

# BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

---

www.BREDL.org ~ PO Box 88 Glendale Springs, North Carolina 28629 ~ Phone (336) 982-2691 ~ Fax (336) 982-2954 ~ BREDL@skybest.com

May 23, 2005

Jean Sulc, Chair  
Savannah River Site Citizens Advisory Board  
Building 742-A, Room 190  
Aiken, SC 29808

Dear Ms. Sulc:

On behalf of the Blue Ridge Environmental Defense League, I request to present the information requested by members of the SRS Citizens Advisory Board at the last meeting. As you may recall, on March 28<sup>th</sup> I provided federal budget documents which revealed that the \$16 billion in savings promised during passage of Section 3116 of the 2005 Defense Authorization for clean up of high-level radioactive waste tanks was not evident. Further, I said, "We at BREDL are convinced that the DOE provided falsified data to gain an exemption so it could add cement to the waste, leave it underground, and reduce costs." Some CAB members took issue with this statement and I am here today to provide documents which will demonstrate the accuracy of our contention.

In 2004 the Department of Energy presented detailed information to members of Congress on residual waste estimates at SRS. I have attached to this statement a DOE table which purports to show waste volumes and radioactivity before and after clean up; this document was provided to Senator Lindsey Graham's office during legislative debate in May of 2004<sup>a</sup> (Attachment 1). The table contains dose estimates to drinking water from four waste tanks, all well below the EPA limit. But this table is factually incorrect and very misleading. The estimates are false because the "original radioactivity" data listed in column 5 is not what was actually contained in tanks 17, 18, 19 and 20 prior to clean up but is based on a system-wide average. Note that the original radioactivity values for all four tanks are identical at 8,340,000 curies. As a result, the original radioactivity is overestimated by 2 to 3 orders of magnitude, thereby skewing bulk waste removal efficiency by a similar factor.

I have also included a second table with data from an earlier and more accurate 1999 DOE Waste Characterization spreadsheet of waste tank volumes and radioactivity levels in sludge, salt, and supernate<sup>b</sup> (Attachment 2). These correct data were also used for the *Savannah River Site High-Level Waste Tank Closure Final Environmental Impact Statement* (DOE/EIS-0303) issued in May 2002. Please note that Tank 19 underwent additional measurements which would indicate that the original radioactivity was approximately 50,700 curies.<sup>c</sup>

The "DOE %" in the following table is taken from columns 4 and 7 of the 2004 table and is based on the system wide averages. I generated the "Actual %" by comparing correct original volumes and radioactivity data from DOE's 1999 characterization with residual waste data from

2004. It is evident that the actual waste volume reductions for tanks 18 and 19 are significantly less than the falsified DOE figure. More importantly, the residual radioactivity is virtually unchanged, over 90% remains in the so-called “emptied and cleaned” tanks 18 and 19.

**DOE HLW Tank Data Comparison 1999-2004**

		<b>Residual<sup>a</sup></b>	<b>Original<sup>b</sup></b>	<b>Actual %</b>	<b>DOE %<sup>a</sup></b>
<b>Tank 18</b>	Volume (gal)	6,730	355,062	1.9	0.52
<b>Tank 18</b>	Radioactivity (Ci)	20,500	22,486	91.2	0.246
<b>Tank 19</b>	Volume (gal)	16,800	278,952	6.0	1.24
<b>Tank 19</b>	Radioactivity (Ci)	50,600	50,700 <sup>c</sup>	99.8	0.607

a. Values from *Estimates of Savannah River Site Tank Residual Wastes*, provided to Congress 2004

b. Values from *Savannah River High-Level Wastes as of 2/23/1999*

c. Value from *Characterization of Tank 19 Residual Wastes*, WSRC-TR-2002-00052, Revision 0, 15 March 2002

The failure to remove a significant amount of the radioactivity may be explained by the fact that the major portion of the radioactivity resides in the waste tank sludge. Observe that in the 1999 DOE waste characterization, the waste tank sludge (column 6) contains fully half of the total radioactivity but just 9% of the total volume (column 2).

The misleading 2004 DOE estimates of residual SRS tank waste certainly had an impact on legislation. In an e-mail from Senator Graham’s legislative aid to other congressional staff dated May 5, 2004, the falsified table was attached and a warning issued: “I believe that there is some bad information out there on the impact of this language, some of which I’m afraid is intentionally misleading.” Ironically, it was the very information attached to the legislative aid’s e-mail which was misleading.

