

Appendix B: Sample description

In this appendix, the lithology of sandstone and sand samples obtained from the Mineoka-Setogawa area and the Bengal basin are described. The lithology of sand samples from the piston cores from the Bengal fan are described in Chapter 4-3.

Table B-1. Lithology of the sandstone samples from the Mineoka area (1).

group / tectonic block	formation / area	sample No.	locality	lithology of outcrop	lithology of sample
Mineoka	Haccho	99082701	Fig. A-1	Massive sandstone	Medium-grained bluish gray massive sandstone
Mineoka	Haccho	99122404	Fig. A-1	Massive sandstone	Medium-grained massive sandstone
Mineoka	Haccho	99122403	Fig. 9	Float	Pebble-sized calcareous conglomerate
Mineoka	Haccho	00021201	Fig. A-1	Alternation of sandstone and shale	Fine-grained massive sandstone
Mineoka	Haccho	00021202	Fig. A-1	Alternation of sandstone and shale	Fine-grained massive sandstone
Mineoka	Haccho	00051407	Fig. 8	Float	Pebbly coarse- to medium-grained massive sandstone
Mineoka	Haccho	00121002	Fig. A-1	Alternation of sandstone (15 to 60 cm thick) and shale rich in sandstone	Medium-grained gray massive sandstone
Mineoka	Haccho	01042101	Fig. A-2	Alternation of sandstone (10 to 50 cm thick) and shale rich in sandstone	Medium-grained bluish gray massive sandstone
Hota	Aokiyama	99072111	Fig. A-1	Alternation of tuffaceous sandstone and mudstone intercalated with white tuff	Medium-grained dark gray massive sandstone
Hota	Aokiyama	99072114	Fig. A-1	Tuffaceous massive sandstone	Medium-grained dark gray tuffaceous massive sandstone
Hota	Aokiyama	99072307	Fig. A-3	Tuffaceous massive sandstone	Medium-grained tuffaceous massive sandstone
Hota	Aokiyama	99082801	Fig. A-1	Float	Medium-grained tuffaceous massive sandstone
Hota	Maejima	99122304	Fig. A-4	Tuffaceous massive sandstone with web structure	Medium-grained calcareous massive sandstone
Hota	Takazuru	99122407	Fig. A-1	Tuffaceous massive sandstone	Medium-grained tuffaceous massive sandstone

Table B-1. Lithology of the sandstone samples from the Mineoka area (2).

group / tectonic block	formation / area	sample No.	locality	lithology of outcrop	lithology of sample
Hota	Maejima	99122601	Fig. A-3	Silty sandstone	Fine-grained tuffaceous massive sandstone
Hota	Aokiyama	00040901	Fig. A-1	Tuffaceous massive sandstone	Coarse-grained tuffaceous massive sandstone
Hota	Fukawa	99072101	Fig. A-2 Fig. 17	Massive sandstone	Medium-grained gray massive sandstone
Hota	Fukawa	99072212	Fig. A-2	Coarse- to medium-grained massive sandstone	Medium-grained gray massive sandstone
Hota	Fukawa	00032508	Fig. A-1	Massive sandstone	Medium-grained massive sandstone (weathered)
Hota	Fukawa	00040908	Fig. A-1	Massive sandstone	Medium-grained light gray massive sandstone
Hota	Kanigawa	99122302	Fig. A-2	Tuffaceous massive sandstone	Coarse-grained tuffaceous massive sandstone
Hota	Kanigawa	02092301	Fig. A-2	Fine-grained massive sandstone containing shell fragments	Fine-grained bluish gray massive sandstone
Sakuma	Okuyama	00021109	Fig. A-1	Bedded sandstone	Coarse-grained grayish green massive sandstone
Sakuma	Okuyama	00080702	Fig. A-1	Alternation of sandstone (about 40 cm thick) and siltstone (20 to 30 cm thick)	Coarse-grained massive sandstone
Sakuma	Okuyama	00082105	Fig. A-1	Bedded pebble- to boulder-sized conglomerate	clast of picritic basalt
Sakuma	Nakaobara	00021206	Fig. A-1	Massive sandstone	Medium-grained massive sandstone
Sakuma	Nakaobara	00040902	Fig. A-1	Alternation of sandstone (about 5 to 20 cm thick) and siltstone (about 5 cm thick)	Coarse-grained massive sandstone
Sakuma	Nakaobara	00082101	Fig. A-1	Bedded sandstone	Coarse-grained massive sandstone

