M.J. O'CONNOR & ASSOCIATES LTD.

CONSULTING ENGINEERS & EARTH SCIENTISTS

GEOLOGICAL DATA COMPILATION

FOR MARINE AREAS OF THE CANADIAN ARCTIC

ARCHIPELAGO

Submitted to:

Atlantic Geoscience Centre

Geological Survey of Canada

Submitted by:

M. J. O'Connor & Associates Ltd.

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ABSTRACT

In 1984 the Atlantic Geoscience Centre determined that there was a need for a compilation of the voluminous amounts of scientific data that have been produced by the private and public sectors pertaining to the marine areas of the Canadian Arctic Archipelago. The majority of the information to be assembled was related to the geological, geophysical and geotechnical properties of the unconsolidated sediments and shallow bedrock materials underlying and immediately adjacent to the marine areas. In addition to the earth sciences data, supplementary information documenting bathymetry, data aquisition techniques and sea ice distribution was also included. The present report provides a comprehensive compilation of all available data developed over the period 1943 to 1984. Sources of the data included government and university publications, technical journals, newsletters, conference proceedings, environmental impact statements, unpublished reports and proprietary petroleum industry studies.

The main body of the report is comprised of the annotated bibliography containing 589 individual references. Use of the bibliography is facilitated by a subject/geographic index. Listings and indices that did not conform with the bibliographic format are enclosed as appendices. A total of 31 Canadian Hydrographic Service Charts (1:500 000) showing the boundaries of marine and related studies, locations of seabed samples and track plots of government and industry geophysical surveys complete the report.

ACKNOWLEDGEMENTS

M. J. O'Connor & Associates Ltd. gratefully acknowledge the cooperation and assistance provided by the Atlantic Geoscience Centre in the preparation of this document. Particular appreciation is extended to Mr. Brian McLean, Mr. Gus Vilks, Mr. Andrew Sherin, Mr. Larry Johnston and Ms. Iris Hardy.

Special thanks is also due to Mr. Trevor Albone of the Polar Gas Project in Toronto and Mr. Martin Van Ieperen of Panarctic Oils Ltd. in Calgary for their cooperation with respect to the inspection of industry reports and documents.

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Dwg. No.	CHS Map No.	Map Area
1	7067	Spicer Islands to West Entrance of Fury and Hecla Strait
2	7220	Lancaster Sound, Eastern Approaches
3	7302	Lady Ann Strait to Smith Sound
4	7502	Gulf of Boothia and Committee Bay
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11	7941	Nansen Sound and Greely Fiord
12	7950	Jones Sound, Norwegian Bay and Queens Channel
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14	7952	Cape Manning to Borden Island
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16	7954	Cape Stallworthy to Cape Discovery

Seismic Track Maps (Map Box)

Dwg. No.	CHS Map No.	Cruise Numbers
17A	7220	63-012 64-020 65-022 66-022 69-050 70-021
17B	7220	70-028 71-032 73-014 74-015 74-026 76-023
17C	7220	76-025 77-008 77-024 81-045 82-034
18A	7302	63-012 65-022 66-022
18B	7302	70-021 71-032 74-026 77-024
19A	7503	65-022 77-024 70-021 70-028 77-008 Polar Gas data

Dwg. No.	CHS Map No.	Cruise Numbers
19B	7503	73-014
19C	7503	74-026
19D	7503	74-015 76-025
20	7830	70-021 70-028 74-024 77-026 Polar Gas data
21	7831	70-021
22	7832	69-050 70-021
23A	7950	63-012 71-032
23B	7950	65-022 77-024

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PART I

1.0 INTRODUCTION

The following report documents the results of a survey undertaken to compile all published and unpublished shallow geological, geophysical and geotechnical data for the marine areas of the Canadian Arctic Archipelago. As this area acquires increasing interest for oil and gas exploration, the information obtained in this bibliography will become increasingly useful for future industry and government surveys.

Similar bibliographies and atlases have been compiled for selected aspects of the Arctic Archipelago, however, this survey represents the first known comprehensive compilation of data pertaining to the seabed and subsurface in the region.

The report is divided into three separate parts as follows:

Part I - contains a preamble to the study, describes the methodology used in compiling the data, and contains a subject/geographic index, the annotated bibliography, a list of unexamined references, and a list of references common to the entire study area and the Queen Elizabeth Islands.

Part II - contains several appendices comprised of useful listings and indices.

Map Box - contains all the Marine and Related Studies Maps and Seismic Track maps.

In addition, single copies of the following items are also provided with the report: a magnetic tape with the digitized locations of all available industry geophysical data and cores; a hard copy of this data; a list of the types of geophysical data gathered on government cruises in the area; one copy of each reference (less than 25 pages); and one copy of the original map mylars.

2.0 STUDY AREA

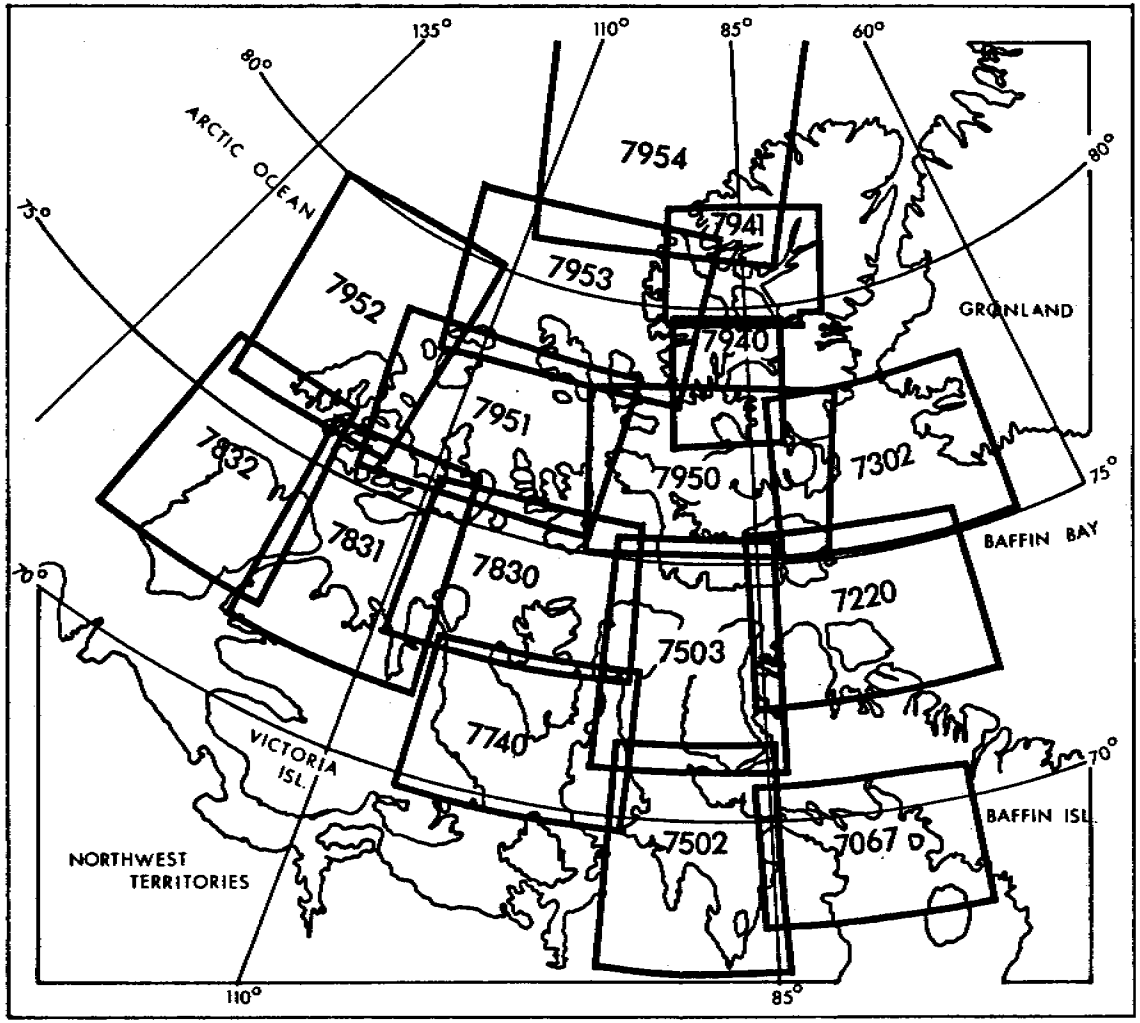
Drawing No. 2.1 shows the location of the study area and the corresponding navigation charts of the Canadian Hydrographic Service (CHS). Although the study area was limited to these boundaries for the most part there were a few exceptions made to accommodate unique or important references to investigations at locations adjacent to the perimeter map sheets. These included, for instance, studies of subsea hydrocarbon seeps and observations of the marine geology of the continental shelf, slope and rise in the Arctic Ocean. A complete listing of all the available navigation charts for the area shown in Drawing No. 2.1 is found in Appendix C.

3.0 METHODOLOGY

3.1 Computer Data Base Searches

To initiate the examination of published information, several computer data base searches were conducted. These are compiled in Table 3.1 along with the respective numbers of citations for each search. Unfortunately it was difficult to precisely limit the scope of each search without missing many useful references. Consequently many irrelevant references were obtained in an effort to maintain broader subject or keyword categories.

While only the ASTIS search provided useful summaries or annotations suitable for this bibliography, the other computer data base searches did provide a useful starting point for locating further references and government contacts which were most helpful in tracking down other



Drawing No. 2.1 Canadian Hydrographic Service Navigation Charts Covering the Study Area

TABLE 3.1 Computer Data Base Searches

Date Base	Source	No. Citations	Comments
GEO. REF.	American Geological Institute	126	-most useful geological source, included bedrock references -poor for government publications, theses, Canadian sources
ASTIS	Arctic Institute of North America	250	-good for hearings, government submissions, general information, ice studies -poor for geological references
OMCRS	Ocean Mining Citation Retrieval System (COGLA)	180	-not very relevant to marine geology -more directed to seabed mining
GEOSCAN	Geological Survey of Canada	418	-GSC publications only
COLD	Cold Regions Research and Engineering Laboratory (CRREL)	107	-useful for data acquisition methodology only -difficult to access proper citation for this study
IEC	Information Exchange Centre (ISTI) Directory of Federally Supported Research in Universities	85	-useful for university research and grants
AGC In-house Bibliography	Atlantic Geoscience Centre Bedford Institute of Oceanography	not determined	-only references work performed by AGC scientists

unpublished data. A manual search of all directly relevant journals, conference proceedings and indices revealed many more citations.

3.2 Industry Data

Contacts were initiated at an early stage in this study with personnel in several arctic oil and transportation companies. The most relevant industry data was obtained from the reports of the Polar Gas Project. Over 100 individual studies by both Polar Gas and their consultants were reviewed in Toronto and at the library of Panarctic Oils Ltd. in Calgary. Permission was obtained to copy summaries, tables of contents, location maps and the lists of references from selected reports. Appendix E describes the reports which were relevant to this study and which were available for our review. Several reports were not located in Panarctic's collection of Polar Gas documents and could not be secured by the completion of this contract. These are also listed in Appendix E.

Some very useful local bathymetric and marine geotechnical studies for the Arctic Pilot Project (APP) were made available by the National Energy Board (NEB). These reports are largely concerned with the Bridport Inlet area and the pipeline route across Melville Island from Drake Point. Other proprietary studies pertaining to the APP were requested from Petro Canada, but were not made available. The reports from the NEB which were examined are listed in Appendix F.

Some additional references to related studies in the Arctic Archipelago region were made available by Gulf Canada Resources Inc. A selected number of non-proprietary data sources was provided by Suncor personnel.

Other Calgary based individuals also provided useful information on the location of selected marine data. Dr. Gordon Jones, executive director of APOA and EPOA was most helpful in this regard. Jeff Pallister of Pallister Resource Management Ltd. assisted in the location of early geophysical data for the region surveyed in the Polarquest Operation of 1971. The contents of the Polarquest data package, which has not yet been publicly released, are described in Appendix I.

The only relevant industry seismic track data were obtained from selected consultants' reports to the Polar Gas Project. These have been digitized and placed on magnetic tape. Because of the generally small scale of these surveys (e.g. 1:20,000 or less) they have not been shown in detail on the 1:500,000 scale navigation charts which display government seismic data. Instead, only the approximate outline of the survey location has been given. Some small scale local bathymetric and seabottom surveys at a scale of 1:5000 or less have not been digitized; copies of these original maps have been included with the collection of references provided to the AGC.

Appendix O gives a summary of the industry seismic data which has been digitized. One separate hardcopy of the data is also included with this report.

3.3 Compilation of References and Data

Most of the information contained in the annotated bibliography (Section 6.0) was obtained from the libraries of the University of

Calgary, the Geological Survey of Canada (ISPG) and the Arctic Institute of North American (AINA) in Calgary. Some publications were obtained through interlibrary loans, however, there were more than 75 publications which were not obtainable prior to the deadline of this compilation. These unexamined references have been tabulated in Section 7.0.

Only those references which were reviewed and could be located on navigational charts were compiled in the annotated bibliography. There were, however, a small group of citations which were included in the bibliography for completeness but which do not have proper annotations. This group comprises the select number of GSC Open File Reports which are only available for purchase and could not be copied at the ISPG library in Calgary.

The annotated bibliography was compiled on several double-sided floppy discs (AES Plus word processor). Copies of these discs are available from M. J. O'Connor & Associates Ltd. The format used to compile the data facilitates the ease of making additions to the bibliography at a later date.

Each individual citation in the bibliography has been described according to the following headings:

REFERENCE NO.
SUBJECT CODE(S)
AUTHOR
TITLE
SOURCE
STATUS
MAP
COMMENTS/SUMMARY

The REFERENCE NUMBER consists of two parts; a four digit number, which was arbitrarily assigned to the reference as it was compiled, and a two digit number indicating the year of publication. For instance, 0057-67 was the 57th reference compiled and corresponds to a citation published in 1967.

The SUBJECT CODES are divided into two levels of heirarchy: primary or secondary. While there may be only one or two primary subject categories, there may be several secondary categories. Details on the individual subject categories are contained in the next section.

The AUTHOR(S) for a citation is usually cited as an individual or individuals unless the work was conducted by a company. In this case the individual author, if known, is cited in the SOURCE. The location of the author(s) at the time of the publication has been used.

TITLE and SOURCE are used here in the normal manner employed in standard bibliographic practice.

STATUS refers to whether the reference is public, proprietary or is soon to be released.

MAP NUMBER refers to the appropriate Canadian Hydrographic Survey map(s) upon which the reference has been located (see Drawing No. 2.1).

The COMMENT/SUMMARY is typically comprised of the original or shortened abstract for the reference or a few descriptive notes briefly outlining the contents of the reference.

3.4 Subject Categories

It is anticipated that the most common method by which individual references in this bibliography will be accessed will be subject category. Accordingly, a coding system has been devised for classifying the references by either a primary or secondary subject category. The categories chosen at the beginning of the data compilation phase reflect the data requested as outlined in the original request for proposal. Table 3.2 is a list of the chosen categories.

The nature and scope of each subject category are described in further detail below. Other pertinent comments regarding the extent and accessibility of each type of data are also included.

A Surficial (Marine) Geology

This general category is the major emphasis of the report; hence a concentrated effort was made to locate and tabulate all the relevant references.

A1 Geochronology, Historical includes reports, papers and documents which discuss such aspects of the Quaternary Period as sea level fluctuations, radiocarbon dates, and the glacial history. While many of these references do not deal explicitly with the present day marine sediments, there is important information which may be drawn from these papers.

A2 Areal Geology is the term used to denote large scale mapping exercises devoted to several aspects of marine geology. Very few studies of this type were located and examined. Most marine surficial studies are specific to one or two aspects of the marine geology.

A3 Geophysics would apply to shallow marine studies where reflection or refraction seismic methods were used. The geophysical components of these studies were usually minor in comparison with other components of the studies.

A4 Stratigraphy as a subject category applied to Recent and/or Pleistocene sediments. It was relatively infrequently used. Most studies of recent marine sediments were classified under sedimentation.

A5 Sedimentation was probably the most commonly used category for classifying marine geological studies. Included in this section are more specific topics such as sedimentology, mineralogy, petrology and depositional processes.

A6 Submarine Topography was used to denote studies where the seabed topography was investigated for reasons other than strictly bathymetry. This category included small local surveys and also large scale investigations of the inter-island channels.

A7 Surficial Geology and Geomorphology studies for the islands of the Arctic Archipelago have been compiled for this report since they very often include valuable information on chronology, coastal geological units and the continuity of terrestrial units into marine waters. Only geochronology and areal studies have been used; more specific investigations of surficial processes have not been compiled under this category.

A9 Engineering and Environmental Geology includes such topics as coastal erosion, ice scour processes, and sedimentation as a determinant of oil spill migration. This section only applies to work which has been done in marine and coastal areas; terrestrial engineering studies are not included.

A10 Economic Geology references for shallow marine sediments of the Arctic Islands are relatively rare. Very few studies of the potential for seabed mining or granular resources have been conducted in this area and very few have been reported.

A11 Fauna, Foraminifera and Palynology studies are similarly not abundant and are most often described as parts of broader studies including sedimentation and topography.

B Underlying Bedrock

The geology and geophysical characteristics of the underlying bedrock in marine areas was considered of secondary importance in this compilation. This limitation was necessary because of the vast amount of information, published and proprietary, available on the topic. The selected references which have been used are most applicable to the top 1000 m or so of the subsurface below marine areas. No effort was made to gather or examine references on deeper structural geology, plate tectonics or the geological history of the pre-Quaternary sediments in the region. A number of selected GSC Open File reports pertaining to bedrock are referenced however. Citations are also provided for publications which make reference to other subject categories, e.g. seismicity. For detailed geophysical and geological information, maps,

cross-sections and reports conducted by industry refer to Appendix M - Canadian Oil and Gas Lands Administration (COGLA) reports.

B1 Areal Geology refers to studies of a regional nature encompassing several aspects of bedrock geology. Only a few select references of this nature pertain to marine areas in the study area. Terrestrial bedrock geology has largely been ignored as it falls outside the scope of this study.

B2 Economic Geology as referring to petroleum or mineralization has only been used as a secondary subject code. Very few references pertaining to this topic were examined.

B3 Geochronology, Historical Geology has only been used as a secondary subject code where some detail related to the pre-Quaternary geological history is given.

B4 Geophysics has been subdivided into four sub-categories as follows:

B4.1 Magnetic
B4.2 Seismic
B4.3 Gravity
B4.4 Heat flow

Magnetic, seismic and gravity surveys within the region have been conducted by several government scientists and are reported in a number of reports, papers and proceedings. Industry data for the area is abundant and work conducted in the last 5 years has been released to the Canadian Oil and Gas Lands Administration (COGLA). This list of released industry reports is found in Appendix M.

An index of manuscript maps for the Gravity Map of Canada (1980) is shown in Appendix J. A list of government aeromagnetic maps in the Arctic Archipelago region has been compiled in Appendix K.

Heat flow overlaps to some extent with Permafrost, Subject Code E5.

B5 Sedimentation is only used as a secondary subject code where this information is supplementary to a more general study of the bedrock geology.

B6 Stratigraphy is a relatively common code for the limited number of published bedrock geological studies conducted in marine areas of the Canadian Arctic Archipelago.

B7 Structural Geology is also a common subject code for the limited number of published bedrock geological studies in marine areas of the Arctic Archipelago. References to plate tectonics, deep crustal geology and similar studies were not normally examined for this compilation.

C Geological Evolution and Development of the Arctic Island Channels

Only a select number of references pertaining to this subject were examined. All of the references refer to the origin of the Channels and are classified under subject code C1.

D Bathymetry

D1 Local Bathymetry is used to describe site specific bathymetric surveys for such structures as harbours, pipelines, surveys and seabed

completions. Usually there is no geological or physiographic significance attached to these investigations of the seabed topography.

D2 Canadian Hydrographic Survey Maps

References pertaining to operations reports or data acquisition techniques used in acquiring the data for these maps has been classified by this code. Appendix C contains a tabulation of all the available hydrographic charts for the study area.

E Seabed Modifying Processes and Hazards

E1 Ice Scouring, including beach scour is fairly prevalent along the coasts of many of the Arctic Islands, as well as in deeper interchannel waters. There were, however, only a few references which discuss the subject.

E2 Submarine Landslides have only rarely been reported in the Arctic Islands region, however they are likely to pose a significant hazard in some marine areas.

E3 Currents There is a significant volume of data available on the current regime in the waters of the Arctic Archipelago. Numerous investigations for the last 50 years have conducted oceanographic surveys throughout the region, particularly in the Baffin Bay and Lancaster Sound Regions. No effort was made here to compile all of this data since a comprehensive bibliography on the same subject has recently been completed by the Institute of Ocean Sciences. For this

compilation a limited amount of current data, particularly at the seabed, has been examined.

E4 Faults (Seismicity) Very few references make any mention of faulting as a seabed hazard. Seismicity is discussed in the Section F - Natural Seismicity.

E5 Submarine Permafrost has been examined in a limited number of studies within the Arctic Archipelago region. Most of the published work has been conducted by scientists of the Earth Physics Branch of the Geological Survey of Canada and pertains to deep permafrost as determined by temperature measurements in abandoned oil and gas wells.

E6 Gas Hydrates pose a potential problem for drilling in several parts of the Arctic Archipelago. References to the nature of this problem and its consequences for the industry, including some of a more general nature, have been compiled.

E7 Subsea Hydrocarbon Seeps No references to the occurence of this phenomenon in the boundaries of the study area were made. However, for reasons of completeness, several citations describing this unique seabed feature near Buchan and Scott Troughs, just south of CHS map 7220 have been made.

F Natural Seismicity

F1 Earthquakes A number of references pertaining to seismicity in the Arctic Archipelago region have been compiled. Most of these are of a regional nature and also include discussions of structural geology.

F2 Seismic Design pertains to a few papers and reports which address the seismicity of a particular location for engineered structures such

as harbour facilities. Most of the work of this nature has been carried out for the Bridport terminal on Melville Island.

G Shoreline and Littoral Zone Composition and Processes

G1 Coastal Processes include all references to coastal erosion, beach development, frost table levels and shoreline ice scour.

H Data Aquisition Techniques

H1 Field Investigation, Technology and Case Histories from the Ice Surface

Although this subject was not the major emphasis of this compilation, some effort was made to assemble relevant information for areas within the Arctic Archipelago. Additional citations to methodologies employed in the Beaufort Sea or elsewhere from ice surfaces were also included. Further details on sampling and in situ measurements on the physical properties of the ocean bottom are described in a survey of published literature conducted by M. Graves of Georesources Ltd. (Ref. No. 0055-81).

H2 Arctic Island Logistics is only used as a secondary code to refer to references where there is some discussion of arctic field operations.

H3 Oil and Gas Drilling is frequently referenced where a case history of some unique offshore program is described. Operation conditions, new technology and costs are frequently reviewed.

H4 Field Investigation, Technology and Case Histories (Marine)
Selected references for this subject area, but only specific to the Canadian Arctic Archipelago, have been compiled. These include cruise reports, operations reports and unique geotechnical and geophysical technology.

I Seasonal Distribution of Sea Ice

I1 Iceberg Distribution Although there is a substantial amount of data available pertaining to the seasonal distribution of icebergs in Baffin Bay and part of Lancaster Sound, this information was not examined in detail. Only occasional references to this type of information were found.

I2 Sea Ice Distribution data is also relatively abundant for the marine areas of the Arctic Archipelago, especially through the Northwest Passage. Because a complete compilation of work pertaining to this topic is beyond the scope of this study, only selected, general references to the subject have been compiled. Further details regarding sea ice distribution may be found in Appendix D where a list of the available Atmospheric Environment Service ice charts is compiled.

J Composite Studies are works of a more general nature which touch on several of the previously described subject categories.

K Bibliographies, Reference Lists and Indices pertaining to the Arctic Archipelago region have been compiled as a separate heading, although some of these references are particular to only one type of data.

3.5 Canadian Hydrographic Charts

A total of 16 navigation charts of the Canadian Hydrographic Service were used to show the location of the various types of marine data from the Arctic Archipelago (see Figure 2.1). All of these maps, with the exception of two, are at a scale of 1:500,000 and all maps overlap with the adjoining sheets.

For each map area there were generally two types of data maps produced: Marine and Related Studies Maps, and Seismic Track Maps. The Marine and Related Studies maps show the location of all studies where this information has been specified in the original paper. The locations of all GSC samples and seabed photographs are shown on these maps with one exception. Because of crowding on CHS Map 7830, a separate sample location map was compiled (Drawing No. 7). The exact locations of all GSC samples, the type of sampler and the cruises on which they were obtained are tabulated in Appendix A.

Government geophysical survey tracks are shown on a separate series of maps, usually at two cruises to a map. Problems in matching data from maps of different projections precluded showing the overlap areas in all cases. The type of data gathered on each cruise is summarized in Appendix B. A tabulation showing all the positional data for most of the cruises as well as parameter flags indicating the type of data gathered has been provided to the Atlantic Geoscience Centre as a separate bound listing.

Industry seismic data is also shown on the geophysical track maps, but only on map sheets where government survey data was gathered. Otherwise, the location of industry seismic data is shown on the Marine and Related Studies maps. A tabulation of all gathered industry positional data and the types of geophysical surveys conducted on each line is enclosed as Appendix O.

4.0 USE OF THE DATA COMPILATION

As noted above the compiled data is presented in the form of an annotated bibliography with supplementary directories and a total of 15 appendices containing useful listings and indices. The annotated bibliography containing 589 individual references is presented in Section 6.0. Use of the bibliography is facilitated by the subject/geographic index enclosed as Section 5.0. Primary subject codes are denoted for each reference by a partially shaded circle. Open circles are used to identify secondary subject codes and the geographic areas in which the references are located. Canadian Hydrographic Service (CHS) map numbers are used to designate study areas. The acronym ESA used in the index refers to entire study area.

Section 7.0 contains a listing of unexamined references. These documents for various reasons were not obtainable prior to the deadline of the compilation. The listing includes the primary subject code, author, year, title and source for each reference. Section 8.0 contains a listing compiled to facilitate the identification of references which includes information on particular subjects for both the Queen Elizabeth Islands and the entire study area. The former area is comprised of the Canadian Arctic islands north of the McClure Strait-Viscount Melville Sound/Barrow Strait - Lancaster Sound system.

Data that does not befit the annotated bibliography format are enclosed in the report appendices as detailed below:

A. GSC Sample Locations
B. Cruise Report Index
C. CHS Navigation Charts
D. AES Ice Distribution Data
E. Polar Gas Reports
F. Arctic Pilot Project Reports
G. Current Government Research
H. Federally Sponsored University Research
I. Operation Polar Quest Data
J. Gravity Maps
K. Aeromagnetic Maps
L. Topographic Maps
M. COGLA Reports
N. Government and Industry Contacts
O. Industry Geophysical Data

The map box accompanying the report contains a total of 31 Canadian Hydrographic Service (CHS) charts showing the boundaries of the marine and related studies, locations of seabed samples and geophysical track plots. The term seismic track lines has been used on the block titles of the maps. In fact all types of geophysical surveys have been plotted on the CHS charts.

5.0 SUBJECT/GEOGRAPHIC INDEX

5.0 SUBJECT/GEOGRAPHIC INDEX

TABLE 3.2 Subject Categories

A. Surficial (Marine) Geology

- A1 Geochronology, Historical
- A2 Areal geology
- A3 Geophysics
- A4 Stratigraphy
- A5 Sedimentation
- A6 Submarine Topography
- A7 Surficial geology, geomorphology (Terrestrial studies)
- A8 Engineering, Environmental Geology
- A9 Geotechnical Properties
- A10 Economic Geology
- A11 Fauna, Foraminifera and Palynology Studies

B. Underlying Bedrock

- B1 Areal geology
- B2 Economic geology
- B3 Geochronology, Historical geology
- B4 Geophysics
  - B4.1 magnetic eismic
  - B4.2 seismic
  - B4.3 gravity
  - B4.4 heat flow
- B5 Sedimentation
- B6 Stratigraphy
- B7 Structural geology

C. Geological Evolution and Development of Arctic Island Channels

- C1 Origin

D. Bathymetry

- D1 Local Bathymetry
- D2 Canadian Hydrographic Survey Maps

E. Seabed Modifying Processes and Hazards

- E1 Ice scouring
- E2 Submarine Landslides
- E3 Currents
- E4 Faults - seismicity
- E5 Submarine Permafrost
- E6 Gas Hydrates
- E7 Subsea Hydrocarbon Seeps

F. Natural Seismicity

- F1 Earthquakes
- F2 Seismic design

G. Shoreline and Littoral Zone Composition and Processes

- G1 Coastal Processes

H. Data Acquisition Techniques

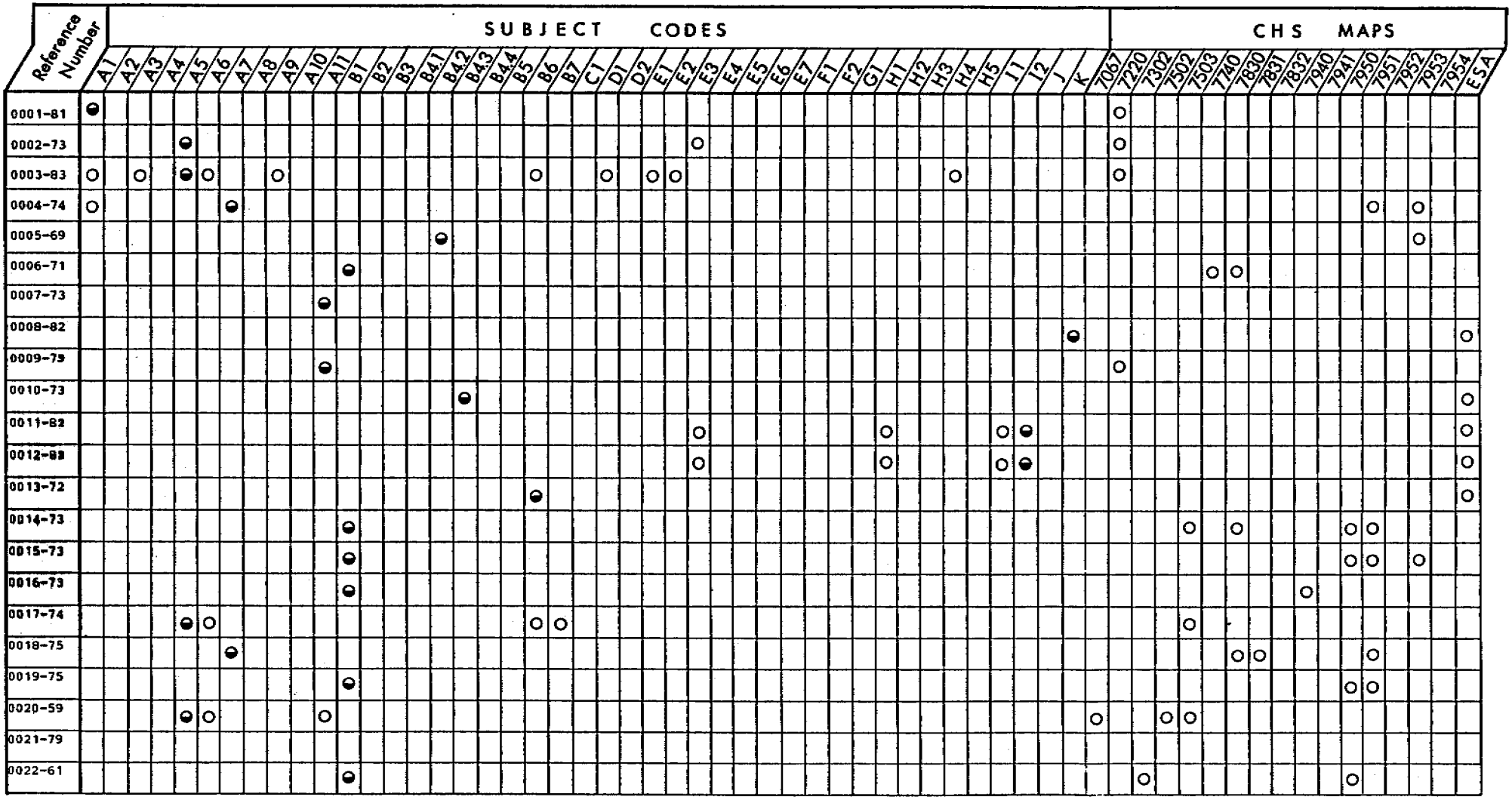
- H1 Field Investigation, Technology and Case Histories (from ice)
- H2 Arctic Islands Logistics
- H3 Oil and Gas Drilling
- H4 Field Investigation, Technology and Case Histories (marine)
- H5 Pipelines, Harbours, Seabed Completion Studies

