GEOLOGICAL SURVEY OF CANADA
COMMISSION GEOLOGIQUE DU CANADA
Open File 2306
BIOSTRATIGRAPHIC DISTRIBUTION OF AGGLUTINATED FORAMINIFERA IN OLIGOCENE AND MIOCENE SHALLOW TO DEEP WATER FACIES OF THE BEAUFORT-MACKENZIE BASIN

C.J. Schröder-Adams[1] and D.H. McNeil[2]

October, 1990

[1]Schröder Paleo Consulting, 5828 Dalcastle Cres. N.W., Calgary, Alberta, T3A 1S4, Canada.
[2]Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada, 3303-33rd St. N.W., Calgary, Alberta, T2L 2A7, Canada.

ABSTRACT

Quantitative species abundance data and general faunal trends have been documented from the agglutinated foraminiferal assemblage, studied from Oligocene to Miocene strata in nine wells from the Beaufort-Mackenzie Basin. The sections studied comprise the Kugmallit, Mackenzie Bay and Akpak sequences and a spectrum of depositional environments from the inner shelf to the continental rise. Above the Miocene the agglutinated assemblage changed to an entirely calcareous benthic foraminiferal fauna. Within the Oligocene to Miocene strata the upper limit of the agglutinated biofacies is diachronous, rising basinward, in comparison to regional seismic correlations and to datums established from last appearance datums (LADs) of calcareous benthic foraminifera. On the continental rise agglutinated species persist into the late Miocene, whereas the same species become extinct in the Oligocene or early Miocene on the shelf. The downhole faunal succession of agglutinated species is generally similar at each well location. We believe that the agglutinated fauna is mainly facies controlled, being dependant on sedimentation pattern and conditions for test preservation. Several species are stratigraphic markers and others indicate paleoenvironmental change through relative abundance changes.

I. INTRODUCTION

Cenozoic strata have been widely documented in numerous studies of the Beaufort-Mackenzie Basin (e.g. Staplin, 1976; Dixon et al., 1984; Dietrich et al., 1989). A stratigraphic framework has evolved from a combination of seismo stratigraphy (Dietrich et al., 1985), biostratigraphy (McNeil, 1989) and conventional lithostratigraphy (Young and McNeil, 1984). The micropaleontological content is dominated by benthic foraminifera. Paleocene to Eocene assemblages are mainly agglutinated, Oligocene assemblages are mixed (agglutinated and calcareous), and the Miocene to Holocene is dominantly calcareous. The transition from agglutinated to calcareous assemblages is diachronous in the Oligocene to Miocene across the basin. Furthermore, the proportion of agglutinated to calcareous specimens in laterally equivalent assemblages varies dramatically within the region. This report concentrates on the dynamic distribution of the Oligocene to Miocene agglutinated biofacies in order to assess their stratigraphic meaning and utility.

For the Oligocene and Miocene, McNeil (1989) has proposed a foraminiferal zonation based on (LADs) of calcareous benthic species. The entire Oligocene to Miocene agglutinated assemblage and its biostratigraphic significance has not been documented in detail. Consequently we have chosen nine wells with particularly dominant, well preserved agglutinated assemblages for analysis of their biostratigraphic importance and paleoenvironmental significance.

The studied wells are located in the central part of the Beaufort-Mackenzie Basin, situated near the basin depocentre (Figure 1). These wells penetrate a variety of depositional environments ranging from near-shore to deep water.

The study is based on the following wells (Figure 1):

Well	GSC Locality	Latitude	Longitude	T.D.(m)
Akpak 2P-35	C-38407	70°14'52"N	134°09'22"W	3673
Amauligak I-65	C-130897	70°04'39"N	133°48'16"W	4126
Amauligak J-44	C-38411	70°03'31"N	133°42'45"W	4002
Amerk O-09	C-38414	69°58'56"N	133°30'50"W	5000
Kadluk O-07	C-126045	69°46'48"N	136°01'14"W	3896
Koakoak O-22	C-80085	70°21'55"N	134°06'48"W	4363.8
Kogyuk N-67	C-162595	70°06'50"N	133°19'47"W	4795
Nerlerk M-98	C-86530	70°27'49"N	133°29'46"W	4890
Orvilruk O-03	C-80083	70°22'48"N	136°30'53"W	3893

The database was derived from well cutting samples, which were studied in 30 to 60 m intervals from the first downhole occurrence of the agglutinated specimens to the total depth of the well (T.D.). Taxonomic details including illustrations of the agglutinated taxa and a detailed correlation between faunal

assemblages and lithologic units, will be provided in a future publication (Schröder-Adams and McNeil, in prep.).

II. BIOSTRATIGRAPHY

1. Stratigraphic framework

Cenozoic sediments in the Beaufort-Mackenzie Basin are divided into nine seismic sequences, whose boundaries are defined by unconformities or hiatuses (Dietrich et al., 1985; Dixon and Dietrich, 1988). This report focuses on the Oligocene Kugmallit sequence, the uppermost Oligocene to middle Miocene Mackenzie Bay sequence, and the late Miocene Akpak Sequence. Benthic calcareous marker species such as *Turrilina alsatica* and *Asterigerina staeschei* for the Oligocene and Miocene, respectively, were generally recognized in the studied wells. The boundaries of the seismic sequences and foraminiferal interval zones are listed in McNeil and Birchard (1989).

Most wells penetrated the Akpak, Mackenzie Bay and Kugmallit sequences. The exceptions are Koakoak O-22 and Nerlerk M-98, where the Akpak sequence unconformably overlies the Kugmallit sequence. Sequences older than Oligocene were drilled in Amerk (Richards and Reindeer sequence), Kadluk (Richards sequence), Nerlerk (undefined Eocene) and Orvilruk (undefined).

2. Depositional environment

The nine study locations cover a variety of paleoenvironments in the Oligocene to Miocene. Seismic stratigraphy and log analysis indicate a shallow marine environment for the Mackenzie Bay and Kugmallit sequences in the Kadluk O-07, Amerk O-09, Kogyuk N-67, Amauligak J-44, and Amauligak I-65 wells. The sequences contain abundant coarse grained units of sandstone and siltstone, interbedded with claystone and shaly intervals. Coarsening-upward cycles are frequent. The faunal association in Amerk and Kadluk is quite distinct in comparison to Kogyuk and Amauligak, and we interpret the Kadluk and Amerk locations as inner shelf and Kogyuk and Amauligak as middle shelf.

During deposition of the Kugmallit sequence, the Akpak 2P-35 well was close to the shelf break (Morrell and Schmidt, 1988). A Miocene transgression deepened the environment to a slope setting for the Mackenzie Bay sequence (J.R. Dietrich, pers. comm. 1990).

The Mackenzie Bay and Kugmallit sequence of Orvilruk and the Kugmallit sequence of Koakoak and Nerlerk contain thick, shaly sections with thin sandy interbeds. Deep-water deposition, possibly in a continental rise environment, prevailed at these locations. A comparison of the foraminiferal assemblages excludes the Nerlerk well from the other two deep-water wells. The lower diversity microfauna in Nerlerk suggests a difference in

environmental parameters, possibly not related to bathymetry.

III. THE AGGLUTINATED ASSEMBLAGE

1. General faunal trends

The most striking feature of the agglutinated foraminifera assemblage is its diachronous occurrence in relation to regional seismic horizons and to datums established from LADs of calcareous species. Figure 2 is a biostratigraphic cross-section from SE to NW, or inner shelf to continental rise. The LAD of *Asterigerina staeschei*, an extinction datum which is widely recognized in the Beaufort Sea at approximately the middle/late Miocene boundary (McNeil, 1989; McNeil,in press), serves as the chronostratigraphic datum. In Akpak 2P-35, *A. staeschei* was not found and the top of the Mackenzie Bay Sequence was chosen instead. In numerous locations the LAD of *A. staeschei* coincides with the top of the Mackenzie Bay Sequence. The LADs of seven agglutinated species with a common, continuous occurrence are correlated to illustrate: a) the diachroneity of agglutinated species with respect to the calcareous foraminiferal datum and b) the correlation of the species succession in the cross-section. All LADs are in the same order with the exception of two points of reversed order: at Akpak 2P-35, *Insculptarenula subvesicularis* occurs above *Haplophragmoides carinatus* and; at Orvilruk O-03, *Verneuilinulla* sp. 1 exists above *Recurvoides* sp. 1.

Some wells, such as Kogyuk N-67 and Amauligak I-65, are characterized by a more abrupt disappearance of agglutinated species.

Verneuilinulla sp. 1, most abundant in deep-water facies of Orvilruk O-03, was not encountered in the Amauligak I-65 well and the nearshore Amerk O-09 well.

A more detailed correlation of biostratigraphic ranges is illustrated in Figure 3 which compares the Amauligak J-44 and Amauligak I-65 wells, only approximately 4 km apart. The Oligocene/Miocene boundary is tentatively chosen at the LAD of *Turrilina alsatica*. This datum appears rather low at this locality since this species is known to range into the lower Mackenzie Bay sequence (McNeil, 1989). The most significant faunal difference between the wells is the higher proportion of calcareous benthic foraminifera in Amauligak I-65 compared to Amauligak J-44. The transition from a dominantly agglutinated assemblage to a calcareous one occurred in the upper Kugmallit sequence in Amauligak I-65, whereas in Amauligak J-44 it occurred in the lower Mackenzie Bay sequence. The LADs of most species compare well in correlation to the top of the Kugmallit sequence which serves as a chronostratigraphic datum. The exceptions are *Spirosigmoilinella compressa* and *Recurvoides* sp. 2; both species occur significantly higher in the sequence at Amauligak J-44. The species composition of the agglutinated fauna is similar between

both locations, although the absolute abundances of species differ. The question that arises is whether the environmental change that caused the transition from agglutinated to calcareous faunas created unfavourable conditions for agglutinated foraminifera or whether it affected their preservation. The examples of the two Amauligak wells show that differences in environmental parameters can affect the microfauna over a relatively small distance which is important to note for basinwide correlations.

Cenozoic agglutinated species generally have long biostratigraphic ranges in the Beaufort Mackenzie Basin. The diachronous LADs add another problem for biostratigraphic interpretations. With some knowledge of the paleo-setting, gained through analysis of seismic profiles, mechanical well logs and fossil composition, however, several agglutinated species are revealed as useful biostratigraphic indicators. Most species seem to possess a tolerance for certain environmental changes, related to changing water depth, which is reflected in their wide bathymetric ranges. The same phenomenon is observed in recent agglutinated assemblages (Schröder, 1986). An increase or decrease in abundance of species, however, indicates preference for particular environments. As a result, relative abundances are a significant parameter for biostratigraphic interpretation.

2. Species distribution

The diachroneity of agglutinated foraminifera in the Beaufort-Mackenzie Basin prohibits the establishment of chronostratigraphically significant interval zones as proposed for calcareous species by McNeil (1989). A zonal scheme based on assemblage zones, defined by indicator species being particularly abundant or exclusively present in a limited stratigraphic interval, is in preparation (Schröder-Adams and McNeil, in prep.). From the quantitative distributional data (Table 1 to 9), it is clear that broad bathymetric zones have unique agglutinated assemblages, which are briefly described.

Akpak Sequence

Agglutinated assemblages are present in bathyal deposits of the Miocene Akpak sequence at Akpak 2P-35, Orvilruk O-03 and Koakoak O-22 (Tables 1 to 3). Typical species of the Akpak sequence are *Glomospira charoides* and *Cystammina pauciloculata*. Several other agglutinated taxa occurred in the late Miocene deep water assemblage, although, they have longer biostratigraphic ranges. These species are *Recurvoides* sp. 2, *Bathysiphon nodosariaformis*, *Ammolagena clavata*, *Ammodiscus spp.*, *Reticulophragmium rotundidorsata*, and others.

Mackenzie Bay Sequence

The Mackenzie Bay sequence, which contains a mixed assemblage of agglutinated and calcareous foraminifera, is developed in Akpak 2P-35, Orvilruk O-03, Amauligak I-65,

Amauligak J-44, and Kogyuk N-67 (Tables 1 and 2, 4 to 6). It is missing in Koakoak O-22 and Nerlerk M-98 due to an unconformity. This sequence is characterized in the deep-water facies at Orvilruk O-03 and Akpak 2P-35 by the LADs of *Recurvoides* sp. 3 and *Reticulophragmium orbicularis*. The deep water assemblage is dominated by numerous long-ranging agglutinated taxa including *Spirosigmoilinella compressa, Recurvoides* sp. 2, *Reticulophragmium* sp. 1, Haplophragmoides carinatus, *Insculptarenula subvesicularis*, and others.

On the middle shelf, the transition from agglutinated to calcareous foraminifera occurred earlier than in the deep-water facies (Figure 2). The assemblage is dominated by *S. compressa, Recurvoides* sp. 2, and *Insculptarenula subvesicularis*. *Reticulophragmium* sp. 1 and *Haplophragmoides carinatus* became dominant during the Oligocene in the middle shelf facies. The LAD of *R. orbicularis* and *Recurvoides* sp. 3 occurred in the Oligocene.

Kugmallit Sequence

The Kugmallit sequence in all studied wells is dominated by agglutinated foraminifera. The three different biofacies show certain faunal differences. The deep-water facies at Orvilruk O-03, Koakoak O-22 and Nerlerk M-98 (Table 7) is characterized by an increased absolute abundance of *Reticulophragmium orbicularis*. *Budashevaella multicamerata* occurred in significant numbers in Orvilruk O-03. The lower part of the deep-water facies is marked by *Recurvoides* sp. 1 and *Verneuilinulla* sp. 1. Most long-ranging taxa of the Mackenzie Bay sequence form also an important component of the Kugmallit sequence. The assemblage of Nerlerk M-98 differs from the other two deep-water locations through a distinct decrease in species diversity.

Characteristic species for the middle shelf are *Reticulophragmium sp. 1, Haplophragmoides carinatus* and *Insculptarenula subvesicularis*. These taxa have increased numbers in the upper part of the Kugmallit sequence. The assemblage of the lower part is dominated by *Labrospira* sp. 1 and *Recurvoides* sp. 1. *Labrospira* sp. 1 seems to be a reliable indicator for middle shelf facies.

The upper part of the Kugmallit sequence (inner shelf facies) of Amerk O-09 and Kadluk O-07 (Table 8 and 9) yields only calcareous foraminifera. Species diversity is decreased compared to the middle shelf biofacies which is especially pronounced at Amerk O-09. The inner shelf agglutinated assemblage is dominated by *Reticulophagmium sp. 1 and Haplophragmoides carinatus. Species such as* Recurvoides *sp. 1 and Insculptarenula subvesicularis, which occur in Oligocene deposits at Kadluk O-07, have LADs in the Eocene at Amerk O-09.*

IV. DISCUSSION

The agglutinated species of the Oligocene to Miocene fauna in the Beaufort-Mackenzie Basin can be grouped into three categories. The first consists of relatively short-ranging, chronostratigraphically useful species. The second group comprises long-ranging, but environmentally useful species and the third and generally most dominant group consists of long-ranging species that occur over a wide bathymetric range. Figure 4 illustrates the changes in abundance of selected agglutinated species from shallow to deep water and compares the Kugmallit with the Mackenzie Bay sequence. Species with a relatively continuous record were chosen. Numerous rare taxa with sporadic occurrences complement the assemblage, however, their implication is difficult to interpret.

Biostratigraphic marker species for the Oligocene are *Labrospira* sp. 1, *Recurvoides* sp. 1, *Cyclammina* sp. 1, and *Verneuilinulla* sp. 1. These species have their LADs within the Kugmallit sequence. *Labrospira* sp. 1 and *Cyclammina* sp. 1 are shallow-water species, whereas *Verneuilinulla* sp. 1 is more common in deep water. No agglutinated species are restricted to the Mackenzie Bay sequence. *Spirosigmoilinella compressa* and *Cystammina pauciloculata* increase in numbers during the Miocene, including the deep-water facies of the late Miocene Akpak sequence. *C. pauciloculata* is a bathyal species, whereas *S. compressa* has a wide bathymetric range.

Another group of species ranges over the entire Oligocene to Miocene interval, but abundance changes of these species between wells suggest that they have paleoenvironmental significance. *Reticulophragmium orbicularis*, *Recurvoides contortus*, *Recurvoides* sp. 3, *Budashevaella multicamerata*, and *Ammolagena clavata* are bathyal species.

An interesting species association marks seismically defined slope facies in the Mackenzie Bay sequence in the Akpak 2P-35 well. A distinctive assemblage with coarse grained tests, consisting of *Recurvoides* sp. (coarse variety), *Psammosphaera fusca*, *Rhabdammina* sp. 1, *Placentammina* sp. 1, and *Reophax* spp. may thus be indicative of a slope environment.

The middle and outer shelf region, which is represented in the Mackenzie Bay and Kugmallit sequences of both Amauligak wells and in the Kugmallit sequence of the Akpak 2P-35 well, is characterized by *Insculptarenula subvesicularis* and *Haplophragmoides* cf. *H. rotulatum*. The inner shelf shows an increase in *Gravellina sp. 1*.

The dominant species of the Oligocene/Miocene assemblage, such as *Bathysiphon nodosariaformis*, *Reticulophragmium* sp. 1, *Haplophragmoides carinatus*, and *Recurvoides* sp. 2, have long

biostratigraphic ranges and do not indicate a preferred environment.

IV. SUMMARY

The results show that a biostratigraphic correlation in the Oligocene to Miocene strata using agglutinated foraminifera is possible when a variety of stratigraphic information is considered. Studies of recent foraminifera have shown that the distribution of certain species is substrate-dependent (Schröder, 1986). In the fossil record, a facies-controlled distribution of agglutinated foraminifera explains the diachronous occurrence of species compared to seismic sequence boundaries. Several agglutinated species have ranges within the Oligocene and therefore become biostratigraphic markers. For this report faunal differences have been related to broad bathymetric zones. In the fossil record it is difficult to identify the ecological parameters that caused the faunal changes, and it was not necessarily depth *per se* that caused the changes. Further studies will assess the relationship between agglutinated assemblages and substrate, to find further clues about the controlling ecological factors.

V. REFERENCES

Dietrich, J.R., Dixon, J., and McNeil, D.H., 1985. Sequence analysis and nomenclature of Upper Cretaceous to Holocene strata in the Beaufort-Mackenzie Basin. In Current Research, Part A, Geological Survey of Canada, Paper 85-1A, p. 613-628.

