

Surface Sediment Samples of the Japan Sea and the Surrounding Seas Collected by R/V *Tansei-maru* and Kanazawa University (1995 to 2005)

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In order to pursue the "Time-spatial distribution of the submarine surface sediments and assemblages of micro-organisms in the Japan Sea", and "Oceanographic development of the Japan Sea since the Last Glacier Maximum", twelve research cruises were made in the Japanese economic waters of the Japan Sea and surrounding seas such as the East China and Okhotsk Seas using R/V *Tansei-maru* (610 G/T) belonging to the Japan Agency of Marine-Earth Science and Technology (to Ocean Research Institute, University of Tokyo up to March 2004) from 1995 to 2005 (Table 1). The cruise reports of them were published for the cruises up to KT03-10 (Tsukawaki *et al.*, 1997; 1998; 1999; 2000; 2001; 2002; 2003; 2005).

Recovered 365 submarine surface sediments and 47 submarine cored sediments from these seas were applied above-stated scientific researches (*e. g.* Takai *et al.*, 2002; Ozawa *et al.*, 2004; Ozawa and Tsukawaki, 2008) and were put to practical use such as oceanic pollution of the submarine sediments (*e. g.* Furuuchi *et al.*, 2008). Further, they were also made good use as educational materials for both undergraduate and graduate courses of Kanazawa University and other universities.

Since all sediment samples have been kept in a storeroom of the General Education Hall of Kanazawa University, their details were compiled in this article aiming for full and the best use of these samples within the university and outside it.

Figure 1 indicates all sampling localities of the submarine surface sediments in the Japan Sea and the

surrounding seas including samples obtained in the cruise KT92-13 led by Tohoku University, and Table 2 shows their details such as geodesic position, water depth, sampling date and time, and brief description of the sediments. All sediment samples were recovered using an Okean-type grab surface sampler of the Ocean Research Institute of the University of Tokyo. Sampling methods and procedures of the surface sediments are referable to the cruise reports.

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References

- Furuuchi, M., Tsukawaki, S. and Kogawara, T., 2008. Preliminary investigation on characteristics of poly-cyclic aromatic hydrocarbons (PAHs) in sediments in Sea of Japan. *Annals of the Research Institute of the Japan Sea Region*, **39**, 1-8 (in Japanese with English abstract).

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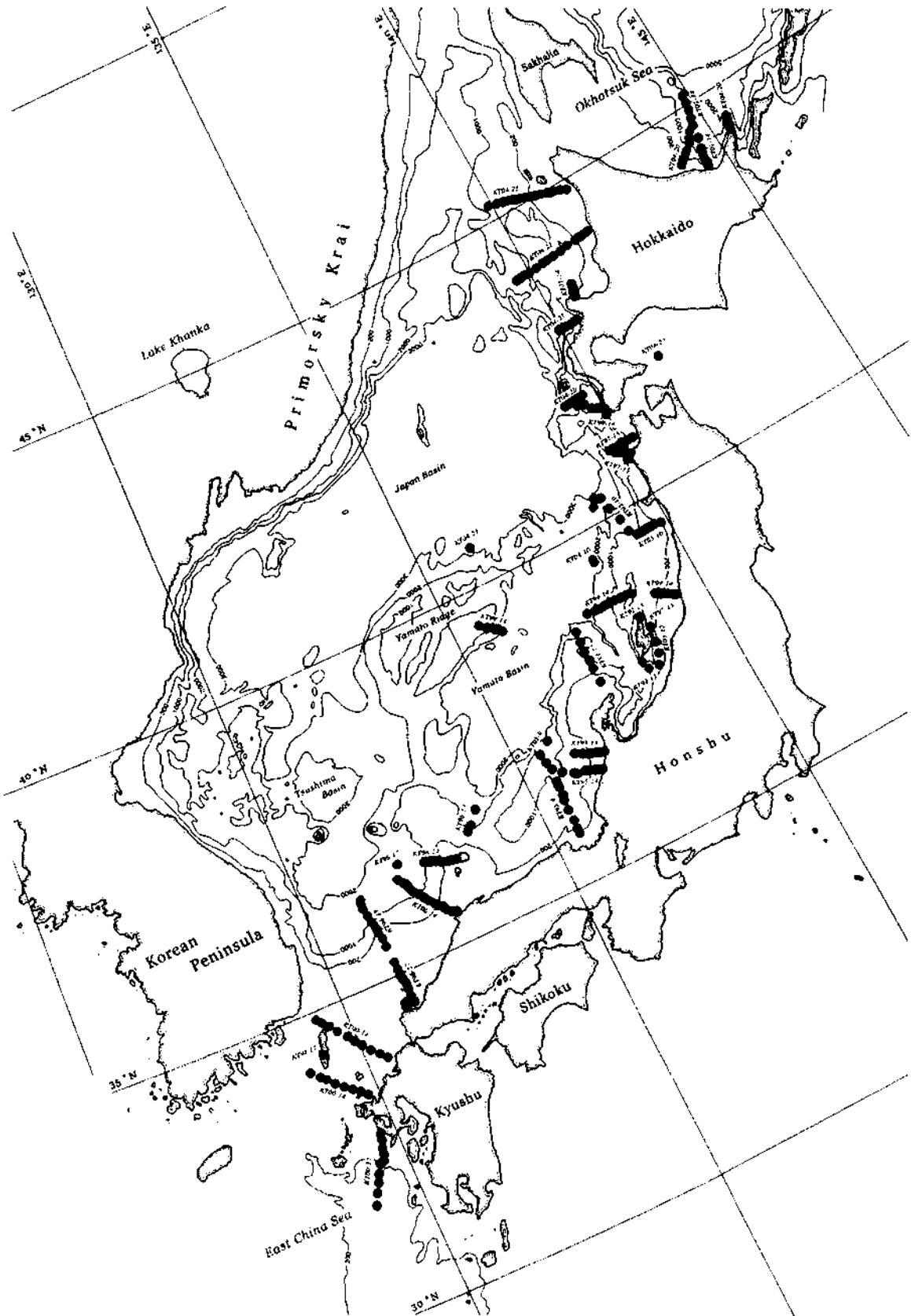


Fig.1 Localities of all submarine surface sediment samples in the Japan Sea and the surrounding seas collected by R/V *Tansei-maru* and Kanazawa University from 1995 - 2005 (samples of KT92-13 in 2003 are included; based on Geographical Survey of Japan 2003).

- Geographical Survey of Japan, 2003: *1:5,000,000 Japan and the Environs* (in Japanese).
- Ozawa, H. and Tsukawaki, S., 2008: Preliminary report on modern ostracods in surface sediment samples collected during R. V. *Tansei-maru* cruise KT04-20 in the southwestern Okhotsk Sea and the northern Japan Sea off Hokkaido, north Japan. *Annals of the Research Institute of the Japan Sea Region*, **39**, 31-48.
- Ozawa, H., Kamiya, T., Itoh, H. and Tsukawaki, S., 2004: Water temperature, salinity ranges and ecological significance of the three families of Recent cold-water ostracods in and around the Japan Sea. *Paleontological Research*, **8**, 11-28.
- Ozawa, H., Kamiya, T., Kato, M. and Tsukawaki, S., 2004: Preliminary report on the Recent ostracodes in sediment samples from the R. V. *Tansei-maru* cruise KT01-14 in the southwestern part of Okhotsk Sea and the northeastern part of the Japan Sea off Hokkaido. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **35**, 33-45.
- Takei, T., Minoura, K., Tsukawaki, S. and Nakamura, T., 2002: Intrusion of a branch of the Oyashio Current into the Japan Sea during the Holocene. *Paleoceanography*, **17**, 1-10.
- Tsukawaki, S., 1998: Preliminary results from the R. V. *Tansei-maru* cruise KT95-14 Leg 2 in the southern marginal area in the Japan Sea - part II: soft X-ray radiograph observations of cored sediments-. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **29**, 67-89.
- Tsukawaki, S., 2003: Preliminary results from the R. V. *Tansei-maru* cruise KT99-14 in the central and northeastern marginal parts of the Japan Sea (Part II: depositional facies of P-9 core from the Yamato Bank). *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **34**, 55-65.
- Tsukawaki, S. and Chatterjee, D., 1995: Depositional facies of cored sediments from the upper course of the Toyama Deep Sea Channel in Japan Sea. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **27**, 17-38 (in Japanese with English abstract).
- Tsukawaki, S., Nemoto, N., Maruyama, T., Shimamoto, M., Sasaki, O., Motoyama, I., Irizuki, T., Kato, H., Chatterjee, D., Fujimoto, E. and Hasegawa, S., 1993: Preliminary results from the R. V. *Tansei-maru* cruise KT92-13 (Leg 2) in the eastern marginal area of the Japan Sea. *Sci. Rep., Hirosaki Univ.*, **40**, 61-99.
- Tsukawaki, S., Kamiya, T., Kato, M., Matsuzaka, T., Naraoka, H., Negishi, K., Ozawa, H. and Ishiwatari, R., 1997: Preliminary results from the R. V. *Tansei-maru* cruise KT95-14 Leg 2 in the southern marginal area in the Japan Sea - part I: sediments, benthic foraminifers and ostracodes-. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **28**, 13-43.
- Tsukawaki, S., Kamiya, T., Ozawa, H. and Kato, M., 1998: Preliminary results on the sediment samplings during the R. V. *Tansei-maru* cruise KT96-17 Leg 2 in the southwestern part of the Japan Sea - sediments, benthic foraminifers and ostracodes. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **29**, 51-65.
- Tsukawaki, S., Ozawa, H., Domitsu, H., Tanaka, Y., Kamiya, T., Kato, M. and Oda, M., 1999: Preliminary results from R. V. *Tansei-maru* cruise KT97-15 in the eastern marginal part of the Japan Sea west off the Tsugaru Peninsula, NE Japan - sediments, benthic and planktonic foraminifers, and ostracodes -. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **30**, 99-139.
- Tsukawaki, S., Ozawa, H., Domitsu, H., Kamiya, T., Kato, M. and Oda, M., 2000: Preliminary results from R. V. *Tansei-maru* cruise KT98-17 in the southwestern marginal part of the Japan Sea - sediments, benthic and planktonic foraminifers, and ostracodes -. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **31**, 89-119.
- Tsukawaki, S., Ozawa, H., Domitsu, H., Hirano, K., Maeda, T., Tomii, Y., Saito, S., Xu, X., Kamiya, T., Kato, M. and Oda, M., 2001: Preliminary results from R. V. *Tansei-maru* cruise KT99-14 in the central and northeastern marginal parts of the Japan Sea - sediments, benthic and planktonic foraminifers, and ostracodes (Part 1: surface sediments). *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **32**, 1-27.
- Tsukawaki, S., Kuroda, J., Ozawa, H., Kamiya, T. and Kato, M., 2002: Preliminary results from R. V. *Tansei-maru* cruises KT00-14 and KT00-17 in the southwestern marginal parts of the Japan Sea and the northeastern marginal part of the East China Sea. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **33**, 43-55.
- Tsukawaki, S., Ozawa, H. and Ooji, A., 2003: Preliminary results from sediment sampling of the R. V. *Tansei-maru* cruise KT01-14 in the southwestern marginal part of the Okhotsk Sea and the northeastern marginal part of the Japan Sea. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **34**, 101-111.
- Tsukawaki, S., Ohtaka, A., Tanaka, G. and Watanabe, M., 2005: Preliminary results from sediment sampling of the R. V. *Tansei-maru* cruise KT03-10 in the eastern marginal part of the Japan Sea off Akita and Niigata Prefectures. *Bull. Japan Sea Res. Inst., Kanazawa Univ.*, **36**, 69-81.

