / 2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01 / 1.6418E-02 / 4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04 / 4.4400E-06 / 1.2000E-07
												Zn-65	2.10000E-22 / 8.0179E-24 / 2.1670E-25
												Subtotal	6.5689E-02 / 1.7754E-03
												Total	6.5689E-02 / 1.7754E-03
												SNM [1.1390E-08 g]	
												Source [4.0340E-03 kg]	
T040/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04 / 7.7889E-06 / 2.1051E-07
												C-14	4.96000E-03 / 1.8938E-04 / 5.1183E-06
												Co-60	6.39000E-06 / 2.4398E-07 / 6.5940E-09
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02 / 8.0179E-04 / 2.1670E-05
												Eu-152	2.95000E-05 / 1.1264E-06 / 3.0442E-08
												Eu-154	1.28000E-05 / 4.8873E-07 / 1.3209E-08
												Eu-155	2.78000E-06 / 1.0614E-07 / 2.8687E-09
												H-3	5.39000E-01 / 2.0579E-02 / 5.5620E-04
												Na-22	1.83000E-10 / 6.9871E-12 / 1.8884E-13
												Ni-63	5.36000E-04 / 2.0465E-05 / 5.5311E-07
												Pm-147	1.95000E-08 / 7.4451E-10 / 2.0122E-11
												Pu-238 [8.2553E-13 g]	1.36000E-05 / 5.1926E-07 / 1.4034E-08
												Pu-239 [8.9710E-09 g]	5.39000E-04 / 2.0579E-05 / 5.5620E-07
												Pu-240 [2.4183E-09 g]	5.39000E-04 / 2.0579E-05 / 5.5620E-07
												Pu-241 [2.1258E-13 g]	2.06000E-05 / 7.8651E-07 / 2.1257E-08
												Ra-226	7.02000E-01 / 2.6803E-02 / 7.2441E-04
												Sr-90	2.15000E-02 / 8.2088E-04 / 2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01 / 1.6418E-02 / 4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04 / 4.4400E-06 / 1.2000E-07
												Zn-65	2.10000E-22 / 8.0179E-24 / 2.1670E-25
												Subtotal	6.5689E-02 / 1.7754E-03
												Total	6.5689E-02 / 1.7754E-03
												SNM [1.1390E-08 g]	
												Source [4.0340E-03 kg]	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 14 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
T041/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 / 7.7889E-06 / 2.1051E-07 4.96000E-03 / 1.8938E-04 / 5.1183E-06 6.39000E-06 / 2.4398E-07 / 6.5940E-09 2.10000E-02 / 8.0179E-04 / 2.1670E-05 2.95000E-05 / 1.1264E-06 / 3.0442E-08
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 / 4.8873E-07 / 1.3209E-08 2.78000E-06 / 1.0614E-07 / 2.8687E-09 5.39000E-01 / 2.0579E-02 / 5.5620E-04 1.83000E-10 / 6.9871E-12 / 1.8884E-13 5.36000E-04 / 2.0465E-05 / 5.5311E-07
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 / 7.4451E-10 / 2.0122E-11 1.36000E-05 / 5.1926E-07 / 1.4034E-08 5.39000E-04 / 2.0579E-05 / 5.5620E-07 5.39000E-04 / 2.0579E-05 / 5.5620E-07
												Pu-241 [2.1258E-13 g] Ra-226 Sr-90 Th-232 [4.0339E-03 kg]	2.06000E-05 / 7.8651E-07 / 2.1257E-08 7.02000E-01 / 2.6803E-02 / 7.2441E-04 2.15000E-02 / 8.2088E-04 / 2.2186E-05 4.30000E-01 / 1.6418E-02 / 4.4372E-04
												U-nat [1.6700E-07 kg] Zn-65 Subtotal Total	1.16288E-04 / 4.4400E-06 / 1.2000E-07 2.10000E-22 / 8.0179E-24 / 2.1670E-25 6.5689E-02 / 1.7754E-03 6.5689E-02 / 1.7754E-03
												SNM [1.1390E-08 g] Source [4.0340E-03 kg]	
T042/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 / 7.7889E-06 / 2.1051E-07 4.96000E-03 / 1.8938E-04 / 5.1183E-06 6.39000E-06 / 2.4398E-07 / 6.5940E-09 2.10000E-02 / 8.0179E-04 / 2.1670E-05 2.95000E-05 / 1.1264E-06 / 3.0442E-08
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 / 4.8873E-07 / 1.3209E-08 2.78000E-06 / 1.0614E-07 / 2.8687E-09 5.39000E-01 / 2.0579E-02 / 5.5620E-04 1.83000E-10 / 6.9871E-12 / 1.8884E-13 5.36000E-04 / 2.0465E-05 / 5.5311E-07
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 / 7.4451E-10 / 2.0122E-11 1.36000E-05 / 5.1926E-07 / 1.4034E-08 5.39000E-04 / 2.0579E-05 / 5.5620E-07 5.39000E-04 / 2.0579E-05 / 5.5620E-07

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 15 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25
												Subtotal		6.5689E-02	1.7754E-03
												Total		6.5689E-02	1.7754E-03
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			
T043/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04518E-04	7.8089E-06	2.1105E-07
												C-14	4.97259E-03	1.8986E-04	5.1313E-06
												Co-60	6.40622E-06	2.4460E-07	6.6107E-09
												Cs-137	2.10533E-02	8.0383E-04	2.1725E-05
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Eu-152	2.95749E-05	1.1292E-06	3.0519E-08
												Eu-154	1.28325E-05	4.8995E-07	1.3242E-08
												Eu-155	2.78705E-06	1.0641E-07	2.8760E-09
												H-3	5.40368E-01	2.0632E-02	5.5761E-04
												Na-22	1.83464E-10	7.0048E-12	1.8932E-13
												Ni-63	5.37360E-04	2.0517E-05	5.5451E-07
												Pm-147	1.95495E-08	7.4640E-10	2.0173E-11
												Pu-238 [8.2763E-13 g]	1.36345E-05	5.2059E-07	1.4070E-08
												Pu-239 [8.9938E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07
												Pu-240 [2.4244E-09 g]	5.40368E-04	2.0632E-05	5.5761E-07
												Pu-241 [2.1311E-13 g]	2.06523E-05	7.8851E-07	2.1311E-08
												Ra-226	7.03782E-01	2.6871E-02	7.2624E-04
												Sr-90	2.15546E-02	8.2299E-04	2.2243E-05
												Th-232 [4.0441E-03 kg]	4.31091E-01	1.6459E-02	4.4485E-04
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07
												Zn-65	2.10533E-22	8.0383E-24	2.1725E-25
												Subtotal		6.5856E-02	1.7799E-03
												Total		6.5856E-02	1.7799E-03
												SNM [1.1419E-08 g]			
												Source [4.0443E-03 kg]			

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 16 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
T044/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.7889E-06 1.8938E-04 2.4398E-07 8.0179E-04 1.1264E-06	2.1051E-07 5.1183E-06 6.5940E-09 2.1670E-05 3.0442E-08	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8873E-07 1.0614E-07 2.0579E-02 6.9871E-12 2.0465E-05	1.3209E-08 2.8687E-09 5.5620E-04 1.8884E-13 5.5311E-07	
												Pm-147 Pu-238 [8.2553E-13 g] Pu-239 [8.9710E-09 g] Pu-240 [2.4183E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4451E-10 5.1926E-07 2.0579E-05 2.0579E-05	2.0122E-11 1.4034E-08 5.5620E-07 5.5620E-07	
												Pu-241 [2.1258E-13 g] Ra-226 Sr-90 Th-232 [4.0339E-03 kg]	2.06000E-05 7.02000E-01 2.15000E-02 4.30000E-01	7.8651E-07 2.6803E-02 8.2088E-04 1.6418E-02	2.1257E-08 7.2441E-04 2.2186E-05 4.4372E-04	
												U-nat [1.6700E-07 kg] Zn-65 Subtotal Total	1.16288E-04 2.10000E-22	4.4400E-06 8.0179E-24 6.5689E-02 6.5689E-02	1.2000E-07 2.1670E-25 1.7754E-03 1.7754E-03	
												SNM [1.1390E-08 g] Source [4.0340E-03 kg]				
T045/R5-0022-01	7	1.0477 37.0000	1068.2101 2355.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	25-HJ	1.0477 37.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04000E-04 4.96000E-03 6.39000E-06 2.10000E-02 2.95000E-05	7.8092E-06 1.8987E-04 2.4461E-07 8.0386E-04 1.1293E-06	2.1106E-07 5.1316E-06 6.6111E-09 2.1726E-05 3.0521E-08	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28000E-05 2.78000E-06 5.39000E-01 1.83000E-10 5.36000E-04	4.8999E-07 1.0642E-07 2.0633E-02 7.0052E-12 2.0518E-05	1.3243E-08 2.8762E-09 5.5765E-04 1.8933E-13 5.5454E-07	
												Pm-147 Pu-238 [8.2768E-13 g] Pu-239 [8.9943E-09 g] Pu-240 [2.4246E-09 g]	1.95000E-08 1.36000E-05 5.39000E-04 5.39000E-04	7.4648E-10 5.2059E-07 2.0633E-05 2.0633E-05	2.0175E-11 1.4070E-08 5.5765E-07 5.5765E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-001

3. PAGE 17 OF 17 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1313E-13 g]	2.06000E-05	7.8858E-07	2.1313E-08	
												Ra-226	7.02000E-01	2.6873E-02	7.2629E-04	
												Sr-90	2.15000E-02	8.2303E-04	2.2244E-05	
												Th-232 [4.0443E-03 kg]	4.30000E-01	1.6461E-02	4.4488E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4515E-06	1.2031E-07	
												Zn-65	2.10000E-22	8.0386E-24	2.1726E-25	
												Subtotal		6.5861E-02	1.7800E-03	
												Total		6.5861E-02	1.7800E-03	
												SNM [1.1420E-08 g]				
												Source [4.0445E-03 kg]				
Shipment Totals		27.6368	35929.0540									SNM [3.8748E-07 g]		2.2346E+00	6.0396E-02	
		976.0000	79210.0000									Source [1.3723E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-001

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-001, WP-9514-002, WP-9514-003, WP-9514-004**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER **CHUX 326**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE *(Specify)* **G**

WCS Generator Certification ID **NA**

SHIPMENT NUMBER

CONTACT **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code) **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER **NA**

SHIPPING DATE **08/29/2021**

CONTACT **James P. Nunes**

TELEPHONE (Include Area Code) **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 9 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9514-002

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT **Keri Gonzalez**

TELEPHONE (Include Area Code) **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt* Renee Cowan

DATE 9-21-21

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

AUTHORIZED SIGNATURE ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.08.26 15:23:28 -04'00'

TITLE Manifester

DATE 26 Aug 2021

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	16. mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.6835E+01**	**(2.6171E+00)**	**NA**	**18220 LBS; 81 FT3**	**144**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1310E+01**	**(3.0568E-01)**	**NA**	**18620 LBS; 81 FT3**	**150**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-002

Page 2 of 4

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.3260E+01**	**(8.9892E-01)**	**NA**	**18640 LBS; 81 FT3**	**154**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.5704E+01**	**(1.2353E+00)**	**NA**	**19260 LBS; 81 FT3**	**166**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.5769E+01**	**(2.5884E+00)**	**NA**	**18020 LBS; 81 FT3**	**170**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1424E+02**	**(3.0876E+00)**	**NA**	**17600 LBS; 81 FT3**	**171**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.1228E-01**	**(8.4399E-03)**	**NA**	**18600 LBS; 81 FT3**	**176**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Na-22	Ni-63	Pm-147	Pu-238	3.1228E-01	(8.4399E-03)	NA	18600 LBS; 81 FT3	176
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.5094E+02	(4.0794E+00)	NA	18280 LBS; 81 FT3	178
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	4.3801E+01	(1.1838E+00)	NA	18460 LBS; 81 FT3	187
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	3.1228E-01	(8.4399E-03)	NA	17500 LBS; 81 FT3	189
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat						
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	3.2115E+01	(8.6798E-01)	NA	18000 LBS; 81 FT3	221
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-002

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**		**3.2115E+01**	**(8.6798E-01)**	**NA**	**18000 LBS; 81 FT3**	**221**
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**7.3899E+01**	**(1.9973E+00)**	**NA**	**17860 LBS; 81 FT3**	**222**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 27.5244 / ft3 972.0000	kg 99114.4753 / lb 218510.0000	NP	NP	6.1282E-04 12 Containers	6.1282E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	6.9845E+02	6.3528E+02	5.8337E+00	NP	NP	(kg)	3.7141E-01
mCi	1.8877E+01	1.7170E+01	1.5767E-01	NP	NP	(lb)	8.1881E-01

2. MANIFEST NUMBER: **WP-9514-002**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CHUX 326**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
144/R5-0022-01	19 Lift Liner	2.2937	8264.4535	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.3376E-02	9.0205E-04	AU
		81.0000	18220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.1037E-01	2.1902E-02	
												Co-60	3.43435E-03	1.0473E-03	2.8305E-05	
												Cs-137	1.12602E+01	3.4337E+00	9.2803E-02	
												Eu-152	1.58768E-02	4.8415E-03	1.3085E-04	
												Eu-154	6.84618E-03	2.0877E-03	5.6424E-05	
												Eu-155	1.49760E-03	4.5669E-04	1.2343E-05	
												H-3	2.89386E+02	8.8245E+01	2.3850E+00	
												Na-22	9.84139E-08	3.0011E-08	8.1110E-10	
												Ni-63	2.88260E-01	8.7905E-02	2.3758E-03	
												Pm-147	1.04607E-05	3.1899E-06	8.6214E-08	
												Pu-238 [3.5320E-09 g]	7.28533E-03	2.2216E-03	6.0044E-05	
												Pu-239 [6.7058E-05 g]	5.04456E-01	1.5383E-01	4.1576E-03	
												Pu-240 [1.8077E-05 g]	5.04456E-01	1.5383E-01	4.1576E-03	
												Pu-241 [9.1040E-10 g]	1.10462E-02	3.3685E-03	9.1040E-05	
												Ra-226	7.02634E-01	2.1426E-01	5.7909E-03	
												Sr-90	1.15980E+01	3.5367E+00	9.5587E-02	
												Th-232 [3.2247E-02 kg]	4.30389E-01	1.3125E-01	3.5472E-03	
												U-nat [1.2829E-03 kg]	6.22350E-02	1.8978E-02	5.1292E-04	
												Subtotal		9.6833E+01	2.6171E+00	
												Total SNM [8.5139E-05 g]		9.6833E+01	2.6171E+00	
												Source [3.3530E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi	
150/R5-0022-01	19 Lift Liner	2.2937	8445.8905	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241		1.21610E-02	3.7899E-03	1.0243E-04	AU
		81.0000	18620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		2.95267E-01	9.2023E-02	2.4871E-03	
												Co-60		3.81595E-04	1.1893E-04	3.2142E-06	
												Cs-137		1.25113E+00	3.8991E-01	1.0538E-02	
												Eu-152		1.76409E-03	5.4978E-04	1.4859E-05	
												Eu-154		7.60687E-04	2.3707E-04	6.4074E-06	
												Eu-155		1.66400E-04	5.1859E-05	1.4016E-06	
												H-3		3.21540E+01	1.0021E+01	2.7084E-01	
												Na-22		1.09349E-08	3.4079E-09	9.2106E-11	
												Ni-63		3.20289E-02	9.9822E-03	2.6979E-04	
												Pm-147		1.16230E-06	3.6224E-07	9.7902E-09	
												Pu-238	[4.0108E-10 g]	8.09481E-04	2.5228E-04	6.8184E-06	
												Pu-239	[7.6149E-06 g]	5.60507E-02	1.7468E-02	4.7212E-04	
												Pu-240	[2.0527E-06 g]	5.60507E-02	1.7468E-02	4.7212E-04	
												Pu-241	[1.0338E-10 g]	1.22735E-03	3.8251E-04	1.0338E-05	
												Ra-226		7.02635E-01	2.1898E-01	5.9184E-03	
												Sr-90		1.28866E+00	4.0164E-01	1.0855E-02	
												Th-232	[3.2957E-02 kg]	4.30389E-01	1.3413E-01	3.6252E-03	
												U-nat	[1.4568E-04 kg]	6.91499E-03	2.1551E-03	5.8246E-05	
												Subtotal			1.1310E+01	3.0568E-01	
												Total			1.1310E+01	3.0568E-01	
												SNM	[9.6681E-06 g]				
												Source	[3.3102E-02 kg]				
154/R5-0022-01	19 Lift Liner	2.2937	8454.9623	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241		3.63851E-02	1.1382E-02	3.0763E-04	AU
		81.0000	18640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		8.83424E-01	2.7636E-01	7.4693E-03	
												Co-60		1.14171E-03	3.5716E-04	9.6531E-06	
												Cs-137		3.74332E+00	1.1710E+00	3.1649E-02	
												Eu-152		5.27808E-03	1.6512E-03	4.4626E-05	
												Eu-154		2.27594E-03	7.1199E-04	1.9243E-05	
												Eu-155		4.97862E-04	1.5575E-04	4.2094E-06	
												H-3		9.62034E+01	3.0095E+01	8.1339E-01	
												Na-22		3.27166E-08	1.0235E-08	2.7662E-10	
												Ni-63		9.58290E-02	2.9979E-02	8.1023E-04	
												Pm-147		3.47755E-06	1.0879E-06	2.9402E-08	
												Pu-238	[1.2045E-09 g]	2.42193E-03	7.5765E-04	2.0477E-05	
												Pu-239	[2.2869E-05 g]	1.67701E-01	5.2462E-02	1.4179E-03	
												Pu-240	[6.1648E-06 g]	1.67701E-01	5.2462E-02	1.4179E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [3.1048E-10 g]	3.67219E-03	1.1488E-03	3.1048E-05
												Ra-226	7.00750E-01	2.1922E-01	5.9248E-03
												Sr-90	3.85562E+00	1.2062E+00	3.2599E-02
												Th-232 [3.2992E-02 kg]	4.29234E-01	1.3428E-01	3.6291E-03
												U-nat [4.3751E-04 kg]	2.06893E-02	6.4724E-03	1.7493E-04
												Subtotal		3.3260E+01	8.9892E-01
												Total		3.3260E+01	8.9892E-01
												SNM [2.9036E-05 g]			
												Source [3.3430E-02 kg]			
166/R5-0022-01	19 Lift Liner	2.2937	8736.1896	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.5683E-02	4.2386E-04
												C-14	1.18107E+00	3.8077E-01	1.0291E-02
												Co-60	1.52638E-03	4.9210E-04	1.3300E-05
												Cs-137	5.00452E+00	1.6135E+00	4.3607E-02
		81.0000	19260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	7.05637E-03	2.2749E-03	6.1485E-05
												Eu-154	3.04275E-03	9.8098E-04	2.6513E-05
												Eu-155	6.65601E-04	2.1459E-04	5.7997E-06
												H-3	1.28616E+02	4.1466E+01	1.1207E+00
												Na-22	4.37395E-08	1.4101E-08	3.8112E-10
												Ni-63	1.28116E-01	4.1303E-02	1.1163E-03
												Pm-147	4.64920E-06	1.4989E-06	4.0511E-08
												Pu-238 [1.6596E-09 g]	3.23792E-03	1.0439E-03	2.8214E-05
												Pu-239 [3.1509E-05 g]	2.24202E-01	7.2283E-02	1.9536E-03
												Pu-240 [8.4938E-06 g]	2.24202E-01	7.2283E-02	1.9536E-03
												Pu-241 [4.2778E-10 g]	4.90944E-03	1.5828E-03	4.2778E-05
												Ra-226	7.02635E-01	2.2653E-01	6.1224E-03
												Sr-90	5.15465E+00	1.6619E+00	4.4915E-02
												Th-232 [3.4093E-02 kg]	4.30389E-01	1.3876E-01	3.7502E-03
												U-nat [6.0280E-04 kg]	2.76600E-02	8.9174E-03	2.4101E-04
												Subtotal		4.5705E+01	1.2353E+00
												Total		4.5705E+01	1.2353E+00
												SNM [4.0005E-05 g]			
												Source [3.4695E-02 kg]			

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
170/R5-0022-01	19 Lift Liner	2.2937	8173.7350	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.3008E-02	8.9212E-04	AU
		81.0000	18020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.0146E-01	2.1661E-02	
												Co-60	3.43435E-03	1.0357E-03	2.7993E-05	
												Cs-137	1.12602E+01	3.3959E+00	9.1782E-02	
												Eu-152	1.58768E-02	4.7882E-03	1.2941E-04	
												Eu-154	6.84618E-03	2.0647E-03	5.5803E-05	
												Eu-155	1.49760E-03	4.5166E-04	1.2207E-05	
												H-3	2.89386E+02	8.7276E+01	2.3588E+00	
												Na-22	9.84139E-08	2.9680E-08	8.0217E-10	
												Ni-63	2.88260E-01	8.6935E-02	2.3496E-03	
												Pm-147	1.04607E-05	3.1548E-06	8.5265E-08	
												Pu-238 [3.4931E-09 g]	7.28533E-03	2.1972E-03	5.9383E-05	
												Pu-239 [6.6320E-05 g]	5.04455E-01	1.5214E-01	4.1118E-03	
												Pu-240 [1.7878E-05 g]	5.04455E-01	1.5214E-01	4.1118E-03	
												Pu-241 [9.0038E-10 g]	1.10462E-02	3.3314E-03	9.0038E-05	
												Ra-226	7.02635E-01	2.1191E-01	5.7272E-03	
												Sr-90	1.15980E+01	3.4978E+00	9.4535E-02	
												Th-232 [3.1892E-02 kg]	4.30388E-01	1.2980E-01	3.5081E-03	
												U-nat [1.2688E-03 kg]	6.22350E-02	1.8769E-02	5.0728E-04	
												Subtotal		9.5770E+01	2.5884E+00	
												Total		9.5770E+01	2.5884E+00	
												SNM [8.4202E-05 g]				
												Source [3.3161E-02 kg]				
171/R5-0022-01	19 Lift Liner	2.2937	7983.2262	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.33771E-01	3.9401E-02	1.0649E-03	AU
		81.0000	17600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.24793E+00	9.5664E-01	2.5855E-02	
												Co-60	4.19754E-03	1.2364E-03	3.3415E-05	
												Cs-137	1.37624E+01	4.0537E+00	1.0956E-01	
												Eu-152	1.94050E-02	5.7154E-03	1.5447E-04	
												Eu-154	8.36756E-03	2.4646E-03	6.6610E-05	
												Eu-155	1.83040E-03	5.3913E-04	1.4571E-05	
												H-3	3.53694E+02	1.0418E+02	2.8156E+00	
												Na-22	1.20284E-07	3.5428E-08	9.5752E-10	
												Ni-63	3.52318E-01	1.0377E-01	2.8046E-03	
												Pm-147	1.27853E-05	3.7659E-06	1.0178E-07	
												Pu-238 [4.1696E-09 g]	8.90430E-03	2.6227E-03	7.0883E-05	
												Pu-239 [7.9163E-05 g]	6.16556E-01	1.8160E-01	4.9081E-03	
												Pu-240 [2.1340E-05 g]	6.16556E-01	1.8160E-01	4.9081E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [1.0747E-09 g]	1.35009E-02 / 3.9764E-03 / 1.0747E-04
												Ra-226	7.02634E-01 / 2.0695E-01 / 5.5933E-03
												Sr-90	1.41753E+01 / 4.1751E+00 / 1.1284E-01
												Th-232 [3.1147E-02 kg]	4.30389E-01 / 1.2677E-01 / 3.4261E-03
												U-nat [1.5145E-03 kg]	7.60649E-02 / 2.2404E-02 / 6.0552E-04
												Subtotal	1.1424E+02 / 3.0876E+00
												Total	1.1424E+02 / 3.0876E+00
												SNM [1.0051E-04 g]	
												Source [3.2661E-02 kg]	
176/R5-0022-01	19 Lift Liner	2.2937	8436.8186	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.18937E-04 / 3.7026E-05 / 1.0007E-06
												C-14	2.89179E-03 / 9.0028E-04 / 2.4332E-05
												Co-60	3.72552E-06 / 1.1598E-06 / 3.1347E-08
		81.0000	18600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.22435E-02 / 3.8117E-03 / 1.0302E-04
												Eu-152	1.71992E-05 / 5.3546E-06 / 1.4472E-07
												Eu-154	7.46269E-06 / 2.3233E-06 / 6.2792E-08
												Eu-155	1.62080E-06 / 5.0461E-07 / 1.3638E-08
												H-3	3.14249E-01 / 9.7832E-02 / 2.6441E-03
												Na-22	1.06693E-10 / 3.3216E-11 / 8.9773E-13
												Ni-63	3.12500E-04 / 9.7288E-05 / 2.6294E-06
												Pm-147	1.13689E-08 / 3.5394E-09 / 9.5659E-11
												Pu-238 [3.9245E-12 g]	7.92911E-06 / 2.4685E-06 / 6.6716E-08
												Pu-239 [4.2647E-08 g]	3.14249E-04 / 9.7832E-05 / 2.6441E-06
												Pu-240 [1.1496E-08 g]	3.14249E-04 / 9.7832E-05 / 2.6441E-06
												Pu-241 [1.0106E-12 g]	1.20103E-05 / 3.7392E-06 / 1.0106E-07
												Ra-226	4.09282E-01 / 1.2742E-01 / 3.4437E-03
												Sr-90	1.25350E-02 / 3.9024E-03 / 1.0547E-04
												Th-232 [1.9177E-02 kg]	2.50700E-01 / 7.8048E-02 / 2.1094E-03
												U-nat [1.4218E-06 kg]	6.75723E-05 / 2.1037E-05 / 5.6856E-07
												Subtotal	3.1228E-01 / 8.4399E-03
												Total	3.1228E-01 / 8.4399E-03
												SNM [5.4148E-08 g]	
												Source [1.9178E-02 kg]	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
178/R5-0022-01	19 Lift Liner	2.2937	8291.6691	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.70254E-01	5.2089E-02	1.4078E-03	AU
		81.0000	18280.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.13373E+00	1.2647E+00	3.4182E-02	
												Co-60	5.34232E-03	1.6345E-03	4.4175E-05	
												Cs-137	1.75158E+01	5.3591E+00	1.4484E-01	
												Eu-152	2.46973E-02	7.5561E-03	2.0422E-04	
												Eu-154	1.06496E-02	3.2583E-03	8.8061E-05	
												Eu-155	2.32960E-03	7.1273E-04	1.9263E-05	
												H-3	4.50157E+02	1.3773E+02	3.7223E+00	
												Na-22	1.53088E-07	4.6838E-08	1.2659E-09	
												Ni-63	4.48405E-01	1.3719E-01	3.7078E-03	
												Pm-147	1.62722E-05	4.9784E-06	1.3455E-07	
												Pu-238 [5.5123E-09 g]	1.13327E-02	3.4673E-03	9.3710E-05	
												Pu-239 [1.0466E-04 g]	7.84708E-01	2.4008E-01	6.4887E-03	
												Pu-240 [2.8212E-05 g]	7.84708E-01	2.4008E-01	6.4887E-03	
												Pu-241 [1.4209E-09 g]	1.71830E-02	5.2573E-03	1.4209E-04	
												Ra-226	7.02635E-01	2.1497E-01	5.8100E-03	
												Sr-90	1.80413E+01	5.5197E+00	1.4918E-01	
												Th-232 [3.2353E-02 kg]	4.30389E-01	1.3168E-01	3.5589E-03	
												U-nat [2.0022E-03 kg]	9.68099E-02	2.9619E-02	8.0052E-04	
												Subtotal		1.5094E+02	4.0794E+00	
												Total		1.5094E+02	4.0794E+00	
												SNM [1.3288E-04 g]				
												Source [3.4355E-02 kg]				
187/R5-0022-01	19 Lift Liner	2.2937	8373.3157	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.5030E-02	4.0621E-04	AU
		81.0000	18460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.18107E+00	3.6492E-01	9.8626E-03	
												Co-60	1.52638E-03	4.7160E-04	1.2746E-05	
												Cs-137	5.00452E+00	1.5463E+00	4.1791E-02	
												Eu-152	7.05637E-03	2.1802E-03	5.8925E-05	
												Eu-154	3.04275E-03	9.4013E-04	2.5409E-05	
												Eu-155	6.65601E-04	2.0565E-04	5.5582E-06	
												H-3	1.28616E+02	3.9738E+01	1.0740E+00	
												Na-22	4.37395E-08	1.3514E-08	3.6525E-10	
												Ni-63	1.28116E-01	3.9583E-02	1.0698E-03	
												Pm-147	4.64920E-06	1.4365E-06	3.8824E-08	
												Pu-238 [1.5905E-09 g]	3.23793E-03	1.0004E-03	2.7039E-05	
												Pu-239 [3.0197E-05 g]	2.24202E-01	6.9271E-02	1.8722E-03	
												Pu-240 [8.1401E-06 g]	2.24202E-01	6.9271E-02	1.8722E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.0997E-10 g]	4.90944E-03	1.5169E-03	4.0997E-05	
												Ra-226	7.02635E-01	2.1709E-01	5.8674E-03	
												Sr-90	5.15465E+00	1.5926E+00	4.3044E-02	
												Th-232 [3.2673E-02 kg]	4.30389E-01	1.3298E-01	3.5940E-03	
												U-nat [5.7769E-04 kg]	2.76600E-02	8.5463E-03	2.3098E-04	
												Subtotal		4.3800E+01	1.1838E+00	
												Total		4.3800E+01	1.1838E+00	
												SNM [3.8339E-05 g]				
												Source [3.3250E-02 kg]				
189/R5-0022-01	19 Lift Liner	2.2937	7937.8670	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.26434E-04	3.7026E-05	1.0007E-06	AU
		81.0000	17500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.07408E-03	9.0028E-04	2.4332E-05	
												Co-60	3.96036E-06	1.1598E-06	3.1347E-08	
												Cs-137	1.30153E-02	3.8117E-03	1.0302E-04	
												Eu-152	1.82834E-05	5.3546E-06	1.4472E-07	
												Eu-154	7.93312E-06	2.3233E-06	6.2792E-08	
												Eu-155	1.72297E-06	5.0461E-07	1.3638E-08	
												H-3	3.34059E-01	9.7832E-02	2.6441E-03	
												Na-22	1.13419E-10	3.3216E-11	8.9773E-13	
												Ni-63	3.32199E-04	9.7288E-05	2.6294E-06	
												Pm-147	1.20856E-08	3.5394E-09	9.5659E-11	
												Pu-238 [3.9245E-12 g]	8.42894E-06	2.4685E-06	6.6716E-08	
												Pu-239 [4.2647E-08 g]	3.34059E-04	9.7832E-05	2.6441E-06	
												Pu-240 [1.1496E-08 g]	3.34059E-04	9.7832E-05	2.6441E-06	
												Pu-241 [1.0106E-12 g]	1.27674E-05	3.7392E-06	1.0106E-07	
												Ra-226	4.35082E-01	1.2742E-01	3.4437E-03	
												Sr-90	1.33252E-02	3.9024E-03	1.0547E-04	
												Th-232 [1.9177E-02 kg]	2.66503E-01	7.8048E-02	2.1094E-03	
												U-nat [1.4218E-06 kg]	7.18319E-05	2.1037E-05	5.6856E-07	
												Subtotal		3.1228E-01	8.4399E-03	
												Total		3.1228E-01	8.4399E-03	
												SNM [5.4148E-08 g]				
												Source [1.9178E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
221/R5-0022-01	19 Lift Liner	2.2937	8164.6632	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	3.64829E-02	1.0990E-02	2.9704E-04	AU
		81.0000	18000.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	8.85800E-01	2.6685E-01	7.2121E-03	
												Co-60	1.14478E-03	3.4487E-04	9.3208E-06	
												Cs-137	3.75339E+00	1.1307E+00	3.0560E-02	
												Eu-152	5.29228E-03	1.5943E-03	4.3089E-05	
												Eu-154	2.28206E-03	6.8746E-04	1.8580E-05	
												Eu-155	4.99201E-04	1.5039E-04	4.0645E-06	
												H-3	9.64621E+01	2.9059E+01	7.8539E-01	
												Na-22	3.28046E-08	9.8823E-09	2.6709E-10	
												Ni-63	9.60868E-02	2.8946E-02	7.8233E-04	
												Pm-147	3.48690E-06	1.0504E-06	2.8390E-08	
												Pu-238 [1.1631E-09 g]	2.42844E-03	7.3156E-04	1.9772E-05	
												Pu-239 [2.2082E-05 g]	1.68152E-01	5.0657E-02	1.3691E-03	
												Pu-240 [5.9525E-06 g]	1.68152E-01	(5.0657E-02)	(1.3691E-03)	
												Pu-241 [2.9979E-10 g]	3.68207E-03	1.1092E-03	2.9979E-05	
												Ra-226	7.02635E-01	2.1167E-01	5.7208E-03	
												Sr-90	3.86599E+00	1.1646E+00	3.1477E-02	
												Th-232 [3.1856E-02 kg]	4.30389E-01	1.2966E-01	3.5042E-03	
												U-nat [4.2244E-04 kg]	2.07449E-02	6.2493E-03	1.6890E-04	
												Subtotal		3.2064E+01	8.6661E-01	
												Total		3.2064E+01	8.6661E-01	
												SNM [2.8036E-05 g]				
												Source [3.2279E-02 kg]				
222/R5-0022-01	19 Lift Liner	2.2937	8101.1603	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.51269E-02	2.5445E-02	6.8769E-04	AU
		81.0000	17860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.06687E+00	6.1779E-01	1.6697E-02	
												Co-60	2.67116E-03	7.9842E-04	2.1579E-05	
												Cs-137	8.75791E+00	2.6178E+00	7.0750E-02	
												Eu-152	1.23487E-02	3.6910E-03	9.9758E-05	
												Eu-154	5.32481E-03	1.5916E-03	4.3016E-05	
												Eu-155	1.16480E-03	3.4816E-04	9.4098E-06	
												H-3	2.25078E+02	6.7277E+01	1.8183E+00	
												Na-22	7.65441E-08	2.2879E-08	6.1836E-10	
												Ni-63	2.24203E-01	6.7014E-02	1.8112E-03	
												Pm-147	8.13610E-06	2.4319E-06	6.5727E-08	
												Pu-238 [2.6927E-09 g]	5.66637E-03	1.6937E-03	4.5775E-05	
												Pu-239 [5.1123E-05 g]	3.92354E-01	1.1728E-01	3.1696E-03	
												Pu-240 [1.3781E-05 g]	3.92354E-01	1.1728E-01	3.1696E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-002

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFI-CATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [6.9406E-10 g]	8.59151E-03	2.5680E-03	6.9406E-05	
												Ra-226	7.02634E-01	2.1002E-01	5.6762E-03	
												Sr-90	9.02065E+00	2.6963E+00	7.2873E-02	
												Th-232 [3.1608E-02 kg]	4.30389E-01	1.2865E-01	3.4769E-03	
												U-Nat [9.7802E-04 kg]	4.84050E-02	1.4468E-02	3.9104E-04	
												Zn-65	8.75791E-20	2.6178E-20	7.0750E-22	
												Subtotal		7.3900E+01	1.9973E+00	
												Total		7.3900E+01	1.9973E+00	
												SNM [6.4907E-05 g]				
												Source [3.2586E-02 kg]				
Shipment Totals		27.5244	99363.9510									SNM [6.1282E-04 g]		6.9845E+02	1.8877E+01	
		972.0000	219060.0000									Source [3.7141E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-002
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-001, WP-9514-002, WP-9514-003, WP-9514-004**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
CIGX 804215
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID
NA

SHIPMENT NUMBER

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
08/29/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF **4** PAGE(S)
FORM 541 AND 541A — **9** PAGE(S)
FORM 542 AND 542A — **None** PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages)
WP-9514-003

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
Renee Cowan

DATE
9·21·21

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

AUTHORIZED SIGNATURE
ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.08.26 15:24:57 -04'00'

TITLE
Manifester

DATE
26 Aug 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.5166E+01**	**(2.3018E+00)**	**NA**	**18020 LBS; 81 FT3**	**169**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.9500E+01**	**(2.6892E+00)**	**NA**	**18720 LBS; 81 FT3**	**173**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.4722E+01**	**(1.4790E+00)**	**NA**	**18480 LBS; 81 FT3**	**174**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.2507E+01**	**(6.0830E-01)**	**NA**	**18820 LBS; 81 FT3**	**175**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.9073E+01**	**(2.6777E+00)**	**NA**	**18640 LBS; 81 FT3**	**177**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.2145E+01**	**(2.4904E+00)**	**NA**	**17340 LBS; 81 FT3**	**188**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1906E+02**	**(3.2178E+00)**	**NA**	**18340 LBS; 81 FT3**	**194**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Na-22	Ni-63	Pm-147	Pu-238	1.1906E+02	(3.2178E+00)	NA	18340 LBS; 81 FT3	194
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.0377E+02	(2.8045E+00)	NA	17580 LBS; 81 FT3	200
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	7.6389E+01	(2.0645E+00)	NA	18460 LBS; 81 FT3	212
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.1170E+02	(3.0189E+00)	NA	18920 LBS; 81 FT3	217
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-nat	Zn-65					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.1698E+02	(3.1615E+00)	NA	18020 LBS; 81 FT3	220
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-003

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**1.1698E+02**	**(3.1615E+00)**	**NA**	**18020 LBS; 81 FT3**	**220**
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.0374E-01**	**(1.3615E-02)**	**NA**	**17480 LBS; 81 FT3**	**224**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 27.5244 / ft3 972.0000	kg 98982.9334 / lb 218220.0000	NP	NP	8.6232E-04 12 Containers	8.6232E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	9.8151E+02	8.9387E+02	8.2083E+00	NP	NP	(kg)	4.0027E-01
mCi	2.6527E+01	2.4158E+01	2.2185E-01	NP	NP	(lb)	8.8245E-01

2. MANIFEST NUMBER: **WP-9514-003**

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CIGX 804215**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
169/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	8173.7350 / 18020.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241	9.72879E-02	2.9341E-02	7.9299E-04	AU
												C-14	2.36213E+00	7.1240E-01	1.9254E-02	
												Co-60	3.05276E-03	9.2067E-04	2.4883E-05	
												Cs-137	1.00090E+01	3.0186E+00	8.1584E-02	
												Eu-152	1.41128E-02	4.2561E-03	1.1503E-04	
												Eu-154	6.08550E-03	1.8353E-03	4.9603E-05	
												Eu-155	1.33120E-03	4.0149E-04	1.0851E-05	
												H-3	2.57232E+02	7.7578E+01	2.0967E+00	
												Na-22	8.74790E-08	2.6382E-08	7.1304E-10	
												Ni-63	2.56231E-01	7.7275E-02	2.0885E-03	
												Pm-147	9.29840E-06	2.8043E-06	7.5791E-08	
												Pu-238 [3.1050E-09 g]	6.47585E-03	1.9530E-03	5.2785E-05	
												Pu-239 [5.8951E-05 g]	4.48405E-01	1.3524E-01	3.6550E-03	
												Pu-240 [1.5891E-05 g]	4.48405E-01	1.3524E-01	3.6550E-03	
												Pu-241 [8.0034E-10 g]	9.81887E-03	2.9613E-03	8.0034E-05	
												Ra-226	7.02635E-01	2.1191E-01	5.7272E-03	
												Sr-90	1.03093E+01	3.1091E+00	8.4031E-02	
												Th-232 [3.1892E-02 kg]	4.30389E-01	1.2980E-01	3.5081E-03	
												U-nat [1.1278E-03 kg]	5.53200E-02	1.6684E-02	4.5091E-04	
												Zn-65	1.00090E-19	3.0186E-20	8.1584E-22	
												Subtotal		8.5166E+01	2.3018E+00	
												Total		8.5166E+01	2.3018E+00	
												SNM [7.4846E-05 g]				
												Source [3.3020E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

in Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
173/R5-0022-01	19 Lift Liner	2.2937	8491.2497	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	4.3294E-02	9.2687E-04	AU
		81.0000	18720.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.3265E-01	2.2504E-02	
												Co-60	3.43435E-03	1.0761E-03	2.9084E-05	
												Cs-137	1.12602E+01	3.5282E+00	9.5357E-02	
												Eu-152	1.58768E-02	4.9747E-03	1.3445E-04	
												Eu-154	6.84618E-03	2.1451E-03	5.7977E-05	
												Eu-155	1.49760E-03	4.6923E-04	1.2682E-05	
												H-3	2.89386E+02	9.0676E+01	2.4507E+00	
												Na-22	9.84139E-08	3.0837E-08	8.3342E-10	
												Ni-63	2.88260E-01	9.0321E-02	2.4411E-03	
												Pm-147	1.04607E-05	3.2777E-06	8.8587E-08	
												Pu-238 [3.6292E-09 g]	7.28533E-03	2.2828E-03	6.1696E-05	
												Pu-239 [6.8903E-05 g]	5.04456E-01	1.5806E-01	4.2720E-03	
												Pu-240 [1.8574E-05 g]	5.04456E-01	1.5806E-01	4.2720E-03	
												Pu-241 [9.3545E-10 g]	1.10462E-02	3.4612E-03	9.3545E-05	
												Ra-226	7.02634E-01	2.2016E-01	5.9503E-03	
												Sr-90	1.15980E+01	3.6341E+00	9.8218E-02	
												Th-232 [3.3134E-02 kg]	4.30389E-01	1.3486E-01	3.6448E-03	
												U-nat [1.3182E-03 kg]	6.22350E-02	1.9500E-02	5.2704E-04	
												Zn-65	1.12602E-19	3.5282E-20	9.5357E-22	
												Subtotal		9.9501E+01	2.6892E+00	
												Total		9.9501E+01	2.6892E+00	
												SNM [8.7482E-05 g]				
												Source [3.4452E-02 kg]				
174/R5-0022-01	19 Lift Liner	2.2937	8382.3876	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	6.08049E-02	1.8807E-02	5.0831E-04	AU
		81.0000	18480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.47633E+00	4.5665E-01	1.2342E-02	
												Co-60	1.90797E-03	5.9015E-04	1.5950E-05	
												Cs-137	6.25565E+00	1.9349E+00	5.2295E-02	
												Eu-152	8.82047E-03	2.7282E-03	7.3736E-05	
												Eu-154	3.80344E-03	1.1764E-03	3.1795E-05	
												Eu-155	8.32001E-04	2.5735E-04	6.9553E-06	
												H-3	1.60770E+02	4.9728E+01	1.3440E+00	
												Na-22	5.46744E-08	1.6911E-08	4.5706E-10	
												Ni-63	1.60145E-01	4.9536E-02	1.3388E-03	
												Pm-147	5.81150E-06	1.7975E-06	4.8582E-08	
												Pu-238 [1.9903E-09 g]	4.04741E-03	1.2519E-03	3.3835E-05	
												Pu-239 [3.7788E-05 g]	2.80253E-01	8.6684E-02	2.3428E-03	
												Pu-240 [1.0186E-05 g]	2.80253E-01	8.6684E-02	2.3428E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.1302E-10 g]	6.13679E-03	1.8982E-03	5.1302E-05	
												Ra-226	7.02634E-01	2.1733E-01	5.8738E-03	
												Sr-90	6.44332E+00	1.9930E+00	5.3864E-02	
												Th-232 [3.2708E-02 kg]	4.30389E-01	1.3312E-01	3.5979E-03	
												U-nat [7.2290E-04 kg]	3.45750E-02	1.0694E-02	2.8904E-04	
												Zn-65	6.25565E-20	1.9349E-20	5.2295E-22	
												Subtotal		5.4723E+01	1.4790E+00	
												Total		5.4723E+01	1.4790E+00	
												SNM [4.7976E-05 g]				
												Source [3.3431E-02 kg]				
175/R5-0022-01	19 Lift Liner	2.2937	8536.6090	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.6616E-03	2.0707E-04	AU
												C-14	5.90533E-01	1.8602E-01	5.0277E-03	
												Co-60	7.63189E-04	2.4041E-04	6.4977E-06	
												Cs-137	2.50226E+00	7.8825E-01	2.1304E-02	
												Eu-152	3.52819E-03	1.1114E-03	3.0039E-05	
												Eu-154	1.52137E-03	4.7926E-04	1.2953E-05	
												Eu-155	3.32801E-04	1.0484E-04	2.8334E-06	
												H-3	6.43081E+01	2.0258E+01	5.4751E-01	
												Na-22	2.18697E-08	6.8894E-09	1.8620E-10	
												Ni-63	6.40578E-02	2.0179E-02	5.4538E-04	
												Pm-147	2.32460E-06	7.3227E-07	1.9791E-08	
												Pu-238 [8.1080E-10 g]	1.61896E-03	5.1001E-04	1.3784E-05	
												Pu-239 [1.5394E-05 g]	1.12101E-01	3.5314E-02	9.5442E-04	
												Pu-240 [4.1496E-06 g]	1.12101E-01	3.5314E-02	9.5442E-04	
												Pu-241 [2.0899E-10 g]	2.45472E-03	7.7326E-04	2.0899E-05	
												Ra-226	7.02635E-01	2.2134E-01	5.9821E-03	
												Sr-90	2.57733E+00	8.1189E-01	2.1943E-02	
												Th-232 [3.3312E-02 kg]	4.30389E-01	1.3558E-01	3.6643E-03	
												U-nat [2.9400E-04 kg]	1.38300E-02	4.3568E-03	1.1775E-04	
												Zn-65	2.50226E-20	7.8825E-21	2.1304E-22	
												Subtotal		2.2507E+01	6.0830E-01	
												Total		2.2507E+01	6.0830E-01	
												SNM [1.9544E-05 g]				
												Source [3.3606E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
177/R5-0022-01	19 Lift Liner	2.2937	8454.9623	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.4147E-02	9.2290E-04	AU
		81.0000	18640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.2910E-01	2.2408E-02	
												Co-60	3.43435E-03	1.0715E-03	2.8959E-05	
												Cs-137	1.12602E+01	3.5131E+00	9.4948E-02	
												Eu-152	1.58768E-02	4.9536E-03	1.3388E-04	
												Eu-154	6.84618E-03	2.1360E-03	5.7729E-05	
												Eu-155	1.49760E-03	4.6724E-04	1.2628E-05	
												H-3	2.89386E+02	9.0287E+01	2.4402E+00	
												Na-22	9.84139E-08	3.0704E-08	8.2985E-10	
												Ni-63	2.88260E-01	8.9936E-02	2.4307E-03	
												Pm-147	1.04607E-05	3.2637E-06	8.8207E-08	
												Pu-238 [3.6136E-09 g]	7.28533E-03	2.2730E-03	6.1432E-05	
												Pu-239 [6.8608E-05 g]	5.04456E-01	1.5739E-01	4.2537E-03	
												Pu-240 [1.8494E-05 g]	5.04456E-01	1.5739E-01	4.2537E-03	
												Pu-241 [9.3144E-10 g]	1.10462E-02	3.4463E-03	9.3144E-05	
												Ra-226	7.02635E-01	2.1922E-01	5.9248E-03	
												Sr-90	1.15980E+01	3.6185E+00	9.7797E-02	
												Th-232 [3.2992E-02 kg]	4.30389E-01	1.3428E-01	3.6291E-03	
												U-nat [1.3125E-03 kg]	6.22349E-02	1.9417E-02	5.2478E-04	
												Zn-65	1.12602E-19	3.5131E-20	9.4948E-22	
												Subtotal		9.9074E+01	2.6777E+00	
												Total		9.9074E+01	2.6777E+00	
												SNM [8.7107E-05 g]				
												Source [3.4305E-02 kg]				
188/R5-0022-01	19 Lift Liner	2.2937	7865.2922	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.1759E-02	8.5836E-04	AU
		81.0000	17340.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	7.7112E-01	2.0841E-02	
												Co-60	3.43435E-03	9.9656E-04	2.6934E-05	
												Cs-137	1.12602E+01	3.2674E+00	8.8309E-02	
												Eu-152	1.58768E-02	4.6072E-03	1.2452E-04	
												Eu-154	6.84618E-03	1.9866E-03	5.3692E-05	
												Eu-155	1.49760E-03	4.3457E-04	1.1745E-05	
												H-3	2.89386E+02	8.3972E+01	2.2695E+00	
												Na-22	9.84139E-08	2.8557E-08	7.7182E-10	
												Ni-63	2.88260E-01	8.3646E-02	2.2607E-03	
												Pm-147	1.04607E-05	3.0354E-06	8.2039E-08	
												Pu-238 [3.3609E-09 g]	7.28533E-03	2.1140E-03	5.7136E-05	
												Pu-239 [6.3810E-05 g]	5.04456E-01	1.4638E-01	3.9562E-03	
												Pu-240 [1.7201E-05 g]	5.04456E-01	1.4638E-01	3.9562E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [8.6631E-10 g]	1.10462E-02 / 3.2053E-03 / 8.6631E-05
												Ra-226	7.02634E-01 / 2.0389E-01 / 5.5105E-03
												Sr-90	1.15980E+01 / 3.3654E+00 / 9.0958E-02
												Th-232 [3.0685E-02 kg]	4.30389E-01 / 1.2489E-01 / 3.3754E-03
												U-Nat [1.2207E-03 kg]	6.22349E-02 / 1.8059E-02 / 4.8808E-04
												Zn-65	1.12602E-19 / 3.2674E-20 / 8.8309E-22
												Subtotal	9.2144E+01 / 2.4904E+00
												Total	9.2144E+01 / 2.4904E+00
												SNM [8.1015E-05 g]	
												Source [3.1906E-02 kg]	
194/R5-0022-01	19 Lift Liner	2.2937	8318.8846	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.33771E-01 / 4.1063E-02 / 1.1098E-03
												C-14	3.24793E+00 / 9.9697E-01 / 2.6945E-02
												Co-60	4.19754E-03 / 1.2885E-03 / 3.4823E-05
												Cs-137	1.37624E+01 / 4.2247E+00 / 1.1418E-01
		81.0000	18340.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	1.94050E-02 / 5.9566E-03 / 1.6099E-04
												Eu-154	8.36756E-03 / 2.5685E-03 / 6.9419E-05
												Eu-155	1.83040E-03 / 5.6185E-04 / 1.5185E-05
												H-3	3.53694E+02 / 1.0857E+02 / 2.9343E+00
												Na-22	1.20284E-07 / 3.6922E-08 / 9.9789E-10
												Ni-63	3.52318E-01 / 1.0815E-01 / 2.9229E-03
												Pm-147	1.27853E-05 / 3.9246E-06 / 1.0607E-07
												Pu-238 [4.3454E-09 g]	8.90429E-03 / 2.7332E-03 / 7.3871E-05
												Pu-239 [8.2501E-05 g]	6.16557E-01 / 1.8926E-01 / 5.1151E-03
												Pu-240 [2.2239E-05 g]	6.16557E-01 / 1.8926E-01 / 5.1151E-03
												Pu-241 [1.1201E-09 g]	1.35009E-02 / 4.1444E-03 / 1.1201E-04
												Ra-226	7.02634E-01 / 2.1568E-01 / 5.8292E-03
												Sr-90	1.41753E+01 / 4.3512E+00 / 1.1760E-01
												Th-232 [3.2460E-02 kg]	4.30389E-01 / 1.3211E-01 / 3.5706E-03
												U-nat [1.5783E-03 kg]	7.60649E-02 / 2.3349E-02 / 6.3105E-04
												Zn-65	1.37624E-19 / 4.2247E-20 / 1.1418E-21
												Subtotal	1.1906E+02 / 3.2178E+00
												Total	1.1906E+02 / 3.2178E+00
												SNM [1.0475E-04 g]	
												Source [3.4038E-02 kg]	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
200/R5-0022-01	19 Lift Liner	2.2937	7974.1544	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-01	3.5778E-02	9.6697E-04	AU
		81.0000	17580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95267E+00	8.6869E-01	2.3478E-02	
												Co-60	3.81595E-03	1.1227E-03	3.0342E-05	
												Cs-137	1.25113E+01	3.6809E+00	9.9483E-02	
												Eu-152	1.76409E-02	5.1900E-03	1.4027E-04	
												Eu-154	7.60687E-03	2.2380E-03	6.0486E-05	
												Eu-155	1.66400E-03	4.8955E-04	1.3231E-05	
												H-3	3.21540E+02	9.4598E+01	2.5567E+00	
												Na-22	1.09349E-07	3.2171E-08	8.6948E-10	
												Ni-63	3.20289E-01	9.4232E-02	2.5468E-03	
												Pm-147	1.16230E-05	3.4195E-06	9.2419E-08	
												Pu-238 [3.7862E-09 g]	8.09481E-03	2.3815E-03	6.4365E-05	
												Pu-239 [7.1884E-05 g]	5.60506E-01	1.6490E-01	4.4568E-03	
												Pu-240 [1.9378E-05 g]	5.60506E-01	1.6490E-01	4.4568E-03	
												Pu-241 [9.7593E-10 g]	1.22736E-02	3.6109E-03	9.7593E-05	
												Ra-226	7.02635E-01	2.0672E-01	5.5870E-03	
												Sr-90	1.28866E+01	3.7914E+00	1.0247E-01	
												Th-232 [3.1111E-02 kg]	4.30389E-01	1.2662E-01	3.4222E-03	
												U-nat [1.3752E-03 kg]	6.91500E-02	2.0344E-02	5.4984E-04	
												Zn-65	1.25113E-19	3.6809E-20	9.9483E-22	
												Subtotal		1.0377E+02	2.8045E+00	
												Total		1.0377E+02	2.8045E+00	
												SNM [9.1267E-05 g]				
												Source [3.2486E-02 kg]				
212/R5-0022-01	19 Lift Liner	2.2937	8373.3157	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.51269E-02	2.6302E-02	7.1086E-04	AU
		81.0000	18460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.06687E+00	6.3862E-01	1.7260E-02	
												Co-60	2.67116E-03	8.2532E-04	2.2306E-05	
												Cs-137	8.75791E+00	2.7060E+00	7.3134E-02	
												Eu-152	1.23487E-02	3.8154E-03	1.0312E-04	
												Eu-154	5.32481E-03	1.6452E-03	4.4465E-05	
												Eu-155	1.16480E-03	3.5989E-04	9.7268E-06	
												H-3	2.25078E+02	6.9542E+01	1.8795E+00	
												Na-22	7.65441E-08	2.3650E-08	6.3919E-10	
												Ni-63	2.24202E-01	6.9271E-02	1.8722E-03	
												Pm-147	8.13610E-06	2.5138E-06	6.7941E-08	
												Pu-238 [2.7834E-09 g]	5.66637E-03	1.7508E-03	4.7318E-05	
												Pu-239 [5.2845E-05 g]	3.92354E-01	1.2123E-01	3.2764E-03	
												Pu-240 [1.4245E-05 g]	3.92354E-01	1.2123E-01	3.2764E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-003