Dietrich, J.R., Dixon, J., McNeil, D.H., McIntyre, D.J., Snowdon, L.R., and Cameron, A.R., 1989. The geology, biostratigraphy and organic geochemistry of the Natsek E-56 and Edlok N-56 wells, western Beaufort Sea. In Current Research, Part G, Geological Survey of Canada, Paper 89-1G, p. 133-157.

Dixon, J. and Dietrich, J.R., 1988. The nature of depositional and seismic sequence boundaries in Cretaceous-Tertiary strata of the Beaufort-Mackenzie Basin. In James, D.P. and Leckie, D.A. (Eds.), Sequences, Stratigraphy, Sedimentology: Surface and Subsurface. Canadian Society of Petroleum Geologists, Memoir 15, p. 63-72.

Dixon, J., McNeil, D.H., Dietrich, J.R., Bujak, J.P., and Davies, E.H., 1984. Geology and biostratigraphy of the Dome Gulf et al. Hunt Kopanoar M-13 well, Beaufort Sea. Geological Survey of Canada, Paper 82-13, p. 1-28.

McNeil, D.H., 1989. Foraminiferal zonation and biofacies analysis of Cenozoic strata in the Beaufort-Mackenzie Basin of Arctic Canada. In Current Research, Part G, Geological Survey of Canada, Paper 89-1G, p. 203-223.

McNeil, D.H., (in press). Tertiary marine events of Beaufort-Mackenzie basin and correlation of Oligocene to Pliocene marine outcrops in Arctic North America. Arctic.

McNeil, D.H. and Birchard, M.C., 1989. Cenozoic foraminiferal interval zones and sequence tops in 66 exploration wells, Beaufort-Mackenzie Basin. Geological Survey of Canada, Open File 2121.

Morrell, G.R. and Schmidt, U.B., 1988. Subsequences of the Kugmallit delta front, Beaufort-Mackenzie Basin. In James, D.P. and Leckie, D.A. (Eds.), Sequences, Stratigraphy, Sedimentology: Surface and Subsurface, Canadian Society of Petroleum Geologists, Memoir 15, p. 361-372.

Schröder, C.J., 1986. Deep-water arenaceous foraminifera in the Northwest Atlantic Ocean. Canadian Technical Report of Hydrography and Ocean Sciences, no. 71, 191 p.

Staplin, F.L., 1976. Tertiary biostratigraphy, Mackenzie Delta region, Canada. Bulletin of Canadian Petroleum Geology, v. 24, no. 1, p. 117-136.

Young, F.G. and McNeil, D.H., 1984. Cenozoic stratigraphy of the Mackenzie Delta, Northwest Territories. Geological Survey of Canada, Bulletin 336, 63 p.

LIST OF FIGURES

Figure 1: Location map of studied wells in the Beaufort-Mackenzie Basin.

Figure 2: Stratigraphic cross-section from inner shelf to continental rise, illustrating the diachronous LADs of selected agglutinated species compared to the LAD of *Asterigerina staeschei*. (Depth in Amauligak I-65 is transformed to the true vertical depth.)

Figure 3: Comparison of biostratigraphic ranges of selected agglutinated species and the relative abundance of calcareous specimens in the Amauligak J-44 and Amauligak I-65 wells. The top of the Kugmallit sequence serves as chronostratigraphic datum. The Oligocene/Miocene boundary is placed at the LAD of *Turrilina alsatica*. (Depth in Amauligak I-65 is transformed to the true vertical depth.)

Figure 4: Paleobathymetric ranges of selected agglutinated foraminifera in the Mackenzie Bay and Kugmallit sequences, Beaufort-Mackenzie Basin.

LIST OF TABLES

The following tables contain the absolute abundance data of benthic foraminifera in well cutting samples from the following wells of the Beaufort-Mackenzie Basin:

Table 1: Akpak 2P-35
Table 2: Orvilruk O-03
Table 3: Koakoak O-22
***Table 4:** Amauligak I-65
Table 5: Amauligak J-44
Table 6: Kogyuk N-57
Table 7: Nerlerk M-98
Table 8: Amerk O-09
Table 9: Kadluk O-07

*Well depth is not correlated according to deviation.

Foraminiferal microslides for the above wells are stored at the Institute of Sedimentary and Petroleum Geology, Calgary, Alberta.

Table 1. 1 AKPAK 2P-35

Depth (m)	2300	2360	2390	2420	2450	2480	2521	2563	2584	2605	2647	2689
Haynesina orbiculare	1											
Miliammina sp. 1	1											
Recurvoides sp.	1											
Haplophragmoides sp.		2	1									
Glomospira charoides			1		1	1	3	2			2	2
Bathysiphon nodosariaformis						8		4	1	11	44	51
Spirosigmoilinella compressa								2		2	3	2
Ammolagena clavata									3	1	2	1
Recurvoides sp. 2										1	2	18
Rhabdammina cylindrica										1		
Ammodiscus sp. 1											1	1
Cibicidoides sp. 4											2	
Insculptarenula subvesicularis											4	2
Nodosaria sp.											1	
Recurvoides contortus											3	
Reticulophragmium rotundidorsata											2	4
Reticulophragmium sp. 1											4	4
Haplophragmoides cf. rotulatum												10
Placentammina sp. 1												1
Psammosphaera fusca												2
Reophax nodulosus												1
Cystammina pauciloculata												
Eratidus sp. 1												
Haplophragmoides carinatus												
Miliolinella circularis												
Nonion sp.												
Recurvoides sp. (coarse)												
Reophax scorpiurus												
Rhabdammina sp. 1												
Ammodiscus planus												
Diatom spp.												
Eponides cf. tumidulus												
Haplophragmoides sp. 3												
Nonion sp. 1												
Recurvoides sp. 1												
Reticulophragmium orbicularis												
Trochammina sp.												

Table 1. 2 AKPAK 2P-35

Depth (m)	2731	2773	2815	2847	2899	2941	2983	3025	3067	3109	3151	3193
Haynesina orbiculare								3	1	2	1	
Miliammina sp. 1	2											
Recurvoides sp.												
Haplophragmoides sp.												
Glomospira charoides	1		3	2								
Bathysiphon nodosariaformis	15	69	22	262	134	26	19	45	16	22	6	16
Spirosigmoilinella compressa	10	12	4	27	14	2		2		6	1	
Ammolagena clavata		3	2								1	
Recurvoides sp. 2	29	24	12	13	10	5		7	1	3	2	19
Rhabdammina cylindrica	6	7	3	27	4					1		1
Ammodiscus sp. 1				2		1		3	1			
Cibicidoides sp. 4			2									
Insculptarenula subvesicularis	16	7	9	3	5			2		5	1	5
Nodosaria sp.			1									
Recurvoides contortus												
Reticulophragmium rotundidorsata	9	3		8	2					1		
Reticulophragmium sp. 1	3	1	2	9	6	5	18	20	23	101	13	10
Haplophragmoides cf. rotulatum	4	5										
Placentammina sp. 1	10	11	5	7	5	2		1	1	1		
Psammosphaera fusca	1	6	9	26	4							
Reophax nodulosus	2	2										
Cystammina pauciloculata	8	13	10	27	2					2		
Eratidus sp. 1	3											
Haplophragmoides carinatus	15	24	4	16	4					4	1	8
Miliolinella circularis	1			4	4			2	1	2		
Nonion sp.	1											
Recurvoides sp. (coarse)	39	41	6	35	5		3					
Reophax scorpiurus	1	4		8	2							
Rhabdammina sp. 1	22	4	3	10					2	2	1	
Ammodiscus planus		2	2					1				
Diatom spp.		3				1						
Eponides cf. tumidulus		1										
Haplophragmoides sp. 3		5										
Nonion sp. 1		2			2	4	2		2	3	1	4
Recurvoides sp. 1		13	3	7	8	5						14
Reticulophragmium orbicularis		1		3	1	2	4	11	1	26	3	2
Trochammina sp.		2	2	1	2							

Table 1. 3 AKPAK 2P-35

Depth (m)	3235	3277	3319	3361	3403	3445	3481	3529	3571	3613	3652
Haynesina orbiculare											
Miliammina sp. 1											
Recurvoides sp.											
Haplophragmoides sp.											
Glomospira charoides				1							
Bathysiphon nodosariaformis	49	51	58	49	7	5	68	33	36	18	19
Spirosigmoilinella compressa		1	4	2	1	2		1		11	
Ammolagena clavata	1						1				
Recurvoides sp. 2	7	4	40	19	1	3	5	7	3	1	5
Rhabdammina cylindrica				1							2
Ammodiscus sp. 1	2		9	1		1		1			
Cibicidoides sp. 4											
Insculptarenula subvesicularis	20	27	65	26	5	4	10	3	5		2
Nodosaria sp.	1										
Recurvoides contortus											
Reticulophragmium rotundidorsata		1	4		1			2			
Reticulophragmium sp. 1	20	17	59	35	9	3	13	12	6	4	9
Haplophragmoides cf. rotulatum		1	4			3	1				
Placentammina sp. 1		2	1					1	1		
Psammosphaera fusca						1			1		
Reophax nodulosus								1			
Cystammina pauciloculata			3	1				4	2	1	
Eratidus sp. 1											
Haplophragmoides carinatus	11	32	42	22	6	1	1	4			
Miliolinella circularis	1	2		1							
Nonion sp.											
Recurvoides sp. (coarse)								3	1	2	1
Reophax scorpiurus		1									1
Rhabdammina sp. 1		2									
Ammodiscus planus		2	1	1		1		1			
Diatom spp.											
Eponides cf. tumidulus											
Haplophragmoides sp. 3		2	1								
Nonion sp. 1		3	1								
Recurvoides sp. 1	32		128	70	7	11	18	13	8		1
Reticulophragmium orbicularis			5	4			1				
Trochammina sp.									2		

Table 1. 4 AKPAK 2P-35

Depth (m)	2300	2360	2390	2420	2450	2480	2521	2563	2584	2605	2647	2689
Turrilina alsatica												
Angulogerina fluens												
Cibicidoides sp. 1												
Elphidiella sp.												
Globocassidulina sp. 1												
Melonis sp. 1												
Nuttallides sp. 1												
Recurvoides sp. 3												
Reophax pilulifer												
Reophax sp.												
Bathysiphon pseudoloculus												
Budashevaella multicamerata												
Cassidulina teretis												
Cibicidoides sp.												
Elphidium sp.												
Jaculella acuta												
Oolina sp.												
Rhabdammina sp. (branched)												
Quinqueloculina sp.												
Cyclammina sp. 1												
Pyrgo sp.												
Bathysiphon sp. 1												
Cibicidoides sp. 2												
Cibicidoides sp. 3												
Polymorphina sp.												
Ammodiscus latus												
Angulogerina sp.	2											
Bulimina elongata												
Reophax guttifer												
Glandulina sp.												
Gravellina sp. 1												
Verneuilinulla sp. 1												
Labrospira sp. 1												
Arenoturrispirillina sp. 1												
Eggerella sp. 1												
Ammodiscus sp.												
Gyroidina sp.												
Ammomarginulina matchigarica												

Table 1. 5 AKPAK 2P-35

Depth (m)	2731	2773	2815	2847	2899	2941	2983	3025	3067	3109	3151	3193
Turrilina alsatica		1	23	14	14	2		15	1	2		3
Angulogerina fluens			6	5	2						4	
Cibicidoides sp. 1			5				2	5			2	
Elphidiella sp.			4	5				4		3		
Globocassidulina sp. 1			3	7	2	2				1	1	1
Melonis sp. 1			1	5	4			8		1		1
Nuttallides sp. 1			18	8	5					3	2	
Recurvoides sp. 3			14			2					2	10
Reophax pilulifer			1	8	3			2	4			
Reophax sp.			2									
Bathysiphon pseudoloculus				2	8		1					
Budashevaella multicamerata				2								
Cassidulina teretis				1								
Cibicidoides sp.				5		1						
Elphidium sp.				1								
Jaculella acuta				1								
Oolina sp.				2		1				1		
Rhabdammina sp. (branched)				1		1			1			
Quinqueloculina sp.						2		1				1
Cyclammina sp. 1							6					
Pyrgo sp.							1					
Bathysiphon sp. 1								3				
Cibicidoides sp. 2								3				
Cibicidoides sp. 3									1			
Polymorphina sp.									1			
Ammodiscus latus											1	
Angulogerina sp.												2
Bulimina elongata												
Reophax guttifer												
Glandulina sp.												
Gravellina sp. 1												
Verneuilinulla sp. 1												
Labrospira sp. 1												
Arenoturrispirillina sp. 1												
Eggerella sp. 1												
Ammodiscus sp.												
Gyroidina sp.												
Ammomarginulina matchigarica												

Table 1. 6 AKPAK 2P-35

Depth (m)	3235	3277	3319	3361	3403	3445	3481	3529	3571	3613	3652
Turrilina alsatica	2							1		1	1
Angulogerina fluens				2						1	
Cibicidoides sp. 1											
Elphidiella sp.											
Globocassidulina sp. 1	1	1	2								
Melonis sp. 1		1		1							
Nuttallides sp. 1	1			2			1	2	1		1
Recurvoides sp. 3	2	3	7	6	3		2		1		
Reophax pilulifer				1				1	1		1
Reophax sp.				1							
Bathysiphon pseudoloculus					2			1	2		
Budashevaella multicamerata											
Cassidulina teretis											
Cibicidoides sp.				2	1	1					
Elphidium sp.											
Jaculella acuta										2	
Oolina sp.											
Rhabdammina sp. (branched)											
Quinqueloculina sp.											
Cyclammina sp. 1											
Pyrgo sp.											
Bathysiphon sp. 1											
Cibicidoides sp. 2											
Cibicidoides sp. 3											
Polymorphina sp.											
Ammodiscus latus					1						
Angulogerina sp.											
Bulimina elongata	1				1						
Reophax guttifer	3										
Glandulina sp.			1								
Gravellina sp. 1			1							1	
Verneuilinulla sp. 1				3		1			2		
Labrospira sp. 1						2			7	14	52
Arenoturrispirillina sp. 1							1				
Eggerella sp. 1							1				
Ammodiscus sp.								1			
Gyroidina sp.								1			
Ammomarginulina matchigarica									1		

Table 2. 1 ORVILRUK 0-03

Depth (m)	2005	2025	2065	2085	2130	2170	2210	2290	2330	2350	2390	2430
Cassidulina teretis	2									2	1	
Saccammina sp.		1										
Haplophragmoides sp.		5	3	2								
Recurvoides sp.			1								1	
Ammolagena clavata			2			1						1
Cancris subconicus			1									
Elphidium sp.					1							
Haynesina orbiculare						1						
Glomospira charoides						15	4			1		2
Reophax sp. 1						2						
Alabaminella weddellensis							1					
Cassidulina reniforme							1					
Recurvoides sp. 2										2		5
Bathysiphon nodosariaformis										1	3	4
Haynesina germanica											1	
Reticulophragmium sp. 1											2	2
Ammodiscus planus												
Ammodiscus sp. 1												
Bathysiphon sp. 1												
Reticulophragmium rotundidorsata												
Haplophragmoides carinatus												
Reophax cf.nodulosus												
Spirosigmoilinella compressa												
Elphidium excavatum												
Recurvoides contortus												
Reophax sp.												
Rhabdammina cylindrica												
Bathysiphon pseudoloculus												
Cystammina pauciloculata												
Insculptarenula subvesicularis												
Miliolinella sp.												
Haplophragmoides subtrullissatus												
Kutsevella sp. 1												
Angulogerina fluens												
Eponides sp. 1												
Quinqueloculina sp.												
Ammomarginulina sp.												
Cibicidoides sp.												
Glomospira cf. irregularis												
Nodosaria sp.												
Reophax sp. C												
Saccammina placenta												
Trochammina sp. 4												
Martinotiella sp.												
Miliammina sp. 1												
Asterigerina staeschei												
Cibicides sp.												
Cibicidoides sp. 1												

Table 2. 2 ORVILRUK 0-03

Depth (m)	2470	2510	2550	2590	2630	2670	2710	2750	2790	2830	2870	2905
Cassidulina teretis		1										
Saccammina sp.												
Haplophragmoides sp.												
Recurvoides sp.		1							11			
Ammolagena clavata		2	3	2	8	2	4	1	1		25	8
Cancris subconicus												
Elphidium sp.												
Haynesina orbiculare												
Glomospira charoides		1			1	2				1	2	
Reophax sp. 1		1										
Alabaminella weddellensis												
Cassidulina reniforme												
Recurvoides sp. 2	4	13	36	22	27	34	18	4	4	17	18	24
Bathysiphon nodosariaformis	2	6	8	13	20	26	22	15	15	5	2	13
Haynesina germanica												
Reticulophragmium sp. 1			2	6	24	9	17	4	19	15	9	13
Ammodiscus planus	1		4	3	3	1				1	7	3
Ammodiscus sp. 1	1	1	7	1		8	9	3	7	7	1	1
Bathysiphon sp. 1	2	1		8	8	6	3	7	12	10		
Reticulophragmium rotundidorsata	1	2	4	13	10	13	20	4	13	19	9	6
Haplophragmoides carinatus		2	9	8	11	7	5	7	10	11	16	20
Reophax cf.nodulosus		1	1							1		
Spirosigmoilinella compressa		5	3	6	9	10	7	3		3	21	15
Elphidium excavatum			1								1	
Recurvoides contortus			2	5	7	25	25	20	16	24	2	
Reophax sp.			1	1	4	5			2			6
Rhabdammina cylindrica			12	3	16	5	8	2	10	1	19	
Bathysiphon pseudoloculus			2	1	7	12	3	2		2	23	1
Cystammina pauciloculata				2	15	12	10		2	1	28	12
Insculptarenula subvesicularis				9	8	4	7	1	5	4	8	7
Miliolinella sp.				1								
Haplophragmoides subtrullissatus					9	6	1	5			3	11
Kutsevella sp. 1					4							
Angulogerina fluens						1	1	3	8	7	3	3
Eponides sp. 1						2	1		7	3	4	5
Quinqueloculina sp.						2	1					
Ammomarginulina sp.							1					
Cibicidoides sp.							4					
Glomospira cf. irregularis							1	1				
Nodosaria sp.							1		1	1	1	
Reophax sp. C							4	1		3		
Saccammina placenta							3					
Trochammina sp. 4							2	2	1		6	6
Martinotiella sp.								1	2	1		
Miliammina sp. 1								2	1			
Asterigerina staeschei									2	6		
Cibicides sp.									1			
Cibicidoides sp. 1									6	2		