Table 1 List of cruises of R/V *Tansei-maru* led by Kanazawa University for submarine sediment samplings in the Japan Sea and the surrounding seas from 1995 - 2005 (KT92-13 cruise led by Tohoku University is included).

Cruise	Duration	Departure / Arrival	Survey Area(s)	Onboard Scientist(s) from Kanazawa University	Reference(s)
KT92-13 Leg 2	14 - 18 September, 1992	Niigata / Sakaiminato	off-Niigata, off-Toyama, off-Ishikawa	S. Tsukawaki (Tohoku University)	Tsukawaki <i>et al.</i> , 1993; Tsukawaki & Chatterjee, 1996
KT95-14 Leg 2	26 Sep. - 2 Oct., 1995	Hakodate / Shimonoseki	off-Ishikawa, off-Fukui, off-Tulori	S. Tsukawaki, T. Kamiya, M. Kato, T. Matsuzaka, T. Furubata	Tsukawaki <i>et al.</i> , 1997; Tsukawaki 1998
KT96-17 Leg 2	19 - 24 September, 1996	Niigata / Shimonoseki	off-Tottori, off-Shimane, off-Yamaguchi	S. Tsukawaki, T. Kamiya	Tsukawaki <i>et al.</i> , 1998
KT97-15	10 - 16 September, 1997	Hachinohe / Niigata	off-Tsugaru Peninsula	S. Tsukawaki, T. Kamiya	Tsukawaki <i>et al.</i> , 1999
KT98-17	25 Sep. - 2 Oct., 1998	Nagoya / Shimonoseki	off-Yamaguchi	S. Tsukawaki, T. Kamiya	Tsukawaki <i>et al.</i> , 2000
KT99-14	13 - 21 September, 1999	Hakodate / Shimonoseki	off-Niigata, off-Aomori, Yamato Bank	S. Tsukawaki, M. Kato, H. Ozawa, Y. Tomii, T. Maeda	Tsukawaki <i>et al.</i> , 2001; Tsukawaki, 2003
KT00-14	24 Sep. - 2 October, 2000	Hakata / Shimonoseki	off-Shimane, off-Tsushima	S. Tsukawaki, T. Kamiya, M. Kato, A. Motoki	Tsukawaki <i>et al.</i> , 2002
KT00-17 Leg 1	11 - 17 December, 2000	Nagasaki / Yokosuka	off-Nagasaki (East China Sea)	S. Tsukawaki	Tsukawaki <i>et al.</i> , 2002
KT01-14 Leg 2	17 - 24 September, 2001	Hachinohe / Otaru	off-Otaru, off-Abashiri (Okhotsk Sea)	S. Tsukawaki, H. Ozawa, A. Ooji	Tsukawaki <i>et al.</i> , 2003
KT03-10	14 - 20 July, 2003	Niigata / Niigata	off-Akita, Sado Basin	S. Tsukawaki, G. Tanaka	Tsukawaki <i>et al.</i> , 2005
KT04-20	12 - 19 September, 2004	Abashiri / Otaru	off-Otaru, off-Shiretoko (Okhotsk Sea)	S. Tsukawaki, A. Ooji	Ozawa & Tsukawaki, 2008
KT04-21	22 - 29 September, 2004	Otaru / Toyama	off-Hokkaido, Yamato Bank	S. Tsukawaki, A. Ooji, M. Furuuchi, Y. Hayashi, H. Domitsu, T. Sakano, T. Yamaguchi, Y. Ooue, T. Takeduchi, Y. Shirakami, Y. Shimizu	
KT05-9	2 - 8 May, 2005	Hakodate / Toyama	off-Wakasa Bay, Yamato Bank	S. Tsukawaki, M. Furuuchi, T. Kamiya, H. Domitsu, T. Sakano, T. Murase, M. Kinnakiri	

Table 2 List of all submarine surface sediment samples in the Japan Sea and the surrounding seas collected by R/V *Taisei-maru* and Kanazawa University from 1995 - 2005 (samples of K192-13 in 2003 are included).

Station	Locality	Date	Time	Longitude (E)	Latitude (N)	Water Depth (m)	Recovery	Sediment Type
K192-13 G-1	flat top of Sado Bank	14 Sep 1992	19:16	138 21.7	37 38.0	160	25%	gravelly calcareous fragment-bearing greyish yellow fine- to coarse-grained sand
K192-13 G-2	eastern slope of Miko-se	15 Sep 1992	15:46	138 38.1	38 52.3	221	60%	molluscan shell- and shell-fragment-rich dusky yellow fine- to medium-grained sand
K192-13 G-3	eastern slope of Miko-se	15 Sep 1992	16:04	138 47.8	38 52.2	149	40%	molluscan shell- and shell-fragment-rich dusky yellow fine- to medium-grained sand
K192-13 G-4	flat top of Miko-se	15 Sep 1992	17:08	138 39.8	38 46.9	123	35%	molluscan shell- and shell-fragment-rich dusky yellow fine- to medium-grained sand
K192-13 G-5	north off-Noto Peninsula	16 Sep 1992	20:15	137 17.4	38 01.5	578	90%	greyish olive homogeneous mud
K192-13 G-6	north off-Noto Peninsula	16 Sep 1992	21:24	137 16.0	38 08.1	1,120	75%	greyish olive homogeneous mud
K192-13 G-7	north off-Noto Peninsula	16 Sep 1992	22:53	137 14.2	38 16.4	1,298	0%	<i>no recovery</i>
K192-13 G-8	north off-Noto Peninsula	16 Sep 1992	23:35	137 14.5	38 16.2	1,298	5%	greyish olive homogeneous compact mud
K192-13 G-9	north off-Noto Peninsula	17 Sep 1992	01:03	137 14.1	38 26.1	513	15%	olive grey homogeneous muddy fine- to medium-grained grained sand
K192-13 G-10	north off-Noto Peninsula	17 Sep 1992	02:34	137 17.0	38 35.9	1,274	5%	greyish olive homogeneous mud
K192-13 G-11	south off-Sado Island	14 Sep 1992	20:35	138 12.3	37 44.2	150	25%	granule-gravel-, molluscan shell- and shell-fragment-rich greyish yellow fine- to medium-grained sand
K192-13 G-12	north off-Sado Island	15 Sep 1992	01:30	138 32.1	38 30.5	136	15%	molluscan shell- and shell-fragment-rich fine- to medium-grained sand
K192-13 G-13	flat top of Miko-se	15 Sep 1992	03:32	138 33.9	38 47.5	170	25%	molluscan shell- and shell-fragment-rich fine- to medium-grained sand
K195-14 G-2	northwest off-Kanazawa	30 Sep 1995	16:58	135 49.9	36 51.6	999	30%	olive grey homogeneous mud
K195-14 G-4	northwest off-Kanazawa	30 Sept. 1995	18:07	135 55.8	36 48.5	498	25%	olive grey homogeneous mud
K195-14 G-6	northwest off-Kanazawa	30 Sept 1995	19:57	136 13.7	36 40.7	250	15%	olive grey homogeneous mud
K195-14 G-7	northwest off-Kanazawa	30 Sept. 1995	20:40	136 18.3	36 38.5	198	60%	olive grey very fine- to fine-grained sandy mud
K195-14 G-8	northwest off-Kanazawa	30 Sept 1995	21:00	136 19.0	36 38.1	177	100%	greyish olive very fine- to fine-grained sandy mud
K195-14 G-9	northwest off-Kanazawa	30 Sept 1995	21:22	136 19.4	36 38.1	151	30%	dusky yellow green muddy fine- to medium-grained sand
K195-14 G-10	northwest off-Kanazawa	30 Sept 1995	21:43	136 20.4	36 37.8	127	40%	dusky yellow green muddy fine- to medium-grained sand
K195-14 G-11	northwest off-Kanazawa	30 Sept 1995	22:11	136 21.7	36 37.0	101	15%	granule- to pebble-gravel-bearing muddy fine- to medium-grained sand
K195-14 G-12	northwest off-Kanazawa	30 Sept 1995	22:43	136 25.0	36 35.0	75	10%	pebble-gravel- and molluscan shell-bearing medium- to coarse-grained sand
K195-11 G-13	northwest off-Kanazawa	30 Sept 1995	23:12	136 28.7	36 34.2	51	15%	pebble-gravel- and molluscan shell-bearing medium- to coarse-grained sand
K195-14 G-14	northwest off-Kanazawa	30 Sept 1995	23:31	136 31.5	36 34.1	29	5%	sandy granule- to pebble-gravels
K195-14 G-15	northwest off-Kanazawa	30 Sept 1995	23:42	136 31.4	36 34.0	29	30%	pebble-gravel-bearing medium- to coarse-grained sand
K195-14 G-16	northwest off-Kanazawa	30 Sept 1995	23:54	136 32.2	36 34.0	18	15%	pebble-gravel-bearing medium- to coarse-grained sand
K195-14 G-18	northwest off-Takamatsui	30 Sept 1995	00:52	136 36.3	36 46.1	48	5%	pebble-gravel-bearing medium- to coarse-grained sand
K195-14 G-18	northwest off-Takamatsui	30 Sept 1995	00:59	136 36.3	36 46.1	48	15%	pebble-gravel-bearing medium- to coarse-grained sand
K195-14 G-19	northwest off-Takamatsui	30 Sept 1995	01:33	136 32.0	36 48.0	75	5%	pebble-gravel- and molluscan shell-bearing medium- to coarse-grained sand
K195-14 G-20	northwest off-Takamatsui	30 Sept 1995	02:12	136 28.3	36 49.8	102	30%	granule- to pebble-gravel-bearing muddy fine- to medium-grained sand
K195-14 G-21	northwest off-Takamatsui	30 Sept 1995	02:39	136 26.5	36 50.2	125	30%	dusky yellow green muddy fine- to medium-grained sand
K195-14 G-22	northwest off-Takamatsui	30 Sept 1995	03:02	136 25.4	36 50.5	149	40%	dusky yellow green muddy fine- to medium-grained sand
K195-14 G-23	northwest off-Takamatsui	30 Sept 1995	03:23	136 24.7	36 51.1	178	65%	greyish olive very fine- to fine-grained sandy mud
K195-14 G-24	northwest off-Takamatsui	30 Sept 1995	03:42	136 24.1	36 51.5	199	65%	olive grey very fine- to fine-grained sandy mud
K195-14 G-25	northwest off-Takamatsui	30 Sept 1995	04:12	136 21.9	36 52.8	251	50%	olive grey homogeneous mud
K195-14 G-26	northwest off-Takamatsui	30 Sept 1995	05:13	136 13.7	36 56.9	352	50%	olive grey homogeneous mud
K196-17 G-1	northeast off-Oki Is.	21 Sep 1996	01:00	133 53.1	36 53.0	1,565	5%	small amounts of olive grey homogeneous mud, no surface layer
K196-17 G-2	northeast off-Oki Is.	21 Sep 1996	05:43	133 36.8	36 41.6	1,092	5%	small amounts of olive grey homogeneous mud, no surface layer
K196-17 G-3	northeast off-Oki Is.	21 Sep 1996	09:27	133 31.6	36 38.9	847	75%	greyish olive green homogeneous mud, no surface layer
K196-17 G-4	northwest off-Oki Is.	21 Sep 1996	17:51	133 11.3	36 17.9	45	5%	a small amount of rounded pebble- to cobble-gravels and molluscan shell-fragments
K196-17 G-4	northwest off-Oki Is.	21 Sep 1996	17:55	133 11.3	36 17.9	45	5%	a small amount of rounded pebble- to cobble-gravels and molluscan shell-fragments
K196-17 G-5	northwest off-Oki Is.	21 Sep 1996	22:05	133 10.5	36 18.0	56	20%	a small amount of rounded pebble- to cobble-gravels and molluscan shell-fragments
K196-17 G-6	northwest off-Oki Is.	21 Sep 1996	22:21	133 10.6	36 18.1	79	10%	molluscan shell-bearing coarse- to very coarse-grained sand
K196-17 G-6	northwest off-Oki Is.	21 Sep 1996	22:24	133 10.6	36 18.2	79	75%	molluscan shell-bearing coarse- to very coarse-grained sand
K196-17 G-7	northwest off-Oki Is.	21 Sep 1996	22:45	133 09.0	36 18.6	105	50%	molluscan shell- and shell fragment-bearing olive grey mucky fine-grained sand
K196-17 G-8	northwest off-Oki Is.	21 Sep 1996	23:03	133 08.3	36 18.9	133	50%	molluscan shell- and shell fragment-bearing olive grey muddy fine-grained sand

