

TABLE 11.6-1

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TABLE 11.6-2

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN ARTIFICIAL ISLAND PREOPERATIONAL
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SAMPLES

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
<u>AQUATIC ENVIRONMENT</u>						
<u>Surface Water</u>						
H-3	259	222	<80	600±100	213±165	pCi/l
Alpha (soluble)	136	6	<1.5	33±32	-	pCi/l
Alpha (insoluble)	136	5	<1.5	3.3±1.0	-	pCi/l
Alpha (total)	123	22	<1.5	27±20	-	pCi/l
Beta (soluble)	136	136	3.8±2.5	120±16	42±52	pCi/l
Beta (insoluble)	136	14	<3.0	4.8±3.2	-	pCi/l
Beta (total)	123	123	3.3±2.7	110±11	32±45	pCi/l
K-40	136	136	0.20±0.02	120±12	41±63	pCi/l
Sr-89	65	5	<0.37	1.5±0.8	-	pCi/l
Sr-90	77	20	<0.28	1.6±0.4	-	pCi/l
Gamma	259					
K-40		200	<6	200±30	48±64	pCi/l
ZrNb-95		2	<0.4	1.9±0.6	-	pCi/l
Cs-137		2	<0.5	0.86±0.56	-	pCi/l
Ra-226		9	<0.9	4.0±1.4	-	pCi/l
Solids	136	136	160±16	14000±1400	5748±7137	mg/l
Chlorides	136	136	32±3	17000±1700	3345±5567	mg/l
<u>Edible Fish Flesh</u>						
H-3 (aqueous)	28	15	<80	460±78	165±206	pCi/l
H-3 (organic)	19	17	<130	480±69	285±205	pCi/l
H-3 (organic)	8	4	<80	390±80	158±230	pCi/kg (dry)
Sr-89	9	0	<4.1	<100	-	pCi/kg (wet)
Sr-90	12	1	<4.1	67±11	-	pCi/kg (wet)

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
Edible Fish Flesh (Cont)						
Gamma	31					
K-40		31	1000±100	13000±1000	2914±4351	pCi/kg(wet)
Cs-137		5	8.7±6.6	11±6	-	pCi/kg(wet)
Ra-226		1	<4	130±80	-	pCi/kg(wet)
Edible Fish Bone						
Sr-89	18	3	100±60	100±70	-	pCi/kg(wet dry)
Sr-90	18	14	<24	940±100	335±614	pCi/kg(wet dry)
Blue Crab - Edible Hard Shell (Flesh)						
H-3 (Aqueous)	8	7	<80	330±71	180±168	pCi/l
H-3 (Organic)	2	2	95±78	420±120	259±455	pCi/l
H-3 (Organic)	4	1	<80	90±80	-	pCi/kg(dry)
H-3 (Total Tritium)	7	5	<80	420±60	219±259	pCi/l
Sr-89	10	0	<6.0	<51	-	pCi/kg(wet)
Sr-90	10	7	<5.1	150±26	40±103	pCi/kg(wet)
Gamma						
K-40	16	16	960±384	12000±1000	2835±5048	pCi/kg(wet dry)
ZrNb-95		1	<5	120±12	-	pCi/kg(wet)
Ra-226		3	<10	33±19	-	pCi/kg(wet)
Blue Crab - Edible Soft Shell (Total)						
H-3 (Aqueous)	4	3	<80	320±110	190±197	pCi/l
H-3 (Organic)	2	0	<140	<220	-	pCi/l
H-3 (Organic)	2	1	<80	130±80	105±71	pCi/kg(dry)
H-3 (Total Tritium)	4	3	<80	500±68	230±373	pCi/l
Sr-89	6	1	<7.5	<26	-	pCi/kg(wet)
Sr-90	8	5	<7.8	39±6	21±24	pCi/kg(wet)
Gamma						
K-40	7	7	770±462	3000±300	2040±1359	pCi/kg(wet)
Ra-226		1	<10	37±15	-	pCi/kg(wet)