Table 2. 3 ORVILRUK O-03

Depth (m)	2945	2985	3025	3065	3105	3145	3185	3225	3265	3305	3346	3385
Cassidulina teretis												
Saccammina sp.												
Haplophragmoides sp.												
Recurvoides sp.												
Ammolagena clavata	1				4	1	1	1	1	6		1
Cancris subconicus												
Elphidium sp.												
Haynesina orbiculare												
Glomospira charoides									2			
Reophax sp. 1												
Alabaminella weddellensis												
Cassidulina reniforme												
Recurvoides sp. 2	19	53	10	15	39	18	22	40	53	27	32	23
Bathysiphon nodosariaformis	9	12	3	9	9	2	7	3	6	16	12	41
Haynesina germanica												
Reticulophragmium sp. 1	16	26	10	19	33	15	16	87	42	68	49	32
Ammodiscus planus	7	2		2	9		5	7	5	6	6	5
Ammodiscus sp. 1	3	2	2									
Bathysiphon sp. 1	9	3	3	9	6	14	14	3	5	1	1	
Reticulophragmium rotundidorsata	5	8	2	25	9	10	19	9	6	7	2	
Haplophragmoides carinatus	31	8		2	30	4	15	14	26	31	12	51
Reophax cf.nodulosus												
Spirosigmoilinella compressa	7	2		2	1		4	2	2	7		1
Elphidium excavatum												
Recurvoides contortus		8	1	7	9	21	16	11	11	8	4	12
Reophax sp.	2						1					
Rhabdammina cylindrica	2	11	1	2	9	1	3	10	3	5	3	4
Bathysiphon pseudoloculus	1	1		2	8		1	5	8	9	9	4
Cystammina pauciloculata	3	5	4	5	8	1		2			1	
Insculptarenula subvesicularis	16	3		3	3	2		2	1	2	2	11
Miliolinella sp.												
Haplophragmoides subtrullissatus	4								1			
Kutsevella sp. 1												
Angulogerina fluens	1											
Eponides sp. 1	2											
Quinqueloculina sp.												
Ammomarginulina sp.												
Cibicidoides sp.												
Glomospira cf. irregularis												
Nodosaria sp.										1		
Reophax sp. C		3			4	1	2					2
Saccammina placenta												
Trochammina sp. 4	1											
Martinotiella sp.												
Miliammina sp. 1												
Asterigerina staeschei												
Cibicides sp.												
Cibicidoides sp. 1												

Table 2. 4 ORVILRUK O-03

Depth (m)	3425	3465	3505	3545	3585	3630	3670	3710	3750	3790	3830	3870
Cassidulina teretis												
Saccammina sp.												
Haplophragmoides sp.					2							
Recurvoides sp.												
Ammolagena clavata	2	1		2		2	3	2		1	2	
Cancris subconicus												
Elphidium sp.												
Haynesina orbiculare												
Glomospira charoides						2	1	2		1		1
Reophax sp. 1												
Alabaminella weddellensis												
Cassidulina reniforme												
Recurvoides sp. 2	29	8	13	29		53	43	58		24	23	30
Bathysiphon nodosariaformis	13	5	10	12	2	19	23	27	17	23	12	13
Haynesina germanica												
Reticulophragmium sp. 1	5	4	3	8	1	27	35	18	17	26	13	16
Ammodiscus planus	1	4		2		10	8	4	7	6	6	3
Ammodiscus sp. 1												
Bathysiphon sp. 1				1		4	3	3	1	2		1
Reticulophragmium rotundidorsata		2	1	1	1		2	2	3			
Haplophragmoides carinatus	18	9	6	5	1	23	34	23	16	20	27	24
Reophax cf.nodulosus									2			1
Spirosigmoilinella compressa		1				5		4		3		2
Elphidium excavatum												
Recurvoides contortus	6		1	1		4	3	6		3		6
Reophax sp.												
Rhabdammina cylindrica	2				1	5	1	3	2	4	6	2
Bathysiphon pseudoloculus	2	1	1	1	2	4	7	4	5	3	1	6
Cystammina pauciloculata						2	1		2			
Insculptarenula subvesicularis		2		1		3		1	1	1	2	2
Miliolinella sp.												
Haplophragmoides subtrullissatus										1		
Kutsevella sp. 1												
Angulogerina fluens												
Eponides sp. 1												
Quinqueloculina sp.												
Ammomarginulina sp.												
Cibicidoides sp.												
Glomospira cf. irregularis												
Nodosaria sp.												
Reophax sp. C	1			2		4	2		2		2	3
Saccammina placenta												
Trochammina sp. 4												
Martinotiella sp.												
Miliammina sp. 1												
Asterigerina staeschei												
Cibicides sp.												
Cibicidoides sp. 1												

Table 2. 5 ORVILRUK O-03

Depth (m)	2005	2025	2065	2085	2130	2170	2210	2290	2330	2350	2390	2430
Eggerella sp. 1												
Globocassidulina subglobosa												
Melonis sp. 1												
Quadrimorphina sp. 1												
Sphaeroidina bulloides												
Ammodiscus latus												
Cibicidoides sp. C												
Fissurina spp.												
Haplophragmoides sp. 3												
Nonionella sp.												
Pelosina sp.												
Recurvoides sp. (coarse)												
Recurvoides sp. 3												
Reophax globosus												
Ehrenbergina praepupa												
Eponides cf. pusillus												
Oolina hexagona												
Rhabdammina sp. 1												
Thuramminoides sp.												
Trochammina sp. 3												
Reticulophragmium orbicularis												
Gravellina sp. 1												
Haplophragmoides cf. rotulatum												
Pyrgoella sphaera												
Fissurina sp.												
Praecystammina cf. globigeriniformis												
Psamminopelta sp. 1												
Oolina sp.												
Psammosphaera fusca												
Trochammina cf. altiformis												
Marginulina sp.												
Placentammina sp. 1												
Rhizammina sp.												
Verneuilinulla sp. 1												
Budashevaella multicamerata												
Recurvoides sp. 1												
Arenobulimina sp. 1												
Semivulvulina sp.												
Miliolinella subrotunda												
Globotextularia sp. 1												
Labrospira cf. crassimargo												
Diatom spp.												
Ammomarginulina ensis												
Trochammina sp. 5												
Trochammina sp. 6												
Trochammina sp. 1												
Ammomarginulina matchigarica												
Saccammina complanata												
Eratidus foliaceus												

Table 2. 6 ORVILRUK O-03

Depth (m)	2470	2510	2550	2590	2630	2670	2710	2750	2790	2830	2870	2905
Eggerella sp. 1									1		1	
Globocassidulina subglobosa									8		3	
Melonis sp. 1									1	4	3	1
Quadrimorphina sp. 1									1	1		
Sphaeroidina bulloides									2	2		
Ammodiscus latus										2		
Cibicidoides sp. C										1		
Fissurina spp.										2		
Haplophragmoides sp. 3										1	2	1
Nonionella sp.										1		
Pelosina sp.										1		
Recurvoides sp. (coarse)										7	8	
Recurvoides sp. 3										5	7	
Reophax globosus										1		
Ehrenbergina praepupa											1	
Eponides cf. pusillus											1	
Oolina hexagona											1	
Rhabdammina sp. 1											8	
Thuramminoides sp.											1	
Trochammina sp. 3											7	2
Reticulophragmium orbicularis												10
Gravellina sp. 1												
Haplophragmoides cf. rotulatum												
Pyrgoella sphaera												
Fissurina sp.												
Praecystammina cf. globigeriniformis												
Psamminopelta sp. 1												
Oolina sp.												
Psammosphaera fusca												
Trochammina cf. altiformis												
Marginulina sp.												
Placentammina sp. 1												
Rhizammina sp.												
Verneuilinulla sp. 1												
Budashevaella multicamerata												
Recurvoides sp. 1												
Arenobulimina sp. 1												
Semivulvulina sp.												
Miliolinella subrotunda												
Globotextularia sp. 1												
Labrospira cf. crassimargo												
Diatom spp.												
Ammomarginulina ensis												
Trochammina sp. 5												
Trochammina sp. 6												
Trochammina sp. 1												
Ammomarginulina matchigarica												
Saccammina complanata												
Eratidus foliaceus												

Table 2. 7 ORVILRUK 0-03

Depth (m)	2945	2985	3025	3065	3105	3145	3185	3225	3265	3305	3346	3385
Eggerella sp. 1					1		4	1		1		
Globocassidulina subglobosa												
Melonis sp. 1	2											
Quadrimorphina sp. 1												
Sphaeroidina bulloides												
Ammodiscus latus												
Cibicidoides sp. C												
Fissurina spp.												
Haplophragmoides sp. 3		2			1		3	1	1	2		4
Nonionella sp.	1											
Pelosina sp.												
Recurvoides sp. (coarse)	1											
Recurvoides sp. 3	17	19	3		12	34	20	36	4	99	28	38
Reophax globosus		1						3				
Ehrenbergina praepupa									1			
Eponides cf. pusillus												
Oolina hexagona												
Rhabdammina sp. 1		4		1	1				3		1	
Thuramminoides sp.												
Trochammina sp. 3	5	8		2	1	3	20	13	6	12	7	21
Reticulophragmium orbicularis	4	24	2	74	132	39	41	54	33	18	8	7
Gravellina sp. 1	3	1		1								2
Haplophragmoides cf. rotulatum	4	14	1	6	10	1		1		2		5
Pyrgoella sphaera	1											
Fissurina sp.		1										
Praecystammina cf. globigeriniformis		1		8								
Psamminopelta sp. 1		1		1	2		2	2	2		1	
Oolina sp.				1								
Psammosphaera fusca				1		1						
Trochammina cf. altiformis				1	4			1	4	4	1	4
Marginulina sp.					1							
Placentammina sp. 1					1		1					
Rhizammina sp.					4							
Verneuilinulla sp. 1					5	2	7	8	15	11	12	25
Budashevaella multicamerata						2				1	6	8
Recurvoides sp. 1						3	2	3	13	11	15	12
Arenobulimina sp. 1							2	1				
Semivulvulina sp.								1				1
Miliolinella subrotunda										1		
Globotextularia sp. 1											2	
Labrospira cf. crassimargo												2
Diatom spp.												
Ammomarginulina ensis												
Trochammina sp. 5												
Trochammina sp. 6												
Trochammina sp. 1												
Ammomarginulina matchigarica												
Saccammina complanata												
Eratidus foliaceus												

Table 2. 8 ORVILRUK O-03

Depth (m)	3425	3465	3505	3545	3585	3630	3670	3710	3750	3790	3830	3870
Eggerella sp. 1				1				2			1	2
Globocassidulina subglobosa												
Melonis sp. 1												
Quadrimorphina sp. 1												
Sphaeroidina bulloides												
Ammodiscus latus												
Cibicidoides sp. C												
Fissurina spp.												
Haplophragmoides sp. 3						2	3			2		
Nonionella sp.												
Pelosina sp.												
Recurvoides sp. (coarse)												
Recurvoides sp. 3					3				37		25	
Reophax globosus	2		2		1							
Ehrenbergina praepupa												
Eponides cf. pusillus												
Oolina hexagona												
Rhabdammina sp. 1		2	1	6	1		1				8	
Thuramminoides sp.	2											1
Trochammina sp. 3	4	3		6		18	8	9	8	11	8	6
Reticulophragmium orbicularis	16	1	5		1	18	10	6	12	7	1	13
Gravellina sp. 1				1								
Haplophragmoides cf. rotulatum		4			2	2	1	3		2	1	
Pyrgoella sphaera												
Fissurina sp.												
Praecystammina cf. globigeriniformis												
Psamminopelta sp. 1		2		1				1	1	1	1	3
Oolina sp.		1										
Psammosphaera fusca		1										
Trochammina cf. altiformis												
Marginulina sp.												
Placentammina sp. 1												
Rhizammina sp.									7			
Verneuilinulla sp. 1			2	3	2	8	4	7	1	10	8	5
Budashevaella multicamerata	12	5	1	1		3	2	4	2	3	4	3
Recurvoides sp. 1	39	6	6	21		4	23	10	29	23	4	14
Arenobulimina sp. 1												
Semivulvulina sp.												
Miliolinella subrotunda												
Globotextularia sp. 1												
Labrospira cf. crassimargo												
Diatom spp.	2		74	1			5	8		1	5	
Ammomarginulina ensis						1						
Trochammina sp. 5						4		1	1	2	1	7
Trochammina sp. 6						3	3				4	
Trochammina sp. 1								2				
Ammomarginulina matchigarica											2	
Saccammina complanata											2	
Eratidus foliaceus												1

Table 3. 1 KOAKOAK 0-22

Depth (m)	2823	2847	2871	2895	2901	2919	2943	2967	2991	3015	3039	3063	3087
Bathysiphon nodosariaformis	2	1	7	3	2	9	3	3	10	20	8	5	12
Cibicidoides sp. 4		1											
Rhabdammina cylindrica		1	3		1			3					
Ammodiscus sp.1			1										
Ammodiscus planus					1								
Spirosigmoilinella compressa					1			2	7	2	4	4	2
Trochammina cf. altiformis							1						
Recurvoides contortus								1			1		
Recurvoides sp. 2								1	5	2	8		3
Cystammina pauciloculata									2	3	5	1	1
Reticulophragmium sp. 1			?						3	4			
Recurvoides sp. 3										13	11	2	
Trochammina sp. 1										4	10	5	1
Ammomarginulina matchigarica											1		
Haplophragmoides carinatus							3				5	5	1
Haplophragmoides subtrullissatus											2		
Nodosaria sp.											1	1	
Placentammina sp. 1											4		
Recurvoides sp. 1											3	2	3
Reophax globosus											1		
Reticulophragmium rotundidorsata											2		
Rhabdammina sp. 1											17	7	35
Rotaliatina mexicana												1	
Nuttallides sp. 1													
Globocassidulina sp. 1													
Nonion sp. 1													
Marginulina obesa													
Turrilina alsatica													
Elphidiella sp. 1													
Gyroidina soldanii													
Melonis sp. 1													
Elphidiella sp.													
Eponides cf. tumidulus													
Reticulophragmium orbicularis													

Table 3. 2 KOAKOAK 0-22

Depth (m)	3111	3135	3159	3183	3207	3231	3255	3279	3303	3327	3351	3375	3399
Bathysiphon nodosariaformis	6	5	18	10	10	15	4	5	10	15	8	8	11
Cibicidoides sp. 4													1
Rhabdammina cylindrica	1	2	1	4	4	3	1				2		3
Ammodiscus sp.1		1					1			1	1		
Ammodiscus planus					1		1		1	1			
Spirosigmoilinella compressa		5	8	6	6	5				4	2	1	2
Trochammina cf. altiformis													
Recurvoides contortus								1					
Recurvoides sp. 2	2	3	2		1	7	5	5		1	5	3	7
Cystammina pauciloculata				3					1	3			
Reticulophragmium sp. 1		2	3	2	3	5	3	1	10	9	6	6	16
Recurvoides sp. 3										5	6		5
Trochammina sp. 1													
Ammomarginulina matchigarica								2					
Haplophragmoides carinatus			2	2	2			1					
Haplophragmoides subtrullissatus										1			
Nodosaria sp.												1	
Placentammina sp. 1													
Recurvoides sp. 1	1			2	4	3	2	6	7	1		3	3
Reophax globosus				1				2	2				
Reticulophragmium rotundidorsata						2			2				
Rhabdammina sp. 1	2			19	6				9				14
Rotaliatina mexicana													
Nuttallides sp. 1		1						2					1
Globocassidulina sp. 1		2		1					1				1
Nonion sp. 1		1		2				1					1
Marginulina obesa			1										
Turrilina alsatica			1	1	4				1		1		
Elphidiella sp. 1				1									
Gyroidina soldanii				3	1				2				1
Melonis sp. 1				1	3	1			3	1	2	2	2
Elphidiella sp.					1								
Eponides cf. tumidulus					1								
Reticulophragmium orbicularis					2	1	5	11	16	7	12	3	13

Table 3. 3 KOAKOAK 0-22

Depth (m)	3432	3456	3480	3504	3528	3552	3576	3600	3624	3648	3672	3696	3726
Bathysiphon nodosariaformis	18	15	9	8	10	11	12	12	17	10	8	8	3
Cibicidoides sp. 4					1								
Rhabdammina cylindrica		2	4	1									
Ammodiscus sp.1										1			
Ammodiscus planus						1				1	1	1	1
Spirosigmoilinella compressa	1		2	1	1		1	1			3	3	
Trochammina cf. altiformis					1			3					
Recurvoides contortus		1				4	3		2				
Recurvoides sp. 2	23	13	34	19	15	17	41	15	5	5	2	4	20
Cystammina pauciloculata		1							2				
Reticulophragmium sp. 1	15	19	33	18	15	23	23	22	20	10	10	24	13
Recurvoides sp. 3	6	10	14	5	13	10	15	12	12	3		32	12
Trochammina sp. 1		3	4										
Ammomarginulina matchigarica													
Haplophragmoides carinatus	2		2						3	2	2	3	3
Haplophragmoides subtrullissatus					2		1						
Nodosaria sp.								1					
Placentammina sp. 1			1		1		1	3					
Recurvoides sp. 1	9	15	17	13	31	15	7	3	9		4	3	13
Reophax globosus													
Reticulophragmium rotundidorsata	2						6	7		1	2	2	2
Rhabdammina sp. 1			5	8	1	4	3	5	12			2	
Rotaliatina mexicana													
Nuttallides sp. 1					4	2							
Globocassidulina sp. 1		1			1								
Nonion sp. 1		1	1	1						1			
Marginulina obesa													
Turrilina alsatica		1		1		1	2		1				1
Elphidiella sp. 1													
Gyroidina soldanii			2		1	1				1	1		
Melonis sp. 1	3	2	2					1		1			1
Elphidiella sp.													
Eponides cf. tumidulus													
Reticulophragmium orbicularis	13	11	5	8	5		10	6	15	9	5	8	11

