

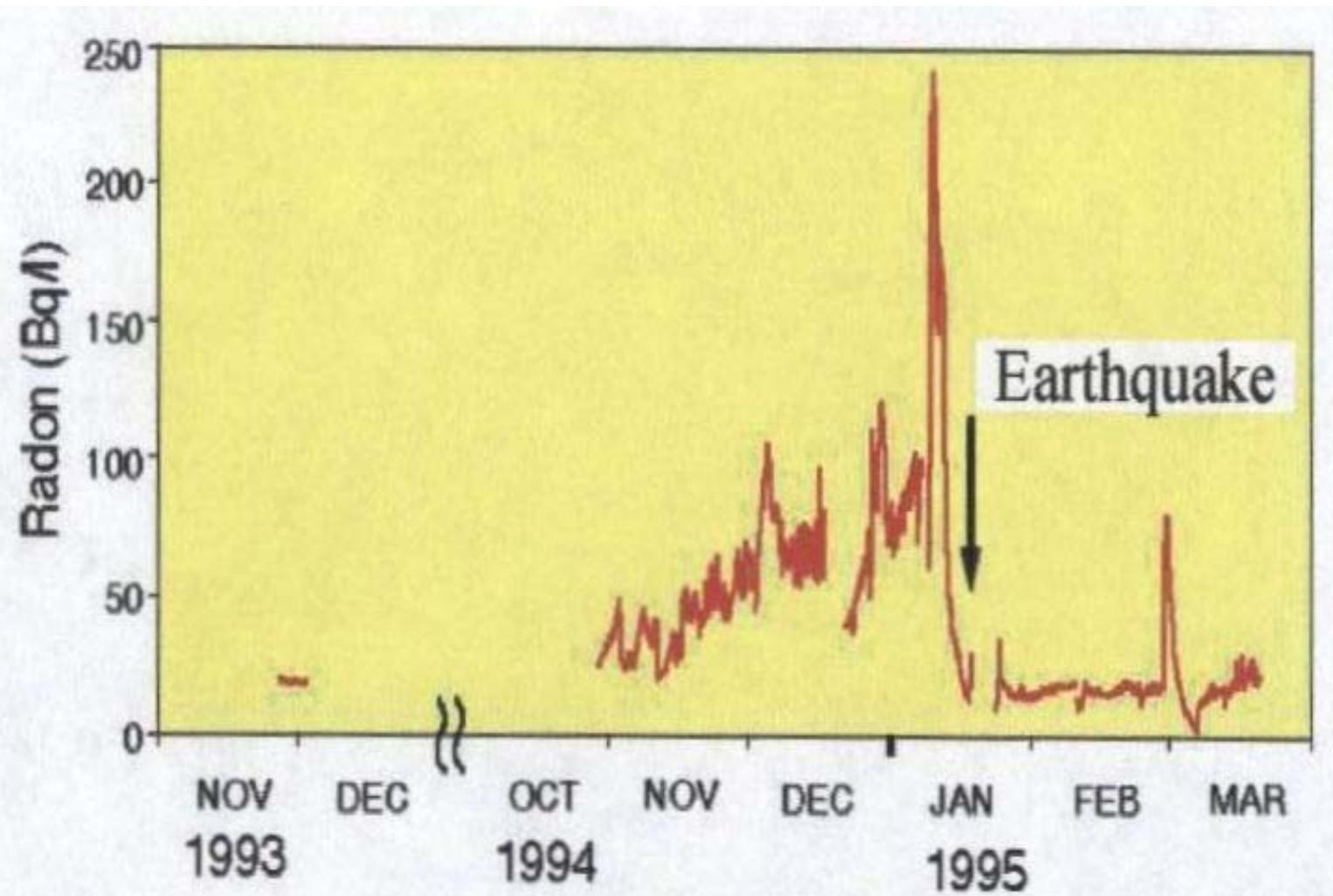
Monitoring of Radon in Taiwan groundwaters

