

**Results of ALPS Treated Water Marine Monitoring:
Seawater Survey (tritium) (August-September, 2023) * Additional announcement**

1 Outline of survey

(1) Date of sampling

August 25-September 15, 2023

*The present survey (the precise analysis for tritium in seawater) is set to be executed four times a year at a total of 29 sampling points. The analysis results for the samples collected on August 25 were announced on October 30, and this time, analysis results for the remaining samples collected between September 5 and 15 is announced.

(2) Sampling points

27 sampling points on coastal waters in the Fukushima Prefecture, 1 sampling point on coastal waters in the Miyagi Prefecture, and 1 sampling point on coastal waters in the Ibaraki Prefecture.

* Water samples were collected from surface and bottom layers at 23 sampling points within 30 km of ALPS treated water discharge outlet and from surface layer at 6 sampling points beyond 30 km .

* Results announced this time are from 24 sampling points on coastal waters in Fukushima Prefecture, 1 sampling point on coastal waters in Miyagi Prefecture, and 1 sampling point on coastal waters in Ibaraki Prefecture.

(3) Detail of the survey

- The measurement of radioactive material concentrations in seawater. (tritium)

Analysis with target lower limit of detection of 0.1 Bq/L.

* A target lower limit of detection means a value that is set for quality control to assure at least the detection up to the value when analysis is conducted. Each actual lower limit of detection differs according to samples, and is equal to or lower than a target lower limit of detection.

2 Outline of results

(1) Seawater survey (29 sampling points (52 samples))

Concentrations of tritium in seawater range from below the lower limit of detection to 5.0 Bq/L.

* Newly announced results for samples collected in September are in the range of 0.052 to 0.32 Bq/L at 26 sampling points (40 samples).

(Detailed are attached)

(Maps attached)

Sampling points within 3 km of ALPS treated water discharge outlet analysis result for tritium in seawater

Sampling point	Sampling date	Sampling layer	Sampling depth (m)	Nuclide	Radioactivity concentration ^{*1*2}			Unit
* E-S1	2023/08/25	Surface layer	1.5	H-3	0.081	±	0.0087	Bq/L
E-S1	2023/09/13	Bottom layer	3.9	H-3	0.060	±	0.0082	Bq/L
* E-S3	2023/08/25	Surface layer	1.5	H-3	0.062	±	0.017	Bq/L
E-S3	2023/09/13	Bottom layer	6.3	H-3	0.052	±	0.017	Bq/L
E-S4	2023/09/13	Surface layer	1.5	H-3	0.085	±	0.0089	Bq/L
E-S4	2023/09/13	Bottom layer	6.3	H-3	0.072	±	0.0084	Bq/L
* E-S5	2023/08/25	Surface layer	1.5	H-3	0.13	±	0.026	Bq/L
E-S5	2023/09/13	Bottom layer	9.3	H-3	0.070	±	0.017	Bq/L
* E-S10	2023/08/25	Surface layer	1.5	H-3	0.71	±	0.038	Bq/L
* E-S10	2023/08/25	Bottom layer	12.6	H-3	0.11	±	0.020	Bq/L
* E-S13	2023/08/25	Surface layer	1.5	H-3	5.0	±	0.21	Bq/L
E-S13	2023/09/13	Bottom layer	10.0	H-3	0.064	±	0.017	Bq/L
E-S14	2023/09/13	Surface layer	1.5	H-3	0.097	±	0.017	Bq/L
E-S14	2023/09/13	Bottom layer	6.5	H-3	0.052	±	0.017	Bq/L
* E-S15	2023/08/25	Surface layer	1.5	H-3	0.067	±	0.017	Bq/L
E-S15	2023/09/15	Bottom layer	6.0	H-3	0.10	±	0.017	Bq/L
* E-S16	2023/08/25	Surface layer	1.5	H-3	0.051	±	0.017	Bq/L
E-S16	2023/09/13	Bottom layer	4.3	H-3	0.096	±	0.017	Bq/L

*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value below 10 Bq/L).

*3 The analysis results marked with asterisks in the “Sampling point” column were announced on October 30.

