Table 19.- Expected dispersal of fission products in fallout from Project Chariot, Case II [1/]

[Quantities are mean values for the respective areas, assuming 15 days decay]

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	Pitemegea 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 II.a)													
Products dissolved in runoff													
Average concentration [2/], μc/ml													
Sr^{90}	$4.0x10^{-6}$	$2.9x10^{-7}$	$9.9x10^{-7}$	$4.1x10^{-8}$	$5.0x10^{-9}$	$1.1x10^{-8}$	$1.9x10^{-9}$	$2.8x10^{-9}$	$1.9x10^{-9}$	$2.8x10^{-9}$	(a)	$1.4x10^{-9}$	$< 1.4x10^{-9}$
I^{131}	$1.1x10^{-2}$	$8.9x10^{-4}$	$2.6x10^{-3}$	$9.1x10^{-5}$	$8.3x10^{-6}$	$2.2x10^{-5}$	$3.5x10^{-6}$	$4.5x10^{-6}$	$4.4x10^{-6}$	$6.8x10^{-6}$	(a)	$1.5x10^{-6}$	$< 2.8x10^{-6}$
Cs^{137}	$2.1x10^{-6}$	$1.7x10^{-7}$	$5.4x10^{-7}$	$2.3x10^{-8}$	$2.9x10^{-9}$	$6.1x10^{-9}$	$1.2x10^{-9}$	$1.5x10^{-9}$	$9.9x10^{-10}$	$1.5x10^{-9}$	(a)	$8.4x10^{-10}$	$< 7.7x10^{-10}$
Other nuclides	$6.5x10^{-5}$	$4.8x10^{-6}$	$1.6x10^{-5}$	$6.6x10^{-7}$	$7.8x10^{-8}$	$1.7x10^{-7}$	$3.0x10^{-8}$	$4.2x10^{-8}$	$3.0x10^{-8}$	$4.4x10^{-8}$	(a)	$2.1x10^{-8}$	$< 2.2x10^{-8}$
Sub-total	$1.1x10^{-2}$	$9.0x10^{-4}$	$2.6x10^{-3}$	$9.2x10^{-5}$	$8.4x10^{-6}$	$2.2x10^{-5}$	$3.5x10^{-6}$	$4.5x10^{-6}$	$4.4x10^{-6}$	$6.8x10^{-6}$	(a)	$1.5x10^{-6}$	$< 2.8x10^{-6}$
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}	$3.5x10^{0}$	$2.0x10^{-1}$	$9.6x10^{-1}$	$5.4x10^{-2}$	$8.6x10^{-3}$	$1.6x10^{-2}$	$3.0x10^{-3}$	$4.7x10^{-3}$	$2.2x10^{-3}$	$3.0x10^{-3}$	(a)	$3.0x10^{-3}$	$< 2.0x10^{-3}$
I^{131}	$7.1x10^{2}$	$4.0x10^{1}$	$1.9x10^{2}$	$1.1x10^{1}$	$1.7x10^{0}$	$3.2x10^{0}$	$6.0x10^{-1}$	$9.5x10^{-1}$	$4.5x10^{-1}$	$6.0x10^{-1}$	(a)	$6.1x10^{-1}$	$< 4.0x10^{-1}$
Cs^{137}	$3.5x10^{0}$	$2.0x10^{-1}$	$9.6x10^{-1}$	$5.4x10^{-2}$	$8.7x10^{-3}$	$1.6x10^{-2}$	$3.0x10^{-3}$	$4.7x10^{-3}$	$2.2x10^{-3}$	$3.0x10^{-3}$	(a)	$3.0x10^{-3}$	$< 2.0x10^{-3}$
Other nuclides	$1.5x10^{2}$	$8.6x10^{0}$	$4.1x10^{1}$	$2.3x10^{0}$	$3.7x10^{-1}$	$6.8x10^{-1}$	$1.3x10^{-1}$	$2.0x10^{-1}$	$9.6x10^{-2}$	$1.3x10^{-1}$	(a)	$1.3x10^{-1}$	$< 8.6x10^{-2}$