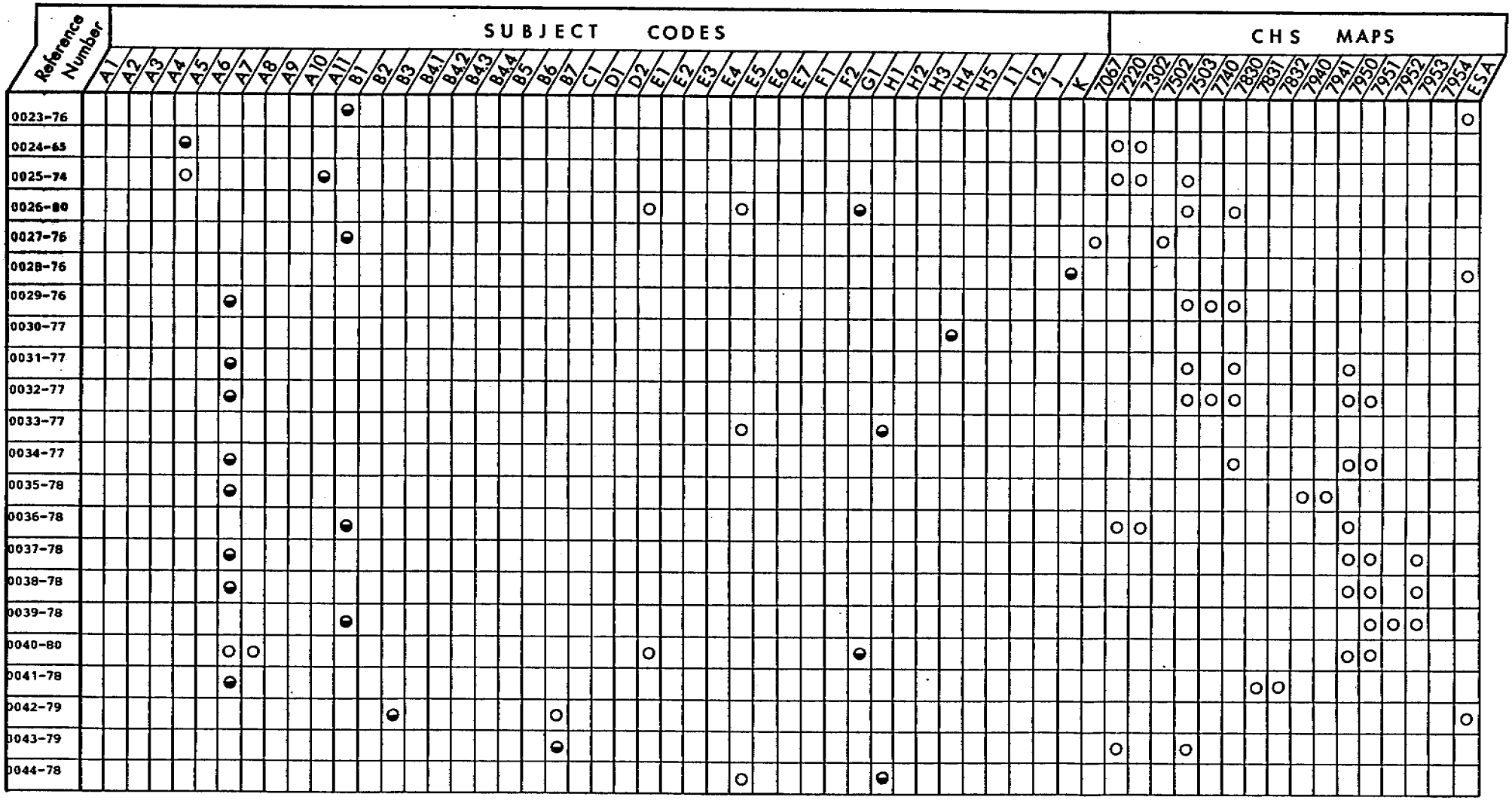
I. Seasonal Distribution of Sea Ice

- I1 Iceberg Distribution
- I2 Sea Ice Distribution

K. Bibliographies, Reference Lists and Indices

SUBJECT - GEOGRAPHIC INDEX

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CHS MAPS
7067 7220 7302 7502 7503 7740 7830 7831 7832 7940 7941 7950 7951 7952 7953 7954 ESA
0023-76
0024-65
0025-74
0026-80
0027-76
0028-76
0029-76
0030-77
0031-77
0032-77
0033-77
0034-77
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0042-79
0043-79
0044-78

NEB EXHIBIT NO.	CONTRACTOR	TITLE	YEAR	EXAMINED	REF. NO. (this study)	COMMENTS
82	GEOCON (1975) LTD.	Preliminary Thermal study Processing Storage and Dock Facilities LNG Terminal, Bridport Inlet	1980	Yes	0498-80	geotechnical properties, thermal properties
90	EBA ENGINEERING CONSULTANTS LTD.	Geotechnical Engineering Overview, Melville Island Pipeline, Arctic Pilot Project	1977	No		
•	TERRATECH LTD.	Geotechnical Investigation, Proposed LNG Harbour Facilities Arctic Pilot Project, Bridport Inlet, Melville Island	1982	Yes	0502-82	geotechnical, geological and permafrost data

APPENDIX G Current Government Research

APPENDIX G – Current or Planned Government Research

This appendix describes some recent but as yet unreported work conducted by various government agencies. Information has been extracted from year end reports, bulletins, newsletters, trade periodicals and some internal governmental correspondance. Some recent activities of the following agencies and departments are examined:

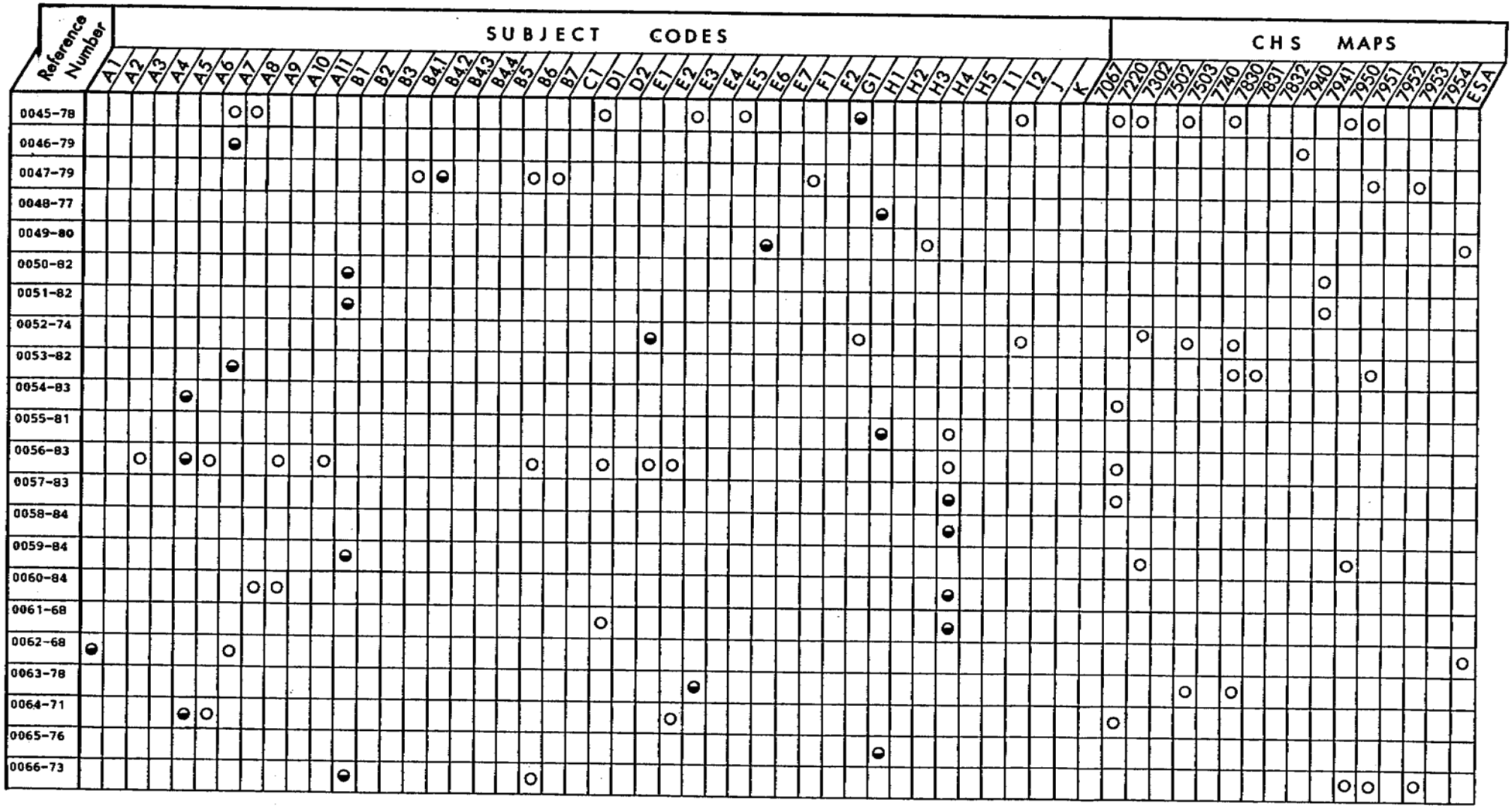
Geological Survey of Canada
Institute of Ocean Sciences
Bedford Institute of Oceanography
Supply and Services Canada
NOGAP Program Indian and Northern Affairs

G.1 Geological Survey of Canada

Table G.1 is a compilation of all 1984 GSC Field Work North of 60° latitude as planned on November 1, 1983. Drawing No. G.1 shows the location of these planned studies in the Arctic Archipelago region.

The results of these field programs will be forthcoming in future issues of Current Research.