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [7.1744E-10 g]	8.59151E-03	2.6545E-03	7.1744E-05	
												Ra-226	7.02635E-01	2.1709E-01	5.8674E-03	
												Sr-90	9.02065E+00	2.7871E+00	7.5328E-02	
												Th-232 [3.2673E-02 kg]	4.30389E-01	1.3298E-01	3.5940E-03	
												U-nat [1.0110E-03 kg]	4.84050E-02	1.4956E-02	4.0421E-04	
												Zn-65	8.75791E-20	2.7060E-20	7.3134E-22	
												Subtotal		7.6388E+01	2.0645E+00	
												Total		7.6388E+01	2.0645E+00	
												SNM [6.7094E-05 g]				
												Source [3.3684E-02 kg]				
217/R5-0022-01	19 Lift Liner	2.2937	8581.9682	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-01	3.8513E-02	1.0409E-03	AU
		81.0000	18920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95267E+00	9.3510E-01	2.5273E-02	
												Co-60	3.81595E-03	1.2085E-03	3.2662E-05	
												Cs-137	1.25113E+01	3.9623E+00	1.0709E-01	
												Eu-152	1.76409E-02	5.5866E-03	1.5099E-04	
												Eu-154	7.60687E-03	2.4090E-03	6.5109E-05	
												Eu-155	1.66400E-03	5.2699E-04	1.4243E-05	
												H-3	3.21540E+02	1.0183E+02	2.7521E+00	
												Na-22	1.09349E-07	3.4630E-08	9.3594E-10	
												Ni-63	3.20289E-01	1.0143E-01	2.7414E-03	
												Pm-147	1.16230E-05	3.6809E-06	9.9484E-08	
												Pu-238 [4.0756E-09 g]	8.09481E-03	2.5635E-03	6.9285E-05	
												Pu-239 [7.7379E-05 g]	5.60506E-01	1.7751E-01	4.7975E-03	
												Pu-240 [2.0859E-05 g]	5.60506E-01	1.7751E-01	4.7975E-03	
												Pu-241 [1.0505E-09 g]	1.22736E-02	3.8869E-03	1.0505E-04	
												Ra-226	7.02635E-01	2.2252E-01	6.0140E-03	
												Sr-90	1.28866E+01	4.0811E+00	1.1030E-01	
												Th-232 [3.3489E-02 kg]	4.30389E-01	1.3630E-01	3.6838E-03	
												U-nat [1.4803E-03 kg]	6.91499E-02	2.1899E-02	5.9187E-04	
												Zn-65	1.25113E-19	3.9623E-20	1.0709E-21	
												Subtotal		1.1170E+02	3.0189E+00	
												Total		1.1170E+02	3.0189E+00	
												SNM [9.8243E-05 g]				
												Source [3.4969E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9514-003**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
220/R5-0022-01	19 Lift Liner	2.2937 81.0000	8173.7350 18020.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	1.33771E-01 3.24793E+00 4.19754E-03 1.37624E+01 1.94050E-02	4.0345E-02 9.7954E-01 1.2659E-03 4.1507E+00 5.8523E-03	1.0904E-03 2.6474E-02 3.4214E-05 1.1218E-01 1.5817E-04	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	8.36756E-03 1.83040E-03 3.53694E+02 1.20284E-07 3.52318E-01	2.5235E-03 5.5204E-04 1.0667E+02 3.6276E-08 1.0626E-01	6.8204E-05 1.4920E-05 2.8830E+00 9.8043E-10 2.8718E-03	
												Pm-147 Pu-238 [4.2694E-09 g] Pu-239 [8.1058E-05 g] Pu-240 [2.1850E-05 g]	1.27853E-05 8.90429E-03 6.16557E-01 6.16557E-01	3.8558E-06 2.6854E-03 1.8595E-01 1.8595E-01	1.0421E-07 7.2579E-05 5.0256E-03 5.0256E-03	
												Pu-241 [1.1005E-09 g] Ra-226 Sr-90 Th-232 [3.1892E-02 kg]	1.35009E-02 7.02635E-01 1.41753E+01 4.30389E-01	4.0719E-03 2.1191E-01 4.2750E+00 1.2980E-01	1.1005E-04 5.7272E-03 1.1554E-01 3.5081E-03	
												U-nat [1.5507E-03 kg] Zn-65 Subtotal Total	7.60649E-02 1.37624E-19	2.2940E-02 4.1507E-20 1.1698E+02 1.1698E+02	6.2001E-04 1.1218E-21 3.1615E+00 3.1615E+00	
												SNM [1.0291E-04 g] Source [3.3442E-02 kg]				
224/R5-0022-01	19 Lift Liner	2.2937 81.0000	7928.7952 17480.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	2.04184E-04 4.96448E-03 6.39578E-06 2.10190E-02 2.95267E-05	5.9729E-05 1.4523E-03 1.8709E-06 6.1487E-03 8.6373E-06	1.6143E-06 3.9250E-05 5.0565E-08 1.6618E-04 2.3344E-07	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.28116E-05 2.78251E-06 5.39487E-01 1.83165E-10 5.36485E-04	3.7477E-06 8.1396E-07 1.5781E-01 5.3580E-11 1.5694E-04	1.0129E-07 2.1999E-08 4.2652E-03 1.4481E-12 4.2415E-06	
												Pm-147 Pu-238 [6.3306E-12 g] Pu-239 [6.8794E-08 g] Pu-240 [1.8545E-08 g]	1.95176E-08 1.36123E-05 5.39487E-04 5.39487E-04	5.7095E-09 3.9819E-06 1.5781E-04 1.5781E-04	1.5431E-10 1.0762E-07 4.2652E-06 4.2652E-06	

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9514-003

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.6301E-12 g]	2.06186E-05	6.0314E-06	1.6301E-07	
												Ra-226	7.02634E-01	2.0554E-01	5.5551E-03	
												Sr-90	2.15194E-02	6.2948E-03	1.7013E-04	
												Th-232 [3.0934E-02 kg]	4.30389E-01	1.2590E-01	3.4027E-03	
												U-nat [2.2925E-06 kg]	1.16005E-04	3.3934E-05	9.1714E-07	
												Zn-65	2.10190E-22	6.1487E-23	1.6618E-24	
												Subtotal		5.0374E-01	1.3615E-02	
												Total		5.0374E-01	1.3615E-02	
												SNM [8.7346E-08 g]				
												Source [3.0936E-02 kg]				
Shipment Totals		27.5244	99255.0889									SNM [8.6232E-04 g]		9.8151E+02	2.6527E+01	
		972.0000	218820.0000									Source [4.0027E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-003
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-001, WP-9514-002, WP-9514-003, WP-9514-004**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER **CIGX 804428**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE *(Specify)* **G**

WCS Generator Certification ID **NA**

SHIPMENT NUMBER

CONTACT **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code) **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER **NA**

SHIPPING DATE **08/29/2021**

CONTACT **James P. Nunes**

TELEPHONE (Include Area Code) **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 9 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9514-004

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT **Keri Gonzalez**

TELEPHONE (Include Area Code) **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt* Renee Cowan

DATE 9-21-21

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

AUTHORIZED SIGNATURE ORTEGA.MICHAEL.12583448 27 Digitally signed by ORTEGA.MICHAEL.12583448 Date: 2021.08.26 15:26:32 -04'00'

TITLE Manifester

DATE 26 Aug 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.7718E+02**	**(4.7887E+00)**	**NA**	**18780 LBS; 81 FT3**	**181**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.8120E-01**	**(1.3005E-02)**	**NA**	**16700 LBS; 81 FT3**	**184**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-004

Page 2 of 4

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5953E+01**	**(1.7825E+00)**	**NA**	**18580 LBS; 81 FT3**	**185**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.3960E+01**	**(1.7286E+00)**	**NA**	**18020 LBS; 81 FT3**	**195**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.0744E+02**	**(2.9037E+00)**	**NA**	**18200 LBS; 81 FT3**	**201**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.6398E+01**	**(2.3350E+00)**	**NA**	**18280 LBS; 81 FT3**	**202**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.0786E+01**	**(2.9153E-01)**	**NA**	**17760 LBS; 81 FT3**	**207**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-004

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.0786E+01**	**(2.9153E-01)**	**NA**	**17760 LBS; 81 FT3**	**207**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.1612E+01**	**(2.4760E+00)**	**NA**	**17240 LBS; 81 FT3**	**208**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.0329E+01**	**(1.6306E+00)**	**NA**	**17000 LBS; 81 FT3**	**209**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.7453E+02**	**(4.7170E+00)**	**NA**	**18500 LBS; 81 FT3**	**211**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.8004E-01**	**(1.5677E-02)**	**NA**	**20120 LBS; 81 FT3**	**218**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-004

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**5.8004E-01**	**(1.5677E-02)**	**NA**	**20120 LBS; 81 FT3**	**218**
Material not regulated by USDOT	**NA**	**NA**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.0948E+01**	**(2.4581E+00)**	**NA**	**19240 LBS; 81 FT3**	**219**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 27.5244 / ft3 972.0000	kg 98801.4969 / lb 217820.0000	NP	NP	8.1698E-04 12 Containers	8.1698E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	9.3020E+02	8.4695E+02	7.7773E+00	NP	NP	(kg)	3.9888E-01
mCi	2.5140E+01	2.2890E+01	2.1020E-01	NP	NP	(lb)	8.7939E-01

2. MANIFEST NUMBER: **WP-9514-004**

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CIGX 804428**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
181/R5-0022-01	19 Lift Liner	2.2937	8518.4653	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01	6.1165E-02	1.6531E-03	AU
		81.0000	18780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.72427E+00	1.4850E+00	4.0136E-02	
												Co-60	6.10551E-03	1.9192E-03	5.1871E-05	
												Cs-137	2.00181E+01	6.2926E+00	1.7007E-01	
												Eu-152	2.82255E-02	8.8726E-03	2.3980E-04	
												Eu-154	1.21710E-02	3.8258E-03	1.0340E-04	
												Eu-155	2.66240E-03	8.3690E-04	2.2619E-05	
												H-3	5.14465E+02	1.6172E+02	4.3708E+00	
												Na-22	1.74958E-07	5.4997E-08	1.4864E-09	
												Ni-63	5.12463E-01	1.6109E-01	4.3538E-03	
												Pm-147	1.85968E-05	5.8456E-06	1.5799E-07	
												Pu-238 [6.4726E-09 g]	1.29517E-02	4.0711E-03	1.1003E-04	
												Pu-239 [1.2289E-04 g]	8.96810E-01	2.8191E-01	7.6191E-03	
												Pu-240 [3.3126E-05 g]	8.96810E-01	2.8191E-01	7.6191E-03	
												Pu-241 [1.6684E-09 g]	1.96377E-02	6.1731E-03	1.6684E-04	
												Ra-226	7.02635E-01	2.2087E-01	5.9694E-03	
												Sr-90	2.06186E+01	6.4813E+00	1.7517E-01	
												Th-232 [3.3241E-02 kg]	4.30389E-01	1.3529E-01	3.6565E-03	
												U-nat [2.3510E-03 kg]	1.10640E-01	3.4779E-02	9.3997E-04	
												Zn-65	2.00181E-19	6.2926E-20	1.7007E-21	
												Subtotal		1.7718E+02	4.7887E+00	
												Total		1.7718E+02	4.7887E+00	
												SNM [1.5602E-04 g]				
												Source [3.5592E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
184/R5-0022-01	19 Lift Liner	2.2937	7574.9931	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.04184E-04	5.7058E-05	1.5421E-06	AU
		81.0000	16700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.96448E-03	1.3872E-03	3.7493E-05	
												Co-60	6.39578E-06	1.7872E-06	4.8303E-08	
												Cs-137	2.10190E-02	5.8734E-03	1.5874E-04	
												Eu-152	2.95267E-05	8.2506E-06	2.2299E-07	
												Eu-154	1.28116E-05	3.5800E-06	9.6756E-08	
												Eu-155	2.78251E-06	7.7752E-07	2.1014E-08	
												H-3	5.39487E-01	1.5075E-01	4.0744E-03	
												Na-22	1.83165E-10	5.1182E-11	1.3833E-12	
												Ni-63	5.36485E-04	1.4991E-04	4.0517E-06	
												Pm-147	1.95176E-08	5.4538E-09	1.4740E-10	
												Pu-238 [6.0473E-12 g]	1.36123E-05	3.8036E-06	1.0280E-07	
												Pu-239 [6.5715E-08 g]	5.39487E-04	1.5075E-04	4.0744E-06	
												Pu-240 [1.7715E-08 g]	5.39487E-04	1.5075E-04	4.0744E-06	
												Pu-241 [1.5572E-12 g]	2.06186E-05	5.7616E-06	1.5572E-07	
												Ra-226	7.02635E-01	1.9634E-01	5.3065E-03	
												Sr-90	2.15194E-02	6.0132E-03	1.6252E-04	
												Th-232 [2.9549E-02 kg]	4.30389E-01	1.2026E-01	3.2504E-03	
												U-nat [2.1899E-06 kg]	1.16005E-04	3.2416E-05	8.7610E-07	
												Zn-65	2.10190E-22	5.8734E-23	1.5874E-24	
												Subtotal		4.8119E-01	1.3005E-02	
												Total		4.8119E-01	1.3005E-02	
												SNM [8.3438E-08 g]				
												Source [2.9551E-02 kg]				
185/R5-0022-01	19 Lift Liner	2.2937	8427.7468	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.2691E-02	6.1328E-04	AU
		81.0000	18580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.77160E+00	5.5093E-01	1.4890E-02	
												Co-60	2.28957E-03	7.1203E-04	1.9244E-05	
												Cs-137	7.50678E+00	2.3345E+00	6.3095E-02	
												Eu-152	1.05846E-02	3.2916E-03	8.8963E-05	
												Eu-154	4.56412E-03	1.4194E-03	3.8362E-05	
												Eu-155	9.98402E-04	3.1049E-04	8.3916E-06	
												H-3	1.92924E+02	5.9996E+01	1.6215E+00	
												Na-22	6.56092E-08	2.0404E-08	5.5145E-10	
												Ni-63	1.92174E-01	5.9762E-02	1.6152E-03	
												Pm-147	6.97380E-06	2.1688E-06	5.8615E-08	
												Pu-238 [2.4013E-09 g]	4.85689E-03	1.5104E-03	4.0822E-05	
												Pu-239 [4.5591E-05 g]	3.36304E-01	1.0458E-01	2.8266E-03	
												Pu-240 [1.2290E-05 g]	3.36304E-01	1.0458E-01	2.8266E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [6.1896E-10 g]	7.36415E-03	2.2902E-03	6.1896E-05
												Ra-226	7.02635E-01	2.1851E-01	5.9057E-03
												Sr-90	7.73198E+00	2.4045E+00	6.4987E-02
												Th-232 [3.2886E-02 kg]	4.30389E-01	1.3384E-01	3.6174E-03
												U-nat [8.7219E-04 kg]	4.14900E-02	1.2903E-02	3.4872E-04
												Zn-65	7.50678E-20	2.3345E-20	6.3095E-22
												Subtotal		6.5952E+01	1.7825E+00
												Total		6.5952E+01	1.7825E+00
												SNM [5.7884E-05 g]			
												Source [3.3758E-02 kg]			
195/R5-0022-01	19 Lift Liner	2.2937	8173.7350	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.2006E-02	5.9475E-04	AU
		81.0000	18020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.77160E+00	5.3428E-01	1.4440E-02	
												Co-60	2.28957E-03	6.9049E-04	1.8662E-05	
												Cs-137	7.50678E+00	2.2640E+00	6.1188E-02	
												Eu-152	1.05846E-02	3.1922E-03	8.6275E-05	
												Eu-154	4.56412E-03	1.3765E-03	3.7202E-05	
												Eu-155	9.98402E-04	3.0111E-04	8.1380E-06	
												H-3	1.92924E+02	5.8183E+01	1.5725E+00	
												Na-22	6.56092E-08	1.9787E-08	5.3478E-10	
												Ni-63	1.92174E-01	5.7957E-02	1.5664E-03	
												Pm-147	6.97380E-06	2.1032E-06	5.6844E-08	
												Pu-238 [2.3287E-09 g]	4.85689E-03	1.4648E-03	3.9589E-05	
												Pu-239 [4.4213E-05 g]	3.36304E-01	1.0142E-01	2.7412E-03	
												Pu-240 [1.1918E-05 g]	3.36304E-01	1.0142E-01	2.7412E-03	
												Pu-241 [6.0025E-10 g]	7.36415E-03	2.2209E-03	6.0025E-05	
												Ra-226	7.02635E-01	2.1191E-01	5.7272E-03	
												Sr-90	7.73198E+00	2.3319E+00	6.3023E-02	
												Th-232 [3.1892E-02 kg]	4.30389E-01	1.2980E-01	3.5081E-03	
												U-nat [8.4583E-04 kg]	4.14900E-02	1.2513E-02	3.3819E-04	
												Zn-65	7.50678E-20	2.2640E-20	6.1188E-22	
												Subtotal		6.3959E+01	1.7286E+00	
												Total		6.3959E+01	1.7286E+00	
												SNM [5.6134E-05 g]				
												Source [3.2738E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
201/R5-0022-01	19 Lift Liner	2.2937	8255.3817	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-01	3.7044E-02	1.0012E-03	AU
		81.0000	18200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95267E+00	8.9940E-01	2.4308E-02	
												Co-60	3.81595E-03	1.1624E-03	3.1415E-05	
												Cs-137	1.25113E+01	3.8110E+00	1.0300E-01	
												Eu-152	1.76409E-02	5.3735E-03	1.4523E-04	
												Eu-154	7.60687E-03	2.3171E-03	6.2625E-05	
												Eu-155	1.66400E-03	5.0686E-04	1.3699E-05	
												H-3	3.21540E+02	9.7943E+01	2.6471E+00	
												Na-22	1.09349E-07	3.3309E-08	9.0023E-10	
												Ni-63	3.20289E-01	9.7562E-02	2.6368E-03	
												Pm-147	1.16230E-05	3.5405E-06	9.5688E-08	
												Pu-238 [3.9201E-09 g]	8.09481E-03	2.4658E-03	6.6642E-05	
												Pu-239 [7.4427E-05 g]	5.60506E-01	1.7074E-01	4.6145E-03	
												Pu-240 [2.0063E-05 g]	5.60506E-01	1.7074E-01	4.6145E-03	
												Pu-241 [1.0104E-09 g]	1.22736E-02	3.7385E-03	1.0104E-04	
												Ra-226	7.02635E-01	2.1403E-01	5.7846E-03	
												Sr-90	1.28866E+01	3.9253E+00	1.0609E-01	
												Th-232 [3.2211E-02 kg]	4.30389E-01	1.3110E-01	3.5432E-03	
												U-nat [1.4238E-03 kg]	6.91499E-02	2.1064E-02	5.6929E-04	
												Zn-65	1.25113E-19	3.8110E-20	1.0300E-21	
												Subtotal		1.0744E+02	2.9037E+00	
												Total		1.0744E+02	2.9037E+00	
												SNM [9.4495E-05 g]				
												Source [3.3635E-02 kg]				
202/R5-0022-01	19 Lift Liner	2.2937	8291.6691	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	9.72879E-02	2.9765E-02	8.0447E-04	AU
		81.0000	18280.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.36213E+00	7.2268E-01	1.9532E-02	
												Co-60	3.05276E-03	9.3399E-04	2.5243E-05	
												Cs-137	1.00090E+01	3.0623E+00	8.2764E-02	
												Eu-152	1.41127E-02	4.3179E-03	1.1670E-04	
												Eu-154	6.08550E-03	1.8619E-03	5.0321E-05	
												Eu-155	1.33120E-03	4.0730E-04	1.1008E-05	
												H-3	2.57232E+02	7.8699E+01	2.1270E+00	
												Na-22	8.74790E-08	2.6764E-08	7.2336E-10	
												Ni-63	2.56231E-01	7.8396E-02	2.1188E-03	
												Pm-147	9.29840E-06	2.8449E-06	7.6888E-08	
												Pu-238 [3.1499E-09 g]	6.47585E-03	1.9813E-03	5.3548E-05	
												Pu-239 [5.9804E-05 g]	4.48405E-01	1.3719E-01	3.7078E-03	
												Pu-240 [1.6121E-05 g]	4.48405E-01	1.3719E-01	3.7078E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [8.1192E-10 g]	9.81887E-03	3.0041E-03	8.1192E-05
												Ra-226	7.02635E-01	2.1497E-01	5.8100E-03
												Sr-90	1.03093E+01	3.1541E+00	8.5247E-02
												Th-232 [3.2353E-02 kg]	4.30389E-01	1.3168E-01	3.5589E-03
												U-nat [1.1441E-03 kg]	5.53200E-02	1.6925E-02	4.5744E-04
												Zn-65	1.00090E-19	3.0623E-20	8.2764E-22
												Subtotal		8.6397E+01	2.3350E+00
												Total		8.6397E+01	2.3350E+00
												SNM [7.5929E-05 g]			
												Source [3.3497E-02 kg]			
207/R5-0022-01	19 Lift Liner	2.2937	8055.8010	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-02	3.6145E-03	9.7690E-05
												C-14	2.95267E-01	8.7760E-02	2.3719E-03
												Co-60	3.81595E-04	1.1342E-04	3.0654E-06
		81.0000	17760.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	1.25113E+00	3.7185E-01	1.0050E-02
												Eu-152	1.76409E-03	5.2433E-04	1.4171E-05
												Eu-154	7.60687E-04	2.2610E-04	6.1107E-06
												Eu-155	1.66400E-04	4.9458E-05	1.3367E-06
												H-3	3.21540E+01	9.5571E+00	2.5830E-01
												Na-22	1.09349E-08	3.2501E-09	8.7841E-11
												Ni-63	3.20289E-02	9.5197E-03	2.5729E-04
												Pm-147	1.16230E-06	3.4546E-07	9.3368E-09
												Pu-238 [3.8251E-10 g]	8.09481E-04	2.4060E-04	6.5026E-06
												Pu-239 [7.2622E-06 g]	5.60506E-02	1.6660E-02	4.5026E-04
												Pu-240 [1.9577E-06 g]	5.60506E-02	1.6660E-02	4.5026E-04
												Pu-241 [9.8595E-11 g]	1.22736E-03	3.6480E-04	9.8595E-06
												Ra-226	7.02635E-01	2.0884E-01	5.6443E-03
												Sr-90	1.28866E+00	3.8302E-01	1.0352E-02
												Th-232 [3.1430E-02 kg]	4.30389E-01	1.2792E-01	3.4573E-03
												U-nat [1.3893E-04 kg]	6.91499E-03	2.0553E-03	5.5549E-05
												Zn-65	1.25113E-20	3.7185E-21	1.0050E-22
												Subtotal		1.0787E+01	2.9153E-01
												Total		1.0787E+01	2.9153E-01
												SNM [9.2204E-06 g]			
												Source [3.1569E-02 kg]			

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
208/R5-0022-01	19 Lift Liner	2.2937	7819.9330	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.1576E-02	8.5340E-04	AU
		81.0000	17240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	7.6664E-01	2.0720E-02	
												Co-60	3.43435E-03	9.9079E-04	2.6778E-05	
												Cs-137	1.12602E+01	3.2485E+00	8.7798E-02	
												Eu-152	1.58768E-02	4.5806E-03	1.2380E-04	
												Eu-154	6.84618E-03	1.9751E-03	5.3381E-05	
												Eu-155	1.49760E-03	4.3205E-04	1.1677E-05	
												H-3	2.89386E+02	8.3487E+01	2.2564E+00	
												Na-22	9.84139E-08	2.8392E-08	7.6735E-10	
												Ni-63	2.88260E-01	8.3161E-02	2.2476E-03	
												Pm-147	1.04607E-05	3.0179E-06	8.1564E-08	
												Pu-238 [3.3415E-09 g]	7.28533E-03	2.1018E-03	5.6805E-05	
												Pu-239 [6.3441E-05 g]	5.04456E-01	1.4553E-01	3.9333E-03	
												Pu-240 [1.7102E-05 g]	5.04456E-01	1.4553E-01	3.9333E-03	
												Pu-241 [8.6130E-10 g]	1.10462E-02	3.1868E-03	8.6130E-05	
												Ra-226	7.02635E-01	2.0271E-01	5.4786E-03	
												Sr-90	1.15980E+01	3.3460E+00	9.0432E-02	
												Th-232 [3.0508E-02 kg]	4.30389E-01	1.2416E-01	3.3558E-03	
												U-nat [1.2137E-03 kg]	6.22349E-02	1.7955E-02	4.8526E-04	
												Zn-65	1.12602E-19	3.2485E-20	8.7798E-22	
												Subtotal		9.1612E+01	2.4760E+00	
												Total		9.1612E+01	2.4760E+00	
												SNM [8.0547E-05 g]				
												Source [3.1721E-02 kg]				
209/R5-0022-01	19 Lift Liner	2.2937	7711.0708	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.0757E-02	5.6099E-04	AU
		81.0000	17000.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.77160E+00	5.0398E-01	1.3621E-02	
												Co-60	2.28957E-03	6.5131E-04	1.7603E-05	
												Cs-137	7.50678E+00	2.1355E+00	5.7715E-02	
												Eu-152	1.05846E-02	3.0110E-03	8.1378E-05	
												Eu-154	4.56412E-03	1.2984E-03	3.5091E-05	
												Eu-155	9.98402E-04	2.8402E-04	7.6761E-06	
												H-3	1.92924E+02	5.4882E+01	1.4833E+00	
												Na-22	6.56092E-08	1.8664E-08	5.0443E-10	
												Ni-63	1.92174E-01	5.4668E-02	1.4775E-03	
												Pm-147	6.97380E-06	1.9838E-06	5.3617E-08	
												Pu-238 [2.1966E-09 g]	4.85689E-03	1.3816E-03	3.7341E-05	
												Pu-239 [4.1704E-05 g]	3.36304E-01	9.5667E-02	2.5856E-03	
												Pu-240 [1.1242E-05 g]	3.36304E-01	9.5667E-02	2.5856E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.6618E-10 g]	7.36415E-03	2.0949E-03	5.6618E-05	
												Ra-226	7.02635E-01	1.9988E-01	5.4021E-03	
												Sr-90	7.73198E+00	2.1995E+00	5.9446E-02	
												Th-232 [3.0082E-02 kg]	4.30389E-01	1.2243E-01	3.3090E-03	
												U-nat [7.9782E-04 kg]	4.14900E-02	1.1803E-02	3.1899E-04	
												Zn-65	7.50678E-20	2.1355E-20	5.7715E-22	
												Subtotal		6.0331E+01	1.6306E+00	
												Total		6.0331E+01	1.6306E+00	
												SNM [5.2948E-05 g]				
												Source [3.0879E-02 kg]				
211/R5-0022-01	19 Lift Liner	2.2937	8391.4594	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01	6.0251E-02	1.6284E-03	AU
		81.0000	18500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.72427E+00	1.4628E+00	3.9536E-02	
												Co-60	6.10551E-03	1.8905E-03	5.1095E-05	
												Cs-137	2.00181E+01	6.1986E+00	1.6753E-01	
												Eu-152	2.82255E-02	8.7398E-03	2.3621E-04	
												Eu-154	1.21710E-02	3.7688E-03	1.0186E-04	
												Eu-155	2.66240E-03	8.2440E-04	2.2281E-05	
												H-3	5.14465E+02	1.5930E+02	4.3054E+00	
												Na-22	1.74958E-07	5.4175E-08	1.4642E-09	
												Ni-63	5.12463E-01	1.5868E-01	4.2887E-03	
												Pm-147	1.85968E-05	5.7583E-06	1.5563E-07	
												Pu-238 [6.3758E-09 g]	1.29517E-02	4.0104E-03	1.0839E-04	
												Pu-239 [1.2105E-04 g]	8.96810E-01	2.7769E-01	7.5052E-03	
												Pu-240 [3.2631E-05 g]	8.96810E-01	2.7769E-01	7.5052E-03	
												Pu-241 [1.6434E-09 g]	1.96377E-02	6.0806E-03	1.6434E-04	
												Ra-226	7.02635E-01	2.1757E-01	5.8802E-03	
												Sr-90	2.06186E+01	6.3844E+00	1.7255E-01	
												Th-232 [3.2744E-02 kg]	4.30389E-01	1.3327E-01	3.6018E-03	
												U-nat [2.3158E-03 kg]	1.10640E-01	3.4259E-02	9.2592E-04	
												Zn-65	2.00181E-19	6.1986E-20	1.6753E-21	
												Subtotal		1.7453E+02	4.7170E+00	
												Total		1.7453E+02	4.7170E+00	
												SNM [1.5369E-04 g]				
												Source [3.5060E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-004

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
218/R5-0022-01	19 Lift Liner	2.2937	9126.2791	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.04184E-04	6.8776E-05	1.8588E-06	AU
		81.0000	20120.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.96448E-03	1.6722E-03	4.5194E-05	
												Co-60	6.39578E-06	2.1543E-06	5.8224E-08	
												Cs-137	2.10190E-02	7.0800E-03	1.9135E-04	
												Eu-152	2.95267E-05	9.9456E-06	2.6880E-07	
												Eu-154	1.28116E-05	4.3153E-06	1.1663E-07	
												Eu-155	2.78251E-06	9.3725E-07	2.5331E-08	
												H-3	5.39487E-01	1.8171E-01	4.9112E-03	
												Na-22	1.83165E-10	6.1698E-11	1.6675E-12	
												Ni-63	5.36484E-04	1.8070E-04	4.8839E-06	
												Pm-147	1.95176E-08	6.5742E-09	1.7768E-10	
												Pu-238 [7.2894E-12 g]	1.36123E-05	4.5850E-06	1.2392E-07	
												Pu-239 [7.9214E-08 g]	5.39487E-04	1.8171E-04	4.9112E-06	
												Pu-240 [2.1353E-08 g]	5.39487E-04	1.8171E-04	4.9112E-06	
												Pu-241 [1.8770E-12 g]	2.06186E-05	6.9449E-06	1.8770E-07	
												Ra-226	7.02635E-01	2.3667E-01	6.3965E-03	
												Sr-90	2.15194E-02	7.2483E-03	1.9590E-04	
												Th-232 [3.5619E-02 kg]	4.30389E-01	1.4497E-01	3.9181E-03	
												U-nat [2.6397E-06 kg]	1.16005E-04	3.9076E-05	1.0561E-06	
												Zn-65	2.10190E-22	7.0800E-23	1.9135E-24	
												Subtotal		5.8003E-01	1.5677E-02	
												Total		5.8003E-01	1.5677E-02	
												SNM [1.0058E-07 g]				
												Source [3.5621E-02 kg]				
219/R5-0022-01	19 Lift Liner	2.2937	8727.1178	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	9.72879E-02	3.1333E-02	8.4683E-04	AU
		81.0000	19240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.36213E+00	7.6076E-01	2.0561E-02	
												Co-60	3.05276E-03	9.8316E-04	2.6572E-05	
												Cs-137	1.00090E+01	3.2236E+00	8.7123E-02	
												Eu-152	1.41127E-02	4.5451E-03	1.2284E-04	
												Eu-154	6.08550E-03	1.9599E-03	5.2971E-05	
												Eu-155	1.33120E-03	4.2872E-04	1.1587E-05	
												H-3	2.57232E+02	8.2847E+01	2.2391E+00	
												Na-22	8.74790E-08	2.8174E-08	7.6145E-10	
												Ni-63	2.56231E-01	8.2521E-02	2.2303E-03	
												Pm-147	9.29840E-06	2.9947E-06	8.0937E-08	
												Pu-238 [3.3158E-09 g]	6.47585E-03	2.0856E-03	5.6368E-05	
												Pu-239 [6.2953E-05 g]	4.48405E-01	1.4441E-01	3.9031E-03	
												Pu-240 [1.6970E-05 g]	4.48405E-01	1.4441E-01	3.9031E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER
WP-9514-004

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.5467E-10 g]	9.81887E-03	3.1623E-03	8.5467E-05	
												Ra-226	7.02635E-01	2.2629E-01	6.1160E-03	
												Sr-90	1.03093E+01	3.3202E+00	8.9736E-02	
												Th-232 [3.4057E-02 kg]	4.30389E-01	1.3861E-01	3.7463E-03	
												U-nat [1.2043E-03 kg]	5.53200E-02	1.7817E-02	4.8153E-04	
												Zn-65	1.00090E-19	3.2236E-20	8.7123E-22	
												Subtotal		9.0950E+01	2.4581E+00	
												Total		9.0950E+01	2.4581E+00	
												SNM [7.9927E-05 g]				
												Source [3.5261E-02 kg]				
Shipment Totals		27.5244	99073.6521									SNM [8.1698E-04 g]		9.3020E+02	2.5140E+01	
		972.0000	218420.0000									Source [3.9888E-01 kg]				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-004
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: September 22, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:
WCS Profile #: **WP-9514**
Manifest(s): **WP-9514-005**
Received On: **September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 21, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER **CHUX 320**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID **NA**
SHIPMENT NUMBER
☑ GENERATOR TYPE *(Specify)* **G**

CONTACT **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code) **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER **NA**
SHIPPING DATE **08/29/2021**

CONTACT **James P. Nunes**
TELEPHONE (Include Area Code) **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 9 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9514-005

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT **Keri Gonzalez**
TELEPHONE (Include Area Code) **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE 9/2/21

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

AUTHORIZED SIGNATURE ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2021.08.26 15:28:18 -04'00'
TITLE Manifester
DATE 26 Aug 2021

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	16. mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.7581E+01**	**(2.6373E+00)**	**NA**	**18360 LBS; 81 FT3**	**182**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.7062E+01**	**(2.3530E+00)**	**NA**	**18420 LBS; 81 FT3**	**183**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.0767E+02**	**(2.9102E+00)**	**NA**	**18240 LBS; 81 FT3**	**186**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.6469E+02**	**(4.4511E+00)**	**NA**	**17460 LBS; 81 FT3**	**190**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.7151E+02**	**(4.6352E+00)**	**NA**	**18180 LBS; 81 FT3**	**191**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.9004E+02**	**(5.1363E+00)**	**NA**	**20140 LBS; 81 FT3**	**192**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.8220E+01**	**(2.6546E+00)**	**NA**	**18480 LBS; 81 FT3**	**193**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**9.8220E+01**	**(2.6546E+00)**	**NA**	**18480 LBS; 81 FT3**	**193**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.4086E+01**	**(1.1915E+00)**	**NA**	**18580 LBS; 81 FT3**	**196**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.5209E+02**	**(4.1107E+00)**	**NA**	**18420 LBS; 81 FT3**	**198**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2741E+02**	**(3.4437E+00)**	**NA**	**16620 LBS; 81 FT3**	**199**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.2785E+01**	**(2.5077E+00)**	**NA**	**17460 LBS; 81 FT3**	**203**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-005

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-Nat**	**Zn-65**	**9.2785E+01**	**(2.5077E+00)**	**NA**	**17460 LBS; 81 FT3**	**203**
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**9.8241E+00**	**(2.6551E-01)**	**NA**	**16180 LBS; 81 FT3**	**205**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3	27.5244	kg	98529.3412	NP	NP	1.1814E-03	1.1814E-03
	ft3	972.0000	lb	217220.0000			12 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.3430E+03	1.2245E+03	1.1245E+01	NP	NP	(kg)	4.0104E-01
mCi	3.6296E+01	3.3095E+01	3.0390E-01	NP	NP	(lb)	8.8414E-01