The ruse in the DOE’s data presented to Senator Graham may not be an isolated incident. In legal proceedings, DOE attempted to mislead the District Court in Idaho by averaging the concentration of residual wastes with grout, making high-activity waste appear low-activity. The bottom line is that billions of dollars in hoped for savings have not materialized.

The Department of Energy’s Accelerated Cleanup program is dubbed by some as Accelerated Cover-up. The Nuclear Waste Policy Act prohibits surface disposal of high-level radioactive waste in sandy soil above aquifers. Leaving such waste at SRS would pollute the Savannah River and spread radioactive contamination. The DOE has some explaining to do and the CAB should demand some answers. Indeed, the mission of the Savannah River Site Citizens Advisory Board is to provide “advice and recommendations ... on environmental remediation, waste management and related issues.” In your capacity as advisors, I recommend you transmit the following recommendations to all appropriate agencies:

1. Block the U.S. Department of Energy from disposing high-level radioactive waste in South Carolina, a precedent which also threatens communities with contaminated DOE sites in Idaho, Washington and other states.
2. Direct DOE to immediately implement an open, transparent and public review process on high-level nuclear waste tank closures.

3. Ensure that an external regulator of high-level waste have the discretion to set an appropriate cleanup standard for the waste that protects public health and the environment.

The DOE's end run around the law, re-classifying the high-level radioactive waste remaining in the tanks as "waste incidental to processing," cannot and must not stand. The Savannah River Site Citizens Advisory Board simply must do something to stop the DOE from riding roughshod over South Carolina. We call upon you to support real public health protection for the residents of the Central Savannah River Area.

Respectfully,

Louis Zeller, Campaign Coordinator

- a. *Estimates of Savannah River Site Tank Residual Wastes* (Attachment 1)
- b. *Savannah River High-Level Wastes as of 2/23/1999* (Attachment 2)
- c. P.D. d'Entremont and J. L. Thomas, *Characterization of Tank 19 Residual Wastes*, WSRC-TR-2002-00052, Revision 0, 15 March 2002, available at <http://www.srs.gov/general/pubs/fulltext/tr2002052/tr2002052.html>

## Estimates of Savannah River Site Tank Residual Wastes

	Original Volume (Gal) <sup>****</sup>	Residual Volume (Gal)	% Volume Remaining	Original Radioactivity (Ci) <sup>*****</sup>	Residual Radioactivity (Ci)	% Radioactivity Remaining	Dose from Drinking Water (mRem/Yr) <sup>***</sup>
Tank 17*	1,300,000	7,280	0.56%	8,340,000	478	0.006%	0.022
Tank 18**	1,300,000	6,730	0.52%	8,340,000	20,500	0.246%	0.0024
Tank 19**	1,355,000	16,800	1.24%	8,340,000	50,600	0.607%	0.0035
Tank 20*	1,300,000	3,500	0.27%	8,340,000	104	0.001%	0.0055

\*Tanks 17 and 20 have already been closed with stabilizing grout.

\*\*Tanks 18 and 19 have been emptied and cleaned, but no stabilizing grout has been added.

\*\*\*EPA Drinking Water Standard is 4mrem/yr

\*\*\*\* Based on maximum inventory recorded in tank history

\*\*\*\*\* Based on average curie content of 50 tanks using 9/30/2002 tank farm inventory of 417M curies (WSRC-RP-2003-00323 Rev. 1).

Only one emptied tank (Tank 19) contains more than 1% of the original tank waste by volume (1.24%)

No tanks contain more than 1% of the estimated original tank waste by radioactivity (most is 0.607%)

## Savannah River High-Level Wastes as of 2/23/1999

Data Adapted From DOE Waste Characterization System (wctables.xls)