Table 3. 4 KOAKOAK O-22

Depth (m)	3750	3774	3798	3822	3846	3870	3894	3918	3942	3966	3993	4017	4041
Bathysiphon nodosariaformis	20	2	35	15	19	4	5	19	11	7	10	7	11
Cibicidoides sp. 4													
Rhabdammina cylindrica							3	1	4	4	3	3	
Ammodiscus sp.1													
Ammodiscus planus	1		3	1		2	1	1	1		2		
Spirosigmoilinella compressa	2		1		2	2	2				1		
Trochammina cf. altiformis													
Recurvoides contortus													
Recurvoides sp. 2	6	14	15	6	11	8	7			7	8		1
Cystammina pauciloculata		1	2			1							
Reticulophragmium sp. 1	14	18	21	41	15	12	10	35	2	2	35	16	6
Recurvoides sp. 3	4	15	13	23	16		6	15	2	5	10	5	2
Trochammina sp. 1													
Ammomarginulina matchigarica													
Haplophragmoides carinatus	3		4	1		1		11	1	1	2	1	
Haplophragmoides subtrullissatus													
Nodosaria sp.							1						
Placentammina sp. 1			1		1	4				2			
Recurvoides sp. 1	8	12	9	2	15	13	3	17	4	6	3	4	
Reophax globosus	1								1			1	
Reticulophragmium rotundidorsata	4	5	5			2						3	
Rhabdammina sp. 1	2	3	1	2		10	4	5	1	3	1	4	
Rotaliatina mexicana										1			
Nuttallides sp. 1			1	1			1	1			1		
Globocassidulina sp. 1													
Nonion sp. 1									2				
Marginulina obesa													
Turrilina alsatica									1				
Elphidiella sp. 1													
Gyroidina soldanii		1	1								1		
Melonis sp. 1		1		1									
Elphidiella sp.													
Eponides cf. tumidulus													
Reticulophragmium orbicularis	10	20	15	3	6	7	4	11	6	2	21	12	

Table 3. 5 KOAKOAK 0-22

Depth (m)	4065	4081	4113	4137	4161	4185	4209	4233	4257	4281	4308	4332
Bathysiphon nodosariaformis	2	8	7	2	3	2	6	2	3	1	5	7
Cibicidoides sp. 4												
Rhabdammina cylindrica			1	1			2	2		2		2
Ammodiscus sp.1												
Ammodiscus planus							1				2	
Spirosigmoilinella compressa				1								
Trochammina cf. altiformis			1									
Recurvoides contortus												
Recurvoides sp. 2		6	1				3		2			
Cystammina pauciloculata		1			1		2			1		
Reticulophragmium sp. 1	1	6	4	4	2	1	6	2	1	3	5	5
Recurvoides sp. 3		10	4							2	5	5
Trochammina sp. 1												
Ammomarginulina matchigarica												
Haplophragmoides carinatus			3	1		1				2	3	4
Haplophragmoides subtrullissatus			1									
Nodosaria sp.												
Placentammina sp. 1			2			1						
Recurvoides sp. 1	1			3	5	2	2	4	3		2	2
Reophax globosus												
Reticulophragmium rotundidorsata		1		1								
Rhabdammina sp. 1		4	2				3		4		5	8
Rotaliatina mexicana												
Nuttallides sp. 1												
Globocassidulina sp. 1												
Nonion sp. 1				1								1
Marginulina obesa												
Turrilina alsatica												
Elphidiella sp. 1												
Gyroidina soldanii												
Melonis sp. 1												
Elphidiella sp.												
Eponides cf. tumidulus												
Reticulophragmium orbicularis		14	6				1	1			3	4

Table 3. 6 KOAKOAK O-22

Depth (m)	2823	2847	2871	2895	2901	2919	2943	2967	2991	3015	3039	3063	3087
Pyrgoella sp.													
Recurvoides sp. (coarse)													
Rhizammina sp.													
Ammomarginulina sp.													
Pyrgoella sphaera													
Globobulimina sp.													
Lenticulina cultrata													
Bathysiphon pseudoloculus													
Bathysiphon sp. 1													
Cibicidoides sp. C													
Haplophragmoides cf. rotulatum													
Bulimina elongata													
Reophax sp.													
Miliolinella circularis													
Valvulineria petrolei													
Insculptarenula subvesicularis													
Quinqueloculina seminula													
Miliammina sp. 1													
Psammosphaera fusca													
Pseudonodosaria sp.													
Hormosinella sp.													
Nonion sp.													
Psamminopelta sp. 1													
Reophax nodulosus													
Trochammina sp. 3													
Ammolagena clavata													
Cibicidoides sp. 1													
Trochammina sp.													
Textularia sp. 1													
Trochammina sp. 6													
Cyclogyra sp.													
Cyclammina sp. 1													
Thurammina sp.													

Table 3. 7 KOAKOAK O-22

Depth (m)	3111	3135	3159	3183	3207	3231	3255	3279	3303	3327	3351	3375	3399
Pyrgoella sp.						1							
Recurvoides sp. (coarse)						2			3				
Rhizammina sp.						24	5	14		10	7	5	
Ammomarginulina sp.								1					
Pyrgoella sphaera								1				1	
Globobulimina sp.									2	1	2		
Lenticulina cultrata									1	1			
Bathysiphon pseudoloculus										6			
Bathysiphon sp. 1										1			
Cibicidoides sp. C										1			
Haplophragmoides cf. rotulatum										1			1
Bulimina elongata											2		
Reophax sp.											1		1
Miliolinella circularis												1	
Valvulineria petrolei												1	
Insculptarenula subvesicularis													2
Quinqueloculina seminula													1
Miliammina sp. 1													
Psammosphaera fusca													
Pseudonodosaria sp.													
Hormosinella sp.													
Nonion sp.													
Psamminopelta sp. 1													
Reophax nodulosus													
Trochammina sp. 3													
Ammolagena clavata													
Cibicidoides sp. 1													
Trochammina sp.													
Textularia sp. 1													
Trochammina sp. 6													
Cyclogyra sp.													
Cyclammina sp. 1													
Thurammina sp.													

Table 3. 8 KOAKOAK O-22

Depth (m)	3432	3456	3480	3504	3528	3552	3576	3600	3624	3648	3672	3696	3726
Pyrgoella sp.													
Recurvoides sp. (coarse)													
Rhizammina sp.	5	19								10			
Ammomarginulina sp.													
Pyrgoella sphaera													
Globobulimina sp.			1										
Lenticulina cultrata													
Bathysiphon pseudoloculus					16	22	14	3	9	3	2		3
Bathysiphon sp. 1				1							10	4	5
Cibicidoides sp. C													
Haplophragmoides cf. rotulatum		3	11			1	2	5	2				2
Bulimina elongata													
Reophax sp.			2	1					1				1
Miliolinella circularis		1			1								
Valvulineria petrolei													
Insculptarenula subvesicularis		3	5	7	1	9	9	8	11		5	5	4
Quinqueloculina seminula													
Miliammina sp. 1	1												
Psammosphaera fusca	1												
Pseudonodosaria sp.		1											
Hormosinella sp.					1								
Nonion sp.					2								
Psamminopelta sp. 1					1	1			2				
Reophax nodulosus					1							1	
Trochammina sp. 3							1					4	3
Ammolagena clavata									1				
Cibicidoides sp. 1									1				
Trochammina sp.									3	3	2		
Textularia sp. 1													1
Trochammina sp. 6													1
Cyclogyra sp.													
Cyclammina sp. 1													
Thurammina sp.													

Table 3. 9 KOAKOAK O-22

Depth (m)	3750	3774	3798	3822	3846	3870	3894	3918	3942	3966	3993	4017	4041
Pyrgoella sp.													
Recurvoides sp. (coarse)													
Rhizammina sp.													
Ammomarginulina sp.													
Pyrgoella sphaera													
Globobulimina sp.		1		1							1		
Lenticulina cultrata													
Bathysiphon pseudoloculus			8	3		4	2	4			3	3	
Bathysiphon sp. 1	3	7											
Cibicidoides sp. C													
Haplophragmoides cf. rotulatum		3	3	2	5	2		4					
Bulimina elongata			1			1	1					1	
Reophax sp.	1									1		1	
Miliolinella circularis											1		
Valvulineria petrolei													
Insculptarenula subvesicularis	4	6	12	4	3	3		7	4	1			
Quinqueloculina seminula		1					1						
Miliammina sp. 1													
Psammosphaera fusca											2		
Pseudonodosaria sp.													
Hormosinella sp.													
Nonion sp.													
Psamminopelta sp. 1	1							1				1	1
Reophax nodulosus									1				
Trochammina sp. 3				3	5	3		3	2	1	2		
Ammolagena clavata				1	1		1						
Cibicidoides sp. 1													
Trochammina sp.	3	1	3									4	1
Textularia sp. 1									1				
Trochammina sp. 6									2				
Cyclogyra sp.						1							
Cyclammina sp. 1												3	
Thurammina sp.													

Table 3. 10 KOAKOAK 0-22

Depth (m)	4065	4081	4113	4137	4161	4185	4209	4233	4257	4281	4308	4332
Pyrgoella sp.												
Recurvoides sp. (coarse)												
Rhizammina sp.												
Ammomarginulina sp.												
Pyrgoella sphaera												
Globobulimina sp.												
Lenticulina cultrata												
Bathysiphon pseudoloculus		1								1	2	
Bathysiphon sp. 1												
Cibicidoides sp. C												
Haplophragmoides cf. rotulatum												
Bulimina elongata												
Reophax sp.		1										
Miliolinella circularis												
Valvulineria petrolei												
Insculptarenula subvesicularis		7	4	1	2							
Quinqueloculina seminula												
Miliammina sp. 1												
Psammosphaera fusca												
Pseudonodosaria sp.												
Hormosinella sp.												
Nonion sp.												
Psamminopelta sp. 1												
Reophax nodulosus												
Trochammina sp. 3		3		4	3	1	5		1		3	12
Ammolagena clavata												
Cibicidoides sp. 1												
Trochammina sp.												
Textularia sp. 1												
Trochammina sp. 6					1							
Cyclogyra sp.												
Cyclammina sp. 1												
Thurammina sp.			2									

Table 4. 1 AMAULIGAK I-65

Depth (m)	2280	2330	2380	2430	2480	2530	2580	2630	2680	2730	2780	2830	2880	2924
?Tobolia sp.	1	3					1							
Alabaminella sp.	1	3	6	4	3	5	7	1	1					
Angulogerina fluens	74	25	6	19	18	19	6	10	2	2				
Angulogerina sp.	2	3	4	1			1	1						
Angulogerina tenuistriata	5	6			1	1								
Asterigerina staeschei	28	21	2	10	17	15	48	20	10	10	3	1	2	
Globocassidulina sp. 1	4	4	8	1	8	8	6	1				1		
Cibicidoides sp. 4	37	43	15	27	14	23	47	7	2	2		1		
Cibicidoides sp. 1	60	28	2	7	10	13	42	14	6	3	5			
Cibicidoides sp. 3	1					2	3	1	1	6				1
Diatom spp.	18	16	7	5	2	2	3							1
Eggerella sp. 1	1						2							
Ehrenbergina praepupa	4	2		1	2	2	6							
Elphidiella sp.	1			3										
Elphidiella sp. 2	15	3	3		3	2	9	4	4	1	1			
Elphidium sp.	4			1			3		1	1				
Favulina sp.	2													
Fissurina spp.	5	1		2	4		4	2						
Globobulimina sp.	2													
Lenticulina cultrata	1						1							
Melonis sp. 1	4	4	4	3	1	2	5	1	1					1
Miliolinella circularis	8	3			3	2	7	3		2				
Miliolinella sp.	3													
Miliolinella subrotunda	5	8		1										
Nodosaria cf. radicula	11	2												
Nonion sp.	1	1			2		4							
Nonionella sp.	1					1	2							
Nonionellina sp.	3	3			1		1							
Oolina sp.	1			1			1							
Pullenia bulloides	1													
Sphaeroidina bulloides	2	3		1	4	2	5							
Spirillina sp.	1			1										
Textularia sp. 1	?													
Valvulineria sp.1	2													
Ammodiscus sp.1		1		1	1		4				3		3	2
Bathysiphon nodosariaformis		1			4	3	11	1		4	3	1	8	
Cibicides lobatulus		1												
Elphidiella brunnescens		2												

Table 4. 2 AMAULIGAK I-65

Depth (m)	2989	3033	3078	3123	3168	3211	3254	3296	3341	3383	3425	3467	3509	3551
?Tobolia sp.														
Alabaminella sp.							1							
Angulogerina fluens				1	3	2	1	2						1
Angulogerina sp.						2		5			2			
Angulogerina tenuistriata														
Asterigerina staeschei	1		1	1	1	6								1
Globocassidulina sp. 1							1		1					
Cibicidoides sp. 4														
Cibicidoides sp. 1		1			3						1			2
Cibicidoides sp. 3														
Diatom spp.														
Eggerella sp. 1								2						
Ehrenbergina praepupa														
Elphidiella sp.					4									
Elphidiella sp. 2				1		5		2						
Elphidium sp.						1								
Favulina sp.														
Fissurina spp.														
Globobulimina sp.					1									
Lenticulina cultrata						1								
Melonis sp. 1					1	1		2	1					1
Miliolinella circularis														
Miliolinella sp.														
Miliolinella subrotunda														
Nodosaria cf. radicula														
Nonion sp.						1								
Nonionella sp.														
Nonionellina sp.														
Oolina sp.														
Pullenia bulloides														
Sphaeroidina bulloides														
Spirillina sp.														
Textularia sp. 1					1		6	1						6
Valvulineria sp.1														
Ammodiscus sp.1		1	4	4	6	7	2	4		4			3	1
Bathysiphon nodosariaformis	1	1			9	7		3		5	6	2	1	4
Cibicides lobatulus														
Elphidiella brunnescens														

Table 4. 3 AMAULIGAK I-65

Depth (m)	3593	3635	3677	3719	3761	3803	3845	3887	3929	3971	4013	4055	4097
?Tobolia sp.													
Alabaminella sp.													
Angulogerina fluens													
Angulogerina sp.			1										
Angulogerina tenuistriata													
Asterigerina staeschei													
Globocassidulina sp. 1								*1					
Cibicidoides sp. 4													
Cibicidoides sp. 1													
Cibicidoides sp. 3													
Diatom spp.						1							
Eggerella sp. 1													
Ehrenbergina praepupa													
Elphidiella sp.													
Elphidiella sp. 2													
Elphidium sp.													
Favulina sp.													
Fissurina spp.							1						
Globobulimina sp.													
Lenticulina cultrata													
Melonis sp. 1													
Miliolinella circularis								2					
Miliolinella sp.													
Miliolinella subrotunda													
Nodosaria cf. radicula													
Nonion sp.													
Nonionella sp.													
Nonionellina sp.													
Oolina sp.													
Pullenia bulloides													
Sphaeroidina bulloides													
Spirillina sp.													
Textularia sp. 1	3	3	2	2	1	1	6			3	1	1	2
Valvulineria sp.1													
Ammodiscus sp.1				1						1			
Bathysiphon nodosariaformis		2	1		1		2	2			3	1	
Cibicides lobatulus													
Elphidiella brunnescens													

Table 4. 4 AMAULIGAK I-65

Depth (m)	2280	2330	2380	2430	2480	2530	2580	2630	2680	2730	2780	2830	2880	2924
Elphidium excavatum		11		4										
Haplophragmoides carinatus		2			2	2	9		1	11	33	25	8	3
Insculptarenula subvesicularis		1			2		14	2			3	4		1
Lenticulina sp.		1												
Pyrgoella sphaera		1												
Reticulophragmium sp. 1		1				1	8	3	4	5	12	7	5	5
Spirillina limbata		1												
Bulimina sp.			1											
Epistominella vitrea			1											
Haplophragmoides sp. 3			3										1	
Heteromorphina sp.				1										
Alabamina sp.					1									
Ammolagena clavata					1	2	5					1		
Elphidium ustulatum					3									
Haplophragmoides subtrullissatus					1	1	10				1	3		
Lagena spp.					1		1							
Nodosaria sp.					1	1	4							
Pseudonodosaria sp.					1		1							
Recurvoides sp.					1					1				3
Rhabdammina cylindrica					1	2							2	
Spirosigmoilinella compressa					2	3	18	5			1			
Recurvoides sp. 2						3	12	2						
Ammodiscus latus							1	4				1		
Buccella sp.							87							
Cibicidoides cf. bradyi							1							
Dentalina sp.							1							
Elphidiella sp. 3							1							
Haplophragmoides cf. bradyi							1							
Haplophragmoides cf. rotulatum							2	2				1		
Haynesina orbiculare							2	1						
Miliolinella sp. 1							6							
Miliolinella sp. 2							3							
Reticulophragmium rotundidorsata							19	1		1	2		1	
Cystammina pauciloculata								2				1		
Eponides cf. tumidulus								1						
Miliolinella sp. 3								3						
Nodosaria sp. 2									1					

Table 4. 5 AMAULIGAK I-65

Depth (m)	2989	3033	3078	3123	3168	3211	3254	3296	3341	3383	3425	3467	3509	3551
Elphidium excavatum														
Haplophragmoides carinatus		5	5	16	41	90	17	60	5	15	13	3	6	3
Insculptarenula subvesicularis			1		11	6	12	35	2	7	2	1	2	
Lenticulina sp.						3								
Pyrgoella sphaera														
Reticulophragmium sp. 1	4	7	5	10	13	37	22	76	10	30	5	3	7	3
Spirillina limbata														
Bulimina sp.														
Epistominella vitrea														
Haplophragmoides sp. 3														
Heteromorphina sp.														
Alabamina sp.														
Ammolagena clavata						1								
Elphidium ustulatum														
Haplophragmoides subtrullissatus														
Lagena spp.														
Nodosaria sp.														
Pseudonodosaria sp.														
Recurvoides sp.									4	1				
Rhabdammina cylindrica								1						1
Spirosigmoilinella compressa		1				1								
Recurvoides sp. 2				7			1	11					2	
Ammodiscus latus			1	1		2								
Buccella sp.														
Cibicidoides cf. bradyi					1	2								
Dentalina sp.														
Elphidiella sp. 3														
Haplophragmoides cf. bradyi														
Haplophragmoides cf. rotulatum					1	5	3					1		
Haynesina orbiculare						2		1						
Miliolinella sp. 1														
Miliolinella sp. 2														
Reticulophragmium rotundidorsata			2							1				1
Cystammina pauciloculata														
Eponides cf. tumidulus														
Miliolinella sp. 3								1						
Nodosaria sp. 2														

Table 4. 6 AMAULIGAK I-65

Depth (m)	3593	3635	3677	3719	3761	3803	3845	3887	3929	3971	4013	4055	4097
Elphidium excavatum													
Haplophragmoides carinatus	4	1		3	1	1	6	3		3	6	10	8
Insculptarenula subvesicularis							1	3				3	2
Lenticulina sp.													
Pyrgoella sphaera													
Reticulophragmium sp. 1	4	1			2			2			8	10	4
Spirillina limbata													
Bulimina sp.													
Epistominella vitrea													
Haplophragmoides sp. 3													
Heteromorphina sp.													
Alabamina sp.													
Ammolagena clavata													
Elphidium ustulatum													
Haplophragmoides subtrullissatus													
Lagena spp.													
Nodosaria sp.													
Pseudonodosaria sp.													
Recurvoides sp.													
Rhabdammina cylindrica		1					1						
Spirosigmoilinella compressa													
Recurvoides sp. 2	3			5									
Ammodiscus latus							1						
Buccella sp.													
Cibicidoides cf. bradyi													
Dentalina sp.													
Elphidiella sp. 3													
Haplophragmoides cf. bradyi													
Haplophragmoides cf. rotulatum													
Haynesina orbiculare												1	
Miliolinella sp. 1													
Miliolinella sp. 2													
Reticulophragmium rotundidorsata													
Cystammina pauciloculata													
Eponides cf. tumidulus													
Miliolinella sp. 3													
Nodosaria sp. 2													

Table 4. 7 AMAULIGAK I-65

Depth (m)	2280	2330	2380	2430	2480	2530	2580	2630	2680	2730	2780	2830	2880	2924
Ammodiscus sp.										1				
Recurvoides contortus											1			
Reticulophragmium orbicularis											1		1	4
Bathysiphon sp. 1												4		
Labrospira sp. 1											1	5	3	2
Gaudryina sp. 1													1	
Bathysiphon pseudoloculus														2
Recurvoides sp. 1														
Cyclammina sp. 1													?	
Placentammina sp. 1														
Recurvoides sp. 3														
Turrilina alsatica														
Ammodiscus planus														
Nuttallides sp. 1														
Rhabdammina sp. 1														
Gyroidina soldanii														
Nonion sp. 1														
Reophax nodulosus														
Trochammina sp.														
Hyperammina sp.														
Bulimina elongata														
Psamminopelta sp. 1														
Reophax sp.														
Trochammina sp. 1														
Anomalinoides sp.														
Ammomarginulina matchigarica														
Saccammina sp. 1														
Recurvoides sp. (coarse)														
Recurvoides sp. 5														
Cibicidoides sp. C														
Arenoturrispirillina sp. 1														
Reophax scorpiurus														
Miliolid (fragment)														
Hyperammina sp. (coarse)														
Ammomarginulina sp.														
Cyclogyra sp.														
Quinqueloculina sp.														