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
Blue Crab - Nonedible Hard Shell (Shell)						
Sr-89	8	3	<57	210±170	-	pCi/kg (dry)
Sr-90	8	8	330±30	990±87	614±511	pCi/kg (dry)
Prey Fish						
Sr-89	16	2	<5.8	320±22	-	pCi/kg (wet dry)
Sr-90	16	8	<4.8	66±11	28±40	pCi/kg (wet dry)
Gamma	29					
K-40		29	970±100	13000±1000	4604±6667	pCi/kg (wet dry)
ZrNb-95		2	<3	17±5	-	pCi/kg (wet)
Cs-137		1	<2	42±38	-	pCi/kg (wet)
Ra-226		1	<5	13±9	-	pCi/kg (wet)
Benthos						
Sr-89	12	1	<44	<36000	-	pCi/kg (dry)
Sr-90	12	5	<120	<30000	-	pCi/kg (dry)
Gamma						
K-40	4	2	<1	6.9±1.8	3.4±5.0	pCi/g (dry)
Mn-54		1	<0.03	0.13±0.09	-	pCi/g (dry)
Nb-95		2	<0.09	0.11±0.08	0.11±0.13	pCi/g (dry)
Ru-106		1	<0.3	0.91±0.65	-	pCi/g (dry)
Cs-137		1	<0.07	<0.1	-	pCi/g (dry)
Ra-226		4	0.26±0.08	0.48±0.16	0.38±0.18	pCi/g (dry)
Th-232		4	0.52±0.13	1.2±0.4	0.80±0.61	pCi/g (dry)
Zooplankton						
Sr-89	8	2	<0.21	4.6±4.4	-	pCi/g (dry)
Sr-90	8	5	<0.51	<4.9	1.3±2.9	pCi/g (dry)

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
<u>Zooplankton (Cont)</u>						
Gamma	20					
Be-7		1	-	3.0±2.8	-	pCi/g (dry)
K-40		3	<3	110±80	-	pCi/g (dry)
ZrNb-95		2	<0.09	<10	-	pCi/G (dry)
Ra-226		1	<0.2	<30	-	pCi/g (dry)
<u>Sediment</u>						
Sr-89	12	0	<0.03	<1.0	-	pCi/g (dry)
Sr-90	16	4	<0.03	0.32±0.05	-	pCi/g (dry)
Gamma	41					
Be-7		3	<0.1	2.3±0.3	-	pCi/g (dry)
K-40		41	3.4±0.4	21±2	15±23	pCi/g (dry)
Nb-95		8	<0.01	2.6±0.6	-	pCi/g (dry)
Zr-95		1	<0.02	0.70±0.30	-	pCi/g (dry)
Ru-103		1	<0.01	0.31±0.13	-	pCi/g (dry)
Ru-106		2	0.03±0.02	0.30±0.17	-	pCi/g (dry)
Sb-125		8	0.05±0.04	0.27±0.12	-	pCi/g (dry)
Cs-137		35	<0.01	0.40±0.04	0.15±0.22	pCi/g (dry)
Ce-144		2	<0.1	0.48±0.14	-	pCi/g (dry)
Ra-226		41	0.28±0.04	1.2±0.1	0.76±0.43	pCi/g (dry)
Th-232		41	0.21±0.11	1.3±0.1	0.84±0.54	pCi/g (dry)
<u>ATMOSPHERIC ENVIRONMENT</u>						
<u>Air Particulates</u>						
Alpha	1045	788	<0.16	7.9±3.1	1.1±2.8	10 ⁻³ pCi/m ³
Beta	1088	1585	5.0	920±24	74±280	10 ⁻³ pCi/m ³
Sr-89	60	18	<0.15	4.7±0.5	-	10 ⁻³ pCi/m ³
Sr-90	60	46	<0.20	3.0±0.3	0.9±1.6	10 ⁻³ pCi/m ³

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
Air Particulates (Cont)						
Gamma	127					
Be-7		127	12±7	330±33	109±126	10 ⁻³ pCi/m ³
Mn-54		31	<0.1	2.6±0.4	-	10 ⁻³ pCi/m ³
Zr-95		80	<0.3	44±5	5±15	10 ⁻³ pCi/m ³
Nb-95		74	<0.4	27±4	4±13	10 ⁻³ pCi/m ³
Ru-103		90	<0.1	84±8	13±39	10 ⁻³ pCi/m ³
Ru-106		60	<0.9	46±4	-	10 ⁻³ pCi/m ³
Sb-125		55	<0.4	6.2±0.8	-	10 ⁻³ pCi/m ³
Cs-237		122	<0.2	11±1	2.2±4.7	10 ⁻³ pCi/m ³
BaLa-140		3	<0.4	27±8	-	10 ⁻³ pCi/m ³
Ce-141		38	<0.2	46±5	-	10 ⁻³ pCi/m ³
Ce-144		99	<1	120±15	19±54	10 ⁻³ pCi/m ³
Ru-226		26	<0.6	16±7	-	10 ⁻³ pCi/m ³
Th-232		24	<0.5	3.1±0.18	-	10 ⁻³ pCi/m ³
Air Iodine						
I-131	519	20	<0.72	42±4	-	10 ⁻³ pCi/m ³
Precipitation						
H-3	63	49	<80	610±90	216±290	pCi/l
Alpha	63	6	<0.45	4.7±1.8	-	pCi/l
Beta	63	57	<3.0	71±8	19±36	pCi/l
K-40	35	32	<0.01	0.52±0.05	0.13±0.21	pCi/l
Sr-89	16	7	<0.43	5.6±1.2	-	pCi/l
Sr-90	20	12	<0.48	3.8±1.1	1.5±2.2	pCi/l
Gamma	22					
Be-7		16	0.75±0.22	79±74	29±45	pCi/l
K-40		3	<5	18±5	-	pCi/l
Kr/Nb-95		9	<0.4	9.5±1.0	-	pCi/l
Ru-103		2	0.48±0.29	3.4±0.5	-	pCi/l
Cs-137		1	<0.5	1.2±0.4	-	pCi/l
BaLa-140		1	<0.4	2.2±0.9	-	pCi/l
Ce-144		1	<3	6.2±2.2	-	pCi/l

