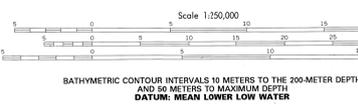


Base from Coast and Geodetic Survey hydrographic chart 1200N-15, 1967.
Universal Transverse Mercator Grid, zone 11.
Short-dashed ticks along coastline indicate 10,000 meter ticks.
This map not intended for navigation.



MAPS OF CALIFORNIA CONTINENTAL BORDERLAND SHOWING COMPOSITIONS AND AGES OF BOTTOM SAMPLES ACQUIRED BETWEEN 1968 AND 1979

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DISCUSSION

In support of regional framework and geologic-hazards investigations of the California Continental Borderland, bottom sampling was attempted at nearly 3,000 sites between March 1968 and May 1979. Of this number, 2,100 were used during U.S. Geological Survey cruises with success at approximately 90 percent of the sites. Initial cruises involving U.S. Geological Survey and university personnel aboard other research vessels resulted in more than 800 supplementary samples. Scripps Institution of Oceanography provided information on 20 dredge hauls (see accompanying table).

Holes 467, 468, and 469, drilled during Leg 83 of the Deep Sea Drilling Project, are shown together with the Outer Continental Shelf (OCS) Deep Stratigraphic Test wells that were drilled on the borderland. The purpose of these maps is to show the location of selected sampling sites as well as to give an indication of the general composition and age of the material collected. Not only are the maps intended as a means of showing the distribution of different rock types but also as a guide for planning future sampling cruises. The samples include a variety of basement rocks, volcanic rocks, and sedimentary rocks that range in age from Cretaceous to Quaternary. In some cases, Quaternary designations are based upon degree of consolidation, composition, and color rather than on contained fossils.

Most of these samples originally were described in the U.S. Geological Survey Open-File Reports listed below, and these reports should be consulted for details on composition and age. Descriptions for the 1975 R/V VEEVER cruise to Cortes Bank and Tanner Bank are incomplete but judging from observations recorded in the shipboard log sheets for this cruise most of the sampled samples are Quaternary.

EXPLANATION

- Core or grab sample — Showing station number
- ▲ Sample Site — No recovery
- Dredge — Length of haul not indicated
- Deep Sea Drilling Project hole
- Deep stratigraphic test well
- OCS-CAL
- Pre-plotted stations — Not occupied
- Cruise designation

EXPLANATION

- Sedimentary rocks or sediments — Containing age-diagnostic fossils. Slack (7) between symbols indicates divergent age; continuous symbols indicate age range of contained fossils; samples without age designations are barren of fossils.
- Quaternary — Clearly glauconitic foraminiferal mud; includes coagulated sand on shallow banks and homotopic ooze on deep, outer ridges
- Pliocene —
- Miocene — Chiefly claystone, mudstone, and very fine grained sandstone
- Oligocene —
- Eocene —
- Palaeocene —
- Late Cretaceous —
- Age and (or) composition uncertain — Chiefly unfossiliferous sandstone; locally includes mudstone and conglomerate
- Volcanic rocks —
- Flow or intrusive body — Includes hydroclastic. Predominantly Miocene
- Volcanoclastic deposits — Includes water laid (lightuff). Probably Miocene
- Virite tuff or basaltic — Generally forms laminae in sedimentary rocks
- Metamorphic rocks —
- Schistose rocks — Bismuthite and (or) greenschist facies
- Saundersized gabbroic rocks
- Pyroxenite —
- Serpentinites —
- Pyroxenite — Almond
- Amphibolite — Almond
- Epiphyllite — Almond
- Metavolcanic rocks — Albite-epidote
- Detrital material — Locally detrital. Where age designation accompanies these symbols, the material occurs as thin fragments within the sample
- Volcanic detritus
- Schist, phyllite, metagraywacke, or argillite detritus
- Serpentine detritus
- Asthenitic rocks
- Phosphatic — Generally nodular, locally pitted or laminar. Miocene and younger
- Barite

EXAMPLE

1 • MPix Station 1; Miocene and (or) Pliocene sedimentary rock containing schist, phyllite, metagraywacke, or argillite detritus

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CRUISE DESIGNATION AND SAMPLING DEVICES

Institution	Symbol	Ship	Year	Sampling device
U.S. Geological Survey	BART	R/V Baret	1972	Dredge
	KZ	R/V Kizer	1973	Dredge
	LCB	R/V Lee	1974	Dredge
	SCS	R/V Lee	1974	Dredge, gravity, box, Van Veen
	L3-76	R/V Lee	1976	Dredge, gravity, box, Van Veen
	L3-78	R/V Lee	1978	Dredge
	S2-78	R/V Sea Swander	1978	Dredge, gravity
	S3-79	R/V Sea Swander	1979	Dredge, gravity, piston
	S3-79	R/V Sea Swander	1979	Dredge
	S3-79	R/V Sea Swander	1979	Dredge
USGS-university joint cruise	VO	R/V Veever	1968	Dredge, Shipk
	VO	R/V Veever	1970	Dredge
	VO	R/V Veever	1970	Dredge
Scripps Institution of Oceanography	AG	R/V Agassiz	1969	Dredge
	CB	R/V Corvick	1970	Dredge, gravity