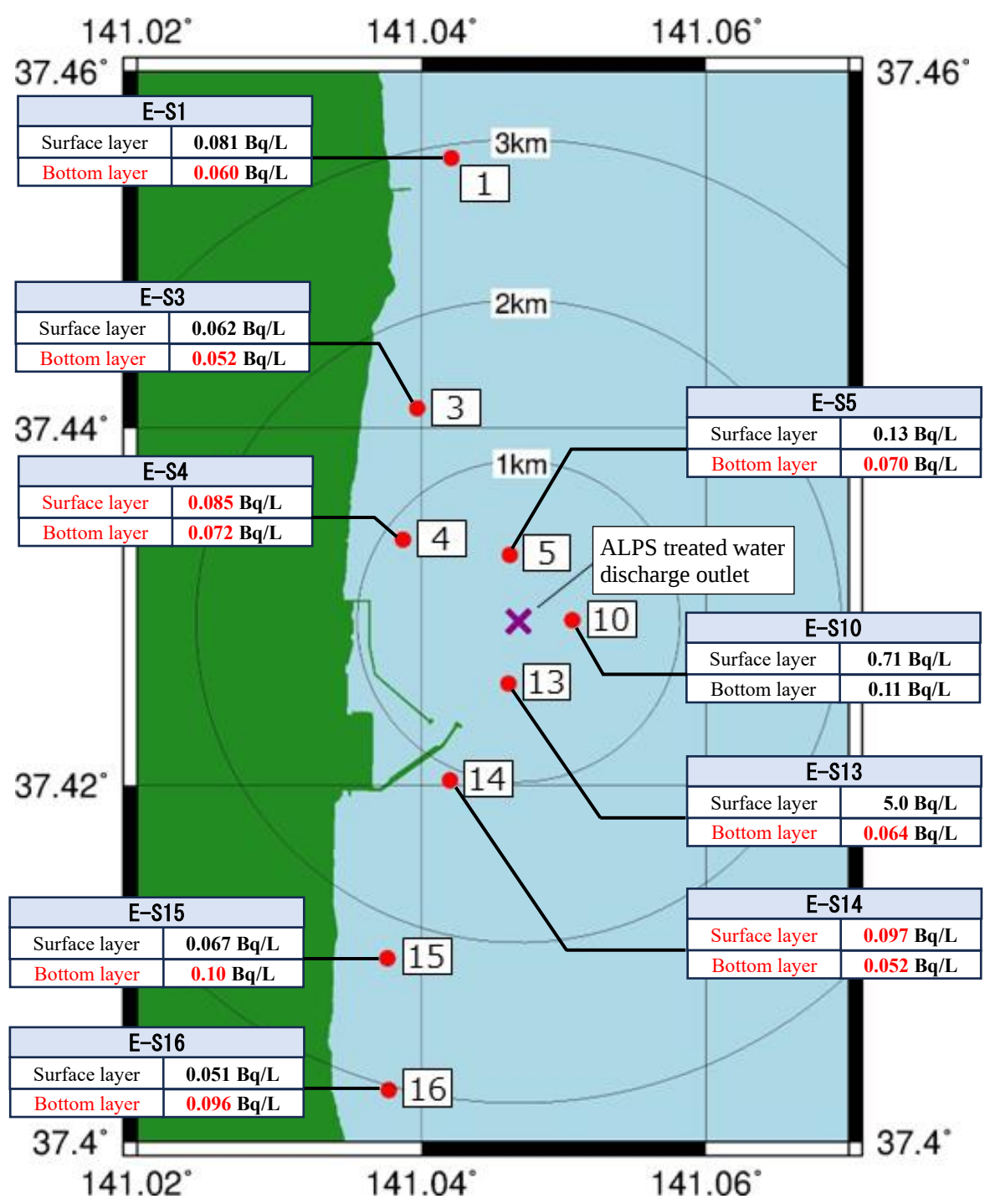
Sampling points beyond 3 km of ALPS treated water discharge outlet analysis result for tritium in seawater