Y. L. Han^{*}, M. C. Tom Kuo^{*} and Y. P. Lee[†]

***Department of Mineral and Petroleum Engineering,
National Cheng Kung University**

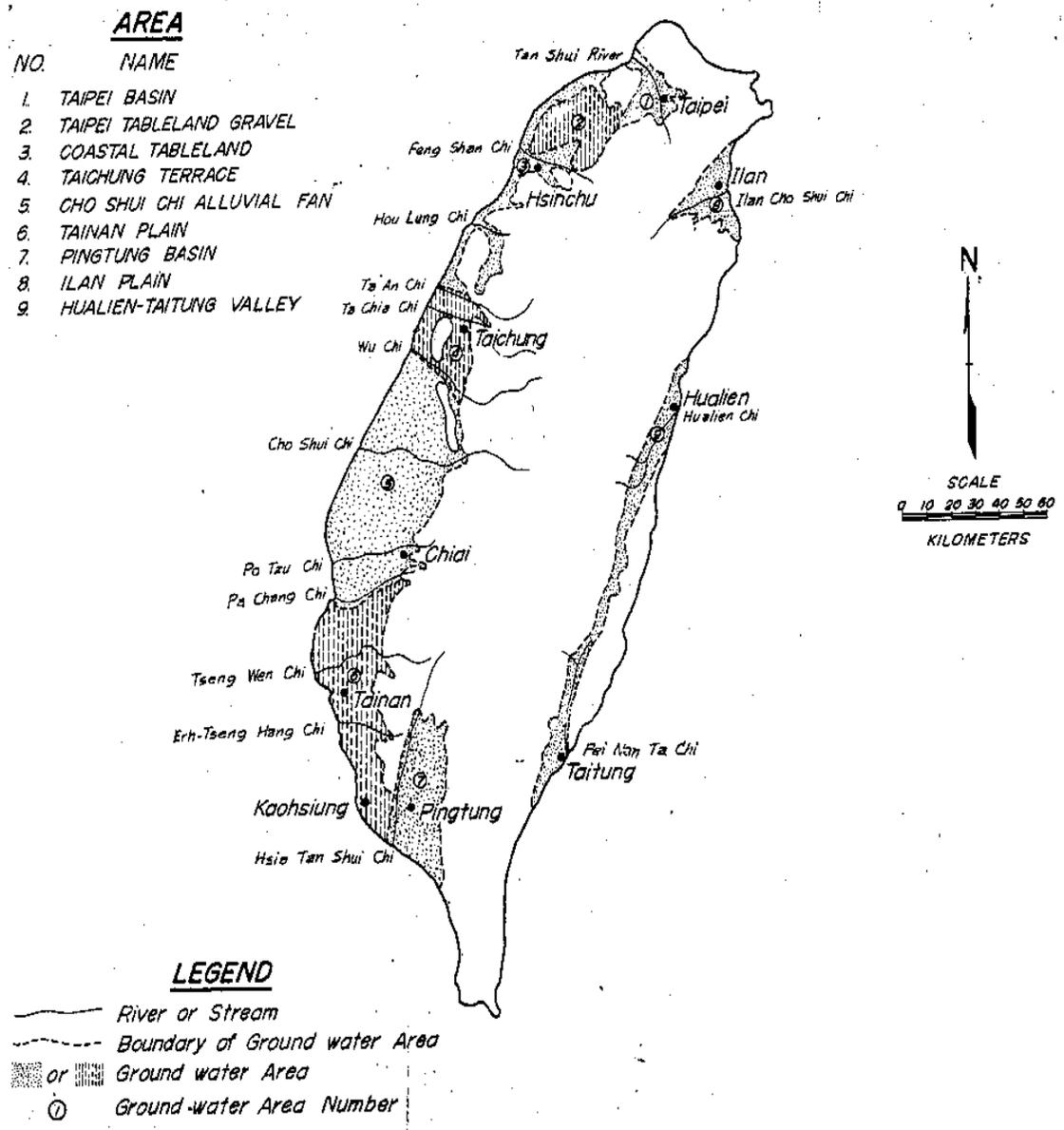
†Water Resources Agency, Ministry of Economic Affairs

- Monitor radon-222 in Taiwan groundwaters for earthquake prediction.



