

Addendum

(Status: January 2019)

to

Cruise Report / Fahrtbericht

FS / RV SONNE

SO264

Suva (Fiji) – Yokohama (Japan) 30.6.2018 – 24.8.2018

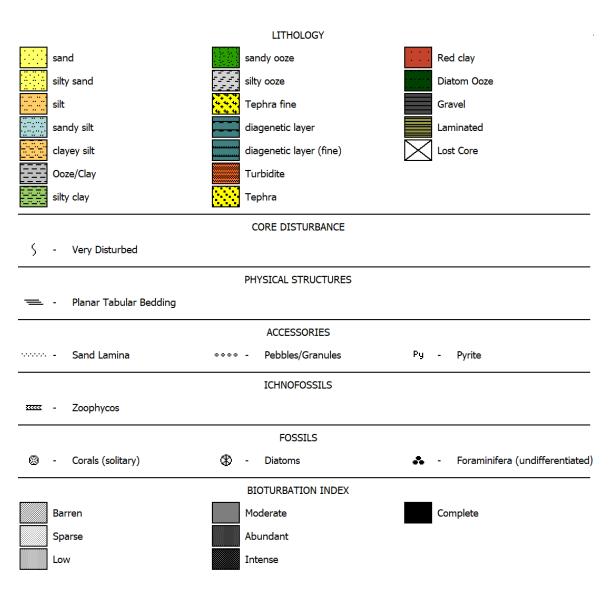
Durchführung im Rahmen von

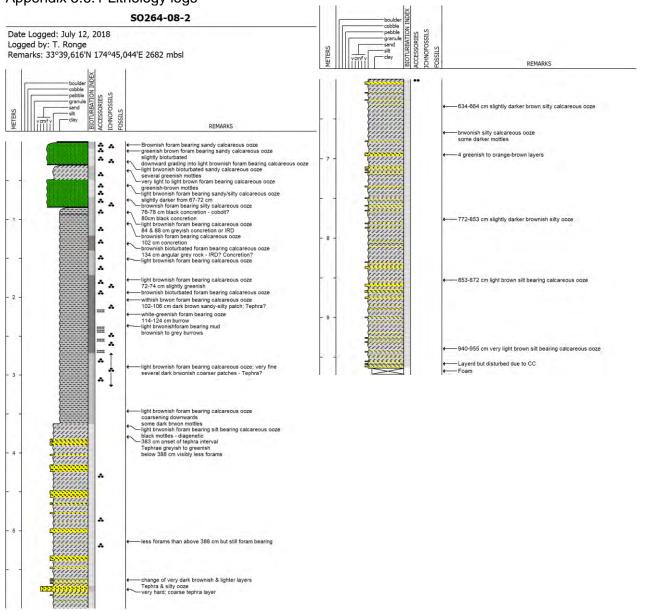
SONNE-EMPEROR

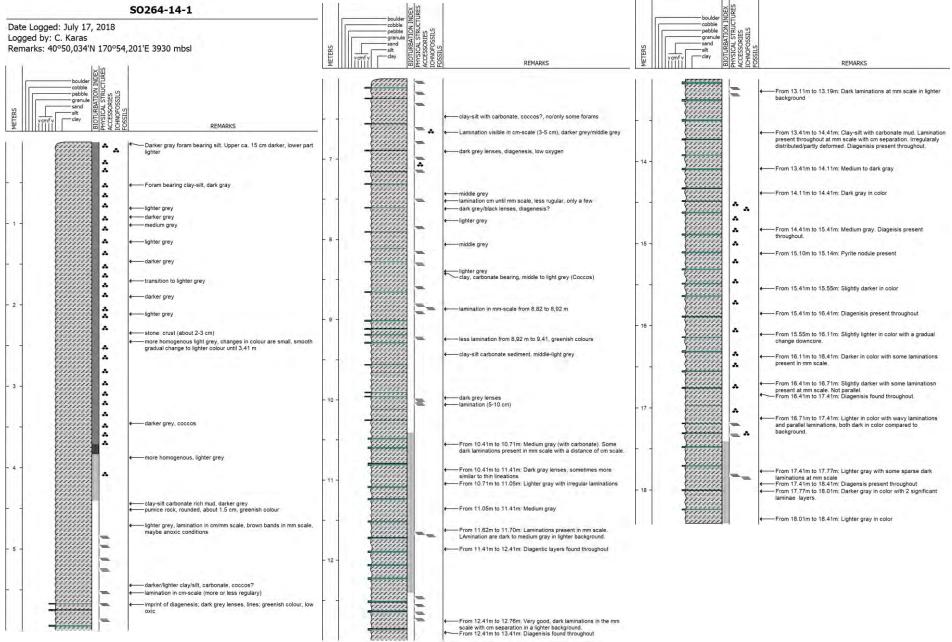
BMBF Projekt Nr. 03G0264A

Chief Scientist / Fahrtleiter: Dirk Nürnberg, GEOMAR Kiel Captain / Kapitän: Oliver Meyer, Briese Research

Legend for core description

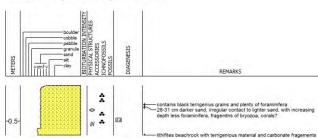




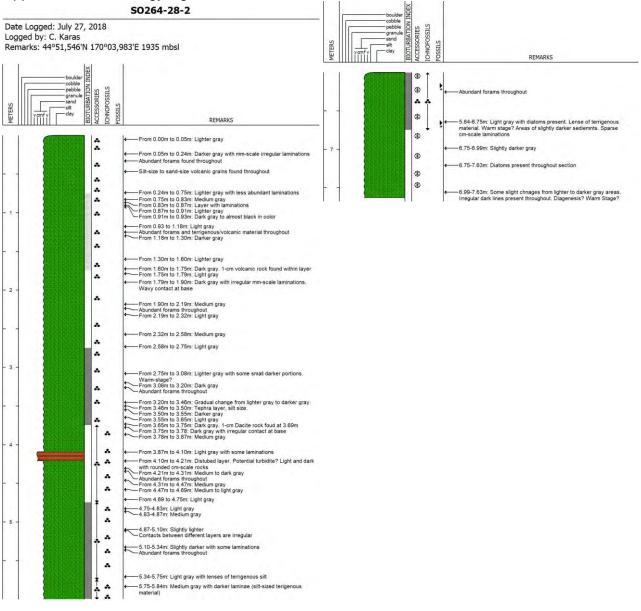


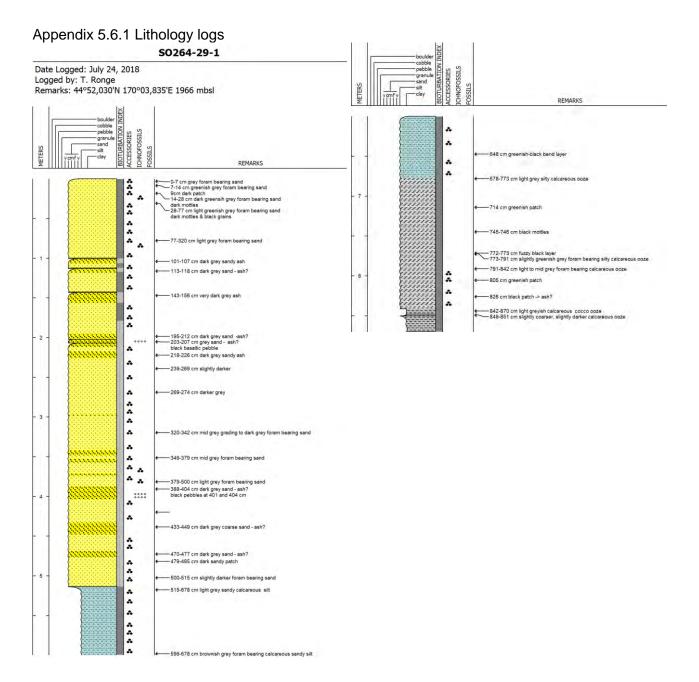
SO264-20-1

Date Logged: July 22, 2018 Logged by: C. Karas Remarks: 41°20,025'N 170°22,742'E 1308 mbsl



From 12.31m to 12.81m: Medium to light gray. At 12.81m, dark gray laminae, approximately 1cm thick. Darker towards base

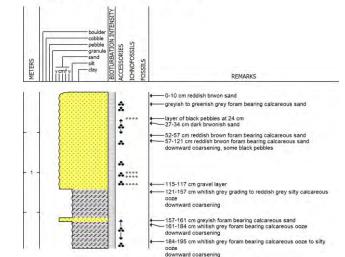




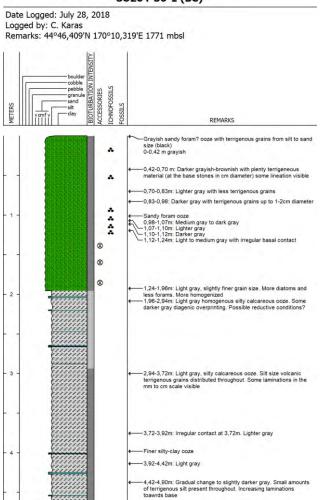
Appendix 5.6.1 Lithology logs 50264-34-2