Sub-total	$8.7x10^{2}$	$4.9x10^{1}$	$2.3x10^{2}$	$1.3x10^{1}$	$2.1x10^{0}$	$3.9x10^{0}$	$7.4x10^{-1}$	$1.2x10^{0}$	$5.5x10^{-1}$	$7.4x10^{-1}$	(a)	$7.5x10^{-1}$	$< 4.9x10^{-1}$
On soil													
Sr^{90}	$3.5x10^{0}$	$2.0x10^{-1}$	$9.5x10^{-1}$	$5.4x10^{-2}$	$8.6x10^{-3}$	$1.6x10^{-2}$	$3.0x10^{-3}$	$4.7x10^{-3}$	$2.2x10^{-3}$	$3.0x10^{-3}$	(a)	$3.0x10^{-3}$	$< 2.0x10^{-3}$
I^{131}	$7.1x10^{2}$	$4.0x10^{1}$	$1.9x10^{2}$	$1.1x10^{1}$	$1.7x10^{0}$	$3.2x10^{0}$	$6.0x10^{-1}$	$9.5x10^{-1}$	$4.5x10^{-1}$	$6.0x10^{-1}$	(a)	$6.1x10^{-1}$	$< 4.0x10^{-1}$
Cs^{137}	$3.5x10^{0}$	$2.0x10^{-1}$	$9.7x10^{-1}$	$5.4x10^{-2}$	$8.7x10^{-3}$	$1.6x10^{-2}$	$3.0x10^{-3}$	$4.8x10^{-3}$	$2.2x10^{-3}$	$3.0x10^{-3}$	(a)	$3.0x10^{-3}$	$< 2.0x10^{-3}$
Other nuclides	$1.5x10^{2}$	$8.6x10^{0}$	$4.1x10^{1}$	$2.3x10^{0}$	$3.7x10^{-1}$	$6.8x10^{-1}$	$1.3x10^{-1}$	$2.0x10^{-1}$	$9.6x10^{-2}$	$1.3x10^{-1}$	(a)	$1.3x10^{-1}$	$< 8.6x10^{-2}$
Sub-total	$8.7x10^{2}$	$4.9x10^{1}$	$2.3x10^{2}$	$1.3x10^{1}$	$2.1x10^{0}$	$3.9x10^{0}$	$7.4x10^{-1}$	$1.2x10^{0}$	$5.5x10^{-1}$	$7.4x10^{-1}$	(a)	$7.5x10^{-1}$	$< 4.9x10^{-1}$
On rock, talus, and colluvium													
Sr^{90}	$3.4x10^{0}$	$1.9x10^{-1}$	$9.3x10^{-1}$	$5.2x10^{-2}$	$8.4x10^{-3}$	$1.5x10^{-2}$	$2.9x10^{-3}$	$4.6x10^{-3}$	$2.1x10^{-3}$	$2.9x10^{-3}$	(a)	$2.9x10^{-3}$	$< 1.9x10^{-3}$
I^{131}	$2.4x10^{2}$	$1.4x10^{1}$	$6.7x10^{1}$	$3.7x10^{0}$	$6.0x10^{-1}$	$1.1x10^{0}$	$2.1x10^{-1}$	$3.3x10^{-1}$	$1.5x10^{-1}$	$2.1x10^{-1}$	(a)	$2.1x10^{-1}$	$< 1.4x10^{-1}$
Cs^{137}	$3.4x10^{0}$	$1.9x10^{-1}$	$9.4x10^{-1}$	$5.3x10^{-2}$	$8.5x10^{-3}$	$1.5x10^{-2}$	$2.9x10^{-3}$	$4.6x10^{-3}$	$2.2x10^{-3}$	$2.9x10^{-3}$	(a)	$3.0x10^{-3}$	$< 1.9x10^{-3}$
Other nuclides	$1.5x10^{2}$	$8.4x10^{0}$	$4.1x10^{1}$	$2.3x10^{0}$	$3.7x10^{-1}$	$6.7x10^{-1}$	$1.3x10^{-1}$	$2.0x10^{-1}$	$9.5x10^{-2}$	$1.3x10^{-1}$	(a)	$1.3x10^{-1}$	$< 8.4x10^{-2}$
Sub-total	$4.0x10^{2}$	$2.3x10^{1}$	$1.1x10^{2}$	$6.1x10^{0}$	$9.9x10^{-1}$	$1.8x10^{0}$	$3.5x10^{-1}$	$5.4x10^{-1}$	$2.5x10^{-1}$	$3.5x10^{-1}$	(a)	$3.5x10^{-1}$	$< 2.3x10^{-1}$
Dissolved products infiltrated to soil water, c/mi^2.													
Sr^{90}	$7.5x10^{-2}$	$5.4x10^{-3}$	$1.9x10^{-2}$	$7.7x10^{-4}$	$9.3x10^{-5}$	$2.1x10^{-4}$	$3.5x10^{-5}$	$5.2x10^{-5}$	$3.6x10^{-5}$	$5.2x10^{-5}$	(a)	$2.6x10^{-5}$	$< 2.6x10^{-5}$