Station	Locality	Date	Time	Longitude (E)	Latitude (N)	Water Depth (m)	Recovery	Sediment Type
K196-17 G-9	northwest off- Oki Is	21 Sep 1996	23:23	133 07.1	36 19.2	158	100%	mollican shell- and shell fragment-bearing olive grey muddy fine-grained sand
K196-17 G-9'	northwest off- Oki Is	21 Sep 1996	23:29	133 07.1	36 19.2	157	100%	mollican shell- and shell fragment-bearing olive grey muddy fine-grained sand
K196-17 G-10	northwest off- Oki Is	22 Sep 1996	00:05	133 02.9	36 20.6	179	10%	olive grey homogeneous fine-grained sandy mud
K196-17 G-10'	northwest off- Oki Is	22 Sep 1996	00:15	133 02.8	36 20.6	179	75%	olive grey homogeneous mud
K196-17 G-11	northwest off- Oki Is	22 Sep 1996	01:35	132 51.2	36 24.7	201	75%	olive grey homogeneous mud
K196-17 G-12	northwest off- Oki Is	22 Sep 1996	02:02	132 48.1	36 25.9	252	5%	no recovery
K196-17 G-12'	northwest off- Oki Is	22 Sep 1996	02:12	132 48.0	36 25.8	253	50%	greyish olive very fine-grained sandy mud
K196-17 G-13	northwest off- Oki Is	22 Sep 1996	02:50	132 44.8	36 27.0	353	40%	greyish olive very fine-grained sandy mud
K196-17 G-14	northwest off- Oki Is	22 Sep 1996	03:22	132 44.2	36 27.2	492	100%	greyish olive very fine-grained sandy mud
K196-17 G-15	SE slope of Tsushima B	22 Sep 1996	04:05	132 41.7	36 28.2	789	100%	greyish olive homogeneous mud
K196-17 G-16	SE slope of Tsushima B	22 Sep 1996	05:25	132 36.6	36 29.9	1,039	0%	no recovery
K196-17 G-16'	SE slope of Tsushima B	22 Sep 1996	08:53	132 36.7	36 30.2	1,018	0%	no recovery
K196-17 G-16''	SE slope of Tsushima B	22 Sep 1996	09:00	132 36.7	36 30.4	1,016	100%	greyish olive homogeneous mud
K196-17 G-17	SE slope of Tsushima B	22 Sep 1996	11:35	132 17.4	36 38.1	1,525	5%	greyish olive homogeneous mud
K196-17 G-17'	SE slope of Tsushima B	22 Sep 1996	12:15	132 17.5	36 38.2	1,523	0%	no recovery
K197-15 G-2	West off- Jusanoko	11 Sep 1997	22:56	140 14.9	40 57.1	34	15%	coarse- to very coarse-grained sand-bearing granule-gravels
K197-15 G-3	West off- Jusanoko	11 Sep 1997	23:11	140 14.1	40 57.0	50	0%	no recovery
K197-15 G-3'	West off- Jusanoko	11 Sep 1997	23:18	140 14.1	40 57.0	50	15%	coarse- to very coarse-grained sand-bearing granule-gravels
K197-15 G-4	West off- Jusanoko	11 Sep 1997	23:40	140 12.6	40 57.0	76	50%	olive grey muddy fine-grained sand
K197-15 G-5	West off- Jusanoko	12 Sep 1997	00:03	140 11.0	40 57.0	160	100%	olive grey fine-grained sandy mud
K197-15 G-6	West off- Jusanoko	12 Sep 1997	00:33	140 08.7	40 56.9	126	100%	olive grey fine-grained sandy mud
K197-15 G-7	West off- Jusanoko	12 Sep 1997	01:07	140 05.3	40 56.9	153	20%	very coarse-grained sand-granul-bearing olive grey mud
K197-15 G-8	West off- Jusanoko	12 Sep 1997	01:40	140 04.8	40 56.8	175	0%	very coarse-grained sand-granul-bearing olive grey mud
K197-15 G-8'	West off- Jusanoko	12 Sep 1997	01:48	140 04.8	40 56.8	175	35%	very coarse-grained sand-granul-bearing olive grey mud
K197-15 G-9	West off- Jusanoko	12 Sep 1997	02:07	140 04.3	40 56.9	201	90%	olive grey fine-grained sandy mud
K197-15 G-10	West off- Jusanoko	12 Sep 1997	02:31	140 03.8	40 56.9	218	60%	olive grey fine-grained sandy mud
K197-15 G-11	West off- Jusanoko	12 Sep 1997	02:57	140 02.9	40 57.1	351	100%	olive grey very fine-grained sandy mud
K197-15 G-12	Nishi-Tsugaru Basin	12 Sep 1997	03:45	139 59.9	40 57.0	496	100%	olive grey homogeneous mud
K197-15 G-13	Nishi-Tsugaru Basin	12 Sep 1997	09:30	139 54.6	40 57.0	749	100%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-14	Nishi-Tsugaru Basin	12 Sep 1997	12:25	139 51.3	40 56.7	978	100%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-15	Nishi-Tsugaru Basin	12 Sep 1997	13:15	139 49.9	40 56.6	1,276	100%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-16	Nishi-Tsugaru Basin	12 Sep 1997	14:22	139 48.8	40 56.3	1,500	90%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-17	Nishi-Tsugaru Basin	12 Sep 1997	17:15	139 40.0	40 55.0	1,947	60%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-18	Nishi-Tsugaru Basin	12 Sep 1997	18:38	139 46.6	40 51.4	1,722	100%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-20	Nishi-Tsugaru Basin	12 Sep 1997	19:41	139 48.4	40 50.0	1,558	100%	olive grey homogeneous mud covered by brown soupy mud
K197-15 G-22	Nishi-Tsugaru Basin	12 Sep 1997	20:26	139 49.4	40 49.7	1,286	100%	olive grey homogeneous mud with mudstone gravels covered by brown soft mud
K197-15 G-23	Nishi-Tsugaru Basin	12 Sep 1997	21:07	139 50.4	40 49.1	993	45%	olive grey homogeneous compact mud
K197-15 G-24	Nishi-Tsugaru Basin	12 Sep 1997	21:50	139 52.5	40 47.8	745	100%	olive grey homogeneous mud covered by greenish grey soft mud
K197-15 G-25	Northwest off-Fukaura	12 Sep 1997	22:24	139 53.3	40 47.3	498	100%	olive grey homogeneous mud covered by brown soft mud
K197-15 G-26	Northwest off-Fukaura	12 Sep 1997	22:54	139 54.7	40 46.4	340	100%	olive grey fine-grained sandy mud
K197-15 G-27	Northwest off-Fukaura	12 Sep 1997	23:19	139 54.8	40 46.3	248	0%	a little amount of semi-consolidated brownish grey mudstone
K197-15 G-28	Northwest off-Fukaura	12 Sep 1997	23:26	139 54.9	40 46.2	190	5%	semi-consolidated brownish grey mudstone with sandy mud
K197-15 G-29	Northwest off-Fukaura	12 Sep 1997	23:49	139 54.8	40 46.1	164	35%	mollican shell- and granule- to pebble-gravel-bearing muddy fine- to medium-grained sand
K197-15 G-30	Northwest off-Fukaura	13 Sep 1997	00:09	139 55.3	40 46.1	137	55%	mollican shell- and granule-gravel-bearing muddy fine- to medium-grained sand
K197-15 G-31	Northwest off-Fukaura	13 Sep 1997	00:33	139 56.2	40 45.6	121	90%	granule- to pebble-gravel-bearing mudak. fine- to medium-grained sand
K197-15 G-32	Northwest off-Fukaura	13 Sep 1997	00:58	139 57.5	40 44.8	100	100%	olive grey homogeneous muddy fine-grained sand
K197-15 G-33	Northwest off-Fukaura	13 Sep 1997	01:38	139 55.9	40 42.2	86	80%	olive grey homogeneous muddy fine-grained sand
K197-15 SD-2	North off-Sado Island	14 Sep 1997	15:45	138 33.1	38 24.2	140	100%	olive grey fine-grained sand, slightly brownish in surface
K197-15 SD-1	Mogami Trough	14 Sep 1997	17:10	138 35.4	38 11.4	610	25%	olive grey homogeneous mud, compact mud in lower, brown soupy mud in surface