Date Logged: July 27, 2018 Logged by: T. Ronge

Remarks: 45°01,852'N 170°13,553'E 2622 mbsl



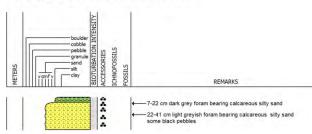
S0264-36-1 (BC)



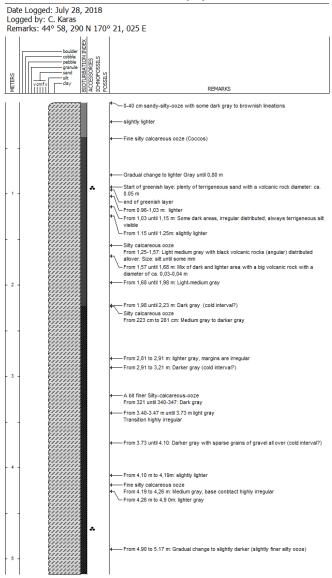
SO264 Cruise Report SO264-38-1 (=36) GKG

Date Logged: July 30, 2018 Logged by: T. Ronge

Remarks: 44°46,414'N 170°10,317'E 1771 mbsl



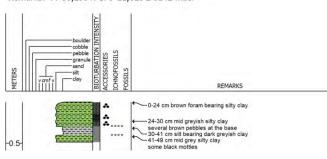
SO264-39-1 (BC)

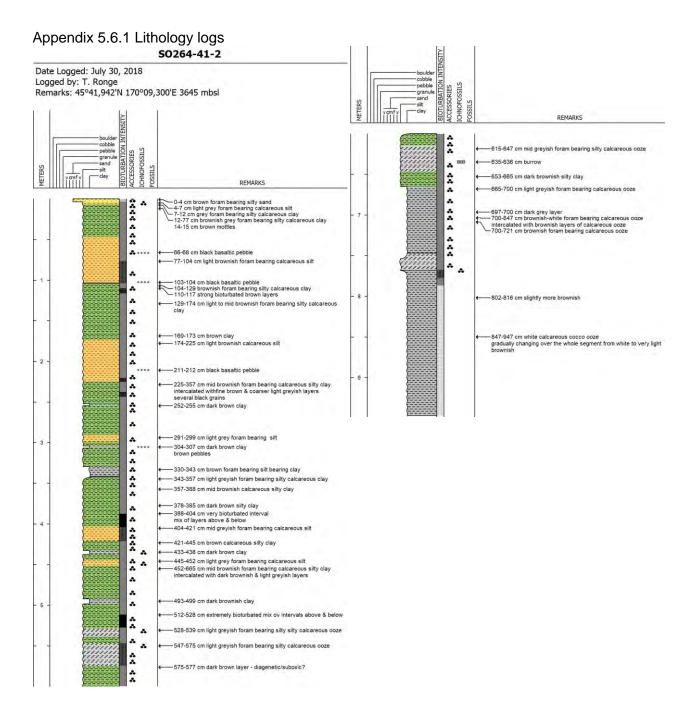


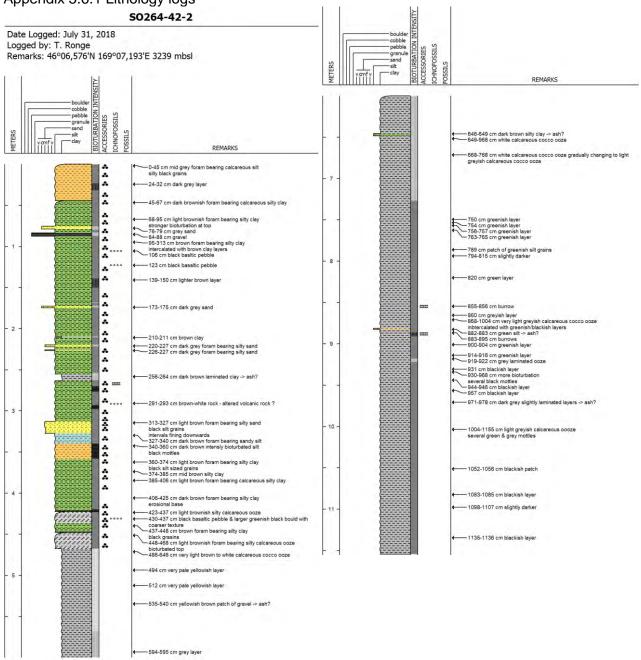
S0264-39-3 GKG

Date Logged: July 30, 2018 Logged by: T. Ronge

Remarks: 44°58,295'N 170°21,025'E 3142 mbsl



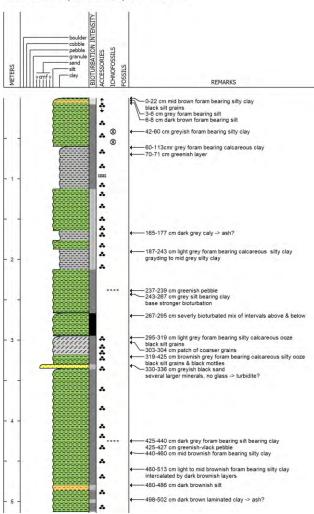




Appendix 5.6.1 Lithology logs S0264-43-2

Date Logged: July 31, 2018

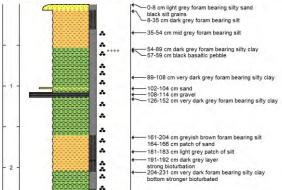
Logged by: T. Ronge Remarks: 46°06,576'N 169°07,193'E 3239 mbsl



Appendix 5.6.1 Lithology logs **50264-44-2**

Date Logged: Aug 1, 2018 Logged by: T. Ronge Remarks: 46°15,298'N 169°20,062'E 1893 mbsl

Double obble obble

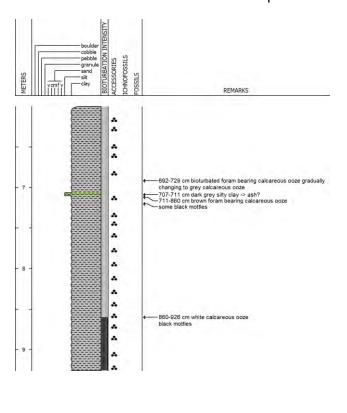


SO264-44-3

Date Logged: Aug 1, 2018 Logged by: T. Ronge Remarks: 46°15,307'N 169°20,064'E 1894 mbsl BIOTURENSITY
ACCESSORIES
ACCESSORIES - cobble - pebble -silt -clay REMARKS —0-10 cm light grey foram bearing silty sand
 —10-22 cm dark grey silty sand
 some black pebbles * * -22-45 cm grey foram bearing silty sand some black pebbles * . -45-96 cm grey foram bearing silt * intercalated with clay & sand layers -52-63 cm very dark silty clay -75 cm black slightly laminated silt * -84-85 cm sand layer * -96-119 cm mid brownish foram bearing silt black silt grains

- 110-111 cm dark grey slightly laminated silt . - 119-134 cm dark silt bearing clay * - 134-179 cm very dark grey silty sand intercalated with light grey silt layers
144-148 cm gravely sand
154-155 cm black pebbles
157-160 cm gravely sand
173 cm grey pebble
173 cm grey pebble - 192-212 cm mid brownish foram bearing silt -212-338 cm very dark grey silty clay intercalated with light grey silt & dark grey sand layers -244-249 cm light grey foram bearing silt -268-270 cm black basaltic pebble -282-285 cm coarse grained pebble with white vein -> IRD? -291-294 cm gravel -303 cm black basaltic pebble -317-324 cm light brown silty clay -328-338 cm dark grey silty sand black & brown pebbles -> IRD?