Table B-1. Lithology of the sandstone samples from the Mineoka area (3).

group / tectonic block	formation / area	sample No.	locality	lithology of outcrop	lithology of sample
—	Futatsuyama	99072112	Fig. A-1	Float	Coarse-grained massive sandstone
—	Futatsuyama	99082805	Fig. A-1	Float	Coarse-grained massive sandstone
—	Futatsuyama	00040907	Fig. A-1	Massive sandstone	Very coarse-grained bluish light green massive sandstone
—	Futatsuyama	00081907	Fig. A-1 Fig. 8	Massive sandstone	Medium-grained calcareous massive sandstone
Serpentine sandstone	Yohka	00081802	Fig. 16	Bedded conglomerate intercalated with sandstone and siltstone	Coarse-grained grayish green massive sandstone
Serpentine sandstone	Yohka	00081803	Fig. 16	Bedded conglomerate intercalated with sandstone and siltstone	Medium-grained grayish green massive sandstone
Serpentine sandstone	Mineoka-sengen	99072206	Fig. 17	Float	Very coarse- to medium-grained graded sandstone containing pebble of serpentinite
Serpentine sandstone	Mineoka-sengen	00081811	Fig. 17	Sheared basalt containing tectonic blocks of sandstone and siltstone (Fig. 18)	Medium-grained massive sandstone
Leucocratic sandstone	Yohka	00081805	Fig. 16	Massive sandstone	Medium-grained dark brown massive sandstone
Leucocratic sandstone	Yohka	00081806	Fig. 16	Parallel laminated fine-grained sandstone	Fine-grained parallel laminated gray sandstone
Leucocratic sandstone	Mineoka-sengen	00081817	Fig. 17	Float	Coarse-grained gray sandstone
Leucocratic sandstone	Hegurinaka	00032512	Fig. 18	Sheared serpentinite and basalt containing tectonic blocks of sandstone, mafic metamorphic rock, basalt and gabbro (Fig. 18)	Fine-grained greenish gray sandstone
Leucocratic sandstone	Hegurinaka	00051303	Fig. 18	Sheared serpentinite and basalt containing tectonic blocks of sandstone, mafic metamorphic rock, basalt and gabbro (Fig. 18)	Fine-grained bluish gray sandstone

Table B-1. Lithology of the sandstone samples from the Setogawa area (1).

group	formation/ Thrust Sheet/ subgroup	sample No.	locality	lithology of outcrop	lithology of sample
Mikura		02082401	Fig. A-8c	Broken beds of alternation of sandstone and shale rich in shale	Medium-grained gray massive sandstone
Mikura		02092902	Fig. A-8c	Alternation of sandstone and shale rich in shale	Medium-grained bluish gray massive sandstone
Mikura		02122701	Fig. A-6c	Bedded sandstone intercalated with shale (about 10 cm thick). Single bed of sandstone is 10 to 60 cm thick.	Very coarse-grained gray massive sandstone
Mikura		02122705	Fig. A-6b	Parallel laminated shale intercalated with sandstone (about 10 cm thick)	Medium-grained bluish gray massive sandstone
Mikura		02122706	Fig. A-6a	Shale containing sandstone lenses and intercalated with sandstone (about 1.5 m thick).	Coarse-grained gray massive sandstone
Setogawa	Odake	02061401	Fig. A-8b	Black and greenish gray shale intercalated with conglomerate (granule to boulder) and sandstone	Granule to pebble sized conglomerate
Setogawa	Odake	03081201	Fig. A-10	Alternation of sandstone (maximum thickness is more than 2 m) and shale	Medium-grained blacky gray massive sandstone
Setogawa	Takayama	02092604	Fig. A-8a	Very coarse- to medium-grained bedded sandstone	Medium-grained gray massive sandstone
Setogawa	Takayama	02093005	Fig. A-8b	Medium- to coarse-grained massive sandstone (thickness is about 3 m) intercalates in alternation of sandstone and shale rich in	Medium-grained gray massive sandstone
Setogawa	Takayama	02093008	Fig. A-8b	Black shale containing sandstone lenses (sandstone is medium- to coarse-grained)	Coarse-grained gray massive sandstone
Setogawa	Oigawa	02071601	Fig. A-9	Massive sandstone	Fine-grained gray massive sandstone
Setogawa	Oigawa	02122603	Fig. A-11	Alternation of sandstone (3 to 40 cm thick) and shale (less than 15cm in thickness) rich in sandstone	Medium-grained bluish gray massive sandstone
Setogawa	Oigawa	02122604	Fig. A-11	Medium-grained assive sandstone	Medium-grained light gray massive sandstone
Setogawa	Oigawa	02122605	Fig. A-11	Medium- to coarse-grained assive sandstone (weathered)	Medium-grained gray massive sandstone
Setogawa	Oigawa	02122606	Fig. A-11	Medium-grained assive sandstone (weathered)	Medium-grained gray massive sandstone