Station	Locality	Date	Time	Longitude (E)	Latitude (N)	Water Depth (m)	Recovery	Sediment Type
KT98-17 G-1	NW off-Hagi	29 Sep 1998	05:26	131 22.4	34 26.2	55	100%	olive grey muddy very fine- to fine-grained sand
KT98-17 G-2	NW off-Hagi	29 Sep 1998	04:53	131 20.2	34 27.9	52	50%	calcareous rich yellowish grey fine- to medium-grained sand
KT98-17 G-3	NW off-Hagi	29 Sep 1998	03:58	131 18.6	34 35.7	78	35%	calcareous rich yellowish grey fine- to medium-grained sand
KT98-17 G-4	NW off-Hagi	29 Sep 1998	05:17	131 17.9	34 40.7	102	35%	calcareous rich yellowish grey fine- to medium-grained sand
KT98-17 G-5	NW off-Hagi	29 Sep 1998	02:54	131 17.7	34 41.8	110	40%	calcareous rich yellowish grey fine- to medium-grained sand
KT98-17 G-6	NW off-Hagi	29 Sep 1998	02:19	131 17.3	34 44.4	100	25%	calcareous rich yellowish grey fine- to medium-grained sand
KT98-17 G-7	NW off-Hagi	29 Sep 1998	01:26	131 16.4	34 50.4	76	0%	a small amount of calcareous fragments
KT98-17 G-8	NW off-Hagi	29 Sep 1998	01:32	131 16.4	34 50.5	75	5%	calcareous coarse- to very coarse-grained sand
KT98-17 G-9	NW off-Hagi	29 Sep 1998	00:36	131 15.1	34 56.3	101	35%	greenish grey fine- to medium-grained sand
KT98-17 G-10	NW off-Hagi	28 Sep 1998	21:39	131 09.7	35 26.1	125	25%	calcareous coarse- to very coarse-grained sand
KT98-17 G-11	NW off-Hagi	28 Sep 1998	20:46	131 08.7	35 32.6	152	100%	yellowish olive grey muddy sand
KT98-17 G-12	NW off-Hagi	28 Sep 1998	19:25	131 07.4	35 40.0	176	25%	molluscan shell fragments bearing muddy fine-grained sand
KT98-17 G-13	NW off-Hagi	28 Sep 1998	18:50	131 07.0	35 42.0	208	50%	olive grey sandy mud
KT98-17 G-14	SE slope of Tsushima B	28 Sep 1998	18:10	131 06.5	35 45.0	254	50%	olive grey sandy mud
KT98-17 G-15	SE slope of Tsushima B	28 Sep 1998	17:26	131 05.5	35 48.0	361	60%	olive grey sandy mud
KT98-17 G-16	SE slope of Tsushima B	28 Sep 1998	16:50	131 05.4	35 49.2	524	90%	olive grey sandy mud
KT98-17 G-17	SE slope of Tsushima B	28 Sep 1998	16:04	131 05.1	35 50.6	746	90%	olive grey mud
KT98-17 G-18	SE slope of Tsushima B	28 Sep 1998	14:20	131 04.4	35 53.5	1,027	100%	olive grey mud, reddish brown surface
KT98-17 G-19	SE slope of Tsushima B	28 Sep 1998	09:42	131 06.5	35 56.8	1,322	5%	bluish grey mud
KT98-17 G-20	SE slope of Tsushima B	28 Sep 1998	10:14	131 06.2	35 56.9	1,337	0%	no recovery
KT98-17 G-21	SE slope of Tsushima B	28 Sep 1998	12:12	131 05.5	35 57.0	1,347	100%	olive grey mud, reddish brown surface
KT98-17 G-22	NW off-Hagi	29 Sep 1998	05:42	131 23.0	34 25.8	28	60%	olive grey muddy sand
KT98-17 G-23	Aso Bay, Tsushima	30 Sep 1998	18:11	129 17.7	34 21.7	32	100%	olive grey soupy homogeneous mud
KT98-17 G-24	Aso Bay, Tsushima	30 Sep 1998	18:22	129 17.7	34 21.7	32	100%	olive grey homogeneous mud
KT99-14 G-4	WNW off-Matsushima	16 Sep 1999	08:45	140 02.2	41 25.5	76	10%	granule- to cobble-gravelly coarse- to very coarse-grained scoriaceous sand
KT99-14 G-5	WNW off-Matsushima	16 Sep 1999	08:23	140 00.0	41 25.9	110	20%	sponge spicules with a small amount of granules and medium- to coarse-grained scoriaceous sand
KT99-14 G-6	WNW off-Matsushima	16 Sep 1999	07:50	139 56.7	41 26.8	128	90%	sponge spicules with a small amount of very fine- to fine-grained scoriaceous sand
KT99-14 G-7	WNW off-Matsushima	16 Sep 1999	07:33	139 55.7	41 26.8	151	50%	sponge spicules with a small amount of fine- to medium-grained scoriaceous sand
KT99-14 G-8	WNW off-Matsushima	16 Sep 1999	07:19	139 55.6	41 26.8	172	90%	sponge spicules with a small amount of fine- to medium-grained scoriaceous sand
KT99-14 G-9	WNW off-Matsushima	16 Sep 1999	07:04	139 55.5	41 27.0	199	15%	granule-gravel- and molluscan shell fragment-bearing medium- to very coarse-grained scoriaceous sand
KT99-14 G-10	WNW off-Matsushima	16 Sep 1999	06:48	139 55.3	41 27.0	242	5%	gravels of volcanic rock- and sedimentary rocks with coarse- to very coarse-grained scoriaceous sand
KT99-14 G-11	WNW off-Matsushima	16 Sep 1999	13:52	139 55.2	41 27.0	245	50%	sponge spicules with fine- to medium-grained scoriaceous sand and olive grey mud
KT99-14 G-12	WNW off-Matsushima	16 Sep 1999	06:27	139 54.6	41 27.1	333	60%	medium- to coarse-grained scoriaceous sand covered by yellowish brown muddy sand
KT99-14 G-13	WNW off-Matsushima	16 Sep 1999	05:56	139 53.4	41 27.2	500	5%	mulchy scoriaceous sand
KT99-14 G-14	WNW off-Matsushima	16 Sep 1999	13:17	139 53.2	41 27.3	466	70%	olive grey scoriaceous sand with intercalation of coarse- to very coarse-grained scoriaceous sand
KT99-14 G-15	WNW off-Matsushima	16 Sep 1999	05:23	139 53.0	41 27.3	719	100%	bluish grey scoriaceous sandy mud covered by olive grey soft mud
KT99-14 G-16	WNW off-Matsushima	16 Sep 1999	03:56	139 50.6	41 27.9	1,006	40%	olive grey scoriaceous sandy mud
KT99-14 G-17	WNW off-Matsushima	16 Sep 1999	04:37	139 50.7	41 27.8	989	50%	olive grey scoriaceous sandy mud
KT99-14 G-18	central Okushiri Basin	16 Sep 1999	01:51	139 44.9	41 29.1	1,426	50%	olive grey homogeneous mud intercalated with scoriaceous sand layer
KT99-14 G-19	central Okushiri Basin	16 Sep 1999	02:35	139 44.6	41 29.3	1,428	80%	olive grey homogeneous mud intercalated with scoriaceous sand layer
KT99-14 G-20	top of Yamato Bank	18 Sep 1999	13:57	135 47.6	39 30.6	504	5%	basaltic pebble-gravels
KT99-14 G-21	top of Yamato Bank	18 Sep 1999	14:12	135 47.8	39 30.7	504	5%	a basaltic cobble-gravel 10 cm in diameter
KT99-14 G-22	SE slope of Yamato B	18 Sep 1999	14:59	135 50.6	39 29.1	777	40%	basaltic granule- to pebble-gravel-bearing olive grey sandy mud
KT99-14 G-23	SE slope of Yamato B	18 Sep 1999	15:51	135 53.6	39 27.5	1,010	20%	bluish grey homogeneous mud covered by reddish brown mud
KT99-14 G-24	SE slope of Yamato B	18 Sep 1999	16:30	135 53.7	39 27.3	1,021	50%	bluish grey homogeneous mud covered by brownish yellow soft mud
KT99-14 G-25	SE slope of Yamato B	18 Sep 1999	20:08	136 05.8	39 21.2	2,492	0%	greyish olive compact mud covered by reddish brown mud
KT99-14 G-26	flat top of Hyotan-guri	20 Sep 1999	05:05	138 19.0	38 32.5	96	0%	no recovery
KT99-14 G-27	flat top of Hyotan-guri	20 Sep 1999	03:57	138 18.9	38 32.5	92	0%	no recovery