Table 4. 8 AMAULIGAK I-65

Depth (m)	2989	3033	3078	3123	3168	3211	3254	3296	3341	3383	3425	3467	3509	3551
Ammodiscus sp.														
Recurvoides contortus														
Reticulophragmium orbicularis			2			9	1			7	4	2	2	1
Bathysiphon sp. 1										6	2	1	1	1
Labrospira sp. 1	4	3		3	1	11		12			2	3	2	
Gaudryina sp. 1														
Bathysiphon pseudoloculus	1	7	14	8		16	11	16	3	4	1	2	4	
Recurvoides sp. 1	4	46	11	19	13	23	4	10	3	24	21	4	6	1
Cyclammina sp. 1		22	6	20	47	43	3	1		6	1		1	
Placentammina sp. 1				1		1	1	1						
Recurvoides sp. 3				2										
Turrilina alsatica				3	12	36	7	20		3		1	1	
Ammodiscus planus					2		1	2					1	
Nuttallides sp. 1					2	3	1	2						
Rhabdammina sp. 1						2		3						
Gyroidina soldanii							1	4						
Nonion sp. 1							4	7		3		2	1	1
Reophax nodulosus							2							
Trochammina sp.							1				4			
Hyperammina sp.								3						
Bulimina elongata								1						
Psamminopelta sp. 1								1						
Reophax sp.								4		3	2		3	1
Trochammina sp. 1								2					3	
Anomalinoides sp.									1		1			
Ammomarginulina matchigarica										1				
Saccammina sp. 1											1			
Recurvoides sp. (coarse)													1	
Recurvoides sp. 5														8
Cibicidoides sp. C														
Arenoturrispirillina sp. 1														
Reophax scorpiurus														
Miliolid (fragment)														
Hyperammina sp. (coarse)														
Ammomarginulina sp.														
Cyclogyra sp.														
Quinqueloculina sp.														

Table 4. 9 AMAULIGAK I-65

Depth (m)	3593	3635	3677	3719	3761	3803	3845	3887	3929	3971	4013	4055	4097
Ammodiscus sp.													
Recurvoides contortus													
Reticulophragmium orbicularis	4		1		1			3			2	4	3
Bathysiphon sp. 1													
Labrospira sp. 1	8	5	2		1	2	13	5	10	4	7	13	2
Gaudryina sp. 1													
Bathysiphon pseudoloculus	1				1			1	1		1	1	2
Recurvoides sp. 1	1			1				2			5	1	
Cyclammina sp. 1		1		1				1					
Placentammina sp. 1													
Recurvoides sp. 3						1							
Turrilina alsatica		1	1	3				1					2
Ammodiscus planus	1										2		1
Nuttallides sp. 1													
Rhabdammina sp. 1													
Gyroidina soldanii													
Nonion sp. 1					1		1				1		
Reophax nodulosus													
Trochammina sp.							1					2	
Hyperammina sp.													
Bulimina elongata													
Psamminopelta sp. 1													
Reophax sp.	1				1			2				1	1
Trochammina sp. 1	2												
Anomalinoides sp.													
Ammomarginulina matchigarica													
Saccammina sp. 1													
Recurvoides sp. (coarse)													
Recurvoides sp. 5		2	6	6	6	2	8	2	1	1		1	1
Cibicidoides sp. C	1											1	
Arenoturrispirillina sp. 1				1									
Reophax scorpiurus				1									
Miliolid (fragment)					1								
Hyperammina sp. (coarse)						1							
Ammomarginulina sp.										1			
Cyclogyra sp.												1	
Quinqueloculina sp.												1	

Table 5. 1 AMAULIGAK J-44

Depth (m)	2050	2110	2170	2230	2290	2345	2395	2445	2495	2543	2585
Angulogerina fluens	3	3	2	1				1	1	1	
Asterigerina staeschei	41	10	5	11	1			1			
Cibicidoides sp. 1	13	6	2	1	1						
Cibicidoides sp. 2	1	5			1						
Cyclogyra sp.	1										
Ehrenbergina praepupa	1	1									
Elphidiella sp. 1	1	3	1		3						
Cibicidoides sp. 4	15	14	9	6	4				1		
Fissurina sp.	1										
Pyrgoella sphaera	1										
Quinqueloculina seminula	1										
Diatom spp.		1	1	1				2			
Elphidium excavatum		4		1							
Lenticulina cultrata		1									
Nodosaria sp.		1		1							
Bathysiphon nodosariaformis			3	9	10	37	14	23	39	7	7
Recurvoides sp. 2			1	12	2	9	14	20	20	1	2
Spirosigmoilinella compressa			1	4	6	19	17	25	19	3	4
Miliolid (fragment)				1		1					
Reticulophragmium sp. 1				2	1	1	4	15	20	3	3
Ammodiscus sp. 1					1	1	3	7			
Bathysiphon sp. 1					2	4		3			
Cystammina pauciloculata					2	1	2	4	4	2	1
Haplophragmoides carinatus					2	9	11	27	19	13	3
Haplophragmoides subtrullissatus						3	4	7	16	3	1
Insculptarenula subvesicularis					1	3	37	99	78	17	14
Reticulophragmium rotundidorsata						4	9	2	16	3	
Cribrostomoides bradyi							1				
Eggerella sp. 1							1	3			
Haplophragmoides cf. rotulatum							6	34	17		1
Miliammina sp. 1							1				
Recurvoides sp. (coarse)							3	23	13	3	3
Recurvoides contortus							6	10	4	7	
Rhabdammina cylindrica							2	10	7	1	
Ammolagena clavata								7	18	3	14
Globocassidulina sp. 1								1	1		
Cyclammina cancellata								3	6		
Kutsevella sp. 1								6	1		
Placentammina sp. 1								6			
Trochammina sp. 6								2	7	1	
Ammodiscus planus									1		
Labrospira sp. 1										5	4
Reticulophragmium orbicularis										?	?

Table 5. 2 AMAULIGAK J-44

Depth (m)	2627	2669	2711	2753	2795	2837	2879	2921	2963	3005	3047
Angulogerina fluens	1										1
Asterigerina staeschei											
Cibicidoides sp. 1											
Cibicidoides sp. 2											
Cyclogyra sp.											
Ehrenbergina praepupa											
Elphidiella sp. 1											
Cibicidoides sp. 4											
Fissurina sp.											
Pyrgoella sphaera											
Quinqueloculina seminula											
Diatom spp.											
Elphidium excavatum										1	
Lenticulina cultrata											
Nodosaria sp.											
Bathysiphon nodosariaformis	16	9	2	5	14		18	2		19	14
Recurvoides sp. 2	1	1	1	4							10
Spirosigmoilinella compressa	3				2						1
Miliolid (fragment)											
Reticulophragmium sp. 1	17	19	19	36	11	4			11	3	11
Ammodiscus sp. 1	2	1		2	6						1
Bathysiphon sp. 1	1	5	11	19	4	3					
Cystammina pauciloculata								2			
Haplophragmoides carinatus	4	2	4	6	4		2	1	2		8
Haplophragmoides subtrullissatus	2	2	1						1		
Insculptarenula subvesicularis	13	8	1	7	6		3	4	1		5
Reticulophragmium rotundidorsata	2				1						
Cribrostomoides bradyi											
Eggerella sp. 1	1	1									
Haplophragmoides cf. rotulatum	3		2		1		1	2			2
Miliammina sp. 1											
Recurvoides sp. (coarse)	2	1			2	2	1		1		1
Recurvoides contortus		2	2	2							15
Rhabdammina cylindrica		1				1					1
Ammolagena clavata	5			1	2				1	1	
Globocassidulina sp. 1											
Cyclammina cancellata											
Kutsevella sp. 1											
Placentammina sp. 1											
Trochammina sp. 6	2										
Ammodiscus planus					2						
Labrospira sp. 1	14	6	9	5	21	4	5	6	11		
Reticulophragmium orbicularis					?	?					

Table 5. 3 AMAULIGAK J-44

Depth (m)	3089	3131	3173	3215	3257	3299	3341	3383	3425	3467	3509
Angulogerina fluens											
Asterigerina staeschei											
Cibicidoides sp. 1											
Cibicidoides sp. 2											
Cyclogyra sp.											
Ehrenbergina praepupa											
Elphidiella sp. 1											
Cibicidoides sp. 4											
Fissurina sp.											
Pyrgoella sphaera											
Quinqueloculina seminula											
Diatom spp.											
Elphidium excavatum											
Lenticulina cultrata											
Nodosaria sp.											
Bathysiphon nodosariaformis	2	22	29	34	56	16	3	20	43	12	6
Recurvoides sp. 2	1	6	5		4	3		6	10	3	1
Spirosigmoilinella compressa	2	1	4		1	3			2	1	1
Miliolid (fragment)											
Reticulophragmium sp. 1	31	9	28	4	4	22		28	20	7	2
Ammodiscus sp. 1		5	8			1	1		2	1	1
Bathysiphon sp. 1						2			7		
Cystammina pauciloculata											
Haplophragmoides carinatus	12		11	25	33	24	6	49	41	4	6
Haplophragmoides subtrullissatus					1						
Insculptarenula subvesicularis	11	4			4	21		31	5	5	
Reticulophragmium rotundidorsata			2		1				1		
Cribrostomoides bradyi											
Eggerella sp. 1	1										
Haplophragmoides cf. rotulatum	4		5		1	4	1	7	6		3
Miliammina sp. 1											
Recurvoides sp. (coarse)	1		3	1		2			1		
Recurvoides contortus	1					1		1	1		
Rhabdammina cylindrica			7					3	2	1	
Ammolagena clavata			7			1					1
Globocassidulina sp. 1											
Cyclammina cancellata											
Kutsevella sp. 1											
Placentammina sp. 1									1	1	
Trochammina sp. 6				1	1						
Ammodiscus planus			3	1		2		1	1		
Labrospira sp. 1		6	10	14	41	30	5	22	41	15	9
Reticulophragmium orbicularis								6	5		

Table 5. 4 AMAULIGAK J-44

Depth (m)	3551	3593	3635	3677	3719	3761	3803	3845	3887	3929	3971
Angulogerina fluens						1		1			
Asterigerina staeschei											
Cibicidoides sp. 1											
Cibicidoides sp. 2											
Cyclogyra sp.											
Ehrenbergina praepupa											
Elphidiella sp. 1											
Cibicidoides sp. 4											
Fissurina sp.											
Pyrgoella sphaera											
Quinqueloculina seminula				2			1				
Diatom spp.											
Elphidium excavatum											
Lenticulina cultrata											
Nodosaria sp.						1					
Bathysiphon nodosariaformis	60	2	7	20	7	12	6	7	6	15	4
Recurvoides sp. 2	14	1	4	3	2	4	3			5	
Spirosigmoilinella compressa	13	6	2	5	3	9	4	2			
Miliolid (fragment)											
Reticulophragmium sp. 1	24	4	3	4	2		7	4	4	12	2
Ammodiscus sp. 1				1		1					
Bathysiphon sp. 1									1	1	
Cystammina pauciloculata		3	2		1	2	3	1			
Haplophragmoides carinatus	51	10	3	20	9	24	17	22	46	25	12
Haplophragmoides subtrullissatus			1								
Insculptarenula subvesicularis	14	2	2	16	4	8	10	31	6	1	2
Reticulophragmium rotundidorsata	1	1			1		3		5	1	
Cribrostomoides bradyi											
Eggerella sp. 1								1	2	1	
Haplophragmoides cf. rotulatum	17			14	5	2	22	3			
Miliammina sp. 1											
Recurvoides sp. (coarse)		1		4		1	4		1		2
Recurvoides contortus		1		1	1	2	1		1		
Rhabdammina cylindrica	2	1	1				2	3			
Ammolagena clavata	4	2		4	1				1	1	
Globocassidulina sp. 1											
Cyclammina cancellata											
Kutsevella sp. 1											
Placentammina sp. 1	2										
Trochammina sp. 6	2										
Ammodiscus planus	2				3	3	1	2	1	3	
Labrospira sp. 1	44	33	45	32	23	31	42	19	135	114	43
Reticulophragmium orbicularis	3	2	3	2	2	15		15	11	14	2

Table 5. 5 AMAULIGAK J-44

Depth (m)	2050	2110	2170	2230	2290	2345	2395	2445	2495	2543	2585
Ammodiscus latus											
Bathysiphon pseudoloculus											
Elphidiella brunnescens											
Labrospira cf. crassimargo											
Ammomarginulina aubertae											
Arenobulimina sp. 1											
Arenoturrispirillina sp. 1											
Recurvoides sp.											
Turrilina alsatica											
Elphidiella sp.											
Rhabdammina sp. 1											
Trochammina cf. altiformis											
Cyclammina sp. 1											
Recurvoides sp. 1											
Recurvoides sp. 3											
Haplophragmoides sp.											
Textularia sp. 1											
Haplophragmoides sp. 3											
Oolina sp.											
Trochammina sp. 3											
Lenticulina sp.											
Psammosphaera fusca											
Reophax sp.											
Ammomarginulina sp.											
Bulimina elongata											
Quinqueloculina sp.											
Gravellina sp. 1											
Reophax nodulosus											
Trochammina sp. 1											
Recurvoides spp.											
Nuttallides sp. 1											
Reophax globosus											
Ammobaculites sp. 1											
Nonion sp.											
Verneuilinulla sp. 1											
Glomospira irregularis											
Psamminopelta sp. 1											
Miliolinella subrotunda											
Ammomarginulina matchigarica											
Cibicidoides perlucidus											
Glomospira charoides											
Reophax scorpiurus											

Table 5. 6 AMAULIGAK J-44

Depth (m)	2627	2669	2711	2753	2795	2837	2879	2921	2963	3005	3047
Ammodiscus latus	1			1			3			1	2
Bathysiphon pseudoloculus	3	2	1			1					2
Elphidiella brunnescens	1	2	2		2	1	1	1			
Labrospira cf. crassimargo	1			1							
Ammomarginulina aubertae		1									
Arenobulimina sp. 1		1									
Arenoturrispirillina sp. 1		2									
Recurvoides sp.		1			1						
Turrilina alsatica		1	1	1				1			1
Elphidiella sp.				1							
Rhabdammina sp. 1				2			3	1			2
Trochammina cf. altiformis				1							
Cyclammina sp. 1					1			1	5	1	
Recurvoides sp. 1							7	3		7	1
Recurvoides sp. 3								2	1		
Haplophragmoides sp.									2		
Textularia sp. 1									1		
Haplophragmoides sp. 3											2
Oolina sp.											1
Trochammina sp. 3											1
Lenticulina sp.											
Psammosphaera fusca											
Reophax sp.											
Ammomarginulina sp.											
Bulimina elongata											
Quinqueloculina sp.											
Gravellina sp. 1											
Reophax nodulosus											
Trochammina sp. 1											
Recurvoides spp.											
Nuttallides sp. 1											
Reophax globosus											
Ammobaculites sp. 1											
Nonion sp.											
Verneuilinulla sp. 1											
Glomospira irregularis											
Psamminopelta sp. 1											
Miliolinella subrotunda											
Ammomarginulina matchigarica											
Cibicidoides perlucidus											
Glomospira charoides											
Reophax scorpiurus											

Table 5. 7 AMAULIGAK J-44

Depth (m)	3089	3131	3173	3215	3257	3299	3341	3383	3425	3467	3509
Ammodiscus latus	4				1						
Bathysiphon pseudoloculus	76	3	19			6		3	6	3	
Elphidiella brunnescens											
Labrospira cf. crassimargo											
Ammomarginulina aubertae											
Arenobulimina sp. 1											
Arenoturrispirillina sp. 1								1			
Recurvoides sp.	5								12		
Turrilina alsatica					1			1			
Elphidiella sp.											
Rhabdammina sp. 1		2	4	6	2		1	6	3		
Trochammina cf. altiformis	3			2							
Cyclammina sp. 1			7		5	7			2		
Recurvoides sp. 1	6	14	2		3	3	4	9		13	3
Recurvoides sp. 3			6				2			2	
Haplophragmoides sp.	2										
Textularia sp. 1							1	1	2		
Haplophragmoides sp. 3		1						1	1		
Oolina sp.											
Trochammina sp. 3											
Lenticulina sp.	1	1			1				2		
Psammosphaera fusca	1					1					1
Reophax sp.		1					1				
Ammomarginulina sp.			1								
Bulimina elongata			1						1		
Quinqueloculina sp.					1						
Gravellina sp. 1						2		1		1	
Reophax nodulosus						2	1	1	2		
Trochammina sp. 1						14		2	15	4	
Recurvoides spp.								14			
Nuttallides sp. 1								1			
Reophax globosus								1			
Ammobaculites sp. 1									1		
Nonion sp.									1		
Verneuilinulla sp. 1									1	3	
Glomospira irregularis										1	
Psamminopelta sp. 1											
Miliolinella subrotunda											
Ammomarginulina matchigarica											
Cibicidoides perlucidus											
Glomospira charoides											
Reophax scorpiurus											

