[redacted]

boom on the IMP. Gamma spectra from the detector are analyzed and recorded. From the 60 keV gamma, the average concentration of Am-241 in the top 3 cm of soil within the detector's field of view (a 21-meter diameter circle) is determined.

Soil samples are taken and radiochemically analyzed in the Enewetak Radiation Laboratory. The concentrations of Plutonium and Americium are determined. Conversion factors are derived from these data which allow estimates of the total transuranic concentrations in soil to be calculated from the Am-241 measurements of the IMP.

To survey a large area, the IMP travels from point-to-point along a surveyed grid, making a measurement at each grid intersection. Data from the entire survey field are statistically analyzed and isopleths are drawn of the estimated average concentrations of total transuranics in the surface soil. The isopleths are based on the 70% upper bound, i.e. the probability is at least 0.7 that the true average concentration is no greater than the upper bound. If soil is removed, this process is repeated to ascertain the concentration values of newly exposed surfaces.

ESTIMATED CAPABILITY

FROM 1 JUN 78 TO 15 MAY 79 = 50 WEEKS

ASSUME 5 DAYS/WEEK. (ALLOWS .5 DAYS PER WEEK FOR MAINTENANCE.

ALLOWS .5 DAYS PER WEEK FOR STORMS, HOLIDAY, BREAKDOWNS, ETC. TOTAL 20% DOWN TIME.)

TRUCKLOAD

ASSUME 24 TRUCKLOADS PER DAY, AVERAGE, DELIVERED TO RUNIT.

ONE 20 TON DUMPTRUCK LOAD = 10 CUBIC YARDS.

50 X 5 = 250 DAYS

24 X 250 = 6,000 TRUCKLOADS

10 X 6000 = 60,000 CUBIC YARDS FROM ISLANDS OTHER THAN RUNIT.

EACH WEEK ADDED INCREASES BY 1200 CUBIC YARDS.

BULK LOAD

ASSUME 270 CUBIC YARDS PER DAY, AVERAGE, DELIVERED TO RUNIT USING 1 LCU AND 2 M-8.

270 X 250 = 67,500 CUBIC YARDS

EACH WEEK ADDED INCREASES BY 1350 CUBIC YARDS.

IMPACT MATRIX

	>400	>200	>100	>80	>40	>20	>10
BOKOLOU (ALICE)							
AREA (ACRES)(22)	0	0	0	0	6.8	14.2	16.1
SURFACE (CU YD)					5482	11461	12956
SUBSURFACE (CU YD)							
BOKOMBAKO (BELLE)							
AREA (31)	0	0	5.6	16.7	24.7	25.9	26.6
SURFACE			4485	13471	19933	20929	21428
SUBSURFACE							
KIRUNU (CLARA)							
AREA (7)							
SURFACE							
SUBSURFACE							
LOUJ (DAISY)							
AREA (21)							
SURFACE							
SUBSURFACE							

	400	200	100	80
BIJIRE (				
AREA (				
SURFAC				
SUBSUR				
LOJWA (U				
AREA (				
SURFAC				
SUBSUR				
ALEMBEL				
AREA	0	0	0	0
SURFA				
SUBSU				
BILLAE				
AREA				
SURFA				
SUBSU				

	>400	>200	>100	>80	>40	>20	>10
KIDRINEN (LUCY)							
AREA (20)	0	0	0	0	6.2	11.1	13.0
SURFACE					4983	8970	10465
SUBSURFACE							
TAIWEL (PERCY)							
AREA (2)							
SURFACE							
SUBSURFACE							
BOKENELAB (MARY)							
AREA (12)							
SURFACE							
SUBSURFACE							
ELLE (NANCY)							
AREA (11)	0	0	0	0	0	6.8	7.3
SURFACE						5482	5855
SUBSURFACE							