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
<u>TERRESTRIAL ENVIRONMENT</u>						
Well Water						
H-3	144	23	<40	380±77	-	pCi/l
Alpha	144	4	<1.0	9.6±2.5	-	pCi/l
Beta	144	126	<2.1	38±6	9±10	pCi/l
K-40	134	134	1.1±0.1	19±2	7.8±7.6	pCi/l
Sr-89	24	1	<0.49	<2.1	-	pCi/l
Sr-90	24	3	<0.36	0.87±0.52	-	pCi/l
Gamma	39					
Be-7		3	32±7	45±9	-	pCi/l
K-40		10	<0.5	30±14	-	pCi/l
ZrNb-95		2	<0.4	2.0±0.7	-	pCi/l
Ra-226		1	<0.8	2.0±1.2	-	pCi/l
Potable Water (Raw and treated)						
H-3	94	73	<80	350±80	179±173	pCi/l
Alpha	94	16	<0.53	2.7±1.3	-	pCi/l
Beta	94	63	<2.6	9.0±3.4	4.2±3.0	pCi/l
K-40	84	84	0.50±0.10	10±1	1.7±2.2	pCi/l
Sr-89	24	3	<0.33	1.1±0.9	-	pCi/l
Sr-90	28	10	<0.26	2.1±1.2	-	pCi/l
Gamma	32					
Ra-226		1	<0.8	1.4±1.0	-	pCi/l
Milk						
Sr-89	177	35	<0.55	14±2	-	pCi/l
Sr-90	193	169	<0.23	12±3	3.5±7.5	pCi/l
I-131	167	44	<0.03	65±6	-	pCi/l

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
Milk (Cont)						
Gamma	270					
K-40		270	800±100	2000±200	1437±440	pCi/l
I-131		5	<0.4	63±14	-	pCi/l
Cs-137		147	<0.4	14±11	3.0±5.1	pCi/l
Ra-226		9	<0.9	<30		pCi/l
Food Products						
Sr-89	29	3	<2.5	10±6*	-	PCi/kg (wet)
Sr-90	45	24	<1.5	24±6*	7±11	PCi/kg (wet)
Gamma	52					
K-40		52	70±50	4800±480	2141±1628	PCi/kg (wet)
Cs-137		7	<1	59±33	-	PCi/kg (wet)
Fodder Crops (dry)						
Gamma	41					
Be-7		21	0.80±30	9.3±0.9	-	pCi/g (dry)
K-40		41	2.9±0.5	80±8	22±33	pCi/g (dry)
Co-58		3	<0.02	0.07±0.05	-	pCi/g (dry)
ZrNb-95		18	<0.02	9.5±4.8	-	pCi/g (dry)
Zr-95		3	4.3±0.4	6.3±0.6	-	pCi/g (dry)
Nb-95		3	3.0±0.3	4.2±0.4	-	pCi/g (dry)
Ru-103		4	0.09±0.02	1.3±0.1	-	pCi/g (dry)
RuRj-206		14	<0.01	2.5±0.2	-	pCi/g (dry)
I-131		3	<0.01	0.53±0.06	-	pCi/g (dry)
I-133		3	<0.02	0.46±0.11	-	pCi/g (dry)
Cs-137		6	<0.01	0.11±0.02	-	pCi/g (dry)
BaLa-140		3	<0.02	3.1±0.3	-	pCi/g (dry)

*Additional egg plant sampled 10-13-76 reported in units of pCi/kg(dry).
Results were: Sr-89, <55 pCi/kg(dry); Sr-90, 32±24 pCi/kg(dry).
(These data not included in ranges, or average).