Tank	Sludge Vol.	Salt Vol.	Free Supernate Vol.	Total Vol.	Sludge Inventory	Salt (Insol) Inventory	Supernate Inventory	Total Inventory	Sludge Conc.	Salt Conc.	Supernate Conc.
	gal		gal		gal	gal			CI		CI
1	7,000	480,000	18,957	505,957	1,412,605	358,689	4,994,820	6,766,113	201.80	0.75	38.58
2	4,000	536,000	374	540,374	177,234	400,536	1,732,961	2,310,730	44.31	0.75	14.31
3	4,000	536,000	645	540,645	160,772	400,536	1,736,839	2,298,146	40.19	0.75	14.31
4	127,000	34,000	349,835	510,835	9,388,288	25,407	9,202,909	18,616,604	73.92	0.75	20.62
5	28,152	15,765	0	43,917	6,652,777			6,652,777	236.32		
6	25,000	0	316,460	341,460	7,713,385		818,859	8,532,244	308.54		2.45
7	209,000	0	149,127	358,127	8,531,434		1,834,162	10,365,595	40.82		5.21
8	132,248	0	41,734	173,982	7,919,160		165,329	8,084,489	59.88		1.43
9	4,000	538,000	3,523	545,523	191,028	402,030	1,749,335	2,342,393	47.76	0.75	14.03
10	4,000	213,000	0	217,000	20,400	159,168	121,591	301,159	5.10	0.75	2.45
11	140,000	0	192,788	332,788	12,839,097		703,829	13,542,926	91.71		2.42
12	113,820	60,325	0	174,145	19,571,838			19,571,838	171.95		
13	223,000	0	661,100	884,100	17,929,936		21,612,367	39,542,303	80.40		26.45
14	27,000	156,000	0	183,000	457,559	116,574	1,730,440	2,304,572	16.95	0.75	32.51
15	213,500	102,480	0	315,980	17,438,819			17,438,819	81.68		
16	0	0	0	0							
17	0	0	0	0	2,269			2,269			
18	42,000	0	313,062	355,062	20,855		1,631	22,486	0.50		
19	7,560	13,000	258,392	278,952	1,693	9,714	13,637	25,044	0.22	0.75	0.05
20	0	0	0	0							
21	14,000	0	109,900	123,900	127,414		4,186	131,600	9.10		0.03
22	21,000	0	1,019,052	1,040,052	268,001		3,085	271,086	12.76		
23	43,000	0	849,434	892,434	950		315	1,265	0.02		
24	0	0	283,554	283,554			22,179	22,179			0.08
25	0	1,108,000	163,322	1,271,322		827,973	3,403,880	4,231,853		0.75	8.36
26	281,000	0	923,070	1,204,070	609,114		12,960,823	13,569,938	2.17		11.57
27	0	463,000	807,725	1,270,725		345,985	4,383,356	4,729,341		0.75	4.82
28	0	1,032,000	186,321	1,218,321		771,181	4,239,312	5,010,492		0.75	10.26
29	0	1,000,000	1,215,864	1,215,864		747,268	8,423,771	9,171,039		0.75	19.33
30	500	65,988	1,087,249	1,153,737	112,098	49,311	28,876,910	29,030,318	224.20	0.75	25.20
31	0	1,014,000	248,547	1,262,547		757,730	11,728,643	12,486,373		0.75	24.87
32	182,871	0	150,579	333,450	25,019,870		3,675,850	28,695,720	136.82		13.19
33	39,000	227,000	261,202	527,202	15,553,599	169,630	96,958	15,820,187	398.81	0.75	0.29
34	25,000	212,000	918,492	1,155,492	22,526,111	158,421	6,763,933	29,448,465	901.04	0.75	6.88
35	64,584	0	1,135,836	1,200,420	23,197,997		21,427,254	44,625,251	359.19		18.14
36	150	1,094,000	153,304	1,247,454	24,795	817,511	16,034,435	16,876,741	165.30	0.75	40.69
37	0	973,000	267,785	1,240,785		727,092	14,416,459	15,143,551		0.75	29.92
38	0	870,480	369,252	1,239,732		650,482	830,374	1,480,856		0.75	1.48
39	92,664	0	952,263	1,044,927	24,101,549		4,896,760	28,998,309	260.10		4.81
40	173,000	0	1,049,393	1,222,393	512,817		2,436,318	2,949,135	2.96		2.08
41	0	1,231,000	14,208	1,245,208	32,172	919,887	1,411,811	2,363,870		0.75	4.95
42	49,140	0	20,569	69,709	504,260		2,250	506,509	10.26		0.04
43	58,756	123,084	921,915	1,103,755	2,543,127	91,977	1,311,105	3,946,209	43.28	0.75	1.32
44	0	989,000	282,076	1,271,076		739,048	5,159,382	5,898,431		0.75	10.33
45	0	1,130,000	136,759	1,266,759		844,413	5,074,001	5,918,414		0.75	13.17
46	0	318,919	591,013	909,932		238,318	10,560,928	10,799,246		0.75	15.97
47	248,000	868,000	113,237	1,229,237	389,923	648,629	2,486,885	3,525,436	1.57	0.75	5.20
48	0	0	237,943	237,943			1,511	1,511			
49	0	0	97,297	97,297							
50	0	0	254,966	254,966				20			
51	567,567	0	0	567,567	3,120,369		52,405	3,172,773	5.50		
Total	3,171,512	15,404,041	16,128,124	34,703,677	229,073,313	11,377,510	217,103,804	457,554,627			