Chemical yield of technetium determined by ^{95m}Te ($T_{1/2}$ = 61d) was measured to be ranging from 41 to 82 %. Small amount of ^{99}Tc was found in ^{95m}Te tracer, therefore, detection limit of ^{99}Tc is considered to be 0.5mBq/sample. In order to avoid ^{99}Tc contamination, ^{93}Nb(α,2n)^{95m}Te reaction is now under investigation to prepare ^{99}Tc-free ^{95m}Te. In the prelimnary experiment, it was found that ^{95m}Tc tracer prepared by ^{93}Nb(α,2n)^{95m}Te reaction is sufficiently pure to be used as technetium tracer.

Table 1 Concentration of ^{99}Tc and inventories of ^{99}Tc, ^{137}Cs, ^{241}Am, ^{239,240}Pu and ^{237}Np measured for coastal sediment from the Irish Sea.

Sampling point	Shore-line Distance (km)	^{99}Tc (Bq/kg)	^{99}Tc (Bq/cm^2)	^{137}Cs (Bq/cm^2)	^{241}Am (Bq/cm^2)	^{239,240}Pu (Bq/cm^2)	^{237}Np (mBq/cm^2)
1	67	1.96	0.083	10.40	1.60	1.18	1.81
2	67	5.22	0.530	81.80	12.20	9.19	14.70
3	38	2.77	0.170	10.90	6.01	4.00	8.63
4	75	3.08	0.170	16.70	3.63	2.40	3.28
5	70	6.88	0.700	52.50	12.70	9.93	22.20
6	77	14.80	1.910	214.00	42.00	34.20	53.20
7	131	0.95	0.074	1.69	0.43	0.23	10.20
8	137	9.40	0.920	65.30	5.89	5.19	8.68
9	189	2.93	0.190	4.87	0.24	0.22	0.68

Results

Technetium-99 activities and inventories measured are summarized in Table 1 together with inventories for ^{137}Cs, ^{241}Am, ^{239,240}Pu and ^{237}Np. Statistical error of ^{99}Tc measurement was measured to be 5 to 10 % depending on the ^{99}Tc activity in the sample. As known from Fig.2, correlation of between inventory of ^{99}Tc and distance from Sellafield was not observed probably due to ^{99}Tc inventory being governed by geochemical nature of the sediment such as size distribution, oontent of organic matters, Eh-pH values etc. Therefore, instead of inventory, inventory ratio relative to ^{239,240}Pu as a function of shore-line distance from the

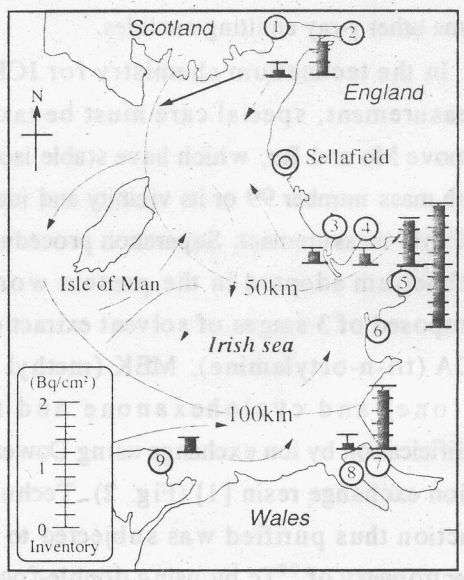

Fig. 2 Inventory of ^{99}Tc in costal area of Irish Sea.