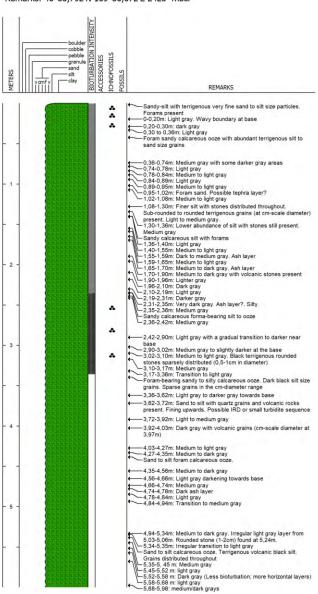
38-692 cm light brownish foram bearing calcareous ooze
339-346 cm some patches of sand * * * * gradually changing to mid brown calcareous ooze

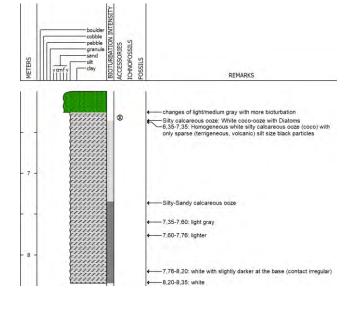


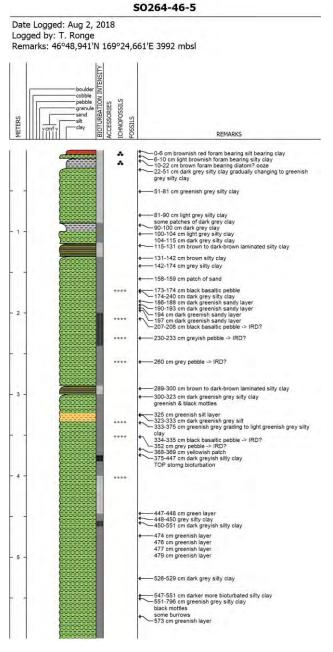
Appendix 5.6.1 Lithology logs so264-45-2

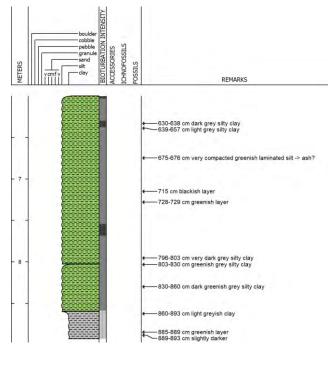
Date Logged: Aug 10, 2018 Logged by: C. Karas

Remarks: 46°33,792'N 169°36,072'E 2425 mbsl

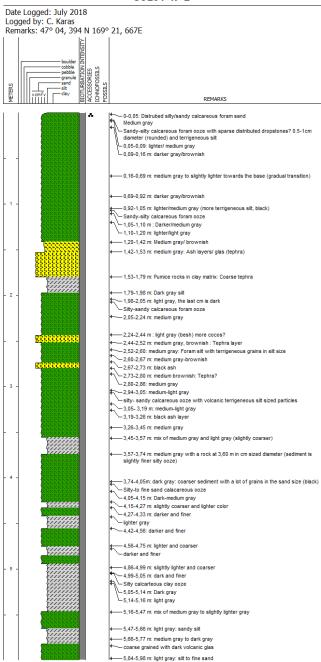


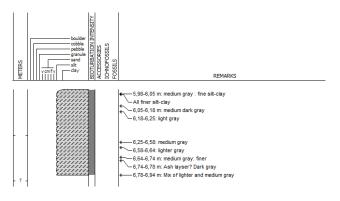






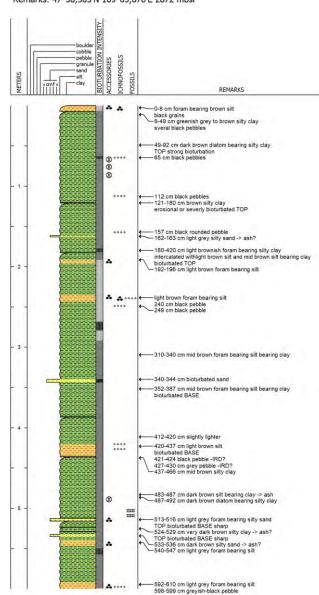
SO264-47-2

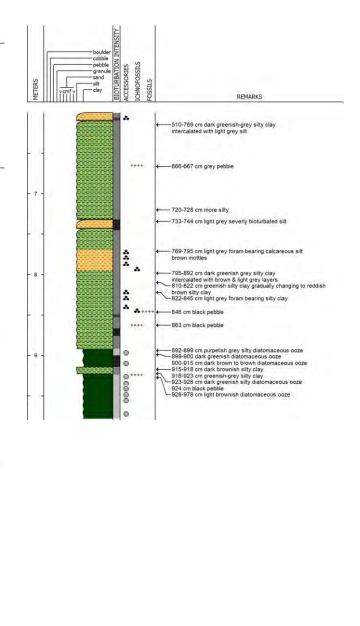




Appendix 5.6.1 Lithology logs **50264-48-2**

Date Logged: Aug 4 , 2018 Logged by: T. Ronge Remarks: 47°58,505'N 169°03,878'E 2872 mbsl

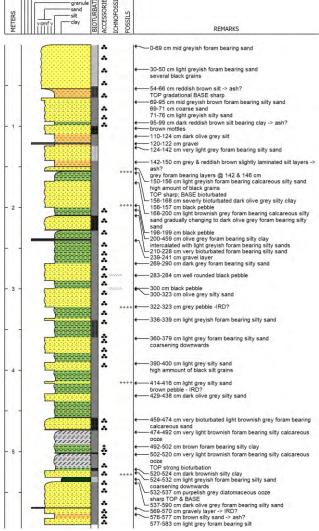




Appendix 5.6.1 Lithology logs **SO264-49-2**

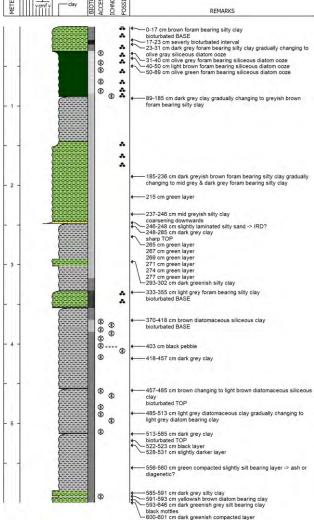
Date Logged: Aug 4, 2018 Logged by: T. Ronge Remarks: 47°40,869'N 169°01,419'E 2400 mbsl

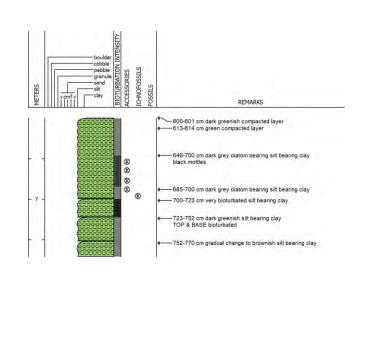




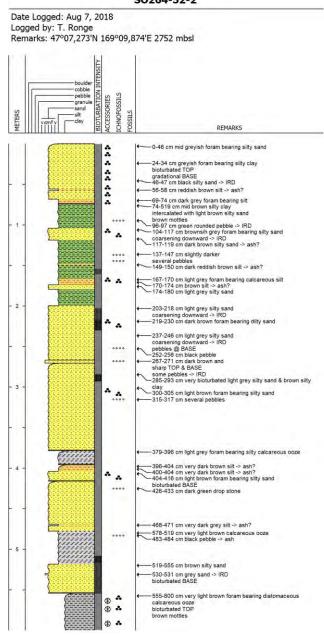
Appendix 5.6.1 Lithology logs so264-51-2

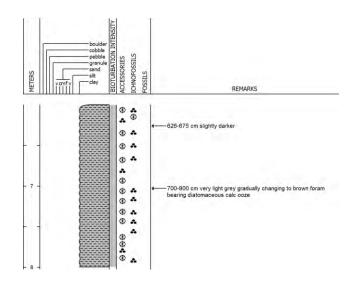
Date Logged: Aug 5, 2018
Logged by: T. Ronge
Remarks: 47°10,547'N 169°25,282'E 2933 mbsl





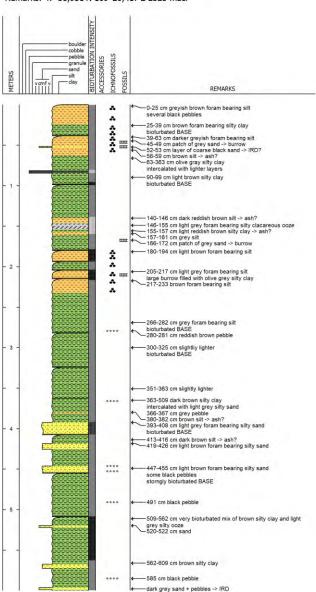
Appendix 5.6.1 Lithology logs **50264-52-2**