Table 5. 8 AMAULIGAK J-44

Depth (m)	3551	3593	3635	3677	3719	3761	3803	3845	3887	3929	3971
Ammodiscus latus	1	1		1							
Bathysiphon pseudoloculus	15	11		1	5	5	9	11	10	10	1
Elphidiella brunnescens		1									
Labrospira cf. crassimargo											
Ammomarginulina aubertae	1										
Arenobulimina sp. 1											
Arenoturrispirillina sp. 1				1							
Recurvoides sp.											
Turrilina alsatica				2		2	3				3
Elphidiella sp.							1				
Rhabdammina sp. 1	7	3	3	4	1		2		6	1	
Trochammina cf. altiformis							2		1		
Cyclammina sp. 1				1							
Recurvoides sp. 1	7		1	2		2			1	1	2
Recurvoides sp. 3											
Haplophragmoides sp.											
Textularia sp. 1	4	3	4	1	4	3	1	4	2	1	2
Haplophragmoides sp. 3	4	1		1	2						
Oolina sp.											
Trochammina sp. 3							2			2	3
Lenticulina sp.			2	4				1	1	2	1
Psammosphaera fusca		1									
Reophax sp.						1		1			
Ammomarginulina sp.											
Bulimina elongata		1			1	4					
Quinqueloculina sp.						1			1		
Gravellina sp. 1	2			1				1			
Reophax nodulosus		2									
Trochammina sp. 1	2	3				1				1	
Recurvoides spp.	10										
Nuttallides sp. 1		1	1					1			1
Reophax globosus											
Ammobaculites sp. 1							2				
Nonion sp.										1	
Verneuilinulla sp. 1							1	1			
Glomospira irregularis											
Psamminopelta sp. 1	3						1				
Miliolinella subrotunda			2								
Ammomarginulina matchigarica				3	2		6	1			
Cibicidoides perlucidus					1						
Glomospira charoides					1			1			
Reophax scorpiurus									1		

Table 6. 1 KOGYUK N - 57

Depth (m)	2480	2510	2540	2600	2660	2720	2780	2840	2900	2960	3020	3080	3140
Angulogerina fluens	2	2		3									
Asterigerina staeschei	15	6	4	4		1				3	2		5
Cibicidoides sp. 1	4		1	2					1		1		2
Melonis sp. 1	1												
Elphidiella sp. 1		1											
Eponides sp.		1											
Globocassidulina sp. 1		1		1									
Nodosaria cf. radicula		1											
Bathysiphon nodosariaformis			8	20	38	37	49	57	49	41	60	17	28
Gravellina sp. 1			1						2				
Lagena sp.			1										
Reticulophragmium sp. 1	1	1	2	5	4	6	9	9		8	27	31	10
Spirosigmoilinella compressa			2	4	20	21	9	19	14	21	25	7	17
Ammodiscus sp. 1				1	2	2	5	2	1	1	5	3	2
Cassidulina teretis				1									
Haplophragmoides carinatus				1	5	7	15	28	29	21	15	5	10
Nonion sp. 1				1		2							1
Oolina globosa				1									
Placentammina sp. 1				1		1	4	1	8	6	1		1
Recurvoides contortus				3		11	2			4		2	2
Recurvoides sp. 2				10	15	31	32	12	21	21	37	15	15
Recurvoides sp. 3				5	3	7	11	8	8	14	3		
Reticulophragmium rotundidorsata				10	13	12	6	17	5	16	21	19	7
Rhabdammina cylindrica				3	1	2		3	21	18	15	3	
Cystammina pauciloculata					2	5	6	5	11	6	5	2	10
Insculptarenula subvesicularis					5	34	25	34	41	31	29	24	66
Recurvoides sp. (coarse)					3	19	7	10	27	9	97	20	3
Recurvoides sp. 1					5	3	2	9	2	2	8	7	5
Reticulophragmium orbicularis					1	5	4	8	5	5	26	4	2
Ammodiscus planus						1					1		
Ammomarginulina sp.						1							
Cibicidoides sp. 4						1							
Eggerella sp. 1						4	3	1		1	4	4	3
Ehrenbergina praepupa						1							
Haplophragmoides cf. rotulatum						1			1	2	2		
Haplophragmoides subtrullissatus						1			8	1	1	2	
Kutsevella sp. 1						1	1		3		3		

Table 6. 2 KOGYUK N - 57

Depth (m)	3200	3260	3320	3380	3440	3500	3560	3620	3680	3740	3800	3860	3920
Angulogerina fluens				2									
Asterigerina staeschei	1	1		2	2	6		6		1	4	5	
Cibicidoides sp. 1								2					
Melonis sp. 1				1				1					
Elphidiella sp. 1													
Eponides sp.													
Globocassidulina sp. 1													
Nodosaria cf. radicula								1					
Bathysiphon nodosariaformis	49	19	35	24	14	93	14	30	6	22	27	28	12
Gravellina sp. 1													
Lagena sp.													
Reticulophragmium sp. 1	36	9	55	21	11	17	11	17	15	54	44	46	28
Spirosigmoilinella compressa	5	3	2	1	1	4		4	1	1	3		3
Ammodiscus sp. 1	3	2	6	4	2				2	3	3	1	1
Cassidulina teretis													
Haplophragmoides carinatus	17	6	5	9	10		2	5	2	10	7	7	14
Nonion sp. 1	3					3		5				1	
Oolina globosa													
Placentammina sp. 1							1	3		4	2	1	1
Recurvoides contortus		1					1	2					
Recurvoides sp. 2	1	2	2	12	7	3	7	17	2	14	7	3	2
Recurvoides sp. 3	3	6	3	4			4			1		3	
Reticulophragmium rotundidorsata	9	2	7	5	3	1	2	4		3	2	5	2
Rhabdammina cylindrica	2	2	2	4	6		1	9	3	2		1	
Cystammina pauciloculata	2			1	1	1				1	1		
Insculptarenula subvesicularis	16	7	10	3	3	8	1	4		15	9	5	3
Recurvoides sp. (coarse)		3	3	4	6	5	9	19	2	4	5	10	
Recurvoides sp. 1	13	7	8	5	9	8		8	33	90	26	151	48
Reticulophragmium orbicularis	8	1	8	7	3	2	1	1	1		2	1	1
Ammodiscus planus	1												
Ammomarginulina sp.													
Cibicidoides sp. 4													
Eggerella sp. 1		1											
Ehrenbergina praepupa													
Haplophragmoides cf. rotulatum													
Haplophragmoides subtrullissatus													
Kutsevella sp. 1													

Table 6. 3 KOGYUK N - 57

Depth (m)	3980	4040	4100	4160	4220	4280	4340	4400	4460	4520	4580	4640	4700
Angulogerina fluens													
Asterigerina staeschei		2	1	2		1							
Cibicidoides sp. 1													
Melonis sp. 1													
Elphidiella sp. 1													
Eponides sp.													
Globocassidulina sp. 1													
Nodosaria cf. radicula													
Bathysiphon nodosariaformis	9	6	5	8		6		63	60	6	1	23	
Gravellina sp. 1		2											
Lagena sp.													
Reticulophragmium sp. 1	27	33	5	41	2	20		17	27	4		33	
Spirosigmoilinella compressa	1												
Ammodiscus sp. 1									1				
Cassidulina teretis													
Haplophragmoides carinatus	51	53	31	24	4	64	2	18	34	55	6	50	7
Nonion sp. 1	1			2					1			1	
Oolina globosa													
Placentammina sp. 1									3	1		3	
Recurvoides contortus													
Recurvoides sp. 2	5	6		5		8		3	8	2		2	
Recurvoides sp. 3		4	1			4		5		1		4	
Reticulophragmium rotundidorsata	1			1		1		1					
Rhabdammina cylindrica									1	1			
Cystammina pauciloculata		2	1										
Insculptarenula subvesicularis	18	26	10	30	1	6		6	30	6	2	14	
Recurvoides sp. (coarse)													
Recurvoides sp. 1	30	75	7	64	2	44		19	95	13	2	64	3
Reticulophragmium orbicularis	7	2		7	1	4		1	1			1	
Ammodiscus planus		1					1						
Ammomarginulina sp.													
Cibicidoides sp. 4													
Eggerella sp. 1				1		1							1
Ehrenbergina praepupa													
Haplophragmoides cf. rotulatum				1					1			1	
Haplophragmoides subtrullissatus													
Kutsevella sp. 1													

Table 6. 4 KOGYUK N - 57

Depth (m)	2480	2510	2540	2600	2660	2720	2780	2840	2900	2960	3020	3080	3140
Reophax sp.						1		2	2				
Trochammina sp. 6						2				1			
Ammodiscus latus							1				2		1
Arenoturrispirillina sp. 1							1						
Cyclammina sp. 1							1			2			
Psammosphaera fusca							1	1			1		
Reophax globosus							1		3	6		1	
Polymorphina sp.								5					
Ammodiscus sp.									1				
Bathysiphon pseudoloculus									4	1	17	4	20
Psammosphaera sp.									1	5		3	1
Rhabdammina sp. 1									1				
Miliolinella circularis										1			1
Ammolagena clavata											8	3	
Reophax nodulosus											1		
Elphidiella sp.												1	
Labrospira sp. 1												8	
Reophax scorpiurus												1	
Ammomarginulina matchigarica													2
Trochammina sp.													2
Saccammina sp.													
Turrilina alsatica													
Lagenoglandulina sp.													
Gyroidina sp.													
Cibicidoides sp.													
Labrospira cf. crassimargo													
Anomalinoides sp.													
Hemisphaerammina sp.													
Trochammina sp. 1													
Pyrgo sp.													
Globocassidulina sp. 2													
Verneuilinulla sp. 1													
Haplophragmoides sp. 3													
Bulimina elongata													
Budashevaella multicamerata													
Quinqueloculina sp.													
Reticulophragmium sp. 4													

Table 6. 5 KOGYUK N - 57

Depth (m)	3200	3260	3320	3380	3440	3500	3560	3620	3680	3740	3800	3860	3920
Reophax sp.			1	1	1								
Trochammina sp. 6													
Ammodiscus latus					1		1				1	1	
Arenoturrispirillina sp. 1													
Cyclammina sp. 1				1									
Psammosphaera fusca	2			1							2		
Reophax globosus			1			1		1					
Polymorphina sp.													
Ammodiscus sp.													
Bathysiphon pseudoloculus	3	3	4				1	1	5	1	6	1	10
Psammosphaera sp.						1		2				2	
Rhabdammina sp. 1							1	3		1	3		
Miliolinella circularis	1				1								
Ammolagena clavata		2	1					3					
Reophax nodulosus												1	
Elphidiella sp.			1			2	1						
Labrospira sp. 1	6	5	14	9	11	24	3	11	3	1	2		
Reophax scorpiurus						1							
Ammomarginulina matchigarica													
Trochammina sp.							1						
Saccammina sp.	1											1	
Turrilina alsatica	1							1	1	1	1		
Lagenoglandulina sp.		1											
Gyroidina sp.			1										
Cibicidoides sp.				1	1								
Labrospira cf. crassimargo					3		1						
Anomalinoides sp.							2						
Hemisphaerammina sp.								1					
Trochammina sp. 1										3			
Pyrgo sp.											1		
Globocassidulina sp. 2													
Verneuilinulla sp. 1													
Haplophragmoides sp. 3													
Bulimina elongata													
Budashevaella multicamerata													
Quinqueloculina sp.													
Reticulophragmium sp. 4													

Table 6. 6 KOGYUK N - 57

Depth (m)	3980	4040	4100	4160	4220	4280	4340	4400	4460	4520	4580	4640	4700
Reophax sp.								1	2			1	
Trochammina sp. 6													
Ammodiscus latus													
Arenoturrispirillina sp. 1													
Cyclammina sp. 1													
Psammosphaera fusca	1	1		1									
Reophax globosus						1							
Polymorphina sp.													
Ammodiscus sp.													
Bathysiphon pseudoloculus	1				1							3	
Psammosphaera sp.		1							1			2	
Rhabdammina sp. 1	3					2			3	1		1	
Miliolinella circularis				1						1		1	
Ammolagena clavata													
Reophax nodulosus								2	2				
Elphidiella sp.										1			
Labrospira sp. 1	3		13			15			3				
Reophax scorpiurus	1												
Ammomarginulina matchigarica													
Trochammina sp.	1			4				1	4			4	
Saccammina sp.				1									
Turrilina alsatica		1	1									2	
Lagenoglandulina sp.													
Gyroidina sp.													
Cibicidoides sp.													
Labrospira cf. crassimargo									2				
Anomalinoides sp.													
Hemisphaerammina sp.													
Trochammina sp. 1													
Pyrgo sp.													
Globocassidulina sp. 2		1											
Verneuilinulla sp. 1		2						1	1			1	
Haplophragmoides sp. 3			1										
Bulimina elongata				1									
Budashevaella multicamerata					2			2					
Quinqueloculina sp.								1					
Reticulophragmium sp. 4								1				2	

Table 7. 1 NERLERK M-98

Depth (m)	3110	3150	3190	3230	3270	3310	3350	3390	3430	3470	3510	3550
Bathysiphon nodosariaformis	2	2	1	6	1	10	9	7	17	15	7	10
Miliolinella sp.	1								1			
Reticulophragmium orbicularis	?							1	27	2	10	12
Reophax sp.		1										
Reticulophragmium rotundidorsata		1				8		1	17	5	8	2
Recurvoides sp. 2					1	13	4	2	9	3	5	12
Haplophragmoides carinatus						2	1	3	12	2	3	2
Reticulophragmium sp. 1							1	2	1	3	3	3
Recurvoides contortus								2	8	3	5	10
Bathysiphon pseudoloculus									1		3	3
Cibicidoides sp. C									2			
Haplophragmoides rotulatum									1	1	5	
Insculptarenula subvesicularis									3		2	2
Reophax sp. (coarse)									1			
Rhabdammina cylindrica									5	4	4	
Spirosigmoilinella compressa									2		2	
Reophax nodulosus										1	1	1
Ammodiscus planus											1	
Recurvoides sp. 1											5	3
Gravellina sp. 1												2
Ammolagena clavata												
Nuttallides sp. 1												
Haplophragmoides subtrullissatus												
Miliolinella circularis												
Cystammina pauciloculata												
Rhabdammina sp. 1												
Gyroidina soldanii												
Textularia sp. 1												
Cyclogyra involvens												
Turrilina alsatica												
Eggerella sp. 1												
Nonion sp. 1												
Trochammina sp. 1												
Placentammina sp.1												
Recurvoides sp. (coarse)												
Reophax scorpiurus												
Trochammina sp. 3												
Recurvoides sp. 3												
Psammosphaera sp.												
Diatom spp.												

Table 7. 2 NERLERK M-98

Depth (m)	3590	3630	3670	3710	3750	3790	3830	3870	3910	3950	3990	4020
Bathysiphon nodosariaformis	15	16	9	3	6	12	16	44	32	5	11	10
Miliolinella sp.												
Reticulophragmium orbicularis	7	5	5	5	4	1	2	1	3	1	2	1
Reophax sp.												
Reticulophragmium rotundidorsata		4		1	1	5	5	3	1			1
Recurvoides sp. 2	5	2	10	6	8	2	7	13	3		3	2
Haplophragmoides carinatus			2	1		6		5	5	1	3	1
Reticulophragmium sp. 1	36	17	22	11	22	17	8	8	5		3	1
Recurvoides contortus	3	3	3	1	10	5	4	3	3			
Bathysiphon pseudoloculus	1	1						1	3	5	2	2
Cibicidoides sp. C	1											
Haplophragmoides rotulatum	1					1			1			
Insculptarenula subvesicularis							2	12	3	1		
Reophax sp. (coarse)				1								
Rhabdammina cylindrica		1						2				1
Spirosigmoilinella compressa												
Reophax nodulosus											1	
Ammodiscus planus			1			1			1			
Recurvoides sp. 1	2	1				3	7	1	9	2	2	2
Gravellina sp. 1												
Ammolagena clavata		1										
Nuttallides sp. 1		1					1	1				
Haplophragmoides subtrullissatus		1										
Miliolinella circularis		1				1						
Cystammina pauciloculata			1					3				
Rhabdammina sp. 1				1	1				2		2	3
Gyroidina soldanii					1							
Textularia sp. 1					1							
Cyclogyra involvens						1						
Turrilina alsatica						1						
Eggerella sp. 1							1					
Nonion sp. 1								1				
Trochammina sp. 1								7	3		1	
Placentammina sp.1												
Recurvoides sp. (coarse)												2
Reophax scorpiurus												1
Trochammina sp. 3												
Recurvoides sp. 3												
Psammosphaera sp.												
Diatom spp.												

Table 7. 3 NERLERK M-98

Depth (m)	4030	4110	4150	4190	4230	4270	4310	4350	4390	4430	4470	4510
Bathysiphon nodosariaformis	10	22	30	10	4	23	20	10	25	20	7	13
Miliolinella sp.												
Reticulophragmium orbicularis	1		2						2			1
Reophax sp.			2									
Reticulophragmium rotundidorsata	1	3				1	2	1	5			
Recurvoides sp. 2		2	7			2	1		5		4	2
Haplophragmoides carinatus		2			2		1		2		1	1
Reticulophragmium sp. 1	4	2	7	9	3	2	5	2	1	1	5	1
Recurvoides contortus		3						3				
Bathysiphon pseudoloculus				2				1			3	1
Cibicidoides sp. C												
Haplophragmoides rotulatum				1				1				
Insculptarenula subvesicularis		3	3		1							
Reophax sp. (coarse)												
Rhabdammina cylindrica			2	2			1		2	1		
Spirosigmoilinella compressa												
Reophax nodulosus												
Ammodiscus planus					2			1				
Recurvoides sp. 1	1	2	7	2	1	2	4		1	1		1
Gravellina sp. 1												
Ammolagena clavata												
Nuttallides sp. 1								1				
Haplophragmoides subtrullissatus							1					
Miliolinella circularis												
Cystammina pauciloculata						1						1
Rhabdammina sp. 1	1	2	5	2				1	2	2	3	1
Gyroidina soldanii												
Textularia sp. 1												
Cyclogyra involvens												
Turrilina alsatica											1	
Eggerella sp. 1												
Nonion sp. 1												
Trochammina sp. 1												
Placentammina sp.1	1											
Recurvoides sp. (coarse)												
Reophax scorpiurus									2		1	
Trochammina sp. 3		1	1						1			
Recurvoides sp. 3			4									
Psammosphaera sp.									1			
Diatom spp.												