Source: GSC Internal Map showing proposed field work north of 60° N latitude.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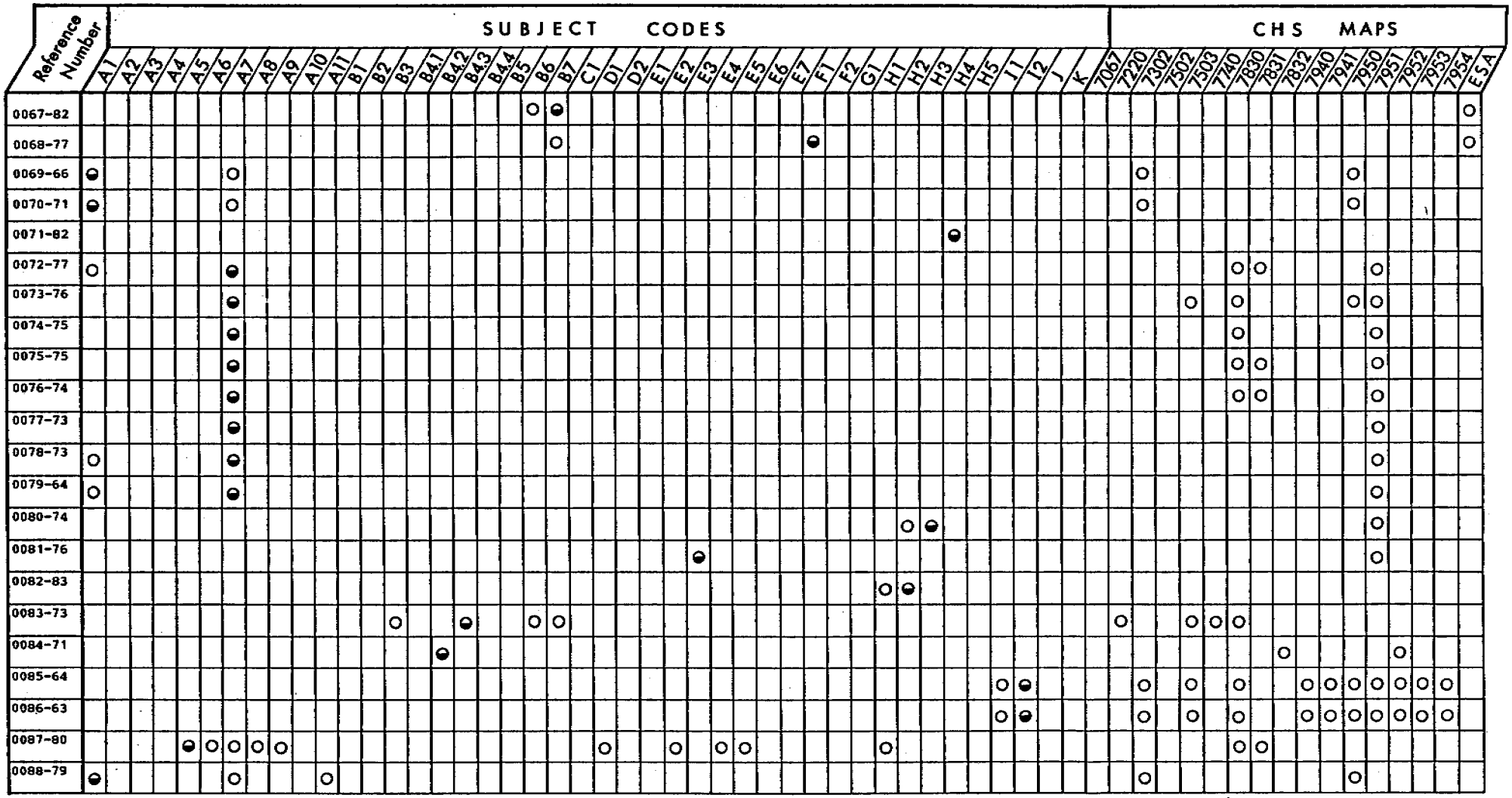
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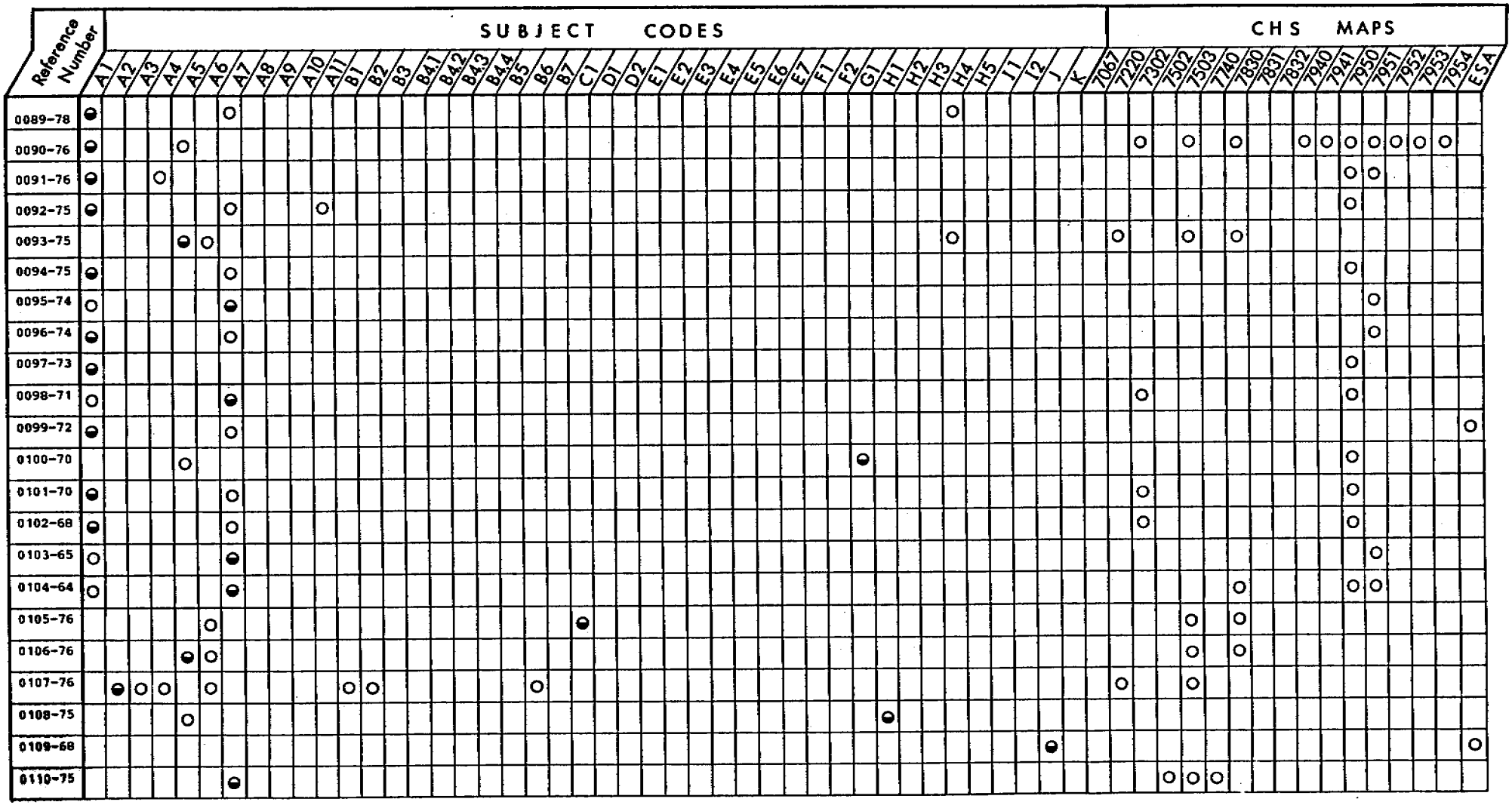
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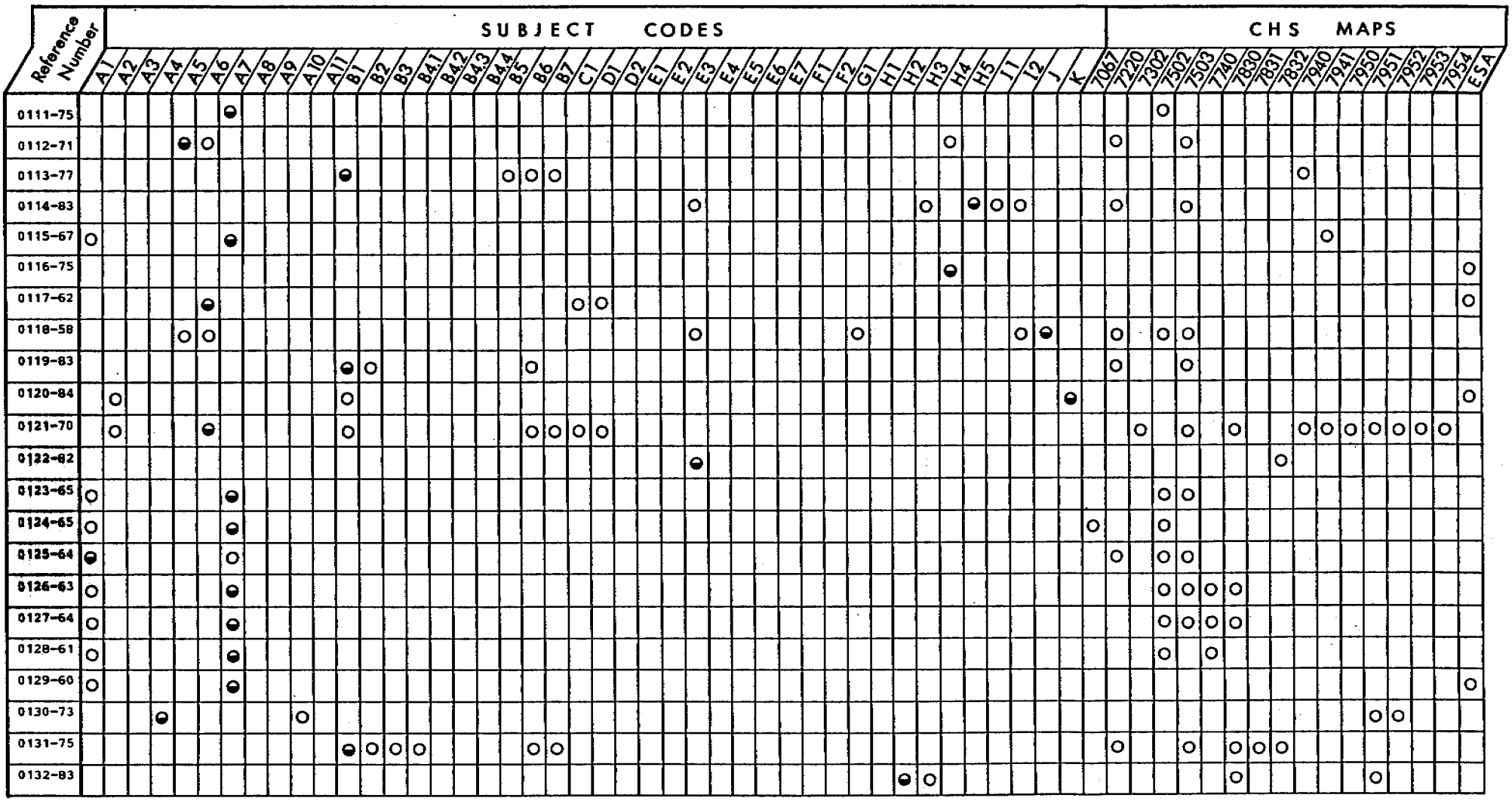
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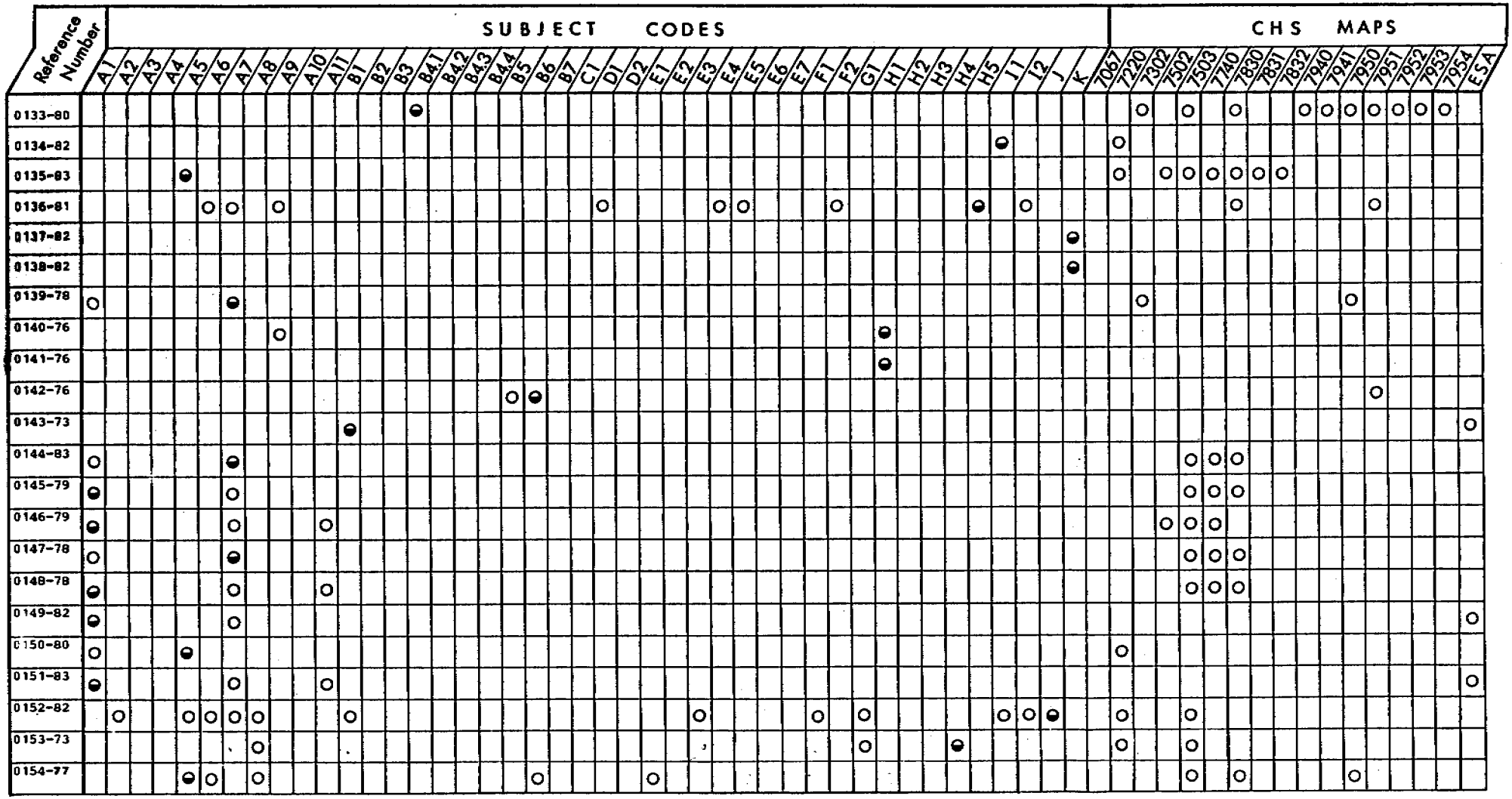
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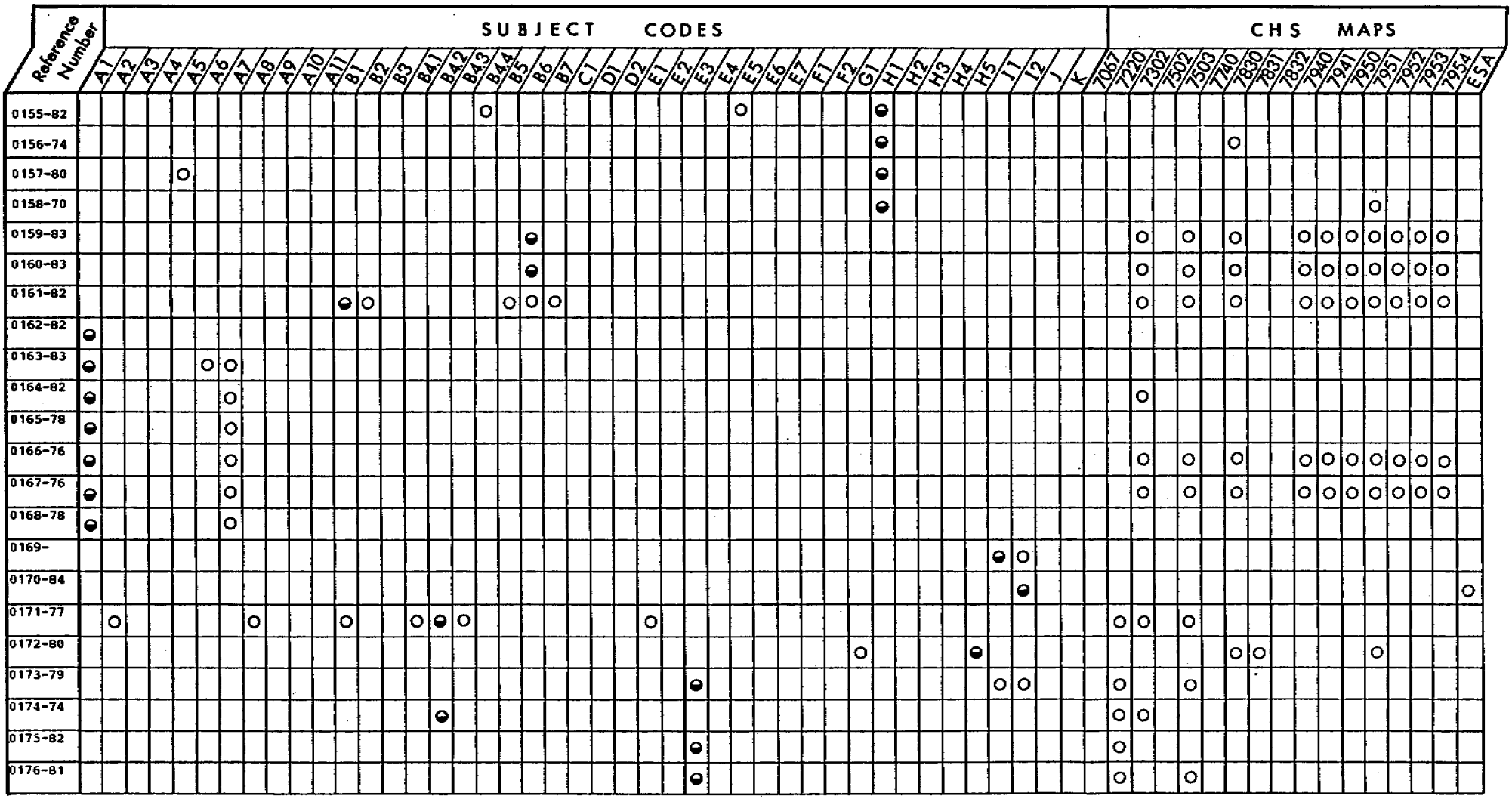
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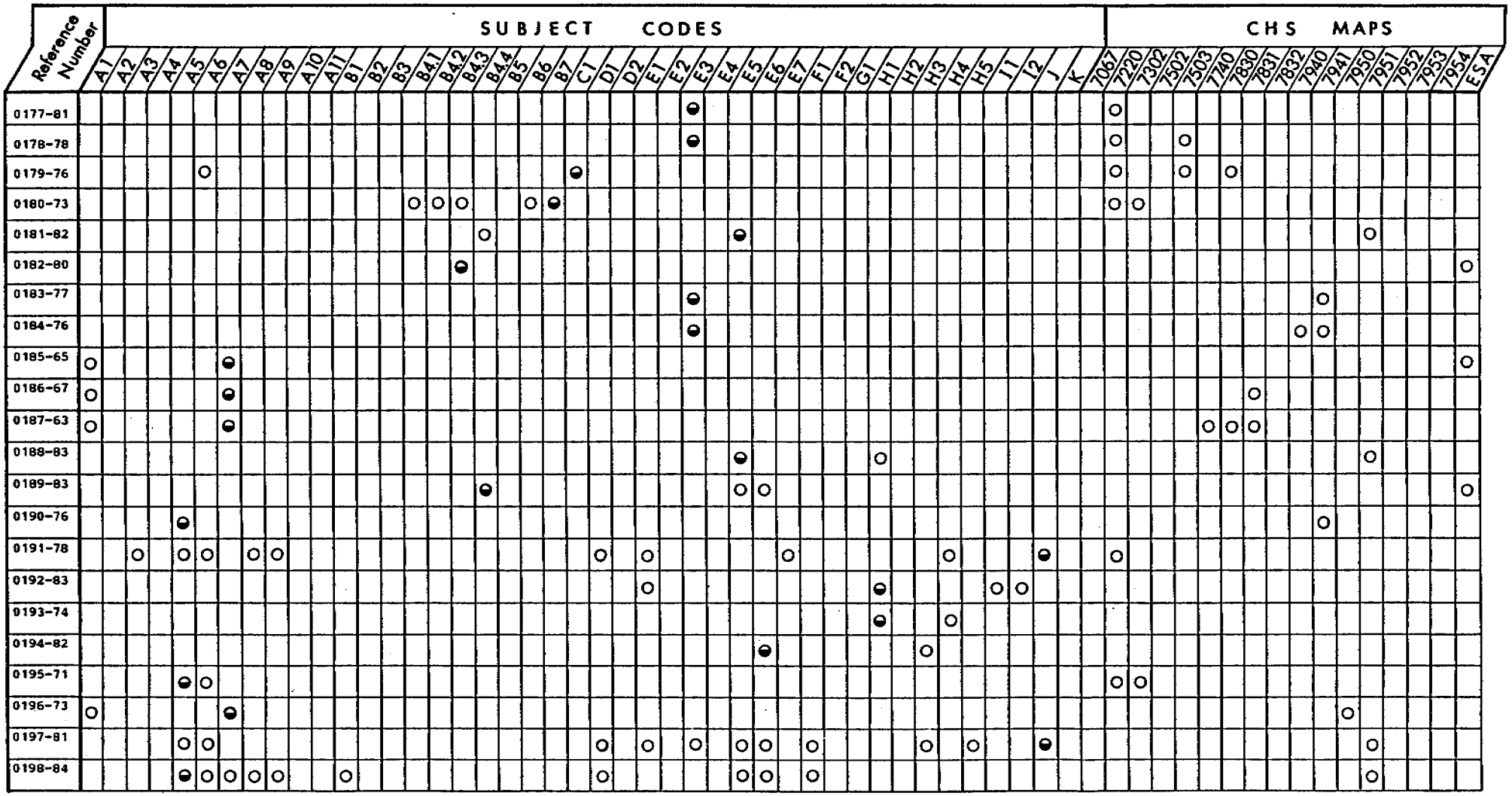
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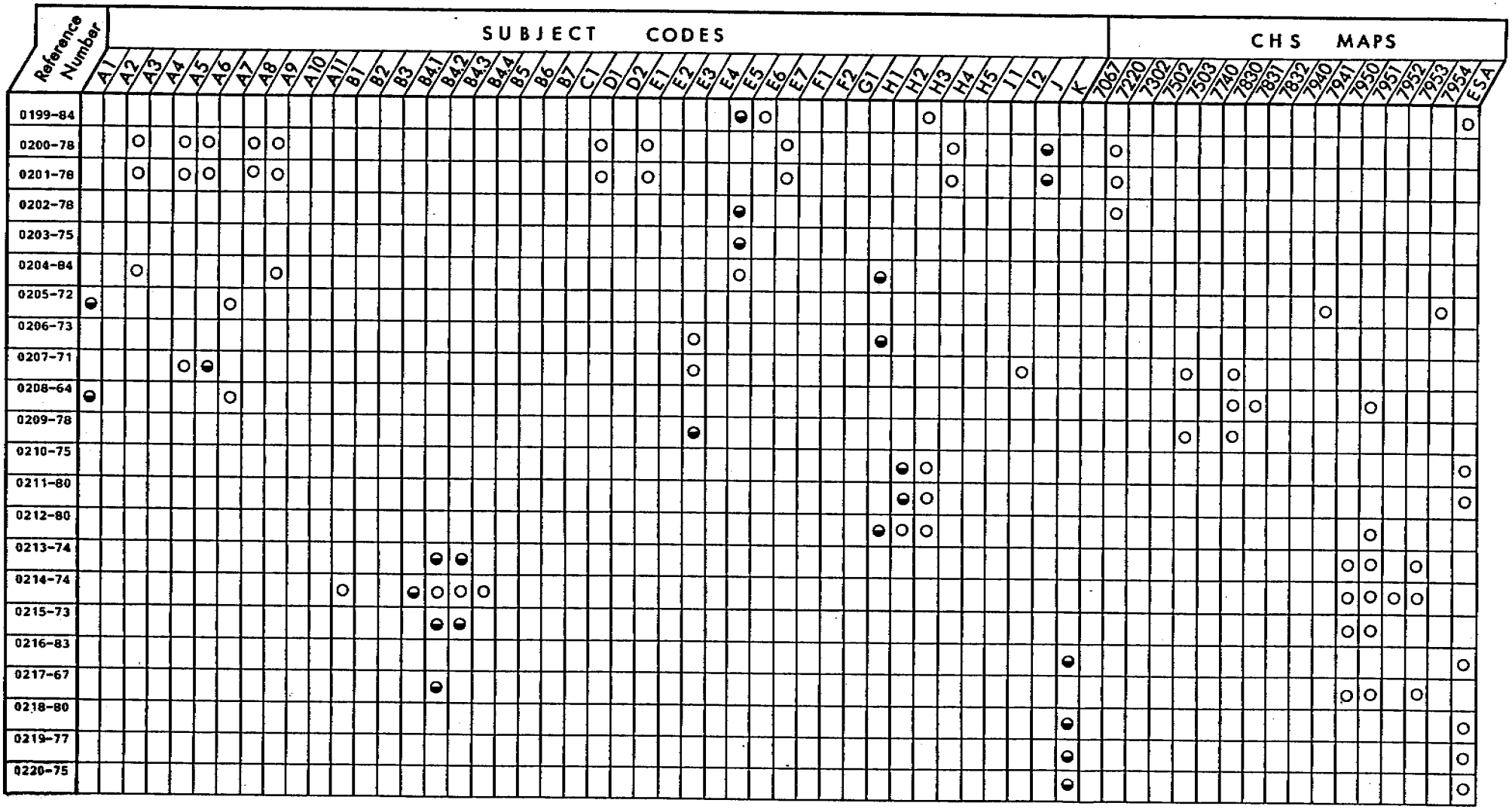
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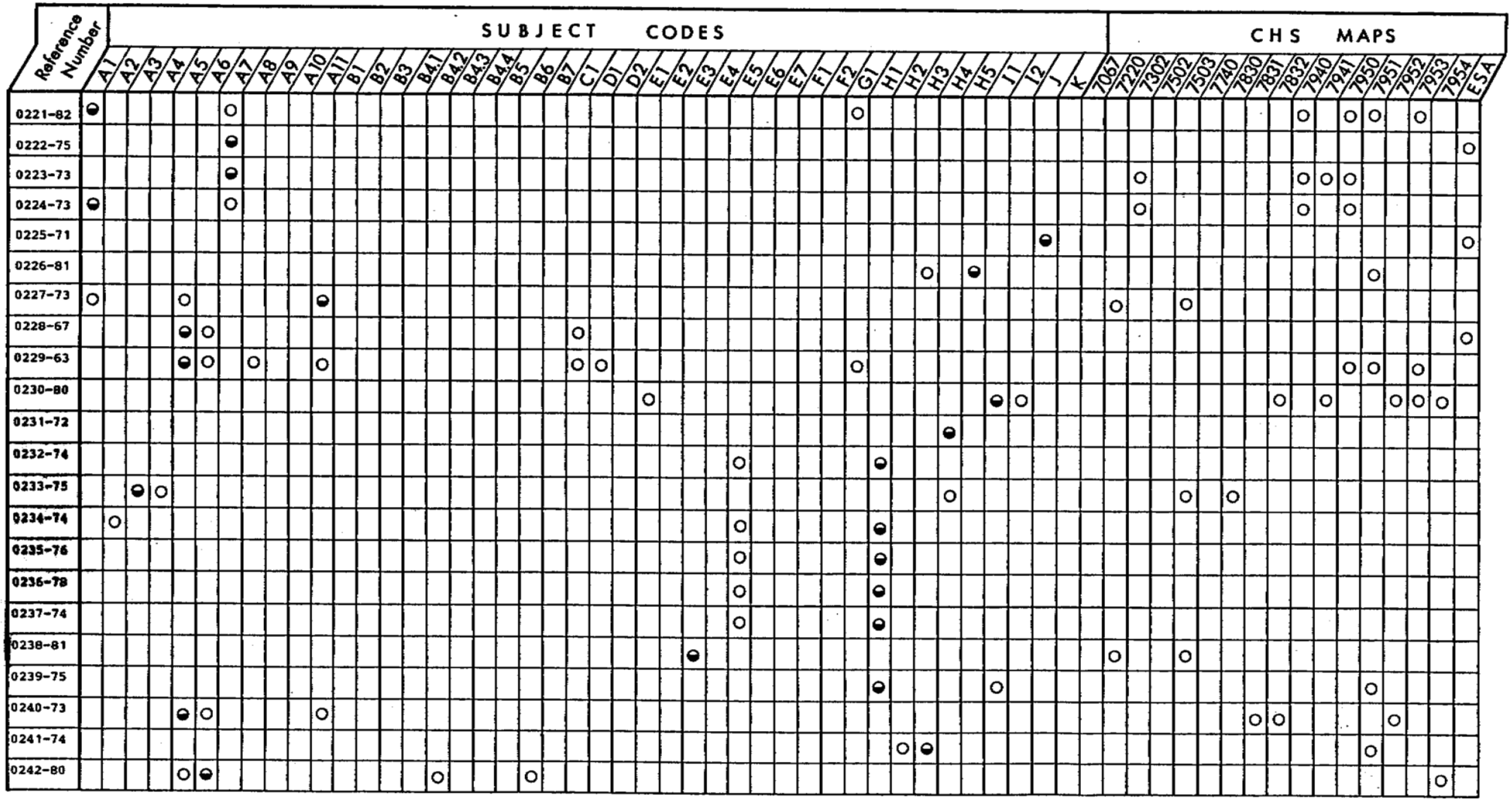
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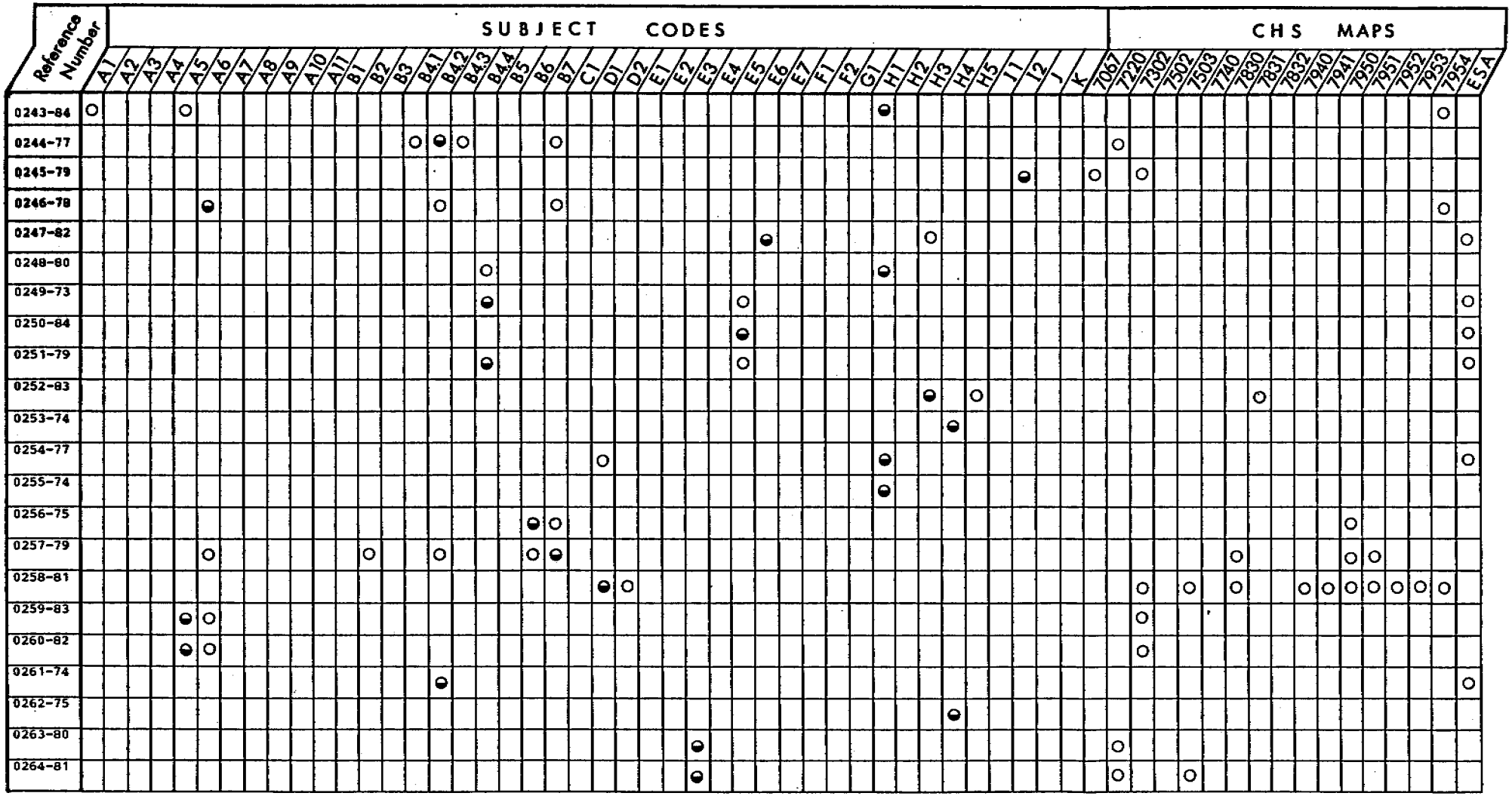
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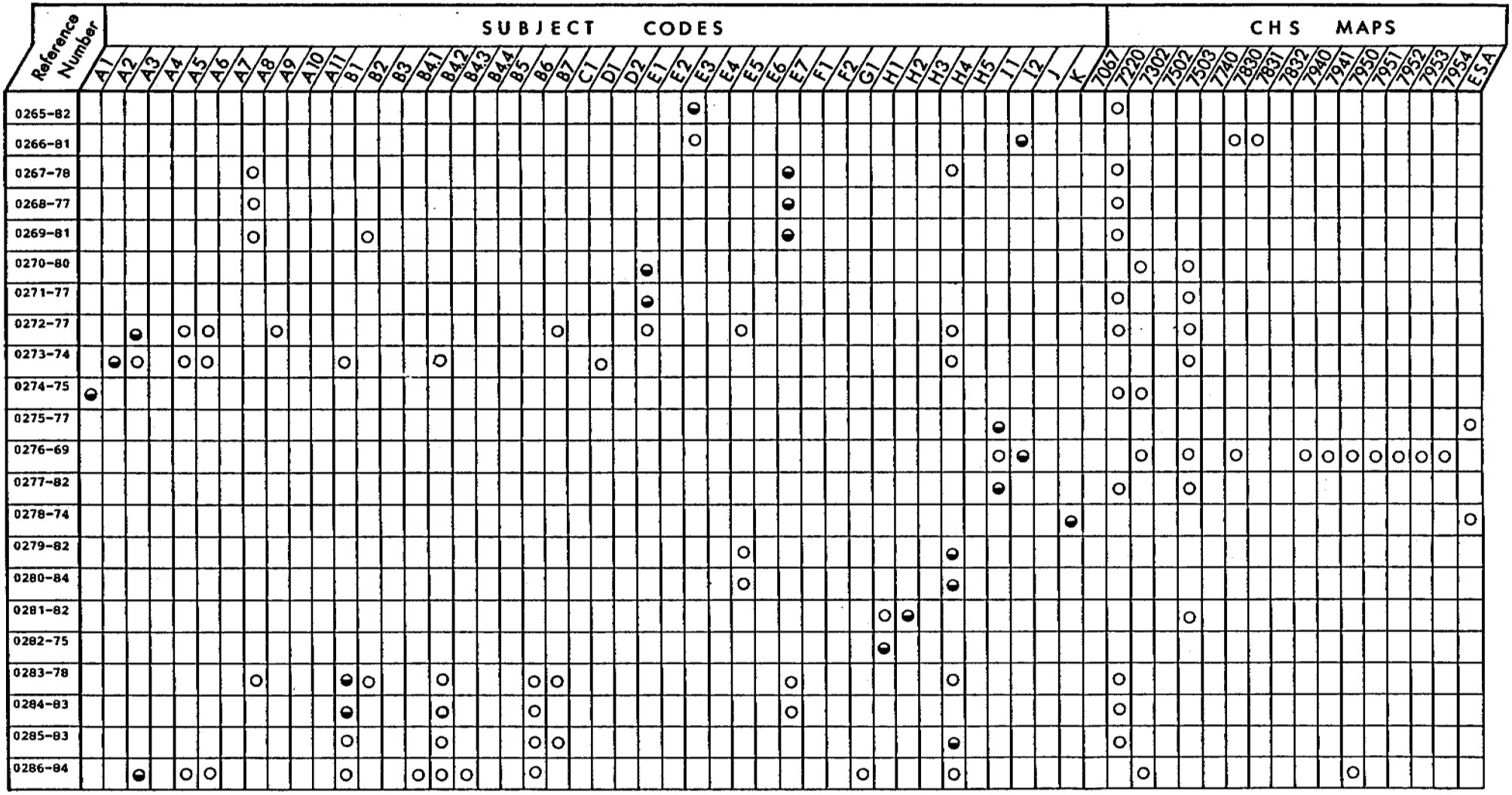
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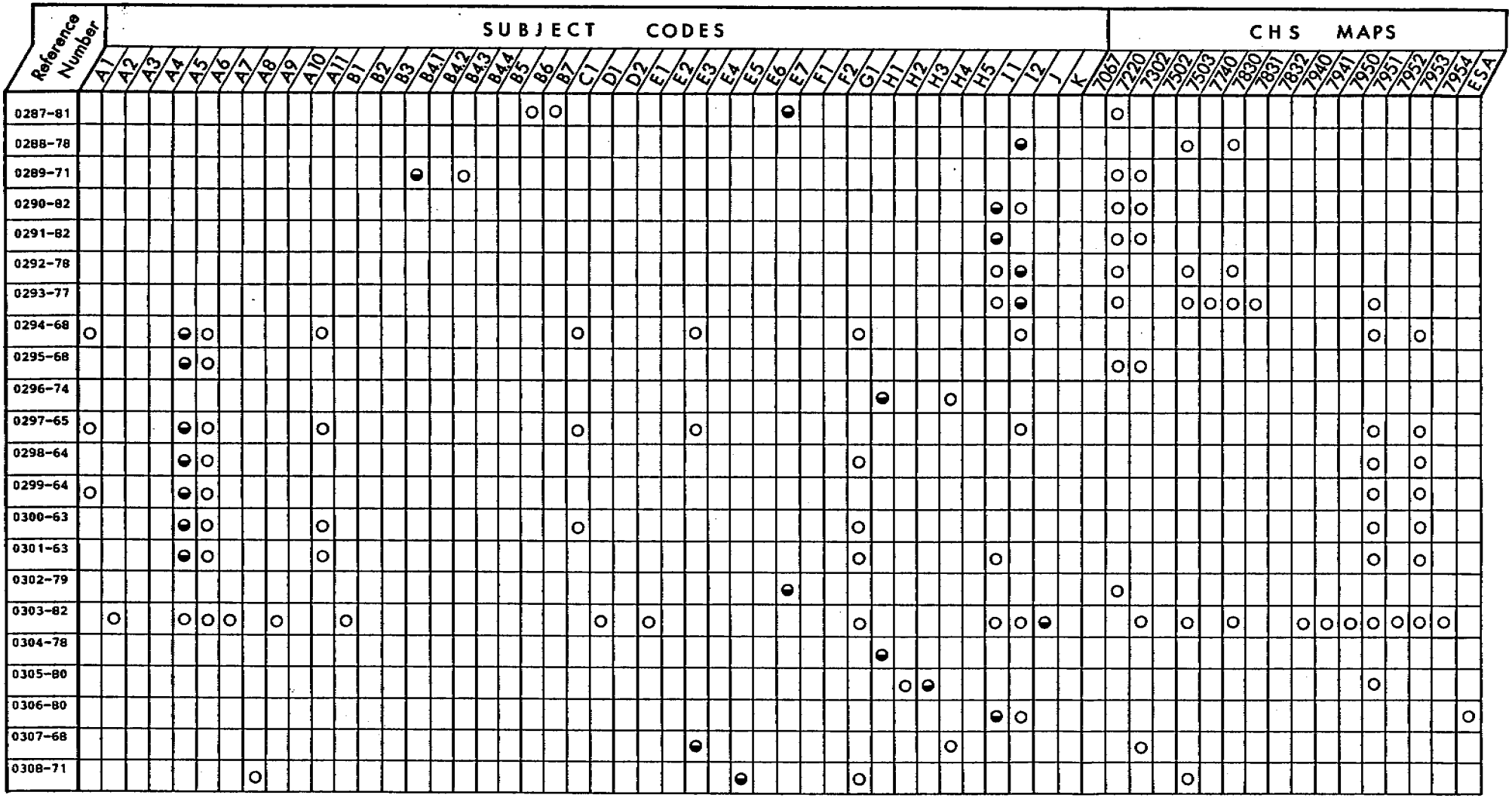
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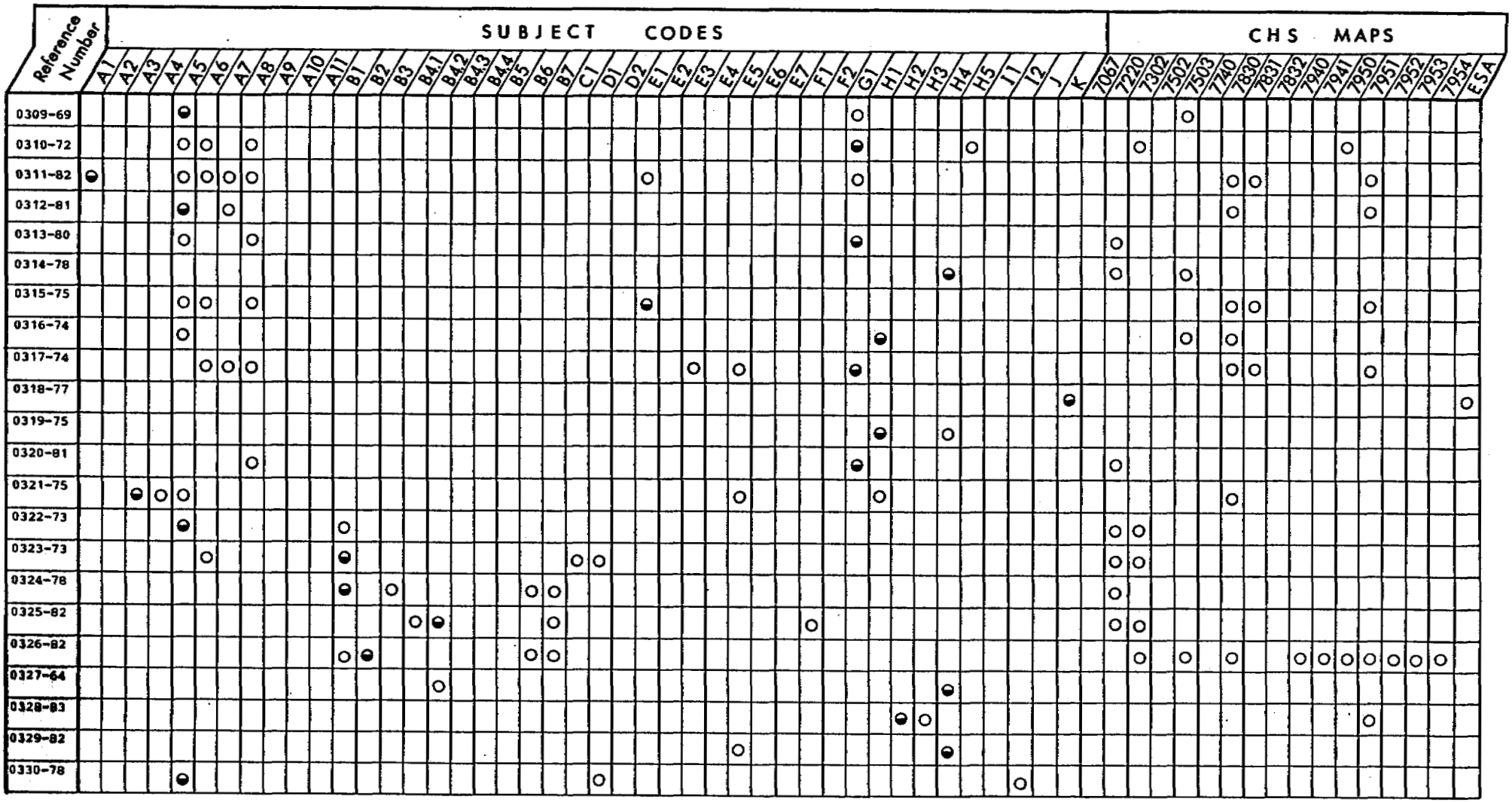
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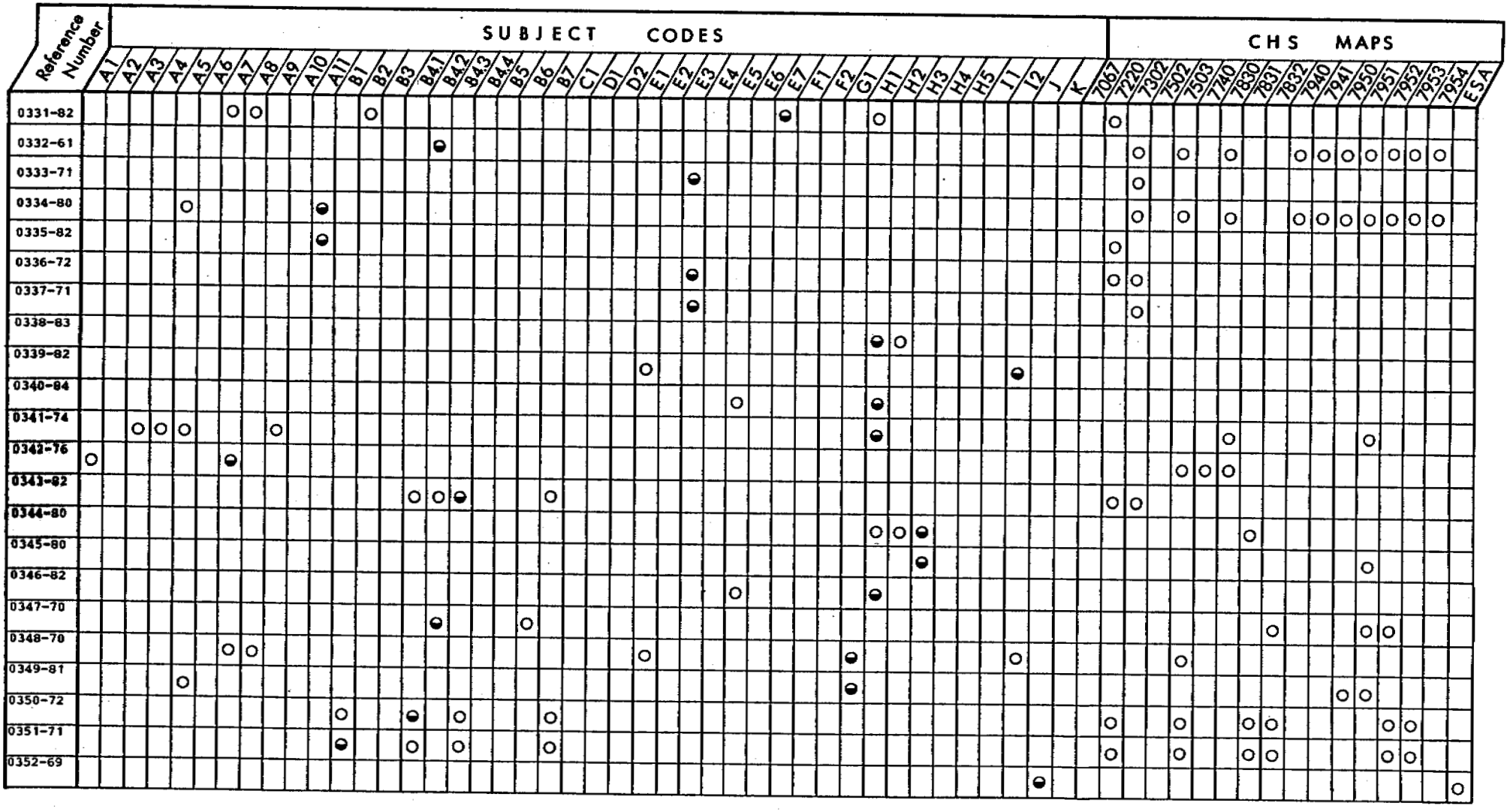
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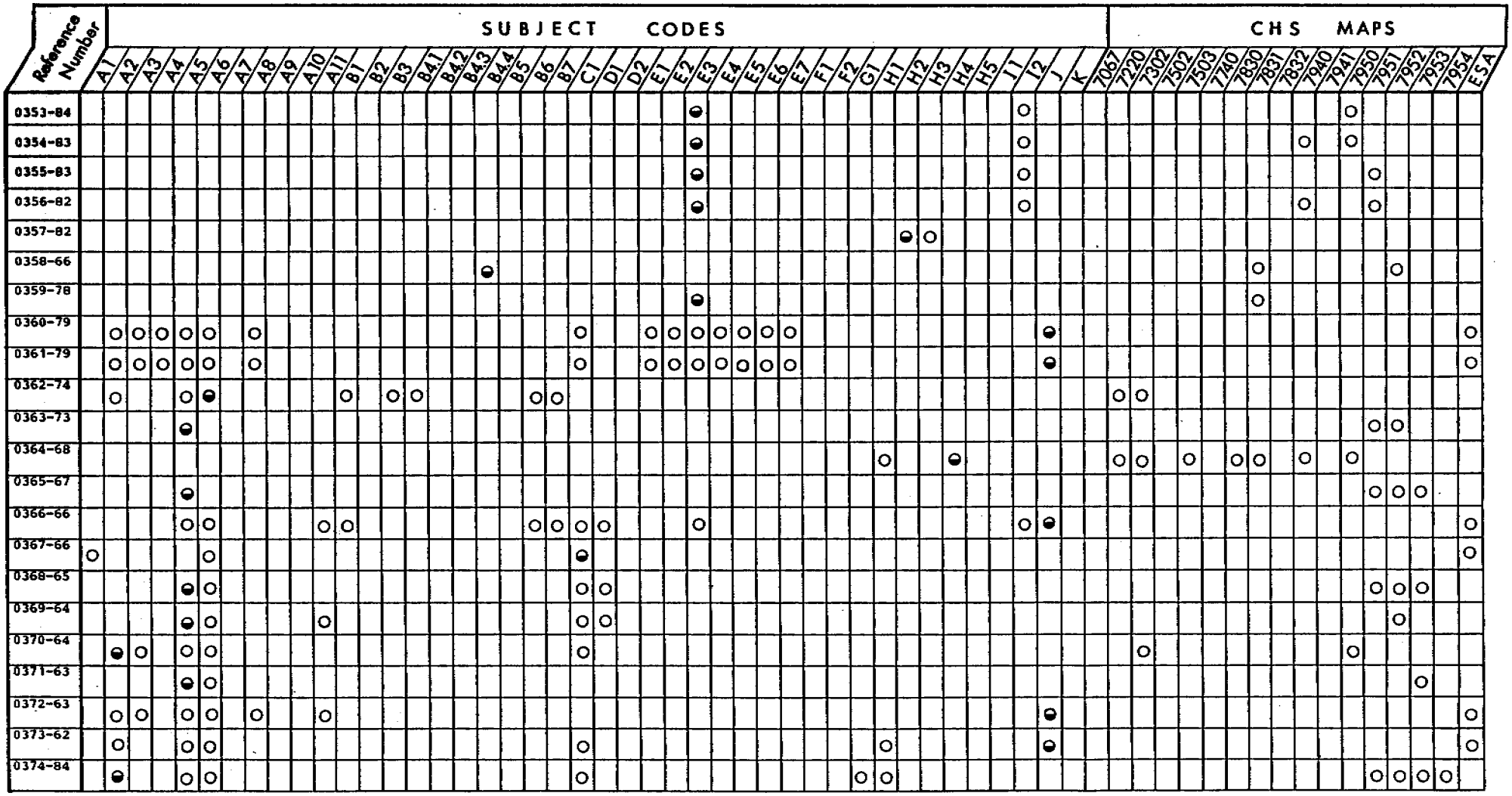
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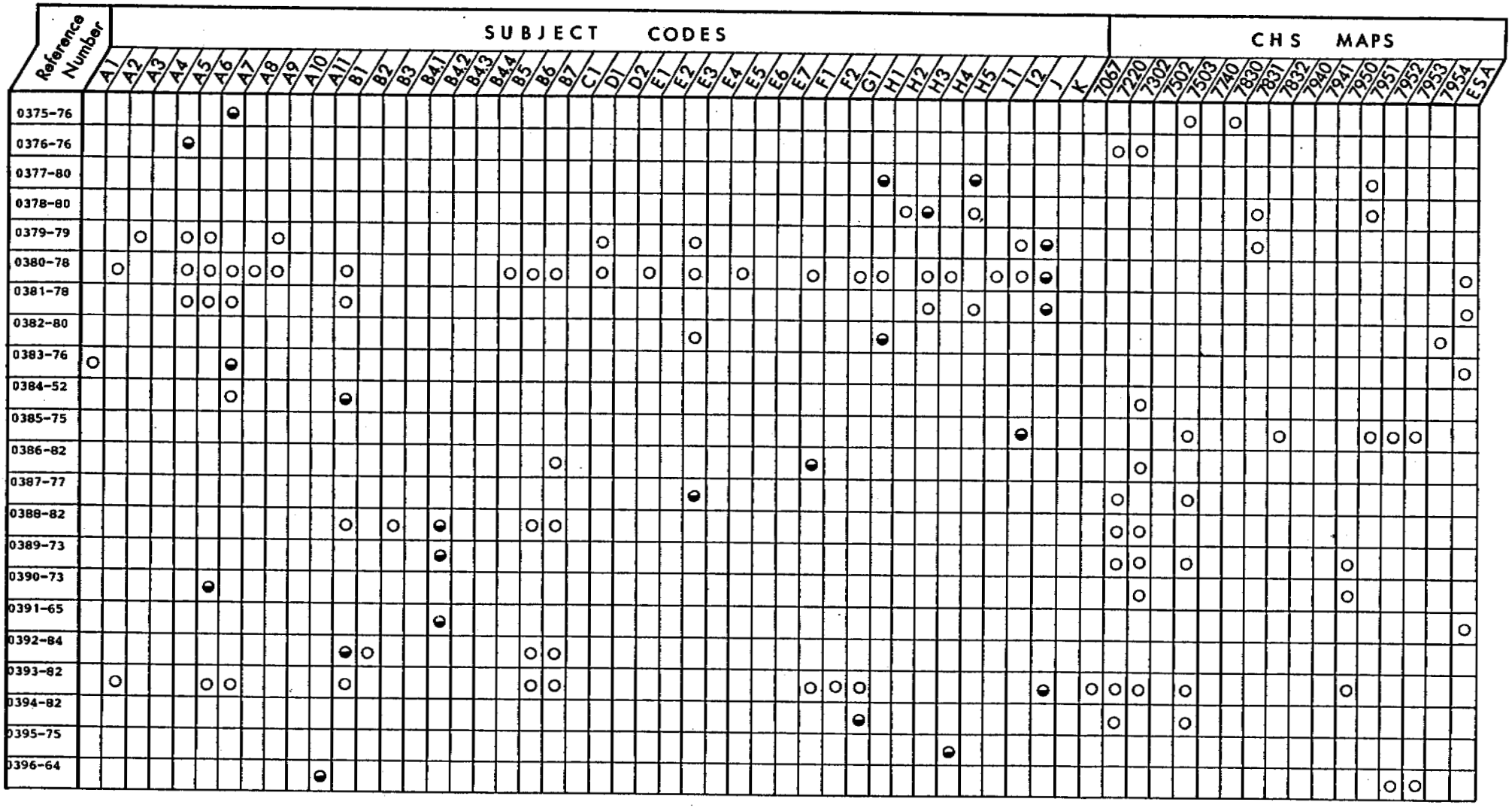
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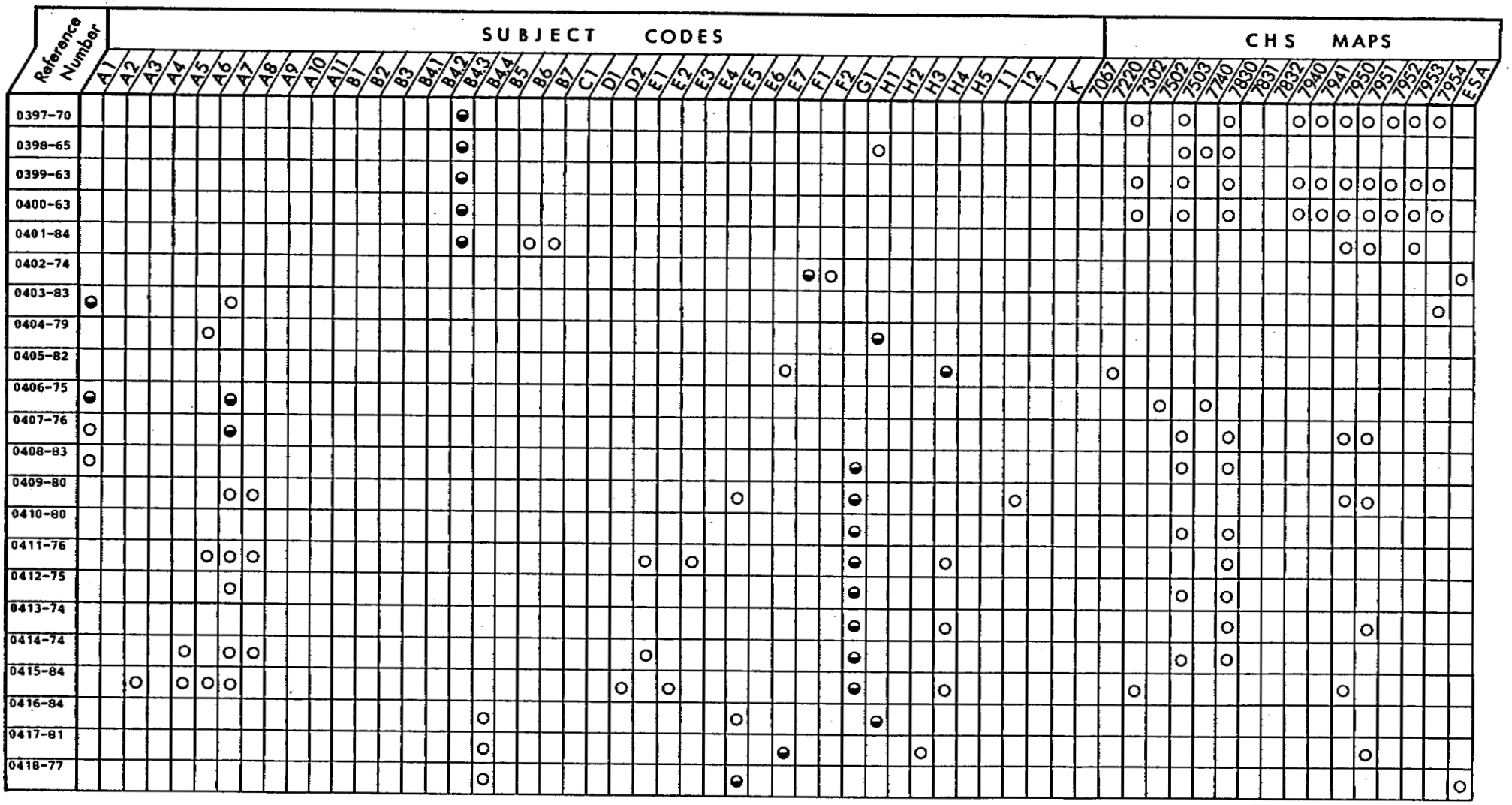
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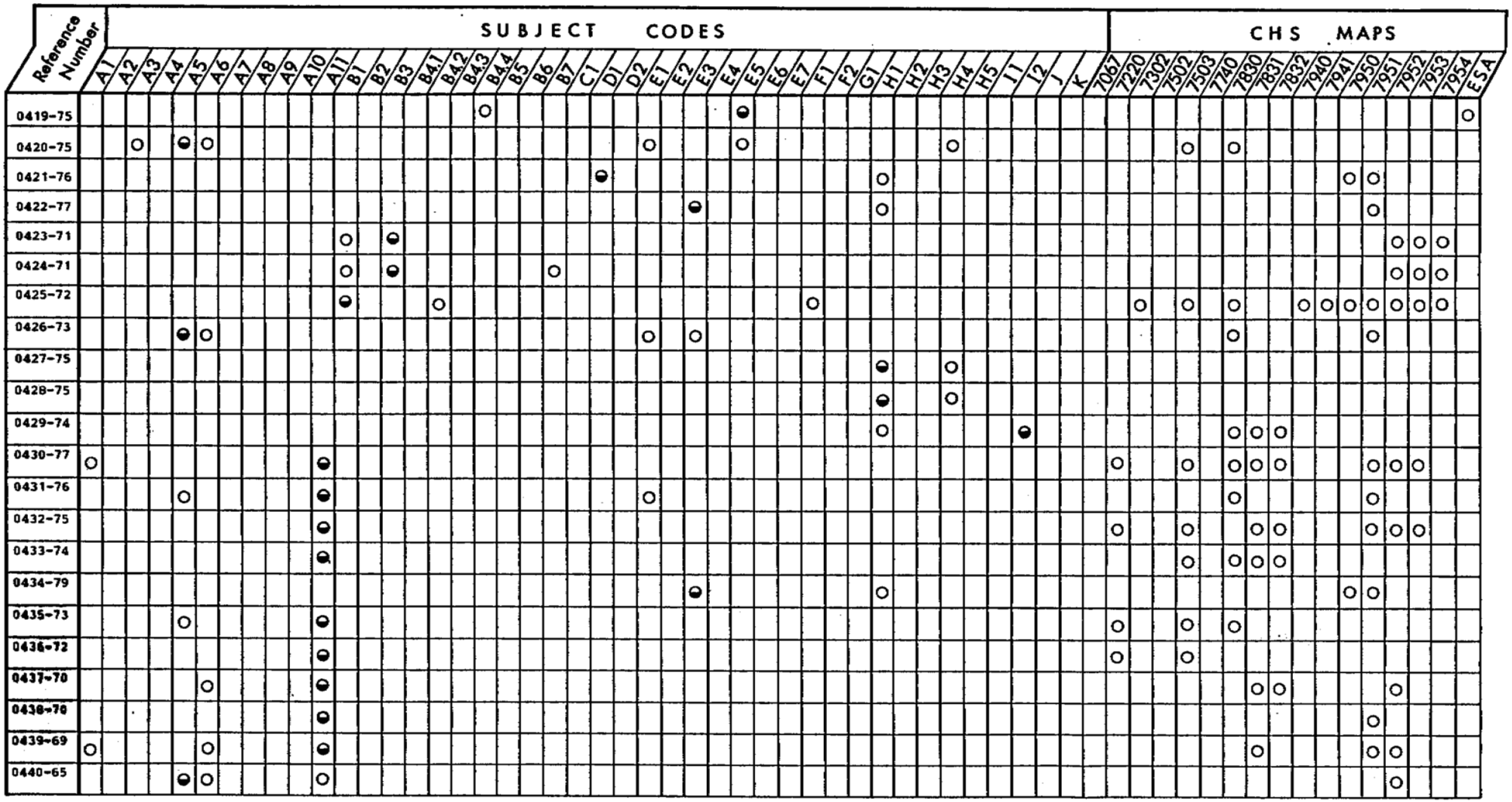
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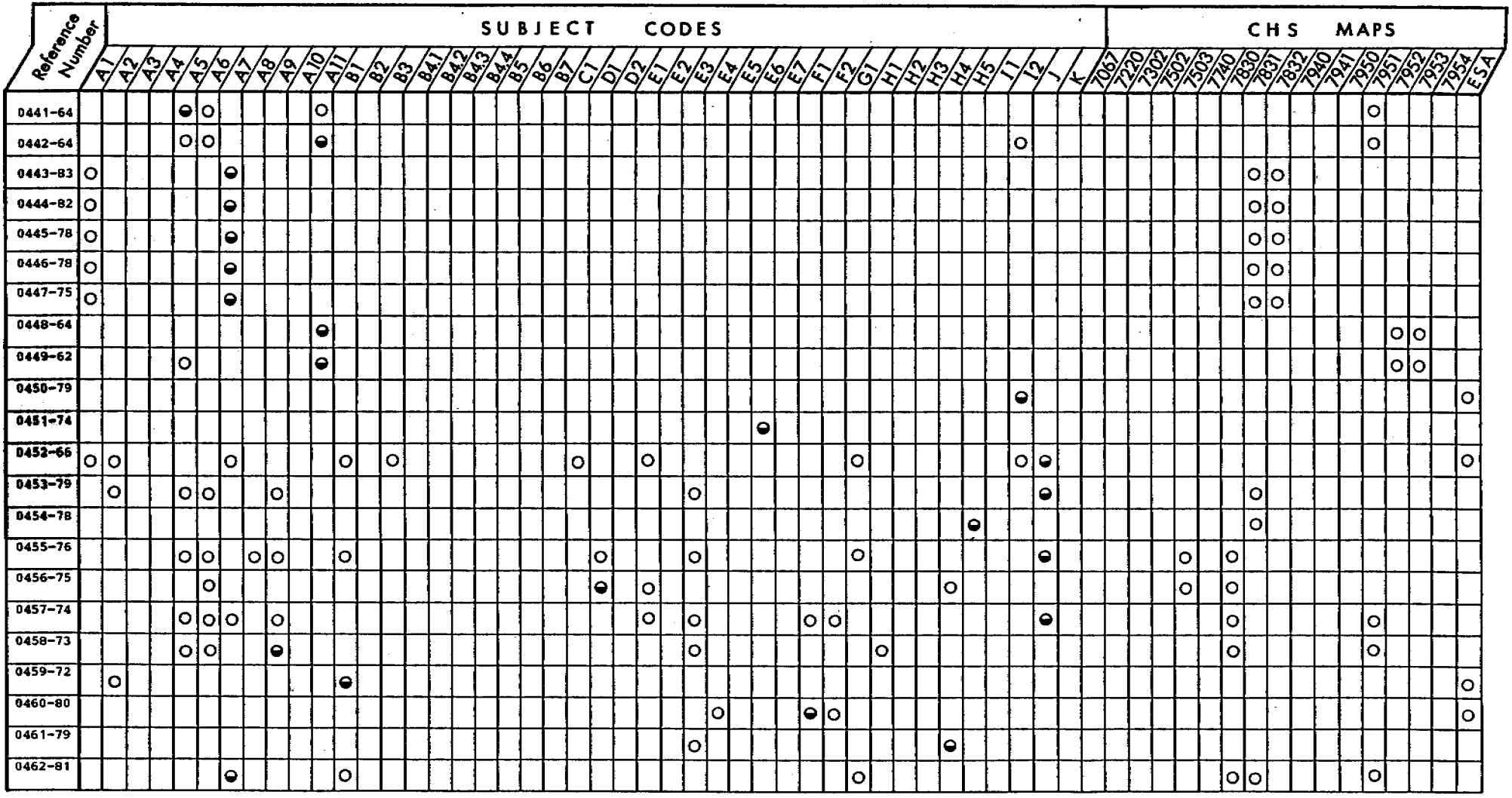
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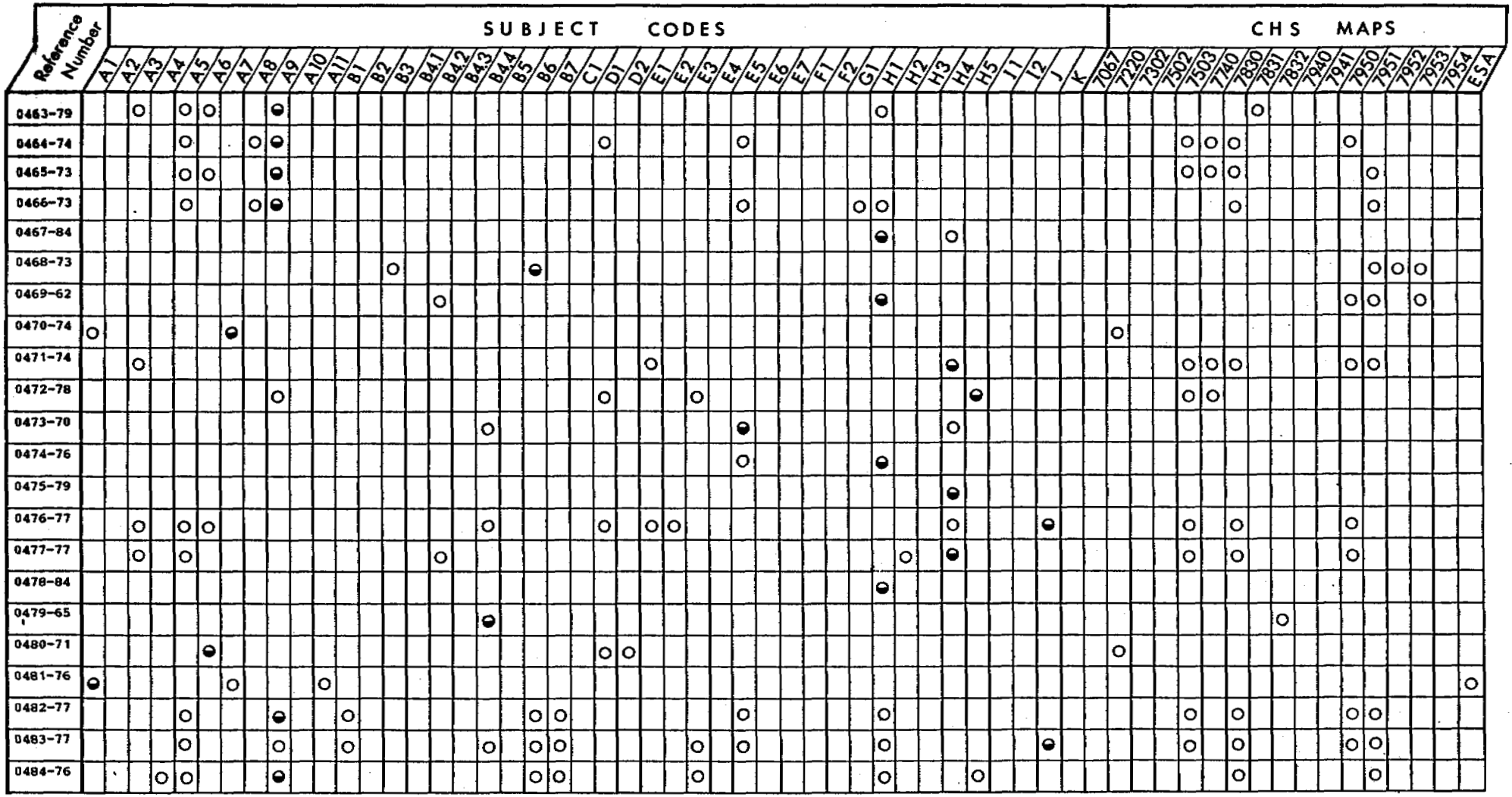
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A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 B1 B2 B3 B4.1 B4.2 B4.3 B4.4 B5 B6 B7 C1 D1 D2 E1 E2 E3 E4 E5 E6 E7 F1 F2 G1 H1 H2 H3 H4 H5 I1 I2 J K
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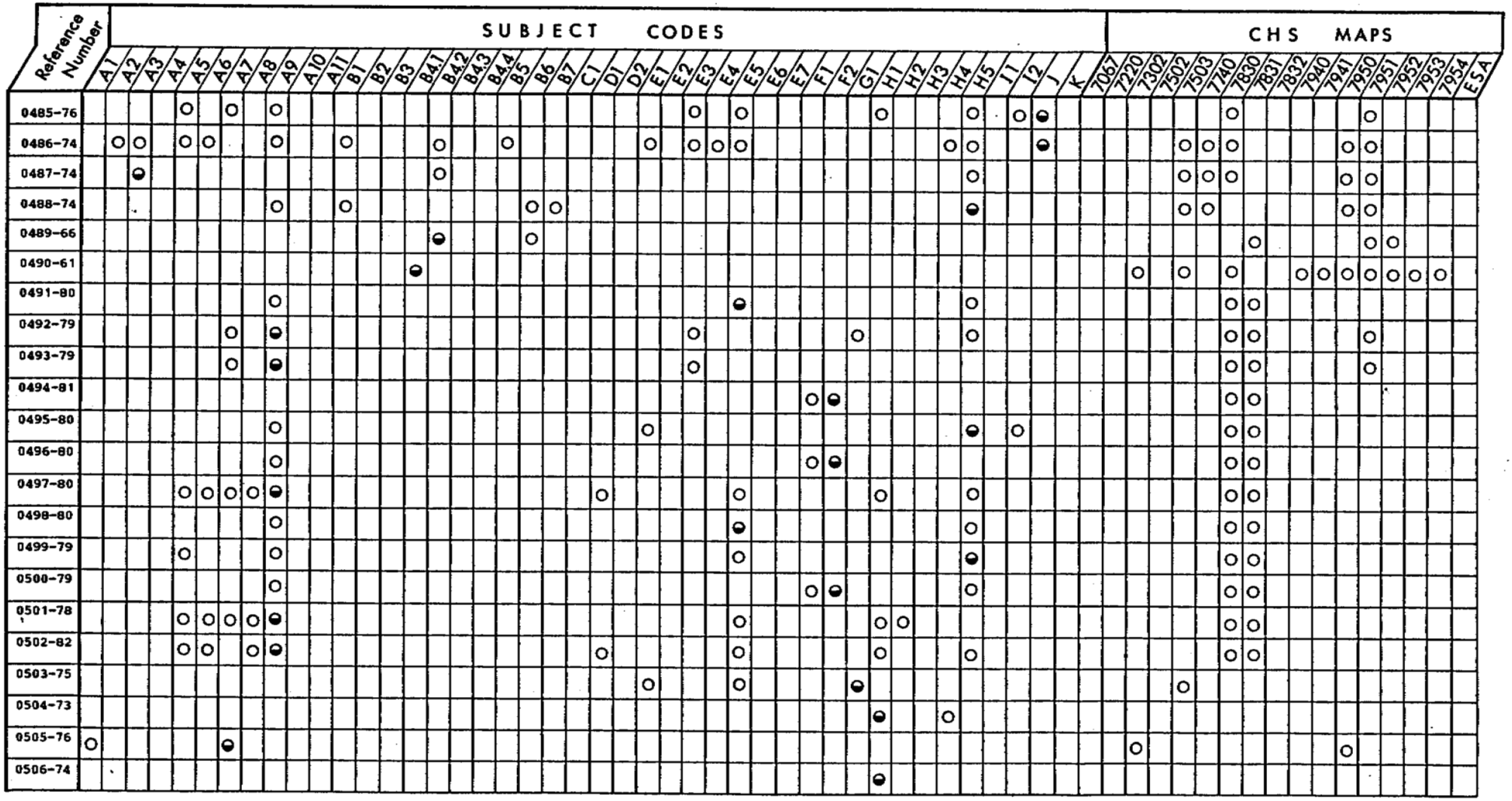
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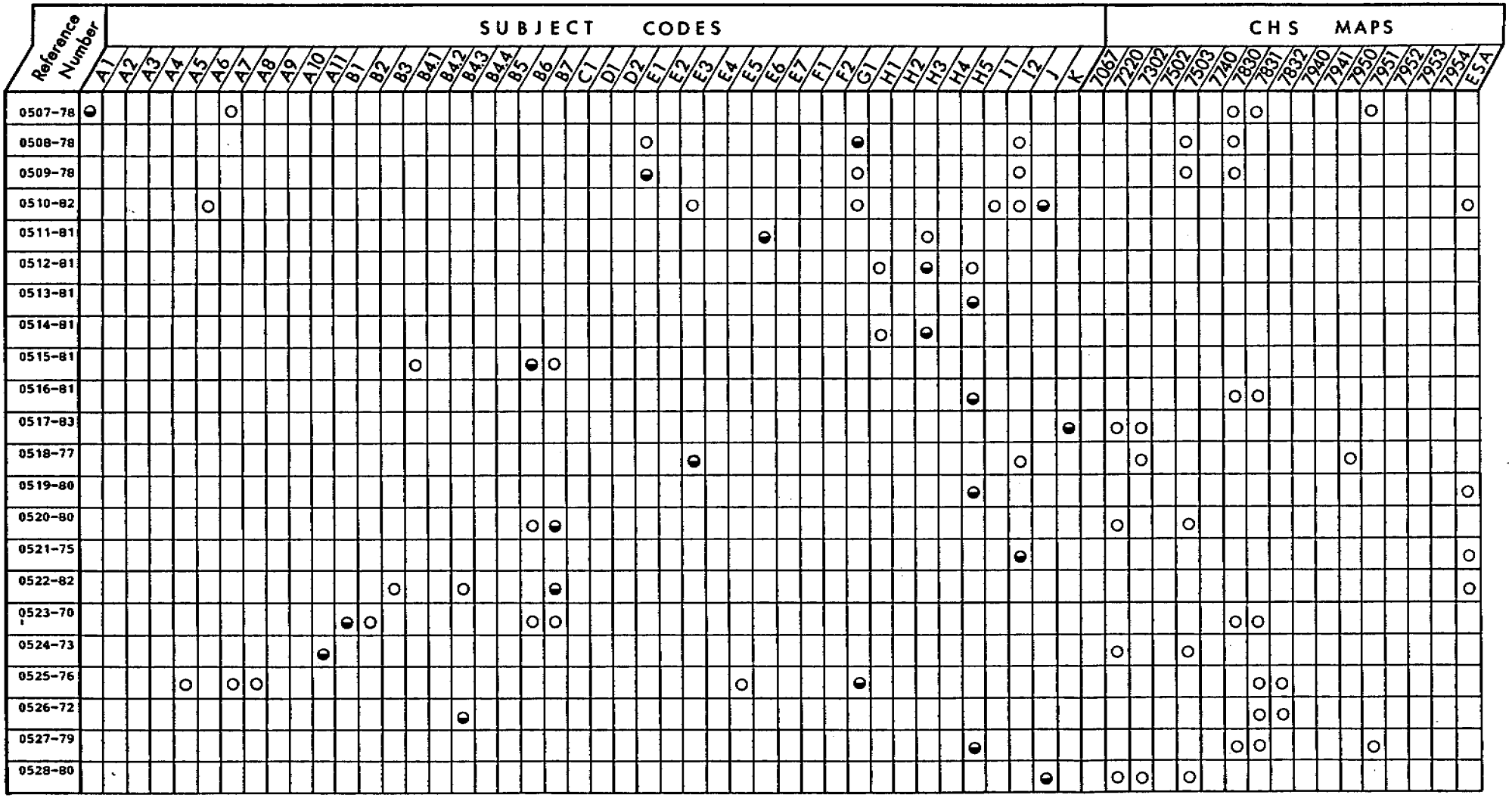
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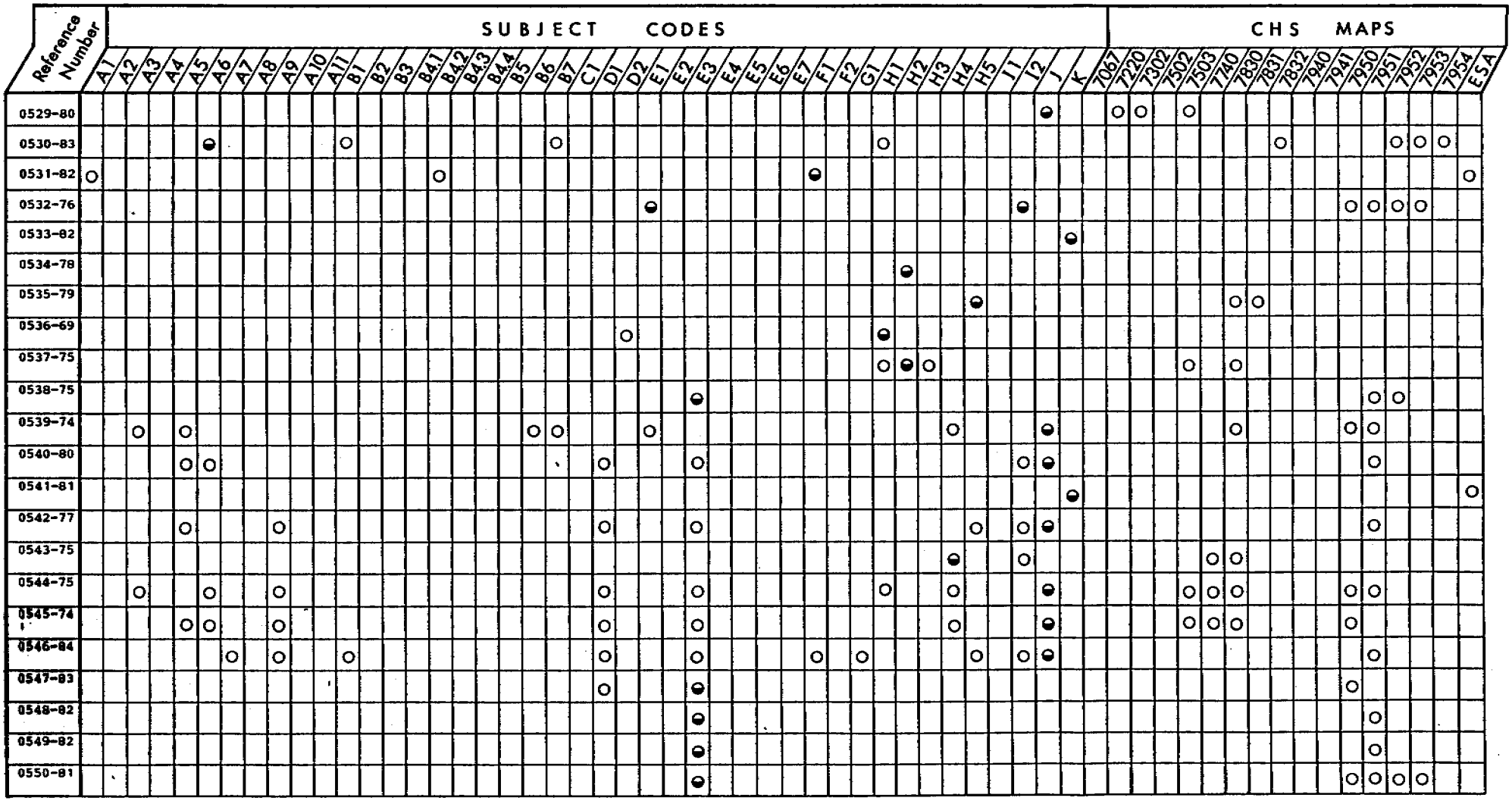
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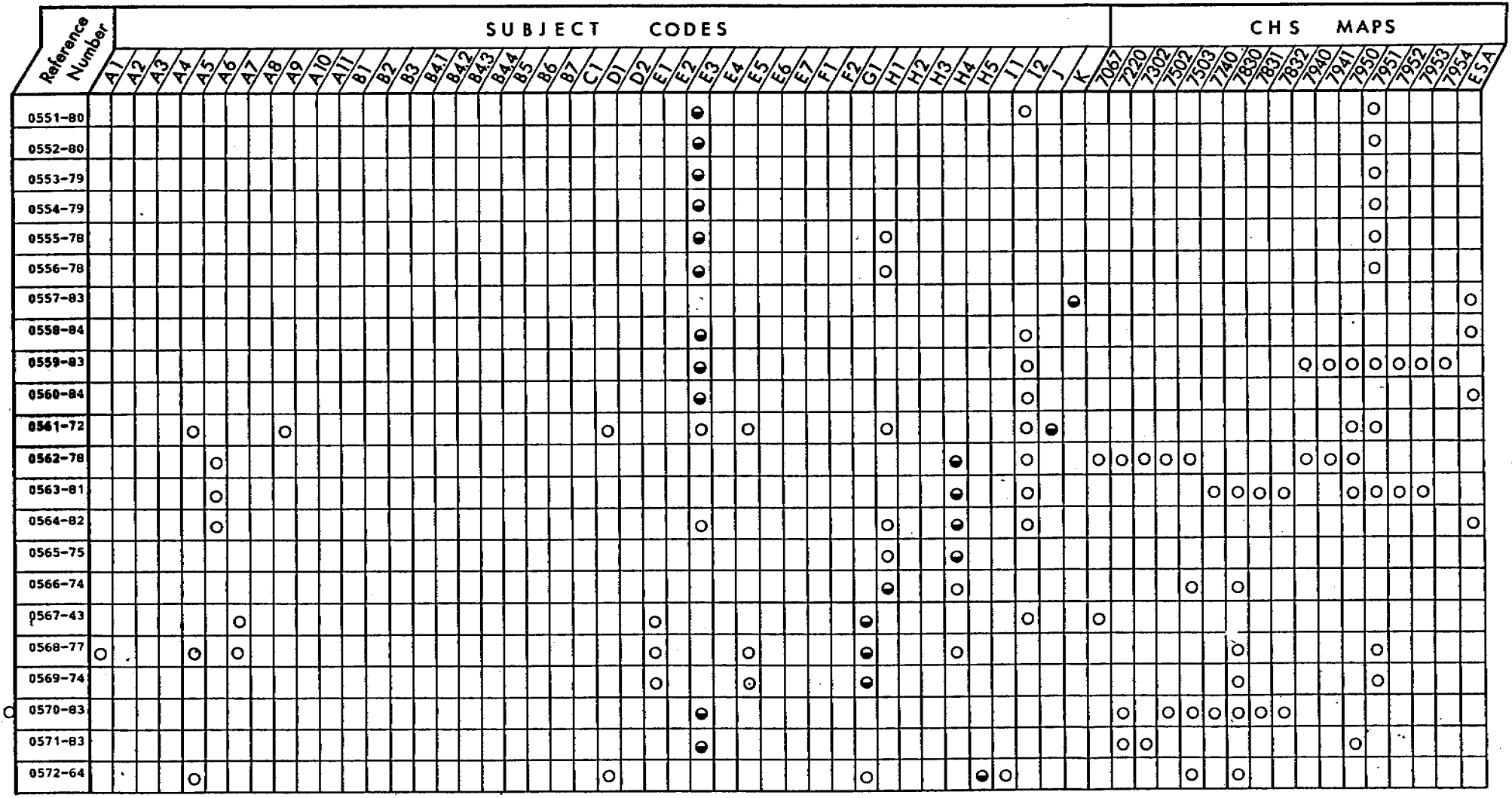
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CHS MAPS
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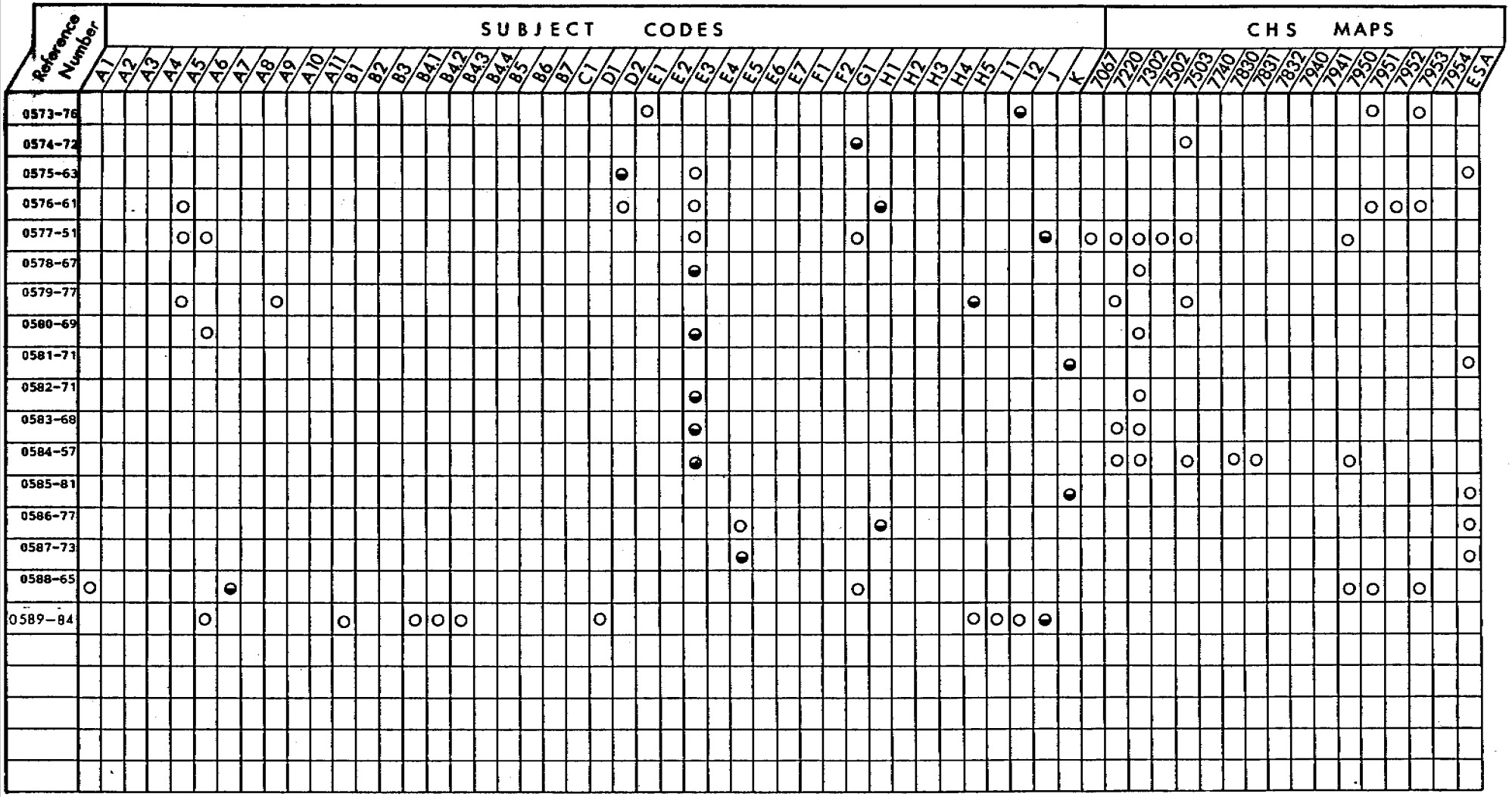
0572-64