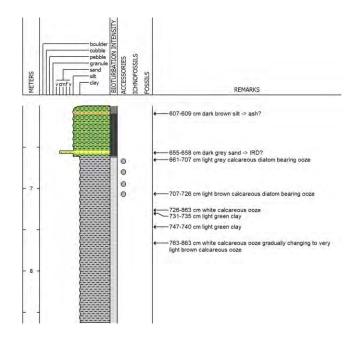


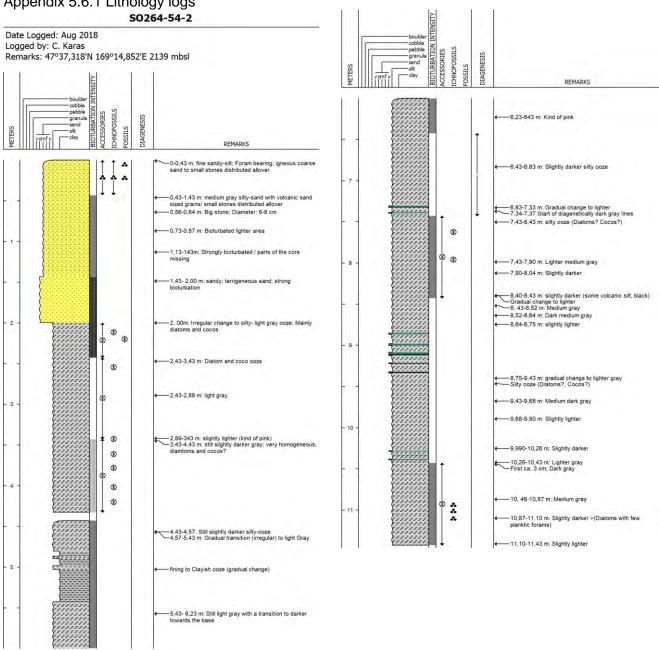


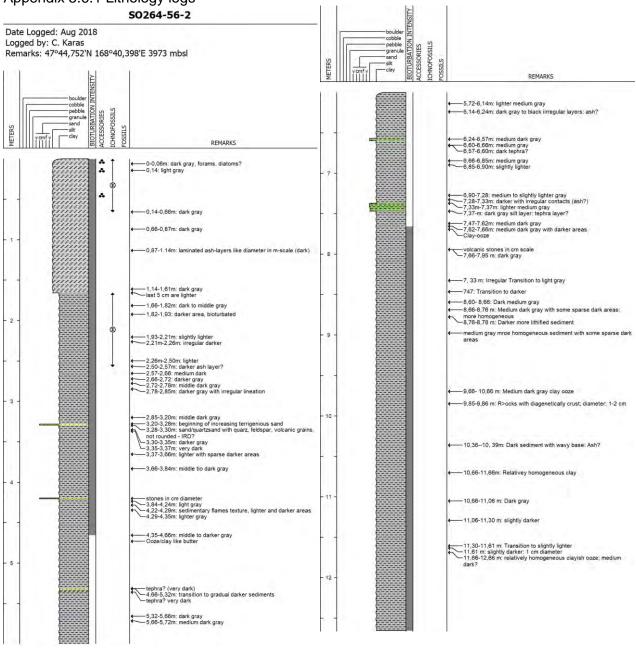
Appendix 5.6.1 Lithology logs so264-53-2

Date Logged: Aug 7, 2018 Logged by: T. Ronge Remarks: 47°38,931'N 169°20,417'E 2325 mbsl

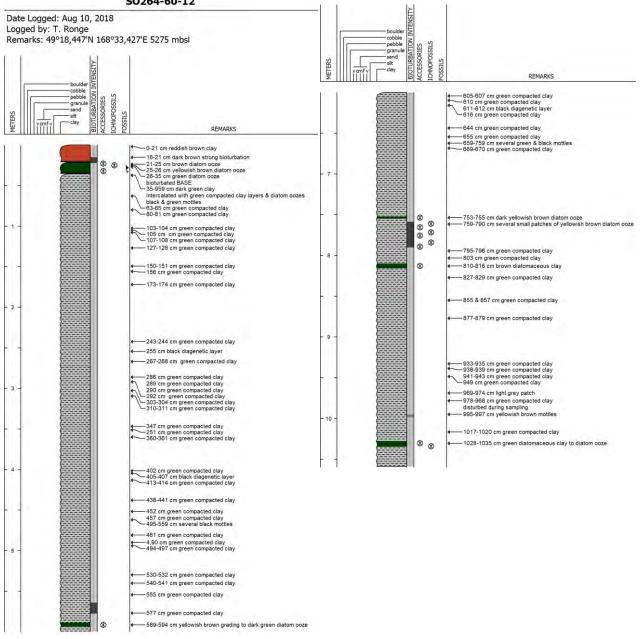




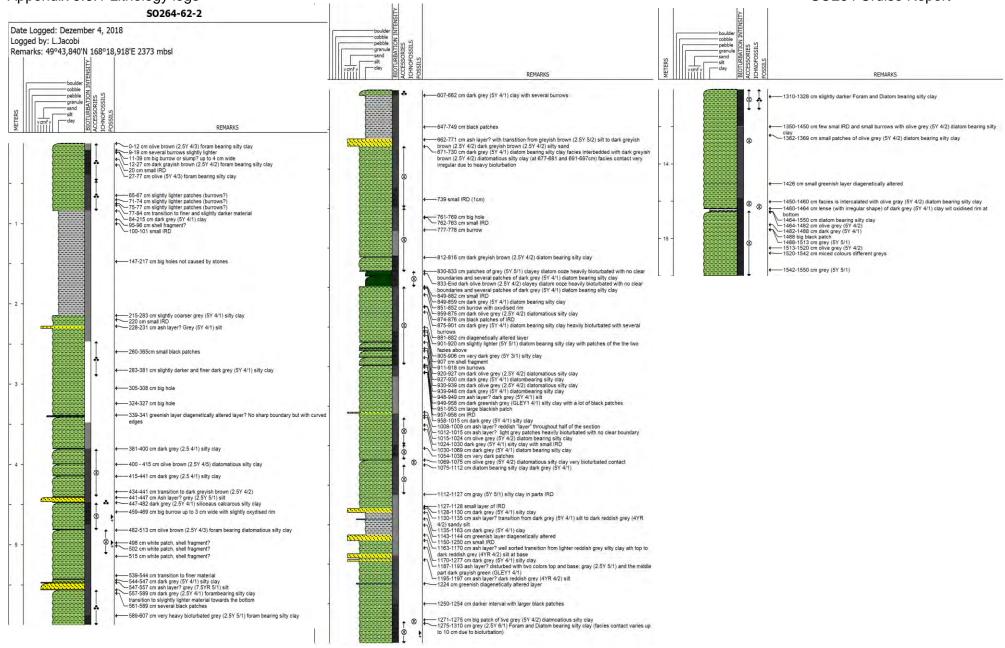




Appendix 5.6.1 Lithology logs 50264-60-12



Appendix 5.6.1 Lithology logs



-1288-1330 cm olive gray change to dark greenish gray at the bottom with a bioturbated base, with occasional likght gray, green and black mottles

(at 585cm) the lower part, which change from dark olive gray with olive mottles to gray