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KT99-14 G-26(2)	flat top of Hiyolan-guri	20 Sep 1999	04:07	138 18.9	38 32.5	94	10%	poorly sorted coarse- to very coarse-grained calcareous sand
KT99-14 G-27	NW off-Sado Island	20 Sep 1999	03:33	138 17.8	38 32.5	127	15%	poorly sorted coarse- to very coarse-grained calcareous sand
KT99-14 G-28	NW off-Sado Island	20 Sep 1999	03:00	138 17.5	38 32.5	154	5%	granule- to pebble-gravels of sedimentary rocks
KT99-14 G-28'	NW off-Sado Island	20 Sep 1999	03:10	138 17.5	38 32.5	150	0%	no recovery
KT99-14 G-29	NW off-Sado Island	20 Sep 1999	02:20	138 17.4	38 32.5	173	10%	poorly sorted medium- to coarse-grained calcareous sand
KT99-14 G-29'	NW off-Sado Island	20 Sep 1999	02:35	138 17.4	38 32.5	170	10%	granule- to pebble-gravel-bearing medium- to very coarse-grained calcareous sand
KT99-14 G-30	NW off-Sado Island	20 Sep 1999	01:25	138 17.4	38 32.5	184	30%	olive grey muddy medium-grained sand with calcareous fragments
KT99-14 G-30'	NW off-Sado Island	20 Sep 1999	01:47	138 17.3	38 32.6	200	30%	granule- to cobble-gravel-bearing medium- to coarse-grained sand with calcareous fragments
KT99-14 G-31	NW off-Sado Island	20 Sep 1999	01:05	138 17.0	38 32.5	245	70%	olive grey homogeneous sandy mud
KT99-14 G-32	NW off-Sado Island	20 Sep 1999	00:43	138 16.6	38 32.6	333	20%	greenish grey homogeneous sandy mud
KT99-14 G-33	NW off-Sado Island	20 Sep 1999	00:15	138 16.0	38 32.5	491	90%	olive grey compact mud covered by reddish brown soft mud
KT99-14 G-34	NW off-Sado Island	19 Sep 1999	22:59	138 10.4	38 32.4	716	0%	no recovery
KT99-14 G-34(2)	NW off-Sado Island	19 Sep 1999	23:16	138 10.5	38 32.4	708	80%	olive grey compact mud covered by reddish brown soft mud
KT99-14 G-35	NW off-Sado Island	19 Sep 1999	22:24	138 08.5	38 32.4	975	90%	dark bluish grey compact mud covered by brownish grey soft mud
KT99-14 G-36	NW off-Sado Island	19 Sep 1999	21:21	138 06.7	38 32.4	1,233	0%	no recovery
KT99-14 G-36(2)	NW off-Sado Island	19 Sep 1999	21:45	138 06.8	38 32.4	1,227	5%	bluish grey semi-consolidated sedimentary rocks
KT99-14 G-37	NW off-Sado Island	19 Sep 1999	20:39	138 05.7	38 32.4	1,456	70%	bluish grey homogeneous mud covered by reddish brown mud
KT99-14 G-38	NW off-Sado Island	19 Sep 1999	18:51	137 55.9	38 32.2	1,929	90%	bluish grey homogeneous mud covered by reddish brown soupy mud
KT99-14 G-40	NW off-Murakami	20 Sep 1999	18:52	138 51.8	38 24.3	555	80%	olive grey homogeneous sand covered by reddish brown soft mud
KT99-14 G-41	NW off-Murakami	20 Sep 1999	18:01	138 52.3	38 24.0	311	0%	no recovery
KT99-14 G-41(2)	NW off-Murakami	20 Sep 1999	18:20	138 53.0	38 21.2	341	110%	bluish grey homogeneous mud covered by reddish brown soft mud
KT99-14 G-42	NW off-Murakami	20 Sep 1999	17:10	138 54.2	38 23.6	248	110%	bluish grey muddy very fine- to fine-grained sand covered by reddish brown soft muddy sand
KT99-14 G-43	NW off-Murakami	20 Sep 1999	16:45	138 55.0	38 23.2	202	110%	well-sorted bluish grey fine-grained sand covered by reddish brown muddy fine-grained sand
KT99-14 G-44	NW off-Murakami	20 Sep 1999	16:23	138 55.7	38 22.9	174	80%	well-sorted bluish grey fine-grained sand covered by reddish brown fine-grained sand
KT99-14 G-45	NW off-Murakami	20 Sep 1999	15:53	138 57.2	38 22.3	148	40%	well-sorted bluish grey fine- to medium-grained sand covered by reddish brown muddy fine-grained sand
KT99-14 G-46	NW off-Murakami	20 Sep 1999	15:05	139 02.1	38 20.4	125	10%	molluscan shell and granule-gravel bearing muddy fine- to coarse-grained sand
KT99-14 G-47	NW off-Murakami	20 Sep 1999	13:43	139 10.5	38 17.2	98	80%	olive grey botuloid mud covered by reddish brown soupy mud
KT99-14 G-48	NW off-Murakami	20 Sep 1999	13:02	139 17.2	38 14.6	75	100%	bluish grey homogeneous mud covered by reddish brown mud
KT99-14 G-49	NW off-Murakami	20 Sep 1999	12:27	139 21.0	38 13.4	50	40%	bluish grey muddy sand covered by reddish brown soft muddy sand
KT99-14 G-50	NW off-Murakami	20 Sep 1999	11:58	139 23.1	38 12.6	35	10%	bluish grey f. sand covered by reddish brown soft f. sand
KT00-14 G-1	southwest off-Tsushima	25 Sep 2000	18:48	129 28.0	33 29.9	77	21%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-2	southwest off-Tsushima	25 Sep 2000	19:11	129 21.8	33 33.2	98	15%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-3	southwest off-Tsushima	25 Sep 2000	20:34	129 15.5	33 40.6	104	15%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-4	southwest off-Tsushima	25 Sep 2000	21:34	129 08.7	33 46.3	120	30%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-5	southwest off-Tsushima	25 Sep 2000	22:23	129 03.3	33 50.7	119	25%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-6	southwest off-Tsushima	25 Sep 2000	23:16	128 56.9	33 55.6	131	15%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-7	southwest off-Tsushima	26 Sep 2000	00:10	128 51.0	34 00.7	120	15%	molluscan shell-bearing grey fine to medium-grained loose sand
KT00-14 G-8	southwest off-Tsushima	26 Sep 2000	01:11	128 44.1	34 06.3	107	15%	molluscan shell-bearing olive grey fine to medium-grained muddy sand
KT00-14 G-10	northeast off-Tsushima	26 Sep 2000	18:07	129 24.5	34 54.2	227	30%	molluscan shell- and shell fragment-bearing olive grey muddy sand
KT00-14 G-11	northeast off-Tsushima	26 Sep 2000	20:09	129 31.4	34 48.1	82	40%	coarse- to very coarse-grained calcareous sand
KT00-14 G-12	northeast off-Tsushima	26 Sep 2000	21:12	129 38.0	34 42.0	94	90%	molluscan shell-rich olive grey muddy sand
KT00-14 G-13	northeast off-Tsushima	26 Sep 2000	22:14	129 44.5	34 35.9	198	90%	molluscan shell-bearing olive grey muddy sand
KT00-14 G-14	northeast off-Tsushima	26 Sep 2000	23:14	129 51.0	34 30.0	112	40%	molluscan shell-bearing olive grey muddy sand
KT00-14 G-15	northeast off-Tsushima	27 Sep 2000	00:14	129 57.4	34 24.3	122	40%	molluscan shell fragment-bearing grey fine- to medium-grained sand
KT00-14 G-16	northeast off-Tsushima	27 Sep 2000	01:15	130 04.2	34 18.2	100	15%	coarse- to very coarse-grained calcareous sand
KT00-14 G-17	northeast off-Tsushima	27 Sep 2000	18:57	130 10.2	34 12.0	93	15%	coarse- to very coarse-grained calcareous sand
KT00-14 G-18	northeast off-Tsushima	27 Sep 2000	19:54	130 15.3	34 06.1	83	25%	molluscan shell-bearing coarse- to very coarse-grained sand
KT00-14 G-19	northeast off-Tsushima	27 Sep 2000	21:04	130 23.4	34 00.0	65	40%	molluscan shell-bearing coarse- to very coarse-grained sand
KT00-14 G-20	northeast off-Shimane	30 Sep 2000	09:40	132 47.1	35 31.0	95	100%	molluscan shell fragment-bearing dark olive grey muddy fine-grained sand
KT00-14 G-21	northeast off-Shimane	30 Sep 2000	10:11	132 46.7	35 31.6	100	100%	molluscan shell fragment-bearing dark olive grey muddy fine-grained sand

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K100-14 G-22	northwest off-Shimane	30 Sep 2000	10:49	132 43.8	35 34.6	124	75%	molluscan shell fragment-bearing dark olive grey muddy very fine-grained sand
K100-14 G-23	northwest off-Shimane	30 Sep 2000	11:57	132 38.4	35 41.2	155	0%	no recovery
K100-14 G-23'	northwest off-Shimane	30 Sep 2000	12:10	132 38.4	35 41.3	155	100%	molluscan shell fragment-bearing dark olive grey sandy mud
K100-14 G-24	northwest off-Shimane	30 Sep 2000	13:01	132 35.3	35 45.1	176	95%	molluscan shell fragment-bearing dark olive grey sandy mud
K100-14 G-25	northwest off-Shimane	30 Sep 2000	13:56	132 31.8	35 49.1	201	90%	molluscan shell fragment-bearing dark olive grey sandy mud or mud
K100-14 G-26	northwest off-Shimane	30 Sep 2000	14:41	132 28.1	35 53.5	254	50%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-14 G-27	northwest off-Shimane	30 Sep 2000	15:51	132 24.9	35 57.0	360	80%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-14 G-28	northwest off-Shimane	30 Sep 2000	16:29	132 23.1	35 59.7	514	100%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-14 G-29	northwest off-Shimane	30 Sep 2000	17:34	132 22.5	36 01.2	744	15%	moderate olive grey soupy mud overlying on semi-consolidated olive grey mud
K100-14 G-30	northwest off-Shimane	30 Sep 2000	19:36	132 21.3	36 02.5	1,011	100%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-14 G-31	northwest off-Shimane	30 Sep 2000	22:07	132 14.9	36 10.4	1,296	100%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-14 G-32	northwest off-Shimane	30 Sep 2000	23:04	132 11.8	36 13.2	1,353	90%	moderate olive grey homogeneous mud covered by brownish grey soupy mud
K100-17 G-1	Southwest off-Nagasaki	11 Dec 2000	17:00	129 39.8	32 50.2	52	75%	calcareous fragment-bearing olive grey fine-grained sand covered by brown soft mud
K100-17 G-2	Southwest off-Nagasaki	11 Dec 2000	16:42	129 38.6	32 45.8	74	90%	calcareous fragment-bearing olive grey fine-grained sand covered by brown soft mud
K100-17 G-3	Southwest off-Nagasaki	11 Dec 2000	17:27	129 35.7	32 41.6	100	50%	calcareous fragment-bearing olive grey fine-grained sand covered by greyish brown soft mud
K100-17 G-4	Southwest off-Nagasaki	11 Dec 2000	19:12	129 26.9	32 28.4	125	15%	calcareous fragment-rich dark grey fine- to medium-grained sand
K100-17 G-5	Southwest off-Nagasaki	11 Dec 2000	19:45	129 26.3	32 27.9	156	40%	calcareous fragment-bearing olive grey fine- to medium-grained sand, surface yellow grey fine-grained sand
K100-17 G-6	Southwest off-Nagasaki	12 Dec 2000	14:32	129 25.8	32 26.5	175	20%	calcareous fragment-bearing yellowish grey fine-grained sand
K100-17 G-7	Southwest off-Nagasaki	12 Dec 2000	15:14	129 23.1	32 22.8	203	25%	molluscan shell bearing dark olive grey fine-grained sand covered by pale coloured sand
K100-17 G-8	Southwest off-Nagasaki	12 Dec 2000	16:15	129 18.7	32 16.4	254	50%	calcareous fragment-bearing dark olive grey fine-grained sand
K100-17 G-9	Southwest off-Nagasaki	12 Dec 2000	17:49	129 15.7	32 12.5	360	50%	calcareous fragment-bearing dark olive grey fine-grained sand
K100-17 G-10	Southwest off-Nagasaki	12 Dec 2000	18:12	129 12.9	32 09.8	502	90%	homogeneous olive grey muddy fine-grained sand, soupy surface
K100-17 G-11	Southwest off-Nagasaki	12 Dec 2000	20:19	129 03.0	31 57.3	800	100%	homogeneous olive grey mud covered by reddish brown mud
K101-14 G-3	north off-Abashiri	20 Sep 2001	13:53	144 34.7	43 38.0	49	60%	molluscan shell-bearing gravelly, coarse- to very coarse-grained sand
K101-14 G-4	north off-Abashiri	20 Sep 2001	13:08	144 37.2	44 01.2	72	30%	molluscan shell-, shell fragment-, and pebble-gravel-bearing medium- to coarse-grained sand
K101-14 G-5	north off-Abashiri	20 Sep 2001	12:34	144 37.5	44 02.9	99	30%	molluscan shell-, shell fragment-, and pebble-gravel-bearing medium- to coarse-grained sand
K101-14 G-6	north off-Abashiri	20 Sep 2001	12:10	144 37.2	44 03.6	117	20%	molluscan shell-, shell fragment-, and pebble-gravel-bearing medium- to coarse-grained sand
K101-14 G-7	north off-Abashiri	20 Sep 2001	11:51	144 36.9	44 04.4	142	30%	purlice-bearing scoriaceous medium-grained sand
K101-14 G-8	north off-Abashiri	20 Sep 2001	11:22	144 37.1	44 04.6	174	20%	pumiceous and scoriaceous medium-grained sand with molluscan shells
K101-14 G-9	north off-Abashiri	20 Sep 2001	10:46	144 37.2	44 04.9	193	40%	pale olive grey pumiceous and scoriaceous fine- to medium-grained sand, serpulid stars on the surface
K101-14 G-10	north off-Abashiri	20 Sep 2001	10:09	144 38.0	44 06.2	250	40%	pale olive grey scoriaceous muddy sand, soft surface, serpulid stars on the surface
K101-14 G-11	north off-Abashiri	20 Sep 2001	09:24	144 38.9	44 07.8	423	60%	olive grey homogeneous sandy mud, soft surface, a large number of serpulid stars on the surface
K101-14 G-12	north off-Abashiri	20 Sep 2001	08:40	144 38.7	44 08.2	493	50%	olive grey homogeneous sandy mud, soft surface, a large number of serpulid stars on the surface
K101-14 G-13	north off-Abashiri	20 Sep 2001	07:49	144 39.7	44 11.4	761	80%	olive grey homogeneous soft mud in the upper, dark olive sticky mud in the lower
K101-14 G-14	north off-Abashiri	20 Sep 2001	05:43	144 41.6	44 15.4	1,004	0%	no recovery
K101-14 G-14'	north off-Abashiri	20 Sep 2001	06:25	144 41.8	44 15.4	1,017	100%	olive grey homogeneous mud, fecal pellets-bearing soupy mud on the surface
K101-14 G-15	north off-Abashiri	20 Sep 2001	00:03	144 43.0	44 18.5	1,270	70%	olive grey homogeneous mud, yellowish grey soft mud of the surface
K101-14 G-16	north off-Abashiri	21 Sep 2001	01:59	144 47.5	44 28.1	1,540	70%	olive grey homogeneous mud, slightly brownish soft mud on the surface
K101-14 G-17	north off-Abashiri	21 Sep 2001	03:52	144 50.6	44 35.8	1,748	60%	olive grey homogeneous mud, reddish brown soft mud on the surface
K101-14 G-18	north off-Abashiri	21 Sep 2001	06:03	144 52.9	44 40.1	1,558	50%	yellowish olive compact mud, pale yellow mud on the surface
K101-14 G-19	north off-Shakotan	23 Sep 2001	17:17	140 37.8	43 20.9	125	30%	compact brownish olive muddy fine-grained sand
K101-14 G-20	north off-Shakotan	23 Sep 2001	17:40	140 38.6	43 21.5	158	20%	pebble-gravel-bearing sticky brownish olive muddy sand
K101-14 G-21	north off-Shakotan	23 Sep 2001	18:04	140 39.0	43 21.7	178	30%	no recovery (disturbed)
K101-14 G-21'	north off-Shakotan	23 Sep 2001	18:17	140 39.1	43 21.6	182	20%	olive grey homogeneous muddy sand, serpulid stars on the surface
K101-14 G-22	north off-Shakotan	23 Sep 2001	18:38	140 39.5	43 21.9	210	40%	olive grey homogeneous muddy sand, serpulid stars on the surface
K101-14 G-23	north off-Shakotan	23 Sep 2001	19:04	140 39.7	43 22.3	252	40%	olive grey homogeneous muddy sand, serpulid stars on the surface
K101-14 G-24	north off-Shakotan	23 Sep 2001	19:44	140 40.3	43 23.4	368	60%	olive grey homogeneous muddy sand / sandy mud
K101-14 G-25	north off-Shakotan	23 Sep 2001	20:31	140 41.4	43 24.7	528	90%	olive grey homogeneous mud