Reference Number
SUBJECT CODES
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CHS MAPS
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0582-71
0583-68
0584-57
0585-81
0586-77
0587-73
0588-65
0589-84

6.0 ANNOTATED BIBLIOGRAPHY

REF. NO.: 0001-81

SUBJECT CODES: A1

AUTHOR: AKSU, A. E.
Department of Geology, Dalhousie University,
Halifax, Nova Scotia

YEAR: 1981

TITLE: Glacial to Interglacial Oceanographic Changes in Baffin Bay and Davis Strait Including a Continuous Record of the Last 400,000 Years

SOURCE: Proceedings, 16th Annual Meeting, Northeastern Section, The Geological Society of America, Bangor, Maine, April 1981, 121 p.

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

The Upper Quaternary stratigraphic framework and paleoceanographic history of the Baffin Bay area have been reconstructed based on analysis of volcanic ash and micropaleontological data from a series of deep piston cores. Oxygen isotope analyses of planktonic foraminifera from two cores produce isotopic curves similar to those previously established for the Atlantic Ocean.

REF. NO.: 0002-73

SUBJECT CODES: A5 (E3)

AUTHOR: BAKER, S. R. and FRIEDMAN, G. M.
Department of Geology, Rensselaer Polytechnic Institute, Troy, New York

YEAR: 1973

TITLE: Sedimentation in an Arctic Marine Environment: Baffin Bay Between Greenland and the Canadian Arctic Archipelago

SOURCE: In Earth Science Symposium on Offshore Eastern Canada, Edited by Peter J. Hood, Geological Survey of Canada, Paper 71-23, pp. 471-498.

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Analysis of cores and grab samples from Baffin Bay indicates that sediment texture reflects the local bottom topography and the random distribution of sediments by ice-rafting. The distribution of ice-rafted sand and gravel can be related to the surface currents in Baffin Bay. The shelf sediments are composed by and large of sands and gravels intermixed with mud. Large depressions on the shelf contain fine-grained sediments similar to those that floor the deep bathyal basin in the central part of Baffin Bay. Fine-grained sediments extend from the mouths of the fiords north of Disko Island across the continental shelf to the bottom of the basin. These fine-grained sediments are inferred to have been deposited as a hyperpycnal deltaic flow that issued from the margin of the glaciers.

The sediment currently being deposited in many areas of the bay is not representative of the underlying sediments. Many cores exhibit alternating intervals of coarse and fine-grained sediments indicating varying processes of sedimentation in the past.

Bottom currents are discounted as important oxidation agents because the presence of significant percentages of fine-grained material at almost every sampling locality indicates very slow current velocities. Sandy layers which occur in the deeper areas of the bay probably were formed by localized downslope movements of sediment rather than by the winnowing action of bottom currents.

REF. NO.: 0003-83

SUBJECT CODES: A5 (A1, A3, A6, A9, B6, D1, E1, E2, H4)

AUTHOR: SYVITSKI, J. P. M.
Atlantic Geoscience Centre, Geological Survey of Canada, Dartmouth, Nova Scotia
BLAKENEY, C. P.
Bedford Institute of Oceanography, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Sedimentology of Arctic Fjords Experiment: HU 82-031 Data Report, Vol. 1

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences, No. 12 (also Geological Survey of Canada, Open File No. 960)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This is the first report in a series on the Sedimentology of Arctic Fjords Experiment (Geological Survey of Canada project 810042). The data are reported in 20 chapters: 35 scientists participated in the project.

REF. NO.: 0004-74

SUBJECT CODES: A7 (A1)

AUTHOR: BALKWILL, H. R., ROY, K. J. and HOPKINS, W. S.
Geological Survey of Canada, Calgary, Alberta
SLITER, W. V.
United States Geological Survey, Menlo Park, California

YEAR: 1974

TITLE: Glacial Features and Pingos, Amund Ringnes Island, Arctic Archipelago

SOURCE: Canadian Journal of Earth Sciences, Vol. 11, pp. 1319-1325

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

Evidence of widespread glaciation of Amund Ringnes Island includes: northwestward-striking grooves and striations in bedrock at three widely separated localities and at elevations of about 60 m, 150 m, and 230 m; and abundant striated erratics, including granite and gneissic rocks. Isolated, sinuous deposits of boulder gravel may be eskers. Dated barnacle shells at approximately 30 m and 35 m above sea level indicate that significant rebound has occurred in the last 8000 to 8500 years, following removal of the ice load.

A cluster of small, but well-developed pingos lies on a nearly flat, featureless plain in the central part of the island.