group	formation/ Thrust Sheet/ subgroup	sample No.	locality	lithology of outcrop	lithology of sample
Table B-1. Lithology of the sandstone samples from the Setogawa area (2).					
Setogawa	Oigawa	02122608	Fig. A-11	Medium-grained assive sandstone (weathered)	Medium-grained gray massive sandstone
Setogawa	Oigawa	02122609	Fig. A-11	Medium-grained assive sandstone (weathered)	Medium-grained gray massive sandstone
Kurami	Amakata	02122803	Fig. A-12	Medium- to fine-grained massive sandstone	Medium-grained gray massive sandstone
Kurami	Towata	02122807	Fig. A-12	Massive medium-grained sandstone to sandy siltstone	Fine-grained bluish gray massive sandstone
Kurami	Todo	02122810	Fig. A-12	Gray siltstone intercalated with medium-grained sandstone (50 cm thick)	Medium-grained gray massive sandstone
Koma	Kushigatayama	02102501	Fig. A-14	Pebbly mudstone intercalated with sandstone (6 cm in thickness) Pebbles are composed of volcanoclastic rocks, mudstone and sandstone	Medium-grained brownish gray massive sandstone
Koma	Kushigatayama	02102502	Fig. A-14	Parallel laminated sandstone (3 m thick)	Medium-grained massive sandstone
Koma	Kushigatayama	02102503	Fig. A-14	Alternation of very coarse-grained sandstone or pebble-sized conglomerate and shale	Very coarse-grained calcareous massive sandstone
Koma	Kushigatayama	02102504	Fig. A-14	Alternation of sandstone (5 cm to 1 m thick) and shale rich in sandstone (partly broken)	Fine-grained bluish gray massive sandstone
Koma	Kushigatayama	02102506	Fig. A-14	Alternation of sandstone (3 to 30 cm thick) and shale rich in shale	Medium-grained brownish gray massive sandstone
Koma	Kushigatayama	02102509	Fig. A-14	Shale containing blocks of conglomerate and calcareous sandstone Diameter of blocks 20 cm to 3 m	Pebbly coarse-grained massive sandstone
Koma	Momonoki	02102101	Fig. A-13	Alternation of sandstone (medium- to fine-grained, 15 to 60 cm in thickness) and shale (3 to 10 cm in thickness) rich in sandstone	Medium-grained gray massive sandstone
Koma	Momonoki	02102207	Fig. A-13	Alternation of sandstone (medium- to fine-grained, 15 to 45 cm in thickness) and shale rich in sandstone	Medium-grained gray parallel laminated sandstone
Koma	Momonoki	02102208	Fig. A-13	Medium- to fine-grained massive sandstone and massive shale	Medium-grained massive sandstone
Koma	Momonoki	02102303	Fig. A-13	Alternation of coarse-grained sandstone and conglomerate (pebble- to cobble-sized)	Coarse-grained pebbly massive sandstone

Table B-1. Lithology of the sand and sandstone samples from Bangladesh (1).