Table 7. 4 NERLERK M-98

Depth (m)	4550	4590	4630	4670	4710	4750	4790	4830	4870	4910
Bathysiphon nodosariaformis	3		2	1	1		8	15	21	13
Miliolinella sp.										
Reticulophragmium orbicularis							1		1	3
Reophax sp.										
Reticulophragmium rotundidorsata										2
Recurvoides sp. 2	1							4	3	7
Haplophragmoides carinatus		1							1	1
Reticulophragmium sp. 1	2	1		2			2	5	6	4
Recurvoides contortus										
Bathysiphon pseudoloculus										
Cibicidoides sp. C										
Haplophragmoides rotulatum										
Insculptarenula subvesicularis									1	
Reophax sp. (coarse)										
Rhabdammina cylindrica	1							1		
Spirosigmoilinella compressa									1	
Reophax nodulosus										
Ammodiscus planus										
Recurvoides sp. 1	4	1					2	3		5
Gravellina sp. 1										
Ammolagena clavata										
Nuttallides sp. 1										
Haplophragmoides subtrullissatus										
Miliolinella circularis										
Cystammina pauciloculata										
Rhabdammina sp. 1					1			1		
Gyroidina soldanii	1									1
Textularia sp. 1								1		
Cyclogyra involvens										
Turrilina alsatica										
Eggerella sp. 1										
Nonion sp. 1										
Trochammina sp. 1										
Placentammina sp.1										
Recurvoides sp. (coarse)										
Reophax scorpiurus	1						1			
Trochammina sp. 3									1	
Recurvoides sp. 3										
Psammosphaera sp.										
Diatom spp.		28	9	1	2	1			6	

Table 8. 1 AMERK 0-09

Depth (m)	2450	2510	2570	2660	2690	2750	2810	2870	2930	2990	3050
Bathysiphon nodosariaformis	1		34	34	5	28	34	23	21	28	16
Bolivina sp.	1										
Nonion sp.	1										
Turrilina alsatica	2		1								
Angulogerina fluens	1	1		1							
Asterigerina staeschei		4									
Cassidulina teretis		1		1							
Elphidiella sp.		2									
Nuttallides sp. 1		1									
Melonis sp. 1		2									
Miliolinella circularis		1		1							
Ammodiscus planus		1	1	1	1						
Cassidulina reniforme			1					2	1		
Elphidium sp.			1								
Haplophragmoides carinatus			1	3							
Reticulophragmium sp. 1			9	8	2		1	3		2	
Spirosigmoilinella compressa			21	16	18	58	59	43	13	41	19
Labrospira sp. 1			1								
Quinqueloculina sp.				1		3	4	2		5	
Gravellina sp. 1				1							1
Placentammina sp. 1					1						
Reticulophragmium rotundidorsata					1						
Haplophragmoides cf. rotulatum					1	2	2			2	
Reticulophragmium orbicularis						1		1		1	
Recurvoides sp. 3						9	18	10	3	6	3
Bathysiphon pseudoloculus							1	1		7	2
Insculptarenula subvesicularis								1		5	
Recurvoides contortus								1	1	5	2
Rhabdammina cylindrica								1	1	4	
Eggerella sp. 1								1		1	
Psammaosophaera fusca										1	
Recurvoides sp. 1										1	
Recurvoides sp. 2										11	14
Trochammina sp. 3										1	
Haplophragmoides sp.										5	
Reophax nodulosus											
Rhabdammina sp. 1											
Baggina sp.											
Arenoturrispirillina sp. 1											
Gyroidina soldanii											
Reticulophragmium sp.											
diatom spp.											
Recurvoides sp.											

Table 8. 2 AMERK 0-09

Depth (m)	3110	3170	3230	3290	3350	3410	3470	3530	3560	3590	3650
Bathysiphon nodosariaformis		2	8	7			9				13
Bolivina sp.											
Nonion sp.											
Turrilina alsatica											
Angulogerina fluens											
Asterigerina staeschei											
Cassidulina teretis											
Elphidiella sp.											
Nuttallides sp. 1											
Melonis sp. 1											1
Miliolinella circularis	1			1							
Ammodiscus planus											
Cassidulina reniforme		1									
Elphidium sp.											
Haplophragmoides carinatus											
Reticulophragmium sp. 1		7	4	6	5	1	5				1
Spirosigmoilinella compressa	2	38	3	7	3		1	1	1		1
Labrospira sp. 1											
Quinqueloculina sp.					1						
Gravellina sp. 1											
Placentammina sp. 1		1		1							
Reticulophragmium rotundidorsata											
Haplophragmoides cf. rotulatum		1									
Reticulophragmium orbicularis											
Recurvoides sp. 3		1									
Bathysiphon pseudoloculus											
Insculptarenula subvesicularis	5				52	10			2	4	
Recurvoides contortus		3		1							
Rhabdammina cylindrica											2
Eggerella sp. 1					1			1			1
Psammaosophaera fusca											
Recurvoides sp. 1											
Recurvoides sp. 2	1	69	11	3	6	2	4	2	1	1	3
Trochammina sp. 3				3							1
Haplophragmoides sp.		10	1	3	3			1			
Reophax nodulosus	1										
Rhabdammina sp. 1		1									
Baggina sp.		1		4			2				
Arenoturrispirillina sp. 1					1						
Gyroidina soldanii						1					
Reticulophragmium sp.									1		
diatom spp.											
Recurvoides sp.											

Table 8. 3 AMERK 0-09

Depth (m)	3710	3770	3830	3890	3980	4160	4250	4460	4490	4520	4550
Bathysiphon nodosariaformis	1	45	20	3	2	3	2				
Bolivina sp.											
Nonion sp.											
Turrilina alsatica											
Angulogerina fluens											
Asterigerina staeschei											
Cassidulina teretis											
Elphidiella sp.											
Nuttallides sp. 1											
Melonis sp. 1											
Miliolinella circularis											
Ammodiscus planus											
Cassidulina reniforme											
Elphidium sp.											
Haplophragmoides carinatus											
Reticulophragmium sp. 1		3									
Spirosigmoilinella compressa		1									
Labrospira sp. 1											
Quinqueloculina sp.	1										
Gravellina sp. 1											
Placentammina sp. 1											
Reticulophragmium rotundidorsata											
Haplophragmoides cf. rotulatum											
Reticulophragmium orbicularis											
Recurvoides sp. 3											
Bathysiphon pseudoloculus											
Insculptarenula subvesicularis	2		4								
Recurvoides contortus											
Rhabdammina cylindrica											
Eggerella sp. 1											
Psammaosophaera fusca											
Recurvoides sp. 1											
Recurvoides sp. 2	2	2	2								
Trochammina sp. 3											
Haplophragmoides sp.	1				1						
Reophax nodulosus					1						
Rhabdammina sp. 1											
Baggina sp.											
Arenoturrispirillina sp. 1											
Gyroidina soldanii											
Reticulophragmium sp.											
diatom spp.							1				
Recurvoides sp.								93	50	28	10

Table 8. 4 AMERK O-09

Depth (m)	4580	4610	4640	4670	4700	4730	4760	4790	4820	4850	4940
Bathysiphon nodosariaformis											
Bolivina sp.											
Nonion sp.											
Turrilina alsatica											
Angulogerina fluens											
Asterigerina staeschei											
Cassidulina teretis											
Elphidiella sp.											
Nuttallides sp. 1											
Melonis sp. 1											
Miliolinella circularis											
Ammodiscus planus											
Cassidulina reniforme											
Elphidium sp.											
Haplophragmoides carinatus											
Reticulophragmium sp. 1											
Spirosigmoilinella compressa											
Labrospira sp. 1											
Quinqueloculina sp.											
Gravellina sp. 1											
Placentammina sp. 1											
Reticulophragmium rotundidorsata											
Haplophragmoides cf. rotulatum											
Reticulophragmium orbicularis											
Recurvoides sp. 3											
Bathysiphon pseudoloculus											
Insculptarenula subvesicularis											
Recurvoides contortus											
Rhabdammina cylindrica											
Eggerella sp. 1											
Psammaosophaera fusca											
Recurvoides sp. 1											
Recurvoides sp. 2											
Trochammina sp. 3											
Haplophragmoides sp.											
Reophax nodulosus											
Rhabdammina sp. 1											
Baggina sp.											
Arenoturrispirillina sp. 1											
Gyroidina soldanii											
Reticulophragmium sp.											
diatom spp.	8	10	10	13	8	3	7	7	5	3	4
Recurvoides sp.		3									

Table 9. 1 KADLUK O-07

Depth (m)	1690	1750	1810	1870	1900	1930	1990	2050	2110	2170	2230	2290	2350
Anomalinoides sp.	1												
Bathysiphon nodosariaformis	17	1	4	6	16	1	12	29	6		2	2	49
Cibicidoides sp. 1	5	7				1	1	5	5	3			
Cibicidoides sp. 3	4	3	2	1	1			2	1	1			1
Nuttallides sp. 1	2	3	3		1		1		8		1		3
Miliolinella circularis	7	5	1	1	1		1	3	2	1			1
Quinqueloculina sp.	6	3											
Recurvoides sp. 2	1				1		2	11	1	3			2
Reticulophragmium sp. 1	2		5	4	6	1	18	81	8	7	14	22	80
Turrilina alsatica	4	5						1	2	1	1		1
Angulogerina sp. 1		1	2										
Gyroidina soldanii		1											
Melonis sp. 1		2							1				
Nonion sp. 1		7	2	1	1			2	3				1
Pullenia quinqueloba		1											
Sphaeroidina bulloides		1							1				
Spirosigmoilinella compressa		1					1	3					12
Cibicidoides sp. C			3							2			
Elphidiella sp.			2										
Insculptarenula subvesicularis			1		1		3	27	4		3	1	18
Eratidus sp. 1			1										
Globulina gibba				1									
Haplophragmoides carinatus				7	12	6	10	6	6		1	5	29
Elphidium sp.					1	1							
Globocassidulina sp. 1					1			1	1				
Labrospira sp. 1					5		4		1		1	2	1
Psamminopelta sp. 1					2								
Recurvoides sp. 1					?			6	2	1		5	24
Haplophragmoides subtrullissatus							1						
Recurvoides contortus							1						2
Trochammina sp. 1							2	4	2			4	8
Ammolagena clavata								1					4
Angulogerina fluens								1					
Bathysiphon pseudoloculus								3	1	2	9	2	3

Table 9. 2 KADLUK 0-07

Depth (m)	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070	3130
Anomalinoides sp.													
Bathysiphon nodosariaformis	12	22	19	14	45	43	43	38	22	25	142	141	174
Cibicidoides sp. 1	5												
Cibicidoides sp. 3													
Nuttallides sp. 1	2	8	3										
Miliolinella circularis	3		1										
Quinqueloculina sp.													
Recurvoides sp. 2		4	1		4			4		3	1		
Reticulophragmium sp. 1	32	22	27	28	12	9	2	2	11	2	5	15	3
Turrilina alsatica	2	1	2										
Angulogerina sp. 1													
Gyroidina soldanii			1										
Melonis sp. 1													
Nonion sp. 1	3	2											
Pullenia quinqueloba													
Sphaeroidina bulloides													
Spirosigmoilinella compressa	7	3	4	8	4	1	1	2	1				
Cibicidoides sp. C	1												
Elphidiella sp.													
Insculptarenula subvesicularis	8	5	14	14	22	7	3	6	11	8		1	
Eratidus sp. 1													
Globulina gibba	1												
Haplophragmoides carinatus	14	29	50	119	76	35	51	64	69	80	67	89	59
Elphidium sp.													
Globocassidulina sp. 1		1	1										
Labrospira sp. 1	1		1										
Psamminopelta sp. 1						1							
Recurvoides sp. 1	22	17	61	49	35	26	30	39	17	82	39	59	13
Haplophragmoides subtrullissatus		3	2									1	
Recurvoides contortus				1					3		1		
Trochammina sp. 1	5	6	13	4	2	1		5					
Ammolagena clavata													
Angulogerina fluens	1	1		1									
Bathysiphon pseudoloculus	4	10	4	4	23	28	14	24	100	39	9	38	8

Table 9. 3 KADLUK 0-07

Depth (m)	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850
Anomalinoides sp.												
Bathysiphon nodosariaformis	178	96	16	43	192	8	3			1	2	
Cibicidoides sp. 1												
Cibicidoides sp. 3												
Nuttallides sp. 1												
Miliolinella circularis												
Quinqueloculina sp.												
Recurvoides sp. 2		3	5	1								
Reticulophragmium sp. 1		12		5	5		1	1				
Turrilina alsatica												
Angulogerina sp. 1				1								
Gyroidina soldanii												
Melonis sp. 1												
Nonion sp. 1												
Pullenia quinqueloba												
Sphaeroidina bulloides												
Spirosigmoilinella compressa												
Cibicidoides sp. C												
Elphidiella sp.												
Insculptarenula subvesicularis	1				1							
Eratidus sp. 1												
Globulina gibba												
Haplophragmoides carinatus	69	137	71	47	9					2		
Elphidium sp.												
Globocassidulina sp. 1												
Labrospira sp. 1												
Psamminopelta sp. 1												
Recurvoides sp. 1	13	85	79	56	56	1	1					
Haplophragmoides subtrullissatus												
Recurvoides contortus		1	1									
Trochammina sp. 1												
Ammolagena clavata												
Angulogerina fluens												
Bathysiphon pseudoloculus	6	3	5	11		1						

Table 9. 4 KADLUK O-07

Depth (m)	1690	1750	1810	1870	1900	1930	1990	2050	2110	2170	2230	2290	2350
Cibicidoides sp. 4								6		2			
Cyclammina sp. 1								2					
Gravellina sp. 1								14	3	1	2		2
Haplophragmoides cf. rotulatum								2					4
Placentammina sp. 1								1					1
Psammosphaera fusca								3					1
Recurvoides sp. 3								16				3	10
Reticulophragmium orbicularis								14	2		5		2
Reticulophragmium rotundidorsata								4					
Rhabdammina cylindrica								1					
Rhabdammina sp. 1								2				1	4
Textularia sp. 1								1					1
Oolina globosa									1				
Reophax sp.										1		1	
Trochammina sp.										1			
Elphidiella sp. 1													
Elphidiella sp. 2													
Lenticulina sp.													
Nodosaria sp.													
Ammodiscus planus													
Arenoturrispirillina sp. 1													
Astrononion sp.													
Trochammina cf. altiformis													
Trochammina sp. 3													
Ammomarginulina matchigarica													
Trochammina sp. 6													
Verneuilinulla sp. 1													
Reophax nodulosus													
Trochamminoides sp.													
Budashevaella multicamerata													
Reticulophragmium sp. 4													
Fissurina sp.													
Jadammina statuminis													
Diatom spp.													
Deuterammina sp.													

Table 9. 5 KADLUK O-07

Depth (m)	2410	2470	2530	2590	2650	2710	2770	2830	2890	2950	3010	3070	3130
Cibicidoides sp. 4													
Cyclammina sp. 1													
Gravellina sp. 1	8	4	3	7	5	3		2	3				
Haplophragmoides cf. rotulatum			2	2	1			1	2	1			
Placentammina sp. 1					1	2							
Psammosphaera fusca		1				1	1				1		
Recurvoides sp. 3	3	2			1				4	2			
Reticulophragmium orbicularis	4												
Reticulophragmium rotundidorsata													
Rhabdammina cylindrica	3								3	1			
Rhabdammina sp. 1	1	1				1			1				
Textularia sp. 1			1		3	4		1	2				
Oolina globosa													
Reophax sp.													
Trochammina sp.									1	2	1		1
Elphidiella sp. 1	2												
Elphidiella sp. 2	2												
Lenticulina sp.	1												
Nodosaria sp.	1												
Ammodiscus planus		1			1	4	1			1			
Arenoturrispirillina sp. 1			2										
Astrononion sp.			1										
Trochammina cf. altiformis			1										
Trochammina sp. 3			8										
Ammomarginulina matchigarica					1					1			
Trochammina sp. 6						1							
Verneuilinulla sp. 1						2	1	1	4				
Reophax nodulosus										1			
Trochamminoides sp.											1		
Budashevaella multicamerata												1	
Reticulophragmium sp. 4													
Fissurina sp.													
Jadammina statuminis													
Diatom spp.													
Deuterammina sp.													