G. Igarashi, et. al., Science, 269, 60-61, 1995.

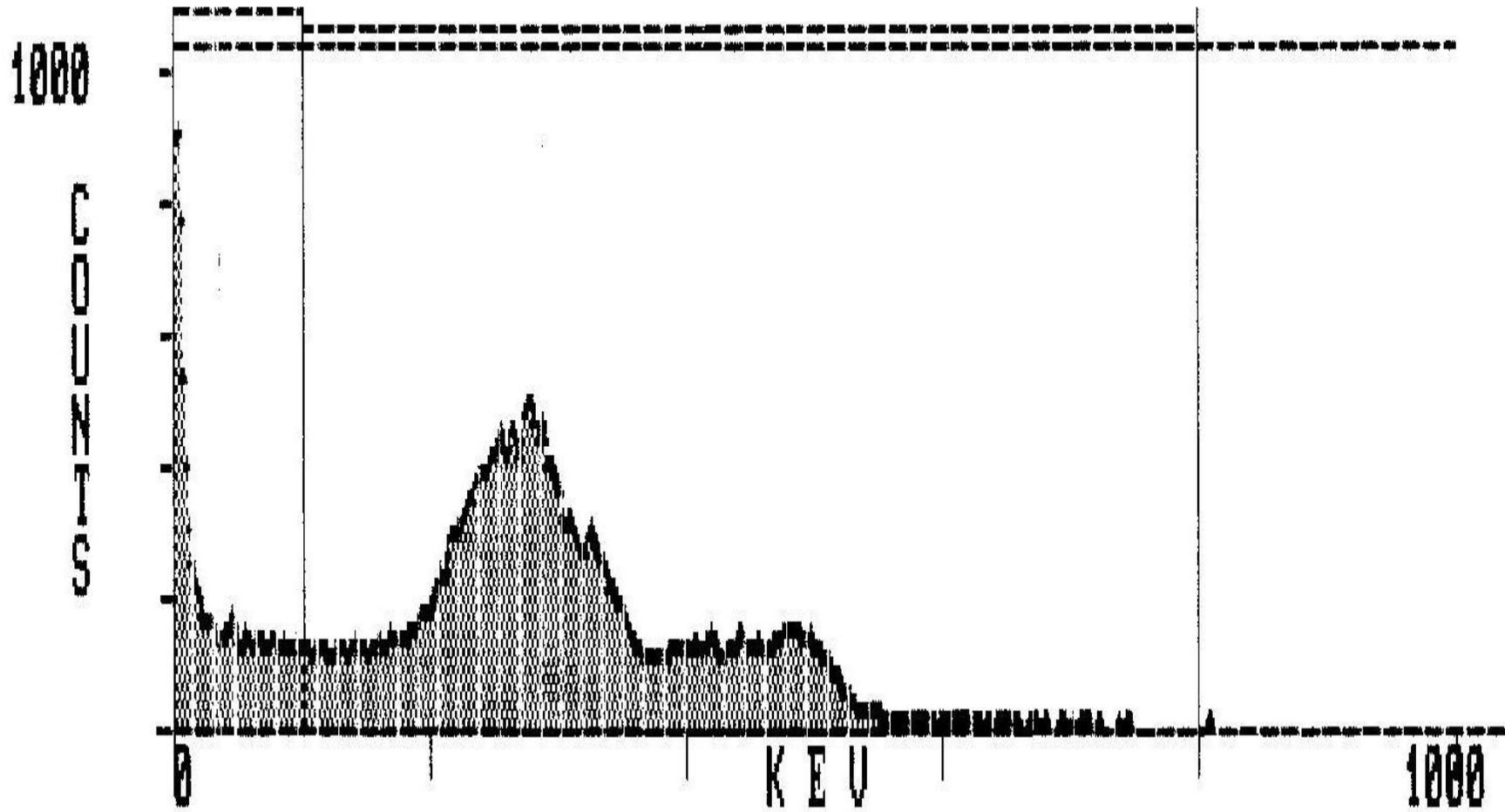
Major ground water areas in Taiwan.



Number of wells sampled for radon-222 analyses in the four groundwater areas in Taiwan.

