Chapter 5, Table 3. Stratigraphic ranges of planktonic foraminifers at Site 1037 and additional information on fossil condition, zone, age, lithologic unit, and a description of the sample lithology and constituents of the sand-sized fraction.

Core, section, interval (cm)	Top depth (mbsf)	Bottom depth (mbsf)	Geologic age	Zone	Group abundance	Preservation	Dissolution	Overgrowth	Bathymetry	Sample preparation	*Beella digitata*	*Globigerina bulloides*	*Globigerina bulloides umbilicata*	*Globigerina clarkei*	*Globigerinita glutinata*	*Globigerinita iota*	*Globigerinita uvula minuta*	*Globigerinita uvula uvula*	*Globorotalia inflata*	*Globorotalia scitula*	*Globoroloides hexagonus*	*Neogloboquadrina pachyderma (left-coiling)*	*Neogloboquadrina pachyderma (right-coiling)*	*Orbulina bilobata*	*Orbulina suturalis*	*Orbulina universa*	*Turborotalita quinqueloba*	Lithologic units	Facies	Description of sand-sized fraction
169-1037A-																														
1H-CC	9.46	9.48	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite mud	Abundant mica; diatoms in 63–150 micron fraction.
169-1037B-																														
1H-2, 6–8	1.56	1.58	Holocene	CD1	Abundant	Moderate	Moderate	—	Mixed	Sieve								F	R	R		C	F	R		R	C	1	Hemipelagite	Dominated by planktonic foraminifers with radiolarians, diatoms, rare ostracodes, and benthic foraminifers.
1H-CC	6.58	6.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbiditic clay	Little in sand fraction, plus mica, volcanic glass shards, a few radiolarians, and abundant diatoms in 63–150 micron fraction.
2H-CC	16.08	16.10	—	—	Rare	Poor	Strong	—	Neritic	Sieve													R				2	Turbiditic clay	Very little in sand-sized fraction; mica, organic bits, a few radiolarians, four calcareous benthic foraminifers, *Nonion* and *Globobulimina pacifica*. One planktonic foraminifer in the 63–150 micron fraction, much framboidal pyrite, a little volcanic glass.
3H-4, 90–92	21.50	21.52	Holocene	CD1	Abundant	Moderate	Moderate	—	Mixed	Sieve		C			R					R		C	C				F	2	Hemipelagite beneath turbidite base	Planktonic foraminfiers dominate, very fine mineral sand, rare radiolarians, ostracodes, big tubes of framboidal pyrite.
3H-4, 132–134	21.92	21.94	—	—	Rare	—	—	—	—	Sieve				R													R	2	Turbiditic clay	Organic matter, pyrite, mica, and diatoms.
3H-CC, 12–14	25.21	25.23	—	—	Rare	—	—	—	—	Sieve		R					R					R	R					2	Turbidite mud	Abundant diatoms, framboidal pyrite, organic matter, five dextral dextral *Neogloboquadrina pachyderma*.
3H-CC	25.58	25.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite mud	Mica, organic bits, framboidal pyrite, pine pollen diatoms, pyritized benthic foraminifers, more pyrite, and organic bits in the 63–150 micron fraction.
4H-2, 58–60	27.68	27.70	—	—	Barren	—	—	—	Neritic	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite mud	Organic matter, pyrite, diatoms, pollen, rare radiolarians, and rare benthic foraminifers.
4H-5, 37–39	31.97	31.99	—	—	Rare	—	—	—	Neritic	Sieve												R						2	Turbidite clay	Organic matter, framboidal pyrite, diatoms, mineral grains, a dried insect, rare benthic foraminifers, and pine pollen.
4H-CC	35.08	35.10	—	—	Rare	—	—	—	—	Sieve												R						2	Turbidite sand	Mineral sand, soupy sediment. One planktonic foraminifer.
5H-2, 20–23	36.81	36.83	—	—	Rare	—	—	—	Neritic	Sieve												R						2	Silty turbidite mud	Organic matter, framboidal pyrite, diatoms, rare radiolarians, benthic foraminifers, mica, and pollen.
5H-5, 6–8	41.16	41.18	Holocene	CD1	Abundant	Moderate	Moderate	—	Abyssal	Sieve		C								R		C	C			R		2	Hemipelagic beneath turbidite base	Planktonic foraminifers dominate, radiolarians, and some mineral grains.
5H-CC	44.58	44.60	—	—	Rare	Poor	Strong	—	Neritic	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite clay	Mica, organic matter, framboidal pyrite, a few diatoms including *Isthmia nervosa*, two planktonic foraminifers, a few shallow benthic foraminifers, pine pollen, poorly preserved radiolarians, black volcanic ash, and a few quartz grains.
6H-1, 17–19	44.77	44.79	—	—	Barren	—	—	—	Neritic	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite clay+AE2	Organic matter, rare diatoms, pollen, and framboidal pyrite.