Appendix 5.6.1 Lithology logs

579-593 cm from light gray transit downward toyellowish gray

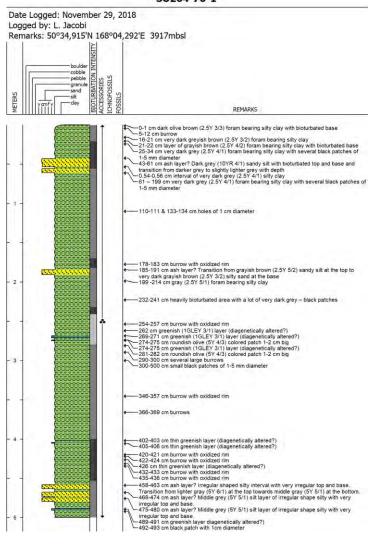
-582-588 cm greenish patches

SO264-69-1 cobble cobble Date Logged: November 28, 2018 Logged by: W. Chao Remarks: 50°30.877' N 167°55.478' E 3473 mbsf REMARKS DEMARKS - 603-604 cm black patches - 609-618 cm lighter color cobble BIOTURBATTON Site and a side a - 1308-1339 cm slightly bioturbated gray clay gradually change to light gray, occasional -634-656 cm lighter color with occasional patches — silt — clay - 1339-1356 cm light olive gray clay 656-659 cm yellowish gray clay with a light and close to invisible layer base 659-667 cm light gray clay with a bioturbated base 667-681 cm dark gray clay with few black patches REMARKS 1356-1456 cm dark gray (2.5Y 4/N4/) claywith occasional black patches 1356-1384 cm lighter color, gray clay 682-690 cm light gray cover with dark gray mottles 690-695 cm dark gray clay intertwine with the upper light gray clay and the lower reddish. -dark vellowish brown (10YR 4/4/3) foram hearing silty clay —5-9 cm prottle —9-16 cm grayish brown (2.5YR 5/5/2) foram bearing silty clay with bioturbated base obs-0-os citi dairy gray cay intertwine with the upper light gray cay white sandy clay white sandy clay patches 685-695 cm reddish white sandy clay patches 685-712-728 cm whitis pray clay with few brownish gray patches 712-728 cm whitis pray clay with dark gray to black strip patches 722 cm black patch on side. 19-56 cm dark gray (2.5Y 4/N4/) clay with occasional greenish mottle 1400 cm light brown sandy clay layer 1402-1406 cm dark gray clay fill with light brown sandy clay patches —dark gray (2.5Y 4/NY) clay with occasional black greenish mottle —bioturbated patches at depth 64cm, 76cm and 86-92cm -740-749 cm deak gray with reddish brown patches —740-749 cm deak gray with reddish brown patches 749-756 on greenish brown (257 5/5/2) [249 slowly getting darker color at the bottom 755-756 cm) as black ality (aly 756-856 cm dark; gray (25 7/44/4) (aly with occasional greenish brown patches 756-856 cm dark; gray (25 7/44/4) (aly with occasional greenish brown patches 756-856 cm green layer, also at 775cm 775 cm bloturbation-like dark gray ring 789-792 cm bloturbation-like dark gray ring 789-792 cm bloturbation-like dark gray ring 1456-1463 cm greenish gray clay with greenish patches and a gray layer-like base 1462-1471 cm light gray clay 794-795 cm bioturbation-like dark gray ring 798-795 cm bioturbation-like dark gray ring 988-799 cm bioturbation-like dark gray ring 804-806 cm bioturbation-like dark gray ring 806-812 cm bioturbation with slightly lighter color - 1471-1485 cm brownish gray clay fill with dark green or black stripe patches - 134-137 cm dark grayish brown sandy clay layer gradually merges into the lower layer 1485-1500 cm gray clay with a sharp upper boundary with a snarp upper boundary —greenish layer at depth 143cm and 147cm —156-256 cm dark gray (2.57 4/N4/) clay with occasional greenish brown and brownish 825-827 cm slightly lighter color - 1500-1515 cm a greenish transition upper boundary and a downward intergraded base -840-846 cm soft and little water contained patch interval fill with dark reddish brown and greenish patches and few light brown sandy olay patches -1515-1519 cm dark gray clay with a bioturbated base -174-205 cm slightly lighter gray clay and strongly bioturbated - 856-956 cm dark gray (2.5Y 4/N4/) clay with occasional black and greenish stripe - 1519-1526 cm strong bioturbation fill with dark gray and whitish brown patches with patches -864-867 cm very dark brown (10YR 2/2/2) silty clay >> ash? intergrades base 804-987 cm very dark prown (10°TK 2/2/2) stily clay >> asn? 888-5972 cm dark brown patiety aray clay 870-881 cm bioturbation within light gray clay 851-888 cm only eyellow clay intertwine with dark gray clay 850-982 cm slightly visiable light gray layer 900-9180 millipher gray clay with few olive yellowish patietes and bioturbated base -1526-1534 cm olive yellowish clay with olive and gray patches, and a intergrades greenish base greenish base -1543+1538 cm dark gray clay -1538-1544 cm dark ofive gray clay with few black stripe patches -1544 cm grayish green (56 4/2) layer with a relatively sharp upper boundary -> ash? -216-230 cm greenish mottled interval -238-241 cm gravish brown patches - 1544-1555 cm olive brown clay - 1555-1562 cm olive brown clay - 1555-1562 cm olive brown clay intergrade to gray clay -256-356 cm dark gray (2.5Y 4/N4/) clay with occasional green brownish mottle 1562-1565 cm olive brown clay with relatively sharp upper boundary and black stripe patch as base, while brown stripe patch within this interval 958-957.5 cm light gray silty clay with irregular base 957.5-959.5 or paleflight brown silty clay with whitish layer as a relatively sharp base 959-971 cm very dark gray clay with small paleflight brown patches and reduse 1565-1575 cm gray clay fill with black patches 1575-1577 cm dark gray clay with bioturbated base intertwined with lower layer - 289-302 cm lighter greenish gray color - 1577-1590 cm light gray foram bearing clay - 1585-1587 cm big green patch intercalate between light gray mottles 971-975 cm interval which intertwine with the upper vary dark gray clay and the lower 1590-1599 cm whitish brown foram bearing clay gray clay -975-986 cm gray clay - 1595-1597 cm green layer-like patch - 1599-1618 cm light olive brown foram bearing clay with few olive patches 320-324 lighter color dark brown patches at depth 321-322cm and 336-339cm 986-994 cm dark gray clay with black stripe patch at 991cm 995-1021 cm brownish foram (?, visible white dots) bearing patches distribute in dark -1618-1630 cm brownish gray transition zone with bioturbated foram filled mottles -1630-1634 cm bioturbated foram filled mottles with greenish gray matrix clay gray clay -1021-1028 cm bioturbated dark gray clay - 1634-1655 cm dark gray clay with occasional black patches - 1655-1660 cm dark gray clay with black stripe patches 356-447 cm dark gray (2.5Y 4/N4/) clay with few black patches and brown mottles 356-360 cm gray color with light bloturbated base light gray color with strong bloturbation 1030 cm brownish foram (?, visible white dots) bearing layer 1030-1086 cm gray clay with loccasional foram (?, visible white dots) bearing patches 1056-1086 cm foram bearing gray clay with occasional black patches and a bioturbated - 1660-1688 cm color change from gray to dark brownish gray, light bioturbated with 1006-1006 sin. Sity clay patch 1062 cm brown sity clay patch 1068-1074 cm reddish gray 1068-113 cm dark gray clay with few black patches 1064-1079 cm brown sity clay patches occasional black stripe patches and a bioturbaed base 1661 cm thin green patch intercalate from aside — 1688-1696 cm light gray clay fill with whitish gray mottles — 1696-1712 cm gray clay with foram bearing at 1704-1712cm and a bioturbated base 392 cm thin green layer 399-401 cm light yellowish brown layer with the base interrupted into the lower greenish layer 401-403 cm greenish fine clay layer -> ash? 1712-1719 cm dark brownish gray clay with light brown patch at the lower part 1719-1755 cm dark gray clay fill with black and gray patches and bioturbation 413 cm greenish stripe 417-421 cm silty clay water patch 1094-1097 cm thorwisely cay packeds 1102-1108 cm thin green layers with black stripe batches below 1113-1134 cm olive yellowish foram bearing bloturbated clay 1113-1124 cm greenish and graysh patches 1124-1131 cm dark frown and olive patches 1124-1131 cm derk frown and olive patches -1720-1722 cm green patches - 1755-1782 cm color change from olive gray to light brownish gary, clay fill with black -436-443 cm lighter color with bioturbation mottles and few whitish mottles, brown mottled bioturbation at the bottom and continue -447-452 cm light gray (2.5Y 7/N7) sandy clay towards to the bioturbated base -450-451 cm greenish layer -450-456 cm hill -> stone underneath? 1134-1143 cm olive clay with few dark brown patches -1782-1792 cm dark olive gray clay fill with black and greenish patches - II 3-4 11-3 cm olives clay with rew dark grown pationes - I143-1145 cm dark gray clay - I145-1156 cm gray clay with black patches at the lower part - I156-1156 cm dark gray clay with reddish brown patch - I163-1166.5 cm light gray clay - I172-1179 cm light gray clay - I172-1179 cm light gray clay 1791 cm green layer-like patch 1792-1801 cm light gray interval with black and dark green mottles and bioturbated -452-456 cm greenish gray clay with greenish patches -456-556 cm dark gray (2.5Y 4/N4) clay with occasional black mottles - 456-474 cm brownish gray with light brown mottles - 459 cm thin green layer -> ash? - 459-463 cm greenish stripes transition base - 1801-1813 cm color change from gray to light gary, with black patches at 1810cm 172-179 cm light gray clay 173-182 cm dark gray clay 173-182 cm dark gray clay 173-182 cm dark gray clay 193-193 cm gray clay and online to the control of t 1813-1828 cm color change from greenish gray to whitish gray with a bioturbated base, bioturbation and dark gray mottles -464 cm light redish brown layer 444 cm light redish brown layer 474-496 cm dark gray clay with occasional black patches 496-509 cm strong bioturbation and light brownish color at the base 516-523 cm light redish brown layers-like/lamination 1823 cm black speckle-layer-like 1828-1829 cm whitish foram bearing patch (fluffy texture) intercalate from side. - 1828-1836 cm dark gray clay 539-541 cm light brown sandy clay patch/layer-like 541-545 cm light brown patches 1836-1851 cm dark gravenish gray clay with few black patches at the lower part 1851-1855 cm core catcher (olive yellowish clay) 1216-1237 on light greenish gray clay with tew dark flow patches 1237 on dark gray clay layer 1239-1252 cm olive gray clay mix with olive yellowish and light gray patches 1252-1256 on dark gray clay 1256-1257 on brown clay 1257-1250 on gray clay mix with whitish patches 556-559 cm very dark gray (2.5Y 3/N3) clay with slightly bioturbated base 559-656 cm dark gray (2.5Y 4/N4) clay with occasional mottles and black patch at 559cm 563-564 cm black natches -503-504 cm black patches -572-610 cm dark gray and black stripe -577-578 cm black patches 1260-1265 cm olive brown silty clay with relatively sharp base 1265-1267 cm whitish gray clay intertwine with clave patches 1267-1271 cm olive clay intertwine with gray clay 1267-1271 cm olive clay intertwine with gray clay 1271-1276 mixture of redolsh brown, light gray and olive gray clay 1277-1285 cm strong bioturbated dark gray clay intertwine with olive foram bearing sitty