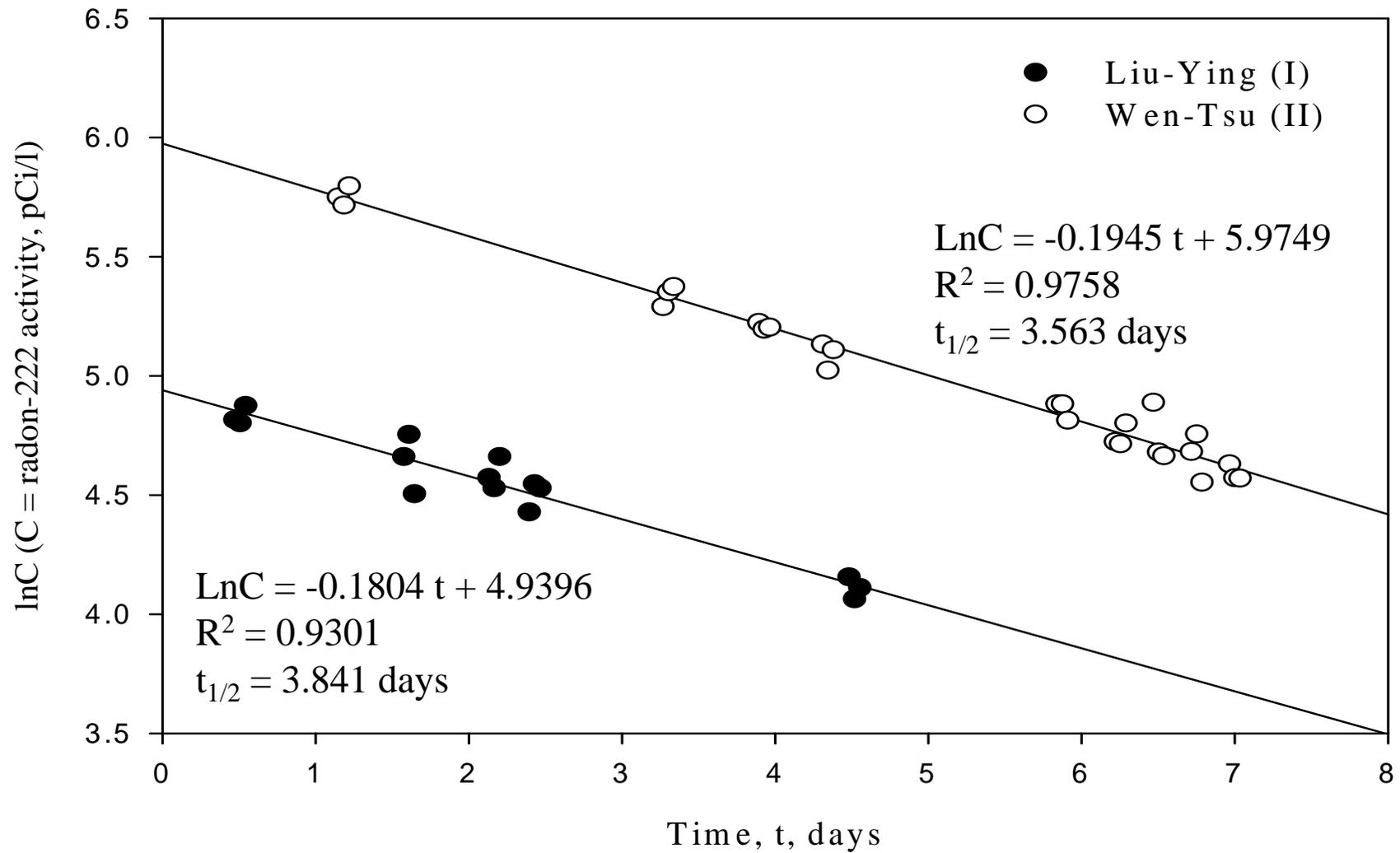
Groundwater area	No. of wells sampled
Hsinchu-Miaoli Coastal Area	33
Choshui River Alluvial Fan	171
Tainan Plain	142
Ilan Plain	37
Total	383

Liquid Scintillation Counting



Alpha spectrum of radon-222 and its daughter nuclides.