Station	Locality	Date	Time	Longitude (E)	Latitude (N)	Water Depth (m)	Recovery	Sediment Type
KT03-10 G-3	west off Honjo	16 July 2003	11:59	139 54.9	39 23.1	75	75%	olive grey homogeneous muddy fine-grained sand covered by yellowish brown sandy soft mud
KT03-10 G-4	west off Honjo	16 July 2003	12:34	139 52.6	39 23.1	102	40%	olive grey fine-grained sandy homogeneous mud covered by thin yellowish brown soft mud
KT03-10 G-5	west off Honjo	16 July 2003	12:56	139 51.4	39 23.0	125	75%	olive grey fine-grained sandy homogeneous mud covered by yellowish to pinkish brown soft mud
KT03-10 G-6	west off Honjo	16 July 2003	13:12	139 50.9	39 23.1	175	60%	olive grey fine-grained sandy homogeneous mud covered by yellowish to brownish red soft mud
KT03-10 G-7	west off Honjo	16 July 2003	13:31	139 50.8	39 23.1	175	60%	olive grey homogeneous mud covered by yellowish to reddish brown soft mud
KT03-10 G-8	west off Honjo	16 July 2003	13:51	139 50.7	39 23.1	202	100%	olive grey homogeneous mud covered by reddish brown soft mud
KT03-10 G-9	west off Honjo	16 July 2003	14:15	139 50.2	39 23.0	253	50%	olive grey homogeneous mud covered by reddish brown soft mud, serpent stars on the surface
KT03-10 G-10	west off Honjo	16 July 2003	14:44	139 49.2	39 23.0	354	50%	dark olive grey mottled sticky mud covered by yellowish brown soft mud
KT03-10 G-11	west off Honjo	16 July 2003	15:38	139 45.6	39 23.0	451	40%	dark olive grey mottled sticky mud covered by reddish brown soft mud, fecal pellets on the surface
KT03-10 G-12	west off Honjo	16 July 2003	16:40	139 36.2	39 23.0	134	0%	a little amount of mudstone gravels and a little amount of fine-grained sand
KT03-10 G-12'	west off Honjo	16 July 2003	16:51	139 36.2	39 22.9	222	5%	semi-consolidated mudstone gravels and a little amount of fine-grained sand
KT03-10 G-13	west off Honjo	16 July 2003	17:37	139 32.5	39 23.0	133	10%	dark grey fine- to medium-grained sand, serpent stars on the surface
KT03-10 G-14	west off Honjo	16 July 2003	17:56	139 32.4	39 23.0	258	25%	dark grey fine- to medium-grained sand with a little amount of gravels, serpent stars
KT03-10 G-15	west off Honjo	16 July 2003	18:19	139 31.9	39 22.9	351	50%	yellowish olive grey sandy mud covered by yellowish brown sticky soft mud, serpent stars
KT03-10 G-16	west off Honjo	16 July 2003	18:53	139 31.0	39 23.0	500	100%	olive grey homogeneous mud covered by thin yellowish to reddish brown soft mud, fecal pellets
KT03-10 G-17	west off Honjo	16 July 2003	19:38	139 28.8	39 23.0	751	25%	olive grey homogeneous mud covered by reddish brown soft mud
KT03-10 G-18	west off Honjo	16 July 2003	21:14	139 18.0	39 22.9	946	90%	olive grey homogeneous mud covered by reddish brown soft mud
KT03-10 G-20	west off Honjo	17 July 2003	01:51	139 11.4	39 49.6	1,500	50%	pale olive grey homogeneous compact mud covered by 1-cm thick reddish brown soft mud
KT03-10 G-22	west off Honjo	17 July 2003	04:00	139 06.9	40 03.4	2,026	60%	dark olive grey homogeneous compact mud covered by 1-cm thick reddish brown soft mud
KT03-10 G-24	west off Honjo	17 July 2003	06:18	139 04.4	40 10.7	2,532	20%	semi-consolidated pale yellow mudstone gravels covered by 3-cm thick yellowish brown soft mud
KT03-10 G-26	foot of Matsui Seamount	17 July 2003	15:17	138 13.9	39 35.0	2,292	30%	reddish brown homogeneous sticky mud, gravelly olive in lower, tiny serpent stars on the surface
KT03-10 G-27	top of Matsui Seamount	17 July 2003	18:17	138 11.0	39 31.7	946	25%	pebble- to cobble-gravels-bearing olive brown muddy medium- to coarse-grained basaltic sand
KT03-10 G-27'	top of Matsui Seamount	17 July 2003	19:02	138 10.8	39 31.8	962	35%	pebble-gravels-bearing olive brown muddy medium- to coarse-grained basaltic sand
KT03-10 G-28	Sado Basin	15 July 2003	00:45	138 40.0	38 09.9	471	35%	olive grey homogeneous soft mud covered by thin brownish red soupy mud
KT03-10 G-29	Sado Basin	14 July 2003	23:30	138 38.9	38 03.9	264	5%	semi-consolidated brownish grey mud covered by thin brown soft mud, serpent stars
KT03-10 G-30	Sado Basin	14 July 2003	23:45	138 38.8	38 03.9	260	10%	semi-consolidated brownish grey mud covered by fine- to medium-grained well-sorted sand
KT03-10 G-31	Sado Basin	14 July 2003	22:19	138 35.9	37 55.9	394	34%	olive grey homogeneous mud covered by thin yellowish grey mud, bluish grey sticky mud in lower
KT03-10 G-32	Sado Basin	14 July 2003	20:42	138 31.9	37 43.0	535	35%	olive grey homogeneous mud covered by thin brownish red soft mud, bluish grey sticky mud in lower
KT03-10 G-32'	Sado Basin	14 July 2003	19:16	138 27.7	37 33.5	437	35%	olive grey homogeneous mud covered by thin reddish brown soft mud, a serpent star of the surface
KT04-20 G-1	north off-Shiretoko P	15 Sep 2004	13:41	145 20.4	44 21.1	48	0%	No recovery
KT04-20 G-1 (2)	north off-Shiretoko P	15 Sep 2004	13:48	145 20.4	44 21.1	47	0%	No recovery
KT04-20 G-1 (3)	north off-Shiretoko P	15 Sep 2004	14:01	145 20.4	44 21.2	49	0%	No recovery
KT04-20 G-2	north off-Shiretoko P	15 Sep 2004	13:16	145 20.9	44 21.6	76	30%	molluscan shell fragment- and rounded pebble-bearing black well sorted basaltic sand
KT04-20 G-3	north off-Shiretoko P	15 Sep 2004	12:51	145 21.6	44 21.8	100	40%	molluscan shell fragment-bearing fine- to medium-grained well sorted sand
KT04-20 G-4	north off-Shiretoko P	15 Sep 2004	12:25	145 21.9	44 22.0	130	5%	a little amount of dark olive basaltic fine- to medium-grained sand, well sorted, sponges
KT04-20 G-5	north off-Shiretoko P	15 Sep 2004	11:47	145 21.8	44 22.5	185	5%	a little amount of dark green basaltic fine- to medium-grained sand, basaltic gravels
KT04-20 G-6	north off-Shiretoko P	13 Sep 2004	06:14	145 21.0	44 22.6	170	50%	molluscan shell fragment-bearing olive grey fine-grained well sorted compact sand
KT04-20 G-7	north off-Shiretoko P	13 Sep 2004	06:32	145 21.1	44 22.9	215	30%	molluscan shell fragment-bearing olive grey fine-grained compact sand, no marked surface layer
KT04-20 G-8	north off-Shiretoko P	13 Sep 2004	05:07	145 21.2	44 23.3	230	5%	a little amount of olive grey homogeneous sandy mud
KT04-20 G-8'	north off-Shiretoko P	13 Sep 2004	05:21	145 21.4	44 23.3	248	20%	olive grey homogeneous muddy sand, no marked difference of the surface, surpini stars
KT04-20 G-9	north off-Shiretoko P	13 Sep 2004	04:35	145 21.3	44 23.6	315	15%	olive grey homogeneous mud covered by thin brownish grey soft mud, a little serpent stars
KT04-20 G-10	north off-Shiretoko P	13 Sep 2004	03:31	145 21.2	44 23.2	505	70%	olive grey homogeneous mud covered by thin brownish grey soft mud, serpent stars on the surface
KT04-20 G-11	north off-Shiretoko P	14 Sep 2004	04:06	145 21.2	44 27.0	844	5%	a little amount of olive grey soft mud, slightly sandy, consolidated mudstone lower, tiny serpent stars
KT04-20 G-12	north off-Shiretoko P	14 Sep 2004	04:35	145 20.9	44 27.4	987	5%	a little amount of olive grey soft and soupy mud, tiny serpent stars
KT04-20 G-13	north off-Shiretoko P	14 Sep 2004	06:05	145 20.9	44 28.1	1,294	95%	soft olive grey homogeneous mud, lower dark olive grey sticky compact mud, serpent stars, lugworms
KT04-20 G-14	north off-Shiretoko P	15 Sep 2004	10:11	145 21.5	44 30.4	1,500	100%	upper 5cm soft olive grey homogeneous mud, lower dark olive grey sticky compact mud
KT04-20 G-15	north off-Yubetsu	15 Sep 2004	18:49	144 28.5	44 39.5	1,499	90%	olive grey / pale olive compact sticky mud covered by thin soupy reddish brown mud
KT04-20 G-16	north off-Yubetsu	15 Sep 2004	20:25	144 22.0	44 37.5	1,244	100%	olive grey / pale olive compact sticky mud covered by thin soupy reddish brown mud
KT04-20 G-17	north off-Yubetsu	15 Sep 2004	21:29	144 19.3	44 37.1	1,001	95%	olive grey / pale olive compact sticky mud covered by thin soft yellowish brown mud, a serpent star