2. MANIFEST NUMBER **WP-9514-005**

3. PAGE 1 OF 9 PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CHUX 320**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
182/R5-0022-01	19 Lift Liner	2.2937	8327.9565	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.3633E-02	9.0900E-04	AU
		81.0000	18360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.1659E-01	2.2070E-02	
												Co-60	3.43435E-03	1.0554E-03	2.8523E-05	
												Cs-137	1.12602E+01	3.4602E+00	9.3518E-02	
												Eu-152	1.58768E-02	4.8788E-03	1.3186E-04	
												Eu-154	6.84618E-03	2.1038E-03	5.6859E-05	
												Eu-155	1.49760E-03	4.6021E-04	1.2438E-05	
												H-3	2.89386E+02	8.8926E+01	2.4034E+00	
												Na-22	9.84139E-08	3.0242E-08	8.1735E-10	
												Ni-63	2.88260E-01	8.8582E-02	2.3941E-03	
												Pm-147	1.04607E-05	3.2145E-06	8.6879E-08	
												Pu-238 [3.5592E-09 g]	7.28533E-03	2.2387E-03	6.0506E-05	
												Pu-239 [6.7575E-05 g]	5.04456E-01	1.5502E-01	4.1896E-03	
												Pu-240 [1.8216E-05 g]	5.04456E-01	1.5502E-01	4.1896E-03	
												Pu-241 [9.1742E-10 g]	1.10462E-02	3.3944E-03	9.1741E-05	
												Ra-226	7.02634E-01	2.1591E-01	5.8355E-03	
												Sr-90	1.15980E+01	3.5640E+00	9.6324E-02	
												Th-232 [3.2495E-02 kg]	4.30389E-01	1.3226E-01	3.5745E-03	
												U-Nat [1.2928E-03 kg]	6.22350E-02	(1.9125E-02)	(5.1688E-04)	
												Zn-65	1.12602E-19	3.4602E-20	9.3518E-22	
												Subtotal		9.7561E+01	2.6368E+00	
												Total		9.7561E+01	2.6368E+00	
												SNM Source [8.5795E-05 g] [3.3788E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 2 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
183/R5-0022-01	19 Lift Liner	2.2937	8355.1720	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	9.72879E-02	2.9994E-02	8.1065E-04	AU
		81.0000	18420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.36213E+00	7.2823E-01	1.9682E-02	
												Co-60	3.05276E-03	9.4117E-04	2.5437E-05	
												Cs-137	1.00090E+01	3.0858E+00	8.3400E-02	
												Eu-152	1.41127E-02	4.3508E-03	1.1759E-04	
												Eu-154	6.08550E-03	1.8762E-03	5.0707E-05	
												Eu-155	1.33120E-03	4.1040E-04	1.1092E-05	
												H-3	2.57232E+02	7.9306E+01	2.1434E+00	
												Na-22	8.74790E-08	2.6970E-08	7.2891E-10	
												Ni-63	2.56231E-01	7.8995E-02	2.1350E-03	
												Pm-147	9.29840E-06	2.8667E-06	7.7478E-08	
												Pu-238 [3.1741E-09 g]	6.47585E-03	1.9965E-03	5.3960E-05	
												Pu-239 [6.0263E-05 g]	4.48405E-01	1.3824E-01	3.7363E-03	
												Pu-240 [1.6245E-05 g]	4.48405E-01	1.3824E-01	3.7363E-03	
												Pu-241 [8.1815E-10 g]	9.81887E-03	3.0272E-03	8.1815E-05	
												Ra-226	7.02635E-01	2.1662E-01	5.8547E-03	
												Sr-90	1.03093E+01	3.1784E+00	8.5902E-02	
												Th-232 [3.2602E-02 kg]	4.30389E-01	1.3269E-01	3.5862E-03	
												U-Nat [1.1529E-03 kg]	5.53200E-02	1.7055E-02	4.6095E-04	
												Zn-65	1.00090E-19	3.0858E-20	8.3400E-22	
												Subtotal		8.7063E+01	2.3530E+00	
												Total		8.7063E+01	2.3530E+00	
												SNM [7.6512E-05 g]				
												Source [3.3755E-02 kg]				
186/R5-0022-01	19 Lift Liner	2.2937	8273.5254	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-01	3.7126E-02	1.0034E-03	AU
		81.0000	18240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95267E+00	9.0139E-01	2.4362E-02	
												Co-60	3.81595E-03	1.1649E-03	3.1485E-05	
												Cs-137	1.25113E+01	3.8195E+00	1.0323E-01	
												Eu-152	1.76409E-02	5.3854E-03	1.4555E-04	
												Eu-154	7.60687E-03	2.3222E-03	6.2763E-05	
												Eu-155	1.66400E-03	5.0797E-04	1.3729E-05	
												H-3	3.21540E+02	9.8161E+01	2.6530E+00	
												Na-22	1.09349E-07	3.3382E-08	9.0221E-10	
												Ni-63	3.20289E-01	9.7776E-02	2.6426E-03	
												Pm-147	1.16230E-05	3.5483E-06	9.5899E-08	
												Pu-238 [3.9288E-09 g]	8.09481E-03	2.4712E-03	6.6789E-05	
												Pu-239 [7.4591E-05 g]	5.60506E-01	1.7111E-01	4.6246E-03	
												Pu-240 [2.0107E-05 g]	5.60506E-01	1.7111E-01	4.6246E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 3 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [1.0127E-09 g]	1.22736E-02 / 3.7470E-03 / 1.0127E-04
												Ra-226	7.02635E-01 / 2.1450E-01 / 5.7973E-03
												Sr-90	1.28866E+01 / 3.9342E+00 / 1.0633E-01
												Th-232 [3.2282E-02 kg]	4.30389E-01 / 1.3139E-01 / 3.5511E-03
												U-Nat [1.4300E-03 kg]	6.91499E-02 / 2.1110E-02 / 5.7054E-04
												Zn-65	1.25113E-19 / 3.8195E-20 / 1.0323E-21
												Subtotal	1.0768E+02 / 2.9102E+00
												Total	1.0768E+02 / 2.9102E+00
												SNM [9.4703E-05 g]	
												Source [3.3712E-02 kg]	
190/R5-0022-01	19 Lift Liner	2.2937	7919.7233	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01 / 5.6854E-02 / 1.5366E-03
												C-14	4.72427E+00 / 1.3804E+00 / 3.7308E-02
												Co-60	6.10551E-03 / 1.7840E-03 / 4.8215E-05
		81.0000	17460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.00181E+01 / 5.8490E+00 / 1.5808E-01
												Eu-152	2.82255E-02 / 8.2473E-03 / 2.2290E-04
												Eu-154	1.21710E-02 / 3.5562E-03 / 9.6114E-05
												Eu-155	2.66240E-03 / 7.7793E-04 / 2.1025E-05
												H-3	5.14465E+02 / 1.5032E+02 / 4.0627E+00
												Na-22	1.74958E-07 / 5.1119E-08 / 1.3816E-09
												Ni-63	5.12463E-01 / 1.4974E-01 / 4.0469E-03
												Pm-147	1.85968E-05 / 5.4338E-06 / 1.4686E-07
												Pu-238 [6.0165E-09 g]	1.29517E-02 / 3.7844E-03 / 1.0228E-04
												Pu-239 [1.1423E-04 g]	8.96810E-01 / 2.6204E-01 / 7.0821E-03
												Pu-240 [3.0792E-05 g]	8.96810E-01 / 2.6204E-01 / 7.0821E-03
												Pu-241 [1.5508E-09 g]	1.96377E-02 / 5.7380E-03 / 1.5508E-04
												Ra-226	7.02635E-01 / 2.0530E-01 / 5.5487E-03
												Sr-90	2.06186E+01 / 6.0247E+00 / 1.6283E-01
												Th-232 [3.0898E-02 kg]	4.30389E-01 / 1.2576E-01 / 3.3988E-03
												U-Nat [2.1853E-03 kg]	1.10640E-01 / 3.2328E-02 / 8.7372E-04
												Zn-65	2.00181E-19 / 5.8490E-20 / 1.5808E-21
												Subtotal	1.6469E+02 / 4.4511E+00
												Total	1.6469E+02 / 4.4511E+00
												SNM [1.4503E-04 g]	
												Source [3.3083E-02 kg]	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 4 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
191/R5-0022-01	19 Lift Liner	2.2937	8246.3098	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01	5.9204E-02	1.6001E-03	AU
		81.0000	18180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.72427E+00	1.4375E+00	3.8850E-02	
												Co-60	6.10551E-03	1.8577E-03	5.0209E-05	
												Cs-137	2.00181E+01	6.0909E+00	1.6462E-01	
												Eu-152	2.82255E-02	8.5881E-03	2.3211E-04	
												Eu-154	1.21710E-02	3.7033E-03	1.0009E-04	
												Eu-155	2.66240E-03	8.1012E-04	2.1895E-05	
												H-3	5.14465E+02	1.5654E+02	4.2307E+00	
												Na-22	1.74958E-07	5.3236E-08	1.4388E-09	
												Ni-63	5.12463E-01	1.5593E-01	4.2143E-03	
												Pm-147	1.85968E-05	5.6584E-06	1.5293E-07	
												Pu-238 [6.2653E-09 g]	1.29517E-02	3.9409E-03	1.0651E-04	
												Pu-239 [1.1895E-04 g]	8.96810E-01	2.7288E-01	7.3750E-03	
												Pu-240 [3.2065E-05 g]	8.96810E-01	2.7288E-01	7.3750E-03	
												Pu-241 [1.6149E-09 g]	1.96377E-02	5.9751E-03	1.6149E-04	
												Ra-226	7.02635E-01	2.1379E-01	5.7782E-03	
												Sr-90	2.06186E+01	6.2737E+00	1.6956E-01	
												Th-232 [3.2176E-02 kg]	4.30389E-01	1.3095E-01	3.5393E-03	
												U-Nat [2.2756E-03 kg]	1.10640E-01	3.3665E-02	9.0986E-04	
												Zn-65	2.00181E-19	6.0909E-20	1.6462E-21	
												Subtotal		1.7151E+02	4.6352E+00	
												Total		1.7151E+02	4.6352E+00	
												SNM [1.5103E-04 g]				
												Source [3.4451E-02 kg]				
192/R5-0022-01	19 Lift Liner	2.2937	9135.3509	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01	6.5605E-02	1.7731E-03	AU
		81.0000	20140.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.72427E+00	1.5929E+00	4.3050E-02	
												Co-60	6.10551E-03	2.0586E-03	5.5637E-05	
												Cs-137	2.00181E+01	6.7495E+00	1.8242E-01	
												Eu-152	2.82255E-02	9.5168E-03	2.5721E-04	
												Eu-154	1.21710E-02	4.1037E-03	1.1091E-04	
												Eu-155	2.66240E-03	8.9766E-04	2.4261E-05	
												H-3	5.14465E+02	1.7346E+02	4.6881E+00	
												Na-22	1.74958E-07	5.8989E-08	1.5943E-09	
												Ni-63	5.12463E-01	1.7279E-01	4.6699E-03	
												Pm-147	1.85968E-05	6.2704E-06	1.6947E-07	
												Pu-238 [6.9426E-09 g]	1.29517E-02	4.3667E-03	1.1802E-04	
												Pu-239 [1.3181E-04 g]	8.96810E-01	3.0238E-01	8.1723E-03	
												Pu-240 [3.5532E-05 g]	8.96810E-01	3.0238E-01	8.1723E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 5 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.7895E-09 g]	1.96377E-02	6.6212E-03	1.7895E-04	
												Ra-226	7.02635E-01	2.3690E-01	6.4028E-03	
												Sr-90	2.06186E+01	6.9519E+00	1.8789E-01	
												Th-232 [3.5654E-02 kg]	4.30389E-01	1.4511E-01	3.9220E-03	
												U-Nat [2.5217E-03 kg]	1.10640E-01	3.7303E-02	1.0082E-03	
												Zn-65	2.00181E-19	6.7495E-20	1.8242E-21	
												Subtotal		1.9004E+02	5.1363E+00	
												Total		1.9004E+02	5.1363E+00	
												SNM [1.6735E-04 g]				
												Source [3.8176E-02 kg]				
193/R5-0022-01	19 Lift Liner	2.2937	8382.3876	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.3854E-02	9.1496E-04	AU
		81.0000	18480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.2196E-01	2.2215E-02	
												Co-60	3.43435E-03	1.0623E-03	2.8710E-05	
												Cs-137	1.12602E+01	3.4828E+00	9.4131E-02	
												Eu-152	1.58768E-02	4.9110E-03	1.3273E-04	
												Eu-154	6.84618E-03	2.1176E-03	5.7232E-05	
												Eu-155	1.49760E-03	4.6320E-04	1.2519E-05	
												H-3	2.89386E+02	8.9510E+01	2.4192E+00	
												Na-22	9.84139E-08	3.0440E-08	8.2271E-10	
												Ni-63	2.88260E-01	8.9163E-02	2.4098E-03	
												Pm-147	1.04607E-05	3.2356E-06	8.7448E-08	
												Pu-238 [3.5825E-09 g]	7.28533E-03	2.2534E-03	6.0903E-05	
												Pu-239 [6.8017E-05 g]	5.04456E-01	1.5603E-01	4.2171E-03	
												Pu-240 [1.8335E-05 g]	5.04456E-01	1.5603E-01	4.2171E-03	
												Pu-241 [9.2343E-10 g]	1.10462E-02	3.4167E-03	9.2343E-05	
												Ra-226	7.02634E-01	2.1733E-01	5.8738E-03	
												Sr-90	1.15980E+01	3.5873E+00	9.6955E-02	
												Th-232 [3.2708E-02 kg]	4.30389E-01	1.3312E-01	3.5979E-03	
												U-Nat [1.3012E-03 kg]	6.22350E-02	1.9250E-02	5.2026E-04	
												Zn-65	1.12602E-19	3.4828E-20	9.4131E-22	
												Subtotal		9.8221E+01	2.6546E+00	
												Total		9.8221E+01	2.6546E+00	
												SNM [8.6357E-05 g]				
												Source [3.4009E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 6 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
196/R5-0022-01	19 Lift Liner	2.2937	8427.7468	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.5127E-02	4.0885E-04	AU
												C-14	1.18107E+00	3.6730E-01	9.9269E-03	
												Co-60	1.52638E-03	4.7467E-04	1.2829E-05	
												Cs-137	5.00452E+00	1.5563E+00	4.2063E-02	
		81.0000	18580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	7.05637E-03	2.1944E-03	5.9309E-05	
												Eu-154	3.04275E-03	9.4624E-04	2.5574E-05	
												Eu-155	6.65601E-04	2.0699E-04	5.5944E-06	
												H-3	1.28616E+02	3.9997E+01	1.0810E+00	
												Na-22	4.37395E-08	1.3602E-08	3.6763E-10	
												Ni-63	1.28116E-01	3.9842E-02	1.0768E-03	
												Pm-147	4.64920E-06	1.4458E-06	3.9077E-08	
												Pu-238 [1.6009E-09 g]	3.23792E-03	1.0070E-03	2.7215E-05	
												Pu-239 [3.0394E-05 g]	2.24202E-01	6.9723E-02	1.8844E-03	
												Pu-240 [8.1932E-06 g]	2.24202E-01	6.9723E-02	1.8844E-03	
												Pu-241 [4.1264E-10 g]	4.90943E-03	1.5268E-03	4.1264E-05	
												Ra-226	7.02635E-01	2.1851E-01	5.9057E-03	
												Sr-90	5.15465E+00	1.6030E+00	4.3325E-02	
												Th-232 [3.2886E-02 kg]	4.30389E-01	1.3384E-01	3.6174E-03	
												U-Nat [5.8146E-04 kg]	2.76600E-02	8.6018E-03	2.3248E-04	
												Zn-65	5.00452E-20	1.5563E-20	4.2063E-22	
												Subtotal		4.4085E+01	1.1915E+00	
												Total		4.4085E+01	1.1915E+00	
												SNM [3.8589E-05 g]				
												Source [3.3467E-02 kg]				
198/R5-0022-01	19 Lift Liner	2.2937	8355.1720	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.70254E-01	5.2488E-02	1.4186E-03	AU
												C-14	4.13373E+00	1.2744E+00	3.4444E-02	
												Co-60	5.34232E-03	1.6471E-03	4.4515E-05	
												Cs-137	1.75158E+01	5.4002E+00	1.4595E-01	
		81.0000	18420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.46973E-02	7.6142E-03	2.0579E-04	
												Eu-154	1.06496E-02	3.2833E-03	8.8737E-05	
												Eu-155	2.32960E-03	7.1821E-04	1.9411E-05	
												H-3	4.50157E+02	1.3878E+02	3.7509E+00	
												Na-22	1.53088E-07	4.7197E-08	1.2756E-09	
												Ni-63	4.48405E-01	1.3824E-01	3.7363E-03	
												Pm-147	1.62722E-05	5.0168E-06	1.3559E-07	
												Pu-238 [5.5547E-09 g]	1.13327E-02	3.4939E-03	9.4429E-05	
												Pu-239 [1.0546E-04 g]	7.84709E-01	2.4192E-01	6.5385E-03	
												Pu-240 [2.8429E-05 g]	7.84709E-01	2.4192E-01	6.5385E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 7 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [1.4318E-09 g]	1.71830E-02	5.2977E-03	1.4318E-04	
												Ra-226	7.02635E-01	2.1662E-01	5.8547E-03	
												Sr-90	1.80413E+01	5.5622E+00	1.5033E-01	
												Th-232 [3.2602E-02 kg]	4.30389E-01	1.3269E-01	3.5862E-03	
												U-Nat [2.0175E-03 kg]	9.68099E-02	2.9846E-02	8.0666E-04	
												Zn-65	1.75158E-19	5.4002E-20	1.4595E-21	
												Subtotal		1.5209E+02	4.1107E+00	
												Total		1.5209E+02	4.1107E+00	
												SNM [1.3390E-04 g]				
												Source [3.4619E-02 kg]				
199/R5-0022-01	19 Lift Liner	2.2937	7538.7057	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.58093E-01	4.3963E-02	1.1882E-03	AU
		81.0000	16620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.83847E+00	1.0675E+00	2.8850E-02	
												Co-60	4.96073E-03	1.3795E-03	3.7285E-05	
												Cs-137	1.62647E+01	4.5233E+00	1.2225E-01	
												Eu-152	2.29332E-02	6.3777E-03	1.7237E-04	
												Eu-154	9.88893E-03	2.7500E-03	7.4325E-05	
												Eu-155	2.16320E-03	6.0158E-04	1.6259E-05	
												H-3	4.18002E+02	1.1624E+02	3.1417E+00	
												Na-22	1.42153E-07	3.9531E-08	1.0684E-09	
												Ni-63	4.16376E-01	1.1579E-01	3.1295E-03	
												Pm-147	1.51099E-05	4.2021E-06	1.1357E-07	
												Pu-238 [4.6525E-09 g]	1.05233E-02	2.9264E-03	7.9093E-05	
												Pu-239 [8.8332E-05 g]	7.28658E-01	2.0263E-01	5.4766E-03	
												Pu-240 [2.3811E-05 g]	7.28658E-01	2.0263E-01	5.4766E-03	
												Pu-241 [1.1992E-09 g]	1.59557E-02	4.4370E-03	1.1992E-04	
												Ra-226	7.02635E-01	1.9540E-01	5.2810E-03	
												Sr-90	1.67526E+01	4.6587E+00	1.2591E-01	
												Th-232 [2.9407E-02 kg]	4.30389E-01	1.1969E-01	3.2348E-03	
												U-Nat [1.6899E-03 kg]	8.98949E-02	2.4999E-02	6.7565E-04	
												Zn-65	1.62647E-19	4.5233E-20	1.2225E-21	
												Subtotal		1.2741E+02	3.4437E+00	
												Total		1.2741E+02	3.4437E+00	
												SNM [1.1215E-04 g]				
												Source [3.1097E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-005

3. PAGE 8 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
203/R5-0022-01	19 Lift Liner	2.2937	7919.7233	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.1980E-02	8.6432E-04	AU
		81.0000	17460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	7.7645E-01	2.0985E-02	
												Co-60	3.43435E-03	1.0035E-03	2.7121E-05	
												Cs-137	1.12602E+01	3.2901E+00	8.8922E-02	
												Eu-152	1.58768E-02	4.6391E-03	1.2538E-04	
												Eu-154	6.84618E-03	2.0004E-03	5.4064E-05	
												Eu-155	1.49760E-03	4.3760E-04	1.1827E-05	
												H-3	2.89386E+02	8.4556E+01	2.2853E+00	
												Na-22	9.84139E-08	2.8755E-08	7.7717E-10	
												Ni-63	2.88260E-01	8.4227E-02	2.2764E-03	
												Pm-147	1.04607E-05	3.0565E-06	8.2608E-08	
												Pu-238 [3.3843E-09 g]	7.28533E-03	2.1287E-03	5.7532E-05	
												Pu-239 [6.4253E-05 g]	5.04456E-01	1.4740E-01	3.9837E-03	
												Pu-240 [1.7320E-05 g]	5.04456E-01	1.4740E-01	3.9837E-03	
												Pu-241 [8.7232E-10 g]	1.10462E-02	3.2276E-03	8.7232E-05	
												Ra-226	7.02635E-01	2.0530E-01	5.5487E-03	
												Sr-90	1.15980E+01	3.3888E+00	9.1589E-02	
												Th-232 [3.0898E-02 kg]	4.30389E-01	1.2576E-01	3.3988E-03	
												U-Nat [1.2292E-03 kg]	6.22349E-02	1.8184E-02	4.9147E-04	
												Zn-65	1.12602E-19	3.2901E-20	8.8922E-22	
												Subtotal		9.2785E+01	2.5077E+00	
												Total		9.2785E+01	2.5077E+00	
												SNM [8.1578E-05 g]				
												Source [3.2127E-02 kg]				
205/R5-0022-01	19 Lift Liner	2.2937	7339.1250	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.12669E-02	3.2921E-03	8.8975E-05	AU
		81.0000	16180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.73558E-01	7.9931E-02	2.1603E-03	
												Co-60	3.53539E-04	1.0330E-04	2.7919E-06	
												Cs-137	1.15915E+00	3.3869E-01	9.1538E-03	
												Eu-152	1.63439E-03	4.7756E-04	1.2907E-05	
												Eu-154	7.04760E-04	2.0592E-04	5.5655E-06	
												Eu-155	1.54166E-04	4.5048E-05	1.2175E-06	
												H-3	2.97900E+01	8.7043E+00	2.3525E-01	
												Na-22	1.01309E-08	2.9601E-09	8.0004E-11	
												Ni-63	2.96741E-02	8.6706E-03	2.3434E-04	
												Pm-147	1.07685E-06	3.1464E-07	8.5039E-09	
												Pu-238 [3.4838E-10 g]	7.49967E-04	2.1913E-04	5.9225E-06	
												Pu-239 [6.6143E-06 g]	5.19297E-02	1.5173E-02	4.1009E-04	
												Pu-240 [1.7830E-06 g]	5.19297E-02	1.5173E-02	4.1009E-04	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9514-005

3. PAGE 9 OF 9 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C

RADIONUCLIDES	pCi/gm	MBq	mCi
Pu-241 [8.9799E-11 g]	1.13712E-03	3.3226E-04	8.9799E-06
Ra-226	6.50976E-01	1.9021E-01	5.1408E-03
Sr-90	1.19392E+00	3.4885E-01	9.4284E-03
Th-232 [2.8626E-02 kg]	3.98746E-01	1.1651E-01	3.1489E-03
U-Nat [1.2654E-04 kg]	6.40660E-03	1.8719E-03	5.0593E-05
Zn-65	1.15915E-20	3.3869E-21	9.1538E-23
Subtotal		9.8241E+00	2.6551E-01
Total		9.8241E+00	2.6551E-01
SNM [8.3978E-06 g]			
Source [2.8753E-02 kg]			

Shipment Totals		**27.5244**	**98220.8983**									SNM [1.1814E-03 g]	1.3430E+03	3.6296E+01
		972.0000	**216540.0000**									Source [4.0104E-01 kg]		

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-005
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-006, WP-9514-007, WP-9514-008**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **11**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
CHUX 311
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
08/29/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF **4** PAGE(S)
FORM 541 AND 541A — **8** PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9514-006

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE 9/2/4

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

AUTHORIZED SIGNATURE
NIGAR.ZAR.155123236 Digitally signed by NIGAR.ZAR.1551232367

TITLE
Manifester

DATE
08/26/2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2496E+02**	**(3.3771E+00)**	**NA**	**16300 LBS; 81 FT3**	**162**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.2110E+01**	**(1.4084E+00)**	**NA**	**17600 LBS; 81 FT3**	**172**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.9467E+01**	**(7.9641E-01)**	**NA**	**16520 LBS; 81 FT3**	**179**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.9048E+01**	**(1.5959E+00)**	**NA**	**16640 LBS; 81 FT3**	**180**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.1913E+01**	**(2.2138E+00)**	**NA**	**15420 LBS; 81 FT3**	**197**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.9994E+01**	**(1.0809E+00)**	**NA**	**16860 LBS; 81 FT3**	**204**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.9677E+01**	**(5.3181E-01)**	**NA**	**16460 LBS; 81 FT3**	**206**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-006

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.9677E+01**	**(5.3181E-01)**	**NA**	**16460 LBS; 81 FT3**	**206**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.2820E+01**	**(1.6978E+00)**	**NA**	**17700 LBS; 81 FT3**	**210**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1310E+01**	**(3.0567E-01)**	**NA**	**18620 LBS; 81 FT3**	**213**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.2027E+01**	**(5.9533E-01)**	**NA**	**18420 LBS; 81 FT3**	**215**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.4131E-01**	**(1.4630E-02)**	**NA**	**18780 LBS; 81 FT3**	**216**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-006

Page 4 of 4

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-Nat**	**Zn-65**	**5.4131E-01**	**(1.4630E-02)**	**NA**	**18780 LBS; 81 FT3**	**216**

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
11	m3 25.2307 / ft3 891.0000	kg 85624.6374 / lb 188770.0000	NP	NP	4.4135E-04 11 Containers	4.4135E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	5.0387E+02	4.5754E+02	4.2015E+00	NP	NP	(kg)	3.4197E-01
mCi	1.3618E+01	1.2366E+01	1.1355E-01	NP	NP	(lb)	7.5391E-01

2. MANIFEST NUMBER: WP-9514-006

3. PAGE 1 OF 8 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CHUX 311

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES		pCi/gm	MBq	mCi
162/R5-0022-01	19 Lift Liner	2.2937	7393.5561	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241		1.58093E-01	4.3116E-02	1.1653E-03	AU
		81.0000	16300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		3.83847E+00	1.0468E+00	2.8293E-02	
												Co-60		4.96073E-03	1.3529E-03	3.6565E-05	
												Cs-137		1.62647E+01	4.4356E+00	1.1988E-01	
												Eu-152		2.29332E-02	6.2545E-03	1.6904E-04	
												Eu-154		9.88893E-03	2.6969E-03	7.2890E-05	
												Eu-155		2.16320E-03	5.8997E-04	1.5945E-05	
												H-3		4.18002E+02	1.1400E+02	3.0810E+00	
												Na-22		1.42153E-07	3.8769E-08	1.0478E-09	
												Ni-63		4.16376E-01	1.1355E-01	3.0690E-03	
												Pm-147		1.51099E-05	4.1207E-06	1.1137E-07	
												Pu-238	[4.5627E-09 g]	1.05233E-02	2.8699E-03	7.7565E-05	
												Pu-239	[8.6626E-05 g]	7.28658E-01	1.9872E-01	5.3708E-03	
												Pu-240	[2.3351E-05 g]	7.28658E-01	1.9872E-01	5.3708E-03	
												Pu-241	[1.1761E-09 g]	1.59557E-02	4.3516E-03	1.1761E-04	
												Ra-226		7.02635E-01	1.9162E-01	5.1790E-03	
												Sr-90		1.67526E+01	4.5688E+00	1.2348E-01	
												Th-232	[2.8839E-02 kg]	4.30389E-01	1.1738E-01	3.1723E-03	
												U-Nat	[1.6572E-03 kg]	8.98949E-02	2.4516E-02	6.6260E-04	
												Zn-65		1.62647E-19	4.4356E-20	1.1988E-21	
												Subtotal			1.2496E+02	3.3771E+00	
												Total			1.2496E+02	3.3771E+00	
												SNM	[1.0998E-04 g]				
												Source	[3.0497E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 2 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
172/R5-0022-01	19 Lift Liner	2.2937	7983.2262	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	6.08049E-02	1.7909E-02	4.8404E-04	AU
		81.0000	17600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.47633E+00	4.3482E-01	1.1752E-02	
												Co-60	1.90797E-03	5.6196E-04	1.5188E-05	
												Cs-137	6.25565E+00	1.8425E+00	4.9798E-02	
												Eu-152	8.82047E-03	2.5980E-03	7.0215E-05	
												Eu-154	3.80343E-03	1.1202E-03	3.0277E-05	
												Eu-155	8.32001E-04	2.4506E-04	6.6232E-06	
												H-3	1.60770E+02	4.7353E+01	1.2798E+00	
												Na-22	5.46744E-08	1.6104E-08	4.3524E-10	
												Ni-63	1.60145E-01	4.7168E-02	1.2748E-03	
												Pm-147	5.81150E-06	1.7117E-06	4.6262E-08	
												Pu-238 [1.8953E-09 g]	4.04741E-03	1.1921E-03	3.2219E-05	
												Pu-239 [3.5983E-05 g]	2.80253E-01	8.2547E-02	2.2310E-03	
												Pu-240 [9.6998E-06 g]	2.80253E-01	8.2547E-02	2.2310E-03	
												Pu-241 [4.8852E-10 g]	6.13679E-03	1.8075E-03	4.8852E-05	
												Ra-226	7.02634E-01	2.0695E-01	5.5933E-03	
												Sr-90	6.44332E+00	1.8978E+00	5.1292E-02	
												Th-232 [3.1147E-02 kg]	4.30389E-01	1.2677E-01	3.4261E-03	
												U-Nat [6.8839E-04 kg]	3.45750E-02	1.0184E-02	2.7523E-04	
												Zn-65	6.25565E-20	1.8425E-20	4.9798E-22	
												Subtotal		5.2110E+01	1.4084E+00	
												Total		5.2110E+01	1.4084E+00	
												SNM [4.5685E-05 g]				
												Source [3.1835E-02 kg]				
179/R5-0022-01	19 Lift Liner	2.2937	7493.3464	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	3.64829E-02	1.0084E-02	2.7255E-04	AU
		81.0000	16520.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	8.85800E-01	2.4485E-01	6.6175E-03	
												Co-60	1.14478E-03	3.1644E-04	8.5523E-06	
												Cs-137	3.75339E+00	1.0375E+00	2.8040E-02	
												Eu-152	5.29228E-03	1.4629E-03	3.9537E-05	
												Eu-154	2.28206E-03	6.3078E-04	1.7048E-05	
												Eu-155	4.99201E-04	1.3798E-04	3.7293E-06	
												H-3	9.64621E+01	2.6663E+01	7.2063E-01	
												Na-22	3.28046E-08	9.0676E-09	2.4507E-10	
												Ni-63	9.60868E-02	2.6560E-02	7.1783E-04	
												Pm-147	3.48690E-06	9.6381E-07	2.6049E-08	
												Pu-238 [1.0672E-09 g]	2.42844E-03	6.7125E-04	1.8142E-05	
												Pu-239 [2.0261E-05 g]	1.68152E-01	4.6479E-02	1.2562E-03	
												Pu-240 [5.4617E-06 g]	1.68152E-01	4.6479E-02	1.2562E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 3 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.7507E-10 g]	3.68207E-03	1.0178E-03	2.7507E-05	
												Ra-226	7.02635E-01	1.9422E-01	5.2491E-03	
												Sr-90	3.86599E+00	1.0686E+00	2.8881E-02	
												Th-232 [2.9230E-02 kg]	4.30389E-01	1.1897E-01	3.2153E-03	
												U-Nat [6.8839E-04 kg]	2.07450E-02	5.7343E-03	1.5498E-04	
												Zn-65	3.75339E-20	1.0375E-20	2.8040E-22	
												Subtotal		2.9467E+01	7.9641E-01	
												Total		2.9467E+01	7.9641E-01	
												SNM [2.5724E-05 g]				
												Source [2.9918E-02 kg]				
180/R5-0022-01	19 Lift Liner	2.2937	7547.7775	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.0316E-02	5.4907E-04	AU
		81.0000	16640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.77160E+00	4.9325E-01	1.3331E-02	
												Co-60	2.28957E-03	6.3747E-04	1.7229E-05	
												Cs-137	7.50678E+00	2.0901E+00	5.6489E-02	
												Eu-152	1.05846E-02	2.9470E-03	7.9649E-05	
												Eu-154	4.56412E-03	1.2708E-03	3.4345E-05	
												Eu-155	9.98402E-04	2.7798E-04	7.5130E-06	
												H-3	1.92924E+02	5.3717E+01	1.4518E+00	
												Na-22	6.56092E-08	1.8267E-08	4.9371E-10	
												Ni-63	1.92174E-01	5.3506E-02	1.4461E-03	
												Pm-147	6.97380E-06	1.9417E-06	5.2478E-08	
												Pu-238 [2.1499E-09 g]	4.85689E-03	1.3523E-03	3.6548E-05	
												Pu-239 [4.0818E-05 g]	3.36304E-01	9.3636E-02	2.5307E-03	
												Pu-240 [1.1003E-05 g]	3.36304E-01	9.3636E-02	2.5307E-03	
												Pu-241 [5.5416E-10 g]	7.36415E-03	2.0504E-03	5.5416E-05	
												Ra-226	7.02635E-01	1.9563E-01	5.2874E-03	
												Sr-90	7.73198E+00	2.1528E+00	5.8184E-02	
												Th-232 [2.9443E-02 kg]	4.30389E-01	1.1983E-01	3.2387E-03	
												U-Nat [7.8088E-04 kg]	4.14900E-02	1.1552E-02	3.1221E-04	
												Zn-65	7.50678E-20	2.0901E-20	5.6489E-22	
												Subtotal		5.9050E+01	1.5959E+00	
												Total		5.9050E+01	1.5959E+00	
												SNM [5.1824E-05 g]				
												Source [3.0224E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 4 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
197/R5-0022-01	19 Lift Liner	2.2937 81.0000	6994.3948 15420.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	1.09449E-01 2.65740E+00 3.43435E-03 1.12602E+01 1.58768E-02	2.8232E-02 6.8550E-01 8.8589E-04 2.9046E+00 4.0955E-03	7.6304E-04 1.8527E-02 2.3943E-05 7.8502E-02 1.1069E-04	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	6.84618E-03 1.49760E-03 2.89386E+02 9.84139E-08 2.88260E-01	1.7660E-03 3.8632E-04 7.4648E+01 2.5386E-08 7.4359E-02	4.7729E-05 1.0441E-05 2.0175E+00 6.8611E-10 2.0097E-03	
												Pm-147 Pu-238 [2.9877E-09 g] Pu-239 [5.6724E-05 g] Pu-240 [1.5291E-05 g]	1.04607E-05 7.28533E-03 5.04456E-01 5.04456E-01	2.6984E-06 1.8793E-03 1.3013E-01 1.3013E-01	7.2929E-08 5.0791E-05 3.5169E-03 3.5169E-03	
												Pu-241 [7.7011E-10 g] Ra-226 Sr-90 Th-232 [2.7278E-02 kg]	1.10462E-02 7.02635E-01 1.15980E+01 4.30389E-01	2.8494E-03 1.8124E-01 2.9917E+00 1.1102E-01	7.7011E-05 4.8985E-03 8.0857E-02 3.0005E-03	
												U-Nat [1.0852E-03 kg] Zn-65 Subtotal Total	6.22350E-02 1.12602E-19	1.6054E-02 2.9046E-20 8.1913E+01 8.1913E+01	4.3388E-04 7.8502E-22 2.2138E+00 2.2138E+00	
												SNM [7.2019E-05 g] Source [2.8363E-02 kg]				
204/R5-0022-01	19 Lift Liner	2.2937 81.0000	7647.5679 16860.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	4.86439E-02 1.18107E+00 1.52638E-03 5.00452E+00 7.05637E-03	1.3723E-02 3.3320E-01 4.3061E-04 1.4119E+00 1.9907E-03	3.7090E-04 9.0055E-03 1.1638E-05 3.8159E-02 5.3804E-05	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	3.04275E-03 6.65601E-04 1.28616E+02 4.37395E-08 1.28116E-01	8.5840E-04 1.8778E-04 3.6285E+01 1.2340E-08 3.6144E-02	2.3200E-05 5.0751E-06 9.8068E-01 3.3351E-10 9.7686E-04	
												Pm-147 Pu-238 [1.4523E-09 g] Pu-239 [2.7573E-05 g] Pu-240 [7.4327E-06 g]	4.64920E-06 3.23792E-03 2.24203E-01 2.24203E-01	1.3116E-06 9.1349E-04 6.3252E-02 6.3252E-02	3.5449E-08 2.4689E-05 1.7095E-03 1.7095E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 5 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [3.7434E-10 g]	4.90943E-03	1.3851E-03	3.7434E-05	
												Ra-226	7.02634E-01	1.9823E-01	5.3575E-03	
												Sr-90	5.15465E+00	1.4542E+00	3.9303E-02	
												Th-232 [2.9833E-02 kg]	4.30389E-01	1.2142E-01	3.2816E-03	
												U-Nat [5.2749E-04 kg]	2.76600E-02	7.8033E-03	2.1090E-04	
												Zn-65	5.00452E-20	1.4119E-20	3.8159E-22	
												Subtotal		3.9994E+01	1.0809E+00	
												Total		3.9994E+01	1.0809E+00	
												SNM [3.5007E-05 g]				
												Source [3.0361E-02 kg]				
206/R5-0022-01	19 Lift Liner	2.2937	7466.1309	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	6.6985E-03	1.8104E-04	AU
		81.0000	16460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.90533E-01	1.6264E-01	4.3956E-03	
												Co-60	7.63189E-04	2.1019E-04	5.6807E-06	
												Cs-137	2.50226E+00	6.8913E-01	1.8625E-02	
												Eu-152	3.52819E-03	9.7169E-04	2.6262E-05	
												Eu-154	1.52137E-03	4.1899E-04	1.1324E-05	
												Eu-155	3.32801E-04	9.1656E-05	2.4772E-06	
												H-3	6.43081E+01	1.7711E+01	4.7867E-01	
												Na-22	2.18698E-08	6.0232E-09	1.6279E-10	
												Ni-63	6.40579E-02	1.7642E-02	4.7681E-04	
												Pm-147	2.32460E-06	6.4021E-07	1.7303E-08	
												Pu-238 [7.0886E-10 g]	1.61896E-03	4.4589E-04	1.2051E-05	
												Pu-239 [1.3458E-05 g]	1.12101E-01	3.0874E-02	8.3442E-04	
												Pu-240 [3.6279E-06 g]	1.12101E-01	3.0874E-02	8.3442E-04	
												Pu-241 [1.8272E-10 g]	2.45472E-03	6.7603E-04	1.8271E-05	
												Ra-226	7.02635E-01	1.9351E-01	5.2300E-03	
												Sr-90	2.57733E+00	7.0981E-01	1.9184E-02	
												Th-232 [2.9123E-02 kg]	4.30389E-01	1.1853E-01	3.2036E-03	
												U-Nat [2.5747E-04 kg]	1.38300E-02	3.8088E-03	1.0294E-04	
												Zn-65	2.50226E-20	6.8913E-21	1.8625E-22	
												Subtotal		1.9677E+01	5.3181E-01	
												Total		1.9677E+01	5.3181E-01	
												SNM [1.7087E-05 g]				
												Source [2.9381E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 6 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
210/R5-0022-01	19 Lift Liner	2.2937	8028.5855	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.1614E-02	5.8416E-04	AU
		81.0000	17700.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.77160E+00	5.2477E-01	1.4183E-02	
												Co-60	2.28957E-03	6.7821E-04	1.8330E-05	
												Cs-137	7.50678E+00	2.2236E+00	6.0098E-02	
												Eu-152	1.05846E-02	3.1353E-03	8.4739E-05	
												Eu-154	4.56412E-03	1.3520E-03	3.6540E-05	
												Eu-155	9.98402E-04	2.9574E-04	7.9931E-06	
												H-3	1.92924E+02	5.7147E+01	1.5445E+00	
												Na-22	6.56093E-08	1.9435E-08	5.2526E-10	
												Ni-63	1.92174E-01	5.6925E-02	1.5385E-03	
												Pm-147	6.97380E-06	2.0657E-06	5.5831E-08	
												Pu-238 [2.2873E-09 g]	4.85689E-03	1.4387E-03	3.8884E-05	
												Pu-239 [4.3426E-05 g]	3.36304E-01	9.9619E-02	2.6924E-03	
												Pu-240 [1.1706E-05 g]	3.36304E-01	9.9619E-02	2.6924E-03	
												Pu-241 [5.8956E-10 g]	7.36415E-03	2.1814E-03	5.8956E-05	
												Ra-226	7.02635E-01	2.0813E-01	5.6252E-03	
												Sr-90	7.73198E+00	2.2903E+00	6.1901E-02	
												Th-232 [3.1324E-02 kg]	4.30389E-01	1.2749E-01	3.4456E-03	
												U-Nat [8.3077E-04 kg]	4.14900E-02	1.2290E-02	3.3216E-04	
												Zn-65	7.50678E-20	2.2236E-20	6.0098E-22	
												Subtotal		6.2820E+01	1.6978E+00	
												Total		6.2820E+01	1.6978E+00	
												SNM [5.5135E-05 g]				
												Source [3.2155E-02 kg]				
213/R5-0022-01	19 Lift Liner	2.2937	8445.8905	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.21610E-02	3.7899E-03	1.0243E-04	AU
		81.0000	18620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95267E-01	9.2023E-02	2.4871E-03	
												Co-60	3.81595E-04	1.1893E-04	3.2142E-06	
												Cs-137	1.25113E+00	3.8991E-01	1.0538E-02	
												Eu-152	1.76409E-03	5.4978E-04	1.4859E-05	
												Eu-154	7.60687E-04	2.3707E-04	6.4074E-06	
												Eu-155	1.66400E-04	5.1859E-05	1.4016E-06	
												H-3	3.21540E+01	1.0021E+01	2.7084E-01	
												Na-22	1.09349E-08	3.4079E-09	9.2106E-11	
												Ni-63	3.20289E-02	9.9822E-03	2.6979E-04	
												Pm-147	1.16230E-06	3.6224E-07	9.7902E-09	
												Pu-238 [4.0108E-10 g]	8.09481E-04	2.5228E-04	6.8184E-06	
												Pu-239 [7.6149E-06 g]	5.60506E-02	1.7468E-02	4.7212E-04	
												Pu-240 [2.0527E-06 g]	5.60506E-02	1.7468E-02	4.7212E-04	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 7 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [1.0338E-10 g]	1.22736E-03	3.8251E-04	1.0338E-05
												Ra-226	7.02635E-01	2.1898E-01	5.9184E-03
												Sr-90	1.28866E+00	4.0164E-01	1.0855E-02
												Th-232 [3.2957E-02 kg]	4.30389E-01	1.3413E-01	3.6252E-03
												U-Nat [1.4568E-04 kg]	5.88031E-03	1.8326E-03	4.9531E-05
												Zn-65	1.25113E-20	3.8991E-21	1.0538E-22
												Subtotal		1.1310E+01	3.0567E-01
												Total		1.1310E+01	3.0567E-01
												SNM [9.6681E-06 g]			
												Source [3.3102E-02 kg]			
215/R5-0022-01	19 Lift Liner	2.2937	8355.1720	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.4984E-03	2.0266E-04	AU
		81.0000	18420.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.90533E-01	1.8206E-01	4.9206E-03
												Co-60	7.63189E-04	2.3529E-04	6.3592E-06
												Cs-137	2.50226E+00	7.7145E-01	2.0850E-02
												Eu-152	3.52819E-03	1.0877E-03	2.9398E-05
												Eu-154	1.52137E-03	4.6905E-04	1.2677E-05
												Eu-155	3.32801E-04	1.0260E-04	2.7730E-06
												H-3	6.43081E+01	1.9826E+01	5.3584E-01
												Na-22	2.18698E-08	6.7425E-09	1.8223E-10
												Ni-63	6.40578E-02	1.9749E-02	5.3376E-04
												Pm-147	2.32460E-06	7.1669E-07	1.9370E-08
												Pu-238 [7.9353E-10 g]	1.61896E-03	4.9913E-04	1.3490E-05
												Pu-239 [1.5066E-05 g]	1.12101E-01	3.4561E-02	9.3408E-04
												Pu-240 [4.0612E-06 g]	1.12101E-01	3.4561E-02	9.3408E-04
												Pu-241 [2.0454E-10 g]	2.45472E-03	7.5680E-04	2.0454E-05
												Ra-226	7.02635E-01	2.1662E-01	5.8547E-03
												Sr-90	2.57733E+00	7.9458E-01	2.1475E-02
												Th-232 [3.2602E-02 kg]	4.30389E-01	1.3269E-01	3.5862E-03
												U-Nat [2.8822E-04 kg]	1.38300E-02	4.2639E-03	1.1524E-04
												Zn-65	2.50226E-20	7.7145E-21	2.0850E-22
												Subtotal		2.2027E+01	5.9533E-01
												Total		2.2027E+01	5.9533E-01
												SNM [1.9128E-05 g]			
												Source [3.2890E-02 kg]			

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-006

3. PAGE 8 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
216/R5-0022-01	19 Lift Liner	2.2937	8518.4653	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.04184E-04	6.4184E-05	1.7347E-06	AU
		81.0000	18780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.96448E-03	1.5605E-03	4.2177E-05	
												Co-60	6.39578E-06	2.0105E-06	5.4337E-08	
												Cs-137	2.10190E-02	6.6071E-03	1.7857E-04	
												Eu-152	2.95267E-05	9.2815E-06	2.5085E-07	
												Eu-154	1.28116E-05	4.0271E-06	1.0884E-07	
												Eu-155	2.78251E-06	8.7468E-07	2.3640E-08	
												H-3	5.39487E-01	1.6958E-01	4.5833E-03	
												Na-22	1.83165E-10	5.7576E-11	1.5561E-12	
												Ni-63	5.36484E-04	1.6864E-04	4.5578E-06	
												Pm-147	1.95176E-08	6.1353E-09	1.6582E-10	
												Pu-238 [6.8027E-12 g]	1.36123E-05	4.2791E-06	1.1565E-07	
												Pu-239 [7.3925E-08 g]	5.39487E-04	1.6958E-04	4.5833E-06	
												Pu-240 [1.9928E-08 g]	5.39487E-04	1.6958E-04	4.5833E-06	
												Pu-241 [1.7517E-12 g]	2.06186E-05	6.4813E-06	1.7517E-07	
												Ra-226	7.02635E-01	2.2087E-01	5.9694E-03	
												Sr-90	2.15194E-02	6.7643E-03	1.8282E-04	
												Th-232 [3.3241E-02 kg]	4.30389E-01	1.3529E-01	3.6565E-03	
												U-Nat [2.4635E-06 kg]	1.16005E-04	3.6465E-05	9.8555E-07	
												Zn-65	2.10190E-22	6.6071E-23	1.7857E-24	
												Subtotal		5.4131E-01	1.4630E-02	
												Total		5.4131E-01	1.4630E-02	
												SNM [9.3861E-08 g]				
												Source [3.3243E-02 kg]				
Shipment Totals		25.2307	85874.1131									SNM [4.4135E-04 g]		5.0387E+02	1.3618E+01	
		891.0000	189320.0000									Source [3.4197E-01 kg]				

FORM 541A (03-06)

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-006, WP-9514-007, WP-9514-008**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **10**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CHUX 319**
☐ COLLECTOR
☐ PROCESSOR
WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
☑ GENERATOR TYPE (Specify) **G**
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **08/29/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 8 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9514-007**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE: 8/26/21

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.15512 32367 Digitally signed by NIGAR.ZAR.1551232367
TITLE: Manifester
DATE: 08/26/2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3972E+02**	**(3.7762E+00)**	**NA**	**18220 LBS; 81 FT3**	**146**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.7164E+01**	**(1.8152E+00)**	**NA**	**18920 LBS; 81 FT3**	**147**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.9177E+01**	**(1.5994E+00)**	**NA**	**19980 LBS; 81 FT3**	**151**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.1619E+01**	**(5.8432E-01)**	**NA**	**18080 LBS; 81 FT3**	**152**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3984E+02**	**(3.7795E+00)**	**NA**	**16940 LBS; 81 FT3**	**163**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3649E+02**	**(3.6889E+00)**	**NA**	**17800 LBS; 81 FT3**	**164**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.7718E+02**	**(4.7887E+00)**	**NA**	**18780 LBS; 81 FT3**	**165**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-007

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.7718E+02**	**(4.7887E+00)**	**NA**	**18780 LBS; 81 FT3**	**165**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3203E+02**	**(3.5684E+00)**	**NA**	**17220 LBS; 81 FT3**	**167**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2798E+02**	**(3.4592E+00)**	**NA**	**14480 LBS; 81 FT3**	**168**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**7.5974E+01**	**(2.0533E+00)**	**NA**	**18360 LBS; 81 FT3**	**214**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
10	m3 22.9370 / ft3 810.0000	kg 80866.4530 / lb 178280.0000	NP	NP	9.4747E-04 10 Containers	9.4747E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.0772E+03	9.8207E+02	9.0181E+00	NP	NP	(kg)	3.3067E-01
mCi	2.9113E+01	2.6542E+01	2.4373E-01	NP	NP	(lb)	7.2901E-01