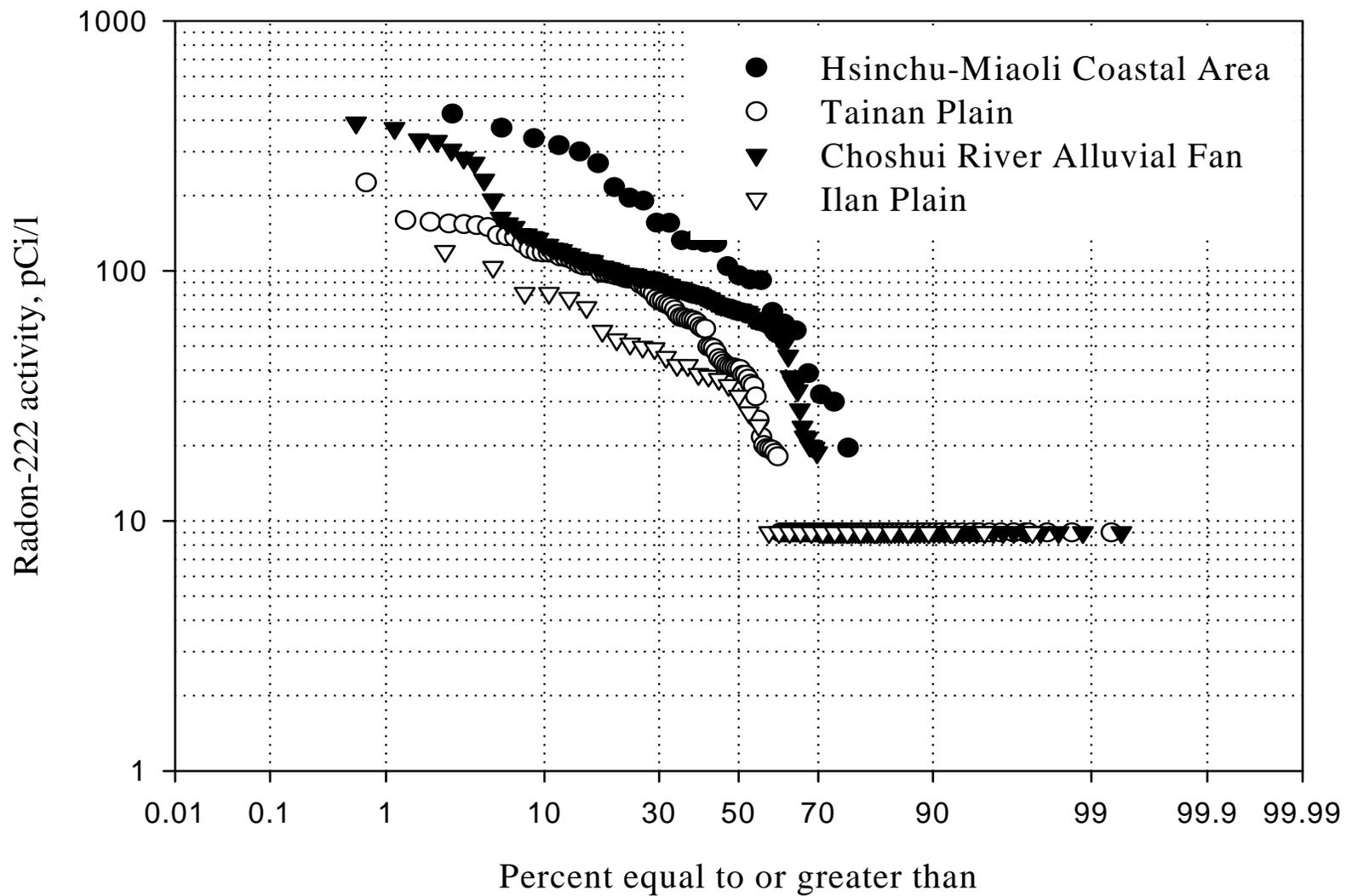
Measurement of half life from semi-logarithmic decay curve.



Summary of statistical properties of distributions of radon-222 for the four groundwater areas in Taiwan.

