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SEISMIC REFLECTION DATA ON THE EASTERN U. S. CONTINENTAL SHELF ACQUIRED BY M.V. L'OLONNOIS AS PART OF THE ATLANTIC MARGIN CORING PROJECT (AMCOR) OF U. S. GEOLOGICAL SURVEY, JULY-SEPTEMBER 1976

By

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In 1976 the U. S. Geological Survey undertook a program to sample the eastern United States Continental Shelf for stratigraphic information by drilling a set of 21 core holes. Results of this Atlantic Margin Coring Program (AMCOR) have been reported by Hathaway and others (1976, 1979). Sites were chosen from seismic-reflection data and were reviewed by a safety panel to minimize the risk of penetrating any hydrocarbon accumulation which might lead to environmental contamination.

The M.V. L'OLONNOIS, the service ship for the drilling operation, was fitted with seismic-reflection profiling equipment (listed below), to run seismic-reflection profiles before drilling began on each hole. This provided additional assurance that no closed structures would be penetrated and allowed minor adjustment with the site selection. A total of 491 km of high-resolution seismic profiles was collected on 22 sites.

Equipment used (specifics for each site noted on records):

Bolt Air Guns 1-40 cubic inch chambers

EPC Recorder

Teledyne Minisparker (last two sites)

Navigation used two Internav 101 Loran-C receivers.

Table 1 is a summary of site locations with information about drill holes and Figure 1 shows a general site map. The original records and track charts showing locations of profiles acquired at each site may be viewed at the offices of the U. S. Geological Survey, Atlantic-Gulf of Mexico Branch, Office of Marine Geology, Woods Hole, Mass. 02543. Copies of the data and track charts may be purchased from the National Geophysical and Solar-Terrestrial Data Center, (NGSDC), Boulder, Colorado 80302.

REFERENCES

Hathaway, John C., Schlee, John S., Poag, C. Wylie, Valentine, Page C., Weed, E. G. A., Bothner, Michael H., Kohout, Francis A., Manheim, Frank T., Schoen, Robert, Miller, Robert E., and Schultz, David M., 1976. Preliminary summary of the 1976 Atlantic Margin Coring Project of the U. S. Geological Survey: U. S. Geological Survey Open-File Report 76-844.

Hathaway, John C., Poag, C. Wylie, Valentine, Page C., Miller, Robert E., Schultz, David M., Manheim, Frank T., Kohout, Francis A., Bothner, Michael H., Sangrey, Dwight A., 1979. U. S. Geological Survey Core Drilling on the Atlantic shelf: Science, v. 206, p. 515-527.

Table I. Summary of AMCOR holes (from Hathaway and others, 1976)

DATE	HOLE (SITE)	LATITUDE LONGITUDE	WATER DEPTH FT.(m)	STRING DEPTH Feet (RKB[1]) Mudline	T.D.	MAXIMUM PENETRATION Feet (Meters)	NO. OF CORES	RECOVERY PERCENT	MAXIMUM AGE REACHED	LOGS[2]
7/22-23/76	6002	31°08.57'N 80°31.05'W	106 (32.3)	138	1138	1000 (304.8)	33	27	Eocene	C, E, FD, G, N, S, T.
7/25/76	6003	32°37.66'N 78°48.80'W	134.5 (41.0)	Unable to spud in because of hard layer at sea floor. No recovery.						
7/26/76	6004	32°03.98'N 79°05.86'W	570 (173.7)	602	1056	454 (138.4)	15	67	Miocene	See 6004B.
7/26-7/27/76	6004B	"	"	602	1612	1010 (307.9)	20	45	Cretaceous	E.
7/30/76	6005	33°15.10'N 78°44.08'W	61 (18.6)	93	249	156 (47.6)	6	6	Paleocene	None.
7/30/76	6005B	"	"	93	249	156 (47.6)	3	13	Paleocene	None.
8/2/76	6006	34°41.4'N 75°43.0'W	184 (56.1)	216	509	293 (89.3)	9	22	Pleistocene	None.
8/4-5/76	6007	37°17.99'N 74°39.16'W	279 (85.0)	311	707	396 (120.7)	13	26	Pliocene	See 6007B.