formation (group)	sample No.	locality	lithology of outcrop	lithology of sample
Kopili Fm.	00042013	Fig. 59	Limestone intercalated with sandstone (1 m thick) and fossiliferous shale (1.2 m thick)	Very fine-grained dark gray parallel laminated sandstone
Barail Fm.	00042002	Fig. 59	Alternation of medium- to coarse-grained sandstone and shale rich in sandstone	Medium-grained gray massive sandstone
Barail Fm.	00042006	Fig. 59	Blackish gray shale containing sandstone lenses (sandstone lenses are about 5cm thick)	Medium-grained dark gray massive sandstone
Barail Fm.	00042015	Fig. 59	Massive to trough cross bedded, fine- to very fine-grained sandstone	Fine-grained yellowish brown massive sandstone
Bhuban Fm.	00042016	Fig. 59	Parallel laminated very fine-grained sandstone to siltstone	Very fine-grained yellowish brown parallel laminated sandstone
Bhuban Fm.	CH01	Fig. 60	Medium- to coarse-grained massive calcareous sandstone and cross laminated siltstone	Medium-grained calcareous light gray massive sandstone
Bhuban Fm.	CH58	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Medium-grained gray massive sandstone
Bhuban Fm.	CH59	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Medium-grained gray massive sandstone
Boka Bil Fm.	CH03	Fig. 60	Siltstone intercalated with sandstone (7 cm thick)	Medium-grained yellowish brown massive sandstone
Boka Bil Fm.	CH05	Fig. 60	Massive sandstone and partly laminated massive siltstone	Medium-grained gray massive sandstone
Boka Bil Fm.	CH11	Fig. 60	Parallel laminated sandy siltstone intercalated with calcareous sandstone (about 6 cm thick)	Medium-grained calcareous bluish gray sandstone
Boka Bil Fm.	CH56	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Coarse-grained yellowish brown massive sandstone
Boka Bil Fm.	CH57	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Medium-grained yellowish brown massive sandstone
Tipam Gr.	00042102	Fig. 59	Yellowish brown massive sandstone containing calcareous concretion (maximum diameter is about 1m)	Coarse-grained yellowish brown massive sandstone
Tipam Gr.	00042103	Fig. 59	Yellowish brown bedded sandstone containing calcareous concretion (thickness of single bed is about 15 to 20 cm)	Medium-grained gray massive sandstone (calcareous concretion)

Table B-1. Lithology of the sand and sandstone samples from Bangladesh. (2)

formation (group)	sample No.	locality	lithology of outcrop	lithology of sample
Tipam Gr.	00042105	Fig. 59	Medium- to coarse-grained massive or parallel laminated sandstone	Coarse-grained bluish gray massive sandstone
Tipam Gr.	00042108	Fig. 59	Alternation of massive sandstone (about 3 to 5 m thick) and parallel laminated siltstone (more than 3 m) rich in siltstone	Medium-grained bluish gray massive sandstone
Tipam Gr.	CH07	Fig. 60	Yellowish brown massive sandstone containing calcareous concretion (diameter is about 20 cm)	Medium-grained greenish gray massive sandstone (calcareous concretion)
Tipam Gr.	CH13	Fig. 60	Massive medium-grained sandstone	Coarse-grained yellowish brown massive sandstone
Tipam Gr.	CH53	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Medium-grained light yellowish brown sandstone
Tipam Gr.	CH54	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Fine-grained light brown massive sandstone
Tipam Gr.	CH55	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Coarse-grained light yellowish brown massive sandstone
Dupi Tila Fm.	00042110	Fig. 59	Parallel laminated medium-grained sandstone	Medium-grained bluish gray parallel laminated sandstone
Dupi Tila Fm.	00042111	Fig. 59	Massive medium-grained sandstone (partly laminated)	Medium-grained bluish gray massive sandstone
Dupi Tila Fm.	00042201	Fig. 59	Siltstone intercalated with sandstone (weathered)	Medium-grained light pinky brown massive sandstone
Dupi Tila Fm.	00042202	Fig. 59	Alternation of sandstone (0.5 to 1 m thick) and siltstone (30 to 40 cm) rich in sandstone	Medium-grained light brownish pink massive sandstone
Dupi Tila Fm.	CH51	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Medium-grained light yellowish brown sandstone
Dupi Tila Fm.	CH52	Fig. 60	This sample was provided by Dr. M. M. Mohiuddin, and Mr. M. A. Islam and lithology of outcrop is unknown.	Coarse-grained light brown massive sandstone
Chittagong (Patenga) beach	CH14	Fig. 60	—	Medium-grained sand