6H-CC	54.08	54.10	—	—	Rare	—	—	—	Neritic	Sieve																	R	2	Turbidite clay	Organic matter, mica, mineral grains, poorly preserved diatoms including *Arachnoidiscus*, very rare radiolarians, rare benthic foraminifers, and pollen. *Bolivina pacifica*, *Nonion*, and other shallow types. Piece of amber(?) given to Bernie.
7H-1, 12–14	54.22	54.24	—	—	Barren	—	—	—	Neritic	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite silty clay	Organic matter (plant fibers), diatoms including *Isthmia* and *Arachnoidiscus*, pine pollen, neritic benthic foraminifers, radiolarians including a collosphaerid, sponge spicules, and mica.
7H-CC	63.58	63.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	Turbidite sand	Mineral sand.
8H-1, 40–42	64.00	64.02	—	—	Rare	—	—	—	Neritic	Sieve					R			R										2	Turbidite clay	Organic matter, pollen, mica, framboidal pyrite, very rare radiolarians and neritic benthic foraminifers.
8H-CC	73.08	73.10	—	—	Rare	—	—	—	Neritic	Sieve							F										F	2	Turbidite silt and fine sand	Abundant organic matter (woody debris), mica, radiolarians, rare benthic foraminifers from the shelf, planktonic foraminifers few in the >150 micron fraction, but abundant in the 63–150 micron fraction. *Nonion*, *B. frigida*, *Lox. beyrichi*, *G. pacifica.*
9H-CC	82.58	82.60	Pleistocene (?)	?	Common	Moderate	Moderate	—	Mixed	Sieve		C			F					R		C	R					3	Turbidite silt and very fine sand	Abundant mica, very fine sand mineral grains, planktonic and benthic foraminifers, shelf and bathyal benthic foraminifers. *Epistominella smithi*. Mixed preservation, some brown-tinted planktonic foraminifers.
10H-2, 48–50	84.58	84.60	Pleistocene (?)	?	Common	Moderate	Moderate	—	Mixed	Sieve		C										C	R					3	Turbidite sand	Mineral grains including mica and pumice, benthic foraminifers, and green earthy mineral.
10H-CC	92.08	92.10	Pleistocene (?)	?	Common	Moderate	Moderate	—	Mixed	Sieve		C	F									C					F	3	Turbidite fine to medium sand	Mineral grains dominate followed by planktonic foraminifers, benthic foraminifers, and clear volcanic ash. *E. smithi*, green earthy mineral, bryozoan.
11H-2, 78–80	94.38	94.40	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	Turbidite sand	Mineral sand.
11H-CC	101.58	101.60	—	—	Rare	—	—	—	—	Sieve												R						3	Turbidite fine to medium sand	Mineral sand, two planktonic foraminifers seen.
12H-CC	111.08	111.10	—	—	Rare	—	—	—	—	Sieve		R																3	Turbidite fine to medium sand	Mineral sand.
14H-2, 65–67	122.75	122.77	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	Turbidite silt and clay	Framboidal pyrite dominates the very small sand size fraction. There is a trace of mineral sand.
14H-CC	130.08	130.10	—	—	Rare	—	—	—	—	Sieve																	R	4	Turbidite clay	Framboidal pyrite dominates the sample, which has very little in the sand-sized fraction. Mineral grains especially in the 63–150 micron fraction. One planktonic foraminifer and two radiolarians.
15H-1, 14–16	130.24	130.26	Pleistocene (?)	?	Few	Moderate	Moderate	—	?	Sieve		C			R		C	F				C				R	C	4	Turbidite top or hemipelagic clay	Framboidal pyrite dominates, including large tubes with minor mineral sand and planktonic foraminifers. Too few benthic foraminifers to estimate depth.
15H-CC	139.58	139.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	Turbidite clay? I see fine sand	Mineral sands dominate with framboidal pyrite.
16H-1, 54–56	140.14	140.16	Pleistocene	CD2	Common	Poor	Strong	—	Abyssal	Sieve		C	F		R							C	—				R	4	Hemipelagic beneath turbidite base	Dominated by planktonic foraminifers with minor mineral grains, 1 dextral *Neogloboquadrina pachyderma* of compact high latitude morphology.
16H-CC	149.08	149.10	Pleistocene	?	Common	—	—	—	—	Sieve		C			R							C	R				R	5	Turbidite, fine to medium sand	Mica and pumice dominate, *E. smithi* benthic assemblage.
17H-CC	158.58	158.60	—	—	Rare	—	—	—	—	Sieve								R										5	Turbidite, fine sand and silt	Dominated by mica, a few small planktonic foraminifers in the 63–150 micron fraction.