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>	<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ± 2 Sigma</u>	<u>Units</u>
Fodder Crops (dry) (Cont)						
Gamma						
Ce-141	4	0.28±0.03	5.1±0.5	-	pCi/g(dry)	
Ce-144	5	<0.1	1.4±0.3	-	pCi/g(dry)	
Ra-226	1	<0.04	0.10±0.04	-	pCi/g(dry)	
Th-232	3	<0.07	0.39±0.08	-	pCi/g(dry)	
Fodder Crops (wet)						
Gamma						
Be-7	4	0.47±0.17	4.7±0.5	2.0±3.7	pCi/g(wet)	
K-40	5	2.9±0.5	16±2	7±11	pCi/g(wet)	
ZrNb-95	1	-	0.03±0.02	-	pCi/g(wet)	
Zr-95	4	0.28±0.04	1.9±0.2	1.4±1.5	pCi/g(wet)	
Nb-95	4	0.04±0.02	0.36±0.04	0.27±0.30	pCi/g(wet)	
Mo-99	4	<0.01	2.2±0.2	1.1±1.9	pCi/g(wet)	
Ru-103	4	0.04±0.02	0.59±0.05	0.21±0.46	pCi/g(wet)	
I-131	4	<0.01	2.4±0.2	1.1±2.0	pCi/g(wet)	
I-132	4	0.23±0.06	1.4±0.1	0.79±0.96	pCi/g(wet)	
Te-132	4	<0.01	1.8±0.2	0.7±1.5	pCi/g(wet)	
I-133	4	<0.01	0.3±0.05	0.19±0.31	pCi/g(wet)	
Ba-140	4	0.50±0.22	2.8±2.0	1.8±2.0	pCi/g(wet)	
La-140	4	0.13±0.03	3.0±0.3	1.8±2.4	pCi/g(wet)	
Ce-141	4	0.06±0.03	1.1±0.1	0.77±0.96	pCi/g(wet)	
Ce-144	1	<0.08	0.45±0.25	-	pCi/g(wet)	
Np-239	3	0.72±0.20	3.2±0.3	2.0±2.5	pCi/g(wet)	
Game						
Sr-89	11	1	<90	<800	-	pCi/kg(dry)
Sr-90	11	11	32±16	1800±600	249±540	pCi/kg(dry)
Gamma						
K-40	16	1600±200	27000±800	4444±12124	pCi/kg(wet dry)	
RuRh-106	1	<10	<66±55	-	pCi/kg(wet)	
Cs-137	1	<3	620±50	-	pCi/kg(wet)	
Ra-226	2	<6	1000±100	-	pCi/kg(wet)	
Th-232	2	20±10	140±40	-	pCi/kg(wet)	

TABLE 11.6-2 (Cont)

<u>Medium and Analysis Performed</u>	<u>Number of Samples Analyzed</u>		<u>Number Above MDL</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average ±2 Sigma</u>	<u>Units</u>
Podder Crops (wet) (Cont.)							
Thyroid							
Gamma	7						
K-40		1	<400	1800±600	-	PCi/kg (wet)	
I-131		1	<30	89±1	-	PCi/kg (wet)	
Soil							
Sr-90	21	18	<0.03	1.1±0.1	0.26±0.50	pCi/g (dry)	
Gamma	30						
Be-7		4	0.18±0.13	21±10	-	pCi/g (dry)	
K-40		30	3.4±0.4	24±2	10±8	pCi/g (dry)	
Mn-54		2	<0.01	0.01±0.01	-	pCi/g (dry)	
ZrNb-95		1	<0.02	0.02±0.02	-	pCi/g (dry)	
Zr-95		2	0.03±0.02	0.06±0.04	-	pCi/g (dry)	
Nb-95		3	0.07±0.02	0.09±0.02	-	pCi/g (dry)	
Sb-125		4	0.05±0.04	0.27±0.07	-	pCi/g (dry)	
Cs-137		29	<0.1	2.8±0.3	0.8±1.5	pCi/g (dry)	
Ce-144		2	<0.09	0.51±0.12	-	pCi/g (dry)	
Ra-226		30	0.27±0.05	1.5±0.2	0.87±0.65	pCi/g (dry)	
Th-232		30	0.14±0.06	1.4±0.1	0.74±0.58	pCi/g (dry)	
DIRECT RADIATION							
Gamma Dose	3872M	3872	2.07±0.14	7.28±0.36	4.26±1.53	mrad/std.mon.	
	1256Q	1256	1.07±0.24	5.60±0.54	4.62±1.18	mrad/std.mon.	
	260SA	260	2.83±0.10	5.21±0.22	4.30±1.15	mrad/std.mon.	