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K104-20 G-18	north off-Yubetsu	15 Sep 2004	22:24	144 17.6	44 36.3	778	95%	olive grey / pale olive compact sticky sandy mud covered by thin soft yellowish brown mud
K104-20 G-19	north off-Yubetsu	15 Sep 2004	23:05	144 16.9	44 35.9	535	70%	rounded and poorly sorted granule- to pebble-gravel (up to 3 cms long)-bearing olive grey soft mud
K104-20 G-20	north off-Yubetsu	15 Sep 2004	23:41	144 16.4	44 35.6	355	60%	rounded and poorly sorted granule- to pebble-gravel (up to 5 cms long)-bearing olive grey soft mud
K104-20 G-21	north off-Yubetsu	16 Sep 2004	00:06	144 16.0	44 35.5	233	40%	rounded and poorly sorted granule- to pebble-gravel (up to 6 cms long)-rich olive grey soft mud
K104-20 G-22	north off-Yubetsu	15 Sep 2004	00:59	144 15.9	44 35.5	207	50%	organic-rich, rounded and poorly sorted granule- to pebble-gravel-rich olive grey sticky mud
K104-20 G-22 (2)	north off-Yubetsu	15 Sep 2004	01:11	144 15.9	44 35.5	202	60%	organic-rich, rounded and poorly sorted granule- to pebble-gravel-rich olive grey sticky mud
K104-20 G-23	north off-Yubetsu	15 Sep 2004	00:28	144 15.8	44 35.5	180	30%	rounded and poorly sorted granule- to pebble-gravel-rich olive grey sticky mud
K104-20 G-24	north off-Yubetsu	15 Sep 2004	01:46	144 14.9	44 35.5	155	30%	sponge-rich, rounded and poorly sorted granule- to pebble-gravel-rich olive grey highly sticky mud
K104-20 G-25	south off-Okushiri Is	17 Sep 2004	21:01	139 26.9	41 58.3	250	40%	molluscan shell fragment-bearing well sorted dark olive compact fine-grained sand
K104-20 G-26	south off-Okushiri Is	17 Sep 2004	21:01	139 27.0	41 58.3	210	0%	a little amount of molluscan shell fragment-bearing sand
K104-20 G-26 (2)	south off-Okushiri Is	17 Sep 2004	21:25	139 27.0	41 58.3	200	20%	molluscan shell fragment-bearing well sorted dark olive compact fine-grained sand
K104-20 G-27	south off-Okushiri Is	17 Sep 2004	21:47	139 27.0	41 58.4	175	25%	molluscan shell fragment-bearing well sorted dark olive compact fine-grained sand
K104-20 G-28	south off-Okushiri Is	17 Sep 2004	22:10	139 27.1	41 58.3	143	30%	molluscan shell fragment-bearing well sorted olive grey compact fine-grained sand
K104-20 G-29	south off-Okushiri Is	17 Sep 2004	22:31	139 27.4	41 58.2	127	20%	molluscan shell fragment-bearing well sorted olive grey fine- to medium-grained sand
K104-20 G-30	south off-Okushiri Is	17 Sep 2004	22:53	139 28.4	41 58.3	100	10%	molluscan shell fragment-rich, granule- to pebble-gravel-bearing olive grey fine- to medium-grained sand
K104-20 G-31	south off-Okushiri Is	17 Sep 2004	15:20	139 29.7	41 58.3	65	3%	a mass of sponge with a very little amount of fine-grained sand and molluscan shell fragments
K104-20 G-31 (2)	south off-Okushiri Is	17 Sep 2004	15:31	139 29.7	41 58.4	65	2%	a very little amount of fine-grained sand with molluscan shell fragments and fragments of sponges
K104-20 G-32	south off-Okushiri Is	17 Sep 2004	23:22	139 31.1	41 58.3	100	10%	molluscan shell fragment-rich well sorted olive grey fine- to medium-grained sand
K104-20 G-33	south off-Okushiri Is	17 Sep 2004	23:43	139 32.2	41 58.4	125	10%	molluscan shell fossils and shell fragment-bearing dark olive fine-grained sand
K104-20 G-34	south off-Okushiri Is	18 Sep 2004	00:03	139 32.7	41 58.4	150	0%	no recovery
K104-20 G-34 (2)	south off-Okushiri Is	18 Sep 2004	00:14	139 32.6	41 58.3	148	5%	pebble- to cobble-gravel- and molluscan shell fragment-bearing dark olive fine-grained sand
K104-20 G-35	south off-Okushiri Is	18 Sep 2004	00:39	139 32.8	41 58.4	174	2%	only a small amount of molluscan shell fragment-bearing fine-grained sand
K104-20 G-35 (2)	south off-Okushiri Is	18 Sep 2004	00:53	139 32.8	41 58.3	174	10%	pebble- to pebble-gravel- and molluscan shell fragment-bearing dark olive fine-grained sand
K104-20 G-36	south off-Okushiri Is	18 Sep 2004	01:12	139 32.9	41 58.2	196	15%	pebble- to pebble-gravel- and molluscan shell fragment-bearing dark olive fine-grained sand
K104-20 G-37	south off-Okushiri Is	18 Sep 2004	01:38	139 33.2	41 58.3	251	30%	molluscan shell fragment-bearing dark olive fine-grained sand with a little amount of pebble-gravels
K104-20 G-38	south off-Okushiri Is	17 Sep 2004	16:21	139 30.9	41 56.2	100	5%	fine- to medium-grained shelly sand, a serpent star and a hermit crab
K104-20 G-39	south off-Okushiri Is	17 Sep 2004	17:44	139 33.4	41 51.1	205	10%	molluscan shell fragment-bearing well sorted v.f.- to fine-grained sand
K104-20 G-40	south off-Okushiri Is	17 Sep 2004	18:37	139 34.0	41 50.8	375	15%	a little amount of molluscan shell fragment-bearing, well sorted fine- to medium-grained olive grey sand
K104-21 G-1	west off-Toshio	23 Sep 2004	23:24	141 51.8	141 38.1	50	60%	greenish olive grey massive well-sorted very fine-grained sand, surface yellowish brown soupy mud
K104-21 G-2	west off-Toshio	23 Sep 2004	00:20	141 52.9	141 29.3	75	60%	olive grey massive well-sorted muddy very fine-grained sand, yellowish brown soupy mud in the surface
K104-21 G-3	west off-Toshio	23 Sep 2004	02:19	141 58.7	141 05.9	100	50%	olive grey massive well-sorted muddy very fine-grained sand, dark grey soupy mud in the surface
K104-21 G-4	west off-Toshio	23 Sep 2004	03:26	145 00.8	140 57.4	126	55%	olive grey massive muddy well-sorted very fine-grained sand, dark/olive grey soupy mud in the surface
K104-21 G-5	west off-Toshio	23 Sep 2004	04:19	145 03.0	140 49.1	155	15%	pebble- to cobble-gravel-bearing muddy poorly sorted f.- to m.-grained, no surface layer ?
K104-21 G-5'	west off-Toshio	23 Sep 2004	04:31	145 02.9	140 49.1	155	20%	pebble- to cobble-gravel-bearing muddy poorly sorted f.- to m.-grained, no surface layer ?
K104-21 G-6	west off-Toshio	23 Sep 2004	04:56	145 03.3	140 47.4	175	30%	olive grey massive well-sorted fine-grained sand, same but slightly loose surface
K104-21 G-7	west off-Toshio	23 Sep 2004	05:25	145 03.5	140 47.1	200	20%	olive grey massive well-sorted fine-grained sand, same but slightly loose surface
K104-21 G-8	west off-Toshio	23 Sep 2004	05:49	145 03.7	140 46.1	250	40%	olive grey muddy massive well-sorted very fine-grained sand, same but slightly loose surface
K104-21 G-9	west off-Toshio	23 Sep 2004	06:23	145 04.5	140 42.8	352	50%	olive grey massive and homogeneous very fine-grained sandy mud, same but loose surface
K104-21 G-10	west off-Toshio	23 Sep 2004	09:05	145 11.7	140 15.5	503	80%	olive grey massive homogeneous very fine-grained sandy mud, surface soft
K104-21 G-11	west off-Toshio	23 Sep 2004	11:07	145 12.9	140 10.4	624	70%	brownish olive grey soft v. f.-grained sandy mud in the upper, lower bluish olive homogeneous mud
K104-21 G-12	west off-Toshio	23 Sep 2004	11:08	145 13.9	140 05.1	752	100%	brownish olive grey massive soft mud in the upper 1 cm, lower bluish olive homogeneous compact mud
K104-21 G-13	west off-Toshio	23 Sep 2004	12:09	145 15.3	140 00.5	870	80%	reddish olive grey - reddish brown massive soft mud in the upper, lower bluish olive grey sticky mud
K104-21 G-14	west off-Toshio	23 Sep 2004	12:58	145 15.9	139 57.9	993	50%	reddish olive grey - reddish brown massive soft mud in the upper, lower bluish olive grey sticky mud
K104-21 G-15	west off-Rumoi	23 Sep 2004	22:12	144 00.4	139 40.8	1,555	55%	upper reddish brown soft mud, middle olive grey compact mud, lower pale yellow semi-consolidated mud
K104-21 G-16	west off-Rumoi	23 Sep 2004	23:55	144 06.0	139 54.0	808	60%	surface brownish olive grey soft mud, lower bluish olive grey compact mud
K104-21 G-17	west off-Rumoi	24 Sep 2004	01:10	144 11.1	139 58.0	1,355	50%	upper reddish brown soft mud, lower olive grey / pale grey compact mud
K104-21 G-18	west off-Rumoi	24 Sep 2004	02:28	144 11.0	140 06.7	987	50%	light grey compact sticky mud, no surface sediment due to opened a lid
K104-21 G-19	west off-Rumoi	24 Sep 2004	03:16	144 11.0	140 07.8	877	25%	surface olive grey soft, very fine-grained sandy mud, lower bluish grey compact mud