18H-1, 6–8	158.66	158.68	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	Turbiditic silty clay	Organic matter dominates with mica, framboidal pyrite.
18H-CC	168.08	168.10	Pleistocene	?	Common	Moderate	Moderate	—	Mixed	Sieve		C			R					R		C	R			R	R	5	Turbiditic sand and silt	Mica and pumice dominate, organic matter, few benthic foraminifers, and very fine mineral sand.
20X-1, 36–38	177.96	177.98	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbidite clay	Organic matter, framboidal pyrite, rare diatoms, and rare mineral grains including mica.
20X-CC	182.48	182.50	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic silt	Organic matter, mica, some framboidal pyrite, and rare diatoms.
21X-CC	192.18	192.20	Pleistocene	?	Few	Moderate	Moderate	—	Mixed	Sieve		C			C							C						6	Turbiditic silty sand	Pumice, pyritized organic matter, mica, benthic foraminifers few as with planktonic foraminifers, which are mixed in preservation with a few a golden brown.
22X-1, 33–35	192.53	192.55	—	—	Rare	—	—	—	—	Sieve												R					R	6	Turbiditic silty clay	Organic matter, framboidal pyrite, mica, other mineral grains very rare, and pollen.
22X-CC	201.78	201.80	Pleistocene	?	Common	Moderate	Moderate	—	Mixed	Sieve		C			C							C					R	6	Turbiditic fine sand	Pumice, mica, framboidal pyrite, magnetite, few planktonic foraminifers in mixed states of preservation—white and golden tests. *Elphidium* with *Melonis.*
23X-2, 26–28	203.56	203.58	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Homogeneous turbiditic clay	Organic matter, mica, and pyrite.
23X-CC	211.38	211.40	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic silt and sand	Mica, organic matter, pollen, and trace of diatoms.
24X-CC	220.98	221.00	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic fine sand	Mica, organic matter, and mineral grains in 63–150 micron fraction.
25X-1, 6–7	221.05	221.07	—	—	Rare	—	—	—	—	Sieve		R										R						6	Homogeneous turbiditic clay	Very small sand-sized fraction, organic matter, mineral sand, framboidal pyrite, and two planktonic foraminifers.
25X-CC	230.58	230.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Homogeneous turbiditic silty clay	Very small sand-sized fraction with pumice and mica.
26X-2, 22–24	232.32	232.34	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Homogeneous turbiditic clay	Organic matter, framboidal pyrite, and mica.
26X-CC	240.18	240.20	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic very fine sand	Mica.
27X-CC	249.78	249.80	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Calcareous silty claystone biscuits	Small amount of organic matter, mica, and framboidal pyrite.
28X-CC	259.38	259.40	—	—	Rare	Good	Weak	—	—	Sieve		R						R										6	Turbiditic calcareous claystone	Organic matter, mica, framboidal pyrite, and two planktonic foraminifers.
29X-CC	268.98	269.00	—	—	Rare	Good	Weak	—	—	Sieve					R	R	R											6	Turbiditic calcareous silty claystone	Organic matter, framboidal pyrite, mica, and very little in sand-sized fraction.
30X-CC	278.48	278.50	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic calcareous silty clay	Organic matter, framboidal pyrite, and mica.
31X-CC	288.08	288.10	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	Turbiditic homogeneous calcareous silty clay	Organic matter, framboidal pyrite, mica, a few quartz and mineral grains, and gas voids in core.
32X-CC	297.68	297.70	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Turbiditic homogeneous calcareous silty clay	Mica, organic matter, framboidal pyrite, and a few mineral grains.
33X-CC	307.28	307.30	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Turbiditic calcareous silty claystone	Mica, organic matter, pyrite blocks >150 microns, and rust flakes.
34X-CC	316.88	316.90	Pleistocene	CD3	Abundant	Moderate	Moderate	—	—	Sieve	F	C			F		C	F		R		C	F			R	C	7	Hemipelagic, calcareous silty clay beneath wavy laminated interval	Dominated by planktonic foraminifers with minor benthic foraminifers, a trace of framboidal pyrite, and urchin spines.
35X-1, 9–11	316.99	317.01	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Calcareous silty claystone	Mud lumps; reprepare.
35X-CC	326.48	326.50	—	—	Rare	Poor	Strong	—	—	Sieve		R										R						7	Calcareous silty claystone	Organic matter, orange pollen grains, framboidal pyrite, and a few mineral grains.
36X-1, 32–34	326.82	326.84	—	—	Rare	—	—	—	—	Sieve																	R	7	Claystone	Organic matter, framboidal pyrite, and pollen.
36X-CC	336.08	336.10	—	—	Rare	—	—	—	—	Sieve					R													7	Clay	Mica dominates, trace of diatoms.
37X-5, 22–24	341.64	341.66	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Silt claystone above parallel laminations	Framboidal pyrite in large masses as well as fine sand, dark colored organic matter, light orange pollen, and rare mineral grains.