SUMMARY OF HOLES (CONTINUED)

DATE	HOLE (SITE)	LATITUDE LONGITUDE	WATER DEPTH FT.(m)	STRING DEPTH Feet (RKB[1]) Mudline	T.D.	MAXIMUM PENETRATION Feet (Meters)	NO. OF CORES	RECOVERY PERCENT	MAXIMUM AGE REACHED	LOGS[2]
8/5-6/76	6007B	"	"	311	1330	1019 (310.6)	20	26	Miocene	C, E, FD, G, N, S.
8/8/76	6008	38°24.21'N 74°53.83'W	68 (20.7)	100	492	392 (119.5)	13	23	Pleistocene	None.
8/12/76	6009	38°51.27'N 73°35.47'W	183 (55.7)	215	523	308 (93.9)	10	9	Pleistocene	None.
8/12-13/76	6009B	"	192 (58.5)	224	1207	983 (299.6)	32	24	Miocene	C, E, FD, G, N, S.
8/14-15/76	6010	39°03.29'N 73°06.8'W	249 (75.9)	281	1300	1019 (310.6)	33	31	Miocene	C, E, FD, G, N, S, V.
8/17-18/76	6011	39°43.5'N 73°58.6'W	73 (22.3)	105	958	853 (260.0)	28	23	Early to mid-Eocene	C, E, FD, G, N, S, T.
8/20-22/76	6012	39°59.57'N 71°20.09'W	862 (262.7)	894	1891	997 (303.9)	33	56	Pleistocene	None.
8/23-24/76	6013	40°05.04'N 68°52.13'W	799 (243.5)	831	1173	342 (104.2)	11	31	Pleistocene	See 6013B.

SUMMARY OF HOLES (CONTINUED)

DATE	HOLE (SITE)	LATITUDE LONGITUDE	WATER DEPTH FT.(m)	STRING DEPTH Feet (RKB[1]) Mudline	T.D.	MAXIMUM PENETRATION Feet (Meters)	NO. OF CORES	RECOV-ERY PER-CENT	MAXIMUM AGE REACHED	LOGS[2]
8/24-25/76	6013B	"	783 (238.7)	815	1815	1000 (304.8)	23	18	Early Pleisto-cene	C, E, FD, G, N, S, T.
8/26-27/76	6014	40°48.33'N 67°53.64'W	229 (69.8m)	261	597	336 (102.4)	10	27	Pleisto-cene	None.
8/28-29/76	6015	40°23.11'N 67°35.85'W	686 (209.1)	718	924	206 (62.8)	6	10	Pleisto-cene	None.
9/1/76	6016	41°09.50'N 68°41.83'W	218 (66.4)	250	272	22 (6.7)	1	2	Pleisto-cene	None.
9/1-2/76	6016B	"	"	250	476	226 (68.9)	6	5	Miocene	None.
9/5/76	6017	42°10.45'N 67°57.51'W	783 (238.7)	815	1112	297 (90.5)	10	20	Pleisto-cene with reworked Eocene	E, G, N, S.
9/6-7/76	6018	40°55.90'N 68°18.14'W	152 (46.3)	183	342	159 (48.5)	6	5	Plio-Pleisto-cene	None.

SUMMARY OF HOLES (CONTINUED)

DATE	HOLE (SITE)	LATITUDE LONGITUDE	WATER DEPTH FT.(m)	STRING DEPTH Feet (RKB[1]) Mudline	T.D.	MAXIMUM PENETRATION Feet (Meters)	NO. OF CORES	RECOV-ERY PER-CENT	MAXIMUM AGE REACHED	LOGS[2]
9/9-10/76	6019	41°49.27'N 68°16.39'W	570 (173.7)	602	837	235 (71.6)	9	21	Middle Eocene	E, to 50 ft.
9/10/76	6019B	"	"	602	607	5 (1.5)	1	100	Quater-nary	None.
9/13/76	6020	39°25.41'N 73°35.63'W	128 (39)	160	304	144 (43.9)	6	23	Pleisto-cene	None.
9/16/76	6021	38°57.92'N 72°49.20'W	987 (298.1)	1010	1060	50 (15.2)	3	57	Pleisto-cene	See 6021B.
9/16-17/76	6021B	"	"	1010	2010	1000 (304.8)	2		No Samples	C, E, FD, G, N, S, T.
9/18/76	6021C	"	988 (301.2)	1020	2020	1000 (304.8)	33	23	Pleisto-cene	See 6021B.

