

WASHINGTON STATE DEPARTMENT OF HEALTH
 DIVISION OF RADIATION PROTECTION
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TO: Mike Elsen & Nancy Darling

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SUBJECT: AUDIT RESULTS OF US ECOLOGY'S SOURCE MANIFEST (1965-2000)

Results of audit of US Ecology's source term manifest (1965-1981) performed by WDOH is provided in the Table 1. It includes results for U-235, U-238, depleted and natural uranium, TC-99, TC-99M, CL36, and I-129. Data for 1982 – 2000 was provided by US Ecology (memo from Bob Haight 9/20/01).

TABLE 1 (1965- 2000)

YEAR	U-235 (kg)	U-238 (kg)	DEP. U (kg)	NAT. U (kg)	TC-99 (mCi)	TC-99m (mCi)	CL-36 (mCi)	I-129 (mCi)
1965-77	65.30	224,895	2,077.7	--	416.7	1,447.1	36.79	0.22
1978	18.52	34,712.3	6,911.4	13.18	64.9	2,965.5	2.10	0.03
1979	18.09	3,992.30	12,950.5	1,356.8	3,587	9,805	0.21	'--
1980	0.002	112,448.3	6,008.2	897.82	9,931.4	94,382.1	97.04	897.00*
1981**	0.0022	910,407.3	67,505.1	7,207.7	808.46	13,592.32	84.08	4.82
1982 – 2000	74.792 (5.79 Ci)	43,150 (1,196 Ci)	16,901 (7.58 Ci)	63,226 (61.27 Ci)	2.2 (2.17 Ci)	--	--	--
TOTAL								

Note: (1) Activity-mass relationship for U isotopes (see WAC 246-231-200):

U-235 = 2.2 E-6 Ci/gm
 U-238 = 3.4 E-7 Ci/gm
 Nat-U = 7.1 E-7 Ci/gm
 Dep. U = 5.0 E-7 Ci/gm

(2) Tc-99 and Tc-99m data need to be re-evaluated since part of Tc-99 may actually be Tc-99m. WDOH and US Ecology will reach a consensus after further evaluation.

(3)* The I-129 data for 1980 needs to be re-evaluated.

(4) **The 1981 data includes audit results of up to 10/81. The data will be modified after completion.

(5) Data for all uranium isotopes given in kilogram, can be converted to curies using the activity-mass relationship as shown above.