	≥ 400	> 20	> 100	> 80	> 40	> 20	> 10
AEJ (OLIVE)							
AREA (41)	0	0	0	0	0	10.5	29.0
SURFACE						8472	23421
SUBSURFACE							
LUJOR (PEARL)							
AREA (54)	?	5	24.1	27.2	32.1	43.9	45.1
SURFACE		44	19434	21926	25913	35381	36377
SUBSURFACE		~ 34	~ 4983	~ 6000	~ 12456	~ 21926	~ 29900
ELELERON (RUBY)							
AREA (4)							
SURFACE							
SUBSURFACE							
AOMON (SALLY)							
AREA (99)	0		0.6	1.2	4.3	13.6	34
SURFACE			500	997	3488	10963	27408
SUBSURFACE							

	>400	>200	>100	>80	>40
BOKINWOTME (EDNA)					
AREA (10)					
SURFACE					
SUBSURFACE					
BOKEN (IRENE)					
AREA (33)	0.6	0.6	0.6	0.6	3
SURFACE					29
SUBSURFACE	1000	1000	1000	1000	~29
ENJEBI (JANET)					
AREA (291)	0	0	0	0	53
SURFACE					428
SUBSURFACE					
MIJIKADREK (KATE)					
AREA (16)	0	0	0	0	
SURFACE					
SUBSURFACE					

	>400	>200	>100	>80	>40	>20	>10
RUNIT (YVONNE)							
AREA (91)							
SURFACE							
SUBSURFACE							
PARTIAL TOTALS							
AREA	0.6+	5.6	29.7	45.1	131.5	315.1	415.1
SURFACE		4485	23919	36394	106,144	254,144	334,746
SUBSURFACE	1000+	~4448	~5983	~7000	~15,446	~40,364	~49,900

AREA IS IN ACRES

SURFACE IS CUBIC YARDS FOR ONE SIX-INCH (15 CM) CUT

SUBSURFACE IS CUBIC YARDS FOR MULTIPLE CUTS - THESE ARE ESTIMATES ONLY BASED ON VERY LIMITED DATA

NORTHERN I

ASSUMPTION: 35 PERCENT OF AREA WIL

ALTERNATIVES:
1. CLEAN ONLY > 40C
2. CLEAN TO < 200,
3. CLEAN TO < 100
4. CLEAN TO < 80, P
5. CLEAN TO < 40, P
6. CLEAN TO < 20, P
7. CLEAN TO < 10

FACTORS:
S = SOIL IN 1000 CU
P = PLOWED AREA IN
T = TRUCK LOADING C
B = BULK LOADING CA
Y = YES: THAT INDI
N = NO: THAT INDI
X = MAY BE INFEASIB

	1				2				3				4			
	400				200/1				100				80/40			
	S	P	T	B	S	P	T	B	S	P	T	B	S	P	T	B
BOKOLUO (ALICE)	0	0	Y	Y	0	0	Y	Y	0	-	Y	Y	0	6.8	Y	Y
BOKOMBAKO (BELLE)	0	0	Y	Y	0	5.6	Y	Y	6.1	-	Y	Y	18.2	24.7	Y	Y
KIRUNU (CLARA)																
LOUJ (DAISY)																
BOKINWOTME (EDNA)																
BOKEN (IRENE)[1]	1.0	-	Y	Y	0	0	Y	Y	0	-	Y	Y	0	X	Y	Y
ENJEBI (JANET)	0	0	Y	Y	0	0	Y	Y	0	-	Y	Y	0	53.1	Y	Y
MIJIKADREK (KATE)	0	0	Y	Y	0	0	Y	Y	0	-	Y	Y	0	0.6	Y	Y
KIDRINEN (LUCY)	0	0	Y	Y	0	0	Y	Y	0	-	Y	Y	0	6.2	Y	Y
TAIWEL (PERCY)																
BOKENLAB (MARY)																
ELLE (NANCY)	0	0	Y	Y	0	0	Y	Y	0	0	Y	Y	0	0	Y	Y
AEJ (OLIVE)	0	0	Y	Y	0	0	Y	Y	0	0	Y	Y	0	0	Y	Y