REF. NO.: 0005-69

SUBJECT CODES: B4.2

AUTHOR: POLAR CONTINENTAL SHELF PROJECT
(Geological Survey of Canada, individual author unknown)

YEAR: 1969

TITLE: Seismic Data, Polar Continental Shelf Project, Athabasca Sandstone Area, Hudson Bay Basin

SOURCE: Geological Survey of Canada, Open File No. 15

STATUS: Public

MAP NUMBERS: 7953

COMMENTS/SUMMARY:

All data are from refraction profiles with the exception of one short reflection spread in Deer Bay, Ellef Ringnes Island.

REF. NO.: 0006-71

SUBJECT CODES: B1

AUTHOR: CHRISTIE, R. L.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgray, Alberta

YEAR: 1971

TITLE: Geology of Prince of Wales and Adjacent Small Islands, District of Franklin, Northwest Territories (67H, 68A-E)

SOURCE: Geological Survey of Canada, Open File No. 66

STATUS: Public

MAP NUMBERS: 7740, 7830

COMMENTS/SUMMARY:

Scale 1:125 000. Examination Points: Ottawa and Calgary. Copies: Orhan's Reproductions & Photomapping Ltd., Calgary, Alberta

REF. NO.: 0007-73

SUBJECT CODES: A11

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1973

TITLE: A Study of Globorotalia Pachyderma (Ehrenberg) = Globigerina Pachyderma (Ehrenberg) in the Canadian Arctic

SOURCE: Ph.D. Thesis, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia

STATUS: Public

MAP NUMBERS: N/D

COMMENTS/SUMMARY:

Available from the National Library of Canada

REF. NO.: 0008-82

SUBJECT CODES: K

AUTHOR: POLAR GAS LTD.
Toronto, Ontario

YEAR: 1982

TITLE: Polar Gas Engineering Studies, Reports and Papers

SOURCE: Polar Gas Project

STATUS: Proprietary

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This compilation contains all studies, reports and/or papers held in the Polar Gas library. These have been arranged chronologically and by doctrine. Chronologically the studies, reports and/or papers are listed by year and by subject. Whether the study, report or paper desired is located either chronologically or by doctrine, the library reference is included in the index in order that the librarian can locate the required document.

REF. NO.: 0009-75

SUBJECT CODES: A11

AUTHOR: LICHTI-FEDEROVICH
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: A Preliminary List of Diatoms from Sea Floor Sediments in Croker Bay, Devon Island, District of Franklin

SOURCE: In Report of Activities, Part B, Geological Survey of Canada. Paper 76-1B, pp. 133-136

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

The site selection and collection of the core from which the diatoms were extracted (Station 95; 74°45.71'N, 83°13.2'W) were carried out under the direction of W. Blake, Jr. during cruise 74-026 of C.S.S. Hudson. The site is situated in the central inner part of Croker Bay, the easternmost bay along the south coast of Devon Island, approximately 20 km north-northeast of Cape Rosamond and 6.5 km south of the snout of an unnamed outlet glacier from the Devon Island Ice Cap. This preliminary investigation has shown that all samples from Station 95 in Croker Bay contain only Pleistocene assemblages as shown by a comparison with the comprehensive floristic surveys of Grontved and Seidenfaden (1938) and Seidenfaden (1947).

REF. NO.: 0010-73

SUBJECT CODES: B4.3

AUTHOR: SOBCZAK, L. W. and WEBER, J. R.
Earth Physics Branch
Energy, Mines and Resources Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Crustal Structure of Queen Elizabeth Islands and Polar Continental Margin, Canada

SOURCE: Arctic Geology, American Association of Petroleum Geologists, Memoir 19, pp. 1-15

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Free-air and Bouguer anomaly maps have been compiled from about 9000 gravity measurements made throughout the Canadian Arctic Archipelago and the Arctic Ocean. These measurements form part of a major survey of the Arctic being carried out by the Canadian government. Correlation of Bouguer anomalies with geologic and physiographic features shows that negative anomalies generally occur over sedimentary basins and mountainous regions and positive anomalies occur over fold belts and the ocean basin. The major feature of the free-air anomaly map is a series of large, positive, elliptically shaped anomalies overlying the continental margin and striking parallel with the continental break.

REF. NO.: 0011-82

SUBJECT CODES: I2 (E3, H1, I1)

AUTHOR: INSTITUTE OF OCEAN SCIENCES
Department of Fisheries and Oceans
Sidney, British Columbia

YEAR: 1982

TITLE: 1982 Annual Review of Activities

SOURCE: Institute of Ocean Sciences, Department of Fisheries and Oceans, 102 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report describes the activities of the Institute of Ocean Sciences. Of special interest to this bibliography are the programs conducted on hydrography, oceanography and sedimentology. Projects in progress and planned activities for 1983 are described. Also see Appendix G for individual excerpts.

REF. NO.: 0012-83

SUBJECT CODES: I2 (E3, H1, I1)

AUTHOR: INSTITUTE OF OCEAN SCIENCES
Department of Fisheries and Oceans
Sidney, British Columbia

YEAR: 1983

TITLE: 1983 Annual Review of Activities

SOURCE: Institute of Ocean Sciences, Department of Fisheries and Oceans

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report describes the activities of the Institute of Ocean Sciences. Of special interest to this bibliography are the programs conducted on hydrography, oceanography and sedimentology. Projects in progress and planned activities for 1984 are described. Also see Appendix G for individual excerpts.

REF. NO.: 0013-72

SUBJECT CODES: B6

AUTHOR: ROY, K. J.
Geological Survey of Canada

YEAR: 1972

TITLE: List of Published Measured Lithologic Sections in the Canadian Arctic Islands with Index Map Showing Number of Section and Location

SOURCE: Geological Survey of Canada, Open File No. 94

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Copies: Orhan's Reporductions & Photomapping Ltd., Calgary, Alberta

REF. NO.: 0014-73

SUBJECT CODES: B1

AUTHOR: THORSTEINSSON, R.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1973

TITLE: Geological Maps of Parts of the Canadian Arctic Archipelago Accompanied by a Legend and Five Pages of Notes; Prince Alfred (59B), Resolute (58F), Baillie-Hamilton Island (58G), Lowther Island (68E) and McDougall Sound (68H) Map Areas

SOURCE: Geological Survey of Canada, Open File No. 139

STATUS: Public

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0015-73

SUBJECT CODES: B1

AUTHOR: BALKWILL, H. R., ROY, K. J., SLITER, W, V. and HOPKINS, W. S.
Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada, Calgary, Alberta

YEAR: 1973

TITLE: Geology, Amund Ringnes Island and Haig-Thomas Island, District of Franklin, North West Territories (Parts of 59C, F, 69D and E)

SOURCE: Geological Survey of Canada, Open File No. 159

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Orhan's Reproductions & Photomapping Ltd., Calgary, Alberta

REF. NO.: 0016-73

SUBJECT CODES: B1

AUTHOR: TRETTIN, H. P.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1973

TITLE: Preliminary 1:1 000 000 Geological Atlas Sheets of Eureka Sound and Robeson Channel Area, Canadian Arctic Islands (NTS 560, 340, and Canadian Part of 120)

SOURCE: Geological Survey of Canada, Open File No. 174

STATUS: Public

MAP NUMBERS: 7940

COMMENTS/SUMMARY:

Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0017-74

SUBJECT CODES: A5 (A6, B6, B7)

AUTHOR: GEOLOGICAL SURVEY OF CANADA
(Author not given in citation)

YEAR: 1974

TITLE: Bedrock and Unconsolidated Sediment Thickness Maps at a Scale of 1:100 000 of the Portion of Lancaster Sound between 86°15'W and 90°0'W,

SOURCE: Geological Survey of Canada, Open File No. 204
Plus Two Interpreted Geological Cross-Sections

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

Copies: Available on microfilm or paper copy from Precision Microfilming, Halifax, Nova Scotia.

Open File not examined.

REF. NO.: 0018-75

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M., EDLUND, S. A. and DREDGE, L. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Terrain Classification and Evaluation -- Eastern Melville Island, Northwest Territories (78H, 79A, B and Part of 78G)

SOURCE: Geological Survey of Canada, Open File No. 252

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

Scale: 1:125 000.

REF. NO.: 0019-75

SUBJECT CODES: B1

AUTHOR: BALKWILL, H. R., ROY, K J., HOPKINS, Jr., W. S., SLITER, W. V. and WILSON, D. G.
Geological Survey of Canada

YEAR: 1975

TITLE: Geology, Cornwall Island, Northwest Territories (Parts of 59C and D)

SOURCE: Geological Survey of Canada, Open File No. 278

STATUS: Public

MAP NUMBERS:

COMMENTS/SUMMARY:

Scale: 1:63 500. Copies: Riley's, Calgary

REF. NO.: 0020-59

SUBJECT CODES: A5 (A6, A11)

AUTHOR: FORGERON, F. D.
Atlantic Oceanographic Group
Fisheries Research Board of Canada

YEAR: 1959

TITLE: A Preliminary Study of Foxe Basin Bottom Sediments

SOURCE: Fisheries Research Board of Canada, Manuscript Report Series (Oceanographic and Limnological) No. 45, September 21, 1959, 45 p.

STATUS: Public

MAP NUMBERS: 7067, 7502, 7503

COMMENTS/SUMMARY:

One hundred seventy-four bottom samples were collected in northern Hudson Bay, Foxe Basin, Gulf of Boothia and Prince Regent Inlet.

Mechanical analysis revealed a wide range of particle sizes in Foxe Basin. Water movements have sorted some of the sediments into specific sedimentary types but in many areas other factors mask the extent of water sorting. The sediments of Foxe Basin and northern Hudson Bay were found to be similar. A smaller range of particle sizes was found in the Gulf of Boothia and Prince Regent Inlet than in Foxe Basin. Sedimentary conditions in Prince Regent Inlet and the Gulf of Boothia suggest weak currents and limited rafting by ice.

Carbonate content analysis of particles less than 0.5 mm in diameter revealed a higher carbonate content in Foxe Basin than in the other areas studied. The sedimentary carbonate content of the basin is approached only by that in northern Hudson Bay. The large proportion of finely divided carbonate in the basin derives its origin from the large proportion of limestone. The high carbonate percentage is believed to be responsible for the prolific shelly fauna.

REF. NO.: 0021-83

SUBJECT CODES: J

AUTHOR: BEDFORD INSTITUTE OF OCEANOGRAPHY
Dartmouth, Nova Scotia

YEAR: 1983

TITLE: BIO Review '83

SOURCE: Bedford Institute of Oceanography, Dartmouth, Nova Scotia

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report reviews the activities of the Bedford Institute of Oceanography. This particular issue concentrates on surveys and monitoring, charts, atlases, and data reports. Individual sections describe the following: data gathering, data processing, designing data collecting instruments, environmental advisory, charts and publications, 1982 voyages, project listings and excerpts from the BIO Log.

REF. NO.: 0022-61

SUBJECT CODES: B1

AUTHOR: CHRISTIE, R. L.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1961

TITLE: Geology, Southeast Ellesmere Island, District of Franklin

SOURCE: Geological Survey of Canada, Map 12-1962

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Map not examined

REF. NO.: 0023-76

SUBJECT CODES: B1

AUTHOR: THORSTEINSSON, R. and TOZER, E. T.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1976

TITLE: The Geology of the Arctic Archipelago

SOURCE: In Geology and Economic Minerals of Canada, Edited by R. J. W. Douglas, Geological Survey of Canada, Economic Geology Report No. 1, 5th edition, Chapter 10, pp. 548-590

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The geology of that part of the Arctic Archipelago that lies north of the Canadian Shield is dealt with in this chapter. The archipelago includes a land area of about 300 000 square miles underlain for the most part by rocks of Phanerozoic age. Precambrian rocks of other parts of the archipelago, particularly of Baffin, Somerset, and Victoria Islands, are treated in Chapter IV. Rocks of all Paleozoic and Mesozoic systems and of Cenozoic age are present. They are mainly sedimentary, but some plutonic and volcanic rocks are also found. Several intervals of Paleozoic orogeny affected parts of the area. The Mesozoic was not a time of orogenic activity, but in the Cenozoic some deformation occurred.

The area is divisible into seven major geological provinces: The Arctic Lowlands, formed of little distrubed, mainly lower Paleozoic rocks overlying the Precambrian basement; Boothia Uplift, a feature characterized by north-trending structures, mainly of Paleozoic age, with a Precambrian core exposed in the south dividing Arctic Lowlands into eastern and western parts; Franklinian Geosyncline, folded in the Paleozoic; Sverdrup Basin, which in late Paleozoic and Mesozoic time was superimposed on the folded Franklinian Geosyncline and was itself folded in the Cenozoic; Prince Patrick Uplift, an area of intermittent tectonic elevation in Mesozoic and Cenozoic time; Arctic Coastal Plain, composed of gently seaward dipping late Cenozoic strata, probably concealing the extensions of the Prince Patrick Uplift; and Arctic Continental Shelf, the seaward extension of Arctic Coastal Plain.

REF. NO.: 0024-65

SUBJECT CODES: A5

AUTHOR: GRANT, A. C.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1965

TITLE: Distribution Trends in the Recent Marine Sediments of Northern Baffin Bay

SOURCE: Bedford Institute of Oceanography Report Series 65-9, 74 p.

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Sedimentological analyses were carried out on 69 samples of bottom sediment collected in Northern Baffin Bay. In addition to mechanical size analyses, organic matter and calcium carbonate content of the sediments were determined, and lithology and abrasion of gravel-size material was evaluated. It was concluded that ice-rafting is the dominant agent of sediment transport in Northern Baffin Bay, with main ice movement occurring in the lateral zone of surface currents.

REF. NO.: 0025-74

SUBJECT CODES: A11 (A5)

AUTHOR: VILKS, S. G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1974

TITLE: The Distribution of Planktonic Foraminifera in the Sediments and Water of the Northwest Passage and Northern Baffin Bay: A Tool for Paleooceanographic Synthesis

SOURCE: Offshore Geology of Eastern Canada, Volume 1 - Concepts and Applications of Environmental Marine Geology, Edited by B. R. Pelletier, Geological Survey of Canada, Paper 74-30, (BIO contribution No. 446) pp. 109-121

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503

COMMENTS/SUMMARY:

On the basis of the differences between intraspecific variants of globorotalia pachyderma in the water column and sediments, a working hypothesis for paleooceanographic synthesis in an Arctic Basin is proposed.

REF. NO.: 0026-80

SUBJECT CODES: G1 (E1, E5)

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1980

TITLE: Beach Thaw Depth and the Effect of Ice-Bonded Sediment on Beach Stability, Canadian Arctic Islands

SOURCE: Proceedings, Canadian Coastal Conference, Burlington, Ontario, National Research Council of Canada, pp. 103-121

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

During 1974 to 1976, the progression of seasonal thaw was similar to that previously reported for other Arctic beaches. Mean annual thaw across gravel beaches was only 50 cm beneath the foreshore, the surface of ice-bonded sediment fluctuated in response to changing beach morphology and to changing salinity of the pore water.

REF. NO.: 0027-76

SUBJECT CODES: B1

AUTHOR: HENDERSON, J. R., REESOR, J. E.,
LE CHEMINANT, A. N., HUTCHEON, I. and MILLER, A.
Regional and Economic Geology Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Geology, Penrhyn Group, Melville Peninsula, Northwest Territories (Parts of 46K, N and O)

SOURCE: Geological Survey of Canada, Open File No. 307

STATUS: Public

MAP NUMBERS: 7067, 7502

COMMENTS/SUMMARY:

Scale: 1:50 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0028-76

SUBJECT CODES: K

AUTHOR: EYRE, W. H.
Geological Survey of Canada

YEAR: 1976

TITLE: Open File Index, 1967-1975

SOURCE: Geological Survey of Canada, Open File No. 308

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Full description of each file with examination points and/or reproduction form for each file listed. Examination of this file can be made at all Geological Survey of Canada libraries.

REF. NO.: 0029-76

SUBJECT CODES: A7

AUTHOR: NETTERVILLE, J.A., DYKE, A.S. and THOMAS, R. D.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Surficial Geology and Geomorphology, Somerset, Northern Prince of Wales and Adjacent Islands (58B, C, 68C, D, Parts of 58A, D, F and 68E)

SOURCE: Geological Survey of Canada, Open File No. 357

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0030-77

SUBJECT CODES: H4

AUTHOR: MACINTOSH, M., WILEY, J. D. and COURNEYA, C.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1977

TITLE: A Compendium of the Sampling and Analytical Techniques Used by the Environmental Marine Subdivision, Atlantic Geoscience Centre, Bedford Institute of Oceanography, Dartmouth, Nova Scotia

SOURCE: Geological Survey of Canada, Open File No. 397

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Copies: Precision Microfilming, Halifax, Nova Scotia.

REF. NO.: 0031-77

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M.; DREDGE, L. A. and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1977

TITLE: Terrain Characteristics, Cornwallis and Adjacent Islands, Northwest Territories (58F, G; 68E, H)

SOURCE: Geological Survey of Canada, Open File No. 457

STATUS: Public

MAP NUMBERS: 7503, 7830, 7950

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0032-77

SUBJECT CODES: A7

AUTHOR: KURFURST, P. J. and VEILLETTE, J. J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1977

TITLE: Geotechnical Characterization of Terrain Units, Bathurst, Cornwallis, Somerset, Prince of Wales and Adjacent Islands, Northwest Territories

SOURCE: Geological Survey of Canada, Open File No. 471

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830, 7950, 7951

COMMENTS/SUMMARY:

Copies not available.

REF. NO.: 0033-77

SUBJECT CODES: H1 (E5)

AUTHOR: MACAULAY, H. A., JUDGE, A. S., HUNTER, J. A., ALLEN, V. A., GAGNE, R. M., BURGESS, M., NEAVE, K. G. and COLLYER, J.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario and the Earth Physics Branch, Energy, Mines and Resources Canada, Ottawa, Ontario

YEAR: 1977

TITLE: A Study of the Subbottom Permafrost in the Beaufort Sea - Mackenzie Delta by Hydraulic Drilling Methods

SOURCE: Geological Survey of Canada, Open File No. 472
Geothermal Service of Canada Internal Report No. 77-3

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Copies: Campbell Reproductions, Ottawa, Ontario and Orhan's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0034-77

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M., DREDGE, L. A. and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1977

TITLE: Terrain Characteristics, Bathurst and Adjacent Islands, Northwest Territories (66G, 68H, 69A, B, 78H, 79A)

SOURCE: Geological Survey of Canada, Open File No. 479

STATUS: Public

MAP NUMBERS: 7830, 7950, 7951

COMMENTS/SUMMARY:

During the six-week period of March 1 to April 16, 1977, twenty-two holes were drilled from the sea-ice to maximum depths of 60 m beneath the sea-bottom of the Beaufort Sea. Each of the holes, drilled with a novel low-cost hydraulic drilling technique was instrumented with several temperature sensors which were subsequently monitored as the thermal disturbance due to the jetting dissipated. Plastic casing was installed in three holes enabling seismic and radioactive logs to be run prior to installation of the temperature cables. Preliminary results show the widespread distribution of permafrost in the sea-bottom but show additionally that it is highly variable in temperature and ice-content.

Copies: Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0035-78

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A. and EDLUND, S. A.
Terrain Sciences Divison
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Surficial Materials and Biophysical Regions, Eastern Queen Elizabeth Islands (49G and H, 340 B South)

SOURCE: Geological Survey of Canada, Open File No. 501

STATUS: Public

MAP NUMBERS: 7940, 7941

COMMENTS/SUMMARY:

This is Part II. Scale: 1:125 000. Copies: Riley's Reproduction & Printing, Ltd., Calgary, Alberta and Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0036-78

SUBJECT CODES: B1

AUTHOR: CHRISTIE, R. L.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1978

TITLE: A Structural Reconnaissance of Eastern Devon Island, Arctic Archipelago (48E, F, G, H)

SOURCE: Geological Survey of Canada, Open File No. 537

STATUS: Public

MAP NUMBERS: 7220, 7302, 7950

COMMENTS/SUMMARY:

Scale: 1 inch to 4 miles. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0037-78

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Surficial Materials, Southern Ellef Ringnes and King Christian Islands, Northwest Territories (Part of 69C, D, E, F, and 79E)

SOURCE: Geological Survey of Canada, Open File No. 538

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta and Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0038-78

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A. and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Surficial Materials and Vegetation. Amund Ringnes and Cornwall Islands, District of Franklin, Northwest Territories (59C and F W1/2, 69D NE3/4)

SOURCE: Geological Survey of Canada, Open File No. 541

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta and Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0039-78

SUBJECT CODES: B1

AUTHOR: BALKWILL, H. R.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1978

TITLE: Geology, Borden Island, District of Franklin, Northwest Territories (Parts of 79F and 89E)

SOURCE: Geological Survey of Canada, Open File No. 544

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0040-80

SUBJECT CODES: G1 (A7, A8, E1)

AUTHOR: WOODWARD-CLYDE CONSULTANTS LTD.
Victoria, British Columbia

YEAR: 1980

TITLE: Coastal Geology, Central Sverdrup Basin, Northwest Territories

SOURCE: Report Prepared for the Strategic Studies Branch, Transport Canada, Ottawa, Ontario, Prepared under the direction of R. B. Taylor, Atlantic Geoscience Centre, Geological Survey of Canada, Dartmouth, Nova Scotia (also released as Geological Survey of Canada Open File No. 549)

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

This report consists of three parts: (1) a coding scheme and legend (2) a volume of coding sheets; and (3) a set of coastal geology maps. The report is designed so that a user can obtain a summary of the primary coastal information by referring to maps or obtain a very detailed description of specific segments of coast from the coding sheets.

Scale: 1:125 000. Copies: Maritime Resource, Amherst, Nova Scotia and Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0041-78

SUBJECT CODES: A7

AUTHOR: VINCENT, J. and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Surficial Geology, Banks Island, Northwest Territories (88B, C, D, F; 97G, H; 98A-F)

SOURCE: Geological Survey of Canada, Open File No. 577

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Campbell Reproductions, Ottawa, Ontario and Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0042-79

SUBJECT CODES: B3 (B7)

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1979

TITLE: Evolution of the Canadian Arctic Islands - A Transition Between the Atlantic and Arctic Oceans

SOURCE: Geological Survey of Canada, Open File No. 618

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

File not examined

REF. NO.: 0043-79

SUBJECT CODES: B7

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1979

TITLE: Structural Framework of Lancaster Aulacogen, Arctic Canada: (Lat.74°05'38" N, Long.81°15'30" W)

SOURCE: Geological Survey of Canada, Open File No. 619

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

File not examined

REF. NO.: 0044-78

SUBJECT CODES: H1 (E5)

AUTHOR: MACAULAY, H. A., JUDGE, A. S., HUNTER, J. A., BURGESS, M., GAGNE, R. M., ALLEN, V. S. and BURNS, R. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario and
Earth Physics Branch
Energy, Mines and Resources Canada, Ottawa, Ontario

YEAR: 1978

TITLE: A Study of Sub-Seabottom Permafrost in the Beaufort Sea, Mackenzie Delta, by Hydraulic Drilling Methods

SOURCE: Geological Survey of Canada, Open File No. 624.
Earth Physics Branch Open File No. 79-11, 8 p. with appendices

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During the spring of 1978, 12 holes were hydraulically jet-drilled from the sea-ice to maximum depths of 61 m beneath the Beaufort Sea. The holes, located in a line across the Delta Front north of Richards Island, were instrumented with temperature cables and monitored as the thermal disturbance due to the jetting dissipated. Much of the sea-bottom material encountered was marginally ice-bonded and permafrost occurred at all sites. Temperatures in the sea-bottom were below 0°C averaging around -1.5°C to -1.0°C. Temperature gradients were near isothermal and are probably indicative of relict degrading permafrost. The shallow lithology interpreted from the drilling logs revealed definite changes in material type and thickness occurring across the Delta Front from Mackenzie Canyon to Kugmallit Bay. Water temperature and salinity profiles at the drillsites reflected the influence of the warmer and fresher Mackenzie River waters flowing into Mackenzie Bay and Kugmallit Bay.

This report is a sequel to Open File No. 472. Copies: Campbell Reproductions, Ottawa, Ontario.

REF. NO.: 0045-78

SUBJECT CODES: G1 (A7, A8, D1, E3, E5, I2)

AUTHOR: BARRIE, W. B., BORNHOLD, B. D., HODGSON, D. A., JUBB, R. G., MCLAREN, P. and TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Coastal Reconnaissance for Marine Terminal Planning in the Arctic, District of Franklin

SOURCE: Geological Survey of Canada, Open File No. 633
Sponsored by Strategic Studies Branch, Ministry of Transport, 328 p.

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503, 7830, 7950, 7951
(Makinson Inlet only)

COMMENTS/SUMMARY:

This report provides a basic coastal data base to which reference can be made in the event of future development along the coasts of the east-central Arctic Islands. From the synthesis of coastal information presented, criteria required to evaluate the suitability of a marine terminal were drawn and a preliminary selection and assessment of potential marine transhipment terminals was made. One of the most important criteria not available for much of the Arctic was nearshore bathymetry. Consequently, it is strongly recommended that future coastal studies include nearshore surveys. From the study area, fourteen sites are recommended as potential marine transhipment terminals or staging areas. Selection of the sites was made primarily from a geologic and geomorphic standpoint. In many cases the assessment of the sites was based on very little quantitative information and therefore detailed field observations are recommended should one of the sites be chosen for further study.

Scale: 1:250 000. Examination points: Text and maps at all Geological Survey libraries; complementary photographs at the Ottawa and Dartmouth branches only. Copies: Map and report only from Precision Microfilming, Halifax.

REF. NO.: 0046-79

SUBJECT CODES: A7

AUTHOR: HODGSON, D.A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1979

TITLE: Surficial Material, Vendom Fiord and Strathcona Fiord Map Areas, South-Central Ellesmere Island, Northwest Territories (49D and E)

SOURCE: Geological Survey of Canada, Open File No. 635

STATUS: Public

MAP NUMBERS: 7940

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Campbell Reproductions, Ottawa, Ontario and Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0047-79

SUBJECT CODES: B4.2 (B4.1, B6, B7, F1)

AUTHOR: FORSYTH, D. A. and MAIR, J. A.
Earth Physics Branch
Department of Energy, Mines and Resources
Ottawa, Ontario
FRASER, I.
Northern Non-Renewable Resources Branch,
Department of Indian Affairs and Northern
Development, Ottawa, Ontario

YEAR: 1979

TITLE: Crustal Structure of the Central Sverdrup Basin

SOURCE: Canadian Journal of Earth Sciences, Vol. 16, pp. 1581-1598 (Earth Physics Branch Contribution No. 783, Northern Non-Renewable Resources Report No. 999-06-10-01)

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

A synthesis of refraction data recorded in 1972 and 1973 in the central Sverdrup Basin with other geophysical data shows major features which correlate well with the regional geological structure. The aeromagnetic data reveal a major series of dykes or minor graben, a likely cause of scattering and attenuation of the seismic energy travelling within the crust. These seismic effects and the focal depths of earthquakes suggest that lateral heterogeneities in the crust may extend to near-mantle depths in this area. East of King Christian Island the refraction results concur with gravity and regional geology in suggesting a major change in crustal and upper mantle structure.

REF. NO.: 0048-77

SUBJECT CODES: H1

AUTHOR: FOWLER, G. A.
Atlantic Oceanographic Laboratory
Dartmouth, Nova Scotia
SCHAFER, C. T. and MANCHESTER, K. S.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1982

TITLE: Portavibe: A Tool for Coring From an Ice Platform

SOURCE: Report of Activities, Part C; Geological Survey of Canada, Paper 77-1C, pp. 9-11

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Coring operations in shallow nearshore marine environments are usually carried out with comparatively lightweight gravity corers or by divers using plastic core liners. These methods normally yield up to 2 m of core depending on sediment texture. In most nearshore areas coarse sediments often underlie a veneer of fine modern sediments, or are interbedded with fine grained layers. These coarse layers may be indicative of storms, high river discharge events or, depending on sedimentation rates, can be formed during a change in relative sea level. The use of vibrocoring techniques is well known for obtaining samples of marine sediments with a high sand content. However, the equipment available does not lend itself to field surveys where portability is of primary importance because of its size, weight and power requirements. This report describes the development and use of a light sampling system "Portavibe" that can be used to obtain samples from shallow marine environments through holes in the ice. The device was developed at the Bedford Institute of Oceanography and was used in February 1977 to core sediments from an 0.6-m-thick ice surface in inner Miramichi Bay, New Brunswick.

REF. NO.: 0049-80

SUBJECT CODES: E6 (H3)

AUTHOR: FRANKLIN, L. J.
Panarctic Oils Ltd., Calgary, Alberta

YEAR: 1980

TITLE: In-Situ Hydrates - A Potential Gas Source

SOURCE: Petroleum Engineer International, November 1980, pp. 112-122

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Large reserves of natural gas exist at shallow depths along the Arctic coastline. Unfortunately, much of this gas is in hydrated form and is not producible under present technology. The large gas reserves are within easy reach if a safe, economical method to melt the hydrate is developed. To solve the problem, industry has tried application of heat from outside sources, and circulation of methanol or ethylene glycol. None of these methods appears economically attractive so far, but a new approach, allowing free gas to influence the melting of associated hydrates, may prove to be a viable technique.

REF. NO.: 0050-82

SUBJECT CODES: B1

AUTHOR: MAYR, U., TRETTIN, H. P. and EMBRY, A. F.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1982

TITLE: Geology, Part of Tanquary Fiord Map Area (340D)

SOURCE: Geological Survey of Canada, Open File No. 835

STATUS: Public

MAP NUMBERS: 7941

COMMENTS/SUMMARY:

Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0051-82

SUBJECT CODES: B1

AUTHOR: TRETTIN, H. P.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1982

TITLE: Geology, Parts of Greely Fiord East, Greely Fiord West and Canon Fiord Map Areas, District of Franklin (340A, B, 49H)

SOURCE: Geological Survey of Canada, Open File No. 836

STATUS: Public

MAP NUMBERS: 7941

COMMENTS/SUMMARY:

Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0052-74

SUBJECT CODES: E1 (E1, I2)

AUTHOR: TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Nearshore Ice and Sea Ice, Somerset Island, N.W.T.

SOURCE: Ice, News Bulletin of the International Glaciological Society, 1st Issue 1974, No. 44, p. 7

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Research on coastal characteristics and processes in the Arctic Archipelago included examination of the nearshore ice (e.g. ice-foot and anchor ice) and monitoring the break-up and freeze-up sequence of the adjacent sea ice. The nature and extent of features created by the movement of sea ice was also documented at the study site on the northern coast of Somerset Island. The most common and distinctive of these features were ice scourings in the nearshore zone and ice push mounds and ice "pitting" on the modern beach. Similar investigations are planned for 1974 on Prince of Wales and Bathurst Islands.

REF. NO.: 0053-82

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A. and VINCENT, J. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1982

TITLE: Surficial Geology of Central Melville Island, Northwest Territories (78F, G, 88E)

SOURCE: Geological Survey of Canada, Open File No. 874

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0054-83

SUBJECT CODES: A5

AUTHOR: SYVITSKI, J. P. M.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Cruise Report: CSS Hudson 82-031

SOURCE: Geological Survey of Canada, Open File No. 897

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report describes the first of three sister cruises to Baffin Island under the Sedimentology of Arctic Fiords Experiment (SAFE).
Copies: Maritime Resource, Amherst, Nova Scotia

REF. NO.: 0055-81

SUBJECT CODES: H1 (H4)

AUTHOR: GEORESOURCES LTD.
Dartmouth, Nova Scotia

YEAR: 1981

TITLE: A Survey of the Published Literature on Sampling and In Situ Measurements on Physical Properties in the Vicinity of the Ocean's Bottom

SOURCE: Report prepared for the Environmental Marine Geology Division, Atlantic Geoscience Centre, Prepared by M. Graves, Geological Survey of Canada, Open File No. 919

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This survey was prepared to provide an up-to-date bank of information on ocean bottom sampling devices and devices used to measure in-situ physical properties of marine sediments. The task of effectively and efficiently sampling and measuring the characteristics of the ocean bottom, especially in the area of the deep continental shelf and rise will become increasingly important in the Canadian context. A collection of published information will aid the process of design and development of equipment to use in this important ocean environment while not duplicating unnecessarily the mistakes or successes of others.

The citations are organized by type of sampling or testing device and described in a manner similar to that classification used in the excellent review by P. G. Sly in 1979: sample recovery, in-situ tests, and continuous surveys. The references included in this report are primarily concerned with description of equipment or instruments, design criteria, development programmes, and procedures of equipment or instruments. A few representative references are included which are concerned with measurements, observations, and interpretation of results gathered with these devices, but inclusion of such citations is not complete.

Copies: Precision Microfilming, Halifax, Nova Scotia

REF. NO.: 0056-83

SUBJECT CODES: A5 (A3, A6, A9, A11, B6, D1, E1, E2, H4)

AUTHOR: SYVITSKI, J. P. M. and BLAKENEY, C. P.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Sedimentology of Arctic Fjords Experiment:
JU 82-031 Data Report, Vol. 1

SOURCE: Geological Survey of Canada, Open File No. 960

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Copies: Atlantic Geoscience Centre, Dartmouth, Nova Scotia

REF. NO.: 0057-83

SUBJECT CODES: H4

AUTHOR: ASPREY, K. W. and JOHNSTON, B. L.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Report on CSS Hudson Cruise 83-028, Baffin Island Fiords

SOURCE: Geological Survey of Canada, Open File No. 1004

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Copies: Precision Microfilming, Halifax, Nova Scotia

REF. NO.: 0058-84

SUBJECT CODES: H4

AUTHOR: MACLEAN, B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1984

TITLE: Proposal for an Eastcoast Offshore Sediment Corehole Sampling Program

SOURCE: Geological Survey of Canada, Open File No. 1014

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Copies: Precision Microfilming, Halifax, Nova Scotia

REF. NO.: 0059-84

SUBJECT CODES: B1

AUTHOR: MAYR, U. and OKULITCH, A. V.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1984

TITLE: Geological Maps of North Kent Island and Southern Ellesmere Island, Northwest Territories (49A, B; 59A)

SOURCE: Geological Survey of Canada, Open File No. 1036

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Scale: 1:125 000. Copies: Riley's Reproduction & Printing Ltd., Calgary, Alberta

REF. NO.: 0060-84

SUBJECT CODES: H1 (A8, A9)

AUTHOR: KURFURST, P. J.
Terrain Sciences Division
Geological Survey of Canada, Calgary, Alberta

YEAR: 1984

TITLE: Geotechnical Investigations in the Southern Beaufort Sea - Spring, 1984

SOURCE: Geological Survey of Canada, Open File No. 1078

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Copies: Campbell Reproductions, Ottawa, Ontario

REF. NO.: 0061-68

SUBJECT CODES: H4 (D1)

AUTHOR: ANDERSON, N. M.

