Table 21.- Expected initial dispersal of fission products in fallout from Project Chariot, Case IV [1]

[Quantities are mean values for the respective areas, assuming 5 days decay.
See Table 22 for expected re-dispersal during next ensuing snowmelt season.]

Basin or area	Ogotoruk Creek	Nusoaruk Creek	Minor basins, Ogotoruk Creek to Cape Seppings	Kukpuk River above Ipewik River	Minor basins, Cape Seppings to Kivalina River	Ipewik River	Kivalina River	Pitmegea River	Wulik River	Kukpowruk River	Noatak River	Minor basins, Pitmegea River to Kukpowruk River	Outlying areas
Number on Plate 1	0	1	2	3	4	5	6	7	8	9	10	11	...

Fallout between azimuths $40°$ and $125°$ (Case IV.a.1)

Products dissolved in runoff and in micro-ponds.

Average concentration [2], $\mu c/ml$

Sr^{90}	3.3×10^{-5}	2.3×10^{-6}	8.1×10^{-6}	3.5×10^{-7}	4.5×10^{-8}	9.5×10^{-8}	1.6×10^{-8}	2.5×10^{-8}	1.6×10^{-8}	2.3×10^{-8}	(a)	1.3×10^{-8}	$< 1.2 \times 10^{-8}$
I^{131}	4.9×10^{-2}	3.5×10^{-3}	1.2×10^{-2}	5.3×10^{-4}	6.8×10^{-5}	1.4×10^{-4}	2.5×10^{-5}	3.7×10^{-5}	2.4×10^{-5}	3.4×10^{-5}	(a)	2.0×10^{-5}	$< 1.8 \times 10^{-5}$
Cs^{137}	1.8×10^{-5}	1.4×10^{-6}	4.8×10^{-6}	2.1×10^{-7}	2.8×10^{-8}	5.6×10^{-8}	1.1×10^{-8}	1.4×10^{-8}	8.9×10^{-9}	1.3×10^{-8}	(a)	8.1×10^{-9}	$< 7.0 \times 10^{-9}$
Other nuclides	2.2×10^{-3}	1.7×10^{-4}	5.6×10^{-4}	2.3×10^{-5}	2.8×10^{-6}	6.1×10^{-6}	1.1×10^{-6}	1.5×10^{-6}	1.0×10^{-6}	1.5×10^{-6}	(a)	7.9×10^{-7}	$< 7.7 \times 10^{-7}$
Sub-total	5.1×10^{-2}	3.7×10^{-3}	1.3×10^{-2}	5.5×10^{-4}	7.1×10^{-5}	1.5×10^{-4}	2.6×10^{-5}	3.9×10^{-5}	2.5×10^{-5}	3.6×10^{-5}	(a)	2.1×10^{-5}	$< 1.9 \times 10^{-5}$

Insoluble, particulate products suspended in runoff.

	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Total stream burden, dissolved and suspended [3]. ... ...

Products adsorbed, c/mi^2

On vegetation

Sr^{90}	3.3×10^{0}	1.9×10^{-1}	8.9×10^{-1}	5.0×10^{-2}	8.1×10^{-3}	1.5×10^{-2}	2.8×10^{-3}	4.4×10^{-3}	2.1×10^{-3}	2.8×10^{-3}	(a)	2.8×10^{-3}	$< 1.9 \times 10^{-3}$
I^{131}	1.3×10^{3}	7.4×10^{1}	3.6×10^{2}	2.0×10^{1}	3.2×10^{0}	5.9×10^{0}	1.1×10^{0}	1.8×10^{0}	8.3×10^{-1}	1.1×10^{0}	(a)	1.1×10^{0}	$< 7.4 \times 10^{-1}$
Cs^{137}	3.3×10^{0}	1.9×10^{-1}	9.1×10^{-1}	5.1×10^{-2}	8.2×10^{-3}	1.5×10^{-2}	2.8×10^{-3}	4.5×10^{-3}	2.1×10^{-3}	2.8×10^{-3}	(a)	2.9×10^{-3}	$< 1.9 \times 10^{-3}$
Other nuclides	5.5×10^{2}	3.1×10^{1}	1.5×10^{2}	8.4×10^{0}	1.4×10^{0}	2.5×10^{0}	4.7×10^{-1}	7.4×10^{-1}	3.5×10^{-1}	4.7×10^{-1}	(a)	4.7×10^{-1}	$< 3.1 \times 10^{-1}$
Sub-total	1.9×10^{3}	1.1×10^{2}	5.1×10^{2}	2.9×10^{1}	4.6×10^{0}	8.4×10^{0}	1.6×10^{0}	2.5×10^{0}	1.2×10^{0}	1.6×10^{0}	(a)	1.6×10^{0}	$< 1.1 \times 10^{0}$