Groundwater area	Radon-222 concentration, pCi/l		
	Minimum	Geometric mean	Maximum
Hsinchu-Miaoli Coastal Area	<18	69	426
Choshui River Alluvial Fan	<18	43	391
Tainan Plain	<18	31	226
Ilan Plain	<18	24	120

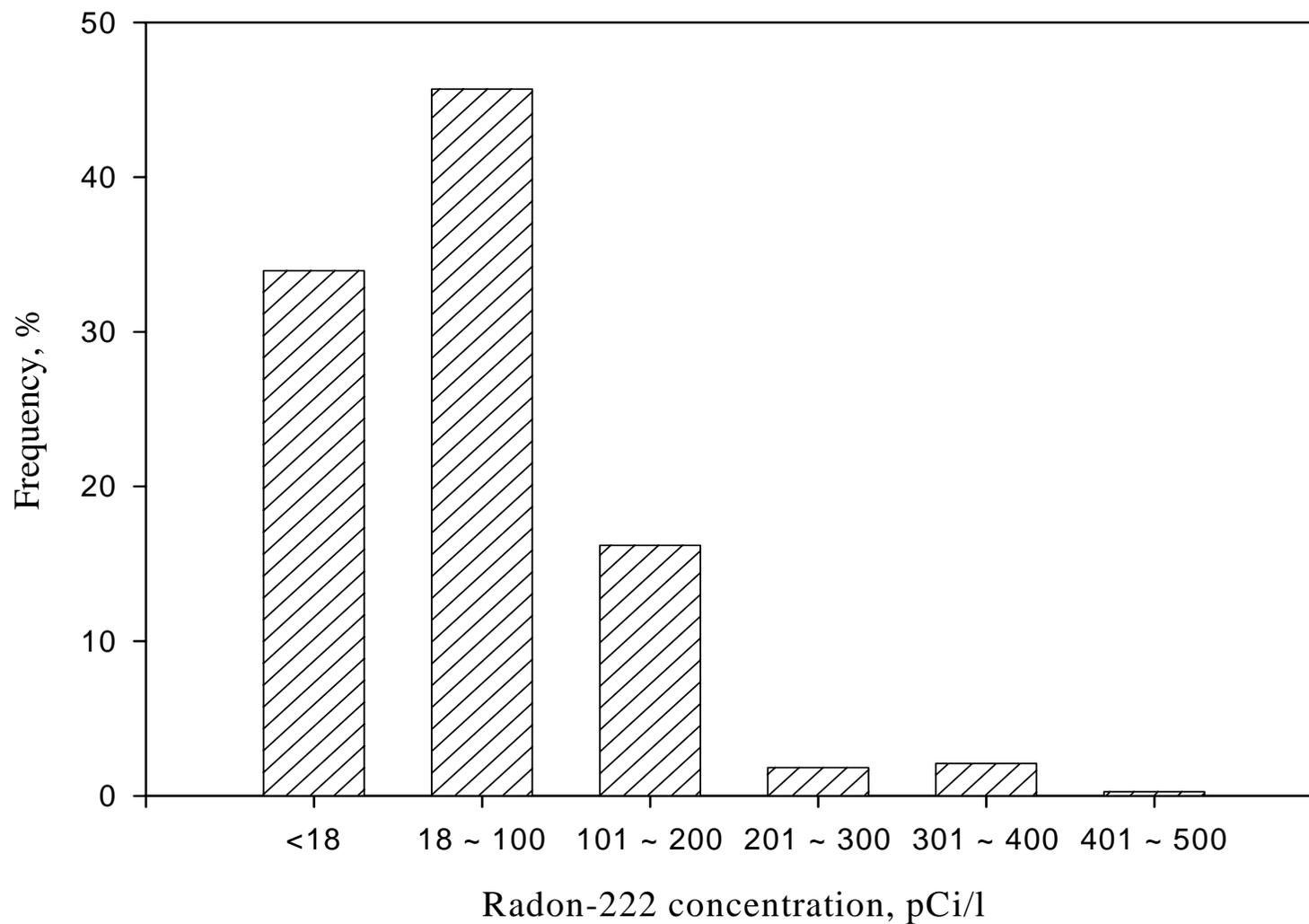
Probability plot of radon-222 for four groundwater areas in Taiwan.



Concluding Remarks

- Detection limit of radon-222 in groundwater
18 pCi/Liter
- 66% of wells can be used to monitor for earthquake prediction.
- Applied in Tiechenshan Gas Field.

Frequency distribution of radon-222 for four groundwater areas in Taiwan.



Monitor radon-222 in Tiechenshan Gas Field for earthquake prediction.