YEAR: 1968

TITLE: Developments of Towed Depth-Sounding Systems During 1967

SOURCE: Polar Continental Shelf Project, Internal Report, 10 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper summarizes the development program by the hydrographic section of the Polar Continental Shelf Project for an airborne, high-speed depth-sounding system. Initially, the airborne system was developed for use with a helicopter but attention is now directed towards a system compatible with an Air Cushion Vehicle. Trials that took place during 1967 are described, as well as the conclusions drawn from the observations at the trials. A detailed analysis of the measurements made during the tests is not complete. They will be published later, in a National Research Council report. The next phase of the program will be to assemble a complete operational system for use with an Air Cushion Vehicle.

REF. NO.: 0062-68

SUBJECT CODES: A1 (A7)

AUTHOR: ANDREWS, J. T.
Geographical Branch, Department of Energy, Mines and Resources, Ottawa, Ontario

YEAR: 1968

TITLE: Pattern and Cause of Variability of Postglacial Uplift and Rate of Uplift in Arctic Canada

SOURCE: Journal of Geology, Vol. 76, pp. 404-425.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Maps of postglacial uplift for Arctic Canada (excluding the Queen Elizabeth Islands) portray a highly irregular surface. Analysis of sites where the elevation and age of marine limits are known indicates that the variability is explicable in terms of distance (D) from the former ice margin (a measure of ice thickness) and date of deglaciation. These two variables account for 80% of the variation in postglacial uplift (U_p) at sixty-seven sites, whereas, if postglacial uplift is related solely to distance by $U_p = CD^n$, only 53% of the variation is accounted for. Trend surfaces are presented for postglacial uplift in the last 6000 years and the present rate of uplift. Models are developed that indicate the effect of different rates of glacial retreat on postglacial uplift, elevation of the marine limit, and strandline deformation.

REF. NO.: 0063-78

SUBJECT CODES: E3

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1978

TITLE: A Surface Current Study of Eastern Parry Channel, Northwest Territories - Summer 1977

SOURCE: Prepared for the Institute of Ocean Sciences, Sidney, British Columbia, prepared by D. B. Fissel and J. R. Marko, Contractor Report Series 78-4, 66 p.

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Near-surface current measurements were obtained from nine drogued satellite-tracked buoys in eastern Parry Channel, from July to November, 1977. Persistent, and at times intense, coastal currents were observed on either side of eastern Parry Channel with eastward movements on the southern side and weaker and more variable westward flow on the opposite side. In the centre of the Sound, gyral motions appeared to dominate the flow pattern except off Wellington Channel and McDougall Sound where a southward current was measured. In Prince Regent Inlet and Peel Sound, a counter clockwise intrusion from Parry Channel was observed.

REF. NO.: 0064-71

SUBJECT CODES: A5 (A6, E2)

AUTHOR: BAKER, S. R.
Rensselaer Polytechnic Institute
Troy, New York

YEAR: 1971

TITLE: Sedimentation in an Arctic Marine Environment: Baffin Bay between Greenland and the Canadian Arctic Archipelago

SOURCE: Ph.D. Thesis, Rensselaer Polytechnic Institute, Troy New York, 124 p.

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Analysis of cores and grab samples from Baffin Bay indicates that sediment texture reflects the local bottom topography and the random distribution of sediments by ice-rafting. The distribution of ice-rafted sand and gravel can be related to the surface current pattern in Baffin Bay. The shelf sediments are composed by and large of sands and gravels intermixed with mud. Large depressions on the shelf contain fine-grained sediments similar to those that floor the deep bathyal basin. Fine-grained sediments extend from the mouths of the fiords north of Disko Island across the continental shelf to the bottom of the basin. These fine-grained sediments are inferred to have been deposited as a hyperpycnal deltaic flow that issued from the margin of the glaciers. Sediment color shows a marked shift in oxidizing conditions from the northern parts of the bay southward. Sandy layers which occur in the deep basin of the bay probably were formed by localized down-slope movements of sediment rather than by the winnowing action of bottom currents. A micro-organism study of the upper parts of the cores taken from the bathyal basin of Baffin Bay indicates that a relationship exists between the mineralogy of the preserved parts of organisms and the color of the sediments.

Dissertations Abstracts Order No. 72-10,850

REF. NO.: 0065-76

SUBJECT CODES: H1

AUTHOR: BANISTER TECHNICAL SERVICES

YEAR: 1976

TITLE: Final Report, Development and Testing of Production Through Ice Survey Techniques

SOURCE: Department of Supply and Services, Contract 1SZ5-0401, 181 p.

STATUS: Proprietary

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

In December, 1975, Banister Technical Services was granted a contract by the Canadian Government to design, construct and test a tracked vehicle for the rapid determinaton of depth profiles in ice covered waters. This contract was the result of an unsolicited proposal for scientific work.

This report contains within it conclusions, specific observations, recommendations and suggestions for future work.

REF. NO.: 0066-73

SUBJECT CODES: B1 (B6, B7)

AUTHOR: BALKWILL, H. R.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1973

TITLE: Structure and Tectonics of Cornwall Arch, Amund Ringnes and Cornwall Islands, Arctic Archipelago

SOURCE: In Proceedings of the Symposium on the Geology of the Canadian Arctic, Edited by J. D. Aitken and D. J. Glass. Geological Association of Canada - Canadian Society of Petroleum Geologists, Saskatoon, Saskatchewan, May 1973, pp. 39-61

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

Northwest-plunging Cornwall Arch dominates the structural geometry of Upper Triassic to Upper Cretaceous marine and nonmarine terrigenous clastic rocks on Cornwall and Amund Ringnes Islands. The arch is at least 200 kilometres long, about 70 kilometres wide, and has structural relief of about 4000 metres; it is asymmetric, with a homoclinal, gently dipping western flank, and a steeper, structurally disrupted eastern flank.

New evidence indicates that the age of the arch is Late Cretaceous or early Tertiary: Maestrichtian strata lie conformably on the Mesozoic succession, but Paleocene - Eocene deposits are discordant with underlying rocks and structures. Local evaporite-cored diapirs may be considerably older than the arch.

The structural style of Cornwall Arch may be accounted for by a tectonic model that relies on crustal fracturing and great vertical uplift as the dynamic mechanism.

REF. NO.: 0067-82

SUBJECT CODES: B7 (B6)

AUTHOR: BALKWILL, H. R.
Petro-Canada Exploration, Calgary, Alberta,
FOX, F. G.
Panarctic Oils Limited, Calgary, Alberta,

YEAR: 1982

TITLE: Incipient Rift Zone, Western Sverdrup Basin, Arctic Canada

SOURCE: In Arctic Geology and Geophysics, Proceedings of the Third International Symposium on Arctic Geology, Edited by Ashton F. Embry and Hugh R. Balkwill. Canadian Society of Petroleum Geologists, Calgary, Alberta, December, 1982, pp. 171-187

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Normal faults, linear magnetic anomalies, gabbro dikes, aligned evaporite domes, and modern earthquake epicentres define a broad tectonic belt in upper Paleozoic and Mesozoic rocks of western Sverdrup Basin. From Melville Island, at the southern margin of the basin, the belt strikes northeastward, toward the continental margin, at northern Ellef Ringnes Island. The age and geometry of the structural elements indicate that the belt represents a long-lasting domain of crustal dilation, as an incipient rift in the northern margin of the craton. Fracture systems, developed from dilation along the belt, could have served as conduits for migrating hydrocarbons, contributing to large natural gas accumulations at Sabine Peninsula, King Christian Island, and western Ellef Ringnes Island, and oil and gas under the offshore regions between the islands.

REF. NO.: 0068-77

SUBJECT CODES: F1 (Z7)

AUTHOR: BASHAM, P. W., FORSYTH, D. A. and WETMILLER, R. J.
Division of Seismology and Geothermal Studies, Earth Physics Branch, Department of Energy, Mines and Resources, Ottawa, Ontario

YEAR: 1977

TITLE: The Seismicity of Northern Canada

SOURCE: Canadian Journal of Earth Sciences, Vol. 14, pp. 1646-1667

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The addition of over 1000 earthquakes to the northern Canadian data file during the past 3 years provides sufficient data to delineate distinctive patterns of seismicity, although the short history of low level earthquake monitoring and the temporal and spatial clustering of earthquakes suggests that not all potentially active areas may yet have been identified. The data indicate areas of activity near the larger earthquakes located teleseismically prior to the post-1960 northern expansion of the Canadian Seismograph Network and additional clusters and trends that were not previously apparent. Correlations to seismicity with major deformational trends in the Yukon - Mackenzie Valley, the northern continental margin, the Arctic archipelago and encircling much of the Baffin Island - Foxe Basin area show that structures formed or reactivated by Palaeozoic and later orogenic phases are continuing activity in response to the contemporary stress field.

REF. NO.: 0069-66

SUBJECT CODES: A1 (A7)

AUTHOR: MULLER, F. and BARR, W.
Department of Geography, McGill University
Montreal, Quebec

YEAR: 1966

TITLE: Postglacial Isostatic Movement in Northeastern Devon Island, Canadian Arctic Archipelago

SOURCE: Arctic, Vol. 19, No. 3, pp. 263-269

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Raised marine features of the lowlands in the vicinity of Cape Sparbo were investigated. The carbon^{14} dates of marine shells indicate that the area was clear of ice as early as 15 500 before present and that the most rapid isostatic uplift (approx. 6.5 m. per century) took place between 9000 and 8000 years ago; the total isostatic rebound having been about 110 m. The two oldest dates (15 000 and 13 000 B.P.), if correct, give a rare indication of the slow onset of the isostatic uplift.

REF. NO.: 0070-71

SUBJECT CODES: A1 (A7)

AUTHOR: BARR, W.

YEAR: 1971

TITLE: Postglacial Isostatic Movement in Northeastern Devon Island: A Reappraisal

SOURCE: Arctic, Vol. 24, No. 4, pp. 249-268

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Amended emergence and uplift curves are presented for the Truelove Inlet area. The new curves are based mainly on radiocarbon dates from whalebone, driftwood and basal peat. The marine limit lies at 76 m.a.s.l., and dates to approximately 9450 B.P., which is also considered to be the date of deglaciation; total postglacial uplift is 107 m. The rate of uplift during the first thousand years following deglaciation reached 4.05 m. per century, which is markedly less rapid than was previously reported. The rate of uplift decreased steadily thereafter and, at present, appears to be matched by eustatic sea level rise. What had appeared to be fossil evidence of restrained rebound at the onset of uplift, was probably due to accidental mixing during collection of interstadial shells with postglacial shells. The total amount of postglacial uplift, and the rates of uplift, have probably been somewhat suppressed by the close proximity of the Devon Island Ice Cap.

REF. NO.: 0071-82

SUBJECT CODES: H4

AUTHOR: BARRIE, J. V., WOODWORTH-LYNAS, C. M. T. and PEREIRA, C. P. G.
Centre for Cold Ocean Resources Engineering, Memorial University of Newfoundland, St. John's, Newfoundland

YEAR: 1982

TITLE: Data Report of the Hekja Wellsite Marine Survey Undertaken During CSS Hudson Cruise No. HU81-045, October, 1981

SOURCE: Data Report, C-CORE Publication No. 82-2

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This report concerns the acquisition and some initial interpretation of raw data during a marine survey in the vicinity of the Hekja wellsite off Loks Land, southeast Baffin Island on the CSS Hudson. The program was undertaken on behalf of Canterra Energy Ltd. (formerly the Aquitaine Company of Canada Ltd.), as operator for the Baffin-Labrador Group of companies. Raw data collected included bottom sediment grabs, gravity and piston core samples, camera transects, shallow and deep tow sidescan transects, bathymetry, HUNTEC DTS high resolution seismic reflection transects, air-gun seismics and an iceberg log. Also presented are some preliminary observations made while the data was being collected.

Some useful methodologies for marine site investigations are described.

REF. NO.: 0072-77

SUBJECT CODES: A7 (A1)

AUTHOR: BARNETT, D. M., EDLUND, S. A. and DREDGE, L. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1977

TITLE: Terrain Characterization and Evaluation: An Example from Eastern Melville Island

SOURCE: Geological Survey of Canada, Paper 76-23

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

This paper explains the methodology of an integrated (interdisciplinary) 1: 125 000 scale mapping project on eastern Melville Island and describes the style of data presentation used in Geological Survey of Canada Open File 252 (Barnett et al., 1975a) which includes photomosaic maps accompanied by expanded legends. The legend is organized to show geological, geomorphological, botanical, and some wildlife data. These data appear in the upper part of the expanded legend. In the lower part they are interpreted and converted into simple numerical evaluations suitable for aspects of land-use management. The data are arranged into a hierarchy with three levels of detail identified as Landscape Type (regional), Geobotanical Facies (intermediate), and Terrain Units (local). Each sedimentary bedrock formation has a distinctive morphological development with associated suites of landforms and vegetation. The combinations of attributes which make each Landscape Type distinctive are set out in a matrix. The particular significance of veneers, the marine limit, vegetation, and ground ice is explained. The basis for evaluation of trafficability and sensitivity, and the potential utility of integrated mapping for wildlife studies is outlined. Guidelines for nonspecialist users are set in nontechnical language.

REF. NO.: 0073-76

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M., DREDGE, L. A. and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Terrain Inventory: Bathurst, Cornwallis, and Adjacent Islands, Northwest Territories

SOURCE: Report of Activities, Geological Survey of Canada, Paper 76-1A, pp. 201-204

STATUS: Public

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

Bathurst, Byam Martin, Cameron, Little Cornwallis, Cornwallis, and several adjacent islands were studied and data were gathered to produce maps at a scale of 1:125 000 for an area of 11 000 square miles (28 000 km^2). Transport was primarily by Bell 206B helicopter with additional ground mobility provided by Honda ATC motor tricycles. A modified CRREL coring barrel with a Haynes power unit was used to obtain subsurface information at selected sites.

REF. NO.: 0074-75

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M., EDLUND, S. A. and DREDGE, L. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Interdisciplinary Environmental Data Presentaiton for Eastern Melville Island: An Approach

SOURCE: Report of Activities, Geological Survey of Canada, Paper 75-1, Part B, pp. 105-107

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

The integrated pilot mapping project of eastern Melville Island, initiated in 1973 was designed to gather and correlate baseline data dealing with a range of environmental factors of possible concern for future environmental management including potential pipeline routing. The approach was designed to produce a coherent environmental statement based on both field and air-photo interpretion for more than 6000 square miles mapped at 1:125 000. Such a system is believed to be readily applicable throughout the Sverdrup Basin and possibly farther afield. This note deals with data presentation ancillary to the basic photomosaics. A three level hierarchy was formulated for presentation of the Melville Island data. Although rank is implicit in a hierarchy, in practice the ranks indicate degree of generalization of the data.

REF. NO.: 0075-75

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M., EDLUND, S. A. and DREDGE, L. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Integrated Landscape Mapping of Eastern Melville Island, District of Franklin

SOURCE: Report of Activities, Geological Survey of Canada, Paper 75-1, Part A, pp. 381-382

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

The integrated pilot mapping project of Eastern Melville Island, initiated in 1973 was designed to gather and correlate basic data dealing with a range of environmental factors of possible concern for future environmental management including potential pipeline routing. The approach was designed to produce a coherent environmental statement based on both field and air-photo interpretation for more than 6000 square miles mapped at 1:125 000. Such a system is believed to be readily applicable throughout the Sverdrup Basin and possibly farther afield. This note deals with data presentation ancillary to the basic photomosaics. A three-level hierarchy was formulated for presentation of the Melville Island data. Although rank is implicit in a hierarchy, in practice the ranks indicate degree of generalization of the data.

REF. NO.: 0076-74

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M. and DREDGE, L. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Surficial Geology and Geomorphology of Melville Island, District of Franklin

SOURCE: Report of Activities, Geological Survey of Canada, Paper 74-1, Part A, p. 239

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

Field work continued under these projects east of 112°W as part of a pilot project for an integrated landscape survey to be undertaken for the Environmental-Social Program-Northern Pipelines. Wildlife habitat and a statistical evaluation of plant communities, including biomass production complemented the vegetation mapping. Evaluation of the variability and character of ice in the surface materials was continued using the modified SIPRE core barrel with a 9 hp GE power head.

REF. NO.: 0077-73

SUBJECT CODES: A7

AUTHOR: BARNETT, D. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Radiocarbon Dates From Eastern Melville Island

SOURCE: Report of Activities, Part B: November 1972 to March 1973. Geological Survey of Canada, Paper 73-1, Part B. pp. 137-140

STATUS: Public

MAP NUMBERS: 795,1

COMMENTS/SUMMARY:

This report describes, in a preliminary fashion, six radiocarbon dates processed in connection with a mapping project on Eastern Melville Island. Dates ranged from 41 000 to 7890 years BP.

REF. NO.: 0078-73

SUBJECT CODES: A7 (A1)

AUTHOR: BARNETT, D. M. and FORBES, D. L.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Surficial Geology and Geomorphology of Melville Island

SOURCE: Report of Activities, Part A: April to October, 1972, Geological Survey of Canada, Paper 73-1, Part A, pp. 189-192

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

During the second field season of the project, efforts were concentrated on drilling surface materials to a target depth of one metre using a modified SIPRE core barrel with teflon coating as well as testing a prototype Darry Engineering corer. Each formation was subdivided to include representative sites above and below the local postglacial marine limit comprising a well-drained site, a poorly drained site and north and south facing slopes. The 106 cores sampled materials ranging from weathered Paleozoic to Quaternary sediments. One new sample of driftwood (composed of several small fragments) was located 16 km north-northwest of Rea Point at a height of 32 m.

REF. NO.: 0079-64

SUBJECT CODES: A7 (A1)

AUTHOR: BARNETT, D. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1964

TITLE: Surficial Geology and Geomorphology of Melville Island

SOURCE: Report of Activities, Part A: April to October, 1971. Geological Survey of Canada, Paper 72-1, Part A, pp. 152-153

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This project was undertaken to provide reconnaissance scale surficial geology information for one of the last major arctic islands for which surficial geology information is not available. Remarkably few glacial landforms are present north of the Winter Harbour moraine although erratics are ubiquitous and recently emerged shore features indicate uplift which is assumed to be glacio-isostatic in origin. The most extensive surficial deposits are alluvial deltaic sequences. Sediments associated with one of the larger streams which flows eastwards into Sherard Bay were examined in some detail and yielded an interesting variety of fossils and sedimentary structures. Large pieces of driftwood when dated, add to the chronology and paleogeographical interpretation of the sequence.

REF. NO.: 0080-74

SUBJECT CODES: H3 (H2)

AUTHOR: BAUDAIS, D. J.
Panarctic Oils Ltd., Calgary, Alberta
MASTERSON, D. M.
FENCO Ltd., Calgary, Alberta
WATTS, J. S.
Westburne Engineering, Calgary, Alberta

YEAR: 1974

TITLE: A System for Offshore Drilling in the Arctic Islands

SOURCE: The Journal of Canadian Petroleum Technology, Vol. 13, No. 1, pp. 15-25

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

The design and construction of the ice platform, the drilling rig selected for the project, the subsea equipment used and the sequence of operations which were followed to drill the Hecla N-52 well are presented in the paper. Performance of the ice platform and the special subsea equipment used during the drilling period is reviewed. Operating experience gathered from the Hecla N-52 well demonstrates that drilling an offshore well in certain areas of the Arctic Ocean from the ice is feasible.

REF. NO.: 0081-76

SUBJECT CODES: E3

AUTHOR: BEAK CONSULTANTS LTD.
Toronto, Ontario

YEAR: 1976

TITLE: Analysis of Oceanographic Data for APOA Project No. 79

SOURCE: Prepared for Panarctic Oils Ltd., Prepared by N. Boston and P. M. Ullman, (Also available as APOA Project No. 79: Arctic Island Ice Movement Study, 1974-75)

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

The information obtained from the data collected during APOA'79 study indicates that the Hazen Strait, Desbarats Strait, Maclean Strait region is an oceanographically quiet region with weak currents. There is water movement due to tidal currents but the tidal currents, particularly at Desbarats Strait, seem to be modified by a net drift towards the east. The Aanderaa RCM-4 meters do not seem to be ideally suited to current measurements in these regions because of the threshold value of 1.5 cm/sec. According to these data, currents are frequently found below the 1.5 cm/sec value and hence are not measurable with the RCM-4 meters.

REF. NO.: 0082-83

SUBJECT CODES: H2 (H1)

AUTHOR: BEAUDOIN, A.
Energy, Mines and Resources Canada

YEAR: 1983

TITLE: CESAR 83: La Fin d'une Enigme?

SOURCE: GEOS, Vol. 12, No. 2, pp. 18, 20 (in French)

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This brief article describes the CESAR 83 experiment which investigated the Alpha Ridge from a drifting ice platform.

REF. NO.: 0083-73

SUBJECT CODES: B4 (B3, B6, B7)

AUTHOR: BERKHOUT, A. W. J.
Mobil Oil Co., Dallas, Texas

YEAR: 1973

TITLE: Gravity in the Prince of Wales, Somerset, and Northern Baffin Islands Region

SOURCE: In Proceedings of the Symposium on the Geology of the Canadian Arctic, Edited by J. D. Aitken and D. J. Glass. Geological Association of Canada - Canadian Society of Petroleum Geologists, Saskatoon, Saskatchewan, May 1973, pp. 63-79

STATUS: Public

MAP NUMBERS: 7220, 7503, 7740, 7830

COMMENTS/SUMMARY:

Regional gravity surveys covering Prince of Wales, Somerset, and northern Baffin Islands were carried out by the Dominion Observatory of Canada (now the Earth Physics Branch) during 1962, 1965, and 1966. On Borden Peninsula, a strong gravity gradient follows the Central Borden Fault Zone and continues into Brodeur Peninsula. To the north of this strong gradient, gravity lows are correlated with exposed or inferred basins of upper Proterozoic quartzitic sandstones, while gravity highs coincide with uplifted basement gneisses. An elongated gravity low is also observed over a belt of upper Proterozoic sandstones east of Agu Bay on Baffin Island. The Boothia Uplift on Somerset Island is defined by a northerly trending gravity high, but a low over its western portion suggests an asymmetrical development and overthrusting onto low density rocks. Two paralleling northerly-trending highs and intermediate lows are observed to the west of the Boothia high, and to the east a northeasterly-trending system consisting of a high belt across Prince Regent Inlet bounded by paralleling lows occurs. Younger non-marine sediments in a local Mesozoic basin on southwestern Bylot Island are defined by a local gravity low.

REF. NO.: 0084-71

SUBJECT CODES: B4.2

AUTHOR: BERRY, M. J. and BARR, K. G.

YEAR: 1971

TITLE: A Seismic Refraction Profile Across the Polar Continental Shelf of the Queen Elizabeth Islands

SOURCE: Canadian Journal of Earth Sciences, Vol. 8, No. 3, pp. 347-360

STATUS: Public

MAP NUMBERS: 7832, 7952

COMMENTS/SUMMARY:

During the spring of 1967, a seismic refraction experiment was conducted from the SW tip of Prince Patrick Island in the Queen Elizabeth Islands of Arctic Canada to a point mid-way down the continental slope, some 220 km from the coast.

It was found that seismic recording on sea ice was plagued by unusually high background noise levels which could be attributed to low frequency (below 1 Hz) oscillations of the ice pans and to the broadband noise generated by frequent ice cracking. It was discovered, and is shown theoretically, that seismic wave propagating through a water layer (the ocean) and incident on the ice layer from below provide an exact 90° phase shift between the horizontal and vertical components of surface motion. This fact can be used to advantage in digital processing. The interpretation shows a crustal model with depths to the M discontinuity of 28 $\pm$ 4 km at the coast, thinning to 15 $\pm$ 9 km at the end of the profile. The velocity of the mantle is measured as 8.05 $\pm$ 0.17 km/s. Mid-way down the continental slope there are 5.0 $\pm$ 1.63 km of sediments overlying material with a velocity of 5.36 $\pm$ 0.15 km/s. Material of a similar velocity, 5.72 $\pm$ 0.18 km/s, lies 2.7 $\pm$ 1.9 km beneath the surface material at the coast, where the surface layer has a velocity of 4.76 $\pm$ 0.4 km/s. It is concluded that the data support the hypothesis that the Canada Basin has an oceanic rather than a continental crust.

REF. NO.: 0085-64

SUBJECT CODES: I2 (I1)

AUTHOR: BLACK, W. A.
Geographical Branch
Maps and Technical Surveys of Canada

YEAR: 1964

TITLE: Sea-Ice Survey, Queen Elizabeth Islands Region, Summer 1962

SOURCE: Geographical Branch, Maps and Technical Surveys of Canada, Paper No. 39, 47 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The aerial survey of arctic sea ice in the Queen Elizabeth Islands region from June to September 1962 is a continuation of the ice-distribution survey begun in the summer of 1961. The immediate purpose was to observe and map the coverage and distribution of the ice and to relate ice conditions to climatic factors. The long-term objective was to build an annual record showing ice and climatic relations, the variability of the ice cover and the nature of the regional ice circulation.

REF. NO.: 0086-63

SUBJECT CODES: I2 (I1)

AUTHOR: BLACK, W. A.
Geographical Branch
Maps and Technical Surveys of Canada;

YEAR: 1963

TITLE: A Preliminary Study of Sea-Ice Conditions in the Queen Elizabeth Islands' Region, Season 1963

SOURCE: Geographical Branch, Maps and Technical Surveys of Canada, Report 407-3, 19 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The break-up of the sea-ice during the early part of the season in the eastern Arctic was delayed because of the backwardness of the season, but it was well-advanced in M'Clure Strait by June 23. The deterioration of the Parry Channel icefields in July continued to be slow. By August 8, the consolidated cover in Parry Channel had shattered. At this time Viscount Melville Sound, Barrow Strait and Lancaster Sound contained heavy concentrations of ice, whereas, M'Clure Strait was largely open water. With the break-up of the consolidated ice cover in Viscount Melville Sound in early August the icefields gradually drifted eastsoutheastward.

REF. NO.: 0087-80

SUBJECT CODES: A5 (A6, A7, A8, A9, D1, E2, E4, E5, H1)

AUTHOR: HOLUBEC, I.
Geocon (1975) Ltd., Calgary, Alberta
MCDONALD, A. F.
Petro-Canada Inc., Calgary, Alberta

YEAR: 1980

TITLE: Geotechnical Aspects in an Arctic Wharf Design

SOURCE: Proccedings, 33rd Canadian Geotechnical Conference - Problems and Progress in Geotechnical Engineering, September 24 - 26, 1980, Calgary, Alberta, 15 p.

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Proposed transportation of natural gas from the high arctic by ice breaking capable ships requires construction of LNG Terminals with wharfs in the Arctic Islands. The primary criteria for locating these Terminals is naturally first the presence of gas followed by sufficient water depth, protection from ice floes and sheets, and finally sea bottom conditions. Generally, the sea bottom conditions in the high arctic in the present gas find areas are poor consisting of soft clays and very loose sands. Since it is difficult to find a terminal site which meets all the criteria, it is frequently necessary to design the terminal for less than ideal soil conditions.

This paper discusses the sea bottom conditions at Petro Canada's proposed LNG Terminal and the process of developing an acceptable Terminal consisting of a wharf and barge containment areas. The structures, aside from standard stability and settlement considerations, have to be constructible in the arctic conditions, withstand large ice and seismic forces and be stable under both thawing and freezing thermal changes.

REF. NO.: 0088-79

SUBJECT CODES: A1 (A7, A11)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1979

TITLE: Age Determinations on Marine and Terrestrial Materials of Holocene Age, Southern Ellesmere Island, Arctic Archipelago

SOURCE: Scientific and Technical Notes, In Current Research, Part C; Geological Survey of Canada, Paper 79-1C, pp. 105-109

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Marine mollusc shells frequently have been used for radiocarbon age determinations because they are the most abundant type of material available along many of the world's coasts. Canada is no exception in this regard, and the earliest age determinations on shells from the Canadian Arctic Archipelago and adjacent northwestern Greenland were carried out more than two decades ago by laboratories at Lamont Geological Observatory, New York (Broecker et al., 1956) and by the U.S. Geological Survey, Washington, D.C. (Suess, 1954). At the same time that marine shells were being widely used for dating, doubts were voiced on numerous occasions as to their validity (e.g. see Shotton, 1967). This note re-emphasizes some of the results obtained by comparative dating of terrestrial and marine materials at one locality in southern Ellesmere Island and presents new data from a second locality.

REF. NO.: 0089-78

SUBJECT CODES: A1 (A7, H4)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Coring of Holocene Pond Sediments at Cape Herschel, Ellesmere Island, Arctic Archipelago

SOURCE: Scientific and Technical Notes, In Current Research, Part C; Geological Survey of Canada, Paper 78-1C, pp. 119-122

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Prior to the 1977 field season an examination of aerial photographs of the Cape Herschel peninsula, eastern Ellesmere Island, revealed the presence of a number of ponds. Studies in the area, during July 1977, showed that several ponds contained organic-rich sediments, despite the general sparseness of vegetation on the surrounding granitic terrane. The majority of ponds are at relatively low elevations, below the level of raised beaches and marine shells in undisturbed shallow-water deposits. Thus it was thought that if cores of the bottom sediments could be recovered, a study of diatoms might reveal the point at which the transition from marine to freshwater conditions had occurred. Then, assuming that the age of the organic sediments above this transition could be determined by radiocarbon dating it might be possible to document the passage of the shoreline and to construct an emergence curve for the Cape Herschel area. Five ponds were cored successfully on Cape Herschel peninsula. In three other ponds, one on the plateau and two fairly close to sea level, no sediment was encountered on top of the rocky bottom. Because, as anticipated, all ponds were frozen to the bottom, it was possible to recover the watery surface sediment; in fact, a break occurred in each core approximately 0.5 to 2.0 cm above the uppermost sediment, and the contact could be seen through the clear ice. Details of the numbers of cores recovered, as well as of ice and sediment thicknesses, are summarized.

REF. NO.: 0090-76

SUBJECT CODES: A1 (A5)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Sea and Land Relations During the Last 15 000 Years in the Queen Elizabeth Islands, Arctic Archipelago

SOURCE: Geological Survey of Canada, Paper 76-1B, pp. 201-207

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

This report is the second in a series of reviews being prepared to cover the coasts of Canada as part of the contribution of Terrain Sciences Division to the International Geological Correlation Program (IGCP) Project No. 61, entitled "Sea-level movements during the last deglacial hemicycle (about 15 000 years)". The first report dealt with the Pacific Coast (Clague, 1975); future reports will treat the southern islands of the Arctic Archipelago, the northern coast of the mainland (including Hudson Bay and James Bay), and the Atlantic Coast.

REF. NO.: 0091-76

SUBJECT CODES: A1 (A4)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Quaternary Geochronology, Arctic Islands

SOURCE: Geological Survey of Canada, Paper 76-1A,
pp. 259-264

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

The main objective of this project, initiated in 1975, is to establish a chronostratigraphic framework for as much of Quaternary time as possible throughout the Arctic Archipelago. Related objectives are: 1) to investigate the suitability of various methods of age determination, especially those which can be utilized beyond the range of radiocarbon dating (approximately 10 000 years); 2) to determine rates of crustal movement; and 3) to reconstruct past environments and events.

This report describes the results of field programs to investigate the above at Stuart River Valley, Bathurst Island; Cape Storm Ellesmere Island; and Nelson Head, Banks Island.

REF. NO.: 0092-75

SUBJECT CODES: A1 (A7, A11)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Radiocarbon Age Determinations and Postglacial Emergence at Cape Storm, Southern Ellesmere Island, Arctic Canada

SOURCE: Geografiska Annaler, 57 A, 1-2

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

Age determinations on marine mollusks indicate that the northwestern part of Jones Sound became open to the sea more than 9000 conventional radiocarbon years ago. The presence of postglacial marine features at elevations of up to 130 m near Cape Storm, Ellesmere Island, shows that a significant thickness of glacier ice was present in this area, and the differential uplift of pumice and other materials associated with raised beaches provides convincing evidence that the former ice cover was thicker to the west and to the north.

REF. NO.: 0093-75

SUBJECT CODES: A5 (A6, B4)

AUTHOR: BLAKE, Jr., W. and LEWIS, C. F. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Marine Surficial Geology: Observations in the High Arctic, 1974

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 383-387

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830

COMMENTS/SUMMARY:

During the period from August 3 to 31 the writers participated in Phase II of Cruise 74-026, C.S.S. Hudson. The chief aim of the surficial geology program on this multidisciplinary cruise was to obtain data on bottom sediments and bathymetry over a wide area in northern Baffin Bay, Nares Strait (to latitude 79°13' in Kane Basin), Parry Channel, and adjacent inlets and bays. In Lancaster Sound and Barrow Strait the work supplemented the survey carried out by Lewis et al. (1974) aboard C.S.S. Baffin in 1973. Grab samples were obtained at 37 stations using a Shipek sampler, and in addition, samples of the near-surface bottom sediments were obtained from most of the 13 stations where rock drilling was attempted. Finally, samples of the bottom sediment were obtained at each of the three sites where dredging was carried out. In addition to the various types of sediment sampling, photographs of the bottom were taken.

REF. NO.: 0094-75

SUBJECT CODES: A1 (A7)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Pattern of Postglacial Emergence, Cape Storm and South Cape Fiord, Southern Ellesmere Island, Northwest Territories

SOURCE: Geological Survey of Canada, Paper 75-1C, pp. 69-77

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

This note presents, in summary fashion, the results of a study of postglacial emergence along the southern coast of Ellesmere Island, adjacent to Jones Sound. Glacial geological investigations were carried out in this area in 1967, 1968 and 1970, and some of the geomorphological features in the environs of Cape Storm are displayed.

REF. NO.: 0095-74

SUBJECT CODES: A7 (A1)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Periglacial Features and Landscape Evolution, Central Bathurst Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 74-1, pp. 235-244

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Much of the 1963 field season, as well as June 1964, was devoted to collecting samples of terrestrial and marine materials for radiocarbon dating, in order to establish a chronology of events bearing on the glacial history of the island (Blake, 1964, 1974). One result of the accumulation of age determinations is that a time framework is now available within which a variety of periglacial landforms are known to have developed, and the purpose of this report is to describe and illustate a few of the features which occur in the vicinity of Polar Bear Pass.