[1]RKB=Relative to Kelly Bushing; Kelly bushing is 32 feet above water line

[2]LOG CODE: C=Caliper; E-Electrical (Spontaneous Potential and Resistivity); FD=Formation Density; G=Gamma Ray; N=Neutron; S=Sonic; T=Temperature; V=Sonic Variable Density

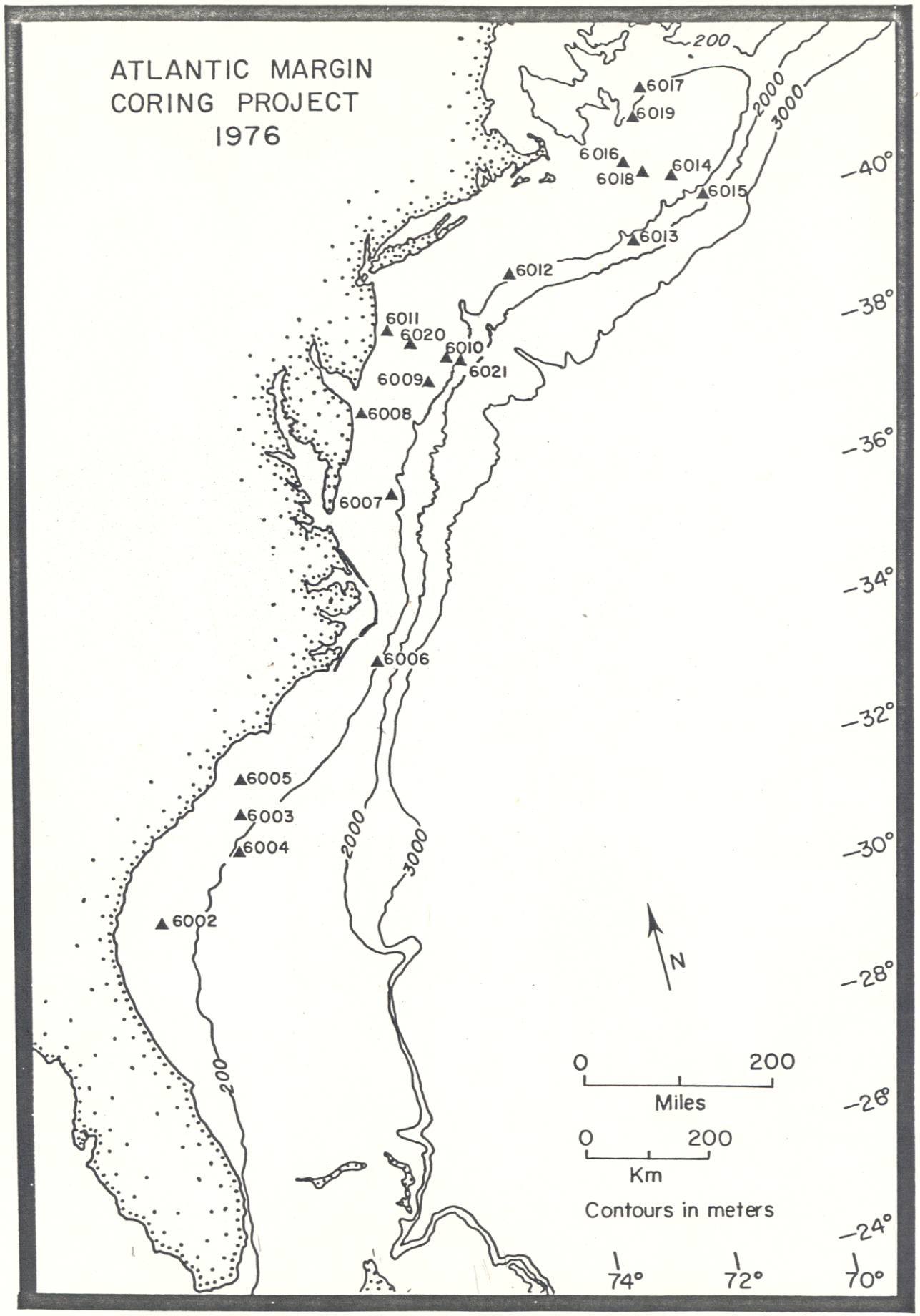

Figure 1. Location of AMCOR sites (from Hathaway and others, 1976)