2. MANIFEST NUMBER: WP-9514-007

3. PAGE 1 OF 8 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: CHUX 319

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
146/R5-0022-01	19 Lift Liner	2.2937	8264.4535	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.58093E-01	4.8211E-02	1.3030E-03	AU
		81.0000	18220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.83847E+00	1.1705E+00	3.1636E-02	
												Co-60	4.96073E-03	1.5127E-03	4.0885E-05	
												Cs-137	1.62647E+01	4.9599E+00	1.3405E-01	
												Eu-152	2.29332E-02	6.9934E-03	1.8901E-04	
												Eu-154	9.88893E-03	3.0156E-03	8.1502E-05	
												Eu-155	2.16320E-03	6.5967E-04	1.7829E-05	
												H-3	4.18003E+02	1.2747E+02	3.4451E+00	
												Na-22	1.42153E-07	4.3349E-08	1.1716E-09	
												Ni-63	4.16376E-01	1.2697E-01	3.4317E-03	
												Pm-147	1.51099E-05	4.6076E-06	1.2453E-07	
												Pu-238 [5.1018E-09 g]	1.05233E-02	3.2090E-03	8.6730E-05	
												Pu-239 [9.6861E-05 g]	7.28658E-01	2.2220E-01	6.0054E-03	
												Pu-240 [2.6110E-05 g]	7.28658E-01	2.2220E-01	6.0054E-03	
												Pu-241 [1.3150E-09 g]	1.59557E-02	4.8655E-03	1.3150E-04	
												Ra-226	7.02634E-01	2.1426E-01	5.7909E-03	
												Sr-90	1.67526E+01	5.1086E+00	1.3807E-01	
												Th-232 [3.2247E-02 kg]	4.30389E-01	1.3124E-01	3.5471E-03	
												U-Nat [1.8530E-03 kg]	8.98949E-02	2.7413E-02	7.4089E-04	
												Zn-65	1.62647E-19	4.9599E-20	1.3405E-21	
												Subtotal		1.3972E+02	3.7762E+00	
												Total		1.3972E+02	3.7762E+00	
												SNM [1.2298E-04 g]				
												Source [3.4100E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 2 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
147/R5-0022-01	19 Lift Liner	2.2937	8581.9682	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	7.29659E-02	2.3108E-02	6.2453E-04	AU
												C-14	1.77160E+00	5.6107E-01	1.5164E-02	
												Co-60	2.28957E-03	7.2509E-04	1.9597E-05	
		81.0000	18920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	7.50678E+00	2.3773E+00	6.4252E-02	
												Eu-152	1.05846E-02	3.3521E-03	9.0596E-05	
												Eu-154	4.56412E-03	1.4454E-03	3.9065E-05	
												Eu-155	9.98402E-04	3.1619E-04	8.5456E-06	
												H-3	1.92924E+02	6.1098E+01	1.6513E+00	
												Na-22	6.56092E-08	2.0778E-08	5.6157E-10	
												Ni-63	1.92174E-01	6.0861E-02	1.6449E-03	
												Pm-147	6.97380E-06	2.2085E-06	5.9690E-08	
												Pu-238 [2.4454E-09 g]	4.85689E-03	1.5381E-03	4.1571E-05	
												Pu-239 [4.6428E-05 g]	3.36304E-01	1.0650E-01	2.8785E-03	
												Pu-240 [1.2515E-05 g]	3.36304E-01	1.0650E-01	2.8785E-03	
												Pu-241 [6.3032E-10 g]	7.36415E-03	2.3322E-03	6.3032E-05	
												Ra-226	7.02635E-01	2.2252E-01	6.0140E-03	
												Sr-90	7.73198E+00	2.4487E+00	6.6180E-02	
												Th-232 [3.3489E-02 kg]	4.30389E-01	1.3630E-01	3.6838E-03	
												U-Nat [8.8819E-04 kg]	4.14900E-02	1.3139E-02	3.5512E-04	
												Zn-65	7.50678E-20	2.3773E-20	6.4252E-22	
												Subtotal		6.7164E+01	1.8152E+00	
												Total		6.7164E+01	1.8152E+00	
												SNM [5.8946E-05 g]				
												Source [3.4377E-02 kg]				
151/R5-0022-01	19 Lift Liner	2.2937	9062.7762	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	6.08049E-02	2.0338E-02	5.4968E-04	AU
												C-14	1.47633E+00	4.9380E-01	1.3346E-02	
												Co-60	1.90797E-03	6.3818E-04	1.7248E-05	
		81.0000	19980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	6.25565E+00	2.0924E+00	5.6551E-02	
												Eu-152	8.82047E-03	2.9503E-03	7.9737E-05	
												Eu-154	3.80344E-03	1.2722E-03	3.4383E-05	
												Eu-155	8.32001E-04	2.7829E-04	7.5213E-06	
												H-3	1.60770E+02	5.3776E+01	1.4534E+00	
												Na-22	5.46744E-08	1.8288E-08	4.9426E-10	
												Ni-63	1.60145E-01	5.3565E-02	1.4477E-03	
												Pm-147	5.81150E-06	1.9438E-06	5.2536E-08	
												Pu-238 [2.1523E-09 g]	4.04741E-03	1.3538E-03	3.6589E-05	
												Pu-239 [4.0863E-05 g]	2.80253E-01	9.3740E-02	2.5335E-03	
												Pu-240 [1.1015E-05 g]	2.80253E-01	9.3740E-02	2.5335E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 3 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [5.5477E-10 g]	6.13679E-03	2.0526E-03	5.5477E-05	
												Ra-226	7.02634E-01	2.3502E-01	6.3519E-03	
												Sr-90	6.44332E+00	2.1552E+00	5.8248E-02	
												Th-232 [3.5370E-02 kg]	4.30389E-01	1.4396E-01	3.8907E-03	
												U-Nat [7.8174E-04 kg]	3.45750E-02	1.1565E-02	3.1256E-04	
												Zn-65	6.25565E-20	2.0924E-20	5.6551E-22	
												Subtotal		5.9178E+01	1.5994E+00	
												Total		5.9178E+01	1.5994E+00	
												SNM [5.1881E-05 g]				
												Source [3.6152E-02 kg]				
152/R5-0022-01	19 Lift Liner	2.2937	8200.9506	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.3597E-03	1.9891E-04	AU
												C-14	5.90533E-01	1.7869E-01	4.8295E-03	
												Co-60	7.63189E-04	2.3094E-04	6.2415E-06	
		81.0000	18080.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.50226E+00	7.5717E-01	2.0464E-02	
												Eu-152	3.52819E-03	1.0676E-03	2.8854E-05	
												Eu-154	1.52137E-03	4.6035E-04	1.2442E-05	
												Eu-155	3.32801E-04	1.0070E-04	2.7217E-06	
												H-3	6.43081E+01	1.9459E+01	5.2593E-01	
												Na-22	2.18698E-08	6.6178E-09	1.7886E-10	
												Ni-63	6.40579E-02	1.9384E-02	5.2388E-04	
												Pm-147	2.32460E-06	7.0341E-07	1.9011E-08	
												Pu-238 [7.7884E-10 g]	1.61896E-03	4.8988E-04	1.3240E-05	
												Pu-239 [1.4787E-05 g]	1.12101E-01	3.3921E-02	9.1679E-04	
												Pu-240 [3.9860E-06 g]	1.12101E-01	3.3921E-02	9.1679E-04	
												Pu-241 [2.0075E-10 g]	2.45472E-03	7.4278E-04	2.0075E-05	
												Ra-226	7.02635E-01	2.1261E-01	5.7463E-03	
												Sr-90	2.57733E+00	7.7989E-01	2.1078E-02	
												Th-232 [3.1998E-02 kg]	4.30389E-01	1.3023E-01	3.5198E-03	
												U-Nat [2.8289E-04 kg]	1.38300E-02	4.1847E-03	1.1310E-04	
												Zn-65	2.50226E-20	7.5717E-21	2.0464E-22	
												Subtotal		2.1619E+01	5.8432E-01	
												Total		2.1619E+01	5.8432E-01	
												SNM [1.8774E-05 g]				
												Source [3.2281E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 4 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
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												RADIONUCLIDES	pCi/gm	MBq	mCi	
163/R5-0022-01	19 Lift Liner	2.2937	7683.8553	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.70254E-01	4.8259E-02	1.3043E-03	AU
		81.0000	16940.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.13373E+00	1.1718E+00	3.1669E-02	
												Co-60	5.34232E-03	1.5143E-03	4.0928E-05	
												Cs-137	1.75158E+01	4.9650E+00	1.3419E-01	
												Eu-152	2.46973E-02	7.0008E-03	1.8921E-04	
												Eu-154	1.06496E-02	3.0188E-03	8.1588E-05	
												Eu-155	2.32960E-03	6.6034E-04	1.7847E-05	
												H-3	4.50157E+02	1.2760E+02	3.4487E+00	
												Na-22	1.53088E-07	4.3394E-08	1.1728E-09	
												Ni-63	4.48405E-01	1.2711E-01	3.4353E-03	
												Pm-147	1.62722E-05	4.6124E-06	1.2466E-07	
												Pu-238 [5.1072E-09 g]	1.13327E-02	3.2124E-03	8.6822E-05	
												Pu-239 [9.6964E-05 g]	7.84709E-01	2.2244E-01	6.0118E-03	
												Pu-240 [2.6138E-05 g]	7.84709E-01	2.2244E-01	6.0118E-03	
												Pu-241 [1.3164E-09 g]	1.71830E-02	4.8707E-03	1.3164E-04	
												Ra-226	7.02635E-01	1.9917E-01	5.3830E-03	
												Sr-90	1.80413E+01	5.1141E+00	1.3822E-01	
												Th-232 [2.9975E-02 kg]	4.30389E-01	1.2200E-01	3.2973E-03	
												U-Nat [1.8550E-03 kg]	9.68099E-02	2.7442E-02	7.4167E-04	
												Zn-65	1.75158E-19	4.9650E-20	1.3419E-21	
												Subtotal		1.3984E+02	3.7795E+00	
												Total		1.3984E+02	3.7795E+00	
												SNM [1.2311E-04 g]				
												Source [3.1830E-02 kg]				
164/R5-0022-01	19 Lift Liner	2.2937	8073.9447	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.58093E-01	4.7094E-02	1.2728E-03	AU
		81.0000	17800.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.83847E+00	1.1434E+00	3.0904E-02	
												Co-60	4.96073E-03	1.4778E-03	3.9940E-05	
												Cs-137	1.62647E+01	4.8452E+00	1.3095E-01	
												Eu-152	2.29332E-02	6.8317E-03	1.8464E-04	
												Eu-154	9.88893E-03	2.9459E-03	7.9618E-05	
												Eu-155	2.16320E-03	6.4439E-04	1.7416E-05	
												H-3	4.18002E+02	1.2452E+02	3.3654E+00	
												Na-22	1.42153E-07	4.2347E-08	1.1445E-09	
												Ni-63	4.16376E-01	1.2404E-01	3.3523E-03	
												Pm-147	1.51099E-05	4.5011E-06	1.2165E-07	
												Pu-238 [4.9838E-09 g]	1.05233E-02	3.1348E-03	8.4725E-05	
												Pu-239 [9.4622E-05 g]	7.28658E-01	2.1706E-01	5.8666E-03	
												Pu-240 [2.5507E-05 g]	7.28658E-01	2.1706E-01	5.8666E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 5 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
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												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2846E-09 g]	1.59557E-02	4.7530E-03	1.2846E-04	
												Ra-226	7.02635E-01	2.0931E-01	5.6571E-03	
												Sr-90	1.67526E+01	4.9906E+00	1.3488E-01	
												Th-232 [3.1501E-02 kg]	4.30389E-01	1.2821E-01	3.4652E-03	
												U-Nat [1.8102E-03 kg]	8.98949E-02	2.6779E-02	7.2376E-04	
												Zn-65	1.62647E-19	4.8452E-20	1.3095E-21	
												Subtotal		1.3649E+02	3.6889E+00	
												Total		1.3649E+02	3.6889E+00	
												SNM [1.2014E-04 g]				
												Source [3.3312E-02 kg]				
165/R5-0022-01	19 Lift Liner	2.2937	8518.4653	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.94576E-01	6.1165E-02	1.6531E-03	AU
												C-14	4.72427E+00	1.4850E+00	4.0136E-02	
												Co-60	6.10551E-03	1.9192E-03	5.1871E-05	
		81.0000	18780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Cs-137	2.00181E+01	6.2926E+00	1.7007E-01	
												Eu-152	2.82255E-02	8.8726E-03	2.3980E-04	
												Eu-154	1.21710E-02	3.8258E-03	1.0340E-04	
												Eu-155	2.66240E-03	8.3690E-04	2.2619E-05	
												H-3	5.14465E+02	1.6172E+02	4.3708E+00	
												Na-22	1.74958E-07	5.4997E-08	1.4864E-09	
												Ni-63	5.12463E-01	1.6109E-01	4.3538E-03	
												Pm-147	1.85968E-05	5.8456E-06	1.5799E-07	
												Pu-238 [6.4726E-09 g]	1.29517E-02	4.0711E-03	1.1003E-04	
												Pu-239 [1.2289E-04 g]	8.96810E-01	2.8191E-01	7.6191E-03	
												Pu-240 [3.3126E-05 g]	8.96810E-01	2.8191E-01	7.6191E-03	
												Pu-241 [1.6684E-09 g]	1.96377E-02	6.1731E-03	1.6684E-04	
												Ra-226	7.02635E-01	2.2087E-01	5.9694E-03	
												Sr-90	2.06186E+01	6.4813E+00	1.7517E-01	
												Th-232 [3.3241E-02 kg]	4.30389E-01	1.3529E-01	3.6565E-03	
												U-Nat [2.3510E-03 kg]	1.10640E-01	3.4779E-02	9.3997E-04	
												Zn-65	2.00181E-19	6.2926E-20	1.7007E-21	
												Subtotal		1.7718E+02	4.7887E+00	
												Total		1.7718E+02	4.7887E+00	
												SNM [1.5602E-04 g]				
												Source [3.5592E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 6 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
167/R5-0022-01	19 Lift Liner	2.2937	7810.8611	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.58093E-01	4.5554E-02	1.2312E-03	AU
		81.0000	17220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.83847E+00	1.1061E+00	2.9895E-02	
												Co-60	4.96073E-03	1.4295E-03	3.8635E-05	
												Cs-137	1.62647E+01	4.6868E+00	1.2667E-01	
												Eu-152	2.29332E-02	6.6086E-03	1.7861E-04	
												Eu-154	9.88893E-03	2.8496E-03	7.7016E-05	
												Eu-155	2.16320E-03	6.2334E-04	1.6847E-05	
												H-3	4.18002E+02	1.2045E+02	3.2555E+00	
												Na-22	1.42153E-07	4.0963E-08	1.1071E-09	
												Ni-63	4.16376E-01	1.1998E-01	3.2428E-03	
												Pm-147	1.51099E-05	4.3542E-06	1.1768E-07	
												Pu-238 [4.8210E-09 g]	1.05233E-02	3.0324E-03	8.1957E-05	
												Pu-239 [9.1531E-05 g]	7.28658E-01	2.0997E-01	5.6749E-03	
												Pu-240 [2.4673E-05 g]	7.28658E-01	2.0997E-01	5.6749E-03	
												Pu-241 [1.2427E-09 g]	1.59557E-02	4.5976E-03	1.2426E-04	
												Ra-226	7.02634E-01	2.0247E-01	5.4722E-03	
												Sr-90	1.67526E+01	4.8274E+00	1.3047E-01	
												Th-232 [3.0472E-02 kg]	4.30389E-01	1.2402E-01	3.3519E-03	
												U-Nat [1.7511E-03 kg]	8.98949E-02	2.5904E-02	7.0011E-04	
												Zn-65	1.62647E-19	4.6868E-20	1.2667E-21	
												Subtotal		1.3203E+02	3.5684E+00	
												Total		1.3203E+02	3.5684E+00	
												SNM [1.1621E-04 g]				
												Source [3.2223E-02 kg]				
168/R5-0022-01	19 Lift Liner	2.2937	6568.0180	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.82415E-01	4.4178E-02	1.1940E-03	AU
		81.0000	14480.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.42900E+00	1.0726E+00	2.8989E-02	
												Co-60	5.72392E-03	1.3862E-03	3.7465E-05	
												Cs-137	1.87670E+01	4.5451E+00	1.2284E-01	
												Eu-152	2.64614E-02	6.4084E-03	1.7320E-04	
												Eu-154	1.14103E-02	2.7633E-03	7.4684E-05	
												Eu-155	2.49600E-03	6.0447E-04	1.6337E-05	
												H-3	4.82311E+02	1.1681E+02	3.1569E+00	
												Na-22	1.64023E-07	3.9723E-08	1.0736E-09	
												Ni-63	4.80434E-01	1.1635E-01	3.1446E-03	
												Pm-147	1.74345E-05	4.2221E-06	1.1411E-07	
												Pu-238 [4.6750E-09 g]	1.21422E-02	2.9405E-03	7.9474E-05	
												Pu-239 [8.8759E-05 g]	8.40759E-01	2.0361E-01	5.5030E-03	
												Pu-240 [2.3926E-05 g]	8.40759E-01	2.0361E-01	5.5030E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 7 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2050E-09 g]	1.84104E-02	4.4585E-03	1.2050E-04	
												Ra-226	7.02634E-01	1.7016E-01	4.5990E-03	
												Sr-90	1.93300E+01	4.6812E+00	1.2652E-01	
												Th-232 [2.5609E-02 kg]	4.30389E-01	1.0423E-01	2.8170E-03	
												U-Nat [1.6980E-03 kg]	1.03725E-01	2.5120E-02	6.7891E-04	
												Zn-65	1.87670E-19	4.5451E-20	1.2284E-21	
												Subtotal		1.2799E+02	3.4592E+00	
												Total		1.2799E+02	3.4592E+00	
												SNM [1.1269E-04 g]				
												Source [2.7307E-02 kg]				
214/R5-0022-01	19 Lift Liner	2.2937	8327.9565	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.51269E-02	2.6159E-02	7.0700E-04	AU
		81.0000	18360.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.06687E+00	6.3514E-01	1.7166E-02	
												Co-60	2.67116E-03	8.2085E-04	2.2185E-05	
												Cs-137	8.75791E+00	2.6912E+00	7.2736E-02	
												Eu-152	1.23486E-02	3.7947E-03	1.0256E-04	
												Eu-154	5.32481E-03	1.6363E-03	4.4224E-05	
												Eu-155	1.16480E-03	3.5794E-04	9.6740E-06	
												H-3	2.25078E+02	6.9164E+01	1.8693E+00	
												Na-22	7.65441E-08	2.3522E-08	6.3572E-10	
												Ni-63	2.24203E-01	6.8898E-02	1.8621E-03	
												Pm-147	8.13610E-06	2.5002E-06	6.7572E-08	
												Pu-238 [2.7683E-09 g]	5.66637E-03	1.7413E-03	4.7061E-05	
												Pu-239 [5.2558E-05 g]	3.92354E-01	1.2057E-01	3.2586E-03	
												Pu-240 [1.4168E-05 g]	3.92354E-01	1.2057E-01	3.2586E-03	
												Pu-241 [7.1355E-10 g]	8.59151E-03	2.6401E-03	7.1354E-05	
												Ra-226	7.02634E-01	2.1591E-01	5.8355E-03	
												Sr-90	9.02065E+00	2.7720E+00	7.4919E-02	
												Th-232 [3.2495E-02 kg]	4.30389E-01	1.3226E-01	3.5745E-03	
												U-Nat [1.0055E-03 kg]	4.84050E-02	1.4874E-02	4.0201E-04	
												Zn-65	8.75791E-20	2.6912E-20	7.2736E-22	
												Subtotal		7.5973E+01	2.0533E+00	
												Total		7.5973E+01	2.0533E+00	
												SNM [6.6729E-05 g]				
												Source [3.3501E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-007

3. PAGE 8 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**22.9370** **810.0000**	**81093.2494** **178780.0000**									**SNM [9.4747E-04 g]** **Source [3.3067E-01 kg]**		**1.0772E+03**	**2.9113E+01**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-007
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: September 23, 2021

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9514**
Manifest(s):	**WP-9514-006, WP-9514-007, WP-9514-008**
Received On:	**September 21, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **September 22, 2021** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **10**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **CHUX 152**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **08/29/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 8 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9514-008**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*
DATE: 9/24

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.1551232367 Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.08.26 16:54:11 -04'00'
TITLE: Manifester
DATE: 08/286/2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.0374E+01**	**(1.0912E+00)**	**NA**	**17020 LBS; 81 FT3**	**145**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.3833E+01**	**(9.1439E-01)**	**NA**	**18960 LBS; 81 FT3**	**148**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.2219E+01**	**(6.0052E-01)**	**NA**	**18580 LBS; 81 FT3**	**149**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.1499E+01**	**(5.8108E-01)**	**NA**	**17980 LBS; 81 FT3**	**153**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.5752E+01**	**(1.2366E+00)**	**NA**	**19280 LBS; 81 FT3**	**155**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.0089E+02**	**(2.7266E+00)**	**NA**	**18980 LBS; 81 FT3**	**156**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**7.9542E+01**	**(2.1498E+00)**	**NA**	**19220 LBS; 81 FT3**	**157**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9514-008

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**7.9542E+01**	**(2.1498E+00)**	**NA**	**19220 LBS; 81 FT3**	**157**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.9999E+01**	**(1.8918E+00)**	**NA**	**16920 LBS; 81 FT3**	**158**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3515E+01**	**(1.1761E+00)**	**NA**	**18340 LBS; 81 FT3**	**159**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					
Material not regulated by USDOT , WP-9514 Soil, sand and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.1379E+01**	**(5.7783E-01)**	**NA**	**17880 LBS; 81 FT3**	**160**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-Nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
10	m3 22.9370 / ft3 810.0000	kg 82853.1878 / lb 182660.0000	NP	NP	4.1959E-04 10 Containers	4.1959E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	4.7900E+02	4.3490E+02	3.9937E+00	NP	NP	(kg)	3.3049E-01
mCi	1.2946E+01	1.1754E+01	1.0794E-01	NP	NP	(lb)	7.2861E-01

2. MANIFEST NUMBER: **WP-9514-008**

3. PAGE 1 OF 8 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CHUX 152**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
145/R5-0022-01	19 Lift Liner	2.2937	7720.1426	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.3854E-02	3.7443E-04	AU
		81.0000	17020.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.18107E+00	3.3637E-01	9.0912E-03	
												Co-60	1.52638E-03	4.3471E-04	1.1749E-05	
												Cs-137	5.00452E+00	1.4253E+00	3.8522E-02	
												Eu-152	7.05637E-03	2.0097E-03	5.4316E-05	
												Eu-154	3.04275E-03	8.6658E-04	2.3421E-05	
												Eu-155	6.65601E-04	1.8957E-04	5.1234E-06	
												H-3	1.28616E+02	3.6630E+01	9.9001E-01	
												Na-22	4.37395E-08	1.2457E-08	3.3668E-10	
												Ni-63	1.28116E-01	3.6488E-02	9.8616E-04	
												Pm-147	4.64920E-06	1.3241E-06	3.5787E-08	
												Pu-238 [1.4661E-09 g]	3.23792E-03	9.2219E-04	2.4924E-05	
												Pu-239 [2.7835E-05 g]	2.24202E-01	6.3855E-02	1.7258E-03	
												Pu-240 [7.5034E-06 g]	2.24202E-01	6.3855E-02	1.7258E-03	
												Pu-241 [3.7790E-10 g]	4.90943E-03	1.3982E-03	3.7790E-05	
												Ra-226	7.02635E-01	2.0011E-01	5.4085E-03	
												Sr-90	5.15466E+00	1.4681E+00	3.9678E-02	
												Th-232 [3.0117E-02 kg]	4.30389E-01	1.2258E-01	3.3129E-03	
												U-Nat [5.3251E-04 kg]	2.76600E-02	7.8777E-03	2.1291E-04	
												Zn-65	5.00452E-20	1.4253E-20	3.8522E-22	
												Subtotal		4.0374E+01	1.0912E+00	
												Total		4.0374E+01	1.0912E+00	
												SNM [3.5340E-05 g]				
												Source [3.0650E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 2 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
148/R5-0022-01	19 Lift Liner	2.2937	8600.1119	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	3.64830E-02	1.1578E-02	3.1293E-04	AU
		81.0000	18960.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	8.85800E-01	2.8112E-01	7.5978E-03	
												Co-60	1.14478E-03	3.6331E-04	9.8193E-06	
												Cs-137	3.75339E+00	1.1912E+00	3.2194E-02	
												Eu-152	5.29228E-03	1.6796E-03	4.5394E-05	
												Eu-154	2.28206E-03	7.2424E-04	1.9574E-05	
												Eu-155	4.99201E-04	1.5843E-04	4.2818E-06	
												H-3	9.64621E+01	3.0613E+01	8.2739E-01	
												Na-22	3.28046E-08	1.0411E-08	2.8138E-10	
												Ni-63	9.60868E-02	3.0494E-02	8.2417E-04	
												Pm-147	3.48690E-06	1.1066E-06	2.9908E-08	
												Pu-238 [1.2253E-09 g]	2.42844E-03	7.7071E-04	2.0830E-05	
												Pu-239 [2.3263E-05 g]	1.68152E-01	5.3365E-02	1.4423E-03	
												Pu-240 [6.2709E-06 g]	1.68152E-01	5.3365E-02	1.4423E-03	
												Pu-241 [3.1583E-10 g]	3.68207E-03	1.1686E-03	3.1583E-05	
												Ra-226	7.02635E-01	2.2299E-01	6.0268E-03	
												Sr-90	3.86599E+00	1.2269E+00	3.3160E-02	
												Th-232 [3.3560E-02 kg]	4.30389E-01	1.3659E-01	3.6916E-03	
												U-Nat [4.4504E-04 kg]	2.07450E-02	6.5838E-03	1.7794E-04	
												Zn-65	3.75339E-20	1.1912E-20	3.2194E-22	
												Subtotal		3.3832E+01	9.1439E-01	
												Total		3.3832E+01	9.1439E-01	
												SNM [2.9535E-05 g]				
												Source [3.4005E-02 kg]				
149/R5-0022-01	19 Lift Liner	2.2937	8427.7468	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.5639E-03	2.0443E-04	AU
		81.0000	18580.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.90533E-01	1.8365E-01	4.9634E-03	
												Co-60	7.63189E-04	2.3734E-04	6.4146E-06	
												Cs-137	2.50226E+00	7.7818E-01	2.1032E-02	
												Eu-152	3.52819E-03	1.0972E-03	2.9654E-05	
												Eu-154	1.52137E-03	4.7312E-04	1.2787E-05	
												Eu-155	3.32801E-04	1.0350E-04	2.7972E-06	
												H-3	6.43081E+01	1.9999E+01	5.4051E-01	
												Na-22	2.18697E-08	6.8013E-09	1.8382E-10	
												Ni-63	6.40579E-02	1.9921E-02	5.3841E-04	
												Pm-147	2.32460E-06	7.2291E-07	1.9538E-08	
												Pu-238 [8.0044E-10 g]	1.61896E-03	5.0346E-04	1.3607E-05	
												Pu-239 [1.5197E-05 g]	1.12101E-01	3.4862E-02	9.4221E-04	
												Pu-240 [4.0966E-06 g]	1.12101E-01	3.4862E-02	9.4221E-04	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 3 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.0632E-10 g]	2.45472E-03	7.6338E-04	2.0632E-05	
												Ra-226	7.02635E-01	2.1851E-01	5.9057E-03	
												Sr-90	2.57733E+00	8.0153E-01	2.1663E-02	
												Th-232 [3.2886E-02 kg]	4.30389E-01	1.3384E-01	3.6174E-03	
												U-Nat [2.9073E-04 kg]	1.38300E-02	4.3009E-03	1.1624E-04	
												Zn-65	2.50226E-20	7.7818E-21	2.1032E-22	
												Subtotal		2.2219E+01	6.0052E-01	
												Total		2.2219E+01	6.0052E-01	
												SNM [1.9295E-05 g]				
												Source [3.3176E-02 kg]				
153/R5-0022-01	19 Lift Liner	2.2937	8155.5914	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.3190E-03	1.9781E-04	AU
		81.0000	17980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.90533E-01	1.7770E-01	4.8027E-03	
												Co-60	7.63189E-04	2.2966E-04	6.2069E-06	
												Cs-137	2.50226E+00	7.5299E-01	2.0351E-02	
												Eu-152	3.52819E-03	1.0617E-03	2.8694E-05	
												Eu-154	1.52137E-03	4.5780E-04	1.2373E-05	
												Eu-155	3.32801E-04	1.0014E-04	2.7066E-06	
												H-3	6.43081E+01	1.9351E+01	5.2301E-01	
												Na-22	2.18697E-08	6.5808E-09	1.7786E-10	
												Ni-63	6.40579E-02	1.9276E-02	5.2097E-04	
												Pm-147	2.32460E-06	6.9952E-07	1.8906E-08	
												Pu-238 [7.7452E-10 g]	1.61896E-03	4.8718E-04	1.3167E-05	
												Pu-239 [1.4705E-05 g]	1.12101E-01	3.3733E-02	9.1170E-04	
												Pu-240 [3.9639E-06 g]	1.12101E-01	3.3733E-02	9.1170E-04	
												Pu-241 [1.9964E-10 g]	2.45472E-03	7.3867E-04	1.9964E-05	
												Ra-226	7.02634E-01	2.1143E-01	5.7144E-03	
												Sr-90	2.57733E+00	7.7556E-01	2.0961E-02	
												Th-232 [3.1821E-02 kg]	4.30389E-01	1.2951E-01	3.5003E-03	
												U-Nat [2.8132E-04 kg]	1.38300E-02	4.1618E-03	1.1248E-04	
												Zn-65	2.50226E-20	7.5299E-21	2.0351E-22	
												Subtotal		2.1499E+01	5.8108E-01	
												Total		2.1499E+01	5.8108E-01	
												SNM [1.8670E-05 g]				
												Source [3.2102E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 4 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
155/R5-0022-01	19 Lift Liner	2.2937	8745.2615	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.5699E-02	4.2430E-04	AU
		81.0000	19280.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.18107E+00	3.8117E-01	1.0302E-02	
												Co-60	1.52638E-03	4.9262E-04	1.3314E-05	
												Cs-137	5.00452E+00	1.6151E+00	4.3652E-02	
												Eu-152	7.05637E-03	2.2773E-03	6.1549E-05	
												Eu-154	3.04275E-03	9.8198E-04	2.6540E-05	
												Eu-155	6.65601E-04	2.1481E-04	5.8057E-06	
												H-3	1.28616E+02	4.1510E+01	1.1219E+00	
												Na-22	4.37395E-08	1.4116E-08	3.8152E-10	
												Ni-63	1.28116E-01	4.1348E-02	1.1175E-03	
												Pm-147	4.64920E-06	1.5005E-06	4.0553E-08	
												Pu-238 [1.6614E-09 g]	3.23792E-03	1.0450E-03	2.8243E-05	
												Pu-239 [3.1542E-05 g]	2.24202E-01	7.2357E-02	1.9556E-03	
												Pu-240 [8.5027E-06 g]	2.24202E-01	7.2357E-02	1.9556E-03	
												Pu-241 [4.2823E-10 g]	4.90943E-03	1.5845E-03	4.2823E-05	
												Ra-226	7.02635E-01	2.2677E-01	6.1288E-03	
												Sr-90	5.15465E+00	1.6636E+00	4.4962E-02	
												Th-232 [3.4128E-02 kg]	4.30389E-01	1.3890E-01	3.7541E-03	
												U-Nat [6.0343E-04 kg]	2.76600E-02	8.9270E-03	2.4127E-04	
												Zn-65	5.00452E-20	1.6151E-20	4.3652E-22	
												Subtotal		4.5753E+01	1.2366E+00	
												Total		4.5753E+01	1.2366E+00	
												SNM [4.0047E-05 g]				
												Source [3.4731E-02 kg]				
156/R5-0022-01	19 Lift Liner	2.2937	8609.1838	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.09449E-01	3.4772E-02	9.3978E-04	AU
		81.0000	18980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.65740E+00	8.4427E-01	2.2818E-02	
												Co-60	3.43435E-03	1.0911E-03	2.9489E-05	
												Cs-137	1.12602E+01	3.5773E+00	9.6685E-02	
												Eu-152	1.58768E-02	5.0442E-03	1.3633E-04	
												Eu-154	6.84618E-03	2.1750E-03	5.8784E-05	
												Eu-155	1.49760E-03	4.7578E-04	1.2859E-05	
												H-3	2.89386E+02	9.1938E+01	2.4848E+00	
												Na-22	9.84139E-08	3.1266E-08	8.4503E-10	
												Ni-63	2.88260E-01	9.1579E-02	2.4751E-03	
												Pm-147	1.04607E-05	3.3233E-06	8.9820E-08	
												Pu-238 [3.6797E-09 g]	7.28533E-03	2.3145E-03	6.2555E-05	
												Pu-239 [6.9863E-05 g]	5.04456E-01	1.6027E-01	4.3315E-03	
												Pu-240 [1.8833E-05 g]	5.04456E-01	1.6027E-01	4.3315E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 5 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [9.4848E-10 g]	1.10462E-02	3.5094E-03	9.4848E-05	
												Ra-226	7.02634E-01	2.2322E-01	6.0331E-03	
												Sr-90	1.15980E+01	3.6847E+00	9.9586E-02	
												Th-232 [3.3596E-02 kg]	4.30389E-01	1.3673E-01	3.6955E-03	
												U-Nat [1.3365E-03 kg]	6.22350E-02	1.9772E-02	5.3438E-04	
												Zn-65	1.12602E-19	3.5773E-20	9.6685E-22	
												Subtotal		1.0089E+02	2.7266E+00	
												Total		1.0089E+02	2.7266E+00	
												SNM [8.8700E-05 g]				
												Source [3.4932E-02 kg]				
157/R5-0022-01	19 Lift Liner	2.2937	8718.0459	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.51269E-02	2.7388E-02	7.4021E-04	AU
		81.0000	19220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.06687E+00	6.6496E-01	1.7972E-02	
												Co-60	2.67116E-03	8.5940E-04	2.3227E-05	
												Cs-137	8.75791E+00	2.8177E+00	7.6153E-02	
												Eu-152	1.23487E-02	3.9731E-03	1.0738E-04	
												Eu-154	5.32481E-03	1.7131E-03	4.6301E-05	
												Eu-155	1.16480E-03	3.7474E-04	1.0128E-05	
												H-3	2.25078E+02	7.2413E+01	1.9571E+00	
												Na-22	7.65441E-08	2.4626E-08	6.6558E-10	
												Ni-63	2.24202E-01	7.2132E-02	1.9495E-03	
												Pm-147	8.13610E-06	2.6176E-06	7.0746E-08	
												Pu-238 [2.8983E-09 g]	5.66637E-03	1.8230E-03	4.9271E-05	
												Pu-239 [5.5027E-05 g]	3.92354E-01	1.2623E-01	3.4116E-03	
												Pu-240 [1.4833E-05 g]	3.92354E-01	1.2623E-01	3.4116E-03	
												Pu-241 [7.4706E-10 g]	8.59151E-03	2.7641E-03	7.4706E-05	
												Ra-226	7.02634E-01	2.2606E-01	6.1096E-03	
												Sr-90	9.02065E+00	2.9022E+00	7.8437E-02	
												Th-232 [3.4022E-02 kg]	4.30389E-01	1.3847E-01	3.7424E-03	
												U-Nat [1.0527E-03 kg]	4.84050E-02	1.5573E-02	4.2090E-04	
												Zn-65	8.75791E-20	2.8177E-20	7.6153E-22	
												Subtotal		7.9541E+01	2.1498E+00	
												Total		7.9541E+01	2.1498E+00	
												SNM [6.9863E-05 g]				
												Source [3.5074E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 6 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
158/R5-0022-01	19 Lift Liner	2.2937	7674.7834	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.51269E-02	2.4102E-02	6.5140E-04	AU
		81.0000	16920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.06687E+00	5.8519E-01	1.5816E-02	
												Co-60	2.67116E-03	7.5628E-04	2.0440E-05	
												Cs-137	8.75791E+00	2.4796E+00	6.7016E-02	
												Eu-152	1.23487E-02	3.4962E-03	9.4493E-05	
												Eu-154	5.32481E-03	1.5076E-03	4.0746E-05	
												Eu-155	1.16480E-03	3.2978E-04	8.9131E-06	
												H-3	2.25078E+02	6.3725E+01	1.7223E+00	
												Na-22	7.65441E-08	2.1672E-08	5.8572E-10	
												Ni-63	2.24203E-01	6.3477E-02	1.7156E-03	
												Pm-147	8.13610E-06	2.3035E-06	6.2258E-08	
												Pu-238 [2.5506E-09 g]	5.66637E-03	1.6043E-03	4.3359E-05	
												Pu-239 [4.8425E-05 g]	3.92354E-01	1.1109E-01	3.0023E-03	
												Pu-240 [1.3054E-05 g]	3.92354E-01	1.1109E-01	3.0023E-03	
												Pu-241 [6.5743E-10 g]	8.59151E-03	2.4325E-03	6.5743E-05	
												Ra-226	7.02635E-01	1.9893E-01	5.3766E-03	
												Sr-90	9.02065E+00	2.5540E+00	6.9027E-02	
												Th-232 [2.9940E-02 kg]	4.30389E-01	1.2186E-01	3.2934E-03	
												U-Nat [9.2640E-04 kg]	4.84050E-02	1.3705E-02	3.7040E-04	
												Zn-65	8.75791E-20	2.4796E-20	6.7016E-22	
												Subtotal		6.9998E+01	1.8918E+00	
												Total		6.9998E+01	1.8918E+00	
												SNM [6.1481E-05 g]				
												Source [3.0866E-02 kg]				
159/R5-0022-01	19 Lift Liner	2.2937	8318.8846	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	4.86439E-02	1.4932E-02	4.0356E-04	AU
		81.0000	18340.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.18107E+00	3.6254E-01	9.7983E-03	
												Co-60	1.52638E-03	4.6853E-04	1.2663E-05	
												Cs-137	5.00452E+00	1.5362E+00	4.1518E-02	
												Eu-152	7.05637E-03	2.1660E-03	5.8541E-05	
												Eu-154	3.04275E-03	9.3399E-04	2.5243E-05	
												Eu-155	6.65601E-04	2.0431E-04	5.5219E-06	
												H-3	1.28616E+02	3.9479E+01	1.0670E+00	
												Na-22	4.37395E-08	1.3426E-08	3.6287E-10	
												Ni-63	1.28116E-01	3.9327E-02	1.0629E-03	
												Pm-147	4.64920E-06	1.4271E-06	3.8571E-08	
												Pu-238 [1.5801E-09 g]	3.23792E-03	9.9389E-04	2.6862E-05	
												Pu-239 [3.0000E-05 g]	2.24202E-01	6.8820E-02	1.8600E-03	
												Pu-240 [8.0870E-06 g]	2.24202E-01	6.8820E-02	1.8600E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 7 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [4.0730E-10 g]	4.90943E-03	1.5070E-03	4.0729E-05
												Ra-226	7.02634E-01	2.1568E-01	5.8292E-03
												Sr-90	5.15466E+00	1.5823E+00	4.2764E-02
												Th-232 [3.2460E-02 kg]	4.30389E-01	1.3211E-01	3.5706E-03
												U-Nat [5.7393E-04 kg]	2.76600E-02	8.4904E-03	2.2947E-04
												Zn-65	5.00452E-20	1.5362E-20	4.1518E-22
												Subtotal		4.3514E+01	1.1761E+00
												Total		4.3514E+01	1.1761E+00
												SNM [3.8089E-05 g]			
												Source [3.3034E-02 kg]			
160/R5-0022-01	19 Lift Liner	2.2937	8110.2321	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.43220E-02	7.2779E-03	1.9670E-04	AU
		81.0000	17880.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.90533E-01	1.7671E-01	4.7759E-03
												Co-60	7.63189E-04	2.2838E-04	6.1723E-06
												Cs-137	2.50226E+00	7.4877E-01	2.0237E-02
												Eu-152	3.52819E-03	1.0558E-03	2.8534E-05
												Eu-154	1.52137E-03	4.5525E-04	1.2304E-05
												Eu-155	3.32801E-04	9.9586E-05	2.6915E-06
												H-3	6.43081E+01	1.9243E+01	5.2009E-01
												Na-22	2.18697E-08	6.5442E-09	1.7687E-10
												Ni-63	6.40579E-02	1.9169E-02	5.1807E-04
												Pm-147	2.32460E-06	6.9560E-07	1.8800E-08
												Pu-238 [7.7020E-10 g]	1.61896E-03	4.8444E-04	1.3093E-05
												Pu-239 [1.4623E-05 g]	1.12101E-01	3.3545E-02	9.0662E-04
												Pu-240 [3.9418E-06 g]	1.12101E-01	3.3545E-02	9.0662E-04
												Pu-241 [1.9853E-10 g]	2.45472E-03	7.3456E-04	1.9853E-05
												Ra-226	7.02635E-01	2.1026E-01	5.6826E-03
												Sr-90	2.57733E+00	7.7123E-01	2.0844E-02
												Th-232 [3.1643E-02 kg]	4.30389E-01	1.2879E-01	3.4808E-03
												U-Nat [2.7975E-04 kg]	1.38300E-02	4.1385E-03	1.1185E-04
												Zn-65	2.50226E-20	7.4877E-21	2.0237E-22
												Subtotal		2.1379E+01	5.7783E-01
												Total		2.1379E+01	5.7783E-01
												SNM [1.8566E-05 g]			
												Source [3.1923E-02 kg]			

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER WP-9514-008

3. PAGE 8 OF 8 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2)		11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
					ALPHA	BETA-GAMMA						RADIONUCLIDES	pCi/gm	MBq	mCi
Shipment Totals		**22.9370**	**83079.9840**									**SNM [4.1959E-04 g]**		**4.7900E+02**	**1.2946E+01**
		810.0000	**183160.0000**									**Source [3.3049E-01 kg]**			

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9514-008
PAGE 1

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GIMX 009703**
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) **G**

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **08/29/2021**
CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**
SIGNATURE -- *Authorized carrier acknowledging waste receipt*
DATE:

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-009**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**
SIGNATURE -- *Authorized consignee acknowledging waste receipt*: Barbara Villa
DATE: 9.23.21

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.15512323367 Digitally signed by NIGAR.ZAR.15512323367 Date: 2021.08.26 14:59:17 -04'00'
TITLE: Manifester
DATE: 08/26/2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.3559E+01**	**(6.3672E-01)**	**NA**	**64200 LBS; 675 FT3**	**BFLU000187**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.9663E+00**	**(1.6125E-01)**	**NA**	**52560 LBS; 675 FT3**	**BFLU000213**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-238**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	5.1786E+00	(1.3996E-01)	NA	59400 LBS; 675 FT3	BFLU000291
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-238	Zn-65					
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	3.6652E+01	(9.9057E-01)	NA	44640 LBS; 675 FT3	ERRU000186
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	5.2035E+01	(1.4063E+00)	NA	56220 LBS; 675 FT3	ERRU000202
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	1.6451E+01	(4.4462E-01)	NA	67620 LBS; 675 FT3	ERRU000272
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-238	Zn-65					

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834	kg 135097.9604	NP	8.2247E-02	1.4129E-03	8.3660E-02
	ft3 4050.0000	lb 297840.0000		3 Containers	6 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.3984E+02	2.3093E+01	1.3441E+01	NP	NP	(kg)	2.7643E-02
mCi	3.7795E+00	6.2412E-01	3.6327E-01	NP	NP	(lb)	6.0942E-02

2. MANIFEST NUMBER: WP-9450-009

3. PAGE 1 OF 5 PAGE(S)

4. SHIPPER NAME: Brookhaven National Lab

SHIPMENT ID NUMBER: GIMX 009703

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000187/R5-0022-01	19 Intermodal Container	19.1139	29120.6321	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.72932E-02	9.2093E-02	2.4890E-03	AU
		675.0000	64200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	2.36216E+00	2.2359E+00	6.0430E-02	
												Co-60	3.05287E-03	2.8897E-03	7.8100E-05	
												Cs-137	1.00108E+01	9.4757E+00	2.5610E-01	
												Eu-152	1.41112E-02	1.3357E-02	3.6100E-04	
												Eu-154	6.08620E-03	5.7609E-03	1.5570E-04	
												Eu-155	1.33138E-03	1.2602E-03	3.4060E-05	
												H-3	4.50308E+00	4.2624E+00	1.1520E-01	
												Na-22	8.74818E-08	8.2806E-08	2.2380E-09	
												Ni-63	2.56230E-01	2.4254E-01	6.5550E-03	
												Pm-147	9.29933E-06	8.8023E-06	2.3790E-07	
												Pu-238 [9.7471E-09 g]	6.47709E-03	6.1309E-03	1.6570E-04	
												Pu-239 [1.8500E-04 g]	4.48354E-01	4.2439E-01	1.1470E-02	
												Pu-240 [4.9870E-05 g]	4.48354E-01	4.2439E-01	1.1470E-02	
												Pu-241 [2.5120E-09 g]	9.81922E-03	9.2944E-03	2.5120E-04	
												Ra-226	2.73234E-03	2.5863E-03	6.9900E-05	
												Sr-90	6.65690E+00	6.3011E+00	1.7030E-01	
												Th-232 [3.1427E-03 kg]	1.35132E-02	1.2791E-02	3.4570E-04	
												U-234 [9.7468E-08 kg]	2.36216E-02	2.2359E-02	6.0430E-04	
												U-235 [1.5714E-02 g]	1.35132E-03	1.2791E-03	3.4570E-05	
												U-238 [1.7774E-03 kg]	2.36216E-02	2.2359E-02	6.0430E-04	
												Zn-65	1.00108E-19	9.4757E-20	2.5610E-21	
												Subtotal		2.3559E+01	6.3672E-01	
												Total		2.3559E+01	6.3672E-01	
												SNM [1.5948E-02 g]				
												Source [4.9202E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-009

3. PAGE 2 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi	
BFLU000213/R5-0022-01	19 Lift Liner	19.1139	23840.8165	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.62146E-02	1.2180E-02	3.2920E-04	AU
		675.0000	52560.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.93689E-01	2.9574E-01	7.9929E-03	
												Co-60	5.08793E-04	3.8221E-04	1.0330E-05	
												Cs-137	1.66817E+00	1.2531E+00	3.3868E-02	
												Eu-152	2.35212E-03	1.7669E-03	4.7754E-05	
												Eu-154	1.01425E-03	7.6190E-04	2.0592E-05	
												Eu-155	2.21867E-04	1.6667E-04	4.5045E-06	
												H-3	4.50407E+00	3.3835E+00	9.1445E-02	
												Na-22	1.45798E-08	1.0952E-08	2.9601E-10	
												Ni-63	4.27052E-02	3.2080E-02	8.6703E-04	
												Pm-147	1.54973E-06	1.1642E-06	3.1464E-08	
												Pu-238 [1.2890E-09 g]	1.07931E-03	8.1078E-04	2.1913E-05	
												Pu-239 [2.4473E-05 g]	7.47339E-02	5.6140E-02	1.5173E-03	
												Pu-240 [6.5970E-06 g]	7.47339E-02	5.6140E-02	1.5173E-03	
												Pu-241 [3.3225E-10 g]	1.63648E-03	1.2293E-03	3.3225E-05	
												Ra-226	2.73247E-03	2.0526E-03	5.5476E-05	
												Sr-90	1.14103E+00	8.5714E-01	2.3166E-02	
												Th-232 [2.4940E-03 kg]	1.35122E-02	1.0150E-02	2.7433E-04	
												U-238 [2.3509E-04 kg]	3.93689E-03	2.9574E-03	7.9929E-05	
												Zn-65	1.66817E-20	1.2531E-20	3.3868E-22	
												Subtotal		5.9663E+00	1.6125E-01	
												Total		5.9663E+00	1.6125E-01	
												SNM [3.1071E-05 g]				
												Source [2.7290E-03 kg]				
BFLU000291/R5-0022-01	19 Lift Liner	19.1139	26943.3886	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.93265E-03	2.5396E-03	6.8639E-05	AU
		675.0000	59400.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	7.12644E-02	6.1716E-02	1.6680E-03	
												Co-60	1.12101E-05	9.7081E-06	2.6238E-07	
												Cs-137	2.09189E-01	1.8116E-01	4.8961E-03	
												Eu-152	1.87169E-04	1.6209E-04	4.3807E-06	
												Eu-154	5.05456E-05	4.3771E-05	1.1830E-06	
												Eu-155	3.90353E-06	3.3804E-06	9.1363E-08	
												H-3	4.50407E+00	3.9005E+00	1.0542E-01	
												Na-22	3.71335E-11	3.2157E-11	8.6912E-13	
												Ni-63	6.92626E-03	5.9981E-03	1.6211E-04	
												Pm-147	4.07368E-09	3.5278E-09	9.5345E-11	
												Pu-238 [2.3702E-10 g]	1.72155E-04	1.4908E-04	4.0293E-06	
												Pu-239 [5.1009E-06 g]	1.35122E-02	1.1702E-02	3.1626E-04	
												Pu-240 [1.3750E-06 g]	1.35122E-02	1.1702E-02	3.1626E-04	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-009**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [3.1391E-11 g]	1.34121E-04	1.1615E-04	3.1391E-06	
												Ra-226	2.73247E-03	2.3663E-03	6.3954E-05	
												Sr-90	1.14103E+00	9.8812E-01	2.6706E-02	
												Th-232 [2.8751E-03 kg]	1.35122E-02	1.1702E-02	3.1626E-04	
												U-238 [4.9058E-05 kg]	7.12644E-04	6.1716E-04	1.6680E-05	
												Zn-65	1.96177E-28	1.6989E-28	4.5916E-30	
												Subtotal		5.1786E+00	1.3996E-01	
												Total		5.1786E+00	1.3996E-01	
												SNM [6.4762E-06 g]				
												Source [2.9241E-03 kg]				
ERRU000186/R5-0022-01	19 Intermodal Container	19.1139	20248.3647	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.57878E-01	1.5944E-01	4.3092E-03	AU
												C-14	6.25265E+00	3.8658E+00	1.0448E-01	
												Co-60	8.07782E-03	4.9943E-03	1.3498E-04	
		675.0000	44640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	2.64943E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.73275E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.61321E-02	9.9741E-03	2.6957E-04	
												Eu-155	3.52080E-03	2.1768E-03	5.8833E-05	
												H-3	5.29886E+00	3.2762E+00	8.8545E-02	
												Na-22	2.31972E-07	1.4342E-07	3.8763E-09	
												Ni-63	6.78254E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.46103E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.71919E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.18930E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.18930E+00	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.60233E-02	1.6090E-02	4.3486E-04	
												Ra-226	3.21464E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.76629E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.58966E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	6.25265E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.57967E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	6.25265E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.64943E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-009**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000202/R5-0022-01	19 Lift Liner	19.1139	25500.9647	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	2.83756E-01	2.3059E-01	6.2321E-03	AU
												C-14	6.88955E+00	5.5985E+00	1.5131E-01	
		675.0000	56220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Co-60	8.90388E-03	7.2354E-03	1.9555E-04	
												Cs-137	2.91930E+01	2.3723E+01	6.4116E-01	
												Eu-152	4.11622E-02	3.3449E-02	9.0404E-04	
												Eu-154	1.77494E-02	1.4424E-02	3.8983E-04	
												Eu-155	3.88267E-03	3.1551E-03	8.5274E-05	
												H-3	4.61250E+00	3.7481E+00	1.0130E-01	
												Na-22	2.55147E-07	2.0734E-07	5.6038E-09	
												Ni-63	7.47341E-01	6.0732E-01	1.6414E-02	
												Pm-147	2.71203E-05	2.2039E-05	5.9564E-07	
												Pu-238 [2.4402E-08 g]	1.88879E-02	1.5349E-02	4.1483E-04	
												Pu-239 [4.6329E-04 g]	1.30785E+00	1.0628E+00	2.8724E-02	
												Pu-240 [1.2489E-04 g]	1.30785E+00	1.0628E+00	2.8724E-02	
												Pu-241 [6.2898E-09 g]	2.86384E-02	2.3272E-02	6.2898E-04	
												Ra-226	2.73247E-03	2.2205E-03	6.0013E-05	
												Sr-90	1.94134E+01	1.5776E+01	4.2637E-01	
												Th-232 [2.6979E-03 kg]	1.35122E-02	1.0980E-02	2.9677E-04	
												U-234 [2.4406E-07 kg]	6.88955E-02	5.5985E-02	1.5131E-03	
												U-235 [3.9344E-02 g]	3.94106E-03	3.2026E-03	8.6557E-05	
												U-238 [4.4504E-03 kg]	6.88955E-02	5.5985E-02	1.5131E-03	
												Zn-65	2.91930E-19	2.3723E-19	6.4116E-21	
												Subtotal		5.2034E+01	1.4063E+00	
												Total		5.2034E+01	1.4063E+00	
												SNM [3.9932E-02 g]				
												Source [7.1485E-03 kg]				
ERRU000272/R5-0022-01	19 Lift Liner	19.1139	30671.9181	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	5.67512E-02	5.6976E-02	1.5399E-03	AU
												C-14	1.37791E+00	1.3834E+00	3.7388E-02	
		675.0000	67620.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Co-60	1.78077E-03	1.7878E-03	4.8319E-05	
												Cs-137	5.83861E+00	5.8615E+00	1.5842E-01	
												Eu-152	8.23244E-03	8.2651E-03	2.2338E-04	
												Eu-154	3.54987E-03	3.5639E-03	9.6321E-05	
												Eu-155	7.76535E-04	7.7959E-04	2.1070E-05	
												H-3	4.50407E+00	4.5218E+00	1.2221E-01	
												Na-22	5.10294E-08	5.1230E-08	1.3846E-09	
												Ni-63	1.49468E-01	1.5006E-01	4.0556E-03	
												Pm-147	5.42406E-06	5.4457E-06	1.4718E-07	
												Pu-238 [6.0294E-09 g]	3.77758E-03	3.7925E-03	1.0250E-04	
												Pu-239 [1.1447E-04 g]	2.61570E-01	2.6260E-01	7.0974E-03	
												Pu-240 [3.0858E-05 g]	2.61570E-01	2.6260E-01	7.0974E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-009**

3. PAGE **5** OF **5** PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.5541E-09 g]	**5.72767E-03**	**5.7502E-03**	**1.5541E-04**	
												Ra-226	**2.73247E-03**	**2.7433E-03**	**7.4142E-05**	
												Sr-90	**3.88267E+00**	**3.8980E+00**	**1.0535E-01**	
												Th-232 [3.3331E-03 kg]	**1.35122E-02**	**1.3566E-02**	**3.6664E-04**	
												U-238 [1.0996E-03 kg]	**1.37791E-02**	**1.3834E-02**	**3.7388E-04**	
												Zn-65	**5.83861E-20**	**5.8615E-20**	**1.5842E-21**	
												Subtotal		**1.6451E+01**	**4.4462E-01**	
												Total		**1.6451E+01**	**4.4462E-01**	
												SNM [1.4534E-04 g]				
												Source [4.4327E-03 kg]				
Shipment Totals		**114.6834**	**156326.0847**									**SNM [8.3660E-02 g]**		**1.3984E+02**	**3.7795E+00**	
		4050.0000	**344640.0000**									**Source [2.7643E-02 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-009
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> **6**

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

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **GCCX 200011**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER: **NA**
SHIPPING DATE: **08/29/2021**

CONTACT: **James P. Nunes**
TELEPHONE (Include Area Code): **(718) 928-2304**

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE

7. FORM 540 AND 540A — PAGE 1 OF **2** PAGE(S)
FORM 541 AND 541A — **5** PAGE(S)
FORM 542 AND 542A — **None** PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9450-010**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt*: Barbara Vaden
DATE: 9.23.21

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.1551232367 Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.06.26 15:01:33 -04'00'
TITLE: Manifester
DATE: 08/26/2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.6045E+00**	**(7.0394E-02)**	**NA**	**27340 LBS; 675 FT3**	**ERRU000151**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-238**	**Zn-65**					
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.5186E+01**	**(4.1042E-01)**	**NA**	**49940 LBS; 675 FT3**	**ERRU000155**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-238**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	5.6871E+01	(1.5370E+00)	NA	60720 LBS; 675 FT3	ERRU000194
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-234	U-235					
				U-238	Zn-65							
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	2.3292E+01	(6.2952E-01)	NA	51660 LBS; 675 FT3	ERRU000207
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-238	Zn-65					
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	4.7260E+00	(1.2773E-01)	NA	49200 LBS; 675 FT3	ERRU000263
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-238	Zn-65					
Material not regulated by USDOT WP-9450, demolition debris, does not contain PCBs	**NA**	**na**	**Solid Oxides**	Am-241	C-14	Co-60	Cs-137	5.4010E+00	(1.4598E-01)	NA	48320 LBS; 675 FT3	ERRU000306
				Eu-152	Eu-154	Eu-155	H-3					
				Na-22	Ni-63	Pm-147	Pu-238					
				Pu-239	Pu-240	Pu-241	Ra-226					
				Sr-90	Th-232	U-238	Zn-65					

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834 ft3 4050.0000	kg 109034.5411 lb 240380.0000	NP	4.3001E-02 1 Container	1.0888E-03 6 Containers	4.4089E-02

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.0808E+02	1.8267E+01	1.0363E+01	NP	NP	(kg)	2.1631E-02
mCi	2.9211E+00	4.9370E-01	2.8008E-01	NP	NP	(lb)	4.7689E-02