I^{131}	$2.1x10^{2}$	$1.7x10^{1}$	$4.9x10^{1}$	$1.7x10^{0}$	$1.5x10^{-1}$	$4.1x10^{-1}$	$6.6x10^{-2}$	$8.5x10^{-2}$	$8.3x10^{-2}$	$1.3x10^{-1}$	(a)	$2.9x10^{-2}$	$< 5.2x10^{-2}$
Cs^{137}	$4.0x10^{-2}$	$3.1x10^{-3}$	$1.0x10^{-2}$	$4.3x10^{-4}$	$5.5x10^{-5}$	$1.1x10^{-4}$	$2.2x10^{-5}$	$2.9x10^{-5}$	$1.9x10^{-5}$	$2.7x10^{-5}$	(a)	$1.6x10^{-5}$	$< 1.4x10^{-5}$
Other nuclides	$1.2x10^{0}$	$9.1x10^{-2}$	$3.0x10^{-1}$	$1.2x10^{-2}$	$1.5x10^{-3}$	$3.2x10^{-4}$	$5.6x10^{-4}$	$7.9x10^{-4}$	$5.6x10^{-4}$	$8.2x10^{-4}$	(a)	$4.0x10^{-4}$	$< 4.1x10^{-4}$
Sub-total	$2.1x10^{2}$	$1.7x10^{1}$	$4.9x10^{1}$	$1.7x10^{0}$	$1.5x10^{-1}$	$4.1x10^{-1}$	$6.7x10^{-2}$	$8.6x10^{-2}$	$8.4x10^{-2}$	$1.3x10^{-1}$	(a)	$2.9x10^{-2}$	$< 5.2x10^{-2}$
Insoluble, particulate products remaining near place of fall, c/mi^2.													
Sr^{90} and Cs^{137}, each	$3.2x10^{1}$	$1.8x10^{0}$	$8.7x10^{0}$	$4.9x10^{-1}$	$7.8x10^{-2}$	$1.4x10^{-1}$	$2.7x10^{-2}$	$4.3x10^{-2}$	$2.0x10^{-2}$	$2.7x10^{-2}$	(a)	$2.7x10^{-2}$	$< 1.8x10^{-2}$
I^{131}	$6.6x10^{3}$	$3.7x10^{2}$	$1.8x10^{3}$	$1.0x10^{2}$	$1.6x10^{1}$	$3.0x10^{1}$	$5.6x10^{0}$	$8.9x10^{0}$	$4.2x10^{0}$	$5.6x10^{0}$	(a)	$5.7x10^{0}$	$< 3.7x10^{0}$
Other nuclides	$1.5x10^{4}$	$8.5x10^{2}$	$4.1x10^{3}$	$2.3x10^{2}$	$3.7x10^{1}$	$6.7x10^{1}$	$1.3x10^{1}$	$2.0x10^{1}$	$9.5x10^{0}$	$1.3x10^{1}$	(a)	$1.3x10^{1}$	$< 8.5x10^{0}$
Sub-total	$2.2x10^{4}$	$1.2x10^{3}$	$5.9x10^{3}$	$3.3x10^{2}$	$5.3x10^{1}$	$9.7x10^{1}$	$1.9x10^{1}$	$2.9x10^{1}$	$1.4x10^{1}$	$1.9x10^{1}$	(a)	$1.9x10^{1}$	$< 1.2x10^{1}$

1/ Assumptions: (1) Detonation at end of snowmelt runoff, in early June. (2) In following 30 days, precipitation 0.5 inch total with not more than 0.1 inch in any one storm. (3) Runoff near minimum, 0.03 inch*, and none generated by rainfall during the period. (4) Adsorption scaled to mean "Kd's" as explained in text.

2/ Average during the 30 days following detonation, in trunk streams at outer margin of the area of measurable 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, 1 cfs.

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