On soil

Sr^{90}	3.2×10^{0}	1.8×10^{-1}	8.7×10^{-1}	4.9×10^{-2}	7.8×10^{-3}	1.4×10^{-2}	2.7×10^{-3}	4.3×10^{-3}	2.0×10^{-3}	2.7×10^{-3}	(a)	2.7×10^{-3}	$< 1.8 \times 10^{-3}$
I^{131}	1.3×10^{3}	7.3×10^{1}	3.5×10^{2}	2.0×10^{1}	3.2×10^{0}	5.8×10^{0}	1.1×10^{0}	1.7×10^{0}	8.2×10^{-1}	1.1×10^{0}	(a)	1.1×10^{0}	$< 7.3 \times 10^{-1}$
Cs^{137}	3.5×10^{0}	2.0×10^{-1}	9.6×10^{-1}	5.4×10^{-2}	8.7×10^{-3}	1.6×10^{-2}	3.0×10^{-3}	4.8×10^{-3}	2.2×10^{-3}	3.0×10^{-3}	(a)	3.0×10^{-3}	$< 2.0 \times 10^{-3}$
Other nuclides	5.5×10^{2}	3.1×10^{1}	1.5×10^{2}	8.5×10^{0}	1.4×10^{0}	2.5×10^{0}	4.7×10^{-1}	7.5×10^{-1}	3.5×10^{-1}	4.7×10^{-1}	(a)	4.8×10^{-1}	$< 3.1 \times 10^{-1}$
Sub-total	1.9×10^{3}	1.0×10^{2}	5.0×10^{2}	2.9×10^{1}	4.6×10^{0}	8.3×10^{0}	1.6×10^{0}	2.5×10^{0}	1.2×10^{0}	1.6×10^{0}	(a)	1.6×10^{0}	$< 1.0 \times 10^{0}$

On rock, talus, and colluvium

Sr^{90}	2.5×10^{0}	1.4×10^{-1}	6.8×10^{-1}	3.8×10^{-2}	6.1×10^{-3}	1.1×10^{-2}	2.1×10^{-3}	3.3×10^{-3}	1.6×10^{-3}	2.1×10^{-3}	(a)	2.1×10^{-3}	$< 1.4 \times 10^{-3}$
I^{131}	9.3×10^{1}	4.7×10^{0}	2.3×10^{1}	1.3×10^{0}	2.0×10^{-1}	3.7×10^{-1}	7.0×10^{-2}	1.1×10^{-1}	5.2×10^{-2}	7.0×10^{-2}	(a)	7.1×10^{-2}	$< 4.7 \times 10^{-2}$
Cs^{137}	2.8×10^{0}	1.6×10^{-1}	7.7×10^{-1}	4.3×10^{-2}	7.0×10^{-3}	1.3×10^{-2}	2.4×10^{-3}	3.8×10^{-3}	1.8×10^{-3}	2.4×10^{-3}	(a)	2.4×10^{-3}	$< 1.6 \times 10^{-3}$
Other nuclides	4.9×10^{2}	2.8×10^{1}	1.3×10^{2}	7.5×10^{0}	1.2×10^{0}	2.2×10^{0}	4.1×10^{-1}	6.5×10^{-1}	3.1×10^{-1}	4.1×10^{-1}	(a)	4.2×10^{-1}	$< 2.8 \times 10^{-1}$
Sub-total	5.3×10^{2}	3.3×10^{1}	1.5×10^{2}	8.9×10^{0}	1.4×10^{0}	2.6×10^{0}	4.8×10^{-1}	7.7×10^{-1}	3.7×10^{-1}	4.8×10^{-1}	(a)	5.0×10^{-1}	$< 3.3 \times 10^{-1}$

Dissolved products infiltrated to soil water, c/mi^2.

	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Insoluble, particulate products remaining near place of fall, c/mi^2.

Sr^{90} and Cs^{137}, each	3.2×10^{1}	1.8×10^{0}	8.7×10^{0}	4.9×10^{-1}	7.8×10^{-2}	1.4×10^{-1}	2.7×10^{-2}	4.3×10^{-2}	2.0×10^{-2}	2.7×10^{-2}	(a)	2.7×10^{-2}	$< 1.8 \times 10^{-2}$
I^{131}	1.6×10^{4}	8.8×10^{2}	4.3×10^{3}	2.4×10^{2}	3.8×10^{1}	7.0×10^{1}	1.3×10^{1}	2.1×10^{1}	9.9×10^{0}	1.3×10^{1}	(a)	1.3×10^{1}	$< 8.8 \times 10^{0}$
Other nuclides	5.6×10^{4}	3.2×10^{3}	1.5×10^{4}	8.6×10^{2}	1.4×10^{2}	2.5×10^{2}	4.7×10^{1}	7.5×10^{1}	3.5×10^{1}	4.7×10^{1}	(a)	4.8×10^{1}	$< 3.2 \times 10^{1}$
Sub-total	7.2×10^{4}	4.1×10^{3}	1.9×10^{4}	1.1×10^{3}	1.8×10^{2}	3.2×10^{2}	6.0×10^{1}	9.6×10^{1}	4.5×10^{1}	6.0×10^{1}	(a)	6.1×10^{1}	$< 4.1 \times 10^{1}$

[1] Assumptions: (1) Detonation in late September, 10 days prior to freezeup, with fallout on saturated tundra. (2) No precipitation between detonation and freezeup. (3) Runoff 0.1 inch* in the 10 days, owing to antecedent rain. (4) Adsorption scaled to mean "Kd's" $\times 10^{-2}$, as explained in text.

[2] Average during the 10 days between detonation and freezeup, in trunk streams at outer margin of the area of measurable fallout; also in micro-ponds within the area of fallout. It is expected that throwout will dam Ogotoruk Creek and pond the runoff in the lower part of that basin, at least temporarily.

[3] Concentration of suspended particulate products being zero or nominal, total stream burden is that of dissolved products, shown above.

[a] Zero or nominal.

*Average in Ogotoruk Creek, 10 cfs.