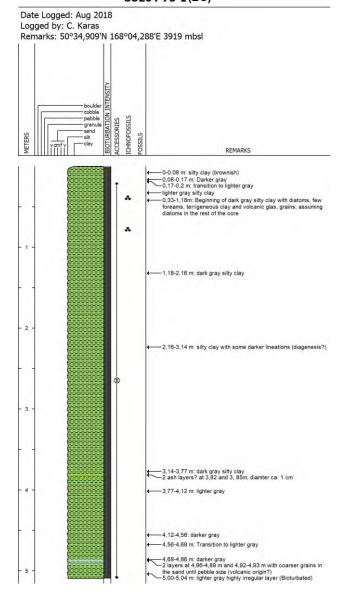
clay patches -1285-1308 cm bioturbated dark gray clay intertwine with light gray patches

Appendix 5.6.1 Lithology logs SO264 Cruise Report

SO264-70-1

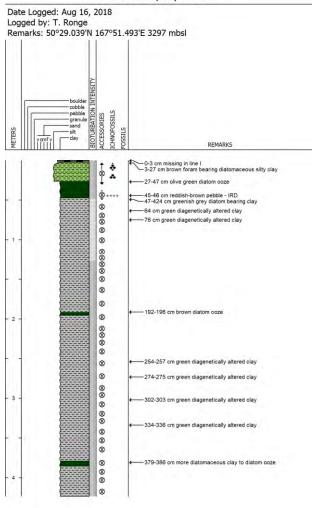


Appendix 5.6.1 Lithology logs **S0264-75-1 (BC)**

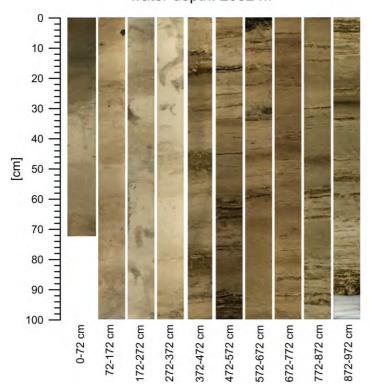


Appendix 5.6.1 Lithology logs

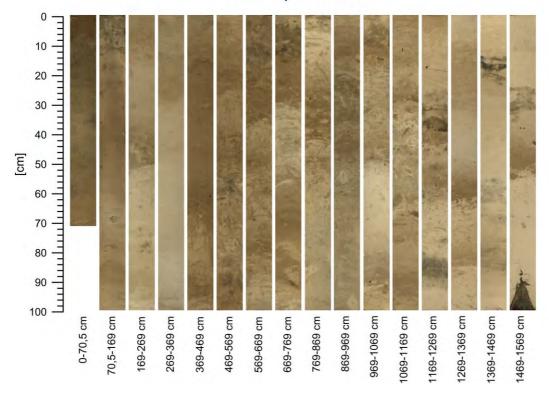
SO264-76-1 (BC) Line I



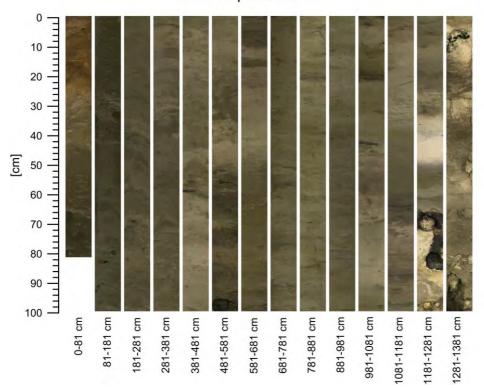
SO264-08-2 33°39,616' N - 174°45,044' E water depth: 2682 m



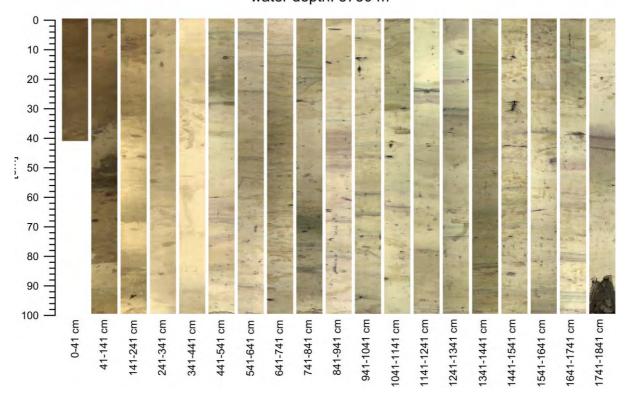
SO264-09-2 34°46,976' N - 172°20,983' E water depth: 3865 m



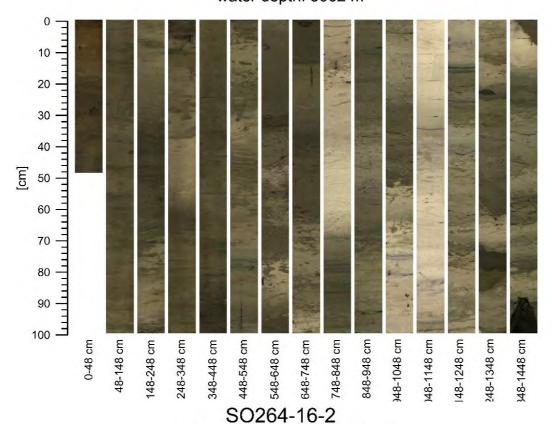
SO264-13-2 37°47,865' N - 170°43,327' E water depth: 3935 m



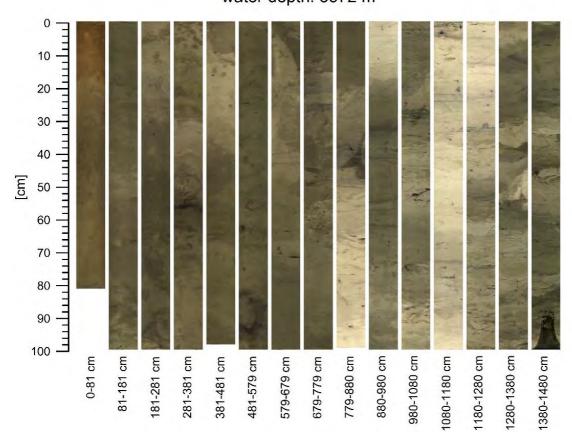
SO264-14-1 40°50,034' N - 170°54,201' E water depth: 3750 m



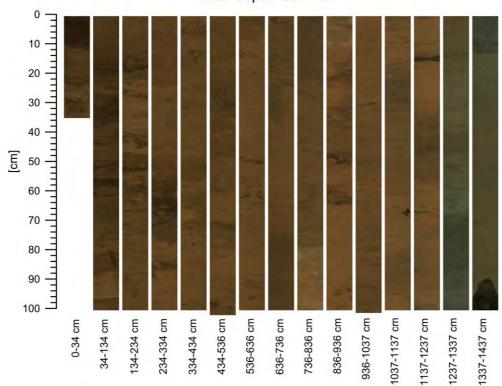
SO264-15-2 41°36,937' N - 170°25,359' E water depth: 3662 m



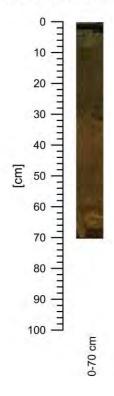
41°34,914' N - 170°25,783' E water depth: 3572 m



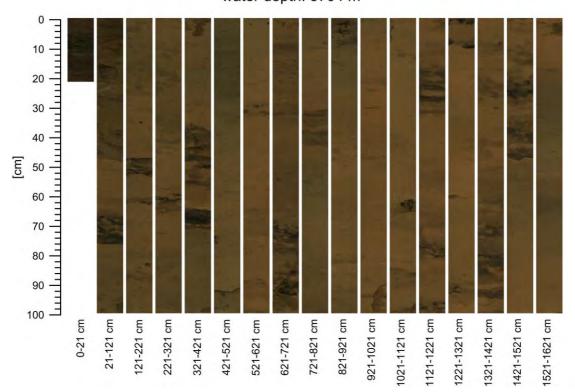
SO264-19-2 41°32,784' N - 169°55,738' E water depth: 5311 m



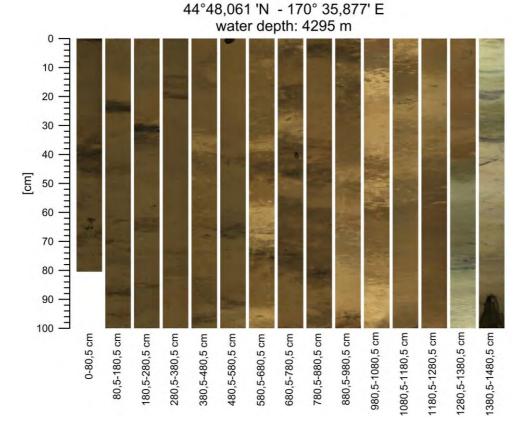
SO264-20-1 41°20,030' N - 170°22,734' E water depth: 1308 m