REF. NO.: 0096-74

SUBJECT CODES: A1 (A7)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Studies of Glacial History in Arctic Canada. II. Interglacial Peat Deposits on Bathurst Island

SOURCE: Canadian Journal of Earth Sciences, Vol. 11, No. 8, pp. 1025-1042

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Sixteen radiocarbon age determinations on peat deposits and buried organic layers at 10 localities within the Queen Elizabeth Islands have resulted in ages between >30 000 and >51 000 years. Similar results have been obtained from the southern Arctic islands, and as yet only one meaningful finite date in the 50 000 to 25 000 year-range has resulted from the dating of driftwood or in situ terrestrial organic materials in the entire archipelago. On Bathurst Island, where two dates of >50 000 years have been obtained, evidence from the assemblages of mosses, vascular plants, and insects in peat and organic layers indicates that climatic conditions were somewhat more favorable than at present when these deposits were forming. The available data are such that all deposits cannot necessarily be related to the same non-glacial interval, but the extensive deposits along the Stuart River are hereby assigned to the Stuart River Interglaciation. The lack of organic materials dating between 50 000 and 25 000 years in the Queen Elizabeth Islands may be because: (1) the area was ice-covered throughout Wisconsin time; (2) any mid-Wisconsin non-glacial interval was too short or had too severe a climate for deposits to accumulate; (3) organic deposits relating to this interval have been eroded; or (4) deposits of this age do exist but they have not been collected.

REF. NO.: 0097-73

SUBJECT CODES: A1

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Age of Pumice on Raised Beaches, Eastern Arctic Canada

SOURCE: Report of Activities, Part B: November 1972 to March 1973; Geological Survey of Canada, Paper 73-1, Part B, pp. 141-142

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

During the 1970 field season new collections of pumice were made at several sites around western Jones Sound, on both Ellesmere and Devon Islands. In each locality samples of driftwood were collected in close proximity to the pumice, and six of these pieces of wood have now been dated. These dates confirm the validity of the suggestion made previously that the pumice is of the order of 5000 years old (conventional radiocarbon years). Samples of wood collected more than 0.5 m below the level of the pumice are without exception clearly less than 5000 years old and samples collected above the level of the pumice are in all cases more than 5000 years old.

REF. NO.: 0098-71

SUBJECT CODES: A7 (A1)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1971

TITLE: Glacial Geology and Geomorphology, Southern Ellesmere Island, Coburg and Devon Islands, District of Franklin

SOURCE: Report of Activities, Part A: April to October, 1970, Geological Survey of Canada, Paper 71-1, Part A, pp. 157-158

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Field work in 1970 was a continuation of studies carried out in 1967 and 1968 on the glacial geology and geomorphology of southern Ellesmere, Coburg, and Devon Islands. Base camp was at Cape Storm in southwestern Ellesmere Island. Local travel was by means of a Piper Super Cub equipped with low-pressure tires, and support was provided by Otter aircraft of the Polar Continental Shelf Project. Part of the field season was devoted to detailed sampling at several sites visited briefly earlier; new areas studied were Graham Island and various localities in western Devon Island - Radstock Bay, Thomas Lee Inlet, and Viks Fiord.

REF. NO.: 0099-72

SUBJECT CODES: A1 (A7)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1972

TITLE: Climatic Implications of Radiocarbon-Dated Driftwood in the Queen Elizabeth Islands, Arctic Canada

SOURCE: In Climatic Changes in Arctic Areas During the Last Ten Thousand Years, Edited by Y. Vasari, H. Hyvarinen and S. Hicks. A Symposium held at Oulanka and Kevo, Finland, October 1971. Series A, Scientiae Rerum Naturalium No. 3, Geologica No. 1, University of Oulu, pp. 77-104

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Numerous radiocarbon dates show that by 10 000 years ago the disintegration of the Innuitian Ice Sheet was well underway in the western part of the Queen Elizabeth Islands, although a lobe of the Laurentide Ice Sheet still impinged on the south coast of Melville Island at that time. By 8000 years ago all of the inter-island channels were open, with the possible exception of the northern part of Nares Strait between Ellesmere Island and Greenland. The oldest driftwood logs discovered, from widely separated parts of the archipelago, are between 8500 and 8000 years old. Driftwood 6500 to 4500 years old is especially abundant, indicating that at least as much open water as at present, and probably more, existed during that interval. The marked decrease in the abundance of driftwood between approximately 4500 and 500 years B.P. is attributed to the onset of more severe sea ice conditions, an event which coincided with the development of ice shelves, especially along the north coast of Ellesmere Island, but perhaps elsewhere in the archipelago as well.

REF. NO.: 0100-70

SUBJECT CODES: G1 (A5)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1970

TITLE: Pumice on Raised Beaches, Eastern Arctic Canada

SOURCE: Report of Activities, Part A: April to October, 1970, Geological Survey of Canada, Paper 71-1, Part A, p. 182

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

A great deal of pumice (more than 100 pieces) was collected near base camp at Cape Storm, Ellesmere Island, and several driftwood logs from the pumice level were collected for dating. Additional pumice finds were made at two other sites visited previously - South Cape Fiord, Ellesmere Island, and Boat Point, Devon Island - and a single piece of pumice was found near Cape Vera, Devon Island. There, as elsewhere, it occurred with driftwood on a morphologically well-defined beach. It was at approximately 84 feet above sea level, slightly above the level at which it occurs near Cape Hawes, six miles to the north.

REF. NO.: 0101-70

SUBJECT CODES: A1 (A7)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario,

YEAR: 1970

TITLE: Studies of Glacial History in Arctic Canada. I. Pumice, Radiocarbon Dates, and Differential Postglacial Uplift in the Eastern Queen Elizabeth Islands

SOURCE: Canadian Journal of Earth Sciences, Vol. 7, pp. 634-664

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Dark brown pumice has been discovered on raised beaches of Ellesmere and Devon Islands, and in archeological sites on Baffin Island. The source area for the pumice is uncertain, but Iceland is a good possibility. Radiocarbon dates on driftwood and whale bones imbedded in beaches at the "pumice level", as well as at higher and lower elevations, indicate that the pumice arrived approximately 5000 years ago. The pumice serves as a time-line and provides a means of correlating widely-separated marine features. Because these features now occur at different elevations, the amount and direction of tilt can be calculated. Also, former ice centers can be delineated, as the areas which have undergone the greatest uplift are those where the ice cover was once thickest. It also rises northwestward toward the head of South Cape Fiord. The Jones Sound information, plus radiocarbon dates from elsewhere in the Queen Elizabeth Islands indicating the approximate position of the shoreline at the same time, shows that there is a region in the eastern and central part of the archipelago where >25 m of uplift has occurred during the last 5000 years. This region, including considerable areas that are now sea, is believed to have been covered by a major ice sheet during the last glaciation.

REF. NO.: 0102-68

SUBJECT CODES: A1 (A7)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1968

TITLE: Glacial Geology and Geomorphology, Southeastern Ellesmere Island and Coburg Island, District of Franklin (Parts of 38G, 39B, C, 49A, D)

SOURCE: Report of Activities, Part A: April to October, 1968, Geological Survey of Canada, Paper 69-1, Part A, pp. 188-189

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

The 1968 field season was devoted to studies of glacial geology and geomorphology in southeastern Ellesmere Island and on Coburg Island. The work was an extension of the 1967 program in northwestern Devon Island and southwestern Ellesmere Island. As in 1967, W. Blake, Jr. concentrated on studying postglacial marine deposits, collecting samples for radiocarbon dating, and recording fluctuations in the marginal positions of glaciers. In general the limit of marine submergence at the mouths of the fiords is lower in southeastern Ellesmere Island than farther west along the north coast of Jones Sound, as it rarely exceeds 300 feet. The marine limit also decreases in altitude northward toward the heads of the various fiords. Pumice was not found on raised beaches in southeastern Ellesmere Island, on Coburg Island, or at the few localities visited on reconnaissance flights along the north coast of Devon Island. However, three additional localities were discovered west of longitude 85°, confirming the results obtained in 1967 and showing that the level at which the pumice occurs rises northward up the fiords as well as rising westward along Jones Sound.

REF. NO.: 0103-65

SUBJECT CODES: A7 (A1)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1965

TITLE: Surficial Geology, Bathurst Island

SOURCE: Report of Activities: Field, 1964, Geological Survey of Canada, Paper 65-1, pp. 2-5

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Field work was devoted primarily to the western part of Bathurst Island, but certain localities in the eastern part of the island that had not been visited in 1963 were examined also. Brief visits were made to Alexander and Massey Islands to the northwest of Bathurst Island. Emphasis was placed on determining the elevation of the limit of marine submergence, and a number of shell samples near the marine limit were collected for radiocarbon dating. In addition a second boring was made in frozen peat, and a 3 m long core was recovered. Finally, a number of new localities with erratic boulder or glacially transported shell fragments were found, attesting further to the glaciated nature of Bathurst Island despite the lack of prominent glacial landforms. It now appears that all the high-level shells could have been transported to their present positions by local ice flowing outward from Bathurst Island. The limit of marine submergence in western and southwestern Bathurst Island is close to 105 m (350 feet), i.e., lower than in the northern part of the island, where postglacial shells have been found up to 140 m (450 feet) above sea-level, but higher than in east-central Bathurst Island, where beaches or postglacial shells have not been found above 90 m (300 feet).

REF. NO.: 0104-64

SUBJECT CODES: A7 (A1)

AUTHOR: BLAKE, Jr., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1964

TITLE: Preliminary Account of the Glacial History of Bathurst Island, Arctic Archipelago

SOURCE: Geological Survey of Canada, Paper 64-30, 8 p.

STATUS: Public

MAP NUMBERS: 7830, 7950, 7951

COMMENTS/SUMMARY:

Bathurst Island, in the central part of the Arctic Archipelago, lacks the prominent glacial landforms such as drumlins and eskers that characterize certain more southerly islands. It does not appear to have been overridden by the continental North American (Laurentide) ice sheet during the last glaciation (classical Wisconsin). Nonetheless Bathurst Island bears undoubted evidence of glaciation in the form of till, erratics, and meltwater channels. Apparently most of these features are related to locally-centered ice cap(s), but the occurrence of till containing shells above the marine limit at several localities along the east coast may possibly be the result of a glacier tongue in the straits having impinged upon the island. The rapid uplift that has taken place in post-glacial time, as determined by radiocarbon dating of marine shells from the raised beaches, is believed to have resulted from glacial rebound. Thus the last glaciation of Bathurst Island is inferred to have taken place during Wisconsin time. The altitude of the marine limit is close to 300 feet (90 m) along the east-central and southeast coasts, but it reaches 400 feet (120 m) in the long inlets that indent the north coast, suggesting that the ice may have been thicker in the latter area.

REF. NO.: 0105-76

SUBJECT CODES: C1 (A6)

AUTHOR: BORNHOLD, B. D.
Geological Survey of Canada, Ottawa, Ontario
FINLAYSON, N. M. and MONAHAN, D.
Canadian Hydrographic Service, Ottawa, Ontario

YEAR: 1976

TITLE: Submerged Drainage Patterns in Barrow Strait, Canadian Arctic

SOURCE: Canadian Journal of Earth Sciences, Vol. 13, pp. 305-311

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Recent detailed bathymetric maps of Barrow Strait enabled a reconsideration of the Tertiary fluvial erosion model used to account for the physiography of the Canadian Arctic Archipelago. Five distinct drainage basins were distinguished within Barrow Strait, including both dendritic and rectangular drainage patterns. The latter were controlled by normal faults along the Precambrian-Paleozoic contact in Peel Sound and Barrow Strait. Several changes in the original model are proposed, including the placement of the main east-west drainage divide through Somerset Island and across Barrow Strait and southern Wellington Channel to Devon Island.

REF. NO.: 0106-76

SUBJECT CODES: A5 (A6)

AUTHOR: BORNHOLD, B. D.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Marine Surficial Geology: Central and Eastern Arctic

SOURCE: Geological Survey of Canada, Paper 76-1A, pp. 29-31

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Grab sampling and gravity coring were carried out in the central and eastern Arctic on an opportunity basis from the Canadian Coast Guard icebreakers Labrador and D'Iberville between September 4 and 29, 1975. In eastern Viscount Melville Sound, off southern Bathurst Island, 91 Shipek grab samples were obtained; 38 grab samples and one gravity core were collected in Strathcona Sound on northern Baffin Island. Temperature and salinity profiles also were obtained at 33 stations in Strathcona Sound.

REF. NO.: 0107-76

SUBJECT CODES: A2 (A3, A4, A6, B1, B2, B6)

AUTHOR: BORNHOLD, B.D. and LEWIS, C. F. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Marine Geology of Western Lancaster Sound

SOURCE: In Program with Abstracts, Vol. 1, Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, Edmonton, Alberta, May 1976, p. 81

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Lancaster Sound formed in mid-Mesozoic by normal faulting and subsidence associated with the rifting and foundering of Baffin Bay. A wedge of clastic marine sediments over 5000 m thick assumulated at the eastern end of the Sound. Contemporaneously non-marine Tertiary sediments were deposited in two small isolated basins farther west. Up to 1600 m of sandstone and shale exist in a small basin in northwestern Lancaster Sound and approximately 1100 m exist in Barrow Basin, a prominent topographic depression in the west. Both basins are half-graben structures, bounded on the north by high-angle normal faults. Similar lower Tertiary non-marine sediments occur in the fiords of southern Devon Island, such as Maxwell Bay and Croker Bay. Ice marginal sediments occur up to 150 m thick in western Lancaster Sound. The thickest unconsolidated sediments (over 90 m) lie along the northern side of the sound in a band up to 20 km wide. These sediments appear on seismic reflection records as nearly transparent with abundant point reflectors and only a few weak laterally persistent reflectors. From piston cores, the sediments are mainly sandy, pebbly muds with occasional steeply dipping units of coarse sand and pebbles. Except in a few topographic depressions, mainly off northwestern Baffin Island where muds are presently accumulating, surficial sediments consist primarily of a coarse pebble pavement, the winnowed product from the underlying sediments. Ice-rafting appears to be of minor importance to modern sedimentation in Lancaster Sound.

REF. NO.: 0108-75

SUBJECT CODES: H1 (A5)

AUTHOR: BORNHOLD, B. D., LEWIS, C. F. M. and FENERTY, N. E.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Arctic Marine Surficial Geology: AIDJEX 1975

SOURCE: Geological Survey of Canada, Paper 75-1C, pp. 79-84

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

From May 3 to May 14, 1975 the writers carried out a program of sediment sampling and sea floor photography at the Arctic Ice Dynamics Joint Experiment (AIDJEX) site in the Arctic Ocean at approximately 76°25'N, 145°00'W. The objectives of the project were: (1) to develop a portable system and techniques for obtaining gravity cores, grab samples, and bottom photographs from the ice surface, where water depths exceed 3000 metres; and (2) to obtain short cores and sea floor photographs from the Canada Abyssal Plain.

REF. NO.: 0109-68

SUBJECT CODES: J

AUTHOR: BOSTOCK, H. S.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1968

TITLE: A Catalogue of Selected Airphotographs

SOURCE: Geological Survey of Canada, Paper 67-48

STATUS: Public

MAP NUMBERS: Entire Study Area

COMMENTS/SUMMARY:

This publication, a catalogue of selected airphotographs of geomorphologic phenomena in Canada, replaces Paper 47-26. It is restricted to photographs taken from aircraft, most of which were made in connection with projects designed to facilitate the topographic mapping of Canada, This catalogue does not cover the extensive photographic collection of the Geological Survey amassed during more than 100 years from photographs taken by field officers in the course of their duties. The catalogue is divided into three sections; the first is a subject classification of features; the second, a serial listing of the photographs; includes a brief discussion of the feature, pertinent technical data, and the source from which the photograph can be obtained; the third section is a finding list which ties the location of each photograph to the National Topographic System (NTS) and thus provides a means of selecting photographs for specific geographic areas. This list should be used in conjunction with the NTS Index Map in the back pocket of the report.

REF. NO.: 0110-75

SUBJECT CODES: A7

AUTHOR: BOYDELL, A. N., DRABINSKY, K. A. and
NETTERVILLE, J. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Terrain Inventory and Land Classification, Boothia Peninsula and Northern Keewatin

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 393-395

STATUS: Public

MAP NUMBERS: 7502, 7503, 7740

COMMENTS/SUMMARY:

Terrain studies were carried out in the Boothia Peninsula-Rae Strait-Simpson Peninsula areas between 72° to 68°N and 88° to 96°W, an area of some 55 000 km^2. Terrain mapping was conducted by the authors and utilized helicopter support originating out of Fort Ross (Somerset Island), and the settlements of Spence Bay and Pelly Bay. The objectives of the field component of this project were: 1) to undertake a terrain inventory of landforms and materials, including a granular resources survey, based on detailed ground checking of preliminary, photo-interpreted maps; 2) to study and record the characteristics of permafrost terrain and the distribution of ground ice with respect to sediment types; 3) to examine, where possible, the stratigraphy of the unconsolidated sediments, and other evidence of glacial and postglacial events, in order to describe the Quaternary history of the area; 4) to conduct a biophysical land classification survey; 5) to evaluate the potential uses of Earth Resources Technology Satellite data for terrain mapping.

REF. NO.: 0111-75

SUBJECT CODES: A7

AUTHOR: BOYDELL, A. N.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Evaluation of the Potential Uses of Earth Resources Technology Satellite (ERTS-1) Data for Small-Scale Terrain Mapping in Canada's North (Project 740074)

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 389-392

STATUS: Public

MAP NUMBERS: 7502

COMMENTS/SUMMARY:

This report describes a project to utilize ERTS-1 data for small-scale terrain mapping in the Pelly Bay region. Some success was achieved in matching certain field units with multispectral data which was processed by automated methods. The method of analysis, field checking results, cost benefits and the computer time and facilities needed are described.

REF. NO.: 0112-71

SUBJECT CODES: A5 (A6, H4)

AUTHOR: BUCKLEY, D. E.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1971

TITLE: Recent Marine Sediments of Lancaster Sound, District of Franklin

SOURCE: Maritime Sediments, Vol. 7, No. 3, pp. 96-117

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Textural and petrographic criteria are most useful in deducing the environment of deposition of marine sediments, provided appropriate consideration can be given to the mode of transportation and energy conditions of the transporting medium. In this study textural attributes of recent sediments from an Arctic marine basin have been examined to evaluate the relationships to dispersal processes. The mineralogy of the medium to fine sand has been studied to determine directions of transport and potential source areas of the clastic sediments.

REF. NO.: 0113-77

SUBJECT CODES: B1 (B5, B6, B7)

AUTHOR: BUSTIN, R. M.
University of Calgary, Calgary, Alberta

YEAR: 1977

TITLE: The Eureka Sound and Beaufort Formations, Axel Heiberg and West Central Ellesmere Islands, District of Franklin

SOURCE: M.Sc. Thesis, Department of Geology, University of Calgary, Calgary, Alberta, 208 p.

STATUS: Public

MAP NUMBERS: 7940

COMMENTS/SUMMARY:

Latest Cretaceous and Tertiary sediments of the Eureka Sound and Beaufort Formations which crop out on west central Ellesmere and Axel Heiberg Islands are important in reconstructing the depositional and tectonic history of the eastern Canadian Arctic Archipelago. The purpose of this thesis is to interpret the depositional history of the Eureka Sound and Beaufort Formations and to resolve the chronology and interaction of tectonism and sedimentation in the study area.

REF. NO.: 0114-83

SUBJECT CODES: H5 (I1, H3, I2, E3)

AUTHOR: CANOCEAN ENGINEERING LTD.
Calgary, Alberta

YEAR: 1983

TITLE: Petroleum Production from Lancaster Sound: A Study of the Application of Technology to Resource Development

SOURCE: Prepared for Consolidex, Magnorth, Oakwood Joint Venture, by CanOcean Engineering Ltd., in consultation with Pallister Resource Management Ltd., January 1983, Document No. CEL-2033A (available as Resource Management Plan Support Document No. 8) 96 p. plus appendices

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The Consolidex, Magnorth, Oakwood Lancaster Sound Joint Venture commissioned this study to assist in its development planning for the Lancaster Sound Resource Management Plan. The purpose of the study is to provide evidence of the industry's ability to work in deep water within the arctic conditions of Lancaster Sound, and to provide preliminary information on a conceptual production field development scenario for Lancaster Sound. The report provides evidence of deepwater accomplishments through a historic overview of technology advancements to ever increasing water depths in the areas of platform design, drilling and subsea completion systems, pipelining technologies and field maintenance. The report includes a summary of the physical environment of Lancaster Sound. The two main physical environmental factors which affect the development scenario in Lancaster Sound are the deep water, 760 m (2500 ft.) and the ice climate, characterized by icebergs, ice-floes and sea-ice.

REF. NO.: 0115-67

SUBJECT CODES: A7 (A1)

AUTHOR: CHRISTIE, R. L.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1967

TITLE: Reconnaissance of the Surficial Geology of Northeastern Ellesmere Island, Arctic Archipelago

SOURCE: Geological Survey of Canada, Bulletin 138

STATUS: Public

MAP NUMBERS: 7941

COMMENTS/SUMMARY:

Glacial features and deposits such as erratics, grooves, and till are abundant in northeastern Ellesmere Island. Distinctive erratics and striae indicate a general outward movement of ice from the high mountains of the island with a limited incursion of Greenland ice onto the eastern shores. Glacio-fluvial gravel and sand is widespread, and certain enigmatic 'boulder gravel hills' may be related. Thick marine and lacustrine silt deposits form conspicuous benches and badlands. A post-glacial marine inundation of at least 250 feet is indicated by marine shells. Some interesting permafrost and ground-ice structures and the existing glacial ice and ice shelves are described. A synthesis of the glacial retreat for the region is attempted. Most of the deposits formed during a period of rapid deglacierization and marine incursion. A relatively warm period, the Climatic Optimum, followed in which beds bearing vegetal matter were deposited. During a succeeding, fairly recent, cold period, the glaciers advanced slightly and the ice shelves formed.

REF. NO.: 0116-75

SUBJECT CODES: H4

AUTHOR: CLINK, J. W. and EINARSSON, T. D.
Geophysical Service Inc.

YEAR: 1975

TITLE: Breaking the Ice Barrier

SOURCE: Proceedings, Seventh Annual Offshore Technology Conference, Houston, Texas, May 1975, Paper No. OTC 2225, pp. 783-786

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Recent seismic data collection in previously unnavigated waters of the Canadian High Arctic (as far north as Kane Basin and west to the western entrance of M'Clure Strait) demonstrates the feasibility of marine seismic surveys to explore the Arctic's potential energy resources. Vessels of the icebreaker/sealer class were able to penetrate multi-year ice without government ice-breaker assistance. Although operational problems such as communications, scouting, and gear protection require further research and development, the ships and systems utilized can accomplish marine seismic coverage at a lower cost than alternative on-ice seismic data collection in this harsh Arctic environment.

REF. NO.: 0117-62

SUBJECT CODES: A6 (C1, D1)

AUTHOR: COLLIN, A. E.
Atlantic Oceanographic Group
Fisheries Research Board of Canada

YEAR: 1962

TITLE: The Waters of the Canadian Arctic Archipelago

SOURCE: In Arctic Basin Symposium, Arctic Institute of North America, Hershey, Pennsylvania, October 1962, 12 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The waters of the Canadian Arctic archipelago constitute a network of shallow channels connecting the Arctic Ocean with Baffin Bay and Hudson Strait. The archipelago system contains some 16 major channels that range in width from 10 to 120 km and in depth to over 700 metres. Arctic oceanographic observations have been carried out in recent years by the Fisheries Research Board and by the Marine Sciences Branch of the Department of Mines and Technical Surveys. Much of this work has been directed toward fisheries research and has been concentrated in Foxe Basin and Lancaster Sound. Oceanographic observations have been recorded in all the main channels of the archipelago and in such areas as Lancaster Sound the data of 4 oceanographic cruises are now available. Almost all of this information has been obtained during the summer months of July and August and there are few marine data for winter conditions in the archipelago.

REF. NO.: 0118-58

SUBJECT CODES: J (A5, A6, E3, G1, I2)

AUTHOR: COLLIN, A. E.
Atlantic Oceanographic Group
Fisheries Research Board of Canada

YEAR: 1958

TITLE: An Oceanographic Study of Prince Regent Inlet, the Gulf of Boothia and Adjacent Waters

SOURCE: Fisheries Research Board of Canada, Manuscript Report Series (Oceanographic and Limnological) No. 13.

STATUS: Public

MAP NUMBERS: 7220, 7502, 7503

COMMENTS/SUMMARY:

In the summer of 1956 H.M.C.S. "Labrador" carried out her third oceanographic survey in the eastern Canadian Arctic. The work commenced in Hudson Strait and continued northward through Foxe Basin to Lancaster Sound. On this cruise, "Labrador" steamed over 19 000 miles in Hudson Strait, Foxe Basin, Gulf of Boothia, Barrow Strait, and Lancaster Sound. The 1956 scientific survey was arranged to complement the work carried out in previous cruises and also to undertake the initial hydrographic and oceanographic investigations of the unsurveyed areas, Gulf of Boothia and Prince Regent Inlet. Heavy winter floes were encountered near Committee Bay with young ice forming between the old floes. Further north, old winter ice was scarce but freshly formed ice was common. Bottom sediments were predominantly composed of a sticky grey-brown clay containing small angular pebbles and occasional shells. In the deeper waters, fewer stones and less animal life were found than in shallower water.

REF. NO.: 0119-83

SUBJECT CODES: B1 (B2, B6)

AUTHOR: CONSOLIDEX GAS AND OIL LTD.
Calgary, Alberta

YEAR: 1983

TITLE: The Geological History and Evaluation of the Lancaster Sound, Northwest Territories, with Specific Reference to the Dundas Structure

SOURCE: Prepared by H. D. Daae, Consolidex Magnorth Oakwood Joint Venture Supporting Documentation, RMPSD 1, 33 p. (Available from Pallister Research Management Ltd.)

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

This report describes the physiography and stratigraphy of the Lancaster Sound region, particularly in the vicinity of the Dundas Structure. Within the stratigraphic portion of the report the entire sequence of rock units from Precambrian through to Tertiary are described. A short comparative basin analysis is also included. The bibliography contains 34 references.

REF. NO.: 0120-84

SUBJECT CODES: K (A2, B1)

AUTHOR: CANADA OIL AND GAS LANDS ADMINISTRATION
Energy, Mines and Resources and Indian and Northern Affairs Canada, Ottawa, Ontario

YEAR: 1984

TITLE: Released Geophysical and Geological Reports - Canada Lands

SOURCE: Canada Oil and Gas Lands Administration, Ottawa, Ontario, July 1984, 130 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This publication contains listings of geophysical and geological reports which have been released in accordance with the provisions of the Canada Oil and Gas Act. Reports and data for before 1982 are coded according to the operator or company, type of work, geological region and the numerical sequence of the reports received from the company or operator. The following types of work are used in the classification: surface geological mapping, photogeologic interpretation, geological evaluation, geochemical surveys, offshore geological surveys, seismic reflection and refraction on land and ice, aeromagnetometer, gravity meter, and marine seismic reflection and refraction research geophysical work. This index is useful for compiling and synthesizing a variety of data pertinent for offshore studies of both the shallow Quaternary sediments and deeper geologic formations.

REF. NO.: 0121-70

SUBJECT CODES: A6 (A2, B1, B6, B7, C1, D1)

AUTHOR: CONTINENTAL SHELF DATA SYSTEMS
Denver, Colorado

YEAR: 1970

TITLE: Geobathymetric Interpretation Report of the Sverdrup Basin Area, Canada

SOURCE: Polarquest Survey A2B (Edinburgh), Prepared for Kenting Exploration Services Ltd., April 1970 (available as COGLA Report 693-5-10-12), 19 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

This report describes a study to assemble extensive water depth information around the Canadian Arctic Islands and to determine the geological significance of the data as it may relate to petroleum exploration. It was anticipated that as additional water depth data becomes available from government and private industry sources the accompanying maps can be updated on an annual basis.

The study covers an area of approximately 85 000 square miles of the Arctic waters around the Queen Elizabeth Islands. The mapped area is between latitudes 76°00' and 80°00' North, and longitudes 88°00' to 120°00' West. The objectives of this study were as follows:

A. To complete a uniform series of comprehensive bathymetric maps from all original open file information and available private industry data.

B. To prepare a series of Geobathymetric maps integrating detailed bathymetry with open file geological and geophysical information.

C. To construct a series of geological cross sections to illustrate the possible relationship of ocean floor topographic features to the onshore geology of the Arctic Islands.

REF. NO.: 0122-82

SUBJECT CODES: E3

AUTHOR: CORNFORD, A. B., MELLING, H., SMILEY, B. D., HERLINVEAUX, R. H. and MACDONALD, R. W.
Institute of Ocean Sciences, Department of Fisheries and Oceans, Sidney, British Columbia
LEMON, D. D. and FISSEL, D. B.
Arctic Sciences Ltd., Sidney, British Columbia

YEAR: 1982

TITLE: Arctic Data Compilation and Appraisal. Volume 1. Beaufort Sea: Physical Oceanography - Temperature, Salinity, Currents and Water Levels

SOURCE: Department of Fisheries and Oceans, Canadian Report of Hydrography and Ocean Sciences, No. 5, 55 p.

STATUS: Public

MAP NUMBERS: 7832

COMMENTS/SUMMARY:

This inventory contains a catalogue of all physical oceanographic data from the Beaufort Sea and Amundsen Gulf. Times and locations of measurements are listed and displayed graphically for temperature-salinity, current meter, water level and drifter data. Meteorological and ice information are not included. Yearly plots showing the locations of all measurements are included, as are indexes by area and measurement types. References and sources are listed for all data included in the inventory.

REF. NO.: 0123-65

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1965

TITLE: Notes on Moraines and Radiocarbon Dates in Northwest Baffin Island, Melville Peninsula, and Northeast District of Keewatin

SOURCE: Geological Survey of Canada, Paper 65-20, 7 p.

STATUS: Public

MAP NUMBERS: 7502, 7503

COMMENTS/SUMMARY:

A linear belt of end moraines lies, both spatially and chronologically, midway in the sequence of deglaciation in the northwest quadrant of the area covered by the Wisconsin Laurentide ice-sheet. The present study presents a series of new radiocarbon dates bearing on the age of these moraines, and discusses the relationship of the various segments and some aspects of their regional significance.

REF. NO.: 0124-65

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1965

TITLE: Surficial Geology, Operation Wager; Northeast District of Keewatin and Melville Peninsula, District of Franklin

SOURCE: Report of Activities: Field, 1964, Geological Survey of Canada, Paper 65-1, pp. 17-19

STATUS: Public

MAP NUMBERS: 7067, 7502

COMMENTS/SUMMARY:

This summary report is based on a study of air photographs and on field data collected by the writer on helicopter-supported Operation Wager, supplemented by additional observations made by other members of the party whose primary interest was the bedrock geology.

REF. NO.: 0125-64

SUBJECT CODES: A1 (A7)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1964

TITLE: Surficial Geology, Operation Admiralty

SOURCE: Summary of Activities: Field, 1963, Geological Survey of Canada, Paper 64-1, p. 3

STATUS: Public

MAP NUMBERS: 7220, 7502, 7503

COMMENTS/SUMMARY:

The northern half of the map area is almost completely devoid of the common glacial landforms indicating the former presence of widespread glacial ice. In the southwest part of the map area there is widespread evidence of glaciation. A broad morainal zone extends along both sides of the trough occupied by Bernier Bay and Berlinguet Inlet and an intermittent morainal ridge extends northward from near the east end of Berlinguet Inlet for about 60 miles inland from the west side of Admiralty Inlet. Drumlin fields indicate glacial flow into the Berlinguet-Bernier trough. The elevation of the marine limit varies throughout the map area and is complicated apparently by the presence of late tongues of ice in some of the major valleys and troughs while others were ice free. The high scarp-bound coasts of much of the northern part show no evidence of this limit except for high deltas near some of the valley mouths. In the south, high beaches, deltas, and the lower limit of undisturbed ground moraine give a clearer indication. In general the marine limit seems to be highest at about 400 feet in the southwest corner of the map area, decreases to nearly 300 feet in the southeast corner, to about 250 feet along Lancaster Sound, Navy Board Inlet, and the south end of Bell Bay, and to slightly over 200 feet at the end of Milne Inlet.

REF. NO.: 0126-63

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1963

TITLE: Surficial Geology, Operation Prince of Wales

SOURCE: Summary of Research: Field, 1962, Geological Survey of Canada, Paper 63-1, pp. 3-4

STATUS: Public

MAP NUMBERS: 7502, 7503, 7740, 7830

COMMENTS/SUMMARY:

Evidence of glacial activity was found thoughout the area mapped. Boothia Peninsula, King William Island, and most of Prince of Wales Island display a variety of glacial landforms and materials, ice-marginal channels, and rock-inscribed features. Most of Somerset Island shows little evidence of glaciation, although granite boulders are common on the limestone uplands, the till has a ground moraine surface pattern in many places, and ice-marginal channels occur along many of the valleys. King William Island, much of Prince of Wales Island except for the northern and eastern parts, the coastal areas and southern part of Boothia Peninsula, and the southeast and central parts of Somerset Island were inundated by the sea following the retreat of the ice. The upper limit of submergence could be deduced in only a few places. Strandlines are not common above 400 feet elevation, although marine pelecypod shells were collected at elevations up to 650 feet on Boothia Peninsula, 500 feet on Somerset Island, and 850 feet on Prince of Wales Island. The highest shells may not represent deposition during the last marine invasion, however.

REF. NO.: 0127-64

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1964

TITLE: Surficial Geology of Boothia Peninsula and Somerset, King William, and Prince of Wales Islands, District of Franklin

SOURCE: Geological Survey of Canada, Paper 63-44, 9 p.

STATUS: Public

MAP NUMBERS: 7502, 7503, 7740, 7830

COMMENTS/SUMMARY:

This paper describes surficial geologic data collected during the 1962 field season of Operation Prince of Wales. The physical setting of the map area, the glacial deposits and their landforms, the extent of glaciation and ice retreat and the chronology and post glacial history are described. Palaeontological remarks by F. J. E. Wagner on shells collected during the project are included as an Appendix. Map 46-1963 is part of this paper.

REF. NO.: 0128-61

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1961

TITLE: Surficial Geology of Northern District of Keewatin, Northwest Territories

SOURCE: Geological Survey of Canada, Paper 61-5, 7 p.

STATUS: Public

MAP NUMBERS: 7502, 7740

COMMENTS/SUMMARY:

This report describes surficial geologic data collected during the 1960 field season as part of "Operation Back River." The general physical setting of the region, the pattern of ice retreat, the pattern of postglacial marine submergence and several radiocarbon age determinations are discussed in this report. F. J. E. Wagner's palaeontological remarks on shells collected during the project are included as an appendix. Map 7-1961 is part of this paper.