Sampling point	Sampling date	Sampling layer	Sampling depth (m)	Nuclide	Radioactivity concentration ^{*1*2}		Unit
E-S17	2023/09/05	Surface layer	1.5	H-3	0.095	± 0.0096	Bq/L
E-S18	2023/09/05	Surface layer	1.5	H-3	0.072	± 0.0088	Bq/L
E-S19	2023/09/05	Surface layer	1.5	H-3	0.068	± 0.0089	Bq/L
E-S19	2023/09/05	Bottom layer	9.7	H-3	0.054	± 0.0084	Bq/L
* E-S20	2023/08/25	Surface layer	1.5	H-3	0.075	± 0.011	Bq/L
E-S20	2023/09/14	Bottom layer	6.9	H-3	0.085	± 0.011	Bq/L
E-S21	2023/09/14	Surface layer	1.5	H-3	0.095	± 0.011	Bq/L
E-S21	2023/09/14	Bottom layer	21.5	H-3	0.093	± 0.011	Bq/L
E-S22	2023/09/13	Surface layer	1.5	H-3	0.10	± 0.011	Bq/L
E-S22	2023/09/13	Bottom layer	7.3	H-3	0.062	± 0.011	Bq/L
E-S23	2023/09/14	Surface layer	1.5	H-3	0.10	± 0.011	Bq/L
E-S23	2023/09/14	Bottom layer	20.4	H-3	0.069	± 0.011	Bq/L
E-S24	2023/09/14	Surface layer	1.5	H-3	0.077	± 0.011	Bq/L
E-S24	2023/09/14	Bottom layer	23.8	H-3	0.070	± 0.011	Bq/L
E-S25	2023/09/14	Surface layer	1.5	H-3	0.065	± 0.011	Bq/L
E-S25	2023/09/14	Bottom layer	42.3	H-3	0.057	± 0.011	Bq/L
E-S26	2023/09/15	Surface layer	1.5	H-3	0.065	± 0.011	Bq/L
E-S26	2023/09/15	Bottom layer	22.4	H-3	0.086	± 0.012	Bq/L
E-S27	2023/09/15	Surface layer	1.5	H-3	0.11	± 0.012	Bq/L
E-S27	2023/09/15	Bottom layer	9.2	H-3	0.093	± 0.011	Bq/L
E-S28	2023/09/15	Surface layer	1.5	H-3	0.079	± 0.011	Bq/L
E-S28	2023/09/15	Bottom layer	31.3	H-3	0.068	± 0.011	Bq/L
* E-S29	2023/08/25	Surface layer	1.5	H-3	0.077	± 0.011	Bq/L
E-S29	2023/09/15	Bottom layer	10.3	H-3	0.098	± 0.012	Bq/L
E-S30	2023/09/06	Surface layer	1.5	H-3	0.095	± 0.011	Bq/L
E-S30	2023/09/06	Bottom layer	11.7	H-3	0.068	± 0.011	Bq/L
E-S31	2023/09/15	Surface layer	1.5	H-3	0.16	± 0.013	Bq/L
E-S32	2023/09/06	Surface layer	1.5	H-3	0.068	± 0.011	Bq/L
* E-S33	2023/08/25	Surface layer	1.5	H-3	< 0.05		Bq/L
E-S34	2023/09/05	Surface layer	1.5	H-3	0.062	± 0.0081	Bq/L
E-S34	2023/09/05	Bottom layer	11.6	H-3	0.068	± 0.0083	Bq/L
E-S35	2023/09/06	Surface layer	1.5	H-3	0.32	± 0.016	Bq/L
E-S35	2023/09/06	Bottom layer	12.6	H-3	0.11	± 0.010	Bq/L
* E-S36	2023/08/25	Surface layer	1.5	H-3	< 0.06		Bq/L

*1 Radioactivity concentrations are presented as radioactivity concentration ± combined standard uncertainty.