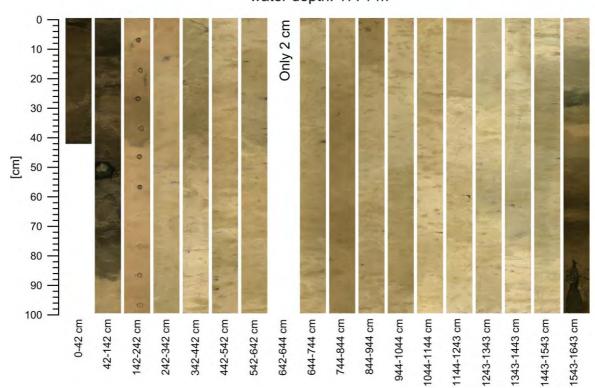
SO264-22-2 43°48,891' N - 170°46,843' E water depth: 5704 m



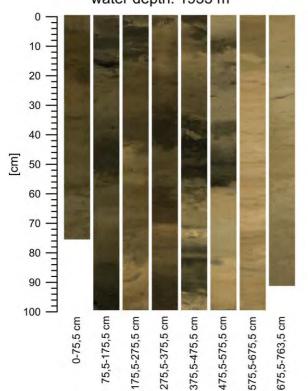
SO264-24-3



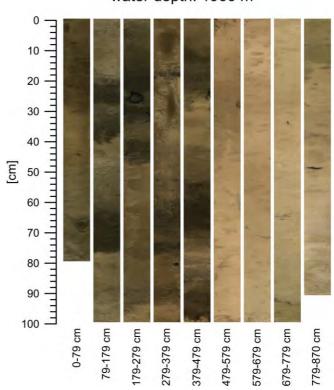
SO264-26-2 44°46,407' N - 170°10,325' E water depth: 1771 m



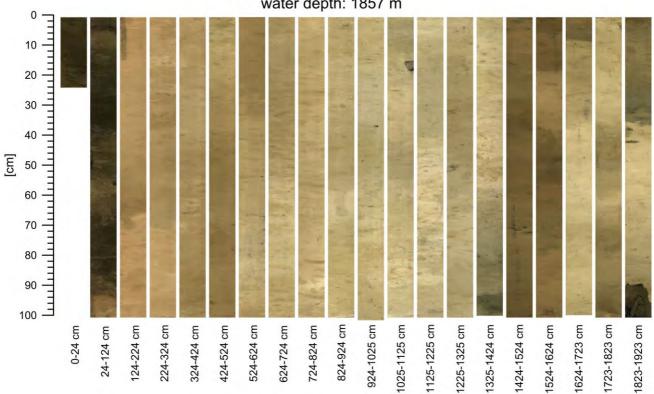
SO264-28-2 44°51,546' N - 170°03,983' E water depth: 1935 m



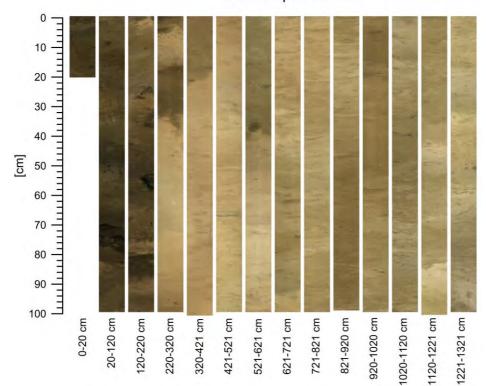
SO264-29-1 44°52,030' N - 170°03,835' E water depth: 1966 m



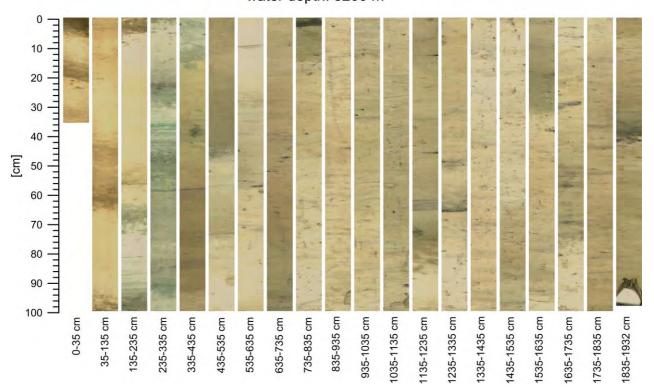
SO264-30-2 44° 46,465' N - 170° 01,090' E water depth: 1857 m



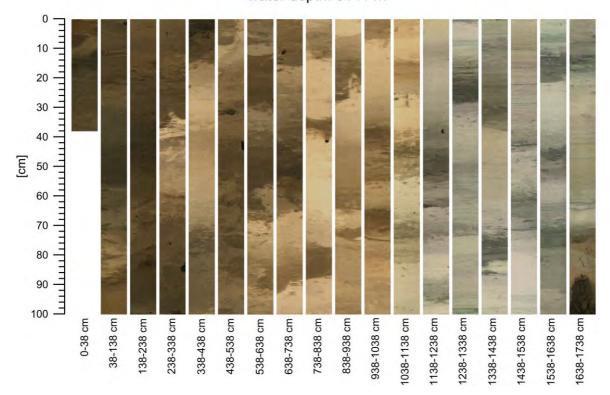
SO264-31-1 44°51,161' N - 170°07,650' E water depth: 1942 m



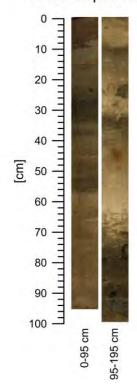
SO264-32-2 44°59,780' N - 170°24,280' E water depth: 3200 m



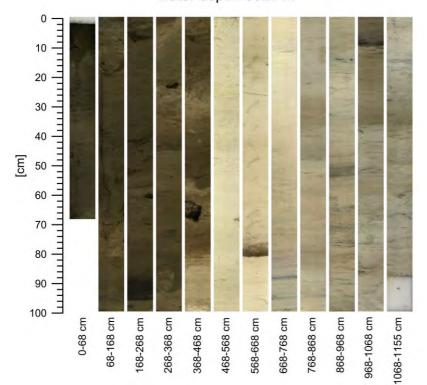
SO264-33-2 44°58,291' N - 170°21,023' E water depth: 3141 m



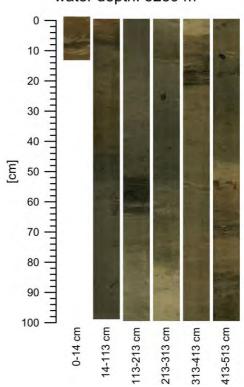
SO264-34-2 45°01,852' N - 170°13,533' E water depth: 2622 m



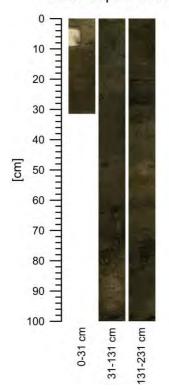
SO264-42-2 46°10,141' N - 169°10,080' E water depth: 3021 m



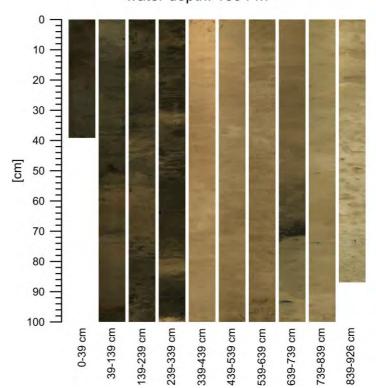
SO264-43-2 46°06,576' N - 169°07,193' E water depth: 3239 m



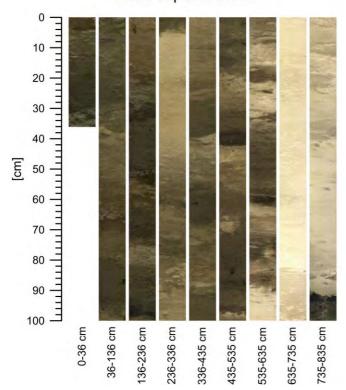
SO264-44-2 46°15,298' N - 169°20,062' E water depth: 1893 m



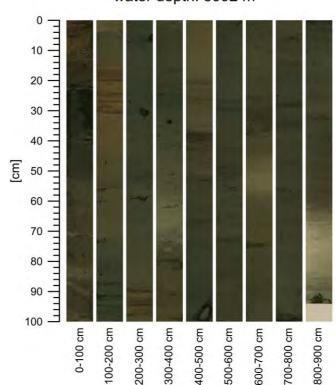
SO264-44-3 46°15,307' N - 169°20,064' E water depth: 1894 m



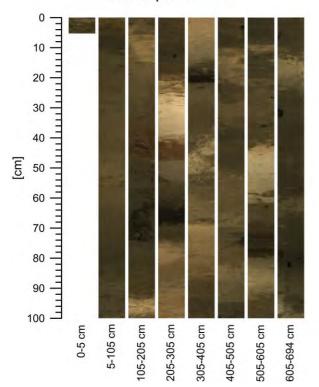
SO264-45-2 46°33,792' N - 169°36,072' E water depth: 2425 m