2. MANIFEST NUMBER **WP-9450-010**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **GCCX 200011**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000151/R5-0022-01	19 Lift Liner	19.1139 675.0000	12401.2162 27340.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	19.1139 675.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.62146E-02	5.3173E-03	1.4371E-04	AU
												C-14	3.93689E-01	1.2910E-01	3.4893E-03	
												Co-60	5.08793E-04	1.6685E-04	4.5095E-06	
												Cs-137	1.66817E+00	5.4705E-01	1.4785E-02	
												Eu-152	2.35212E-03	7.7134E-04	2.0847E-05	
												Eu-154	1.01425E-03	3.3261E-04	8.9894E-06	
												Eu-155	2.21867E-04	7.2757E-05	1.9664E-06	
												H-3	4.50407E+00	1.4770E+00	3.9920E-02	
												Na-22	1.45798E-08	4.7811E-09	1.2922E-10	
												Ni-63	4.27052E-02	1.4005E-02	3.7850E-04	
												Pm-147	1.54973E-06	5.0823E-07	1.3736E-08	
												Pu-238 [5.6271E-10 g]	1.07931E-03	3.5395E-04	9.5661E-06	
												Pu-239 [1.0684E-05 g]	7.47342E-02	2.4508E-02	6.6238E-04	
												Pu-240 [2.8799E-06 g]	7.47342E-02	2.4508E-02	6.6238E-04	
												Pu-241 [1.4504E-10 g]	1.63648E-03	5.3665E-04	1.4504E-05	
												Ra-226	2.73247E-03	8.9607E-04	2.4218E-05	
												Sr-90	1.14103E+00	3.7418E-01	1.0113E-02	
												Th-232 [1.0887E-03 kg]	1.35122E-02	4.4311E-03	1.1976E-04	
												U-238 [1.0263E-04 kg]	3.93689E-03	1.2910E-03	3.4893E-05	
												Zn-65	1.66817E-20	5.4705E-21	1.4785E-22	
												Subtotal		2.6045E+00	7.0394E-02	
												Total		2.6045E+00	7.0394E-02	
												SNM [1.3564E-05 g]				
												Source [1.1914E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9450-010**

3. PAGE **2** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000155/R5-0022-01	19 Lift Liner	19.1139 675.0000	22652.4045 49940.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	19.1139 675.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	8.10732E-02 1.96844E+00 2.54396E-03 8.34087E+00 1.17606E-02	5.7339E-02 1.3921E+00 1.7992E-03 5.8989E+00 8.3176E-03	1.5497E-03 3.7625E-02 4.8626E-05 1.5943E-01 2.2480E-04	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	5.07125E-03 1.10934E-03 4.50407E+00 7.28992E-08 2.13526E-01	3.5865E-03 7.8455E-04 3.1854E+00 5.1556E-08 1.5101E-01	9.6933E-05 2.1204E-05 8.6092E-02 1.3934E-09 4.0814E-03	
												Pm-147 Pu-238 [6.0677E-09 g] Pu-239 [1.1520E-04 g] Pu-240 [3.1054E-05 g]	7.74867E-06 5.39654E-03 3.73671E-01 3.73671E-01	5.4801E-06 3.8166E-03 2.6427E-01 2.6427E-01	1.4811E-07 1.0315E-04 7.1424E-03 7.1424E-03	
												Pu-241 [1.5640E-09 g] Ra-226 Sr-90 Th-232 [2.3480E-03 kg]	8.18239E-03 2.73247E-03 5.54667E+00 1.35122E-02	5.7868E-03 1.9325E-03 3.9227E+00 9.5564E-03	1.5640E-04 5.2229E-05 1.0602E-01 2.5828E-04	
												U-238 [1.1066E-03 kg] Zn-65 Subtotal Total	1.96844E-02 8.34087E-20	1.3921E-02 5.8989E-20 1.5185E+01 1.5185E+01	3.7625E-04 1.5943E-21 4.1042E-01 4.1042E-01	
												SNM [1.4626E-04 g] Source [3.4546E-03 kg]				
ERRU000194/R5-0022-01	19 Lift Liner	19.1139 675.0000	27542.1305 60720.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	19.1139 675.0000	89 - Wastelock 770 100	Oxides/None	NP	Am-241 C-14 Co-60 Cs-137 Eu-152	2.83756E-01 6.88956E+00 8.90387E-03 2.91930E+01 4.11622E-02	2.5202E-01 6.1191E+00 7.9080E-03 2.5928E+01 3.6558E-02	6.8113E-03 1.6538E-01 2.1373E-04 7.0075E-01 9.8806E-04	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.77494E-02 3.88267E-03 4.61250E+00 2.55147E-07 7.47341E-01	1.5764E-02 3.4484E-03 4.0966E+00 2.2661E-07 6.6374E-01	4.2606E-04 9.3200E-05 1.1072E-01 6.1245E-09 1.7939E-02	
												Pm-147 Pu-238 [2.6670E-08 g] Pu-239 [5.0635E-04 g] Pu-240 [1.3649E-04 g]	2.71203E-05 1.88879E-02 1.30785E+00 1.30785E+00	2.4087E-05 1.6775E-02 1.1616E+00 1.1616E+00	6.5100E-07 4.5338E-04 3.1394E-02 3.1394E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-010**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [6.8744E-09 g]	2.86384E-02	2.5435E-02	6.8743E-04	
												Ra-226	2.73247E-03	2.4268E-03	6.5590E-05	
												Sr-90	1.94134E+01	1.7242E+01	4.6600E-01	
												Th-232 [2.9486E-03 kg]	1.35122E-02	1.2001E-02	3.2435E-04	
												U-234 [2.6674E-07 kg]	6.88956E-02	6.1191E-02	1.6538E-03	
												U-235 [4.3001E-02 g]	3.94106E-03	3.5002E-03	9.4601E-05	
												U-238 [4.8640E-03 kg]	6.88956E-02	6.1191E-02	1.6538E-03	
												Zn-65	2.91930E-19	2.5928E-19	7.0075E-21	
												Subtotal		5.6871E+01	1.5370E+00	
												Total		5.6871E+01	1.5370E+00	
												SNM [4.3643E-02 g]				
												Source [7.8129E-03 kg]				
ERRU000207/R5-0022-01	19 Lift Liner	19.1139	23432.5834	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.29717E-01	9.5486E-02	2.5807E-03	AU
		675.0000	51660.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.14951E+00	2.3183E+00	6.2658E-02	
												Co-60	4.07034E-03	2.9961E-03	8.0977E-05	
												Cs-137	1.33454E+01	9.8235E+00	2.6550E-01	
												Eu-152	1.88170E-02	1.3851E-02	3.7435E-04	
												Eu-154	8.11399E-03	5.9725E-03	1.6142E-04	
												Eu-155	1.77494E-03	1.3065E-03	3.5311E-05	
												H-3	4.50407E+00	3.3154E+00	8.9606E-02	
												Na-22	1.16639E-07	8.5859E-08	2.3205E-09	
												Ni-63	3.41642E-01	2.5148E-01	6.7968E-03	
												Pm-147	1.23979E-05	9.1261E-06	2.4665E-07	
												Pu-238 [1.0105E-08 g]	8.63447E-03	6.3559E-03	1.7178E-04	
												Pu-239 [1.9185E-04 g]	5.97873E-01	4.4008E-01	1.1894E-02	
												Pu-240 [5.1715E-05 g]	5.97873E-01	4.4008E-01	1.1894E-02	
												Pu-241 [2.6046E-09 g]	1.30918E-02	9.6367E-03	2.6045E-04	
												Ra-226	2.73247E-03	2.0114E-03	5.4361E-05	
												Sr-90	8.87468E+00	6.5327E+00	1.7656E-01	
												Th-232 [2.4438E-03 kg]	1.35122E-02	9.9463E-03	2.6882E-04	
												U-238 [1.8429E-03 kg]	3.14951E-02	2.3183E-02	6.2658E-04	
												Zn-65	1.33454E-19	9.8235E-20	2.6550E-21	
												Subtotal		2.3292E+01	6.2952E-01	
												Total		2.3292E+01	6.2952E-01	
												SNM [2.4357E-04 g]				
												Source [4.2867E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: **WP-9450-010**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
ERRU000263/R5-0022-01	19 Lift Liner	19.1139	22316.7461	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	8.10732E-03	5.6329E-03	1.5224E-04	AU
		675.0000	49200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	1.96844E-01	1.3677E-01	3.6965E-03	
												Co-60	2.54396E-04	1.7676E-04	4.7772E-06	
												Cs-137	8.34087E-01	5.7953E-01	1.5663E-02	
												Eu-152	1.17606E-03	8.1715E-04	2.2085E-05	
												Eu-154	5.07125E-04	3.5235E-04	9.5231E-06	
												Eu-155	1.10934E-04	7.7078E-05	2.0832E-06	
												H-3	4.50407E+00	3.1295E+00	8.4580E-02	
												Na-22	7.28992E-09	5.0649E-09	1.3689E-10	
												Ni-63	2.13526E-02	1.4836E-02	4.0097E-04	
												Pm-147	7.74867E-07	5.3839E-07	1.4551E-08	
												Pu-238 [5.9612E-10 g]	5.39654E-04	3.7496E-04	1.0134E-05	
												Pu-239 [1.1318E-05 g]	3.73671E-02	2.5963E-02	7.0170E-04	
												Pu-240 [3.0509E-06 g]	3.73671E-02	2.5963E-02	7.0170E-04	
												Pu-241 [1.5365E-10 g]	8.18239E-04	5.6851E-04	1.5365E-05	
												Ra-226	2.73247E-03	1.8985E-03	5.1312E-05	
												Sr-90	1.14103E+00	7.9280E-01	2.1427E-02	
												Th-232 [2.3067E-03 kg]	1.35122E-02	9.3884E-03	2.5374E-04	
												U-238 [1.0872E-04 kg]	1.96844E-03	1.3677E-03	3.6965E-05	
												Zn-65	8.34087E-21	5.7953E-21	1.5663E-22	
												Subtotal		4.7260E+00	1.2773E-01	
												Total		4.7260E+00	1.2773E-01	
												SNM [1.4369E-05 g]				
												Source [2.4155E-03 kg]				
ERRU000306/R5-0022-01	19 Lift Liner	19.1139	21917.5848	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	NP	Am-241	1.62146E-02	1.1027E-02	2.9802E-04	AU
		675.0000	48320.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.93689E-01	2.6772E-01	7.2358E-03	
												Co-60	5.08793E-04	3.4600E-04	9.3513E-06	
												Cs-137	1.66817E+00	1.1344E+00	3.0660E-02	
												Eu-152	2.35212E-03	1.5995E-03	4.3231E-05	
												Eu-154	1.01425E-03	6.8972E-04	1.8641E-05	
												Eu-155	2.21867E-04	1.5088E-04	4.0778E-06	
												H-3	4.50407E+00	3.0629E+00	8.2782E-02	
												Na-22	1.45798E-08	9.9149E-09	2.6797E-10	
												Ni-63	4.27052E-02	2.9041E-02	7.8490E-04	
												Pm-147	1.54973E-06	1.0539E-06	2.8483E-08	
												Pu-238 [1.1669E-09 g]	1.07931E-03	7.3397E-04	1.9837E-05	
												Pu-239 [2.2154E-05 g]	7.47342E-02	5.0823E-02	1.3736E-03	
												Pu-240 [5.9721E-06 g]	7.47342E-02	5.0823E-02	1.3736E-03	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER: WP-9450-010

3. PAGE 5 OF 5 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
												Pu-241 [3.0078E-10 g]	1.63648E-03 / 1.1129E-03 / 3.0078E-05
												Ra-226	2.73247E-03 / 1.8582E-03 / 5.0221E-05
												Sr-90	1.14103E+00 / 7.7596E-01 / 2.0972E-02
												Th-232 [2.2577E-03 kg]	1.35122E-02 / 9.1890E-03 / 2.4835E-04
												U-238 [2.1282E-04 kg]	3.93689E-03 / 2.6772E-03 / 7.2358E-05
												Zn-65	1.66817E-20 / 1.1344E-20 / 3.0660E-22
												Subtotal	5.4011E+00 / 1.4598E-01
												Total	5.4011E+00 / 1.4598E-01
												SNM [2.8128E-05 g]	
												Source [2.4705E-03 kg]	
Shipment Totals		114.6834	130262.6655									SNM [4.4089E-02 g]	1.0808E+02 / 2.9211E+00
		4050.0000	287180.0000									Source [2.1631E-02 kg]	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-010
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

WASTE CONTROL SPECIALISTS

FORM

WASTE LOAD TRACKING

Effective Date 12/18/2020 | OP1.2.29-1

Revision 16 | Page 1 of 1

SECTION 1: Shipment INFORMATION **ANT PERMIT REQUIRED** ☐ YES X NO *Arrival Date:* 9.23.21

Generator: Brookhaven Profile: WP-9450 Rev 0 Rad Manifest #: WP-9450-010 UHWM #: NA

Received By Signature:	Barbara Vogler	Bvgl	9.23.21	See Attached
	WAS Print Name	WAS Signature	Date	WCS Container ID

Section: 1A **Off-Site Shipment Information** ☐ Not Applicable

Off-site Shipment Information	Off-site Receiving Facility	Manifest #	Date	MCC ID#

SECTION 2: RADIOLOGICAL SAFETY REQUIREMENTS

☐Gate Monitor Used WI-RS-18.0 All Non-Radioactive and RCRA Waste shipments ☐Not Applicable

☐Gate Monitor **DID NOT** Alarm (Lab signature required)

☐Gate Monitor **DID** Alarm (RST must perform survey prior to acceptance, RSS signature required). Refer to Survey Number below.

Average 1 foot exposure rate on truck/bin/IM is:

☐< 2x Background (RSS checks box, signature required)

☐> 2x Background (RSS checks box, RSS, RSO signature required)

Lab Tech Printed Name | Lab Tech Signature | Date | Radiation Safety Officer (RSO) or designee Printed Name (RSO only Required for Non-Rad Shipments >2X) | RSO or designee Signature | Date

All Rail, NORM, Exempt Radioactive, & Licensed radioactive material shipments ☐Not Applicable

☐Physical Survey Performed RS-4.2.1

Survey Number(s):

Radiation Safety Supervisor Printed Name (RSS) | RSS Signature | Date

(RSS Required for Non-Rad Gate alarms and Physical Surveys)

SECTION 3: Routing Approvals

Disposal Route:

☐Disposal at RCRA landfill as Texas Exempt Radioactive Waste
☐Disposal at RCRA landfill as Hazardous or Industrial Solid Waste, same day
☐Disposal at RCRA landfill, after processing through RS-5.0.0
☐Disposal at Compact Waste Facility (CWF)
☐Disposal at Federal Waste Facility (FWF)
☐Other:

Laboratory Manager Initials _____ Date _____

ICS Initials for storage _____

☐N/A
☐Processing (NRWO, RWO, Number):

ICS Initials _____ Date _____

Level 1 Approval Printed Name | Level 1 Approval Signature | Date

Level 2 Landfill Approval Printed Name | Level 2 Approval Signature | Date

☐Form OP-1.2.29-5 Shipment Approval Variance applies (i.e. No Level 2 Signature Needed)

CWF/FWF Transfer Approval

ICS Manager Printed Name | Signature | Date

SECTION 4: Disposal Information ☐Not Applicable

Do Not Continue Without Routing Approval, First & Second Level Approval Signatures in Section 3

Cell	Alpha	Numeric	Landfill Tier	Disposal Date	Landfill ID#

Disposal Verification

Container Disposal?
☐Yes ☐No
Is Container RCRA Empty?
☐Yes ☐No ☐Not Applicable

Landfill Operator or Supervisor Printed Name | Landfill Operator or Supervisor Signature | Date

Comments:

WCS WASTE CONTROL SPECIALISTS	FORM	Effective Date 09/17/2019	OP-1.2.29-6
	OPERATIONS DEPARTMENT	Revision 4	Page 1 of 1

WASTE LOAD TRACKING FORM CONTINUATION SHEET

Generator Name: Brookhaven Profile: WP-9450 Rev 0	RAD Manifest #: WP-9450-010	USEPA Manifest #: NA

ELITE #	Generator #	Shipped to ☐ NA	Manifest ☐ NA	Date ☐ NA
21-004634	ERRU000151			
21-004631	ERRU000207			
21-004629	ERRU000155			
21-004632	ERRU000263			
21-004630	ERRU000194			
21-004633	ERRU000306			

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
CIGX 803988
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-008

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 16 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.0386E+02**	**(5.5097E+00)**	**NA**	**21620 LBS; 81 FT3**	**008**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.9379E+02**	**(7.9402E+00)**	**NA**	**20080 LBS; 81 FT3**	**026**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19960 LBS; 81 FT3**	**064**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.7517E+02**	**(1.0140E+01)**	**NA**	**19860 LBS; 81 FT3**	**073**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-238**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19200 LBS; 81 FT3**	**074**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**21300 LBS; 81 FT3**	**075**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**19200 LBS; 81 FT3**	**076**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.3601E+02**	**(3.6759E+00)**	**NA**	**19200 LBS; 81 FT3**	**076**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.4101E+02**	**(1.1919E+01)**	**NA**	**21480 LBS; 81 FT3**	**077**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**21200 LBS; 81 FT3**	**078**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18980 LBS; 81 FT3**	**119**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Sorbed liquids	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-014**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed liquids	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-014**
Material not regulated by USDOT WP-9334 Sorbed liquids	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-015**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 ft3 884.0000	kg 93861.8754 lb 206930.0000	NP	NP	1.7685E-03 12 Containers	1.7685E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.0070E+03	1.8318E+03	1.6822E+01	NP	NP	(kg)	3.8258E-01
mCi	5.4242E+01	4.9507E+01	4.5465E-01	NP	NP	(lb)	8.4345E-01

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX 803988**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
008/R5-0022-01	19 Lift Liner	2.2937 81.0000	9806.6677 21620.0000	<1.0000E-03 <1.0000E-01	3.3400E-07 2.0000E+01	3.3400E-06 2.0000E+02	22,29-HJ	2.2937 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241 C-14 Co-60 Cs-137 Eu-152	1.94000E-01 4.72000E+00 6.10000E-03 2.00000E+01 2.82000E-02	7.0230E-02 1.7087E+00 2.2082E-03 7.2402E+00 1.0209E-02	1.8981E-03 4.6180E-02 5.9682E-05 1.9568E-01 2.7591E-04	AU
												Eu-154 Eu-155 H-3 Na-22 Ni-63	1.22000E-02 2.66000E-03 5.14000E+02 1.75000E-07 5.12000E-01	4.4163E-03 9.6293E-04 1.8607E+02 6.3351E-08 1.8535E-01	1.1936E-04 2.6025E-05 5.0289E+00 1.7122E-09 5.0094E-03	
												Pm-147 Pu-238 [7.4243E-09 g] Pu-239 [1.4139E-04 g] Pu-240 [3.8115E-05 g]	1.86000E-05 1.29000E-02 8.96000E-01 8.96000E-01	6.7333E-06 4.6698E-03 3.2436E-01 3.2436E-01	1.8198E-07 1.2621E-04 8.7664E-03 8.7664E-03	
												Pu-241 [1.9177E-09 g] Ra-226 Sr-90 Th-232 [3.8246E-02 kg]	1.96000E-02 7.02000E-01 2.06000E+01 4.30000E-01	7.0955E-03 2.5413E-01 7.4574E+00 1.5566E-01	1.9177E-04 6.8683E-03 2.0155E-01 4.2071E-03	
												U-nat [1.5100E-03 kg] Zn-65 Subtotal Total	1.10385E-01 2.00000E-19	3.9960E-02 7.2402E-20 2.0386E+02 2.0386E+02	1.0800E-03 1.9568E-21 5.5097E+00 5.5097E+00	
												SNM [1.7952E-04 g] Source [3.9756E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
026/R5-0022-01	**19 Lift Liner**	**2.2937**	**9108.1354**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**3.02179E-01**	**1.0158E-01**	**2.7454E-03**	**AU**
		81.0000	**20080.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**7.33579E+00**	**2.4660E+00**	**6.6649E-02**	
												Co-60	**9.47291E-03**	**3.1844E-03**	**8.6065E-05**	
												Cs-137	**3.11125E+01**	**1.0459E+01**	**2.8267E-01**	
												Eu-152	**4.38358E-02**	**1.4736E-02**	**3.9827E-04**	
												Eu-154	**1.88862E-02**	**6.3488E-03**	**1.7159E-04**	
												Eu-155	**4.13508E-03**	**1.3901E-03**	**3.7569E-05**	
												H-3	**7.98189E+02**	**2.6832E+02**	**7.2519E+00**	
												Na-22	**2.71364E-07**	**9.1224E-08**	**2.4655E-09**	
												Ni-63	**7.95207E-01**	**2.6732E-01**	**7.2248E-03**	
												Pm-147	**2.88263E-05**	**9.6903E-06**	**2.6190E-07**	
												Pu-238 [1.0731E-08 g]	**2.00790E-02**	**6.7499E-03**	**1.8243E-04**	
												Pu-239 [2.0393E-04 g]	**1.39161E+00**	**4.6779E-01**	**1.2643E-02**	
												Pu-240 [5.4971E-05 g]	**1.39161E+00**	**4.6779E-01**	**1.2643E-02**	
												Pu-241 [2.7725E-09 g]	**3.05161E-02**	**1.0258E-02**	**2.7725E-04**	
												Ra-226	**6.97794E-01**	**2.3457E-01**	**6.3397E-03**	
												Sr-90	**3.20071E+01**	**1.0760E+01**	**2.9080E-01**	
												Th-232 [3.5303E-02 kg]	**4.27424E-01**	**1.4368E-01**	**3.8833E-03**	
												U-nat [2.1800E-03 kg]	**1.71704E-01**	**5.7720E-02**	**1.5600E-03**	
												Zn-65	**3.11125E-19**	**1.0459E-19**	**2.8267E-21**	
												Subtotal		**2.9379E+02**	**7.9402E+00**	
												Total		**2.9379E+02**	**7.9402E+00**	
												SNM [2.5891E-04 g]				
												Source [3.7483E-02 kg]				
064/R5-0022-01	**19 Lift Liner**	**2.2937**	**9053.7043**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.02156E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**19960.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**4.91516E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.33223E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.08101E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**2.92333E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.26843E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.75487E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.34127E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.81346E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.31154E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**1.93237E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.34770E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.34127E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.34127E-04**	**1.7848E-04**	**4.8237E-06**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8436E-12 g]	2.04138E-05	6.8213E-06	1.8436E-07	
												Ra-226	6.95653E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.13056E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.26113E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.15159E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.08101E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
073/R5-0022-01	19 Lift Liner	2.2937	9008.3451	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	3.89430E-01	1.2947E-01	3.4993E-03	AU
		81.0000	19860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	9.46085E+00	3.1454E+00	8.5012E-02	
												Co-60	1.22556E-02	4.0744E-03	1.1012E-04	
												Cs-137	4.00883E+01	1.3328E+01	3.6022E-01	
												Eu-152	5.65818E-02	1.8812E-02	5.0842E-04	
												Eu-154	2.43966E-02	8.1111E-03	2.1922E-04	
												Eu-155	5.33748E-03	1.7746E-03	4.7961E-05	
												H-3	1.03084E+03	3.4272E+02	9.2628E+00	
												Na-22	3.50487E-07	1.1652E-07	3.1493E-09	
												Ni-63	1.02626E+00	3.4120E-01	9.2216E-03	
												Pm-147	3.72249E-05	1.2376E-05	3.3449E-07	
												Pu-238 [1.3682E-08 g]	2.58856E-02	8.6062E-03	2.3260E-04	
												Pu-239 [2.6062E-04 g]	1.79825E+00	5.9785E-01	1.6158E-02	
												Pu-240 [7.0254E-05 g]	1.79825E+00	5.9785E-01	1.6158E-02	
												Pu-241 [3.5301E-09 g]	3.92866E-02	1.3061E-02	3.5301E-04	
												Ra-226	8.04058E-01	2.6733E-01	7.2250E-03	
												Sr-90	4.13483E+01	1.3747E+01	3.7154E-01	
												Th-232 [4.0232E-02 kg]	4.92514E-01	1.6374E-01	4.4255E-03	
												U-238 [5.8824E-03 kg]	2.22578E-01	7.4000E-02	2.0000E-03	
												Zn-65	4.00883E-19	1.3328E-19	3.6022E-21	
												Subtotal		3.7517E+02	1.0140E+01	
												Total		3.7517E+02	1.0140E+01	
												SNM [3.3089E-04 g]				
												Source [4.6115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
074/R5-0022-01	**19 Lift Liner**	**2.2937**	**8708.9741**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.56773E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
												C-14	**2.32303E+00**	**7.4659E-01**	**2.0178E-02**	
		81.0000	**19200.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**3.00222E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.84334E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.38791E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.98475E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.30916E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.52974E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.60308E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.51990E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.14446E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.36864E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.40982E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.40982E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-241 [8.3877E-10 g]	**9.65632E-03**	**3.1034E-03**	**8.3877E-05**	
												Ra-226	**6.91003E-01**	**2.2208E-01**	**6.0022E-03**	
												Sr-90	**1.01386E+01**	**3.2585E+00**	**8.8067E-02**	
												Th-232 [3.3423E-02 kg]	**4.23264E-01**	**1.3603E-01**	**3.6766E-03**	
												U-nat [6.6200E-04 kg]	**5.44539E-02**	**1.7501E-02**	**4.7300E-04**	
												Zn-65	**9.84334E-20**	**3.1636E-20**	**8.5502E-22**	
												Subtotal		**8.9256E+01**	**2.4123E+00**	
												Total		**8.9256E+01**	**2.4123E+00**	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
075/R5-0022-01	**19 Lift Liner**	**2.2937**	**9661.5181**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.31572E-01**	**4.6923E-02**	**1.2682E-03**	**AU**
												C-14	**3.19016E+00**	**1.1377E+00**	**3.0749E-02**	
		81.0000	**21300.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**4.12739E-03**	**1.4720E-03**	**3.9783E-05**	
												Cs-137	**1.35176E+01**	**4.8207E+00**	**1.3029E-01**	
												Eu-152	**1.91049E-02**	**6.8136E-03**	**1.8415E-04**	
												Eu-154	**8.21873E-03**	**2.9311E-03**	**7.9219E-05**	
												Eu-155	**1.80235E-03**	**6.4276E-04**	**1.7372E-05**	
												H-3	**3.47854E+02**	**1.2406E+02**	**3.3529E+00**	
												Na-22	**1.18054E-07**	**4.2102E-08**	**1.1379E-09**	
												Ni-63	**3.46052E-01**	**1.2341E-01**	**3.3355E-03**	
												Pm-147	**1.25264E-05**	**4.4674E-06**	**1.2074E-07**	
												Pu-238 [4.9614E-09 g]	**8.75042E-03**	**3.1207E-03**	**8.4343E-05**	
												Pu-239 [9.4148E-05 g]	**6.05591E-01**	**2.1598E-01**	**5.8372E-03**	
												Pu-240 [2.5379E-05 g]	**6.05591E-01**	**2.1598E-01**	**5.8372E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2769E-09 g]	1.32473E-02	4.7245E-03	1.2769E-04	
												Ra-226	6.32626E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.39682E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	3.87506E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	7.46982E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.35176E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				
076/R5-0022-01	19 Lift Liner	2.2937	8708.9741	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.46000E-01	4.6923E-02	1.2682E-03	AU
		81.0000	19200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.54000E+00	1.1377E+00	3.0749E-02	
												Co-60	4.58000E-03	1.4720E-03	3.9783E-05	
												Cs-137	1.50000E+01	4.8207E+00	1.3029E-01	
												Eu-152	2.12000E-02	6.8136E-03	1.8415E-04	
												Eu-154	9.12000E-03	2.9311E-03	7.9219E-05	
												Eu-155	2.00000E-03	6.4276E-04	1.7372E-05	
												H-3	3.86000E+02	1.2406E+02	3.3529E+00	
												Na-22	1.31000E-07	4.2102E-08	1.1379E-09	
												Ni-63	3.84000E-01	1.2341E-01	3.3355E-03	
												Pm-147	1.39000E-05	4.4674E-06	1.2074E-07	
												Pu-238 [4.9614E-09 g]	9.71000E-03	3.1207E-03	8.4343E-05	
												Pu-239 [9.4148E-05 g]	6.72000E-01	2.1598E-01	5.8372E-03	
												Pu-240 [2.5379E-05 g]	6.72000E-01	2.1598E-01	5.8372E-03	
												Pu-241 [1.2769E-09 g]	1.47000E-02	4.7245E-03	1.2769E-04	
												Ra-226	7.02000E-01	2.2561E-01	6.0977E-03	
												Sr-90	1.55000E+01	4.9817E+00	1.3464E-01	
												Th-232 [3.3955E-02 kg]	4.30000E-01	1.3820E-01	3.7351E-03	
												U-nat [1.0100E-03 kg]	8.28896E-02	2.6640E-02	7.2000E-04	
												Zn-65	1.50000E-19	4.8207E-20	1.3029E-21	
												Subtotal		1.3601E+02	3.6759E+00	
												Total		1.3601E+02	3.6759E+00	
												SNM [1.1953E-04 g]				
												Source [3.4965E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
077/R5-0022-01	**19 Lift Liner**	**2.2937**	**9743.1648**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**4.25000E-01**	**1.5285E-01**	**4.1312E-03**	**AU**
		81.0000	**21480.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.03000E+01**	**3.7044E+00**	**1.0012E-01**	
												Co-60	**1.33000E-02**	**4.7834E-03**	**1.2928E-04**	
												Cs-137	**4.38000E+01**	**1.5753E+01**	**4.2575E-01**	
												Eu-152	**6.17000E-02**	**2.2191E-02**	**5.9975E-04**	
												Eu-154	**2.66000E-02**	**9.5667E-03**	**2.5856E-04**	
												Eu-155	**5.82000E-03**	**2.0932E-03**	**5.6573E-05**	
												H-3	**1.12000E+03**	**4.0282E+02**	**1.0887E+01**	
												Na-22	**3.82000E-07**	**1.3739E-07**	**3.7132E-09**	
												Ni-63	**1.12000E+00**	**4.0282E-01**	**1.0887E-02**	
												Pm-147	**4.06000E-05**	**1.4602E-05**	**3.9465E-07**	
												Pu-238 [1.6182E-08 g]	**2.83000E-02**	**1.0178E-02**	**2.7509E-04**	
												Pu-239 [3.0729E-04 g]	**1.96000E+00**	**7.0492E-01**	**1.9052E-02**	
												Pu-240 [8.2835E-05 g]	**1.96000E+00**	**7.0492E-01**	**1.9052E-02**	
												Pu-241 [4.1701E-09 g]	**4.29000E-02**	**1.5429E-02**	**4.1701E-04**	
												Ra-226	**7.02000E-01**	**2.5248E-01**	**6.8237E-03**	
												Sr-90	**4.51000E+01**	**1.6220E+01**	**4.3839E-01**	
												Th-232 [3.7998E-02 kg]	**4.30000E-01**	**1.5465E-01**	**4.1798E-03**	
												U-nat [3.3000E-03 kg]	**2.41759E-01**	**8.6950E-02**	**2.3500E-03**	
												Zn-65	**4.38000E-19**	**1.5753E-19**	**4.2575E-21**	
												Subtotal		**4.4102E+02**	**1.1919E+01**	
												Total		**4.4102E+02**	**1.1919E+01**	
												SNM [3.9015E-04 g]				
												Source [4.1298E-02 kg]				
078/R5-0022-01	**19 Lift Liner**	**2.2937**	**9616.1589**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**8.66298E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**21200.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.10336E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**2.71832E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**8.91253E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.25667E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.41882E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.18537E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.29052E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**7.78955E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.28161E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**8.27974E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**5.76641E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**3.99281E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**3.99281E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	8.74319E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.25660E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.17991E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.83239E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	4.93046E-02	1.7501E-02	4.7300E-04	
												Zn-65	8.91253E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
119/R5-0022-01	19 Lift Liner	2.2937	8609.1838	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.62769E-01	8.3483E-02	2.2563E-03	AU
		81.0000	18980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	6.37998E+00	2.0269E+00	5.4781E-02	
												Co-60	8.25072E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.70338E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.81717E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.64366E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.60090E-03	1.1440E-03	3.0919E-05	
												H-3	6.95310E+02	2.2090E+02	5.9702E+00	
												Na-22	2.36816E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.92066E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.50874E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.75179E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.21111E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.21111E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.64931E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.59109E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.78989E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.64982E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	3.99466E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.70338E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-014/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-015/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
												Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-008**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**
												Subtotal		**6.5689E-02**	**1.7754E-03**
												Total		**6.5689E-02**	**1.7754E-03**
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			
Shipment Totals		**25.0324**	**94161.2465**									**SNM [1.7685E-03 g]**		**2.0070E+03**	**5.4242E+01**
		884.0000	**207590.0000**									**Source [3.8258E-01 kg]**			

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-008
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
CIGX 804001
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 9 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-009

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4192E+02**	**(6.5384E+00)**	**NA**	**21580 LBS; 81 FT3**	**006**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8137E+02**	**(4.9019E+00)**	**NA**	**19240 LBS; 81 FT3**	**081**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**20260 LBS; 81 FT3**	**085**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**18460 LBS; 81 FT3**	**111**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**18160 LBS; 81 FT3**	**112**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19480 LBS; 81 FT3**	**113**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**20300 LBS; 81 FT3**	**114**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**20300 LBS; 81 FT3**	**114**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.3283E+02**	**(6.2928E+00)**	**NA**	**19400 LBS; 81 FT3**	**116**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**18940 LBS; 81 FT3**	**117**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2169E+03**	**(3.2888E+01)**	**NA**	**21180 LBS; 81 FT3**	**142**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 sorbed water	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-016**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-009

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 sorbed water	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-016**
Material not regulated by USDOT WP-9334 Sorbed water	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-019**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 540A (03-06)

FORM 541

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 91194.7520 / lb 201050.0000	NP	NP	2.0043E-03 12 Containers	2.0043E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.2350E+03	2.0372E+03	1.9076E+01	NP	NP	(kg)	3.7552E-01
mCi	6.0406E+01	5.5060E+01	5.1557E-01	NP	NP	(lb)	8.2789E-01

2. MANIFEST NUMBER: **WP-9334-009**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **CIGX 804001**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
006/R5-022-01	19 Lift Liner	2.2937 / 81.0000	9788.5240 / 21580.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.31036E-01	8.3483E-02	2.2563E-03	AU
												C-14	5.60952E+00	2.0269E+00	5.4781E-02	
												Co-60	7.25435E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.37692E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.35621E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.44516E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.16605E-03	1.1440E-03	3.0919E-05	
												H-3	6.11343E+02	2.2090E+02	5.9702E+00	
												Na-22	2.08218E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.08490E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.20578E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.54024E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.06486E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.06486E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.32938E-02	8.4168E-03	2.2748E-04	
												Ra-226	6.67438E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.45298E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.08830E-01	1.4772E-01	3.9925E-03	
												U-nat [1.8000E-03 kg]	1.32094E-01	4.7730E-02	1.2900E-03	
												Zn-65	2.37692E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4192E+02	6.5384E+00	
												Total		2.4192E+02	6.5384E+00	
												SNM [2.1295E-04 g]				
												Source [3.8096E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
081/R5-0022-01	**19 Lift Liner**	**2.2937**	**8727.1178**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.94000E-01**	**6.2482E-02**	**1.6887E-03**	**AU**
		81.0000	**19240.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**4.72000E+00**	**1.5201E+00**	**4.1085E-02**	
												Co-60	**6.10000E-03**	**1.9646E-03**	**5.3097E-05**	
												Cs-137	**2.00000E+01**	**6.4413E+00**	**1.7409E-01**	
												Eu-152	**2.82000E-02**	**9.0820E-03**	**2.4546E-04**	
												Eu-154	**1.22000E-02**	**3.9290E-03**	**1.0619E-04**	
												Eu-155	**2.66000E-03**	**8.5670E-04**	**2.3154E-05**	
												H-3	**5.14000E+02**	**1.6554E+02**	**4.4741E+00**	
												Na-22	**1.75000E-07**	**5.6362E-08**	**1.5233E-09**	
												Ni-63	**5.12000E-01**	**1.6489E-01**	**4.4566E-03**	
												Pm-147	**1.86000E-05**	**5.9903E-06**	**1.6190E-07**	
												Pu-238 [6.6051E-09 g]	**1.29000E-02**	**4.1547E-03**	**1.1229E-04**	
												Pu-239 [1.2579E-04 g]	**8.96000E-01**	**2.8857E-01**	**7.7991E-03**	
												Pu-240 [3.3909E-05 g]	**8.96000E-01**	**2.8857E-01**	**7.7991E-03**	
												Pu-241 [1.7061E-09 g]	**1.96000E-02**	**6.3126E-03**	**1.7061E-04**	
												Ra-226	**7.02000E-01**	**2.2609E-01**	**6.1105E-03**	
												Sr-90	**2.06000E+01**	**6.6345E+00**	**1.7931E-01**	
												Th-232 [3.4026E-02 kg]	**4.30000E-01**	**1.3849E-01**	**3.7429E-03**	
												U-nat [1.3500E-03 kg]	**1.10519E-01**	**3.5594E-02**	**9.6200E-04**	
												Zn-65	**2.00000E-19**	**6.4413E-20**	**1.7409E-21**	
												Subtotal		**1.8137E+02**	**4.9019E+00**	
												Total		**1.8137E+02**	**4.9019E+00**	
												SNM [1.5971E-04 g]				
												Source [3.5376E-02 kg]				
085/R5-0022-01	**19 Lift Liner**	**2.2937**	**9189.7820**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.99155E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**20260.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**4.84220E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.23823E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.05012E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**2.87994E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.24960E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.71397E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.26198E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.78654E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.23270E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**1.90369E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.32770E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.26198E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.26198E-04**	**1.7848E-04**	**4.8237E-06**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8436E-12 g]	2.01107E-05	6.8213E-06	1.8436E-07	
												Ra-226	6.85327E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.09894E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.19787E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.13450E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.05012E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
111/R5-0022-01	19 Lift Liner	2.2937	8373.3157	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.95231E-02	3.0750E-02	8.3108E-04	AU
		81.0000	18460.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.41640E+00	7.4659E-01	2.0178E-02	
												Co-60	3.12290E-03	9.6489E-04	2.6078E-05	
												Cs-137	1.02390E+01	3.1636E+00	8.5502E-02	
												Eu-152	1.44370E-02	4.4607E-03	1.2056E-04	
												Eu-154	6.22531E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.36179E-03	4.2076E-04	1.1372E-05	
												H-3	2.63142E+02	8.1304E+01	2.1974E+00	
												Na-22	8.94889E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.62118E-01	8.0986E-02	2.1888E-03	
												Pm-147	9.51203E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.62463E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.58707E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.58707E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	1.00445E-02	3.1034E-03	8.3877E-05	
												Ra-226	7.18778E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.05462E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.40277E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.66427E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.02390E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
112/R5-0022-01	**19 Lift Liner**	**2.2937**	**8237.2380**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**5.26254E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
		81.0000	**18160.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.27774E+00**	**3.8835E-01**	**1.0496E-02**	
												Co-60	**1.65673E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.41414E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.63393E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.29179E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**7.20080E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.73195E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.73195E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.38602E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**5.03515E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.50836E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.42553E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.42553E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**5.31668E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**7.60145E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**5.57656E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.65616E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**2.99470E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.41414E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
113/R5-0022-01	**19 Lift Liner**	**2.2937**	**8835.9800**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.42985E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**19480.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.28955E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**2.95896E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.70149E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.36791E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.89851E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.29030E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.49328E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.47910E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.48358E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.01269E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.27687E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.34627E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.34627E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	**9.51716E-03**	**3.1034E-03**	**8.3877E-05**	
												Ra-226	**6.81045E-01**	**2.2208E-01**	**6.0022E-03**	
												Sr-90	**9.99254E+00**	**3.2585E+00**	**8.8067E-02**	
												Th-232 [3.3423E-02 kg]	**4.17164E-01**	**1.3603E-01**	**3.6766E-03**	
												U-nat [6.6200E-04 kg]	**5.36692E-02**	**1.7501E-02**	**4.7300E-04**	
												Zn-65	**9.70149E-20**	**3.1636E-20**	**8.5502E-22**	
												Subtotal		**8.9256E+01**	**2.4123E+00**	
												Total		**8.9256E+01**	**2.4123E+00**	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
114/R5-0022-01	**19 Lift Liner**	**2.2937**	**9207.9257**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.04800E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**20300.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.19684E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**2.83914E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.30864E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.31252E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.65965E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.23805E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.39232E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.13575E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.38301E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**8.64773E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.02269E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.17027E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.17027E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-241 [8.3877E-10 g]	**9.13178E-03**	**3.1034E-03**	**8.3877E-05**	
												Ra-226	**6.53467E-01**	**2.2208E-01**	**6.0022E-03**	
												Sr-90	**9.58790E+00**	**3.2585E+00**	**8.8067E-02**	
												Th-232 [3.3423E-02 kg]	**4.00272E-01**	**1.3603E-01**	**3.6766E-03**	
												U-nat [6.6200E-04 kg]	**5.14959E-02**	**1.7501E-02**	**4.7300E-04**	
												Zn-65	**9.30864E-20**	**3.1636E-20**	**8.5502E-22**	
												Subtotal		**8.9256E+01**	**2.4123E+00**	
												Total		**8.9256E+01**	**2.4123E+00**	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
116/R5-0022-01	**19 Lift Liner**	**2.2937**	**8799.6926**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.47580E-01**	**8.0401E-02**	**2.1730E-03**	**AU**
		81.0000	**19400.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.01233E+00**	**1.9525E+00**	**5.2770E-02**	
												Co-60	**7.77034E-03**	**2.5234E-03**	**6.8200E-05**	
												Cs-137	**2.54758E+01**	**8.2732E+00**	**2.2360E-01**	
												Eu-152	**3.59236E-02**	**1.1666E-02**	**3.1530E-04**	
												Eu-154	**1.54951E-02**	**5.0320E-03**	**1.3600E-04**	
												Eu-155	**3.38841E-03**	**1.1004E-03**	**2.9740E-05**	
												H-3	**6.54782E+02**	**2.1264E+02**	**5.7470E+00**	
												Na-22	**2.22628E-07**	**7.2298E-08**	**1.9540E-09**	
												Ni-63	**6.52162E-01**	**2.1179E-01**	**5.7240E-03**	
												Pm-147	**2.36642E-05**	**7.6849E-06**	**2.0770E-07**	
												Pu-238 [8.5118E-09 g]	**1.64863E-02**	**5.3539E-03**	**1.4470E-04**	
												Pu-239 [1.6161E-04 g]	**1.14162E+00**	**3.7074E-01**	**1.0020E-02**	
												Pu-240 [4.3565E-05 g]	**1.14162E+00**	**3.7074E-01**	**1.0020E-02**	
												Pu-241 [2.1940E-09 g]	**2.49972E-02**	**8.1178E-03**	**2.1940E-04**	
												Ra-226	**6.50339E-01**	**2.1120E-01**	**5.7080E-03**	
												Sr-90	**2.62391E+01**	**8.5211E+00**	**2.3030E-01**	
												Th-232 [3.1782E-02 kg]	**3.98315E-01**	**1.2935E-01**	**3.4960E-03**	
												U-nat [9.0400E-03 kg]	**1.19745E-01**	**3.8887E-02**	**1.0510E-03**	
												Zn-65	**2.54758E-19**	**8.2732E-20**	**2.2360E-21**	
												Subtotal		**2.3283E+02**	**6.2928E+00**	
												Total		**2.3283E+02**	**6.2928E+00**	
												SNM [2.0519E-04 g]				
												Source [4.0822E-02 kg]				
117/R5-0022-01	**19 Lift Liner**	**2.2937**	**8591.0401**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.69942E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**18940.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.35500E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**3.04354E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.97882E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.40701E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.06713E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.32718E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.56456E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.72149E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.55458E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.27033E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.45630E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.47051E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.47051E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	9.78923E-03	3.1034E-03	8.3877E-05	
												Ra-226	7.00513E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.02782E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.29089E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.52034E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.97882E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
142/R5-0022-01	19 Lift Liner	2.2937	9607.0870	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.18670E+00	4.2084E-01	1.1374E-02	AU
		81.0000	21180.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.87624E+01	1.0200E+01	2.7567E-01	
												Co-60	3.72101E-02	1.3196E-02	3.5664E-04	
												Cs-137	1.21687E+02	4.3153E+01	1.1663E+00	
												Eu-152	1.71971E-01	6.0983E-02	1.6482E-03	
												Eu-154	7.41186E-02	2.6284E-02	7.1038E-04	
												Eu-155	1.61914E-02	5.7417E-03	1.5518E-04	
												H-3	3.13772E+03	1.1127E+03	3.0073E+01	
												Na-22	1.06602E-06	3.7803E-07	1.0217E-08	
												Ni-63	3.11761E+00	1.1056E+00	2.9880E-02	
												Pm-147	1.13642E-04	4.0300E-05	1.0892E-06	
												Pu-238 [4.4452E-08 g]	7.88452E-02	2.7960E-02	7.5568E-04	
												Pu-239 [8.4417E-04 g]	5.46084E+00	1.9365E+00	5.2339E-02	
												Pu-240 [2.2756E-04 g]	5.46084E+00	1.9365E+00	5.2339E-02	
												Pu-241 [1.1470E-08 g]	1.19676E-01	4.2439E-02	1.1470E-03	
												Ra-226	7.05987E-01	2.5036E-01	6.7664E-03	
												Sr-90	1.25710E+02	4.4578E+01	1.2048E+00	
												Th-232 [3.7679E-02 kg]	4.32442E-01	1.5335E-01	4.1447E-03	
												U-nat [9.0400E-03 kg]	6.74015E-01	2.3902E-01	6.4600E-03	
												Zn-65	1.21687E-18	4.3153E-19	1.1663E-20	
												Subtotal		1.2168E+03	3.2888E+01	
												Total		1.2168E+03	3.2888E+01	
												SNM [1.0718E-03 g]				
												Source [4.6719E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-016/R5-0022-01	**7**	**1.0477**	**1068.2101**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**25-HJ**	**1.0477**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.04000E-04**	**7.7889E-06**	**2.1051E-07**	**AU**
		37.0000	**2355.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**37.0000**				**C-14**	**4.96000E-03**	**1.8938E-04**	**5.1183E-06**	
												Co-60	**6.39000E-06**	**2.4398E-07**	**6.5940E-09**	
												Cs-137	**2.10000E-02**	**8.0179E-04**	**2.1670E-05**	
												Eu-152	**2.95000E-05**	**1.1264E-06**	**3.0442E-08**	
												Eu-154	**1.28000E-05**	**4.8873E-07**	**1.3209E-08**	
												Eu-155	**2.78000E-06**	**1.0614E-07**	**2.8687E-09**	
												H-3	**5.39000E-01**	**2.0579E-02**	**5.5620E-04**	
												Na-22	**1.83000E-10**	**6.9871E-12**	**1.8884E-13**	
												Ni-63	**5.36000E-04**	**2.0465E-05**	**5.5311E-07**	
												Pm-147	**1.95000E-08**	**7.4451E-10**	**2.0122E-11**	
												Pu-238 [8.2553E-13 g]	**1.36000E-05**	**5.1926E-07**	**1.4034E-08**	
												Pu-239 [8.9710E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-240 [2.4183E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-019/R5-0022-01	**7**	**1.0477**	**1068.2101**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**25-HJ**	**1.0477**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.04000E-04**	**7.7889E-06**	**2.1051E-07**	**AU**
		37.0000	**2355.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**37.0000**				**C-14**	**4.96000E-03**	**1.8938E-04**	**5.1183E-06**	
												Co-60	**6.39000E-06**	**2.4398E-07**	**6.5940E-09**	
												Cs-137	**2.10000E-02**	**8.0179E-04**	**2.1670E-05**	
												Eu-152	**2.95000E-05**	**1.1264E-06**	**3.0442E-08**	
												Eu-154	**1.28000E-05**	**4.8873E-07**	**1.3209E-08**	
												Eu-155	**2.78000E-06**	**1.0614E-07**	**2.8687E-09**	
												H-3	**5.39000E-01**	**2.0579E-02**	**5.5620E-04**	
												Na-22	**1.83000E-10**	**6.9871E-12**	**1.8884E-13**	
												Ni-63	**5.36000E-04**	**2.0465E-05**	**5.5311E-07**	
												Pm-147	**1.95000E-08**	**7.4451E-10**	**2.0122E-11**	
												Pu-238 [8.2553E-13 g]	**1.36000E-05**	**5.1926E-07**	**1.4034E-08**	
												Pu-239 [8.9710E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-240 [2.4183E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-009**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**
												Subtotal		**6.5689E-02**	**1.7754E-03**
												Total		**6.5689E-02**	**1.7754E-03**
												SNM [1.1390E-08 g]			
												Source [4.0340E-03 kg]			
Shipment Totals		**25.0324**	**91494.1231**									**SNM [2.0043E-03 g]**		**2.2350E+03**	**6.0406E+01**
		884.0000	**201710.0000**									**Source [3.7552E-01 kg]**			

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-009
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **12**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
CIGX 803976
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER
(Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE
(Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 9 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-010

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE
(Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**20320 LBS; 81 FT3**	**088**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19240 LBS; 81 FT3**	**089**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19520 LBS; 81 FT3**	**098**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**18760 LBS; 81 FT3**	**101**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19340 LBS; 81 FT3**	**104**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19440 LBS; 81 FT3**	**105**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1928E+02**	**(3.2238E+00)**	**NA**	**20200 LBS; 81 FT3**	**106**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.1928E+02**	**(3.2238E+00)**	**NA**	**20200 LBS; 81 FT3**	**106**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6980E-01**	**(1.5400E-02)**	**NA**	**17440 LBS; 81 FT3**	**110**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**20900 LBS; 81 FT3**	**115**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**20260 LBS; 81 FT3**	**143**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Sorbed liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-006**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-010

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Sorbed liquid	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-006**
Material not regulated by USDOT WP-9334 Sorbed liquid	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-020**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
12	m3 25.0324 / ft3 884.0000	kg 90478.0759 / lb 199470.0000	NP	NP	4.2225E-04 12 Containers	4.2225E-04