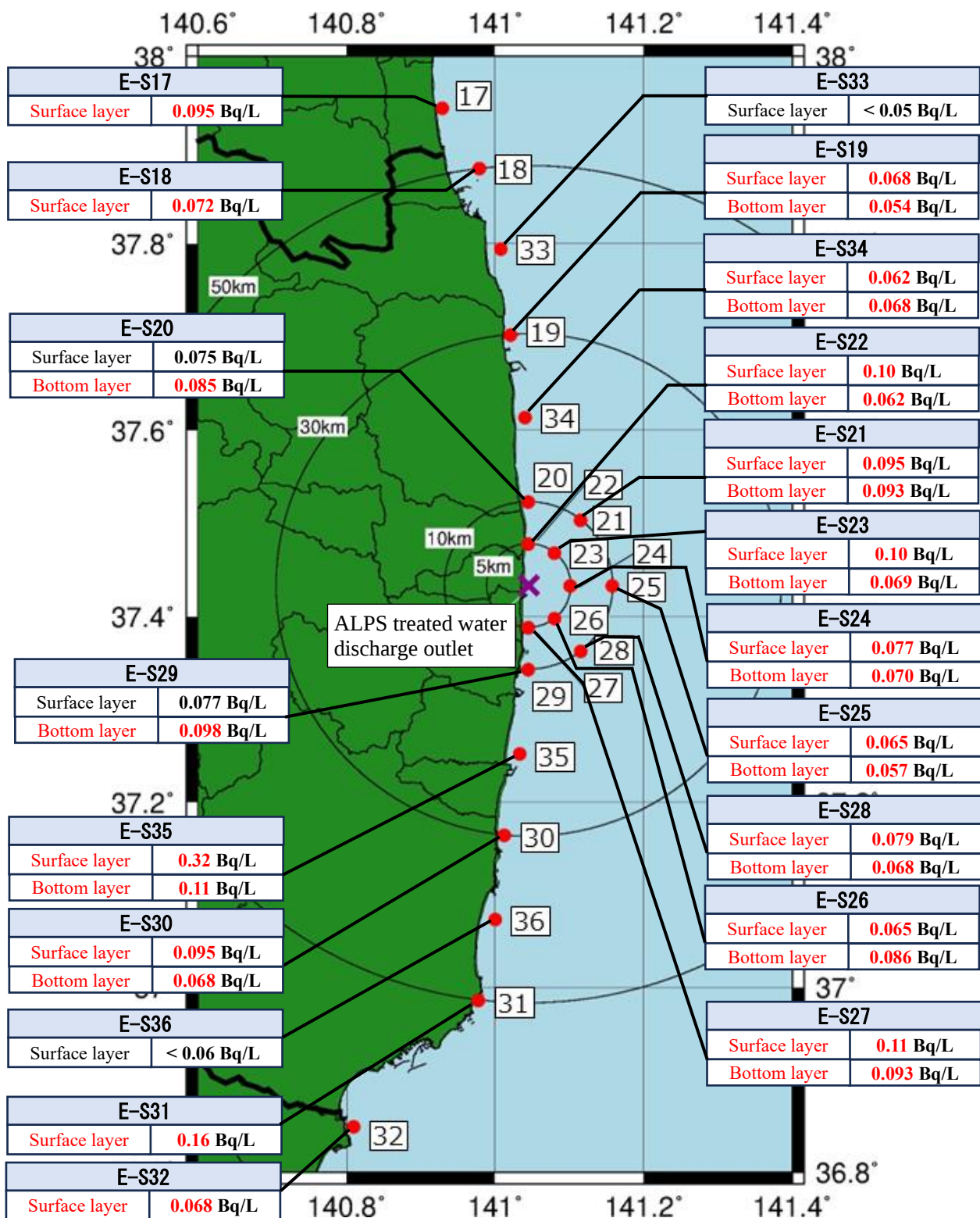
*2 Values below detection limit are shown by lower limit of detection (e.g., “<10 Bq/L” indicates a value below 10 Bq/L).

*3 The analysis results marked with asterisks in the “Sampling point” column were announced on October 30.



- * Numbers in the map are shown with “E-S” omitted from labels in the map (e.g., E-S1 is marked as 1).
- * The results newly announced this time are shown in red. The black letters are the analysis results announced on October 30.

Fig. 1 Sampling points within 3 km of ALPS treated water discharge outlet



* Numbers in the map are shown with “E-S” omitted from labels in the map (e.g., E-S20 is marked as 20).

* The results newly announced this time are shown in red. The black letters are the analysis results announced on October 30.

Fig. 2 Sampling points beyond 3 km of ALPS treated water discharge outlet