37X-CC	345.68	345.70	—	—	Rare	—	—	—	—	Sieve												R					R	7	Claystone	Abundant pyrite, rare mineral grains.
38X-CC	355.38	355.40	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Carbonate claystone	Pyrite dominates, organic matter, dark orange pollen, trace of mica, and mineral grains.
39X-3, 23–25	358.63	358.65	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	Claystone	Semi-lithified silt lumps, pyritized organic matter, framboidal pyrite, and light orange pollen.
39X-CC	364.98	365.00	—	—	Rare	—	—	—	—	Sieve																		8	Claystone	Pyrite, organic matter, mineral grains common, dark orange pollen, pyritized twigs (?), and trace of broken planktonic foraminifer chambers.
40X-1, 40–43	365.41	365.43	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	Clayey siltstone	Carbonate nodules, semi-lithified silt lumps, mica and other mineral grains, opaque black mineral, black pumice (?), rare organic bits, and orange pollen.
40X-CC	374.68	374.70	Pleistocene	CD4?	Common	Poor	Strong	Brown tint	Mixed	Sieve		C										A					R	8	Turbidite sand	Mineral sand dominates, discolored planktonic foraminifers, and trace of framboidal pyrite.
41X-CC	384.28	384.30	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	Turbidite sand	Carbonate nodules, carbonate cemented silt, and mineral sand grains.
42X-CC	393.88	393.90	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	SIlty clay	Mineral grains, mica, and organic matter.
43X-CC	403.58	403.60	—	—	Few	Poor	Strong	Brown tint	Neritic			C			R					R		C					R	8	Calcareous clayey silt	Mud lumps, mica, black ash(?), and few benthic and planktonic foraminifers.
44X-CC	413.18	413.20	—	—	Few	Poor	Strong	Brown tint	Neritic	Sieve		C										C						8	Turbidite sand	Mica-rich very fine sand, golden to orange brown foraminifers (*Elphidium* is highly colored).
45X-CC	422.78	422.80	—	—	Rare	Poor	Strong	—	—	Sieve					R													8	Turbidite sand	Mica-rich sand with black ash. Pale yellow foraminifers.
46X-CC	432.38	432.40	—	—	Rare	Poor	Strong	—	—	Sieve																		8	SIlty claystone	Mica, organic matter (dark brown), mushy foraminifers that break when touched, and rust colored pollen.
47X-CC	441.98	442.00	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	Turbidite clayey silt	Mineral grains and mica.
48X-5, 22–24	448.22	448.24	Pleistocene	CD4	Abundant	Poor	Strong	Brown tint	Abyssal	Sieve		C			R		R			R		C	R?				R	8	Hemipelagic silty claystone	Flattened planktonic foraminifers dominate, brown tint and encrusted; rare benthic foraminifers.
48X-CC	451.58	451.60	—	—	Rare	—	—	—	—	Sieve												R						8	Silty claystone	Semi-lithified silt lumps, golden planktonic foraminifer, and framboidal pyrite.
49X-CC	461.28	461.30	—	—	Rare	—	—	Brown tint	—	Sieve																		8	Silty claystone	Semi-lithified silt lumps, framboidal pyrite, and golden foraminifers.
50X-CC	470.88	470.90	—	—	Rare	—	—	Brown tint	—	Sieve																		8	Claystone	Semi-lithified silt lumps, framboidal pyrite, and golden foraminifers.
51X-CC	480.48	480.50	—	—	Rare	—	—	Brown tint	—	Sieve																		8	Siltstone	Semi-lithified silt lumps, fine mineral sand, and golden and flattened foraminifers.
52X-4, 62–64	485.62	485.64	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Silty claystone beneath laminations	Lithified silt.
52X-CC	490.08	490.10	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Siltstone	Semi-lithified silt lumps and mica.
53X-CC	495.58	495.60	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Calcareous sandy siltstone	Semi-lithified silt lumps, very fine mineral sand with mica, pyrite crystals, and framboidal pyrite.
54X-CC	499.68	499.70	—	—	Barren	—	—	Brown tint	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Silicified calcareous claystone	Lithified silt lumps, even in fine fraction of the sand-sized material, framboidal pyrite, and flattened benthic foraminifers that are golden brown.
55X-CC	501.18	501.20	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Silicified calcareous claystone	Lithified silt lumps, including fine sand fraction and rare pyrite.
57R-CC	517.28	517.30	—	—	Barren	—	—	—	—	Sieve	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	?	Brown siltstone above basalt	Lithified khaki-colored lumps, masses of long-bladed crystals (zeolites?), and pyrite in large crystals.

Notes: F = few, R = rare, and C = common. — = age and zone cannot be assigned based on fossils in that sample. ? = not assignable to an age or zone.