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	3.9810E+02	3.5341E+02	4.0220E+00	NP	NP	(kg)	3.6531E-01
mCi	1.0760E+01	9.5516E+00	1.0870E-01	NP	NP	(lb)	8.0536E-01

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **1** OF **9** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **CIGX 803976**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
088/R5-0022-01	19 Lift Liner	2.2937	9216.9976	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	4.70176E-02	1.5995E-02	4.3229E-04	AU
		81.0000	20320.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.14158E+00	3.8835E-01	1.0496E-02	
												Co-60	1.48018E-03	5.0353E-04	1.3609E-05	
												Cs-137	4.83720E+00	1.6455E+00	4.4474E-02	
												Eu-152	6.82045E-03	2.3202E-03	6.2709E-05	
												Eu-154	2.94102E-03	1.0005E-03	2.7040E-05	
												Eu-155	6.43347E-04	2.1886E-04	5.9151E-06	
												H-3	4.22771E-08	1.4382E-08	3.8871E-10	
												Na-22	4.22771E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.23832E-01	4.2125E-02	1.1385E-03	
												Pm-147	4.49859E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.13450E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.16706E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.16706E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	4.75013E-03	1.6159E-03	4.3674E-05	
												Ra-226	6.79143E-01	2.3104E-01	6.2442E-03	
												Sr-90	4.98231E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.15999E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	2.67558E-02	9.1020E-03	2.4600E-04	
												Zn-65	4.83720E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **2** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
089/R5-0022-01	**19 Lift Liner**	**2.2937**	**8727.1178**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**4.96637E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
												C-14	**1.20583E+00**	**3.8835E-01**	**1.0496E-02**	
		81.0000	**19240.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**1.56349E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.10943E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.20430E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.10653E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**6.79554E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.46564E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.46564E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.30801E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**4.75177E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.31091E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.28903E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.28903E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**5.01746E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**7.17364E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**5.26271E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.39411E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**2.82616E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.10943E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
098/R5-0022-01	**19 Lift Liner**	**2.2937**	**8854.1236**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.06724E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
												C-14	**5.02624E-03**	**1.6424E-03**	**4.4389E-05**	
		81.0000	**19520.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**6.47533E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.12804E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**2.98939E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.29709E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.81712E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.46198E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.85444E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.43158E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**1.97604E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.37816E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.46198E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.46198E-04**	**1.7848E-04**	**4.8237E-06**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **3** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8436E-12 g]	2.08751E-05	6.8213E-06	1.8436E-07	
												Ra-226	7.11374E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.17871E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.35742E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.17762E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.12804E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
101/R5-0022-01	19 Lift Liner	2.2937	8509.3934	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.15121E-04	6.7551E-05	1.8257E-06	AU
		81.0000	18760.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.23040E-03	1.6424E-03	4.4389E-05	
												Co-60	6.73836E-06	2.1159E-06	5.7186E-08	
												Cs-137	2.21448E-02	6.9538E-03	1.8794E-04	
												Eu-152	3.11082E-05	9.7684E-06	2.6401E-07	
												Eu-154	1.34978E-05	4.2384E-06	1.1455E-07	
												Eu-155	2.93156E-06	9.2052E-07	2.4879E-08	
												H-3	5.68384E-01	1.7848E-01	4.8237E-03	
												Na-22	1.92976E-10	6.0595E-11	1.6377E-12	
												Ni-63	5.65221E-04	1.7748E-04	4.7968E-06	
												Pm-147	2.05631E-08	6.4569E-09	1.7451E-10	
												Pu-238 [7.1595E-12 g]	1.43414E-05	4.5033E-06	1.2171E-07	
												Pu-239 [7.7801E-08 g]	5.68384E-04	1.7848E-04	4.8237E-06	
												Pu-240 [2.0973E-08 g]	5.68384E-04	1.7848E-04	4.8237E-06	
												Pu-241 [1.8436E-12 g]	2.17230E-05	6.8213E-06	1.8436E-07	
												Ra-226	7.40270E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.26721E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.53442E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.22545E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.21448E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **4** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
104/R5-0022-01	**19 Lift Liner**	**2.2937**	**8772.4770**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.08653E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**19340.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.07314E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.53575E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.14790E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**3.01729E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.30920E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.84341E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.51294E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.87174E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.48226E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**1.99448E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.39102E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.51294E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.51294E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-241 [1.8436E-12 g]	**2.10699E-05**	**6.8213E-06**	**1.8436E-07**	
												Ra-226	**7.18012E-01**	**2.3245E-01**	**6.2824E-03**	
												Sr-90	**2.19904E-02**	**7.1192E-03**	**1.9241E-04**	
												Th-232 [3.4984E-02 kg]	**4.39808E-01**	**1.4238E-01**	**3.8482E-03**	
												U-nat [1.4500E-06 kg]	**1.18861E-04**	**3.8480E-05**	**1.0400E-06**	
												Zn-65	**2.14790E-22**	**6.9538E-23**	**1.8794E-24**	
												Subtotal		**5.6969E-01**	**1.5397E-02**	
												Total		**5.6969E-01**	**1.5397E-02**	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
105/R5-0022-01	**19 Lift Liner**	**2.2937**	**8817.8363**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.44930E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**19440.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.29428E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**2.96506E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.72151E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.37073E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.91068E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.29296E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.49843E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.49660E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.48871E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.03128E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.28981E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.35523E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.35523E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **5** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	9.53680E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.82450E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.00132E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.18025E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.37799E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.72151E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
106/R5-0022-01	19 Lift Liner	2.2937	9162.5665	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.21556E-01	4.1107E-02	1.1110E-03	AU
		81.0000	20200.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.95301E+00	9.9863E-01	2.6990E-02	
												Co-60	3.81626E-03	1.2906E-03	3.4880E-05	
												Cs-137	1.25166E+01	4.2328E+00	1.1440E-01	
												Eu-152	1.76371E-02	5.9644E-03	1.6120E-04	
												Eu-154	7.60736E-03	2.5726E-03	6.9530E-05	
												Eu-155	1.66414E-03	5.6277E-04	1.5210E-05	
												H-3	3.21559E+02	1.0874E+02	2.9390E+00	
												Na-22	1.09345E-07	3.6978E-08	9.9940E-10	
												Ni-63	3.20246E-01	1.0830E-01	2.9270E-03	
												Pm-147	1.16195E-05	3.9294E-06	1.0620E-07	
												Pu-238 [4.3524E-09 g]	8.09533E-03	2.7376E-03	7.3990E-05	
												Pu-239 [8.2629E-05 g]	5.60513E-01	1.8955E-01	5.1230E-03	
												Pu-240 [2.2274E-05 g]	5.60513E-01	1.8955E-01	5.1230E-03	
												Pu-241 [1.1220E-09 g]	1.22759E-02	4.1514E-03	1.1220E-04	
												Ra-226	7.02638E-01	2.3761E-01	6.4220E-03	
												Sr-90	1.28886E+01	4.3586E+00	1.1780E-01	
												Th-232 [3.5764E-02 kg]	4.30423E-01	1.4556E-01	3.9340E-03	
												U-nat [9.0400E-03 kg]	5.88085E-02	1.9888E-02	5.3750E-04	
												Zn-65	1.25166E-19	4.2328E-20	1.1440E-21	
												Subtotal		1.1928E+02	3.2238E+00	
												Total		1.1928E+02	3.2238E+00	
												SNM [1.0491E-04 g]				
												Source [4.4804E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **6** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
110/R5-0022-01	**19 Lift Liner**	**2.2937**	**7910.6515**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.31493E-04**	**6.7562E-05**	**1.8260E-06**	**AU**
		81.0000	**17440.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.62846E-03**	**1.6427E-03**	**4.4397E-05**	
												Co-60	**7.25118E-06**	**2.1163E-06**	**5.7197E-08**	
												Cs-137	**2.38302E-02**	**6.9549E-03**	**1.8797E-04**	
												Eu-152	**3.34757E-05**	**9.7699E-06**	**2.6405E-07**	
												Eu-154	**1.45251E-05**	**4.2391E-06**	**1.1457E-07**	
												Eu-155	**3.15466E-06**	**9.2071E-07**	**2.4884E-08**	
												H-3	**6.11641E-01**	**1.7851E-01**	**4.8246E-03**	
												Na-22	**2.07663E-10**	**6.0606E-11**	**1.6380E-12**	
												Ni-63	**6.08237E-04**	**1.7751E-04**	**4.7977E-06**	
												Pm-147	**2.21280E-08**	**6.4580E-09**	**1.7454E-10**	
												Pu-238 [7.1608E-12 g]	**1.54329E-05**	**4.5040E-06**	**1.2173E-07**	
												Pu-239 [7.7816E-08 g]	**6.11641E-04**	**1.7851E-04**	**4.8246E-06**	
												Pu-240 [2.0977E-08 g]	**6.11641E-04**	**1.7851E-04**	**4.8246E-06**	
												Pu-241 [1.8439E-12 g]	**2.33763E-05**	**6.8224E-06**	**1.8439E-07**	
												Ra-226	**7.96609E-01**	**2.3249E-01**	**6.2836E-03**	
												Sr-90	**2.43976E-02**	**7.1207E-03**	**1.9245E-04**	
												Th-232 [3.4990E-02 kg]	**4.87951E-01**	**1.4241E-01**	**3.8489E-03**	
												U-nat [1.4500E-06 kg]	**1.31871E-04**	**3.8487E-05**	**1.0402E-06**	
												Zn-65	**2.38302E-22**	**6.9549E-23**	**1.8797E-24**	
												Subtotal		**5.6980E-01**	**1.5400E-02**	
												Total		**5.6980E-01**	**1.5400E-02**	
												SNM [9.8801E-08 g]				
												Source [3.4992E-02 kg]				
115/R5-0022-01	**19 Lift Liner**	**2.2937**	**9480.0812**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**8.78763E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**20900.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.13362E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**2.75743E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.04077E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.27475E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**5.49679E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.20242E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.32348E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**7.90163E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.31444E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**8.39887E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**5.84938E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.05026E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.05026E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **7** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	8.86899E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.34662E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.31199E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	3.88753E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.00140E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.04077E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
143/R5-0022-01	19 Lift Liner	2.2937	9189.7820	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	9.06591E-02	3.0750E-02	8.3108E-04	AU
		81.0000	20260.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	2.20119E+00	7.4659E-01	2.0178E-02	
												Co-60	2.84476E-03	9.6489E-04	2.6078E-05	
												Cs-137	9.32707E+00	3.1636E+00	8.5502E-02	
												Eu-152	1.31512E-02	4.4607E-03	1.2056E-04	
												Eu-154	5.67086E-03	1.9234E-03	5.1985E-05	
												Eu-155	1.24050E-03	4.2076E-04	1.1372E-05	
												H-3	2.39706E+02	8.1304E+01	2.1974E+00	
												Na-22	8.15186E-08	2.7649E-08	7.4728E-10	
												Ni-63	2.38773E-01	8.0986E-02	2.1888E-03	
												Pm-147	8.66484E-06	2.9389E-06	7.9431E-08	
												Pu-238 [3.2541E-09 g]	6.03461E-03	2.0468E-03	5.5320E-05	
												Pu-239 [6.1782E-05 g]	4.17853E-01	1.4173E-01	3.8305E-03	
												Pu-240 [1.6654E-05 g]	4.17853E-01	1.4173E-01	3.8305E-03	
												Pu-241 [8.3877E-10 g]	9.14985E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.54760E-01	2.2208E-01	6.0022E-03	
												Sr-90	9.60688E+00	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.01064E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.15978E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.32707E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **8** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
T-006/R5-0022-01	**7**	**1.0477** / **37.0000**	**1068.2101** / **2355.0000**	**<1.0000E-03** / **<1.0000E-01**	**3.3400E-07** / **2.0000E+01**	**3.3400E-06** / **2.0000E+02**	**25-HJ**	**1.0477** / **37.0000**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.04000E-04**	**7.7889E-06**	**2.1051E-07**	**AU**
												C-14	**4.96000E-03**	**1.8938E-04**	**5.1183E-06**	
												Co-60	**6.39000E-06**	**2.4398E-07**	**6.5940E-09**	
												Cs-137	**2.10000E-02**	**8.0179E-04**	**2.1670E-05**	
												Eu-152	**2.95000E-05**	**1.1264E-06**	**3.0442E-08**	
												Eu-154	**1.28000E-05**	**4.8873E-07**	**1.3209E-08**	
												Eu-155	**2.78000E-06**	**1.0614E-07**	**2.8687E-09**	
												H-3	**5.39000E-01**	**2.0579E-02**	**5.5620E-04**	
												Na-22	**1.83000E-10**	**6.9871E-12**	**1.8884E-13**	
												Ni-63	**5.36000E-04**	**2.0465E-05**	**5.5311E-07**	
												Pm-147	**1.95000E-08**	**7.4451E-10**	**2.0122E-11**	
												Pu-238 [8.2553E-13 g]	**1.36000E-05**	**5.1926E-07**	**1.4034E-08**	
												Pu-239 [8.9710E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-240 [2.4183E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [1.6700E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-020/R5-0022-01	**7**	**1.0477** / **37.0000**	**1068.2101** / **2355.0000**	**<1.0000E-03** / **<1.0000E-01**	**3.3400E-07** / **2.0000E+01**	**3.3400E-06** / **2.0000E+02**	**25-HJ**	**1.0477** / **37.0000**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.04000E-04**	**7.7889E-06**	**2.1051E-07**	**AU**
												C-14	**4.96000E-03**	**1.8938E-04**	**5.1183E-06**	
												Co-60	**6.39000E-06**	**2.4398E-07**	**6.5940E-09**	
												Cs-137	**2.10000E-02**	**8.0179E-04**	**2.1670E-05**	
												Eu-152	**2.95000E-05**	**1.1264E-06**	**3.0442E-08**	
												Eu-154	**1.28000E-05**	**4.8873E-07**	**1.3209E-08**	
												Eu-155	**2.78000E-06**	**1.0614E-07**	**2.8687E-09**	
												H-3	**5.39000E-01**	**2.0579E-02**	**5.5620E-04**	
												Na-22	**1.83000E-10**	**6.9871E-12**	**1.8884E-13**	
												Ni-63	**5.36000E-04**	**2.0465E-05**	**5.5311E-07**	
												Pm-147	**1.95000E-08**	**7.4451E-10**	**2.0122E-11**	
												Pu-238 [8.2553E-13 g]	**1.36000E-05**	**5.1926E-07**	**1.4034E-08**	
												Pu-239 [8.9710E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-240 [2.4183E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-010**

3. PAGE **9** OF **9** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	**2.06000E-05**	**7.8651E-07**	**2.1257E-08**	
												Ra-226	**7.02000E-01**	**2.6803E-02**	**7.2441E-04**	
												Sr-90	**2.15000E-02**	**8.2088E-04**	**2.2186E-05**	
												Th-232 [4.0339E-03 kg]	**4.30000E-01**	**1.6418E-02**	**4.4372E-04**	
												U-nat [3.5294E-07 kg]	**1.16288E-04**	**4.4400E-06**	**1.2000E-07**	
												Zn-65	**2.10000E-22**	**8.0179E-24**	**2.1670E-25**	
												Subtotal		**6.5689E-02**	**1.7754E-03**	
												Total		**6.5689E-02**	**1.7754E-03**	
												SNM [1.1390E-08 g]				
												Source [4.0342E-03 kg]				
Shipment Totals		**25.0324**	**90777.4471**									**SNM [4.2225E-04 g]**		**3.9810E+02**	**1.0760E+01**	
		884.0000	**200130.0000**									**Source [3.6531E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-010

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **13**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
TILX 520226
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 10 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-011

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 16 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19300 LBS; 81 FT3**	**090**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**17540 LBS; 81 FT3**	**095**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-011

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**16700 LBS; 81 FT3**	**096**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**17600 LBS; 81 FT3**	**097**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3227E+00**	**(1.1683E-01)**	**NA**	**18720 LBS; 81 FT3**	**099**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9255E+01**	**(2.4123E+00)**	**NA**	**18340 LBS; 81 FT3**	**100**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**20220 LBS; 81 FT3**	**102**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-011

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**20220 LBS; 81 FT3**	**102**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**20720 LBS; 81 FT3**	**103**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**18140 LBS; 81 FT3**	**107**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**18000 LBS; 81 FT3**	**108**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18680 LBS; 81 FT3**	**118**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-011

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18680 LBS; 81 FT3**	**118**
Material not regulated by USDOT WP-9334 Sorbed liquids	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-017**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Sorbed liquids	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**6.5690E-02**	**(1.7754E-03)**	**NA**	**2355 LBS; 37 FT3**	**T-018**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
13	m3 27.3261	kg 94329.0755	NP	NP	4.9275E-04	4.9275E-04
	ft3 965.0000	lb 207960.0000			13 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	4.3635E+02	3.8444E+02	4.6937E+00	NP	NP	(kg)	3.9328E-01
mCi	1.1793E+01	1.0390E+01	1.2686E-01	NP	NP	(lb)	8.6704E-01

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **1** OF **10** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **TILX 520226**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES		pCi/gm	MBq	mCi	
090/R5-0022-01	19 Lift Liner	2.2937	8754.3333	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241		2.09087E-04	6.7551E-05	1.8257E-06	AU
		81.0000	19300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14		5.08368E-03	1.6424E-03	4.4389E-05	
												Co-60		6.54934E-06	2.1159E-06	5.7186E-08	
												Cs-137		2.15236E-02	6.9538E-03	1.8794E-04	
												Eu-152		3.02356E-05	9.7684E-06	2.6401E-07	
												Eu-154		1.31192E-05	4.2384E-06	1.1455E-07	
												Eu-155		2.84932E-06	9.2052E-07	2.4879E-08	
												H-3		5.52440E-01	1.7848E-01	4.8237E-03	
												Na-22		1.87563E-10	6.0595E-11	1.6377E-12	
												Ni-63		5.49365E-04	1.7748E-04	4.7968E-06	
												Pm-147		1.99862E-08	6.4569E-09	1.7451E-10	
												Pu-238	[7.1595E-12 g]	1.39391E-05	4.5033E-06	1.2171E-07	
												Pu-239	[7.7801E-08 g]	5.52440E-04	1.7848E-04	4.8237E-06	
												Pu-240	[2.0973E-08 g]	5.52440E-04	1.7848E-04	4.8237E-06	
												Pu-241	[1.8436E-12 g]	2.11137E-05	6.8213E-06	1.8436E-07	
												Ra-226		7.19504E-01	2.3245E-01	6.2824E-03	
												Sr-90		2.20361E-02	7.1192E-03	1.9241E-04	
												Th-232	[3.4984E-02 kg]	4.40722E-01	1.4238E-01	3.8482E-03	
												U-nat	[1.4500E-06 kg]	1.19108E-04	3.8480E-05	1.0400E-06	
												Zn-65		2.15236E-22	6.9538E-23	1.8794E-24	
												Subtotal			5.6969E-01	1.5397E-02	
												Total			5.6969E-01	1.5397E-02	
												SNM	[9.8783E-08 g]				
												Source	[3.4985E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **2** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
095/R5-0022-01	**19 Lift Liner**	**2.2937**	**7956.0107**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**5.44909E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
												C-14	**1.32303E+00**	**3.8835E-01**	**1.0496E-02**	
		81.0000	**17540.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**1.71545E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.60606E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.90455E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.40848E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**7.45606E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.89970E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.89970E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.43515E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**5.21364E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.63273E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.51152E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.51152E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**5.50515E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**7.87091E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**5.77424E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.82121E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**3.10086E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.60606E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
096/R5-0022-01	**19 Lift Liner**	**2.2937**	**7574.9931**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.10043E-01**	**3.0750E-02**	**8.3108E-04**	**AU**
												C-14	**2.67183E+00**	**7.4659E-01**	**2.0178E-02**	
		81.0000	**16700.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**3.45300E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**1.13213E+01**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.59631E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.88336E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.50574E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.90958E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**9.89483E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.89826E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**1.05175E-05**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**7.32489E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**5.07195E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**5.07195E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **3** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	1.11062E-02	3.1034E-03	8.3877E-05	
												Ra-226	7.94757E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.16610E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.86817E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	6.26301E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.13213E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
097/R5-0022-01	19 Lift Liner	2.2937	7983.2262	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	5.43046E-02	1.5995E-02	4.3229E-04	AU
		81.0000	17600.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.31851E+00	3.8835E-01	1.0496E-02	
												Co-60	1.70959E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.58689E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.87752E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.39683E-03	1.0005E-03	2.7040E-05	
												Eu-155	7.43057E-04	2.1886E-04	5.9151E-06	
												H-3	4.88295E-08	1.4382E-08	3.8871E-10	
												Na-22	4.88295E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.43025E-01	4.2125E-02	1.1385E-03	
												Pm-147	5.19581E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.62031E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.50293E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.50293E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	5.48633E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.84400E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.75450E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.80473E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	3.09026E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.58689E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **4** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
099/R5-0022-01	**19 Lift Liner**	**2.2937**	**8491.2497**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**5.10461E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
		81.0000	**18720.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.23939E+00**	**3.8835E-01**	**1.0496E-02**	
												Co-60	**1.60701E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.25166E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.40484E-03**	**2.3202E-03**	**6.2708E-05**	
												Eu-154	**3.19301E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**6.98471E-04**	**2.1886E-04**	**5.9150E-06**	
												H-3	**4.58995E-08**	**1.4382E-08**	**3.8870E-10**	
												Na-22	**4.58995E-08**	**1.4382E-08**	**3.8870E-10**	
												Ni-63	**1.34442E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**4.88404E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6952E-09 g]	**3.40308E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.35274E-01**	**7.3719E-02**	**1.9924E-03**	
												Pu-240 [8.6627E-06 g]	**2.35274E-01**	**7.3719E-02**	**1.9924E-03**	
												Pu-241 [4.3673E-10 g]	**5.15713E-03**	**1.6159E-03**	**4.3673E-05**	
												Ra-226	**7.37333E-01**	**2.3103E-01**	**6.2441E-03**	
												Sr-90	**5.40921E+00**	**1.6949E+00**	**4.5808E-02**	
												Th-232 [3.4770E-02 kg]	**4.51643E-01**	**1.4151E-01**	**3.8247E-03**	
												U-nat [3.4400E-04 kg]	**2.90483E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.25166E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5114E-02 kg]				
100/R5-0022-01	**19 Lift Liner**	**2.2937**	**8318.8846**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.00176E-01**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**18340.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.43226E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**3.14338E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**1.03062E+01**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.45317E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.26615E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.37072E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.64868E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**9.00759E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.63838E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.57443E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.66809E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.61716E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.61716E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **5** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	1.01103E-02	3.1034E-03	8.3877E-05	
												Ra-226	7.23493E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.06154E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.43165E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.70143E-02	1.7501E-02	4.7300E-04	
												Zn-65	1.03062E-19	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
102/R5-0022-01	19 Lift Liner	2.2937	9171.6383	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.99550E-04	6.7551E-05	1.8257E-06	AU
		81.0000	20220.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	4.85180E-03	1.6424E-03	4.4389E-05	
												Co-60	6.25060E-06	2.1159E-06	5.7186E-08	
												Cs-137	2.05419E-02	6.9538E-03	1.8794E-04	
												Eu-152	2.88565E-05	9.7684E-06	2.6401E-07	
												Eu-154	1.25208E-05	4.2384E-06	1.1455E-07	
												Eu-155	2.71936E-06	9.2052E-07	2.4879E-08	
												H-3	5.27242E-01	1.7848E-01	4.8237E-03	
												Na-22	1.79008E-10	6.0595E-11	1.6377E-12	
												Ni-63	5.24307E-04	1.7748E-04	4.7968E-06	
												Pm-147	1.90746E-08	6.4569E-09	1.7451E-10	
												Pu-238 [7.1595E-12 g]	1.33033E-05	4.5033E-06	1.2171E-07	
												Pu-239 [7.7801E-08 g]	5.27242E-04	1.7848E-04	4.8237E-06	
												Pu-240 [2.0973E-08 g]	5.27242E-04	1.7848E-04	4.8237E-06	
												Pu-241 [1.8436E-12 g]	2.01506E-05	6.8213E-06	1.8436E-07	
												Ra-226	6.86686E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.10310E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.20620E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.13675E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.05419E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **6** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
103/R5-0022-01	**19 Lift Liner**	**2.2937**	**9398.4345**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.94723E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**20720.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**4.73444E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.09940E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.00450E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**2.81584E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.22179E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.65358E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.14488E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.74678E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.11625E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**1.86132E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.29815E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.14488E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.14488E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-241 [1.8436E-12 g]	**1.96632E-05**	**6.8213E-06**	**1.8436E-07**	
												Ra-226	**6.70075E-01**	**2.3245E-01**	**6.2824E-03**	
												Sr-90	**2.05223E-02**	**7.1192E-03**	**1.9241E-04**	
												Th-232 [3.4984E-02 kg]	**4.10445E-01**	**1.4238E-01**	**3.8482E-03**	
												U-nat [1.4500E-06 kg]	**1.10925E-04**	**3.8480E-05**	**1.0400E-06**	
												Zn-65	**2.00450E-22**	**6.9538E-23**	**1.8794E-24**	
												Subtotal		**5.6969E-01**	**1.5397E-02**	
												Total		**5.6969E-01**	**1.5397E-02**	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
107/R5-0022-01	**19 Lift Liner**	**2.2937**	**8228.1661**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.22494E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**18140.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.40966E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.96930E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.29038E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**3.21744E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.39604E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**3.03203E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.87865E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.99590E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.84593E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**2.12678E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.48329E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.87865E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.87865E-04**	**1.7848E-04**	**4.8237E-06**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **7** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8436E-12 g]	**2.24676E-05**	**6.8213E-06**	**1.8436E-07**	
												Ra-226	**7.65642E-01**	**2.3245E-01**	**6.2824E-03**	
												Sr-90	**2.34491E-02**	**7.1192E-03**	**1.9241E-04**	
												Th-232 [3.4984E-02 kg]	**4.68983E-01**	**1.4238E-01**	**3.8482E-03**	
												U-nat [1.4500E-06 kg]	**1.26745E-04**	**3.8480E-05**	**1.0400E-06**	
												Zn-65	**2.29038E-22**	**6.9538E-23**	**1.8794E-24**	
												Subtotal		**5.6969E-01**	**1.5397E-02**	
												Total		**5.6969E-01**	**1.5397E-02**	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
108/R5-0022-01	**19 Lift Liner**	**2.2937**	**8164.6632**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.24230E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**18000.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.45186E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**7.02366E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.30825E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**3.24253E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.40693E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**3.05568E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.92450E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**2.01147E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.89152E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**2.14337E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.49486E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.92450E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.92450E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-241 [1.8436E-12 g]	**2.26428E-05**	**6.8213E-06**	**1.8436E-07**	
												Ra-226	**7.71613E-01**	**2.3245E-01**	**6.2824E-03**	
												Sr-90	**2.36320E-02**	**7.1192E-03**	**1.9241E-04**	
												Th-232 [3.4984E-02 kg]	**4.72641E-01**	**1.4238E-01**	**3.8482E-03**	
												U-nat [1.4500E-06 kg]	**1.27734E-04**	**3.8480E-05**	**1.0400E-06**	
												Zn-65	**2.30825E-22**	**6.9538E-23**	**1.8794E-24**	
												Subtotal		**5.6969E-01**	**1.5397E-02**	
												Total		**5.6969E-01**	**1.5397E-02**	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **8** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	
118/R5-0022-01	**19 Lift Liner**	**2.2937**	**8473.1060**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.67000E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**18680.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.48272E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.38358E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.74691E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.87864E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.67012E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.65889E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**7.06506E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.40630E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**7.03210E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.54914E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.78000E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.23062E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.23062E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.69198E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.71333E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.83481E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.72469E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**4.05899E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.74691E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
T-017/R5-0022-01	**7**	**1.0477**	**1068.2101**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**25-HJ**	**1.0477**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.04000E-04**	**7.7889E-06**	**2.1051E-07**	**AU**
		37.0000	**2355.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**37.0000**				**C-14**	**4.96000E-03**	**1.8938E-04**	**5.1183E-06**	
												Co-60	**6.39000E-06**	**2.4398E-07**	**6.5940E-09**	
												Cs-137	**2.10000E-02**	**8.0179E-04**	**2.1670E-05**	
												Eu-152	**2.95000E-05**	**1.1264E-06**	**3.0442E-08**	
												Eu-154	**1.28000E-05**	**4.8873E-07**	**1.3209E-08**	
												Eu-155	**2.78000E-06**	**1.0614E-07**	**2.8687E-09**	
												H-3	**5.39000E-01**	**2.0579E-02**	**5.5620E-04**	
												Na-22	**1.83000E-10**	**6.9871E-12**	**1.8884E-13**	
												Ni-63	**5.36000E-04**	**2.0465E-05**	**5.5311E-07**	
												Pm-147	**1.95000E-08**	**7.4451E-10**	**2.0122E-11**	
												Pu-238 [8.2553E-13 g]	**1.36000E-05**	**5.1926E-07**	**1.4034E-08**	
												Pu-239 [8.9710E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	
												Pu-240 [2.4183E-09 g]	**5.39000E-04**	**2.0579E-05**	**5.5620E-07**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **9** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				
T-018/R5-0022-01	7	1.0477	1068.2101	<1.0000E-03	3.3400E-07	3.3400E-06	25-HJ	1.0477	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.04000E-04	7.7889E-06	2.1051E-07	AU
												C-14	4.96000E-03	1.8938E-04	5.1183E-06	
												Co-60	6.39000E-06	2.4398E-07	6.5940E-09	
		37.0000	2355.0000	<1.0000E-01	2.0000E+01	2.0000E+02		37.0000				Cs-137	2.10000E-02	8.0179E-04	2.1670E-05	
												Eu-152	2.95000E-05	1.1264E-06	3.0442E-08	
												Eu-154	1.28000E-05	4.8873E-07	1.3209E-08	
												Eu-155	2.78000E-06	1.0614E-07	2.8687E-09	
												H-3	5.39000E-01	2.0579E-02	5.5620E-04	
												Na-22	1.83000E-10	6.9871E-12	1.8884E-13	
												Ni-63	5.36000E-04	2.0465E-05	5.5311E-07	
												Pm-147	1.95000E-08	7.4451E-10	2.0122E-11	
												Pu-238 [8.2553E-13 g]	1.36000E-05	5.1926E-07	1.4034E-08	
												Pu-239 [8.9710E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-240 [2.4183E-09 g]	5.39000E-04	2.0579E-05	5.5620E-07	
												Pu-241 [2.1258E-13 g]	2.06000E-05	7.8651E-07	2.1257E-08	
												Ra-226	7.02000E-01	2.6803E-02	7.2441E-04	
												Sr-90	2.15000E-02	8.2088E-04	2.2186E-05	
												Th-232 [4.0339E-03 kg]	4.30000E-01	1.6418E-02	4.4372E-04	
												U-nat [1.6700E-07 kg]	1.16288E-04	4.4400E-06	1.2000E-07	
												Zn-65	2.10000E-22	8.0179E-24	2.1670E-25	
												Subtotal		6.5689E-02	1.7754E-03	
												Total		6.5689E-02	1.7754E-03	
												SNM [1.1390E-08 g]				
												Source [4.0340E-03 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-011**

3. PAGE **10** OF **10** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
Shipment Totals		**27.3261** **965.0000**	**94651.1259** **208670.0000**									**SNM [4.9275E-04 g]** **Source [3.9328E-01 kg]**		**4.3635E+02**	**1.1793E+01**	

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-011
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **11**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
TILX 520226
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 8 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-012

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.6336E+02**	**(4.4152E+00)**	**NA**	**17320 LBS; 81 FT3**	**091**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**16000 LBS; 81 FT3**	**092**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-012

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**17680 LBS; 81 FT3**	**093**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**17780 LBS; 81 FT3**	**094**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**18660 LBS; 81 FT3**	**109**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**17720 LBS; 81 FT3**	**131**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.6789E+02**	**(4.5374E+00)**	**NA**	**18980 LBS; 81 FT3**	**132**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-012

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**1.6789E+02**	**(4.5374E+00)**	**NA**	**18980 LBS; 81 FT3**	**132**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19940 LBS; 81 FT3**	**135**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2817E+02**	**(3.4641E+00)**	**NA**	**19740 LBS; 81 FT3**	**137**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.3398E+02**	**(3.6211E+00)**	**NA**	**18920 LBS; 81 FT3**	**138**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19440 LBS; 81 FT3**	**139**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-012

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19440 LBS; 81 FT3**	**139**

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
11	m3 25.2307 / ft3 891.0000	kg 91457.8356 / lb 201630.0000	NP	NP	1.2837E-03 11 Containers	1.2837E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.3326E+03	1.2043E+03	1.2219E+01	NP	NP	(kg)	4.1950E-01
mCi	3.6016E+01	3.2548E+01	3.3026E-01	NP	NP	(lb)	9.2484E-01

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **1** OF **8** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **TILX 520226**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	
												RADIONUCLIDES	pCi/gm / MBq / mCi
091/R5-0022-01	19 Lift Liner	2.2937	7856.2204	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.94549E-01 / 5.6388E-02 / 1.5240E-03
												C-14	4.72458E+00 / 1.3694E+00 / 3.7010E-02
												Co-60	6.10583E-03 / 1.7697E-03 / 4.7830E-05
												Cs-137	2.00166E+01 / 5.8016E+00 / 1.5680E-01
		81.0000	17320.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				Eu-152	2.82249E-02 / 8.1807E-03 / 2.2110E-04
												Eu-154	1.21708E-02 / 3.5276E-03 / 9.5340E-05
												Eu-155	2.66292E-03 / 7.7182E-04 / 2.0860E-05
												H-3	5.14457E+02 / 1.4911E+02 / 4.0300E+00
												Na-22	1.75018E-07 / 5.0727E-08 / 1.3710E-09
												Ni-63	5.12415E-01 / 1.4852E-01 / 4.0140E-03
												Pm-147	1.85996E-05 / 5.3909E-06 / 1.4570E-07
												Pu-238 [5.9706E-09 g]	1.29572E-02 / 3.7555E-03 / 1.0150E-04
												Pu-239 [1.1331E-04 g]	8.96790E-01 / 2.5993E-01 / 7.0250E-03
												Pu-240 [3.0544E-05 g]	8.96790E-01 / 2.5993E-01 / 7.0250E-03
												Pu-241 [1.5380E-09 g]	1.96336E-02 / 5.6906E-03 / 1.5380E-04
												Ra-226	7.02623E-01 / 2.0365E-01 / 5.5040E-03
												Sr-90	2.06166E+01 / 5.9755E+00 / 1.6150E-01
												Th-232 [3.0646E-02 kg]	4.30331E-01 / 1.2473E-01 / 3.3710E-03
												U-nat [9.0400E-03 kg]	9.40831E-02 / 2.7269E-02 / 7.3700E-04
												Zn-65	2.00166E-19 / 5.8016E-20 / 1.5680E-21
												Subtotal	1.6336E+02 / 4.4152E+00
												Total	1.6336E+02 / 4.4152E+00
												SNM [1.4386E-04 g]	
												Source [3.9686E-02 kg]	

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **2** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
092/R5-0022-01	**19 Lift Liner**	**2.2937**	**7257.4784**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**5.97521E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
		81.0000	**16000.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.45077E+00**	**3.8835E-01**	**1.0496E-02**	
												Co-60	**1.88108E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**6.14734E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**8.66774E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.73758E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**8.17596E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**5.37277E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**5.37277E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.57372E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**5.71702E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.98347E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.75401E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.75401E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**6.03668E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**8.63086E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**6.33176E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**5.28671E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**3.40025E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**6.14734E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
093/R5-0022-01	**19 Lift Liner**	**2.2937**	**8019.5136**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.82145E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**17680.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.85043E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.85911E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.90272E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**4.09864E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.76486E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.86643E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**7.46580E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.54279E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**7.43097E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.69373E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.88097E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.30042E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.30042E+00**	**3.8476E-01**	**1.0399E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **3** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	2.84467E-02	8.4168E-03	2.2748E-04	
												Ra-226	8.15085E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.99561E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.99268E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	4.28922E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.90272E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
094/R5-0022-01	19 Lift Liner	2.2937	8064.8729	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	5.37533E-02	1.5995E-02	4.3229E-04	AU
		81.0000	17780.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	1.30512E+00	3.8835E-01	1.0496E-02	
												Co-60	1.69223E-03	5.0353E-04	1.3609E-05	
												Cs-137	5.53017E+00	1.6455E+00	4.4474E-02	
												Eu-152	7.79755E-03	2.3202E-03	6.2709E-05	
												Eu-154	3.36235E-03	1.0005E-03	2.7040E-05	
												Eu-155	7.35513E-04	2.1886E-04	5.9151E-06	
												H-3	4.83337E-08	1.4382E-08	3.8871E-10	
												Na-22	4.83337E-08	1.4382E-08	3.8871E-10	
												Ni-63	1.41572E-01	4.2125E-02	1.1385E-03	
												Pm-147	5.14306E-06	1.5304E-06	4.1361E-08	
												Pu-238 [1.6953E-09 g]	3.58355E-03	1.0663E-03	2.8819E-05	
												Pu-239 [3.2136E-05 g]	2.47752E-01	7.3723E-02	1.9925E-03	
												Pu-240 [8.6629E-06 g]	2.47752E-01	7.3723E-02	1.9925E-03	
												Pu-241 [4.3674E-10 g]	5.43063E-03	1.6159E-03	4.3674E-05	
												Ra-226	7.76437E-01	2.3104E-01	6.2442E-03	
												Sr-90	5.69608E+00	1.6949E+00	4.5809E-02	
												Th-232 [3.4771E-02 kg]	4.75595E-01	1.4152E-01	3.8248E-03	
												U-nat [3.4400E-04 kg]	3.05888E-02	9.1020E-03	2.4600E-04	
												Zn-65	5.53017E-20	1.6455E-20	4.4474E-22	
												Subtotal		4.3227E+00	1.1683E-01	
												Total		4.3227E+00	1.1683E-01	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **4** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
109/R5-0022-01	**19 Lift Liner**	**2.2937**	**8464.0342**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.16277E-04**	**6.7551E-05**	**1.8257E-06**	**AU**
		81.0000	**18660.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.25851E-03**	**1.6424E-03**	**4.4389E-05**	
												Co-60	**6.77457E-06**	**2.1159E-06**	**5.7186E-08**	
												Cs-137	**2.22638E-02**	**6.9538E-03**	**1.8794E-04**	
												Eu-152	**3.12754E-05**	**9.7684E-06**	**2.6401E-07**	
												Eu-154	**1.35703E-05**	**4.2384E-06**	**1.1455E-07**	
												Eu-155	**2.94731E-06**	**9.2052E-07**	**2.4879E-08**	
												H-3	**5.71438E-01**	**1.7848E-01**	**4.8237E-03**	
												Na-22	**1.94013E-10**	**6.0595E-11**	**1.6377E-12**	
												Ni-63	**5.68258E-04**	**1.7748E-04**	**4.7968E-06**	
												Pm-147	**2.06736E-08**	**6.4569E-09**	**1.7451E-10**	
												Pu-238 [7.1595E-12 g]	**1.44185E-05**	**4.5033E-06**	**1.2171E-07**	
												Pu-239 [7.7801E-08 g]	**5.71438E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-240 [2.0973E-08 g]	**5.71438E-04**	**1.7848E-04**	**4.8237E-06**	
												Pu-241 [1.8436E-12 g]	**2.18398E-05**	**6.8213E-06**	**1.8436E-07**	
												Ra-226	**7.44248E-01**	**2.3245E-01**	**6.2824E-03**	
												Sr-90	**2.27939E-02**	**7.1192E-03**	**1.9241E-04**	
												Th-232 [3.4984E-02 kg]	**4.55879E-01**	**1.4238E-01**	**3.8482E-03**	
												U-nat [1.4500E-06 kg]	**1.23204E-04**	**3.8480E-05**	**1.0400E-06**	
												Zn-65	**2.22638E-22**	**6.9538E-23**	**1.8794E-24**	
												Subtotal		**5.6969E-01**	**1.5397E-02**	
												Total		**5.6969E-01**	**1.5397E-02**	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				
131/R5-0022-01	**19 Lift Liner**	**2.2937**	**8037.6573**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**5.39358E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
		81.0000	**17720.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.30955E+00**	**3.8835E-01**	**1.0496E-02**	
												Co-60	**1.69798E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.54895E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.82402E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.37376E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**7.38011E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.84978E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.84978E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.42053E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**5.16053E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.59572E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.48593E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.48593E-01**	**7.3723E-02**	**1.9925E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **5** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3674E-10 g]	**5.44907E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**7.79073E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**5.71542E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.77210E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**3.06927E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.54895E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
132/R5-0022-01	**19 Lift Liner**	**2.2937**	**8609.1838**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.82380E-01**	**5.7942E-02**	**1.5660E-03**	**AU**
		81.0000	**18980.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**4.42907E+00**	**1.4071E+00**	**3.8030E-02**	
												Co-60	**5.72413E-03**	**1.8186E-03**	**4.9150E-05**	
												Cs-137	**1.87621E+01**	**5.9607E+00**	**1.6110E-01**	
												Eu-152	**2.64603E-02**	**8.4064E-03**	**2.2720E-04**	
												Eu-154	**1.14098E-02**	**3.6249E-03**	**9.7970E-05**	
												Eu-155	**2.49579E-03**	**7.9291E-04**	**2.1430E-05**	
												H-3	**4.82271E+02**	**1.5322E+02**	**4.1410E+00**	
												Na-22	**1.63979E-07**	**5.2096E-08**	**1.4080E-09**	
												Ni-63	**4.80408E-01**	**1.5263E-01**	**4.1250E-03**	
												Pm-147	**1.74344E-05**	**5.5389E-06**	**1.4970E-07**	
												Pu-238 [6.1353E-09 g]	**1.21470E-02**	**3.8591E-03**	**1.0430E-04**	
												Pu-239 [1.1644E-04 g]	**8.40742E-01**	**2.6710E-01**	**7.2190E-03**	
												Pu-240 [3.1387E-05 g]	**8.40742E-01**	**2.6710E-01**	**7.2190E-03**	
												Pu-241 [1.5810E-09 g]	**1.84127E-02**	**5.8497E-03**	**1.5810E-04**	
												Ra-226	**7.02618E-01**	**2.2322E-01**	**6.0330E-03**	
												Sr-90	**1.93328E+01**	**6.1420E+00**	**1.6600E-01**	
												Th-232 [3.3600E-02 kg]	**4.30445E-01**	**1.3675E-01**	**3.6960E-03**	
												U-nat [9.0400E-03 kg]	**8.82087E-02**	**2.8024E-02**	**7.5740E-04**	
												Zn-65	**1.87621E-19**	**5.9607E-20**	**1.6110E-21**	
												Subtotal		**1.6789E+02**	**4.5374E+00**	
												Total		**1.6789E+02**	**4.5374E+00**	
												SNM [1.4783E-04 g]				
												Source [4.2640E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **6** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
135/R5-0022-01	**19 Lift Liner**	**2.2937**	**9044.6325**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.50086E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**19940.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.07205E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**7.85249E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.57290E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.63294E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.56432E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.42710E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.61750E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.25386E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.58663E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.38765E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.66724E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.15266E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.15266E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.52144E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.22471E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.65523E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.42539E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**3.80186E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.57290E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
137/R5-0022-01	**19 Lift Liner**	**2.2937**	**8953.9140**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.33801E-01**	**4.4215E-02**	**1.1950E-03**	**AU**
		81.0000	**19740.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**3.24817E+00**	**1.0734E+00**	**2.9010E-02**	
												Co-60	**4.19765E-03**	**1.3871E-03**	**3.7490E-05**	
												Cs-137	**1.37608E+01**	**4.5473E+00**	**1.2290E-01**	
												Eu-152	**1.94039E-02**	**6.4121E-03**	**1.7330E-04**	
												Eu-154	**8.36731E-03**	**2.7650E-03**	**7.4730E-05**	
												Eu-155	**1.83066E-03**	**6.0495E-04**	**1.6350E-05**	
												H-3	**3.53704E+02**	**1.1688E+02**	**3.1590E+00**	
												Na-22	**1.20253E-07**	**3.9738E-08**	**1.0740E-09**	
												Ni-63	**3.52361E-01**	**1.1644E-01**	**3.1470E-03**	
												Pm-147	**1.27867E-05**	**4.2254E-06**	**1.1420E-07**	
												Pu-238 [4.6782E-09 g]	**8.90475E-03**	**2.9426E-03**	**7.9530E-05**	
												Pu-239 [8.8823E-05 g]	**6.16603E-01**	**2.0376E-01**	**5.5070E-03**	
												Pu-240 [2.3944E-05 g]	**6.16603E-01**	**2.0376E-01**	**5.5070E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **7** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2060E-09 g]	1.35032E-02	4.4622E-03	1.2060E-04	
												Ra-226	7.02594E-01	2.3218E-01	6.2750E-03	
												Sr-90	1.41750E+01	4.6842E+00	1.2660E-01	
												Th-232 [3.4946E-02 kg]	4.30402E-01	1.4223E-01	3.8440E-03	
												U-nat [9.0400E-03 kg]	6.46835E-02	2.1375E-02	5.7770E-04	
												Zn-65	1.37608E-19	4.5473E-20	1.2290E-21	
												Subtotal		1.2817E+02	3.4641E+00	
												Total		1.2817E+02	3.4641E+00	
												SNM [1.1277E-04 g]				
												Source [4.3986E-02 kg]				
138/R5-0022-01	19 Lift Liner	2.2937	8581.9682	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.45924E-01	4.6213E-02	1.2490E-03	AU
		81.0000	18920.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.54354E+00	1.1222E+00	3.0330E-02	
												Co-60	4.57868E-03	1.4500E-03	3.9190E-05	
												Cs-137	1.50130E+01	4.7545E+00	1.2850E-01	
												Eu-152	2.11701E-02	6.7044E-03	1.8120E-04	
												Eu-154	9.12814E-03	2.8908E-03	7.8130E-05	
												Eu-155	1.99667E-03	6.3233E-04	1.7090E-05	
												H-3	3.85899E+02	1.2221E+02	3.3030E+00	
												Na-22	1.31203E-07	4.1551E-08	1.1230E-09	
												Ni-63	3.84380E-01	1.2173E-01	3.2900E-03	
												Pm-147	1.39498E-05	4.4178E-06	1.1940E-07	
												Pu-238 [4.8906E-09 g]	9.71348E-03	3.0762E-03	8.3140E-05	
												Pu-239 [9.2855E-05 g]	6.72606E-01	2.1301E-01	5.7570E-03	
												Pu-240 [2.5030E-05 g]	6.72606E-01	2.1301E-01	5.7570E-03	
												Pu-241 [1.2610E-09 g]	1.47326E-02	4.6657E-03	1.2610E-04	
												Ra-226	7.02632E-01	2.2252E-01	6.0140E-03	
												Sr-90	1.54687E+01	4.8988E+00	1.3240E-01	
												Th-232 [3.3491E-02 kg]	4.30412E-01	1.3631E-01	3.6840E-03	
												U-nat [9.0400E-03 kg]	7.05670E-02	2.2348E-02	6.0400E-04	
												Zn-65	1.50130E-19	4.7545E-20	1.2850E-21	
												Subtotal		1.3398E+02	3.6211E+00	
												Total		1.3398E+02	3.6211E+00	
												SNM [1.1789E-04 g]				
												Source [4.2531E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-012**

3. PAGE **8** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
139/R5-0022-01	**19 Lift Liner**	**2.2937**	**8817.8363**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.56535E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**19440.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.22862E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.05498E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.63925E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.72662E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.60466E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.51548E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.78814E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.31198E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.75647E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.44922E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.71023E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.18238E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.18238E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.58646E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.41101E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.72370E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.53950E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**3.89989E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.63925E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
Shipment Totals		**25.2307**	**91707.3116**									**SNM [1.2837E-03 g]**		**1.3326E+03**	**3.6016E+01**	
		891.0000	**202180.0000**									**Source [4.1950E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-012
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **11**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
TILX 520236
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 8 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-013

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**20440 LBS; 81 FT3**	**082**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**20480 LBS; 81 FT3**	**086**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-013

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5376E+00)**	**NA**	**20440 LBS; 81 FT3**	**087**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**17960 LBS; 81 FT3**	**122**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**18100 LBS; 81 FT3**	**124**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18180 LBS; 81 FT3**	**125**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18880 LBS; 81 FT3**	**126**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-013

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18880 LBS; 81 FT3**	**126**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**17820 LBS; 81 FT3**	**128**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19060 LBS; 81 FT3**	**129**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1655E+02**	**(3.1502E+00)**	**NA**	**19740 LBS; 81 FT3**	**133**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18920 LBS; 81 FT3**	**134**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-013

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**18920 LBS; 81 FT3**	**134**

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
11	m3 25.2307 / ft3 891.0000	kg 95013.9999 / lb 209470.0000	NP	NP	1.9254E-03 11 Containers	1.9254E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.1452E+03	1.9548E+03	1.8326E+01	NP	NP	(kg)	4.0739E-01
mCi	5.7979E+01	5.2831E+01	4.9529E-01	NP	NP	(lb)	8.9815E-01