5				6				7			
40/20				20/10				10			
S	P	T	B	S	P	T	B	S	P	T	B
7.4	14.2	Y	Y	15.5	16.1	Y	Y	17.5	-	Y	Y
26.9	25.9	Y	Y	28.3	26.6	Y	Y	28.9	-	Y	Y
4.1	X	Y	Y	24.9	X	Y	Y	34.9	-	Y	Y
57.9	158	Y	Y	172	200	N	N	218	-	N	N
0.7	8.7	Y	Y	9.4	11.7	Y	Y	12.8	-	Y	Y
6.7	11.1	Y	Y	12.1	13.0	Y	Y	14.2	-	Y	Y
0	6.8	Y	Y	7.4	7.3	Y	Y	7.9	-	Y	Y
0	10.5	Y	Y	11.5	29	Y	Y	31.6	-	Y	Y

NORTHERN ISLAND USAGE (CONT)

	1				2				3			
	400				200/100				100			
	S	P	T	B	S	P	T	B	S	P	T	B
LUJOR (PEARL)[2]	?	-	Y	Y	6.1	24.1	Y	Y	26.3	-	Y	Y
ELELERON (RUBY)												
AOMON (SALLY)	0	0	Y	Y	0	0	Y	Y	0.7	-	Y	Y
BIJIRE (TILDA)												
LOJWA (URSULA)												
ALEMBEL (VERA)	0	0	Y	Y	0	0	Y	Y	0	-	Y	Y
BILLAE (WILMA)												
RUNIT (YVONNE)												
PARTIAL TOTALS[3]	1.0+	0	Y	Y	6.1	29.7	Y	Y	33.1	-	Y	Y
ESTIMATED TOTALS	1.0+	0	Y	Y	6.1	29.7	Y	Y	33.1	-	Y	Y

4				5				6				7			
80/40				40/20				20/10				10			
S	P	T	B	S	P	T	B	S	P	T	B	S	P	T	B
29.6	32.1	Y	Y	35.0	43.9	Y	Y	47.8	45.1	Y	Y	49.1	-	Y	Y
1.4	4.3	Y	Y	4.7	13.6	Y	Y	14.8	34	Y	Y	37	-	Y	Y
0	0	Y	Y	0	0	Y	Y	0	0	Y	Y	0	0	Y	Y
49.2	127.8	Y	Y	144	293	N	N	344	383	N	N	452	-	N	N
59.0	153	Y	Y	173	352	N	N	413	460	N	N	461	-	N	N

NOTES:

1. LIMITED SUBSURFACE DATA INDICATES SUBSURFACE CONTAMINATION LEVEL IS HIGHER THAN SURFACE LEVELS.
2. LIMITED SUBSURFACE DATA INDICATES GREATER THAN 35 PERCENT WILL REQUIRE SECOND CUT, PROBABLY 50-75 PERCENT. 30-35 PERCENT MAY REQUIRE THIRD 6 INCH CUT.
3. BASED ON DATA FROM 11 OF 21 ISLANDS. ADDING ISLANDS FOR WHICH DATA IS NOT AVAILABLE, EXCEPT RUNIT, WILL PROBABLY ADD APPROXIMATELY 20 PERCENT TO TOTALS, AS SHOWN.

EXAMPLES:

1. CLEAN ENJEBI TO 80, PLOW TO 40; CLEAN LUJOR TO 40, PLOW TO 20, CLEAN AOMON TO 20, PLOW TO 10; CLEAN 400 FROM BOKEN; EXCAVATE AOMON CRYPT, IS PROBABLY WITHIN CAPABILITY.
2. TO CLEAN ALL ISLANDS, EXCEPT RUNIT, TO 80 AND PLOW TO 40 IS PROBABLY WITHIN CAPABILITY.