Table 9. 6 KADLUK O-07

Depth (m)	3190	3250	3310	3370	3430	3490	3550	3610	3670	3730	3790	3850
Cibicidoides sp. 4												
Cyclammina sp. 1												
Gravellina sp. 1												
Haplophragmoides cf. rotulatum												
Placentammina sp. 1		1										
Psammosphaera fusca												
Recurvoides sp. 3		3										
Reticulophragmium orbicularis												
Reticulophragmium rotundidorsata												
Rhabdammina cylindrica												
Rhabdammina sp. 1				1				4				
Textularia sp. 1												
Oolina globosa												
Reophax sp.												
Trochammina sp.					2							
Elphidiella sp. 1												
Elphidiella sp. 2												
Lenticulina sp.												
Nodosaria sp.												
Ammodiscus planus												
Arenoturrispirillina sp. 1												
Astrononion sp.												
Trochammina cf. altiformis												
Trochammina sp. 3												
Ammomarginulina matchigarica												
Trochammina sp. 6												
Verneuilinulla sp. 1												
Reophax nodulosus												
Trochamminoides sp.												
Budashevaella multicamerata				3	11							
Reticulophragmium sp. 4			10	9	4	2						
Fissurina sp.				1								
Jadammina statuminis					1	51	26	3		1	15	
Diatom spp.						1	13	1	4	9	20	5
Deuterammina sp.											1	

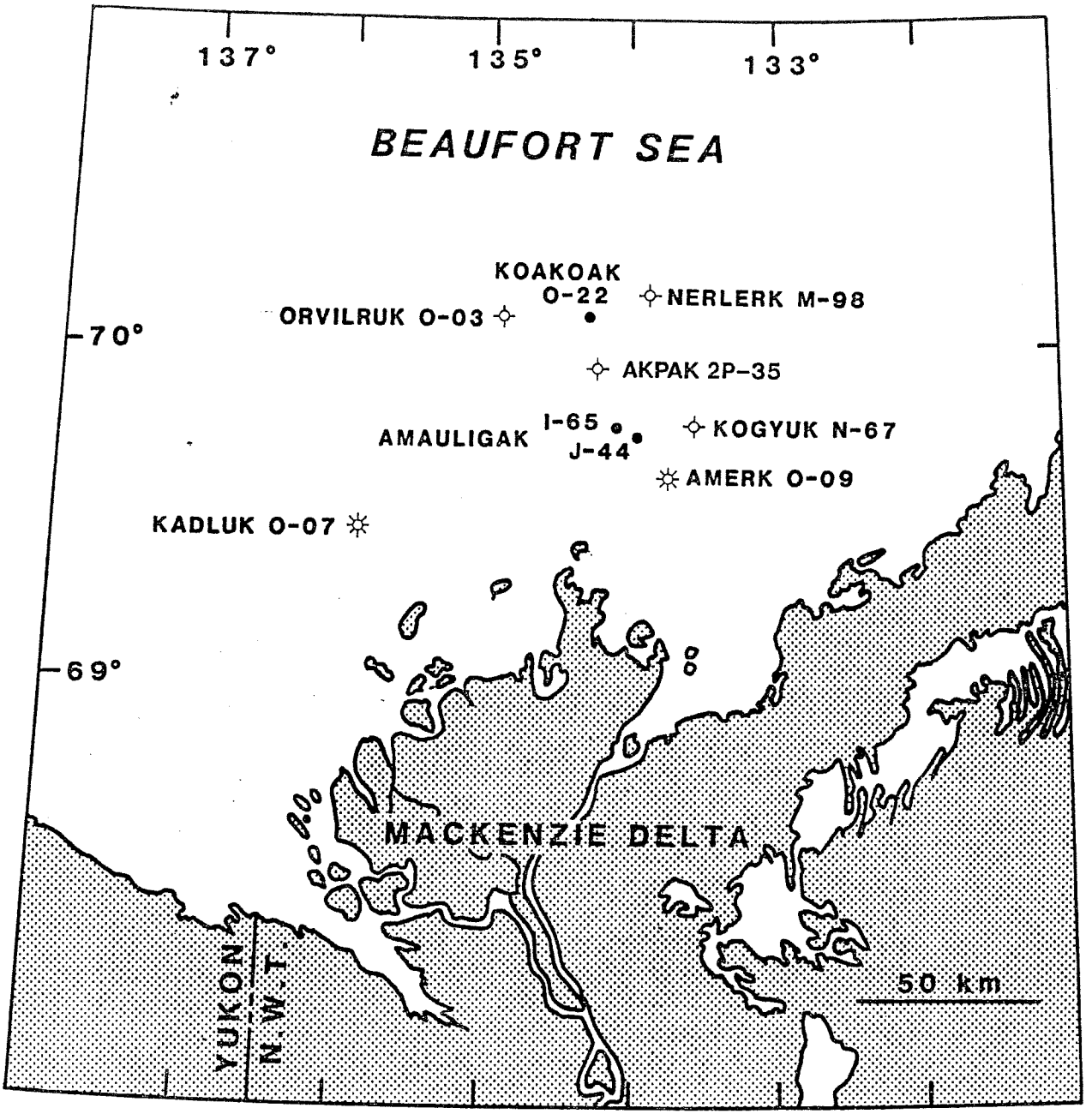
137°
135°
133°
BEAUFORT SEA
KOAKOAK
O-22
NERLERK M-98
ORVILRUK O-03
70°
AKPAK 2P-35
AMAULIGAK
I-65
J-44
KOGYUK N-67
AMERK O-09
KADLUK O-07
69°
MACKENZIE DELTA
YUKON
N.W.T.
50 km

Figure 1

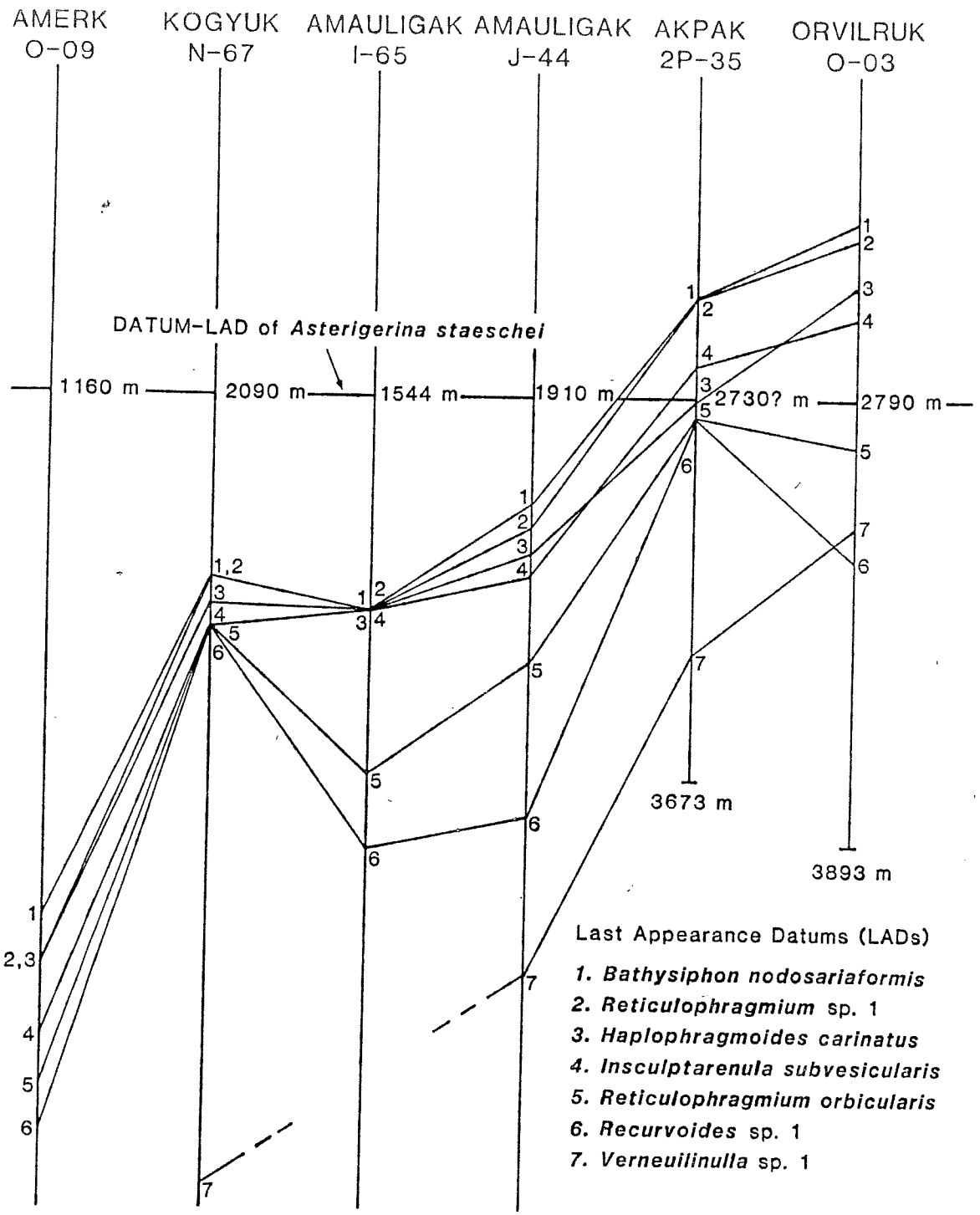
AMERK
O-09
KOGYUK
N-67
AMAULIGAK
I-65
AMAULIGAK
J-44
AKPAK
2P-35
ORVILRUK
O-03
DATUM-LAD of Asterigerina staeschei
1160 m
2090 m
1544 m
1910 m
2730? m
2790 m
3673 m
3893 m
Last Appearance Datums (LADs)
1. Bathysiphon nodosariaformis
2. Reticulophragmium sp. 1
3. Haplophragmoides carinatus
4. Insculptarenula subvesicularis
5. Reticulophragmium orbicularis
6. Recurvoides sp. 1
7. Verneuilinulla sp. 1

Figure 2

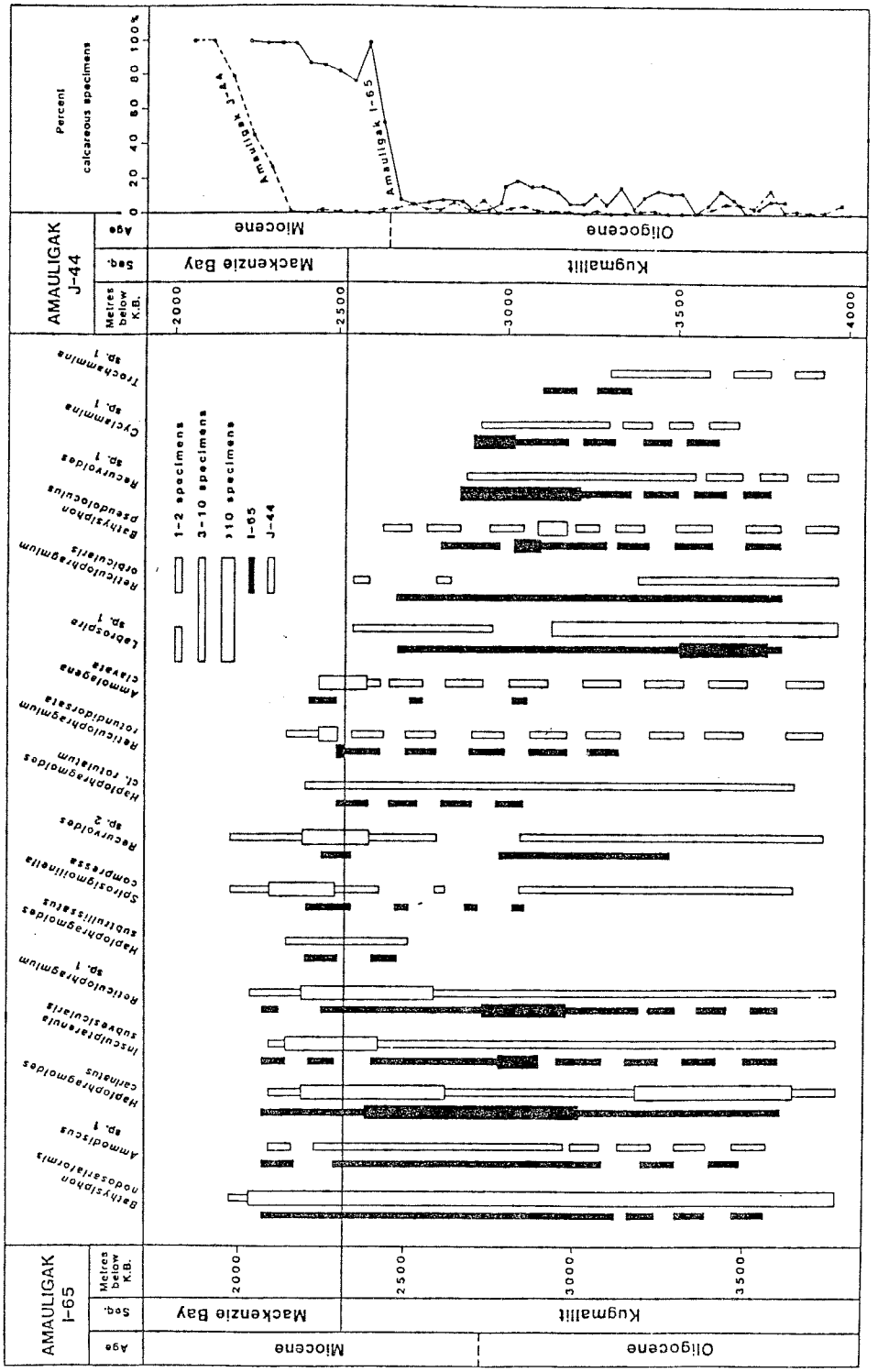
AMAULIGAK I-65
Age
Seq.
Metres below K.B.
Miocene
Oligocene
Mackenzie Bay
Kugmallit
2000
2500
3000
3500
Batysiphon nodosariformis
Ammodiscus sp. 1
Haplophragmoides carlinatus
Insculptarenula subvesicularis
Reticulophragmium sp. 1
Haplophragmoides subtrullissatus
Spiroplectinella compressa
Recurvoides sp. 2
Haplophragmoides cf. foliatum
Reticulophragmium rotundidorsata
Ammolagena clavata
Labrospira sp. 1
Reticulophragmium orbicularis
Batysiphon pseudoloculus
Recurvoides sp. 1
Cycloammina sp. 1
Trochammina sp. 1
1-2 specimens
3-10 specimens
>10 specimens
I-65
J-44
AMAULIGAK J-44
Age
Seq.
Metres below K.B.
Miocene
Oligocene
Mackenzie Bay
Kugmallit
2000
2500
3000
3500
4000
Percent calcareous specimens
0
20
40
60
80
100%
Amauligak J-44
Amauligak I-65

Figure 3

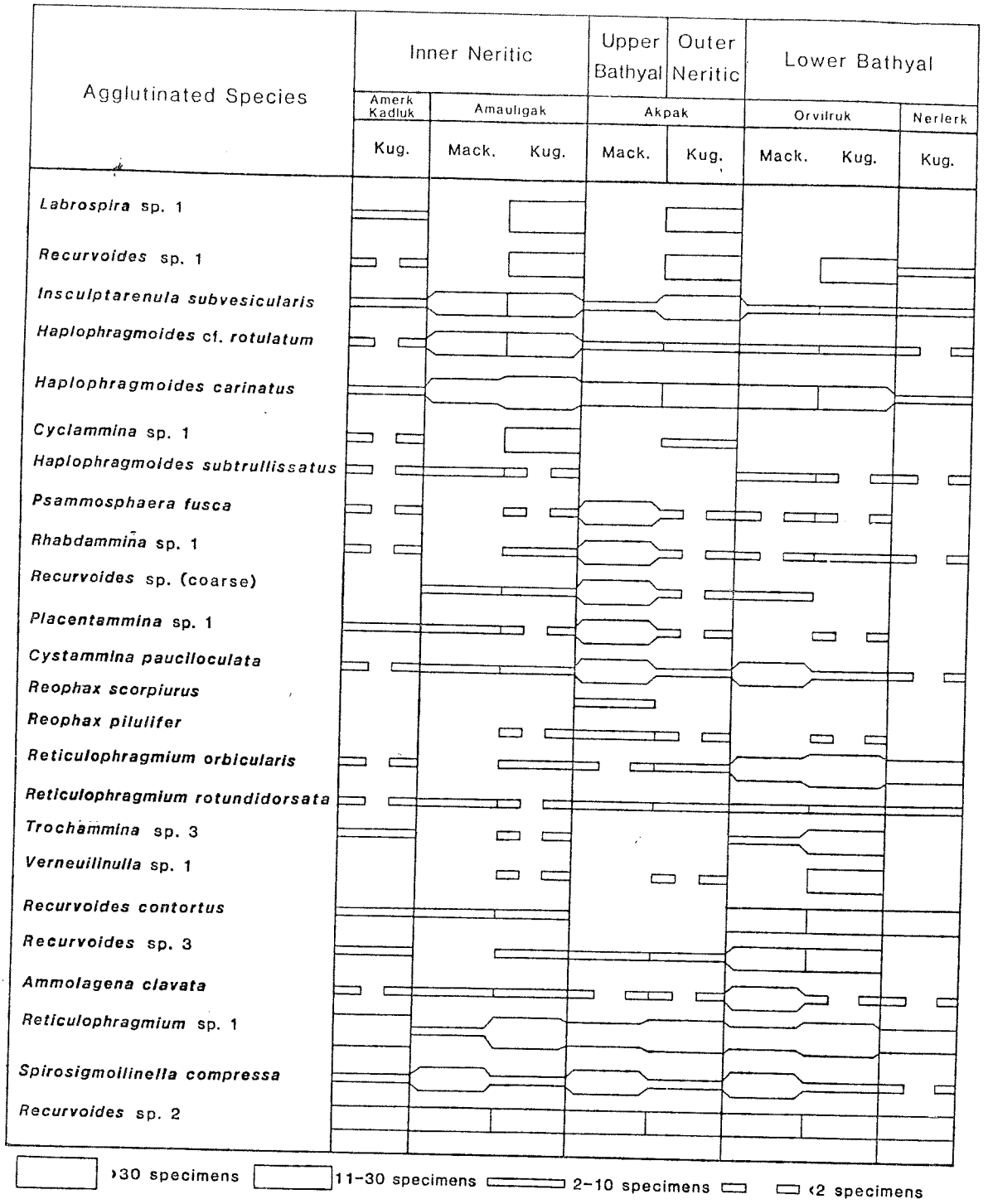
Agglutinated Species
Inner Neritic
Upper Bathyal
Outer Neritic
Lower Bathyal
Amerk Kadluk
Amauligak
Akpak
Orvilruk
Nerlerk
Kug.
Mack.
Kug.
Mack.
Kug.
Mack.
Kug.
Kug.
Labrospira sp. 1
Recurvoides sp. 1
Insculptarenula subvesicularis
Haplophragmoides cf. rotulatum
Haplophragmoides carinatus
Cyclammina sp. 1
Haplophragmoides subtrullissatus
Psammosphaera fusca
Rhabdammina sp. 1
Recurvoides sp. (coarse)
Placentammina sp. 1
Cystammina pauciloculata
Reophax scorpiurus
Reophax pilulifer
Reticulophragmium orbicularis
Reticulophragmium rotundidorsata
Trochammina sp. 3
Verneuilinulla sp. 1
Recurvoides contortus
Recurvoides sp. 3
Ammolagena clavata
Reticulophragmium sp. 1
Spirosigmoilinella compressa
Recurvoides sp. 2
›30 specimens
11-30 specimens
2-10 specimens
‹2 specimens

Figure 4