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K104-21 G-20	west off-Rumoi	24 Sep 2004	04:00	44 10.9	140 09.1	753	30%	upper olive grey soft very fine-grained sandy mud, lower light olive grey compact mud
K104-21 G-21	west off-Rumoi	24 Sep 2004	05:06	44 10.8	140 15.9	625	70%	upper olive grey soft very fine-grained sandy mud, lower light olive grey compact mud
K104-21 G-22	west off-Rumoi	24 Sep 2004	06:08	44 11.0	140 23.2	495	40%	surface olive grey soft very fine-grained sandy mud, lower light olive grey compact mud
K104-21 G-23	west off-Rumoi	24 Sep 2004	06:59	44 10.8	140 29.4	330	70%	surface olive grey soft very fine-grained sandy mud, lower light olive grey compact mud
K104-21 G-24	west off-Rumoi	24 Sep 2004	07:47	44 10.9	140 35.6	230	40%	dark greenish grey well-sorted fine- to medium-grained sand, no marked surface layer
K104-21 G-25	west off-Rumoi	24 Sep 2004	10:32	44 10.4	141 11.7	200	70%	olive grey - dark olive grey homogeneous very fine-grained sandy mud, surface similar but soft
K104-21 G-26	west off-Rumoi	24 Sep 2004	11:03	44 10.3	141 12.2	177	50%	dark olive grey muddy fine-grained sand in the upper, lower dark olive grey fine-grained compact sand
K104-21 G-27	west off-Rumoi	24 Sep 2004	11:31	44 10.2	141 13.3	151	20%	dark olive grey muddy fine-grained loose sand, surface slightly muddy and soft
K104-21 G-28	west off-Rumoi	24 Sep 2004	12:01	44 10.1	141 15.5	126	40%	dark olive grey well-sorted homogeneous fine-grained 3 cms thick, surface slightly muddy
K104-21 G-29	west off-Rumoi	24 Sep 2004	12:29	44 10.1	141 17.5	100	50%	dark olive grey muddy very fine-grained soft sand, lower dark and compact muddy fine-grained sand
K104-21 G-30	west off-Rumoi	24 Sep 2004	12:58	44 10.1	141 20.2	75	50%	dark olive grey muddy fine- to medium-grained sand, lower compact fine- to medium-grained sand
K104-21 G-31	west off-Rumoi	24 Sep 2004	13:55	44 10.0	141 29.3	58	50%	dark coloured poorly sorted medium- to very coarse-grained sand, no distinguishable surface layer
K104-21 G-32	west off-Kamoenai	24 Sep 2004	22:11	43 06.6	140 24.5	75	40%	dark olive grey well-sorted fine- to medium-grained sand, no distinguishable surface layer
K104-21 G-33	west off-Kamoenai	24 Sep 2004	22:54	43 06.4	140 23.6	101	30%	dark olive grey well-sorted fine- to medium-grained sand, surface slightly brownish and muddy
K104-21 G-34	west off-Kamoenai	24 Sep 2004	23:02	43 06.4	140 22.2	125	30%	dark olive grey well-sorted fine-grained sand, surface slightly brownish and muddy
K104-21 G-35	west off-Kamoenai	24 Sep 2004	23:38	43 06.2	140 20.3	151	30%	rounded granule- to pebble-gravel-bearing poorly sorted coarse- to very coarse-grained sand
K104-21 G-36	west off-Kamoenai	25 Sep 2004	00:01	43 06.0	140 20.1	174	30%	rounded granule-gravel-bearing poorly sorted coarse- to very coarse-grained sand
K104-21 G-37	west off-Kamoenai	25 Sep 2004	00:23	43 06.0	140 19.9	203	30%	rounded granule- to pebble-gravel-bearing poorly sorted coarse- to very coarse-grained sandy mud
K104-21 G-38	west off-Kamoenai	25 Sep 2004	00:48	43 06.0	140 19.4	250	55%	greenish dark olive grey well sorted very fine- to fine-grained sand, surface partly disturbed
K104-21 G-39	west off-Kamoenai	25 Sep 2004	01:20	43 05.9	140 18.4	352	60%	dark olive grey well-sorted very fine- to fine-grained sandy homogeneous mud, surface soft and muddy
K104-21 G-40	west off-Kamoenai	25 Sep 2004	02:39	43 04.6	140 09.1	492	90%	surface olive grey soft very fine-grained sandy mud, lower bluish compact very fine-grained sandy mud
K104-21 G-41	west off-Kamoenai	25 Sep 2004	03:21	43 04.7	140 08.6	625	80%	olive grey homogeneous slightly very fine-grained sandy mud, surface soft light olive - brownish
K104-21 G-42	west off-Kamoenai	25 Sep 2004	04:28	43 04.2	140 06.3	703	35%	olive grey homogeneous slightly sandy mud, surface soft and brownish
K104-21 G-43	west off-Kamoenai	25 Sep 2004	06:02	43 03.7	140 00.0	833	80%	olive grey homogeneous soft mud 3 cms, lower dark olive grey sticky compact mud
K104-21 G-44	west off-Kamoenai	25 Sep 2004	07:06	43 03.5	139 59.5	914	0%	only a little amount of olive grey mud
K104-21 G-44 (2)	west off-Kamoenai	25 Sep 2004	08:00	43 03.2	139 59.2	1,068	85%	olive grey homogeneous soft mud, surface slightly brownish and soupy, lower compact and dark mud
K104-21 G-45	west off-Kamoenai	25 Sep 2004	09:10	43 03.9	139 57.8	1,563	10%	a little number of fragments of consolidated mudstone with a little amount of olive grey mud
K104-21 G-46	west off-Kamoenai	25 Sep 2004	10:33	43 03.3	139 57.0	1,963	5%	granule-gravel-bearing well sorted medium-grained sand, surface a little amount of olive grey soft mud
K104-21 G-47	east off-Cape Usan	26 Sep 2004	07:16	41 57.2	141 29.9	453	40%	greenish olive pumiceous slightly very fine-grained mud, lower rather compact
K104-21 G-48	floor of Japan Basin	27 Sep 2004	19:23	40 31.0	136 06.0	3,317	100%	dark brownish red soft clay in the surface, lower chocolate brown sticky soft clay
K104-21 G-49a	top of Yamato Bank	28 Sep 2004	09:31	39 25.0	135 30.0	687	40%	foraminifers-bearing pale olive grey homogeneous compact mud, slightly sandy, lower compact
K104-21 G-49b	top of Yamato Bank	28 Sep 2004	10:15	39 25.0	135 29.9	680	50%	foraminifers-bearing pale olive grey homogeneous compact mud, slightly sandy, lower compact
K104-21 G-49c	top of Yamato Bank	28 Sep 2004	10:57	39 25.0	135 29.5	680	70%	foraminifers-bearing pale olive grey homogeneous compact mud, slightly sandy, lower compact
K105-9 G-4	north off-Wakasa Bay	06 May 2005	05:30	35 50.2	135 30.3	177	80%	olive grey massive and homogeneous muddy fine-grained sand, serpent stars
K105-9 G-5	north off-Wakasa Bay	06 May 2005	01:55	35 53.2	135 28.3	200	80%	dark olive grey homogeneous fine-grained sandy mud, lower compact, serpent stars
K105-9 G-6	north off-Wakasa Bay	06 May 2005	03:56	36 00.2	135 29.8	265	60%	olive grey soft fine-grained sandy mud in upper 3 cms, olive grey compact mud in lower, serpent stars
K105-9 G-7	north off-Wakasa Bay	06 May 2005	00:24	36 10.3	135 29.8	355	50%	dark olive grey fine-grained sandy mud in upper 4 cms, bluish grey semi-consolidated mudstone in lower
K105-9 G-8	north off-Wakasa Bay	05 May 2005	23:17	36 17.1	135 31.6	511	40%	dark olive grey fine-grained sandy mud in upper 4 cms, bluish grey semi-consolidated mudstone in lower
K105-9 G-9	north off-Wakasa Bay	05 May 2005	22:19	36 20.6	135 32.1	616	30%	mottled sediments of bluish grey semi-consolidated mudstone and soft bluish grey mud
K105-9 G-10	north off-Wakasa Bay	05 May 2005	20:19	36 33.9	135 35.6	757	45%	olive grey homogeneous mud, surface a few millimetres reddish brown soupy mud
K105-9 G-11	north off-Wakasa Bay	05 May 2005	19:18	36 36.7	135 36.4	891	40%	olive grey homogeneous mud, surface half centimetre reddish brown soupy mud
K105-9 G-12	north off-Wakasa Bay	05 May 2005	18:24	36 38.8	135 36.6	979	40%	bluish olive grey homogeneous compact mud, surface one centimetre reddish brown soupy mud
K105-9 G-13	south of Yamato Basin	05 May 2005	16:22	36 55.2	135 40.3	1,258	20%	bluish olive grey homogeneous compact mud, surface half centimetre reddish brown soupy mud
K105-9 G-14	south of Yamato Basin	05 May 2005	14:50	36 58.1	135 36.9	1,486	70%	bluish olive grey homogeneous compact mud, surface a few centimetres thick reddish brown and soft
K105-9 G-15	south of Yamato Basin	05 May 2005	11:14	37 09.8	135 28.3	1,762	4%	a very small quantity of fine-grained sand with fragments of benthic organisms
K105-9 G-15'	south of Yamato Basin	05 May 2005	12:29	37 09.7	135 28.0	1,760	30%	olive grey homogeneous compact sticky mud, surface a few millimetres reddish brown and soupy

学術研究船淡青丸ならびに金沢大学によって採取された 日本海および周辺海域の海底表層堆積物 (1995～2005)

塚脇真二¹

要 旨

「日本海における表層堆積物および有殻微小生物群集の空間分布」および「日本海における最終氷期最大期以降の海洋構造発達史」を主題とし、1995年から2005年までの11年間に、学術研究船「淡青丸」の12回の学術航海において、我が国経済水域下の日本海のほぼ全域、および東シナ海東北端部ならびにオホーツク海南西端部からこれまでに365点の海底表層堆積物および47点の海底柱状堆積物が採集された。これらの海底堆積物試料は上記の研究目的に沿ってはもちろんのこと、海洋汚染などの応用的分野や大学教育の教材としても活用されている。これらの試料はすべて金沢大学総合教育2号館地学実験資料室に保管されており、2003年までの航海については航海の概要を記載した報告が出版されている。そこで、これらの試料の存在を国内外にさらに周知させ、さまざまな目的で有効に活用する第一歩として、まず海底表層堆積物についてここに資料としてとりまとめた。

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