

Fukushima Daiichi Nuclear Power Station: Uranium analysis result in the soil

1. Analysis result

(Unit: Bq/kg·dry soil)

Sampling spot ( ):Distance from the stack of Unit 1, 2	Sampling date/Analyzed organization	U-234	U-235	U-238
Playground (west-northwest approx. 500m)	June 20/ Japan Chemical Analysis Center	11 ± 0.58	0.57 ± 0.097	12 ± 0.59
Near the industrial waste disposal plant (south-southwest approx. 500m)		6.4 ± 0.37	0.40 ± 0.079	6.2 ± 0.35
Adjacent to industrial waste disposal facility ( south-southwest approx. 500m )		5.7 ± 0.33	0.22 ± 0.055	5.7 ± 0.33
Natural Uranium specific radioactivity (Bq/g)		1.2 × 10 <sup>4</sup>	5.7 × 10 <sup>2</sup>	1.2 × 10 <sup>4</sup>
Natural Uranium abundance ratio (wt%)		0.0054	0.72	99.3

2. Evaluation

Uranium detected for this analysis is valued as the same level as in the natural condition for the following reasons.

- Radioactive densities of U-234 and U-238 are same in the sampling , and , where Uranium in nature forms radioactive balance (same radioactivity density between U-234 and U-238).
- U-235 abundance ratio of the sampling , and are almost same as the natural U-235 abundance ratio, which is  $U-235/U-238 = 0.0073$ .

U-235 of the sampling :  $7.1 \times 10^{-6} \text{g/kg} \cdot \text{Dry soil}$  (0.57Bq/kg·Dry soil)

U-238 of the sampling :  $9.6 \times 10^{-4} \text{g/kg} \cdot \text{Dry soil}$  (12Bq/kg·Dry soil)

$U-235/U-238=0.0074^*$

U-235 of the sampling :  $5.0 \times 10^{-6} \text{g/kg} \cdot \text{Dry soil}$  (0.40Bq/kg·Dry soil)

U-238 of the sampling :  $5.0 \times 10^{-4} \text{g/kg} \cdot \text{Dry soil}$  (6.2Bq/kg·Dry soil)

$U-235/U-238=0.010^*$

U-235 of the sampling :  $2.7 \times 10^{-6} \text{g/kg} \cdot \text{Dry soil}$  (0.22Bq/kg·Dry soil)

U-238 of the sampling :  $4.6 \times 10^{-4} \text{g/kg} \cdot \text{Dry soil}$  (5.7Bq/kg·Dry soil)

$U-235/U-238=0.0060^*$

\* The above values may not match the calculation due to the rounding off.

END