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **1** OF **8** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **TILX 520236**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
082/R5-0022-01	19 Lift Liner	2.2937	9271.4287	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.43953E-01	8.3483E-02	2.2563E-03	AU
		81.0000	20440.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	5.92315E+00	2.0269E+00	5.4781E-02	
												Co-60	7.65994E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.50981E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.54385E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.52596E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.34307E-03	1.1440E-03	3.0919E-05	
												H-3	6.45523E+02	2.2090E+02	5.9702E+00	
												Na-22	2.19859E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.42511E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.32910E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.62636E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.12439E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.12439E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.45961E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.04754E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.59012E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.31687E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	3.70863E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.50981E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **2** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
086/R5-0022-01	**19 Lift Liner**	**2.2937**	**9289.5724**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**4.66493E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
												C-14	**1.13264E+00**	**3.8835E-01**	**1.0496E-02**	
		81.0000	**20480.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**1.46859E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**4.79931E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**6.76703E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**2.91798E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**6.38309E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.19460E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.19460E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.22862E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**4.46336E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.10996E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.15009E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.15009E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**4.71293E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**6.73824E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**4.94329E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.12741E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**2.65463E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**4.79931E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
087/R5-0022-01	**19 Lift Liner**	**2.2937**	**9271.4287**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.43954E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
												C-14	**5.92315E+00**	**2.0269E+00**	**5.4781E-02**	
		81.0000	**20440.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**Co-60**	**7.65994E-03**	**2.6213E-03**	**7.0845E-05**	
												Cs-137	**2.50981E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.54385E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.52596E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.34307E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.45523E+02**	**2.2090E+02**	**5.9703E+00**	
												Na-22	**2.19859E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.42512E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.32910E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.62636E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.12440E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.12440E+00**	**3.8476E-01**	**1.0399E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **3** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	**2.45961E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.04755E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.59012E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.31687E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**3.70863E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.50981E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5376E+00**	
												Total		**2.4189E+02**	**6.5376E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
122/R5-0022-01	**19 Lift Liner**	**2.2937**	**8146.5195**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.77734E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**17960.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.74333E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.72061E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.85734E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**4.03457E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.73726E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.80598E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**7.34908E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.50303E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**7.31480E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.65161E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.85156E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.28009E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.28009E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.80020E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**8.02342E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.94878E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.91463E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**4.22216E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.85734E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **4** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
124/R5-0022-01	**19 Lift Liner**	**2.2937**	**8210.0224**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.01508E-01**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**18100.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.46460E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**3.18518E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**1.04432E+01**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.47249E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.34947E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.38895E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.68391E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**9.12737E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.67346E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.70175E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.75676E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.67856E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.67856E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-241 [8.3877E-10 g]	**1.02448E-02**	**3.1034E-03**	**8.3877E-05**	
												Ra-226	**7.33114E-01**	**2.2208E-01**	**6.0022E-03**	
												Sr-90	**1.07565E+01**	**3.2585E+00**	**8.8067E-02**	
												Th-232 [3.3423E-02 kg]	**4.49058E-01**	**1.3603E-01**	**3.6766E-03**	
												U-nat [6.6200E-04 kg]	**5.77724E-02**	**1.7501E-02**	**4.7300E-04**	
												Zn-65	**1.04432E-19**	**3.1636E-20**	**8.5502E-22**	
												Subtotal		**8.9256E+01**	**2.4123E+00**	
												Total		**8.9256E+01**	**2.4123E+00**	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
125/R5-0022-01	**19 Lift Liner**	**2.2937**	**8246.3098**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.74363E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**18180.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.66150E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.61479E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.82267E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.98561E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.71618E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.75980E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**7.25991E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.47266E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**7.22603E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.61944E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.82909E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.26456E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.26456E+00**	**3.8476E-01**	**1.0399E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **5** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	2.76622E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.92606E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.91300E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.85499E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	4.17093E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.82267E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
126/R5-0022-01	19 Lift Liner	2.2937	8563.8245	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.64164E-01	8.3483E-02	2.2563E-03	AU
		81.0000	18880.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	6.41386E+00	2.0269E+00	5.4781E-02	
												Co-60	8.29454E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.71774E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.83745E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.65238E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.62003E-03	1.1440E-03	3.0919E-05	
												H-3	6.99002E+02	2.2090E+02	5.9702E+00	
												Na-22	2.38074E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.95741E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.52206E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.76110E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.21755E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.21755E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.66338E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.63141E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.80471E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.67451E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	4.01588E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.71774E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **6** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
128/R5-0022-01	**19 Lift Liner**	**2.2937**	**8083.0166**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.79922E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**17820.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.79645E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.78931E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.87985E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**4.06635E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.75095E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.83597E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**7.40698E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.52275E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**7.37243E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.67250E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.86615E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.29017E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.29017E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.82226E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**8.08663E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.97201E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.95335E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**4.25543E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.87985E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
129/R5-0022-01	**19 Lift Liner**	**2.2937**	**8645.4711**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.61663E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**19060.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.35313E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.21600E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.69200E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.80111E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.63674E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.58575E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.92383E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.35820E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.89153E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.49818E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.74442E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.20602E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.20602E+00**	**3.8476E-01**	**1.0399E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **7** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [2.2748E-09 g]	**2.63816E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.55915E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.77815E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.63025E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**3.97785E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.69200E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
133/R5-0022-01	**19 Lift Liner**	**2.2937**	**8953.9140**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.21596E-01**	**4.0182E-02**	**1.0860E-03**	**AU**
		81.0000	**19740.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.95258E+00**	**9.7569E-01**	**2.6370E-02**	
												Co-60	**3.81584E-03**	**1.2610E-03**	**3.4080E-05**	
												Cs-137	**1.25067E+01**	**4.1329E+00**	**1.1170E-01**	
												Eu-152	**1.76460E-02**	**5.8312E-03**	**1.5760E-04**	
												Eu-154	**7.60705E-03**	**2.5138E-03**	**6.7940E-05**	
												Eu-155	**1.66383E-03**	**5.4982E-04**	**1.4860E-05**	
												H-3	**3.21570E+02**	**1.0626E+02**	**2.8720E+00**	
												Na-22	**1.09347E-07**	**3.6134E-08**	**9.7660E-10**	
												Ni-63	**3.20338E-01**	**1.0586E-01**	**2.8610E-03**	
												Pm-147	**1.16222E-05**	**3.8406E-06**	**1.0380E-07**	
												Pu-238 [4.2529E-09 g]	**8.09523E-03**	**2.6751E-03**	**7.2300E-05**	
												Pu-239 [8.0742E-05 g]	**5.60508E-01**	**1.8522E-01**	**5.0060E-03**	
												Pu-240 [2.1765E-05 g]	**5.60508E-01**	**1.8522E-01**	**5.0060E-03**	
												Pu-241 [1.0960E-09 g]	**1.22716E-02**	**4.0552E-03**	**1.0960E-04**	
												Ra-226	**7.02594E-01**	**2.3218E-01**	**6.2750E-03**	
												Sr-90	**1.28874E+01**	**4.2587E+00**	**1.1510E-01**	
												Th-232 [3.4946E-02 kg]	**4.30402E-01**	**1.4223E-01**	**3.8440E-03**	
												U-nat [9.0400E-03 kg]	**5.88052E-02**	**1.9432E-02**	**5.2520E-04**	
												Zn-65	**1.25067E-19**	**4.1329E-20**	**1.1170E-21**	
												Subtotal		**1.1655E+02**	**3.1502E+00**	
												Total		**1.1655E+02**	**3.1502E+00**	
												SNM [1.0251E-04 g]				
												Source [4.3986E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-013**

3. PAGE **8** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
134/R5-0022-01	**19 Lift Liner**	**2.2937**	**8581.9682**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.63604E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**18920.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.40026E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.27695E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.71198E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.82931E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.64888E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.61235E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.97520E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.37569E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.94266E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.51671E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.75736E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.21497E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.21497E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.65774E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.61523E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.79876E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.66460E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**4.00736E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.71198E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
Shipment Totals		**25.2307**	**95263.4759**									**SNM [1.9254E-03 g]**		**2.1452E+03**	**5.7979E+01**	
		891.0000	**210020.0000**									**Source [4.0739E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-013
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **11**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
TILX 520191
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A 8 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-014

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.6969E-01**	**(1.5397E-02)**	**NA**	**19680 LBS; 81 FT3**	**083**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19140 LBS; 81 FT3**	**084**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-014

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.1868E+02**	**(3.2074E+00)**	**NA**	**18280 LBS; 81 FT3**	**120**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2916E+02**	**(3.4906E+00)**	**NA**	**18240 LBS; 81 FT3**	**121**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**17880 LBS; 81 FT3**	**123**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.2882E+02**	**(3.4815E+00)**	**NA**	**19840 LBS; 81 FT3**	**127**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**17860 LBS; 81 FT3**	**130**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9334-014

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Na-22**	**Ni-63**	**Pm-147**	**Pu-238**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**17860 LBS; 81 FT3**	**130**
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**20340 LBS; 81 FT3**	**136**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**8.9256E+01**	**(2.4123E+00)**	**NA**	**19120 LBS; 81 FT3**	**140**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**2.4189E+02**	**(6.5375E+00)**	**NA**	**19980 LBS; 81 FT3**	**141**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-nat**	**Zn-65**					
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19260 LBS; 81 FT3**	**161**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9334-014

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9334 Soil and Debris	**NA**	**na**	**Solid Oxides**	**Sr-90**	**Th-232**	**U-nat**	**Zn-65**	**4.3228E+00**	**(1.1683E-01)**	**NA**	**19260 LBS; 81 FT3**	**161**

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
11	m3 25.2307 / ft3 891.0000	kg 94832.5631 / lb 209070.0000	NP	NP	1.3810E-03 11 Containers	1.3810E-03

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.5276E+03	1.3899E+03	1.3145E+01	NP	NP	(kg)	4.1225E-01
mCi	4.1286E+01	3.7564E+01	3.5527E-01	NP	NP	(lb)	9.0885E-01

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **1** OF **8** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **TILX 520191**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
083/R5-0022-01	19 Lift Liner	2.2937 / 81.0000	8926.6984 / 19680.0000	<1.0000E-03 / <1.0000E-01	3.3400E-07 / 2.0000E+01	3.3400E-06 / 2.0000E+02	22,29-HJ	2.2937 / 81.0000	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.05039E-04	6.7551E-05	1.8257E-06	AU
												C-14	4.98527E-03	1.6424E-03	4.4389E-05	
												Co-60	6.42255E-06	2.1159E-06	5.7186E-08	
												Cs-137	2.11070E-02	6.9538E-03	1.8794E-04	
												Eu-152	2.96503E-05	9.7684E-06	2.6401E-07	
												Eu-154	1.28652E-05	4.2384E-06	1.1455E-07	
												Eu-155	2.79416E-06	9.2052E-07	2.4879E-08	
												H-3	5.41746E-01	1.7848E-01	4.8237E-03	
												Na-22	1.83932E-10	6.0595E-11	1.6377E-12	
												Ni-63	5.38731E-04	1.7748E-04	4.7968E-06	
												Pm-147	1.95993E-08	6.4569E-09	1.7451E-10	
												Pu-238 [7.1595E-12 g]	1.36693E-05	4.5033E-06	1.2171E-07	
												Pu-239 [7.7801E-08 g]	5.41746E-04	1.7848E-04	4.8237E-06	
												Pu-240 [2.0973E-08 g]	5.41746E-04	1.7848E-04	4.8237E-06	
												Pu-241 [1.8436E-12 g]	2.07049E-05	6.8213E-06	1.8436E-07	
												Ra-226	7.05576E-01	2.3245E-01	6.2824E-03	
												Sr-90	2.16095E-02	7.1192E-03	1.9241E-04	
												Th-232 [3.4984E-02 kg]	4.32191E-01	1.4238E-01	3.8482E-03	
												U-nat [1.4500E-06 kg]	1.16802E-04	3.8480E-05	1.0400E-06	
												Zn-65	2.11070E-22	6.9538E-23	1.8794E-24	
												Subtotal		5.6969E-01	1.5397E-02	
												Total		5.6969E-01	1.5397E-02	
												SNM [9.8783E-08 g]				
												Source [3.4985E-02 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **2** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
084/R5-0022-01	**19 Lift Liner**	**2.2937**	**8681.7585**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.60566E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**19140.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**6.32651E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**8.18157E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.68072E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.78518E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.62988E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.57072E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.89482E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.34831E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.86265E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.48771E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238	**[8.8481E-09 g]**	**1.73711E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239	**[1.6773E-04 g]**	**1.20096E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240	**[4.5214E-05 g]**	**1.20096E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241	**[2.2748E-09 g]**	**2.62711E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226		**7.52747E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90		**2.76651E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232	**[3.6296E-02 kg]**	**4.61084E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat	**[4.8000E-04 kg]**	**3.96118E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65		**2.68072E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal			**2.4189E+02**	**6.5375E+00**	
												Total			**2.4189E+02**	**6.5375E+00**	
												SNM	**[2.1295E-04 g]**				
												Source	**[3.6776E-02 kg]**				
120/R5-0022-01	**19 Lift Liner**	**2.2937**	**8291.6691**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.33753E-01**	**4.0922E-02**	**1.1060E-03**	**AU**
		81.0000	**18280.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**3.24830E+00**	**9.9382E-01**	**2.6860E-02**	
												Co-60	**4.19763E-03**	**1.2843E-03**	**3.4710E-05**	
												Cs-137	**1.37623E+01**	**4.2106E+00**	**1.1380E-01**	
												Eu-152	**1.94100E-02**	**5.9385E-03**	**1.6050E-04**	
												Eu-154	**8.36745E-03**	**2.5600E-03**	**6.9190E-05**	
												Eu-155	**1.83095E-03**	**5.6018E-04**	**1.5140E-05**	
												H-3	**3.53733E+02**	**1.0823E+02**	**2.9250E+00**	
												Na-22	**1.20281E-07**	**3.6800E-08**	**9.9460E-10**	
												Ni-63	**3.52282E-01**	**1.0778E-01**	**2.9130E-03**	
												Pm-147	**1.27828E-05**	**3.9109E-06**	**1.0570E-07**	
												Pu-238	**[4.3312E-09 g]**	**8.90440E-03**	**2.7243E-03**	**7.3630E-05**	
												Pu-239	**[8.2226E-05 g]**	**6.16524E-01**	**1.8863E-01**	**5.0980E-03**	
												Pu-240	**[2.2165E-05 g]**	**6.16524E-01**	**1.8863E-01**	**5.0980E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **3** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.1160E-09 g]	1.34963E-02	4.1292E-03	1.1160E-04	
												Ra-226	7.02629E-01	2.1497E-01	5.8100E-03	
												Sr-90	1.41735E+01	4.3364E+00	1.1720E-01	
												Th-232 [3.2355E-02 kg]	4.30406E-01	1.3168E-01	3.5590E-03	
												U-nat [9.0400E-03 kg]	6.46878E-02	1.9791E-02	5.3490E-04	
												Zn-65	1.37623E-19	4.2106E-20	1.1380E-21	
												Subtotal		1.1868E+02	3.2074E+00	
												Total		1.1868E+02	3.2074E+00	
												SNM [1.0440E-04 g]				
												Source [4.1395E-02 kg]				
121/R5-0022-01	19 Lift Liner	2.2937	8273.5254	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.45925E-01	4.4548E-02	1.2040E-03	AU
		81.0000	18240.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	3.54269E+00	1.0815E+00	2.9230E-02	
												Co-60	4.57895E-03	1.3979E-03	3.7780E-05	
												Cs-137	1.50167E+01	4.5843E+00	1.2390E-01	
												Eu-152	2.11737E-02	6.4639E-03	1.7470E-04	
												Eu-154	9.12881E-03	2.7868E-03	7.5320E-05	
												Eu-155	1.99738E-03	6.0976E-04	1.6480E-05	
												H-3	3.85902E+02	1.1781E+02	3.1840E+00	
												Na-22	1.31260E-07	4.0071E-08	1.0830E-09	
												Ni-63	3.84326E-01	1.1733E-01	3.1710E-03	
												Pm-147	1.39502E-05	4.2587E-06	1.1510E-07	
												Pu-238 [4.7147E-09 g]	9.71421E-03	2.9656E-03	8.0150E-05	
												Pu-239 [8.9516E-05 g]	6.72662E-01	2.0535E-01	5.5500E-03	
												Pu-240 [2.4130E-05 g]	6.72662E-01	2.0535E-01	5.5500E-03	
												Pu-241 [1.2150E-09 g]	1.47258E-02	4.4955E-03	1.2150E-04	
												Ra-226	7.02598E-01	2.1449E-01	5.7970E-03	
												Sr-90	1.54652E+01	4.7212E+00	1.2760E-01	
												Th-232 [3.2282E-02 kg]	4.30382E-01	1.3139E-01	3.5510E-03	
												U-nat [9.0400E-03 kg]	7.05628E-02	2.1541E-02	5.8220E-04	
												Zn-65	1.50167E-19	4.5843E-20	1.2390E-21	
												Subtotal		1.2916E+02	3.4906E+00	
												Total		1.2916E+02	3.4906E+00	
												SNM [1.1365E-04 g]				
												Source [4.1322E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **4** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
123/R5-0022-01	**19 Lift Liner**	**2.2937**	**8110.2321**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.02761E-01**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**17880.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.49501E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**3.22448E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**1.05721E+01**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.49066E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.42782E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.40609E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.71702E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**9.23999E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.70645E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.82145E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.84013E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.73629E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.73629E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-241 [8.3877E-10 g]	**1.03712E-02**	**3.1034E-03**	**8.3877E-05**	
												Ra-226	**7.42159E-01**	**2.2208E-01**	**6.0022E-03**	
												Sr-90	**1.08892E+01**	**3.2585E+00**	**8.8067E-02**	
												Th-232 [3.3423E-02 kg]	**4.54599E-01**	**1.3603E-01**	**3.6766E-03**	
												U-nat [6.6200E-04 kg]	**5.84852E-02**	**1.7501E-02**	**4.7300E-04**	
												Zn-65	**1.05721E-19**	**3.1636E-20**	**8.5502E-22**	
												Subtotal		**8.9256E+01**	**2.4123E+00**	
												Total		**8.9256E+01**	**2.4123E+00**	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
127/R5-0022-01	**19 Lift Liner**	**2.2937**	**8999.2732**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.33793E-01**	**4.4437E-02**	**1.2010E-03**	**AU**
		81.0000	**19840.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**3.24847E+00**	**1.0789E+00**	**2.9160E-02**	
												Co-60	**4.19761E-03**	**1.3942E-03**	**3.7680E-05**	
												Cs-137	**1.37581E+01**	**4.5695E+00**	**1.2350E-01**	
												Eu-152	**1.94061E-02**	**6.4454E-03**	**1.7420E-04**	
												Eu-154	**8.36736E-03**	**2.7791E-03**	**7.5110E-05**	
												Eu-155	**1.83033E-03**	**6.0791E-04**	**1.6430E-05**	
												H-3	**3.53700E+02**	**1.1748E+02**	**3.1750E+00**	
												Na-22	**1.20314E-07**	**3.9960E-08**	**1.0800E-09**	
												Ni-63	**3.52363E-01**	**1.1703E-01**	**3.1630E-03**	
												Pm-147	**1.27889E-05**	**4.2476E-06**	**1.1480E-07**	
												Pu-238 [4.7018E-09 g]	**8.90432E-03**	**2.9574E-03**	**7.9930E-05**	
												Pu-239 [8.9274E-05 g]	**6.16607E-01**	**2.0480E-01**	**5.5350E-03**	
												Pu-240 [2.4065E-05 g]	**6.16607E-01**	**2.0480E-01**	**5.5350E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **5** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.2120E-09 g]	1.35019E-02	4.4844E-03	1.2120E-04	
												Ra-226	7.02609E-01	2.3336E-01	6.3070E-03	
												Sr-90	1.41703E+01	4.7064E+00	1.2720E-01	
												Th-232 [3.5118E-02 kg]	4.30344E-01	1.4293E-01	3.8630E-03	
												U-nat [9.0400E-03 kg]	6.46797E-02	2.1482E-02	5.8060E-04	
												Zn-65	1.37581E-19	4.5695E-20	1.2350E-21	
												Subtotal		1.2882E+02	3.4815E+00	
												Total		1.2882E+02	3.4815E+00	
												SNM [1.1335E-04 g]				
												Source [4.4158E-02 kg]				
130/R5-0022-01	19 Lift Liner	2.2937	8101.1603	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.79293E-01	8.3483E-02	2.2563E-03	AU
		81.0000	17860.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	6.78119E+00	2.0269E+00	5.4781E-02	
												Co-60	8.76957E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.87339E+01	8.5884E+00	2.3212E-01	
												Eu-152	4.05722E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.74702E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.82735E-03	1.1440E-03	3.0919E-05	
												H-3	7.39035E+02	2.2090E+02	5.9702E+00	
												Na-22	2.51709E-07	7.5236E-08	2.0334E-09	
												Ni-63	7.35587E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.66650E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.86196E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.28728E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.28728E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.81592E-02	8.4168E-03	2.2748E-04	
												Ra-226	8.06847E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.96533E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.94222E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	4.24587E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.87339E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

FORM 541A (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **6** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
136/R5-0022-01	**19 Lift Liner**	**2.2937**	**9226.0694**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.45156E-01**	**8.3483E-02**	**2.2563E-03**	**AU**
		81.0000	**20340.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**5.95234E+00**	**2.0269E+00**	**5.4781E-02**	
												Co-60	**7.69769E-03**	**2.6212E-03**	**7.0844E-05**	
												Cs-137	**2.52218E+01**	**8.5884E+00**	**2.3212E-01**	
												Eu-152	**3.56132E-02**	**1.2127E-02**	**3.2776E-04**	
												Eu-154	**1.53348E-02**	**5.2218E-03**	**1.4113E-04**	
												Eu-155	**3.35954E-03**	**1.1440E-03**	**3.0919E-05**	
												H-3	**6.48704E+02**	**2.2090E+02**	**5.9702E+00**	
												Na-22	**2.20943E-07**	**7.5236E-08**	**2.0334E-09**	
												Ni-63	**6.45678E-01**	**2.1987E-01**	**5.9424E-03**	
												Pm-147	**2.34058E-05**	**7.9702E-06**	**2.1541E-07**	
												Pu-238 [8.8481E-09 g]	**1.63437E-02**	**5.5655E-03**	**1.5042E-04**	
												Pu-239 [1.6773E-04 g]	**1.12994E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-240 [4.5214E-05 g]	**1.12994E+00**	**3.8476E-01**	**1.0399E-02**	
												Pu-241 [2.2748E-09 g]	**2.47173E-02**	**8.4168E-03**	**2.2748E-04**	
												Ra-226	**7.08228E-01**	**2.4117E-01**	**6.5181E-03**	
												Sr-90	**2.60289E+01**	**8.8634E+00**	**2.3955E-01**	
												Th-232 [3.6296E-02 kg]	**4.33815E-01**	**1.4772E-01**	**3.9925E-03**	
												U-nat [4.8000E-04 kg]	**3.72691E-02**	**1.2691E-02**	**3.4300E-04**	
												Zn-65	**2.52218E-19**	**8.5884E-20**	**2.3212E-21**	
												Subtotal		**2.4189E+02**	**6.5375E+00**	
												Total		**2.4189E+02**	**6.5375E+00**	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				
140/R5-0022-01	**19 Lift Liner**	**2.2937**	**8672.6867**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**9.60787E-02**	**3.0750E-02**	**8.3108E-04**	**AU**
		81.0000	**19120.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**2.33277E+00**	**7.4659E-01**	**2.0178E-02**	
												Co-60	**3.01481E-03**	**9.6489E-04**	**2.6078E-05**	
												Cs-137	**9.88464E+00**	**3.1636E+00**	**8.5502E-02**	
												Eu-152	**1.39373E-02**	**4.4607E-03**	**1.2056E-04**	
												Eu-154	**6.00986E-03**	**1.9234E-03**	**5.1985E-05**	
												Eu-155	**1.31466E-03**	**4.2076E-04**	**1.1372E-05**	
												H-3	**2.54035E+02**	**8.1304E+01**	**2.1974E+00**	
												Na-22	**8.63917E-08**	**2.7649E-08**	**7.4728E-10**	
												Ni-63	**2.53047E-01**	**8.0986E-02**	**2.1888E-03**	
												Pm-147	**9.18283E-06**	**2.9389E-06**	**7.9431E-08**	
												Pu-238 [3.2541E-09 g]	**6.39536E-03**	**2.0468E-03**	**5.5320E-05**	
												Pu-239 [6.1782E-05 g]	**4.42832E-01**	**1.4173E-01**	**3.8305E-03**	
												Pu-240 [1.6654E-05 g]	**4.42832E-01**	**1.4173E-01**	**3.8305E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **7** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [8.3877E-10 g]	9.69683E-03	3.1034E-03	8.3877E-05	
												Ra-226	6.93901E-01	2.2208E-01	6.0022E-03	
												Sr-90	1.01812E+01	3.2585E+00	8.8067E-02	
												Th-232 [3.3423E-02 kg]	4.25039E-01	1.3603E-01	3.6766E-03	
												U-nat [6.6200E-04 kg]	5.46823E-02	1.7501E-02	4.7300E-04	
												Zn-65	9.88464E-20	3.1636E-20	8.5502E-22	
												Subtotal		8.9256E+01	2.4123E+00	
												Total		8.9256E+01	2.4123E+00	
												SNM [7.8440E-05 g]				
												Source [3.4085E-02 kg]				
141/R5-0022-01	19 Lift Liner	2.2937	9062.7762	<1.0000E-03	3.3400E-07	3.3400E-06	22,29-HJ	2.2937	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.49584E-01	8.3483E-02	2.2563E-03	AU
		81.0000	19980.0000	<1.0000E-01	2.0000E+01	2.0000E+02		81.0000				C-14	6.05986E+00	2.0269E+00	5.4781E-02	
												Co-60	7.83673E-03	2.6212E-03	7.0844E-05	
												Cs-137	2.56774E+01	8.5884E+00	2.3212E-01	
												Eu-152	3.62564E-02	1.2127E-02	3.2776E-04	
												Eu-154	1.56118E-02	5.2218E-03	1.4113E-04	
												Eu-155	3.42023E-03	1.1440E-03	3.0919E-05	
												H-3	6.60422E+02	2.2090E+02	5.9702E+00	
												Na-22	2.24934E-07	7.5236E-08	2.0334E-09	
												Ni-63	6.57341E-01	2.1987E-01	5.9424E-03	
												Pm-147	2.38286E-05	7.9702E-06	2.1541E-07	
												Pu-238 [8.8481E-09 g]	1.66390E-02	5.5655E-03	1.5042E-04	
												Pu-239 [1.6773E-04 g]	1.15035E+00	3.8476E-01	1.0399E-02	
												Pu-240 [4.5214E-05 g]	1.15035E+00	3.8476E-01	1.0399E-02	
												Pu-241 [2.2748E-09 g]	2.51638E-02	8.4168E-03	2.2748E-04	
												Ra-226	7.21021E-01	2.4117E-01	6.5181E-03	
												Sr-90	2.64990E+01	8.8634E+00	2.3955E-01	
												Th-232 [3.6296E-02 kg]	4.41651E-01	1.4772E-01	3.9925E-03	
												U-nat [4.8000E-04 kg]	3.79423E-02	1.2691E-02	3.4300E-04	
												Zn-65	2.56774E-19	8.5884E-20	2.3212E-21	
												Subtotal		2.4189E+02	6.5375E+00	
												Total		2.4189E+02	6.5375E+00	
												SNM [2.1295E-04 g]				
												Source [3.6776E-02 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9334-014**

3. PAGE **8** OF **8** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
161/R5-0022-01	**19 Lift Liner**	**2.2937**	**8736.1896**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**22,29-HJ**	**2.2937**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**4.96120E-02**	**1.5995E-02**	**4.3229E-04**	**AU**
		81.0000	**19260.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**81.0000**				**C-14**	**1.20457E+00**	**3.8835E-01**	**1.0496E-02**	
												Co-60	**1.56186E-03**	**5.0353E-04**	**1.3609E-05**	
												Cs-137	**5.10411E+00**	**1.6455E+00**	**4.4474E-02**	
												Eu-152	**7.19680E-03**	**2.3202E-03**	**6.2709E-05**	
												Eu-154	**3.10330E-03**	**1.0005E-03**	**2.7040E-05**	
												Eu-155	**6.78847E-04**	**2.1886E-04**	**5.9151E-06**	
												H-3	**4.46099E-08**	**1.4382E-08**	**3.8871E-10**	
												Na-22	**4.46099E-08**	**1.4382E-08**	**3.8871E-10**	
												Ni-63	**1.30665E-01**	**4.2125E-02**	**1.1385E-03**	
												Pm-147	**4.74682E-06**	**1.5304E-06**	**4.1361E-08**	
												Pu-238 [1.6953E-09 g]	**3.30746E-03**	**1.0663E-03**	**2.8819E-05**	
												Pu-239 [3.2136E-05 g]	**2.28664E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-240 [8.6629E-06 g]	**2.28664E-01**	**7.3723E-02**	**1.9925E-03**	
												Pu-241 [4.3674E-10 g]	**5.01224E-03**	**1.6159E-03**	**4.3674E-05**	
												Ra-226	**7.16617E-01**	**2.3104E-01**	**6.2442E-03**	
												Sr-90	**5.25724E+00**	**1.6949E+00**	**4.5809E-02**	
												Th-232 [3.4771E-02 kg]	**4.38954E-01**	**1.4152E-01**	**3.8248E-03**	
												U-nat [3.4400E-04 kg]	**2.82322E-02**	**9.1020E-03**	**2.4600E-04**	
												Zn-65	**5.10411E-20**	**1.6455E-20**	**4.4474E-22**	
												Subtotal		**4.3227E+00**	**1.1683E-01**	
												Total		**4.3227E+00**	**1.1683E-01**	
												SNM [4.0801E-05 g]				
												Source [3.5115E-02 kg]				
Shipment Totals		**25.2307**	**95082.0389**									**SNM [1.3810E-03 g]**		**1.5276E+03**	**4.1286E+01**	
		891.0000	**209620.0000**									**Source [4.1225E-01 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9334-014
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER **GIMX 516165**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID **NA**

SHIPMENT NUMBER

☑ GENERATOR TYPE *(Specify)* **G**

CONTACT **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code) **865-300-5789**

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER **NA**

SHIPPING DATE **06/19/2021**

CONTACT **James P. Nunes**

TELEPHONE (Include Area Code) **(718) 928-2304**

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A 5 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9450-007

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT **Keri Gonzalez**

TELEPHONE (Include Area Code) **(432)525-8500**

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 18 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.4255E+01**	**(1.4663E+00)**	**NA**	**64380 LBS; 675 FT3**	**AWIU000117**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**4.2099E+01**	**(1.1378E+00)**	**NA**	**50440 LBS; 675 FT3**	**AWIU000131**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-007

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.4255E+01**	**(1.4663E+00)**	**NA**	**56520 LBS; 675 FT3**	**AWIU000263**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**60640 LBS; 675 FT3**	**BFLU000172**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**51100 LBS; 675 FT3**	**ERRU000270 a**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**1.8372E+01**	**(4.9655E-01)**	**NA**	**56540 LBS; 675 FT3**	**ERRU000276 a**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834	kg 132820.9265	NP	1.7905E-01	2.6780E-03	1.8173E-01
	ft3 4050.0000	lb 292820.0000		6 Containers	6 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	2.4228E+02	2.2511E+01	2.5471E+01	NP	NP	(kg)	3.6840E-02
mCi	6.5482E+00	6.0840E-01	6.8840E-01	NP	NP	(lb)	8.1218E-02

2. MANIFEST NUMBER **WP-9450-007**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **GIMX 516165**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000117/R5-0022-01	19 Intermodal Container	19.1139	29202.2787	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.51324E-01	2.3865E-01	6.4500E-03	AU
		675.0000	64380.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	6.10190E+00	5.7942E+00	1.5660E-01	
												Co-60	7.88650E-03	7.4888E-03	2.0240E-04	
												Cs-137	2.58571E+01	2.4553E+01	6.6360E-01	
												Eu-152	3.64595E-02	3.4621E-02	9.3570E-04	
												Eu-154	1.57223E-02	1.4930E-02	4.0350E-04	
												Eu-155	3.43904E-03	3.2656E-03	8.8260E-05	
												H-3	4.50434E+00	4.2772E+00	1.1560E-01	
												Na-22	2.25996E-07	2.1460E-07	5.8000E-09	
												Ni-63	6.62014E-01	6.2863E-01	1.6990E-02	
												Pm-147	2.40219E-05	2.2811E-05	6.1650E-07	
												Pu-238 [2.5253E-08 g]	1.67276E-02	1.5884E-02	4.2930E-04	
												Pu-239 [4.7952E-04 g]	1.15843E+00	1.1000E+00	2.9730E-02	
												Pu-240 [1.2926E-04 g]	1.15843E+00	1.1000E+00	2.9730E-02	
												Pu-241 [6.5100E-09 g]	2.53662E-02	2.4087E-02	6.5100E-04	
												Ra-226	2.73261E-03	2.5948E-03	7.0130E-05	
												Sr-90	1.71952E+01	1.6328E+01	4.4130E-01	
												Th-232 [3.1527E-03 kg]	1.35130E-02	1.2832E-02	3.4680E-04	
												U-234 [2.5258E-07 kg]	6.10190E-02	5.7942E-02	1.5660E-03	
												U-235 [4.0718E-02 g]	3.49048E-03	3.3145E-03	8.9580E-05	
												U-238 [4.6059E-03 kg]	6.10190E-02	5.7942E-02	1.5660E-03	
												Zn-65	2.58571E-19	2.4553E-19	6.6360E-21	
												Subtotal		5.4255E+01	1.4663E+00	
												Total		5.4255E+01	1.4663E+00	
												SNM [4.1327E-02 g]				
												Source [7.7589E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-007**

3. PAGE **2** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000131/R5-0022-01	**19 Intermodal Container**	**19.1139**	**22879.2007**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.59448E-01**	**1.8567E-01**	**5.0180E-03**	**AU**
		675.0000	**50440.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**6.29748E+00**	**4.5066E+00**	**1.2180E-01**	
												Co-60	**8.13812E-03**	**5.8238E-03**	**1.5740E-04**	
												Cs-137	**2.66893E+01**	**1.9099E+01**	**5.1620E-01**	
												Eu-152	**3.76349E-02**	**2.6932E-02**	**7.2790E-04**	
												Eu-154	**1.62297E-02**	**1.1614E-02**	**3.1390E-04**	
												Eu-155	**3.54996E-03**	**2.5404E-03**	**6.8660E-05**	
												H-3	**4.50389E+00**	**3.2231E+00**	**8.7110E-02**	
												Na-22	**2.33286E-07**	**1.6694E-07**	**4.5120E-09**	
												Ni-63	**6.83519E-01**	**4.8914E-01**	**1.3220E-02**	
												Pm-147	**2.47970E-05**	**1.7745E-05**	**4.7960E-07**	
												Pu-238 [1.9647E-08 g]	**1.72689E-02**	**1.2358E-02**	**3.3400E-04**	
												Pu-239 [3.7307E-04 g]	**1.19590E+00**	**8.5581E-01**	**2.3130E-02**	
												Pu-240 [1.0057E-04 g]	**1.19590E+00**	**8.5581E-01**	**2.3130E-02**	
												Pu-241 [5.0640E-09 g]	**2.61826E-02**	**1.8737E-02**	**5.0640E-04**	
												Ra-226	**2.73253E-03**	**1.9555E-03**	**5.2850E-05**	
												Sr-90	**1.77498E+01**	**1.2702E+01**	**3.4330E-01**	
												Th-232 [2.3755E-03 kg]	**1.35101E-02**	**9.6681E-03**	**2.6130E-04**	
												U-234 [1.9645E-07 kg]	**6.29748E-02**	**4.5066E-02**	**1.2180E-03**	
												U-235 [3.1677E-02 g]	**3.60321E-03**	**2.5785E-03**	**6.9690E-05**	
												U-238 [3.5824E-03 kg]	**6.29748E-02**	**4.5066E-02**	**1.2180E-03**	
												Zn-65	**2.66893E-19**	**1.9099E-19**	**5.1620E-21**	
												Subtotal		**4.2099E+01**	**1.1378E+00**	
												Total		**4.2099E+01**	**1.1378E+00**	
												SNM [3.2151E-02 g]				
												Source [5.9580E-03 kg]				
AWIU000263/R5-0022-01	**19 Intermodal Container**	**19.1139**	**25637.0424**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.91870E-01**	**2.3865E-01**	**6.4500E-03**	**AU**
		675.0000	**56520.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**7.08633E+00**	**5.7942E+00**	**1.5660E-01**	
												Co-60	**9.15883E-03**	**7.4888E-03**	**2.0240E-04**	
												Cs-137	**3.00287E+01**	**2.4553E+01**	**6.6360E-01**	
												Eu-152	**4.23415E-02**	**3.4621E-02**	**9.3570E-04**	
												Eu-154	**1.82588E-02**	**1.4930E-02**	**4.0350E-04**	
												Eu-155	**3.99387E-03**	**3.2656E-03**	**8.8260E-05**	
												H-3	**5.23103E+00**	**4.2772E+00**	**1.1560E-01**	
												Na-22	**2.62457E-07**	**2.1460E-07**	**5.8000E-09**	
												Ni-63	**7.68817E-01**	**6.2863E-01**	**1.6990E-02**	
												Pm-147	**2.78973E-05**	**2.2811E-05**	**6.1650E-07**	
												Pu-238 [2.5253E-08 g]	**1.94263E-02**	**1.5884E-02**	**4.2930E-04**	
												Pu-239 [4.7952E-04 g]	**1.34532E+00**	**1.1000E+00**	**2.9730E-02**	
												Pu-240 [1.2926E-04 g]	**1.34532E+00**	**1.1000E+00**	**2.9730E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-007**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [6.5100E-09 g]	2.94585E-02	2.4087E-02	6.5100E-04	
												Ra-226	3.17346E-03	2.5948E-03	7.0130E-05	
												Sr-90	1.99693E+01	1.6328E+01	4.4130E-01	
												Th-232 [3.1527E-03 kg]	1.56931E-02	1.2832E-02	3.4680E-04	
												U-234 [2.5258E-07 kg]	7.08633E-02	5.7942E-02	1.5660E-03	
												U-235 [4.0718E-02 g]	4.05360E-03	3.3145E-03	8.9580E-05	
												U-238 [4.6059E-03 kg]	7.08633E-02	5.7942E-02	1.5660E-03	
												Zn-65	3.00287E-19	2.4553E-19	6.6360E-21	
												Subtotal		5.4255E+01	1.4663E+00	
												Total		5.4255E+01	1.4663E+00	
												SNM [4.1327E-02 g]				
												Source [7.7589E-03 kg]				
BFLU000172/R5-0022-01	19 Intermodal Container	19.1139	27505.8431	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.79792E-01	1.5944E-01	4.3092E-03	AU
												C-14	4.35935E+00	3.8658E+00	1.0448E-01	
												Co-60	5.63185E-03	4.9943E-03	1.3498E-04	
		675.0000	60640.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				Cs-137	1.84718E+01	1.6381E+01	4.4273E-01	
												Eu-152	2.60247E-02	2.3079E-02	6.2375E-04	
												Eu-154	1.12473E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.45470E-03	2.1768E-03	5.8833E-05	
												H-3	3.69436E+00	3.2762E+00	8.8545E-02	
												Na-22	1.61731E-07	1.4342E-07	3.8763E-09	
												Ni-63	4.72878E-01	4.1936E-01	1.1334E-02	
												Pm-147	1.71583E-05	1.5216E-05	4.1124E-07	
												Pu-238 [1.6899E-08 g]	1.19861E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	8.29179E-01	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	8.29179E-01	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	1.81434E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.24125E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.23145E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.10831E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.35935E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.49575E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.35935E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.84718E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-007**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000270a/R5-0022-01	**19 Intermodal Container**	**19.1139**	**23178.5716**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**2.19405E-01**	**1.5944E-01**	**4.3092E-03**	**AU**
		675.0000	**51100.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**5.31981E+00**	**3.8658E+00**	**1.0448E-01**	
												Co-60	**6.87267E-03**	**4.9943E-03**	**1.3498E-04**	
												Cs-137	**2.25416E+01**	**1.6381E+01**	**4.4273E-01**	
												Eu-152	**3.17586E-02**	**2.3079E-02**	**6.2375E-04**	
												Eu-154	**1.37253E-02**	**9.9741E-03**	**2.6957E-04**	
												Eu-155	**2.99552E-03**	**2.1768E-03**	**5.8833E-05**	
												H-3	**4.50831E+00**	**3.2762E+00**	**8.8545E-02**	
												Na-22	**1.97364E-07**	**1.4342E-07**	**3.8763E-09**	
												Ni-63	**5.77064E-01**	**4.1936E-01**	**1.1334E-02**	
												Pm-147	**2.09386E-05**	**1.5216E-05**	**4.1124E-07**	
												Pu-238 [1.6899E-08 g]	**1.46270E-02**	**1.0629E-02**	**2.8728E-04**	
												Pu-239 [3.2054E-04 g]	**1.01187E+00**	**7.3534E-01**	**1.9874E-02**	
												Pu-240 [8.6407E-05 g]	**1.01187E+00**	**7.3534E-01**	**1.9874E-02**	
												Pu-241 [4.3486E-09 g]	**2.21408E-02**	**1.6090E-02**	**4.3486E-04**	
												Ra-226	**2.73504E-03**	**1.9875E-03**	**5.3717E-05**	
												Sr-90	**1.50277E+01**	**1.0921E+01**	**2.9515E-01**	
												Th-232 [2.4149E-03 kg]	**1.35249E-02**	**9.8287E-03**	**2.6564E-04**	
												U-234 [1.6852E-07 kg]	**5.31981E-02**	**3.8658E-02**	**1.0448E-03**	
												U-235 [2.7190E-02 g]	**3.04562E-03**	**2.2132E-03**	**5.9817E-05**	
												U-238 [3.0730E-03 kg]	**5.31981E-02**	**3.8658E-02**	**1.0448E-03**	
												Zn-65	**2.25416E-19**	**1.6381E-19**	**4.4273E-21**	
												Subtotal		**3.6652E+01**	**9.9057E-01**	
												Total		**3.6652E+01**	**9.9057E-01**	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000276a/R5-0022-01	**19 Intermodal Container**	**19.1139**	**25646.1143**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**8.27756E-02**	**6.7710E-02**	**1.8300E-03**	**AU**
		675.0000	**56540.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**2.01013E+00**	**1.6443E+00**	**4.4440E-02**	
												Co-60	**2.59770E-03**	**2.1249E-03**	**5.7430E-05**	
												Cs-137	**8.51729E+00**	**6.9671E+00**	**1.8830E-01**	
												Eu-152	**1.20092E-02**	**9.8235E-03**	**2.6550E-04**	
												Eu-154	**5.17913E-03**	**4.2365E-03**	**1.1450E-04**	
												Eu-155	**1.13262E-03**	**9.2648E-04**	**2.5040E-05**	
												H-3	**5.11128E+00**	**4.1810E+00**	**1.1300E-01**	
												Na-22	**7.44528E-08**	**6.0902E-08**	**1.6460E-09**	
												Ni-63	**2.18021E-01**	**1.7834E-01**	**4.8200E-03**	
												Pm-147	**7.91117E-06**	**6.4713E-06**	**1.7490E-07**	
												Pu-238 [7.1647E-09 g]	**5.50932E-03**	**4.5066E-03**	**1.2180E-04**	
												Pu-239 [1.3607E-04 g]	**3.81582E-01**	**3.1213E-01**	**8.4360E-03**	
												Pu-240 [3.6678E-05 g]	**3.81582E-01**	**3.1213E-01**	**8.4360E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-007**

3. PAGE **5** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [1.8470E-09 g]	**8.35445E-03**	**6.8339E-03**	**1.8470E-04**	
												Ra-226	**3.10024E-03**	**2.5360E-03**	**6.8540E-05**	
												Sr-90	**5.66311E+00**	**4.6324E+00**	**1.2520E-01**	
												Th-232 [3.0809E-03 kg]	**1.53293E-02**	**1.2539E-02**	**3.3890E-04**	
												U-234 [7.1677E-08 kg]	**2.01013E-02**	**1.6443E-02**	**4.4440E-04**	
												U-235 [1.1555E-02 g]	**1.14981E-03**	**9.4054E-04**	**2.5420E-05**	
												U-238 [1.3071E-03 kg]	**2.01013E-02**	**1.6443E-02**	**4.4440E-04**	
												Zn-65	**8.51729E-20**	**6.9671E-20**	**1.8830E-21**	
												Subtotal		**1.8372E+01**	**4.9655E-01**	
												Total		**1.8372E+01**	**4.9655E-01**	
												SNM [1.1727E-02 g]				
												Source [4.3880E-03 kg]				
Shipment Totals		**114.6834**	**154049.0508**									**SNM [1.8173E-01 g]**		**2.4228E+02**	**6.5482E+00**	
		4050.0000	**339620.0000**									**Source [3.6840E-02 kg]**				

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-007
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **6**

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

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
GIMX 9717
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER -- Name and Address
New York & Atlantic Railway
68-01 Otto Road
Glendale, NY 11385

EPA I.D. NUMBER
NA

SHIPPING DATE
06/19/2021

CONTACT
James P. Nunes

TELEPHONE (Include Area Code)
(718) 928-2304

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE

7. FORM 540 AND 540A — PAGE 1 OF 2 PAGE(S)
FORM 541 AND 541A — 5 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — **None** PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9450-008

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

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

AUTHORIZED SIGNATURE | TITLE: Manifester | DATE: 16 Jun 2021

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9058E-01)**	**NA**	**51300 LBS; 675 FT3**	**AWIU000278**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5745E+00**	**(1.5066E-01)**	**NA**	**53420 LBS; 675 FT3**	**AWIU000293**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

FORM 540 (03-06)

FORM 540A

Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) WP-9450-008

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	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**59560 LBS; 675 FT3**	**ERRU000142**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5745E+00**	**(1.5066E-01)**	**NA**	**62500 LBS; 675 FT3**	**ERRU000165**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**3.6652E+01**	**(9.9057E-01)**	**NA**	**55580 LBS; 675 FT3**	**ERRU000169**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							
Material not regulated by USDOT WP-9450 Demolition debris and soil - does not contain PCBs	**NA**	**na**	**Solid Oxides**	**Am-241**	**C-14**	**Co-60**	**Cs-137**	**5.5744E+00**	**(1.5066E-01)**	**NA**	**65000 LBS; 675 FT3**	**ERRU000224**
				Eu-152	**Eu-154**	**Eu-155**	**H-3**					
				Na-22	**Ni-63**	**Pm-147**	**Pu-238**					
				Pu-239	**Pu-240**	**Pu-241**	**Ra-226**					
				Sr-90	**Th-232**	**U-234**	**U-235**					
				U-238	**Zn-65**							

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
6	m3 114.6834	kg 136331.7318	NP	8.7389E-02	1.3080E-03	8.8697E-02
	ft3 4050.0000	lb 300560.0000		6 Containers	6 Containers	

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.2668E+02	1.9304E+01	1.2425E+01	NP	NP	(kg)	2.4106E-02
mCi	3.4237E+00	5.2172E-01	3.3580E-01	NP	NP	(lb)	5.3145E-02

2. MANIFEST NUMBER **WP-9450-008**

3. PAGE **1** OF **5** PAGE(S)

4. SHIPPER NAME **Brookhaven National Lab**

SHIPMENT ID NUMBER **GIMX 9717**

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000278/R5-0022-01	19 Intermodal Container	19.1139	23269.2901	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	2.18397E-01	1.5944E-01	4.3092E-03	AU
												C-14	5.29538E+00	3.8658E+00	1.0448E-01	
												Co-60	6.84111E-03	4.9943E-03	1.3498E-04	
												Cs-137	2.24380E+01	1.6381E+01	4.4273E-01	
												Eu-152	3.16127E-02	2.3079E-02	6.2376E-04	
		675.0000	51300.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000								
												Eu-154	1.36623E-02	9.9741E-03	2.6957E-04	
												Eu-155	2.98177E-03	2.1769E-03	5.8834E-05	
												H-3	4.48761E+00	3.2762E+00	8.8546E-02	
												Na-22	1.96458E-07	1.4342E-07	3.8763E-09	
												Ni-63	5.74414E-01	4.1936E-01	1.1334E-02	
												Pm-147	2.08425E-05	1.5216E-05	4.1125E-07	
												Pu-238 [1.6899E-08 g]	1.45598E-02	1.0629E-02	2.8728E-04	
												Pu-239 [3.2054E-04 g]	1.00722E+00	7.3534E-01	1.9874E-02	
												Pu-240 [8.6407E-05 g]	1.00722E+00	7.3534E-01	1.9874E-02	
												Pu-241 [4.3486E-09 g]	2.20391E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.72248E-03	1.9876E-03	5.3718E-05	
												Sr-90	1.49587E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.34628E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	5.29538E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	3.03163E-03	2.2133E-03	5.9818E-05	
												U-238 [3.0730E-03 kg]	5.29538E-02	3.8658E-02	1.0448E-03	
												Zn-65	2.24380E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9058E-01	
												Total		3.6652E+01	9.9058E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