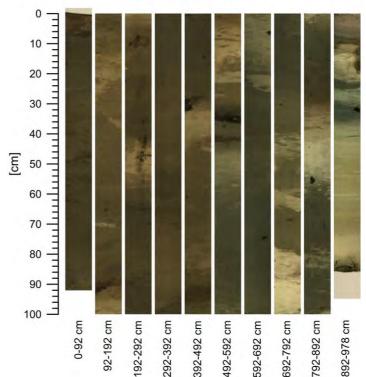
SO264-46-5 46°48,941' N - 169°24,661' E water depth: 3992 m



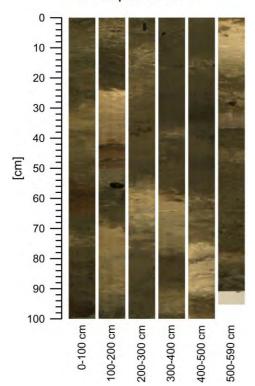
SO264-47-2 47°04,394' N - 169°21,667' E water depth: 2647 m



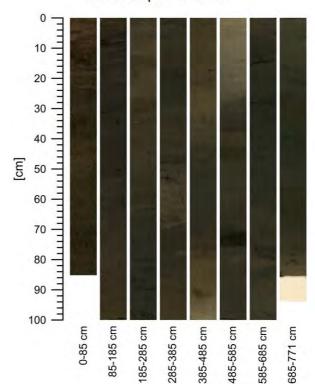
SO264-48-2 47°58,505' N - 169°03,878' E water depth: 2872 m



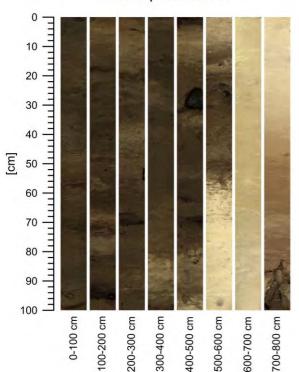
SO264-49-2 47°40,869' N - 169°01,419' E water depth: 2400 m



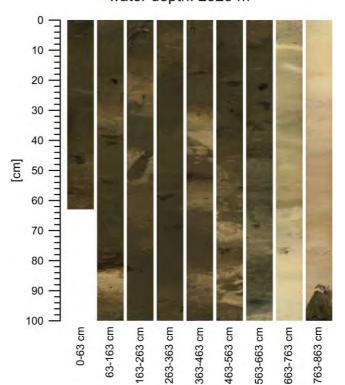
SO264-51-2 47°07,271' N - 169°09,869' E water depth: 2752 m



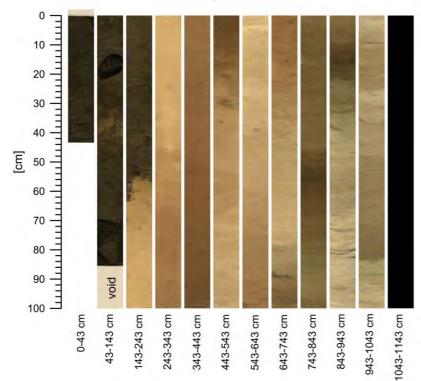
SO264-52-2 47°07,271' N - 169°09,869' E water depth: 2752 m



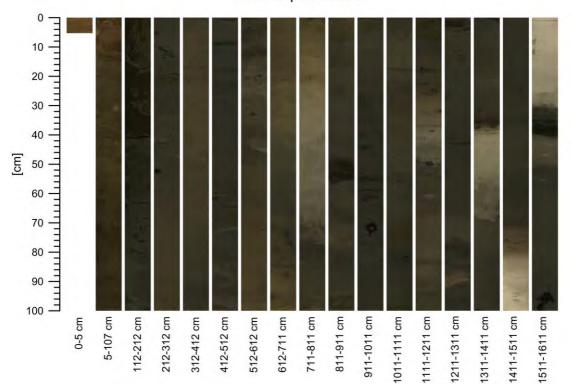
SO264-53-2 47°38,934' N - 169°20,417' E water depth: 2325 m



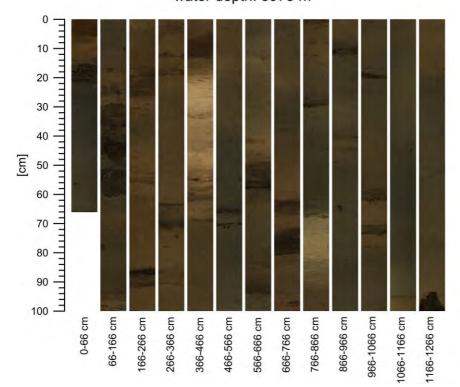
SO264-54-2 47°37,318' N - 169°14,852' E water depth: 2139 m



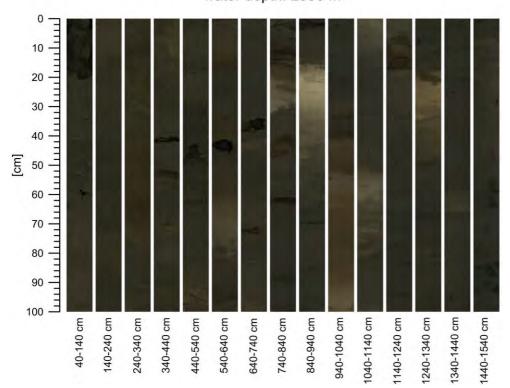
SO264-55-1 47°10,548' N - 169°25,284' E water depth: 2925 m



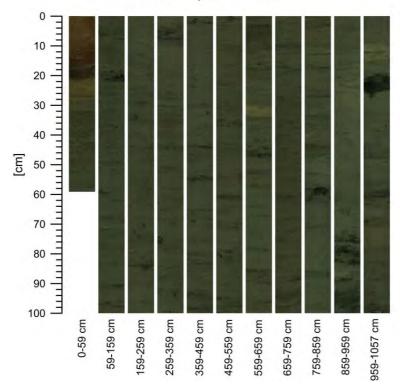
SO264-56-2 47°44,752' N - 168°40,398' E water depth: 3973 m



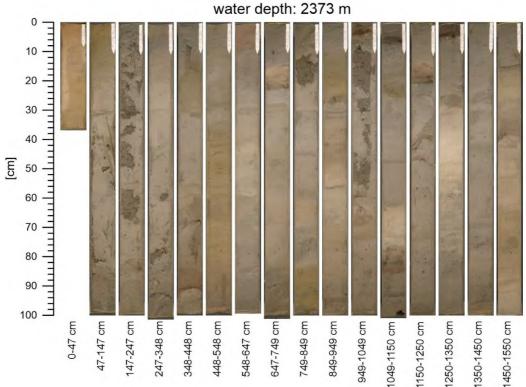
SO264-57-2 48°50,815' N - 168°29,998' E water depth: 2356 m



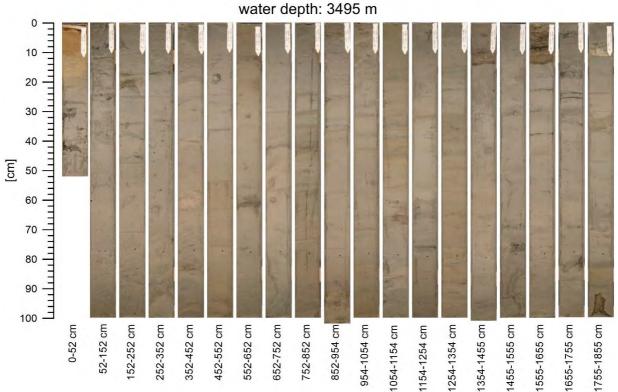
SO264-60-12 49°18,444' N - 168°33,426' E water depth: 5275 m



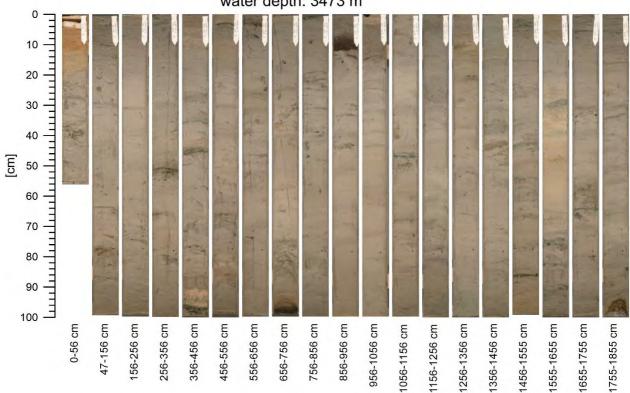
SO264-62-2 49°43,840'N - 168°18,918'E



SO264-64-1 49°59,494'N - 168°13,468'E



SO264-69-2 50°30,877'N - 167°55,478'E water depth: 3473 m



SO264-70-1 50°34,915'N - 168°04,292'E water depth: 3917 m