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

Solidification

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

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-008**

3. PAGE **2** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
AWIU000293/R5-0022-01	**19 Intermodal Container**	**19.1139** / **675.0000**	**24230.9060** / **53420.0000**	**<1.0000E-03** / **<1.0000E-01**	**3.3400E-07** / **2.0000E+01**	**3.3400E-06** / **2.0000E+02**	**29-HJ**	**19.1139** / **675.0000**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.48506E-02**	**1.1370E-02**	**3.0730E-04**	**AU**
												C-14	**3.60264E-01**	**2.7583E-01**	**7.4549E-03**	
												Co-60	**4.65685E-04**	**3.5654E-04**	**9.6363E-06**	
												Cs-137	**1.53089E+00**	**1.1721E+00**	**3.1678E-02**	
												Eu-152	**2.15425E-03**	**1.6493E-03**	**4.4577E-05**	
												Eu-154	**9.25870E-04**	**7.0888E-04**	**1.9159E-05**	
												Eu-155	**2.03508E-04**	**1.5581E-04**	**4.2111E-06**	
												H-3	**4.12516E+00**	**3.1584E+00**	**8.5361E-02**	
												Na-22	**1.33839E-08**	**1.0247E-08**	**2.7695E-10**	
												Ni-63	**3.91432E-02**	**2.9969E-02**	**8.0998E-04**	
												Pm-147	**1.42089E-06**	**1.0879E-06**	**2.9402E-08**	
												Pu-238 [1.2051E-09 g]	**9.90039E-04**	**7.5802E-04**	**2.0487E-05**	
												Pu-239 [2.2855E-05 g]	**6.84777E-02**	**5.2429E-02**	**1.4170E-03**	
												Pu-240 [6.1608E-06 g]	**6.84777E-02**	**5.2429E-02**	**1.4170E-03**	
												Pu-241 [3.1109E-10 g]	**1.50339E-03**	**1.1510E-03**	**3.1109E-05**	
												Ra-226	**2.50260E-03**	**1.9161E-03**	**5.1786E-05**	
												Sr-90	**1.04504E+00**	**8.0013E-01**	**2.1625E-02**	
												Th-232 [2.3280E-03 kg]	**1.23755E-02**	**9.4750E-03**	**2.5608E-04**	
												U-234 [1.2024E-08 kg]	**3.60264E-03**	**2.7583E-03**	**7.4549E-05**	
												U-235 [1.9400E-03 g]	**2.06258E-04**	**1.5792E-04**	**4.2681E-06**	
												U-238 [2.1926E-04 kg]	**3.60264E-03**	**2.7583E-03**	**7.4549E-05**	
												Zn-65	**1.53089E-20**	**1.1721E-20**	**3.1678E-22**	
												Subtotal		**5.5745E+00**	**1.5066E-01**	
												Total		**5.5745E+00**	**1.5066E-01**	
												SNM [1.9690E-03 g]				
												Source [2.5473E-03 kg]				
ERRU000142/R5-0022-01	**19 Intermodal Container**	**19.1139** / **675.0000**	**27015.9633** / **59560.0000**	**<1.0000E-03** / **<1.0000E-01**	**3.3400E-07** / **2.0000E+01**	**3.3400E-06** / **2.0000E+02**	**29-HJ**	**19.1139** / **675.0000**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.83544E-01**	**1.5944E-01**	**4.3092E-03**	**AU**
												C-14	**4.45031E+00**	**3.8658E+00**	**1.0448E-01**	
												Co-60	**5.74936E-03**	**4.9943E-03**	**1.3498E-04**	
												Cs-137	**1.88572E+01**	**1.6381E+01**	**4.4273E-01**	
												Eu-152	**2.65677E-02**	**2.3079E-02**	**6.2375E-04**	
												Eu-154	**1.14820E-02**	**9.9741E-03**	**2.6957E-04**	
												Eu-155	**2.50592E-03**	**2.1768E-03**	**5.8833E-05**	
												H-3	**3.77145E+00**	**3.2762E+00**	**8.8545E-02**	
												Na-22	**1.65105E-07**	**1.4342E-07**	**3.8763E-09**	
												Ni-63	**4.82745E-01**	**4.1936E-01**	**1.1334E-02**	
												Pm-147	**1.75163E-05**	**1.5216E-05**	**4.1124E-07**	
												Pu-238 [1.6899E-08 g]	**1.22362E-02**	**1.0629E-02**	**2.8728E-04**	
												Pu-239 [3.2054E-04 g]	**8.46480E-01**	**7.3534E-01**	**1.9874E-02**	
												Pu-240 [8.6407E-05 g]	**8.46480E-01**	**7.3534E-01**	**1.9874E-02**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-008**

3. PAGE **3** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
												RADIONUCLIDES	pCi/gm	MBq	mCi	
												Pu-241 [4.3486E-09 g]	1.85220E-02	1.6090E-02	4.3486E-04	
												Ra-226	2.28801E-03	1.9875E-03	5.3717E-05	
												Sr-90	1.25715E+01	1.0921E+01	2.9515E-01	
												Th-232 [2.4149E-03 kg]	1.13143E-02	9.8287E-03	2.6564E-04	
												U-234 [1.6852E-07 kg]	4.45031E-02	3.8658E-02	1.0448E-03	
												U-235 [2.7190E-02 g]	2.54782E-03	2.2132E-03	5.9817E-05	
												U-238 [3.0730E-03 kg]	4.45031E-02	3.8658E-02	1.0448E-03	
												Zn-65	1.88572E-19	1.6381E-19	4.4273E-21	
												Subtotal		3.6652E+01	9.9057E-01	
												Total		3.6652E+01	9.9057E-01	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000165/R5-0022-01	19 Intermodal Container	19.1139	28349.5250	<1.0000E-03	3.3400E-07	3.3400E-06	29-HJ	19.1139	89 - Wastelock 770 100	Oxides/None	np	Am-241	1.23854E-02	1.1370E-02	3.0730E-04	AU
		675.0000	62500.0000	<1.0000E-01	2.0000E+01	2.0000E+02		675.0000				C-14	3.00462E-01	2.7583E-01	7.4549E-03	
												Co-60	3.88383E-04	3.5654E-04	9.6363E-06	
												Cs-137	1.27677E+00	1.1721E+00	3.1678E-02	
												Eu-152	1.79665E-03	1.6493E-03	4.4577E-05	
												Eu-154	7.72179E-04	7.0888E-04	1.9159E-05	
												Eu-155	1.69727E-04	1.5581E-04	4.2111E-06	
												H-3	3.44040E+00	3.1584E+00	8.5361E-02	
												Na-22	1.11622E-08	1.0247E-08	2.7695E-10	
												Ni-63	3.26456E-02	2.9969E-02	8.0998E-04	
												Pm-147	1.18503E-06	1.0879E-06	2.9402E-08	
												Pu-238 [1.2051E-09 g]	8.25697E-04	7.5802E-04	2.0487E-05	
												Pu-239 [2.2855E-05 g]	5.71107E-02	5.2429E-02	1.4170E-03	
												Pu-240 [6.1608E-06 g]	5.71107E-02	5.2429E-02	1.4170E-03	
												Pu-241 [3.1109E-10 g]	1.25384E-03	1.1510E-03	3.1109E-05	
												Ra-226	2.08718E-03	1.9161E-03	5.1786E-05	
												Sr-90	8.71569E-01	8.0013E-01	2.1625E-02	
												Th-232 [2.3280E-03 kg]	1.03212E-02	9.4750E-03	2.5608E-04	
												U-234 [1.2024E-08 kg]	3.00462E-03	2.7583E-03	7.4549E-05	
												U-235 [1.9400E-03 g]	1.72020E-04	1.5792E-04	4.2681E-06	
												U-238 [2.1926E-04 kg]	3.00462E-03	2.7583E-03	7.4549E-05	
												Zn-65	1.27677E-20	1.1721E-20	3.1678E-22	
												Subtotal		5.5745E+00	1.5066E-01	
												Total		5.5745E+00	1.5066E-01	
												SNM [1.9690E-03 g]				
												Source [2.5473E-03 kg]				

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-008**

3. PAGE **4** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	pCi/gm	MBq	mCi	
ERRU000169/R5-0022-01	**19 Intermodal Container**	**19.1139**	**25210.6656**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.98833E-01**	**1.5944E-01**	**4.3092E-03**	**AU**
		675.0000	**55580.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**4.82101E+00**	**3.8658E+00**	**1.0448E-01**	
												Co-60	**6.22827E-03**	**4.9943E-03**	**1.3498E-04**	
												Cs-137	**2.04280E+01**	**1.6381E+01**	**4.4273E-01**	
												Eu-152	**2.87808E-02**	**2.3079E-02**	**6.2375E-04**	
												Eu-154	**1.24384E-02**	**9.9741E-03**	**2.6957E-04**	
												Eu-155	**2.71465E-03**	**2.1768E-03**	**5.8833E-05**	
												H-3	**4.08560E+00**	**3.2762E+00**	**8.8545E-02**	
												Na-22	**1.78859E-07**	**1.4342E-07**	**3.8763E-09**	
												Ni-63	**5.22957E-01**	**4.1936E-01**	**1.1334E-02**	
												Pm-147	**1.89753E-05**	**1.5216E-05**	**4.1124E-07**	
												Pu-238 [1.6899E-08 g]	**1.32555E-02**	**1.0629E-02**	**2.8728E-04**	
												Pu-239 [3.2054E-04 g]	**9.16990E-01**	**7.3534E-01**	**1.9874E-02**	
												Pu-240 [8.6407E-05 g]	**9.16990E-01**	**7.3534E-01**	**1.9874E-02**	
												Pu-241 [4.3486E-09 g]	**2.00648E-02**	**1.6090E-02**	**4.3486E-04**	
												Ra-226	**2.47860E-03**	**1.9875E-03**	**5.3717E-05**	
												Sr-90	**1.36187E+01**	**1.0921E+01**	**2.9515E-01**	
												Th-232 [2.4149E-03 kg]	**1.22568E-02**	**9.8287E-03**	**2.6564E-04**	
												U-234 [1.6852E-07 kg]	**4.82101E-02**	**3.8658E-02**	**1.0448E-03**	
												U-235 [2.7190E-02 g]	**2.76005E-03**	**2.2132E-03**	**5.9817E-05**	
												U-238 [3.0730E-03 kg]	**4.82101E-02**	**3.8658E-02**	**1.0448E-03**	
												Zn-65	**2.04280E-19**	**1.6381E-19**	**4.4273E-21**	
												Subtotal		**3.6652E+01**	**9.9057E-01**	
												Total		**3.6652E+01**	**9.9057E-01**	
												SNM [2.7597E-02 g]				
												Source [5.4881E-03 kg]				
ERRU000224/R5-0022-01	**19 Intermodal Container**	**19.1139**	**29483.5060**	**<1.0000E-03**	**3.3400E-07**	**3.3400E-06**	**29-HJ**	**19.1139**	**89 - Wastelock 770 100**	**Oxides/None**	**np**	**Am-241**	**1.18441E-02**	**1.1370E-02**	**3.0730E-04**	**AU**
		675.0000	**65000.0000**	**<1.0000E-01**	**2.0000E+01**	**2.0000E+02**		**675.0000**				**C-14**	**2.87328E-01**	**2.7583E-01**	**7.4548E-03**	
												Co-60	**3.71406E-04**	**3.5654E-04**	**9.6363E-06**	
												Cs-137	**1.22096E+00**	**1.1721E+00**	**3.1678E-02**	
												Eu-152	**1.71812E-03**	**1.6493E-03**	**4.4577E-05**	
												Eu-154	**7.38425E-04**	**7.0888E-04**	**1.9159E-05**	
												Eu-155	**1.62307E-04**	**1.5581E-04**	**4.2111E-06**	
												H-3	**3.29001E+00**	**3.1584E+00**	**8.5361E-02**	
												Na-22	**1.06743E-08**	**1.0247E-08**	**2.7695E-10**	
												Ni-63	**3.12186E-02**	**2.9969E-02**	**8.0998E-04**	
												Pm-147	**1.13323E-06**	**1.0879E-06**	**2.9402E-08**	
												Pu-238 [1.2051E-09 g]	**7.89603E-04**	**7.5802E-04**	**2.0487E-05**	
												Pu-239 [2.2855E-05 g]	**5.46142E-02**	**5.2429E-02**	**1.4170E-03**	
												Pu-240 [6.1608E-06 g]	**5.46142E-02**	**5.2429E-02**	**1.4170E-03**	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. MANIFEST NUMBER **WP-9450-008**

3. PAGE **5** OF **5** PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			
												RADIONUCLIDES	pCi/gm	MBq	mCi
												Pu-241 [3.1109E-10 g]	**1.19903E-03**	**1.1510E-03**	**3.1109E-05**
												Ra-226	**1.99594E-03**	**1.9160E-03**	**5.1785E-05**
												Sr-90	**8.33470E-01**	**8.0013E-01**	**2.1625E-02**
												Th-232 [2.3280E-03 kg]	**9.87004E-03**	**9.4750E-03**	**2.5608E-04**
												U-234 [1.2024E-08 kg]	**2.87328E-03**	**2.7583E-03**	**7.4548E-05**
												U-235 [1.9400E-03 g]	**1.64501E-04**	**1.5792E-04**	**4.2680E-06**
												U-238 [2.1926E-04 kg]	**2.87328E-03**	**2.7583E-03**	**7.4548E-05**
												Zn-65	**1.22096E-20**	**1.1721E-20**	**3.1678E-22**
												Subtotal		**5.5745E+00**	**1.5066E-01**
												Total		**5.5745E+00**	**1.5066E-01**
												SNM [1.9690E-03 g]			
												Source [2.5473E-03 kg]			
Shipment Totals		**114.6834**	**157559.8560**									**SNM [8.8697E-02 g]**		**1.2668E+02**	**3.4237E+00**
		4050.0000	**347360.0000**									**Source [2.4106E-02 kg]**			

FORM 541A (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9450-008
PAGE 1

Railroads moving cars:
NYA
New York & Atlantic Railway Company
68-01 Otto Road
Glendale, NY 11385
CSXT
CSX Transportation
500 Water Street - Jacksonville, FL 32202

UP
Union Pacific
1400 Douglas St. STOP 1210 | Omaha, NE 68179

TXN
Texas & New Mexico Rail Road
109 E Texas Ave
Eunice, NM 88231

Certificate of Disposal

Date of Certificate: January 20, 2022

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9636**
Manifest(s):	**WP-9636-001, WP-9636-003**
Received On:	**December 28, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **January 19, 2022** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

WASTE CONTROL SPECIALISTS

Certificate of Disposal

Date of Certificate: January 11, 2022

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:

WCS Profile #:	**WP-9636**
Manifest(s):	**WP-9636-002**
Received On:	**December 28, 2021**

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **January 07, 2022** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

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

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

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **Tanker# 92801**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**
SHIPMENT NUMBER:
☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**
TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
INTERSTATE VENTURES INC.
1261 E. TRI COUNTY BOULEVARD
OLIVER SPRINGS, TN 37840

EPA I.D. NUMBER: **TNR000046706**
SHIPPING DATE: **12/20/2021**

CONTACT: **KRISTY SEEBER**
TELEPHONE (Include Area Code): **(865)482-8670**

SIGNATURE – *Authorized carrier acknowledging waste receipt*: Michael Davis
DATE: 12-20-21

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

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9636-001**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**
TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt*: Barbara Vaden
DATE: 12.28.21

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

AUTHORIZED SIGNATURE: NIGAR.ZAR.1551 232367 Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.12.20 11:41:27 -01'00'
TITLE: Manifester
DATE: 12-20-2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9636 - tanker filled with water	**NA**	**na**	**Liquid oxides**	**H-3 Sr-90 U-Nat**	**5.6736E+00**	**(1.5334E-01)**	**NA**	**57000 LBS; 641 FT3**	**Tanker 92801**

FOR CONSIGNEE USE ONLY
The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

1

H-68

FORM 540 (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3 18.1511 / ft3 641.0000	kg 17853.3969 / lb 39360.0000	NP	NP	NP	NP

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	5.6737E+00	1.6580E+00	NP	NP	NP	(kg)	4.5631E-02
mCi	1.5334E-01	4.4812E-02	NP	NP	NP	(lb)	1.0060E-01

2. MANIFEST NUMBER: **WP-9636-001**

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **Tanker# 92801**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
Tanker 92801/R5-0022-01	19	18.1511 / 641.0000	25854.7668 / 57000.0000	<1.0000E-03 / <1.0000E-01	<3.3400E-06 / <2.0000E+02	<0.0000 / <2000.0000	25	18.1511 / 641.0000	100 100	oxides/na	na	H-3	2.51000E+00	1.6580E+00	4.4812E-02	AU
												Sr-90	5.21000E+00	3.4416E-02	9.3016E-02	
												U-Nat [4.5631E-02 kg]	8.69000E-01	5.7406E-01	1.5515E-02	
												Subtotal		5.6737E+00	1.5334E-01	
												Total Source [4.5631E-02 kg]		5.6737E+00	1.5334E-01	
Shipment Totals		18.1511 / 641.0000	25854.7668 / 57000.0000									Source [4.5631E-02 kg]		5.6737E+00	1.5334E-01	

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9636-001
PAGE 1

Mike Davis
Truck H68
Tag # N2562HY / TN
Tanker 92801
Cell # 865-659-6262

FORM 540 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

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

ORGANIZATION
Chemtrec (Cabrera contract #CCN3584)

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

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

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

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER
Tanker# 97139
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID
NA

SHIPMENT NUMBER

☑ GENERATOR TYPE
(Specify) **G**

CONTACT
Wade Fillingame

TELEPHONE NUMBER (Include Area Code)
865-300-5789

6. CARRIER – Name and Address
INTERSTATE VENTURES INC.
1261 E. TRI COUNTY BOULEVARD
OLIVER SPRINGS, TN 37840

EPA I.D. NUMBER
TNR000046706

SHIPPING DATE
12/20/2021

CONTACT
KRISTY SEEBER

TELEPHONE (Include Area Code)
(865)482-8670

SIGNATURE – *Authorized carrier acknowledging waste receipt*

DATE
12-20-21

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

8. MANIFEST NUMBER
(Use this number on all continuation pages)
WP-9636-002

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT
Keri Gonzalez

TELEPHONE (Include Area Code)
(432)525-8500

SIGNATURE – *Authorized consignee acknowledging waste receipt*
Barbara Vaffi

DATE
12.28.2021

10. CERTIFICATION

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

AUTHORIZED SIGNATURE
NIGAR.ZAR.15512 32367 Digitally signed by NIGAR.ZAR.1551232367 Date: 2021.12.20 11:47:11 -05'00'

TITLE
Manifester

DATE
12-20-2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9636-002 water in tanker	**NA**	**na**	**Liquid oxides**	**H-3 Sr-90 U-Nat**	**5.6721E+00**	**(1.5330E-01)**	**NA**	**57000 LBS; 641 FT3**	**Tanker 97139**

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

17-50

FORM 540 (03-06)

FORM 541 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3 18.1511 ft3 641.0000	kg 17853.3969 lb 39360.0000	NP	NP	NP	NP

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	5.6721E+00	1.6596E+00	NP	NP	NP	(kg)	4.5645E-02
mCi	1.5330E-01	4.4854E-02	NP	NP	NP	(lb)	1.0063E-01

2. MANIFEST NUMBER: **WP-9636-002**

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

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **Tanker# 97139**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT — RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
Tanker 97139/R5-0022-01	19	18.1511 641.0000	25854.7668 57000.0000	<1.0000E-03 <1.0000E-01	<3.3400E-06 <2.0000E+02	<0.0000 <2000.0000	25	18.1511 641.0000	100 100	oxides/na	na	H-3	2.51239E+00	1.6596E+00	4.4854E-02	AU
												Sr-90	5.20499E+00	3.4383E+00	9.2926E-02	
												U-Nat [4.5645E-02 kg]	8.69266E-01	5.7420E-01	1.5519E-02	
												Subtotal		5.6721E+00	1.5330E-01	
												Total Source [4.5645E-02 kg]		5.6721E+00	1.5330E-01	
Shipment Totals		18.1511 641.0000	25854.7668 57000.0000									Source [4.5645E-02 kg]		5.6721E+00	1.5330E-01	

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9636-002
PAGE 1

Kenneth Dillman
Truck H58
Tag # N2561HY / TN
Tanker 97139
Cell # 865-307-1848

#75107

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

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

ORGANIZATION: **Chemtrec (Cabrera contract #CCN3584)**

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

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

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

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Lab
Bldg 860
Upton, NY 11973

SHIPPER I.D. NUMBER: **Tanker# 97049**
☐ COLLECTOR
☐ PROCESSOR

WCS Generator Certification ID: **NA**

SHIPMENT NUMBER:

☑ GENERATOR TYPE (Specify) **G**

CONTACT: **Wade Fillingame**

TELEPHONE NUMBER (Include Area Code): **865-300-5789**

6. CARRIER – Name and Address
INTERSTATE VENTURES INC.
1261 E. TRI COUNTY BOULEVARD
OLIVER SPRINGS, TN 37840

EPA I.D. NUMBER: **TNR000046706**

SHIPPING DATE: **12/21/2021**

CONTACT: **KRISTY SEEBER**

TELEPHONE (Include Area Code): **(865)482-8670**

SIGNATURE – *Authorized carrier acknowledging waste receipt*

DATE: 12-21-2021

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

8. MANIFEST NUMBER (Use this number on all continuation pages): **WP-9636-003**

9. CONSIGNEE - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

CONTACT: **Keri Gonzalez**

TELEPHONE (Include Area Code): **(432)525-8500**

SIGNATURE – *Authorized consignee acknowledging waste receipt*: Barbara Vinson

DATE: 12.28.2021

10. CERTIFICATION

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

AUTHORIZED SIGNATURE: Dri

TITLE: Manifester

DATE: 12/21/2021

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Material not regulated by USDOT , WP-9636, water in tanker	**NA**	**na**	**Liquid oxides**	**H-3 Sr-90 U-Nat**	**5.6721E+00**	**(1.5330E-01)**	**NA**	**57000 LBS; 641 FT3**	**Tanker 97049**

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20.

SP. 1

FORM 540 (03-06)

FORM 541 **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

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

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3	18.1511	kg	17853.3969	NP	NP	NP	NP
	ft3	641.0000	lb	39360.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	5.6721E+00	1.6596E+00	NP	NP	NP	(kg)	4.5645E-02
mCi	1.5330E-01	4.4854E-02	NP	NP	NP	(lb)	1.0063E-01

2. MANIFEST NUMBER: **WP-9636-003**

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: **Brookhaven National Lab**

SHIPMENT ID NUMBER: **Tanker# 97049**

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

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
Tanker 97049/R5-0022-01	19	18.1511 641.0000	25854.7668 57000.0000	<1.0000E-03 <1.0000E-01	<3.3400E-08 <2.0000E+02	<0.0000 <2000.0000	25	18.1511 641.0000	100 100	oxides/na	na	H-3 Sr-90 U-Nat [4.5645E-02 kg] Subtotal	2.51239E+00 5.20499E+00 8.69266E-01	1.6596E+00 3.4383E+00 5.7420E-01 5.6721E+00	4.4854E-02 9.2926E-02 1.5519E-02 1.5330E-01	AU
												Total Source [4.5645E-02 kg]		5.6721E+00	1.5330E-01	
Shipment Totals		18.1511 641.0000	25854.7668 57000.0000									Source [4.5645E-02 kg]		5.6721E+00	1.5330E-01	

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

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

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S," and the media vendor and brand name must also be identified

In Item 13. Code 100=NONE REQUIRED.

Solidification

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

FORM 541 (03-06)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9636-003
PAGE 1

James Willey
Truck #26
Tag # FLM26
Tanker 97049
Cell # 410-253-3791

FORM 540 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. Emergency Telephone Number (Include Area Code)
Not HAZMAT for info call 315-336-7721

Organization
FPM, Dan Ours

2. Is this an "Exclusive Use" Shipment? ☐ YES ☑ NO

3. Total Number of packages identified on this manifest? 5

4. Does EPA regulated waste requiring a manifest accompany this shipment? ☐ YES ☑ NO
If "Yes," provide Manifest Number

EPA Manifest Number

5. Shipper - Name and Facility
Brookhaven National Lab
Bldg 860
Upton, NY 11973

Shipper ID Number: NA
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: NA
Shipment Number:

Contact: Dan Ours, FPM
Phone No (Include Area Code): (315) 336-7721

6. Carrier - Name and Address
Hittman Transport Services, Inc.
1560 Bear Creek Rd
Oak Ridge, TN 37830

EPA I.D. Number: na
Shipping Date: 02/02/2022

Contact: Matthew Parker
Phone No (Include Area Code): 865-220-5817

Signature - Authorized carrier acknowledging waste receipt
Date: 2.2.22

7. Form 540 and 540A — Page 1 of 1 Page(s) — Electronic ☐
Form 541 and 541A — 2 Page(s) ☐
Form 542 and 542A — None Page(s) ☐
Additional Information — None Page(s) ☐

8. Manifest Number: WP-9635-001a

9. Consignee - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

Contact: Keri Gonzalez
Phone No (Include Area Code): (432) 525-8500

Signature - Authorized consignee acknowledging waste receipt
Date: 2822

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, the Commission, and equivalent state regulations. For materials that are consigned to a land disposal facility or waste collector, this certifies that the materials are classified per the applicable requirements of 10 CFR Part 61, meet the land disposal facility's waste acceptance criteria, and are in proper condition for disposal as described in accordance with the applicable requirements of 10 CFR Parts 20 and 61, or equivalent state regulations. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification."

Authorized Signature and Title: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2022.02.01 14:29:05 -05'00' — Manifester
Date: 1 Feb 2022

11. U.S. Department of Transportation Description (Including UN ID number, proper shipping name, hazard class, and any additional information)	12. DOT Labels	13. Transport Index	14. Physical and Chemical Form	15. Individual Radionuclides	16. Maximum Package Activity MBq	16. Maximum Package Activity mCi	17. Total Weight or Volume (Use appropriate units)	18. Identification Number of Package
Material not regulated by USDOT WP-9635, WP-9635, DAW and equipment	NA	NA	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	469
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	471
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	472
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	473
Material not regulated by USDOT WP-9635, wetted concrete dust and paint chips	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	2.2945E+00	6.2013E-02	21400 LBS; 669 FT3	V1205

FOR CONSIGNEE USE ONLY

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

19. 2053 / F530001

FORM 540 (06-2021)

FORM 541 — Waste Control Specialists

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

No. of Pkgs/ Disposal Containers	Net Waste Volume (m^3)		Net Waste Weight (kg)		Special Nuclear Material (grams) U-233	U-235	Pu	Total
5	m3	17.71	kg	12337.71	NP	NP	9.2970E-06 5 Containers	9.2970E-06
	ft3	625.50	lb	27200.00				

Activity	All Nuclides	Tritium	C-14	Tc-99	I-129	Source (kg)	
MBq	5.4729E+00	NP	NP	NP	NP	(kg)	2.0214E-03
mCi	1.4792E-01	NP	NP	NP	NP	(lb)	4.4563E-03

2. Manifest Number: **WP-9635-001a**

3. Page **1** of **2** Page(s)

4. Shipper Name: **Brookhaven National Lab**

Shipment ID Number: **NA**

| Disposal Container Description | | | | | | | | Waste Description for Each Waste Type in Container | | | | | | | |

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. Manifest Number: WP-9635-001a

3. Page 2 of 2 Page(s)

Disposal Container Description								Waste Description for Each Waste Type in Container										
								Physical Description			15. Chemical Description		16. Radiological Description					17. Waste Class AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. Container Identification Number/Generator ID Number(s)	6. Container Description (See Note 1 & Note 1A)	7. Volume (m3) / (ft3)	8. Waste and Container Weight (kg) / (lb)	9. Waste Weight (kg) / (lb)	10. Surface Radiation Level (mSv/hr) / (mrem/hr)	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Alpha	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Beta-Gamma	12. Waste Descriptor (See Notes 2 & 2A)	13. Approximate Waste Volume(s) in Container (m3) / (ft3)	14. Sorbent Solidification, Stabilization, Media (See Note 3)	Chemical Form/ Chelating Agent	Weight % Chelating Agent if > 0.1%	Individual Radionuclides and Activity (MBq) and Container Total; or Container Total Activity and Radionuclide Percent: Radionuclides	pCi/gm	MBq	mCi	
473/	19 soft sided bag	3.82	1814.37	1791.69	<1.0000E-03	<3.3400E-06	<3.3400E-05	33,39-H	3.82	100 100	Oxides/none	na	Cs-137	6.68000E+00	4.4282E-01	1.1968E-02	AU
		135.00	4000.00	3950.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		135.00				Pu-239 [1.0635E-06 g]	3.68000E-02	2.4396E-03	6.5934E-05	
													Pu-240 [2.8667E-07 g]	3.68000E-02	2.4396E-03	6.5934E-05	
													Sr-90	5.19000E+00	3.4406E-01	9.2988E-03	
													Th-NAT [7.7042E-11 kg]	4.30000E-02	2.8506E-03	7.7042E-05	
													Subtotal		7.9461E-01	2.1476E-02	
													Total		7.9461E-01	2.1476E-02	
													SNM [1.3501E-06 g]				
													Source [7.7042E-11 kg]				
V1205/	2	18.94	9706.88	5170.95	<1.0000E-03	<3.3400E-06	<3.3400E-05	22,37,59-DEWATERED-GH	2.42	100 100	Oxides/none	na	Cs-137	6.68604E+00	1.2792E+00	3.4573E-02	AU
		669.00	21400.00	11400.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		85.50				Pu-239 [3.0692E-06 g]	3.68000E-02	7.0407E-03	1.9029E-04	
													Pu-240 [8.2735E-07 g]	3.68000E-02	7.0407E-03	1.9029E-04	
													Sr-90	5.19000E+00	9.9297E-01	2.6837E-02	
													Th-NAT [2.0214E-03 kg]	4.30000E-02	8.2270E-03	2.2235E-04	
													Subtotal		2.2945E+00	6.2013E-02	
													Total		2.2945E+00	6.2013E-02	
													SNM [3.8965E-06 g]				
													Source [2.0214E-03 kg]				
Shipment Totals		34.22	16964.36	12337.71											5.4729E+00	1.4792E-01	
		1209.00	37400.00	27200.00									SNM [9.2970E-06 g]				
													Source [2.0214E-03 kg]				

Waste Control Specialists	Manifest Number
ADDITIONAL NOTES	WP-9635-001a
	PAGE 1

Company: Hittman Transportation

Driver: MONTY E BERTRAM

Phone (865) 323-9432

License: 063378496 TN

Tractor no. 3053

Trailer number: F530001

FORM 540 — Waste Control Specialists

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. Emergency Telephone Number (Include Area Code)
Not HAZMAT for info call 315-336-7721

Organization
FPM, Dan Ours

2. Is this an "Exclusive Use" Shipment? ☐ YES ☑ NO

3. Total Number of packages identified on this manifest? 2

4. Does EPA regulated waste requiring a manifest accompany this shipment? If "Yes," provide Manifest Number ☐ YES ☑ NO

EPA Manifest Number

5. Shipper - Name and Facility
Brookhaven National Lab
Bldg 860
Upton, NY 11973

Shipper ID Number: NA
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: NA
Shipment Number:

Contact: Dan Ours, FPM
Phone No (Include Area Code): (315) 336-7721

6. Carrier - Name and Address
Hittman Transport Services, Inc.
1560 Bear Creek Rd
Oak Ridge, TN 37830

EPA I.D. Number: na
Shipping Date: 02/02/2022

Contact: Matthew Parker
Phone No (Include Area Code): 865-220-5817

Signature - Authorized carrier acknowledging waste receipt
Date: 2/2/22

7. Form 540 and 540A — Page 1 of 1 Page(s) Electronic ☐
Form 541 and 541A — 1 Page(s)
Form 542 and 542A — None Page(s)
Additional Information — None Page(s)

8. Manifest Number: WP-9635-002

9. Consignee - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

Contact: Keri Gonzalez
Phone No (Include Area Code): (432) 525-8500

Signature - Authorized consignee acknowledging waste receipt
Date: 2822

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, the Commission, and equivalent state regulations. For materials that are consigned to a land disposal facility or waste collector, this certifies that the materials are classified per the applicable requirements of 10 CFR Part 61, meet the land disposal facility's waste acceptance criteria, and are in proper condition for disposal as described in accordance with the applicable requirements of 10 CFR Parts 20 and 61, or equivalent state regulations. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification."

Authorized Signature and Title: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2022.02.01 11:59:12 -05'00' Manifester
Date: 1 Feb 2022

11. U.S. Department of Transportation Description (Including UN ID number, proper shipping name, hazard class, and any additional information)	12. DOT Labels	13. Transport Index	14. Physical and Chemical Form	15. Individual Radionuclides	16. Maximum Package Activity MBq	16. Maximum Package Activity mCi	17. Total Weight or Volume (Use appropriate units)	18. Identification Number of Package
Material not regulated by USDOT WP-9635, wetted concrete dust and paint chips	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	2.8726E+00	7.7640E-02	24280 LBS; 669 FT3	V1102
Material not regulated by USDOT WP-9635, wetted concrete dust and paint chips	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	1.5249E+00	4.1212E-02	17580 LBS; 669 FT3	V386

FOR CONSIGNEE USE ONLY

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

19.

3024 / FF30002

FORM 540 (08-2021)

FORM 541 **Waste Control Specialists**

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

No. of Pkgs/ Disposal Containers	Net Waste Volume (m^3)	Net Waste Weight (kg)	Special Nuclear Material (grams) U-233	U-235	Pu	Total
2	m3 4.64	kg 9915.53	NP	NP	7.4718E-06 2 Containers	7.4718E-06
	ft3 164.00	lb 21860.00				

Activity	All Nuclides	Tritium	C-14	Tc-99	I-129	Source (kg)	
MBq	4.3975E+00	NP	NP	NP	NP	(kg)	4.2637E-10
mCi	1.1885E-01	NP	NP	NP	NP	(lb)	9.3997E-10

2. Manifest Number: WP-9635-002

3. Page 1 of 1 Page(s)

4. Shipper Name: Brookhaven National Lab

Shipment ID Number: NA

Disposal Container Description								Waste Description for Each Waste Type in Container										
								Physical Description			15. Chemical Description		16. Radiological Description					17. Waste Class AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. Container Identification Number/Generator ID Number(s)	6. Container Description (See Note 1 & Note 1A)	7. Volume (m3) / (ft3)	8. Waste and Container Weight (kg) / (lb)	9. Waste Weight (kg) / (lb)	10. Surface Radiation Level (mSv/hr) / (mrem/hr)	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Alpha	Beta-Gamma	12. Waste Descriptor (See Notes 2 & 2A)	13. Approximate Waste Volume(s) in Container (m3) / (ft3)	14. Sorbent Solidification, Stabilization, Media (See Note 3)	Chemical Form/ Chelating Agent	Weight % Chelating Agent if > 0.1%	Individual Radionuclides and Activity (MBq) and Container Total; or Container Total Activity and Radionuclide Percent Radionuclides	pCi/gm	MBq	mCi	
V1102/	2	18.94	11013.22	6477.30	<1.0000E-03	<3.3400E-06	<3.3400E-05	22,37,59-DEWATERED-GH	3.03	100 100	Oxides/none	na	Cs-137	6.68000E+00	1.6009E+00	4.3268E-02	AU
		669.00	24280.00	14280.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		107.10				Pu-239 [3.8446E-06 g]	3.68000E-02	8.8193E-03	2.3836E-04	
													Pu-240 [1.0364E-06 g]	3.68000E-02	8.8193E-03	2.3836E-04	
													Sr-90	5.19000E+00	1.2438E+00	3.3617E-02	
													Th-NAT [2.7852E-10 kg]	4.30000E-02	1.0305E-02	2.7852E-04	
													Subtotal		2.8726E+00	7.7640E-02	
													Total		2.8726E+00	7.7640E-02	
													SNM [4.8809E-06 g]				
													Source [2.7852E-10 kg]				
V386/	2	18.94	7974.15	3438.23	<1.0000E-03	<3.3400E-06	<3.3400E-05	22,37,59-DEWATERED-GH	1.61	100 100	Oxides/none	na	Cs-137	6.68000E+00	8.4978E-01	2.2967E-02	AU
		669.00	17580.00	7580.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		56.90				Pu-239 [2.0408E-06 g]	3.68000E-02	4.6816E-03	1.2653E-04	
													Pu-240 [5.5011E-07 g]	3.68000E-02	4.6816E-03	1.2653E-04	
													Sr-90	5.19000E+00	6.6023E-01	1.7844E-02	
													Th-NAT [1.4784E-10 kg]	4.30000E-02	5.4701E-03	1.4784E-04	
													Subtotal		1.5248E+00	4.1212E-02	
													Total		1.5248E+00	4.1212E-02	
													SNM [2.5909E-06 g]				
													Source [1.4784E-10 kg]				
Shipment Totals		37.88	18987.37	9915.53											4.3975E+00	1.1885E-01	
		1338.00	41860.00	21860.00									SNM [7.4718E-06 g]				
													Source [4.2637E-10 kg]				

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in Item 12, or additional page

Note 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S," and the media vendor and brand name must also be identified in Item 14. Code 100=NONE REQUIRED.

Sorption
60. Speed Dri
61. Celetom
62. Floor Dry/Superfine
63. High Dri
64. Safe T Sorb
64. Safe N Dri
66. Florco
67. Florco X
68. Solid A Sorb
69. Chemsil 30
70. Chemsil 50
71. Chemsil 3030
72. Dicapell HP200
73. Dicapell HP500
74. Petroset
75. Petroset II
76. Aquaset
77. Aquaset II
89. Other. Describe in Item 14 or additional page

Solidification
90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in Item 14, or additional page
100. None Required

FORM 541 (06-2021)

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9635-002
PAGE 1

Company: Hittman Transportation
Driver: DANNY R STIDHAM
Phone (423) 343-3900
License: S94-559-340 KY
Tractor no. 3027
Trailer number: F530002

Certificate of Disposal

Date of Certificate: March 04, 2022

EPA ID Number TXD988088464

Wade Fillingame
Brookhaven/Cabrera Services
50 Founders Plaza Ste. 207
East Hartford, CT 06108

Reference:
WCS Profile #: **WP-9635**
Manifest(s): **WP-9635-001a**
Received On: **February 08, 2022**

Gen #	WCS #
469	22-000427
472	22-000429
473	22-000425
471	22-000428

This is to certify that the waste shipped to WCS on the above mentioned manifest was disposed of on **February 25, 2022** in the WCS permitted hazardous waste landfill associated with the EPA ID Number above. Disposal is subject to all applicable licenses, permits and regulations.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact me at (432) 525-8726.

Sincerely,
WASTE CONTROL SPECIALISTS LLC

Tom Hannah
Technical Services Project Manager

Corporate
17101 Preston Rd. Ste. 115
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility
P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

FORM 540 — **Waste Control Specialists**

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. Emergency Telephone Number *(Include Area Code)*
Not HAZMAT for info call 315-336-7721

Organization: FPM, Dan Ours

2. Is this an "Exclusive Use" Shipment? ☐ YES ☑ NO

3. Total Number of packages identified on this manifest? 5

4. Does EPA regulated waste requiring a manifest accompany this shipment? ☐ YES ☑ NO
If "Yes," provide Manifest Number:

EPA Manifest Number:

5. Shipper - Name and Facility
Brookhaven National Lab
Bldg 860
Upton, NY 11973

Shipper ID Number: NA
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify) G

WCS Generator Certification ID: NA
Shipment Number:

Contact: Dan Ours, FPM
Phone No (Include Area Code): (315) 336-7721

6. Carrier - Name and Address
Hittman Transport Services, Inc.
1560 Bear Creek Rd
Oak Ridge, TN 37830

EPA I.D. Number: na
Shipping Date: 02/02/2022

Contact: Matthew Parker
Phone No (Include Area Code): 865-220-5817

Signature - *Authorized carrier acknowledging waste receipt*
Date: 2.2.22

7. Form 540 and 540A — Page 1 of 1 Page(s) — Electronic
Form 541 and 541A — 2 Page(s)
Form 542 and 542A — None Page(s)
Additional Information — None Page(s)

8. Manifest Number: WP-9635-001a

9. Consignee - Name and Facility
Waste Control Specialists
TSD Facility
9998 Highway 176 West
Andrews, TX 79714

Contact: Keri Gonzalez
Phone No (Include Area Code): (432) 525-8500

Signature - *Authorized consignee acknowledging waste receipt*
Date: 2822

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, the Commission, and equivalent state regulations. For materials that are consigned to a land disposal facility or waste collector, this certifies that the materials are classified per the applicable requirements of 10 CFR Part 61, meet the land disposal facility's waste acceptance criteria, and are in proper condition for disposal as described in accordance with the applicable requirements of 10 CFR Parts 20 and 61, or equivalent state regulations. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification."

Authorized Signature and Title: ORTEGA.MICHAEL.1258344827 Digitally signed by ORTEGA.MICHAEL.1258344827 Date: 2022.02.01 14:29:05 -05'00' — Manifester
Date: 1 Feb 2022

11. U.S. Department of Transportation Description (Including UN ID number, proper shipping name, hazard class, and any additional information)	12. DOT Labels	13. Transport Index	14. Physical and Chemical Form	15. Individual Radionuclides	16. Maximum Package Activity MBq	16. Maximum Package Activity mCi	17. Total Weight or Volume (Use appropriate units)	18. Identification Number of Package
Material not regulated by USDOT WP-9635, WP-9635, DAW and equipment	NA	NA	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	469
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	471
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	472
Material not regulated by USDOT WP-9635, DAW and equipment	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	7.9462E-01	2.1476E-02	4000 LBS; 135 FT3	473
Material not regulated by USDOT WP-9635, wetted concrete dust and paint chips	NA	na	solid Oxides	Cs-137 Pu-239 Pu-240 Sr-90 Th-NAT	2.2945E+00	6.2013E-02	21400 LBS; 669 FT3	V1205

FOR CONSIGNEE USE ONLY

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

19.

2053 / F530001

FORM 540 (06-2021)

FORM 541 — Waste Control Specialists

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

No. of Pkgs/ Disposal Containers	Net Waste Volume (m^3)		Net Waste Weight (kg)		Special Nuclear Material (grams) U-233	U-235	Pu	Total
5	m3	17.71	kg	12337.71	NP	NP	9.2970E-06 5 Containers	9.2970E-06
	ft3	625.50	lb	27200.00				

Activity	All Nuclides	Tritium	C-14	Tc-99	I-129	Source (kg)	
MBq	5.4729E+00	NP	NP	NP	NP	(kg)	2.0214E-03
mCi	1.4792E-01	NP	NP	NP	NP	(lb)	4.4563E-03

2. Manifest Number: **WP-9635-001a**

3. Page 1 of 2 Page(s)

4. Shipper Name: **Brookhaven National Lab**

Shipment ID Number: **NA**

Disposal Container Description								Waste Description for Each Waste Type in Container												17. Waste Class AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
								Physical Description			15. Chemical Description		16. Radiological Description							
5. Container Identification Number/Generator ID Number(s)	6. Container Description (See Note 1 & Note 1A)	7. Volume (m3) / (ft3)	8. Waste and Container Weight (kg) / (lb)	9. Waste Weight (kg) / (lb)	10. Surface Radiation Level (mSv/hr) / (mrem/hr)	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Alpha	Beta-Gamma	12. Waste Descriptor (See Notes 2 & 2A)	13. Approximate Waste Volume(s) in Container (m3) / (ft3)	14. Sorbent Solidification, Stabilization, Media (See Note 3)	Chemical Form/ Chelating Agent	Weight % Chelating Agent if > 0.1%	Individual Radionuclides and Activity (MBq) and Container Total; or Container Total Activity and Radionuclide Percent Radionuclides	pCi/gm	MBq	mCi			
469/	19 soft sided bag	3.82	1814.37	1791.69	<1.0000E-03	<3.3400E-06	<3.3400E-05	33,39-H	3.82	100 100	Oxides/none	na	Cs-137	6.68000E+00	4.4282E-01	1.1968E-02				AU
		135.00	4000.00	3950.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		135.00				Pu-239 [1.0635E-06 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Pu-240 [2.8667E-07 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Sr-90	5.19000E+00	3.4406E-01	9.2988E-03				
													Th-NAT [7.7042E-11 kg]	4.30000E-02	2.8506E-03	7.7042E-05				
													Subtotal		7.9461E-01	2.1476E-02				
													Total		7.9461E-01	2.1476E-02				
													SNM [1.3501E-06 g]							
													Source [7.7042E-11 kg]							
471/	19 soft sided bag	3.82	1814.37	1791.69	<1.0000E-03	<3.3400E-06	<3.3400E-05	33,39-H	3.82	100 100	Oxides/none	na	Cs-137	6.68000E+00	4.4282E-01	1.1968E-02				AU
		135.00	4000.00	3950.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		135.00				Pu-239 [1.0635E-06 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Pu-240 [2.8667E-07 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Sr-90	5.19000E+00	3.4406E-01	9.2988E-03				
													Th-NAT [7.7042E-11 kg]	4.30000E-02	2.8506E-03	7.7042E-05				
													Subtotal		7.9461E-01	2.1476E-02				
													Total		7.9461E-01	2.1476E-02				
													SNM [1.3501E-06 g]							
													Source [7.7042E-11 kg]							
472/	19 soft sided bag	3.82	1814.37	1791.69	<1.0000E-03	<3.3400E-06	<3.3400E-05	33,39-H	3.82	100 100	Oxides/none	na	Cs-137	6.68000E+00	4.4282E-01	1.1968E-02				AU
		135.00	4000.00	3950.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		135.00				Pu-239 [1.0635E-06 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Pu-240 [2.8667E-07 g]	3.68000E-02	2.4396E-03	6.5934E-05				
													Sr-90	5.19000E+00	3.4406E-01	9.2988E-03				
													Th-NAT [7.7042E-11 kg]	4.30000E-02	2.8506E-03	7.7042E-05				
													Subtotal		7.9461E-01	2.1476E-02				
													Total		7.9461E-01	2.1476E-02				
													SNM [1.3501E-06 g]							
													Source [7.7042E-11 kg]							

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

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

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

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

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 12, or additional page

Note 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S," and the media vendor and brand name must also be identified in Item 14. Code 100=NONE REQUIRED.

Sorption
60. Speed Dri
61. Celetom
62. Floor Dry/Superfine
63. High Dri
64. Safe T Sorb
64. Safe N Dri
66. Florco
67. Florco X
68. Solid A Sorb
69. Chemsil 30
70. Chemsil 50
71. Chemsil 3030
72. Dicaperl HP200
73. Dicaperl HP500
74. Petroset
75. Petroset II
76. Aquaset
77. Aquaset II
89. Other. Describe in item 14 or additional page

Solidification
90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 14, or additional page
100. None Required

FORM 541 (06-2021)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

Waste Control Specialists

2. Manifest Number: WP-9635-001a

3. Page 2 of 2 Page(s)

Disposal Container Description								Waste Description for Each Waste Type in Container								
								Physical Description			15. Chemical Description		16. Radiological Description				17. Waste Class AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. Container Identification Number/Generator ID Number(s)	6. Container Description (See Note 1 & Note 1A)	7. Volume (m3) / (ft3)	8. Waste and Container Weight (kg) / (lb)	9. Waste Weight (kg) / (lb)	10. Surface Radiation Level (mSv/hr) / (mrem/hr)	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Alpha	11. Surface Contamination (MBq/100 cm2) / (dpm/100 cm2) Beta-Gamma	12. Waste Descriptor (See Notes 2 & 2A)	13. Approximate Waste Volume(s) in Container (m3) / (ft3)	14. Sorbent Solidification, Stabilization, Media (See Note 3)	Chemical Form/ Chelating Agent	Weight % Chelating Agent if > 0.1%	Individual Radionuclides and Activity (MBq) and Container Total; or Container Total Activity and Radionuclide Percent: Radionuclides	pCi/gm	MBq	mCi	
473/	19 soft sided bag	3.82	1814.37	1791.69	<1.0000E-03	<3.3400E-06	<3.3400E-05	33,39-H	3.82	100 100	Oxides/none	na	Cs-137	6.68000E+00	4.4282E-01	1.1968E-02	AU
		135.00	4000.00	3950.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		135.00				Pu-239 [1.0635E-06 g]	3.68000E-02	2.4396E-03	6.5934E-05	
													Pu-240 [2.8667E-07 g]	3.68000E-02	2.4396E-03	6.5934E-05	
													Sr-90	5.19000E+00	3.4406E-01	9.2988E-03	
													Th-NAT [7.7042E-11 kg]	4.30000E-02	2.8506E-03	7.7042E-05	
													Subtotal		7.9461E-01	2.1476E-02	
													Total		7.9461E-01	2.1476E-02	
													SNM [1.3501E-06 g]				
													Source [7.7042E-11 kg]				
V1205/	2	18.94	9706.88	5170.95	<1.0000E-03	<3.3400E-06	<3.3400E-05	22,37,59-DEWATERED-GH	2.42	100 100	Oxides/none	na	Cs-137	6.68604E+00	1.2792E+00	3.4573E-02	AU
		669.00	21400.00	11400.00	<1.0000E-01	<2.0000E+02	<2.0000E+03		85.50				Pu-239 [3.0692E-06 g]	3.68000E-02	7.0407E-03	1.9029E-04	
													Pu-240 [8.2735E-07 g]	3.68000E-02	7.0407E-03	1.9029E-04	
													Sr-90	5.19000E+00	9.9297E-01	2.6837E-02	
													Th-NAT [2.0214E-03 kg]	4.30000E-02	8.2270E-03	2.2235E-04	
													Subtotal		2.2945E+00	6.2013E-02	
													Total		2.2945E+00	6.2013E-02	
													SNM [3.8965E-06 g]				
													Source [2.0214E-03 kg]				
Shipment Totals		34.22	16964.36	12337.71											5.4729E+00	1.4792E-01	
		1209.00	37400.00	27200.00									SNM [9.2970E-06 g]				
													Source [2.0214E-03 kg]				

Waste Control Specialists

ADDITIONAL NOTES

Manifest Number
WP-9635-001a
PAGE 1

Company: Hittman Transportation

Driver: MONTY E BERTRAM

Phone (865) 323-9432

License: 063378496 TN

Tractor no. 3053

Trailer number: F530001