REF. NO.: 0129-60

SUBJECT CODES: A7 (A1)

AUTHOR: CRAIG, B. G. and FYLES, J. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1960

TITLE: Pleistocene Geology of Arctic Canada

SOURCE: Geological Survey of Canada, Paper 60-10, 21 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This summary of the Pleistocene history of Arctic Canada is presented as a preliminary account, subject to revision as more adequate information becomes available. Some parts of the region and parts of the geological record are treated in greater detail than others, and the Cordillera is omitted entirely from the discussion. Much of the information pertaining to the Districts of Keewatin and Mackenzie and to Banks and Victoria Islands is based upon our own observations, and those of H. A. Lee, gained in the course of large-scale airborne operations covering about 450 000 square miles. In compiling data on the Arctic Islands we have drawn upon unpublished information and ideas of our colleagues at the Geological Survey of Canada; this assistance is gratefully acknowledged.

The following topics are discussed in this paper: the extent of glaciation, the pre-Wisconsin geology, the Wisconsin Laurentide ice-sheet, glacial lakes, sea-level changes, and radiocarbon dates.

REF. NO.: 0130-73

SUBJECT CODES: A5 (A10)

AUTHOR: CROCKET, J. H.
Department of Geology
McMaster University, Hamilton, Ontario
MACDOUGALL, J. D.
Department of Physics
University of California, Berkeley, California
HARRISS, R. C.
Department of Oceanography
Florida State University, Tallahassee, Florida

YEAR: 1973

TITLE: Gold, Palladium and Iridium in Marine Sediments

SOURCE: Geochimica et Cosmochimica Acta, Vol. 37,
pp. 2547-2556

STATUS: Public

MAP NUMBERS: 7951, 7952

COMMENTS/SUMMARY:

The paper presents a preliminary evaluation of some processes affecting the noble metal content of deep-sea sediments. Neutron activation data for Au, Pd and Ir in deep-sea sediments, nearshore Arctic sediments and soils and Tahitian basalts and weathered derivatives are presented. A suite of sediment samples across the East Pacific Rise provide strong evidence that submarine volcanic exhalation has contributed significantly to the Pd and Au contents of these sediments. Limited data on continental weathering indicate that detritus contributed to the marine environment will not differ greatly in Au, Pd or Ir content compared to its continental source rocks.

REF. NO.: 0131-75

SUBJECT CODES: B1 (B2, B3, B4, B6, B7)

AUTHOR: DAAE, H. D. and RUTGERS, A. T. C.
Norlands Petroleums Limited, Calgary, Alberta

YEAR: 1975

TITLE: Geological History of the Northwest Passage

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 23, No. 1, pp. 84-108 (Also Report No. NR29 of Norlands Petroleum Ltd.'s Lancaster Sound Study, Available from Pallister Resources Management Ltd.)

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830, 7831, 7832

COMMENTS/SUMMARY:

The broad structural geology and stratigraphy of the Northwest Passage is controlled by the Boothia Arch and structural depressions on each side, namely, Viscount Melville Sound and M'Clure Strait to the west (graben), and Lancaster Sound to the east (half-graben). Negative rift movements began during Mesozoic time and continued into the Tertiary. Outcrop and well information from the islands are related to marine seismic data in the Northwest Passage. Paleozoic strata appear to continue off-shore in facies predictable from data on the islands. Mesozoic and Tertiary strata, however, are represented by sparse remnants on land but are well developed under Lancaster Sound, if low velocity beds present there are of these ages. M'Clure Strait also seems to have thicker Tertiary and Mesozoic sediments than do the adjacent islands.

REF. NO.: 0132-83

SUBJECT CODES: H2 (H3)

AUTHOR: DAVIES, P.

YEAR: 1983

TITLE: A Survey of Panarctic Oils' High Arctic Hydrocarbon Exploration

SOURCE: APOA Review, Vol. 6, No. 3, pp. 16-20

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

This report describes Panarctic's experience in high arctic oil exploration. This history of drilling in the region from its beginning to the present is traced. Topics discussed include: cold weather logistics, ice platform construction, plans to ship or pipe gas to southern markets, and environmental problems.

REF. NO.: 0133-80

SUBJECT CODES: B4.1

AUTHOR: DELAURIER, J. M.
Pacific Geoscience Centre, Earth Physics Branch,
Department of Energy, Mines and Resources,
Sidney, British Columbia
NIBLETT, E. R., PLET, F. and CAMFIELD, P. A.
Division of Geomagnetism, Earth Physics Branch,
Department of Energy, Mines and Resources,
Ottawa, Ontario

YEAR: 1980

TITLE: Geomagnetic Depth Sounding Over the Central Arctic Islands, Canada

SOURCE: Canadian Journal of Earth Sciences, Vol. 17, pp. 1642-1652

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

In the spring of 1973, 3 days of simultaneous geomagnetic observations were obtained at six recording sites over the central Arctic Islands. The northern site, Isachsen, displayed the strong suppression of the amplitudes of short-period temporal variations in the vertical component that has been observed at Mould Bay, about 500 km to the southwest. One-dimensional conductivity models suggest high conductivities in the upper crust. Parkinson's arrows for short periods point to the inter-island channels of sea water but for long periods the arrows rotate to point to the deep Arctic Ocean. A large spatial variation of the in-phase correlated Z/H ratios is also observed along a profile across the central Arctic Islands. These ratios peak at the Cameron Island site, which is near the Sverdrup Basin - Franklinian Geosyncline geological boundary. In well-log resistivity data, a conductivity contrast of two orders of magnitude is observed across this margin. Electric currents therefore flow in the conductive sediments of the Sverdrup basin and in the sea water in the inter-island channels. The electromagnetic response is similar to that near an ocean-continent margin but the peak response occurs "inland" by 300-400 km. Consequently, the margin of the resistive continent is located near the Franklinian - Sverdrup Basin boundary in the central Arctic Islands.

REF. NO.: 0134-82

SUBJECT CODES: I1

AUTHOR: De LANGE BOOM, B. R., MACNEILL, M. R. and BUCKLEY, J. R.
Seakem Oceanography Ltd., Sidney, British Columbia

YEAR: 1982

TITLE: Iceberg Motion in Lancaster Sound and Northwest Baffin Bay, Summer 1978

SOURCE: Arctic, Vol. 35, No. 1, pp. 219-233

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

A radar station on Hope Monument, Devon Island, N.W.T., was operated from 7 July 1978 to 24 September 1978 to track the movement of icebergs in eastern Lancaster Sound and northwestern Baffin Bay. Data were recorded by photographing the radar screen every 20 minutes. Meteorological measurements were also made. The data were processed by computer to provide a statistical picture of the iceberg motions as well as tracks of individual bergs. The mean circulation pattern of the ice was well defined and variations about the mean did not greatly change the general form of the pattern. The dominant feature of the flow was a stream of icebergs moving with a mean speed of about 40 cm s^{-1} southward along the east coast of Devon Island from north of Philpots Island to Cape Sherard and then westward to Cape Warrender. At Cape Warrender, the bergs turned toward the centre of Lancaster Sound with directions ranging from southwest to southeast and average speeds up to 50 cm s^{-1}. East of the coastal stream in Baffin Bay, the icebergs moved slowly (<25 cm s^{-1}) westward to join the coastal stream, while south of the stream at the entrance to Lancaster Sound two large persistent eddies were observed.

REF. NO.: 0135-83

SUBJECT CODES: A5

AUTHOR: THOMAS, D. J., FRANCIS, A. G. and WOOD, V.
Arctic Laboratories Limited
Sidney, British Columbia
MACDONALD, R. W. and CORNFORD, A. B.
Institute of Ocean Sciences
Sidney, British Columbia

YEAR: 1983

TITLE: Arctic Data Compilation and Appraisal, Volume 4, Northwest Passage: Chemical Oceanography

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences No. 5, Institute of Ocean Sciences, Sidney, British Columbia, 199 p.

STATUS: Public

MAP NUMBERS: 7220, 7502, 7503, 7740, 7830, 7831, 7832

COMMENTS/SUMMARY:

This inventory contains a catalogue of chemical oceanographic data sets from the Northwest Passage. The inventory includes commonly measured substances such as dissolved oxygen, major and minor elemental components, nutrients and less frequently measured substances such as trace elements, hydrocarbons and chlorinated hydrocarbons. Suspended particulate matter (although not a truly chemical quantity) is also included. Data sets are included for sea ice, sea water, sediments and biota. Times and locations of measurements are listed and displayed graphically on a yearly and cumulative bi-monthly basis. A geographical index and alphabetical references (by data set number) are also included.

REF. NO.: 0136-81

SUBJECT CODES: H5 (A6, A7, A9, D1, E4, E5, F2, I2)

AUTHOR: ARCTIC PILOT PROJECT
Petro-Canada Inc., Calgary, Alberta

YEAR: 1981

TITLE: Facilities/Arctic Pilot Project

SOURCE: Volume 3, Part of an application to the National Energy Board, Department of Indian Affairs and Northern Development and the Department of Transport

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

Volume III presents a technical description of the different physical facilities that will compose the Arctic Pilot Project. The project will obtain gas from a gathering system and field processing facility at Drake Point; these facilities will be the subject of a separate application to the Department of Indian Affairs and Northern Development by Panarctic Oils Limited, the developer of this gas field.

Various sections describe the LNG receiving terminal including comments on the seabed sediments, permafrost, seismicity, sea ice management and bathymetry. An extensive list of sub-consultant reports is also contained in this volume. A 1:5000 scale map shows one plan of the proposed terminal facility as well as 1978 and 1979 penetrometer and geotechnical test holes in the offshore near the proposed Bridport terminal.

REF. NO.: 0137-82

SUBJECT CODES: K

AUTHOR: ARCTIC SCIENCE AND TECHNOLOGY INFORMATION SYSTEM (Edited by C. Ross Goodwin)

YEAR: 1982

TITLE: EAMES Bibliography

SOURCE: Arctic Institute of North America, Calgary, Alberta Publication No. 6, ISSN 0225-5170,

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This bibliography contains all reports and articles produced by, or written about, the EAMES program; a total of 130 documents. This includes the actual EAMES reports from the northern and southern sectors, all papers in the special EAMES issue of Arctic, other journal articles that were based on EAMES data, articles describing the project itself, and the EAMES integrated reports and atlas.

REF. NO.: 0138-82

SUBJECT CODES: K

AUTHOR: ARCTIC SCIENCE AND TECHNOLOGY INFORMATION SYSTEM (Edited by C. Ross Goodwin)

YEAR: 1982

TITLE: Norlands Bibliography

SOURCE: Arctic Institute of North America, Calgary, Alberta Publication No. 7, ISSN 0225-5170,

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This short bibliography contains 28 reports produced by Norlands Petroleums during its unsuccessful attempt to obtain permission to drill an exploratory well in Lancaster Sound. Subjects covered include the physical and biological environment of the area, drilling procedures, contingency plans, and the economics of frontier petroleum development.

REF. NO.: 0139-78

SUBJECT CODES: A7 (A1)

AUTHOR: BLAKE, JR., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Aspects of Glacial History, Southeastern Ellesmere Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 78-1A, Part A, pp. 175-182

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Field work around Makinson Inlet, Ellesmere Island, has revealed that erratics, striated rock surfaces, and marginal drainage channels are widespread. These features, plus the glacial sculpture on Bowman Island, show that a major outlet glacier formerly flowed eastward in Makinson Inlet, draining a significant mass of ice that lay to the west of the present-day ice caps. A fossil peat deposit indicates an ice-free interval >44 000 years (GSC-140-2) ago with a climate more favourable than that of today. During Holocene time the sea penetrated to the head of the west arm of Makinson Inlet by 8930 $\pm$ 100 years B.P. (GSC-2519) and to the head of the north arm by 7330 $\pm$ 80 years B.P. (GSC-1972).

REF. NO.: 0140-76

SUBJECT CODES: H1 (A9)

AUTHOR: CAULFIELD, D. D., and LIRON, A.
Banister Technical Services Ltd.
LEWIS, C. F. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario
HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Preliminary Test Results of the "Bancqes" Through-Ice Sub-Bottom Acoustic Profiling System at Tuktoyaktuk, Northwest Territories

SOURCE: Geological Survey of Canada, Paper 76-1A, pp. 503-510

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Signal processing through the BANCQES system was performed for measurements taken at four sites in the Mackenzie Delta near Tuktoyaktuk. Measurements were made through 2 m of sea-ice and 2 to 4 m of water. Interpreted acoustic impedances were related to grain size and porosity of sediments to depths of 25 m below sea-bottom. The method shows promise for determining engineering and sediment properties of sub-sea-bottom materials in ice-covered areas without the necessity of a detailed coring program.

REF. NO.: 0141-76

SUBJECT CODES: H1

AUTHOR: CRUTCHLOW, M. R.

YEAR: 1976

TITLE: Tracked Vehicle Sounding Over Ice

SOURCE: Light House, No. 14, pp. 16-18

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Sounding in ice covered waters from a tracked vehicle using a transducer mechanically coupled to a spike is a new field for the Canadian Hydrographic Service. Although tracked vehicles and through-ice sounding have both been around for a number of years, the combination of both is a recent development.

REF. NO.: 0142-76

SUBJECT CODES: B6 (B5)

AUTHOR: DOUGLAS, T. R.
Department of Geology, University of Calgary, Calgary, Alberta

YEAR: 1976

TITLE: Environments of Deposition of the Borden Island Gas Zone in the Subsurface of the Sabine Peninsula Area, Melville Island, Arctic Archipelago

SOURCE: Master of Science Thesis, Department of Geology, The University of Calgary, Calgary, Alberta

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

The subsurface clastic deposits of the interval labelled the Borden Island gas zone form the major reservoir in the two largest gas fields yet discovered in the Sverdrup Basin. These gas fields (Drake Point and Hecla) lie on and adjacent to the Sabine Peninsula, Melville Island. On the basis of colour, lithology and mechanical log character and position in sequence, three units are recognized in the gas zone and are correlated through 15 wells on northern Melville Island. Each unit appears as a basinward thickening wedge of sediment, the total thickness of which varies from 65 to 354 feet (20 to 108 m). Cores from 5 wells, when combined, provide an almost complete lithological record of the interval in the subsurface.

REF. NO.: 0143-73

SUBJECT CODES: B1

AUTHOR: DRUMMOND, K. J.
Mobil Oil Co., Princeton, New Jersey

YEAR: 1973

TITLE: Canadian Arctic Islands

SOURCE: In The Future Petroleum Provinces of Canada - Their Geology and Potential, Edited by R. G. McCrossan, Canadian Society of Petroleum Geologists, Memoir 1, Calgary, Alberta, pp. 443-472

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The Canadian Arctic Islands contain a sedimentary basin with a favorable sedimentary section covering an area of approximately 664 600 square miles, with a land area of 286 500 square miles. The sediments constitute a total estimated volume in excess of 950 000 cubic miles. The Arctic Islands sedimentary basin has all the necessary geologic elements conducive to the entrapment of hydrocarbons in large quantities. The area contains a very thick, lithologically varied, stratigraphic succession representing every geological period which includes adequate source beds, and abundant potential reservoir rocks. There is an abundance of diversified traps; including large closed anticlines, extensive reefs, piercement evaporite domes, faulted homoclines, angular unconformities and striking facies changes. Hydrocarbon shows including oil sands, stain and bitumen occur over a large area in a wide range of ages. Significant reserves of natural gas have been discovered to date.

This comprehensive review describes the state of knowledge up to 1971. The following topics are discussed: regional geology, tectonic and depositional history, geological provinces and general structure economic geology.

REF. NO.: 0144-83

SUBJECT CODES: A7 (A1)

AUTHOR: DYKE, A. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1983

TITLE: Quarternary Geology of Somerset Island, District of Franklin

SOURCE: Geological Survey of Canada, Memoir 404, 32 p.

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

Somerset Island was formed during a Late Cretaceous-Teritiary rifting episode associated with separation of Canada and Greenland. Surface materials are divided into eight genetic units. Rock and residuum cover 70% of the island, till covers 20%, and glacio-fluvial, glaciolacustrine, fluvial, marine, and colluvial sediments cover the rest. Prior to the last glacial episode, the island was covered by a regional ice sheet that left widely scattered erratics, and a lengthy period of bedrock weathering produced extensive colluvial and residual soils; however, the relative ages of these events is not known. "Old" driftwood in a glaciomarine delta above the Holocene marine limit indicates deglaciation and a high sea level stand prior to late Wisconsin time, and erratic shells of apparent middle Wisconsin age in till indicate that Peel Sound was free of glacier ice during the middle Wisconsin. The pattern of coastal emergence during the Holocene reflects the isostatic dominance of the main eastward-flowing ice sheet; emergence continues today at rates of about 46 cm per century in the west and 28 cm per century in the east.

REF. NO.: 0145-79

SUBJECT CODES: A1 (A7)

AUTHOR: DYKE, A. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1979

TITLE: Radiocarbon-Dated Holocene Emergence of Somerset Island, Central Canadian Arctic

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 79-1B, pp. 307-318

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

Thirty-six radiocarbon dates on marine shells, whale and walrus bones, and driftwood are used to reconstruct the Holocene emergence of Somerset Island. Nine dates, all around 9200 ± 100 years, pertain to the marine limit. The 9200 ± 100 year old shoreline has a parabolic profile that rises and steepens west-southwestward; its maximum gradient is in the area of the late Wisconsin Laurentide Ice Sheet limit. The shoreline lies at 76 m a.s.l. in the northeast and 157 m a.s.l. in the southwest part of the island. Emergence curves are drawn for Cape Anne, Cunningham Inlet, Rodd Bay, and the Creswell River lowland. Early emergence rates were 8 to 11 m/100 years, and 56 per cent of total emergence was accomplished in the first 1000 years. Emergence has proceeded at a constant rate at each site during the last 5000 to 6000 years but has varied spatially from 46 cm/100 years in the west to 28 cm/100 years in the east. The 5000 year old shoreline declines from 22 m a.s.l. in the west to 14 m a.s.l. in the east with an average gradient of 6.2 cm·km.

REF. NO.: 0146-79

SUBJECT CODES: A1 (A7, A11)

AUTHOR: DYKE, A. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1979

TITLE: Glacial Geology of Northern Boothia Peninsula, District of Franklin

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 79-1B, pp. 385-394

STATUS: Public

MAP NUMBERS: 7502, 7503, 7740

COMMENTS/SUMMARY:

Mapping of glacial and marine features and radiocarbon dating of fossil marine molluscs have provided much new information on the glacial geology of northern Boothia Peninsula. At the late Wisconsin maximum ice flowed eastward to northeastward over the area. This flow is recorded by large fields of rock drumlins and other ice moulded bedrock forms. During recession, lateral meltwater channels, ice dammed lakes, and moraines were formed. These features document westward recession of the ice mass, whose margins and last flow pattern were topographically controlled. The marine limit near the east coast lies at 215 m a.s.l. and was formed 9230 $\pm$ 130 years B.P. The marine limit declines westward in the direction of ice recession to 15 m a.s.l. and less in Wrottesley Valley, where it was formed about 9040 $\pm$ 100 years ago. The ice margin retreated about 300 m/year, and the ice surface lowered about 5.5 m/year between 9230 and 9040 years B.P. The initial coastal emergence rate was more than 30 m/100 years. Shells dated at >23 300 years, from deltaic sediment at 195 m a.s.l. on the northeast coast, probably represent a pre-late Wisconsin marine incursion caused by ice recession. Organics, dated at >30 000 years, from sands below the Holocene marine limit in Wrottesley Valley, are probably detritus in Holocene marine sediments.

REF. NO.: 0147-78

SUBJECT CODES: A7 (A1)

AUTHOR: DYKE, A. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Glacial History of and Marine Limits on Southern Somerset Island, District of Franklin

SOURCE: In Current Research, Part B, Geological Survey of Canada, Scientific and Technical Notes, Paper 78-1B, pp. 218-223

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

Southern and western Somerset Island were inundated by a foreign ice sheet that flowed onto the island from a major but undefined, and hitherto unrecognized, area of ice dispersal to the west. On the southernmost part of the island this ice was sufficiently thick to inundate summits rising to 500 m elevation and to defy topographic channelling of flow. The ice sheet thinned northward, and in the Stanwell-Fletcher Lake basin ice flow was severely topographically channelled. The ice margin, which is marked by lateral meltwater channels, lay against the western side of the gneissic plateau along the 330 m contour.

During retreat proglacial deltas were deposited in the sea which was as much as 205 m above present sea level in Creswell Bay. Driftwood from 160 m a.s.l. and shells from a beach ridge at 145 m are beyond the range of radiocarbon dating and are probably of early or middle Wisconsin ice load.

The apparent Holocene marine limit at the mouth of Creswell Bay is marked by a wave-cut notch in bedrock and dates from 9270 $\pm$ 90 years B.P. The Holocene marine gravels overlie deeply weathered (disintegrated) bedrock indicating that a marine transgression followed a substantial period of subaerial weathering.

REF. NO.: 0148-78

SUBJECT CODES: A1 (A7, A11)

AUTHOR: DYKE, A. S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Glacial and Marine Limits on Somerset Island, Northwest Territories

SOURCE: In Abstracts with Programs, North-Central Section of The Geological Society of America, 12th Annual Meeting, University of Michigan, Ann Arbor, Michigan, May 1-2, 1978, p. 394

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

The Somerset Island terrain is both glacial and non-glacial in character. An early glaciation deposited carbonate-bearing till on gneisses (recognized in one place) and widespread shield erratics on carbonate strata. During a subsequent glaciation ice flowing eastward from beyond the island inundated northern Boothia Peninsula and southern Somerset Is. The ice thinned northward and terminated ca. 20 km inland from the west coast. Two large lobes of western ice, in Creswell and Aston Bays, coalesced with a local ice cap but elsewhere the two ice masses were separated by nunataks. In Creswell Bay ice-marginal marine deltas range from 150 to 205 m a.s.l. Driftwood (Liberian Larch?) at 160 m dated >38 000 ^{14}C yr. B.P. Beach ridges rise to 145 m a s.l. Whole valves of Hiatella arctica from the highest ridge are >40 000 yr. old and are probably of Early or Middle Wisconsinan age based on the amino acid racemization. The marine deposits are related to recession of the local ice. The apparent Holocene marine limit has been dated ca. 9200 $\pm$ 100 B.P. at 8 localities. The 9200 B.P. shoreline dips eastward, indicating a dominant Late Wisconsinan load to the west. No ice-marginal marine sediments of Holocene age have been found. Furthermore, the Holocene marine gravels overlie weathered bedrock indicating a transgression of a former ice-free area.

REF. NO.: 0149-82

SUBJECT CODES: A1 (A7)

AUTHOR: DYKE, A., DREDGE, L. A., VINCENT, S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1982

TITLE: Configuration and Dynamics of the Laurentide Ice Sheet During the Late Wisconsin Maximum

SOURCE: Geographie Physique et Quaternaire, Vol. XXXVI, Nos. 1-2, pp. 5-14, 5 fig.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Prior to 1943 the Laurentide Ice Sheet was considered to have three major domes centered in Keewatin, Labrador and Patricia. Flint (1943) argued that these centres were of only local and temporary importance and favoured a single-domed ice sheet. Despite the lack of supporting geological evidence, and despite the proposition of a Foxe Dome in the interim, the single-dome concept was not seriously challenged until the late 1970's and, in fact, is still strenuously supported. This paper extends and modifies recent conclusions that the Laurentide Ice Sheet had more than one dome at the Late Wisconsin maximum. We propose a model incorporating five domes (M'Clintock, Foxe, Labrador, Hudson, and (?) Caribou) based on the position of ice divides, ice flow patterns, drift composition, late-glacial features, postglacial isostatic recovery and free-air gravity anomalies. Like Tyrrell, our reconstruction is based on field evidence obtained through extensive mapping; the single dome model continues to be unsupported by geological data.

REF. NO.: 0150-80

SUBJECT CODES: A5 (A1)

AUTHOR: AKSU, A. E.
Dalhousie University, Halifax, Nova Scotia

YEAR: 1980

TITLE: Late Quaternary Stratigraphy, Paleoenvironmentology and Sedimentation History of Baffin Bay and Davis Strait

SOURCE: Ph.D. Thesis, Department of Geology, Dalhousie University, Halifax, Nova Scotia, 771 p.

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

The late Quaternary history of the Baffin Bay area has been investigated using piston/gravity cores, grab samples and seismic profiles. Six lithofacies have been characterized in more than 50 cores. Correlation in cores has been established on the basis of several distinct lithological units, three prominent volcanic ash zones, the occurrence and abundance of micro fossils and paleomagnetic inclination and declination. The stratigraphic sequence has been placed into a time framework using ^{14}C dates and the oxygen isotopic curves from two cores.

REF. NO.: 0151-83

SUBJECT CODES: A1 (A7, A11)

AUTHOR: BLAKE, JR., W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1983

TITLE: Geological Survey of Canada Radiocarbon Dates XXIII

SOURCE: Geological Survey of Canada, Paper 83-7, pp. 1-33

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This list includes 152 radiocarbon age determinations made by the Radiocarbon Dating Laboratory. They are on 150 geological samples from various areas as follows: Labrador Shelf (7); Labrador (3), Newfoundland (16); Nova Scotia (6); New Brunswick (8); Quebec (16); Ontario (9); Alberta (17); British Columbia (29); Yukon Territory (2); Northwest Territories, Mainland (29); Northwest Territories, Arctic Archipelago (10). Details of background and standard for the 2 L and 5 L counters during the period from November 3, 1982 to November 2, 1983 are summarized in Tables 1 and 2; Table 3 gives the number of counts used to determine the average background and standard counting rates; and Table 4 lists the number of different background and standard gas preparations used for counting.

REF. NO.: 0152-82

SUBJECT CODES: J (A2, A5, A6, A7, A8, B1, E3, F1, G1, I1, I2)

AUTHOR: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
Ottawa, Ontario

YEAR: 1982

TITLE: The Lancaster Sound Region: Data Atlas

SOURCE: Prepared for the Northern Environment Directorate, Department of Indian Affairs and Northern Development by the Working Group for the Lancaster Sound Regional Study and James Dobbin Associates Inc., Toronto, Ontario
Project Manager: H. J. Dirschl

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The Lancaster Sound Data Atlas is a compilation of all information regarding the physical environment, biological characteristics, existing human activities and potential human activities in study area. Within the physical environment section the following topics of interest to this study are addressed:

Geology
Earthquake epicentres since 1962
Physiography
Coastal Geology
Coastal Geomorphology
Coastal Slope
Marine Sediments
Surface Water Circulation: Summer
Median Ice Cover
Maximum Ice Cover
Minimum Ice Cover
Ice Drift: Winter
Ice Drift: Summer
Icebergs

For each of the above topics a map is given which indicates the extent of known information. A short annotation describes the relevance of the existing data, a description of the data, an assessment of the completeness and quantity of data, and the map compiler. A short list of related references is also included.

REF. NO.: 0153-73

SUBJECT CODES: H4 (G1, A8)

AUTHOR: DYCK, W.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Feasibility Study of Geochemical Sampling of Arctic Coastal Streams by Helicopter Based on a Department of Transport Icebreaker

SOURCE: Geological Survey of Canada, Paper 72-42

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Using a helicopter on board the Department of Transport icebreaker, "John A. Macdonald", 69 water and sediment samples from 54 stream sites were collected from eight regions during the period July 9 to August 19, 1971. At fifteen of these sites another sample from the brackish water zone of the stream was also collected. Of the factors influencing sampling, the ship's route and weather were most decisive. The water samples were analyzed on board ship for radon, alkalinity, Eh, pH, oxygen, calcium, total divalent cations, and chloride ions. Radon concentration were generally low; however, waters from granitic regions contained easily detectable amounts of radon. Tests for alkalinity, pH, calcium, divalent ions and chloride ions gave clear evidence of the dominant rock type of the landscape through which the streams flow (e.g. limestone or granites) and also instances of intermixture with sea water. Cost estimates show that with appropriate modifications of the 1971 sampling program, sampling of Arctic coastal streams by the above method is economical.

REF. NO.: 0154-77

SUBJECT CODES: A5 (A6, A8, B6, E1)

AUTHOR: KENTING EXPLORATION SERVICES LTD.
Calgary, Alberta

YEAR: 1977

TITLE: Arctic Islands Marine Data Interpretation Plans and Profiles

SOURCE: Prepared for Montreal Engineering Company Limited

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950

COMMENTS/SUMMARY:

This reference consists of a series of maps and cross-sections for the 1977 geophysical investigation conducted by Kenting Exploration Services Ltd. The seismic track data has been digitized and placed on a magnetic tape which accompanies this bibliography. The location of the seismic track lines are shown on CHS maps accompanying this report.

REF. NO.: 0155-82

SUBJECT CODES: H1 (E5, B4.4)

AUTHOR: EBA ENGINEERING CONSULTANTS LTD.
Edmonton, Alberta

YEAR: 1982

TITLE: Acquisition of Geothermal Data in Offshore Wells

SOURCE: Prepared for the Geothermal Service of Canada, Earth Physics Branch, Energy Mines and Resources Canada, Earth Physics Branch Open File 82-14, 41 p. and 61 p. appendices

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This report describes a suite of equipment which could be used to monitor temperatures to depths of 1000 m in offshore abandoned hydrocarbon exploration drillholes. It describes feasible methods of deployment and recovery through both open-water and waters with perennial ice-cover. Both passive and acoustic telemetry data acquisition systems are considered.

REF. NO.: 0156-74

SUBJECT CODES: H1

AUTHOR: BANISTER TECHNICAL SERVICES LTD.

YEAR: 1974

TITLE: Comparison of Direct Marine Profiling with Through-the-Ice Profiling, Rea Point, Northwest Territories

SOURCE: Report prepared for Polar Gas Project, Prepared by G. Jones, Banister Technical Services, Technical Memorandum 74-102, December 6, 1974

STATUS: Proprietary

MAP NUMBERS: 7830

COMMENTS/SUMMARY:

During the spring of 1974, Banister Technical Services (BTS) carried out a through-the-ice survey on Byam Channel on the Queen Elizabeth Islands for Polar Gas Project. The purpose of this survey was first to determine the bathymetry along a proposed pipeline route and second to acquire sub-bottom information in terms of the engineering data required by the Project's marine design engineer to complete a feasibility study for the propsed route.

One sector of the areas surveyed during the 1974 field program identified as line D-D was purposely located co-linear with a portion of the area surveyed during the 1973 direct marine program. A plan was formulated to compare the bathymetry collected via the direct marine and through-the-ice survey methods. The report contains several bathymetric cross-sections, a detailed data list and reduced magnetic tape listings of data location and water depths in the study area.

REF. NO.: 0157-80

SUBJECT CODES: H1 (A5)

AUTHOR: BLASCO, S. M., LEWIS, C. F. M.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia
BORNHOLD, B. D.
Pacific Geoscience Centre
Geological Survey of Canada, Sidney, B. C.

YEAR: 1980

TITLE: Surficial Geology and Geomorphology of the Lomonosov Ridge

SOURCE: EOS, Vol. 61, No. 17, Meeting of the American Geophysical Union, April 22, 1980, p. 276

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

High resolution reflection seismic and bathymetric profiling, sediment sampling and seabed photography were conducted from ice station LOREX in April and May of 1979, as the ice floe drifted over the Lomonosov Ridge close to the north geographic pole. A continuous 3KHz, bathymetric-subbottom profile reveals a ridge relief of 2800 m, the crest rising to within 1400 m of sea surface. Assymetric in shape, the Amerasian flank has slopes as steep as 12°, but the Eurasian flank slopes do not exceed 7° along the drift path. The continuous shallow seismic reflection profiles indicate the ridge consists of en echelon fault blocks that give the crest an irregular morphology. Less than 75 m of stratified, unconsolidated sediment, primarily associated with the fault-block tops, appear to have been deposited on the ridge crest prior to faulting. Seabed photographs show these sediments to be undergoing erosion by current scour. The presence of neritic dinoflagellate Luxidinium propalulun in reworked seabed material taken from the top of a core recovered from the ridge crest indicates that these sediments may be mid-Cretaceous in age. This suggests that faulting (and separation from the Barents Continental Shelf?) was possibly initiated no earlier than mid-Cretaceous. More than 1100 m stratified, unconsolidated sediments infill the Makaron and Fram basins directly adjacent to the ridge. These flat-lying sediments unconformably abut against the ridge flanks.

REF. NO.: 0158-70

SUBJECT CODES: H1

AUTHOR: ELF CANADA

YEAR: 1970

TITLE: Reflection Tests Mackenzie King - Cape Norem

SOURCE: Elf Canada Internal Report, available as COGLA Report No. 581-6-10-57

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This brief operations report describes a field test program for obtaining geophysical data from an ice surface. The tests performed comprised two parts:

(1) a transposed spread for the purpose of comparing various transmitting and receiving techniques.
(2) a lure about 5 km long, shot in 12-fold coverage and 600 vertical stack .

Hydrophones, denotating fuses in ice and other operation procedures are described. Array layout included.

Exact test location not available.

REF. NO.: 0159-83

SUBJECT CODES: B6

AUTHOR: EMBRY, A. F.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1983

TITLE: The Heiberg Group, Western Sverdrup Basin, Arctic Islands

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 83-1B, pp. 381-389

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The Heiberg, a prominent formation in the eastern and central Sverdrup Basin, is given group status in the western Sverdrup. The Heiberg Group comprises five formations which, in ascending order are: Skybattle, Grosvenor Island, Maclean Strait, Lougheed Island and King Christian. These new formations are formally defined herein. The Skybattle, Maclean Strait and King Christian formations are sandstone-dominant and consist of delta front, distributary mouth bar and delta plain deposits. The sandstone-dominant units are separated from each other by shale-siltstone formations (Grosvenor Island and Lougheed Island). These argillaceous formations represent prodelta and offshore shelf deposits. Three formal members are recognized in the King Christian Formation. The Drake Point (lowest) and Whitefish members are sandstone-dominant and are separated by the Stupart Member, which consists of shale and siltstone.

REF. NO.: 0160-83

SUBJECT CODES: B6

AUTHOR: EMBRY, A. F.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1983

TITLE: Stratigraphic Subdivision of the Heiberg Formation, Eastern and Central Sverdrup Basin, Arctic Islands

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 83-1B, pp. 205-213

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The Heiberg Formation, an Upper Triassic-Lower Jurassic sandstone-dominant unit in the Sverdrup Basin, is divided into three members, named in ascending order, Romulus, Fosheim, and Remus. The Romulus Member consists of interbedded sandstone, siltstone and shale with the lithologies arranged in coarsening-upward cycles of delta front origin. The Fosheim Member consists mainly of fine- to medium-grained sandstone with thin interbeds of carbonaceous siltstone, shale and coal. The member contains both fining-upward and thin, coarsening-upward cycles and is of delta plain origin. The Remus Member consists almost entirely of very fine- to medium-grained sandstone of beach and nearshore marine origin. The Romulus and Fosheim members represent the progradation of a major deltaic complex into the Sverdrup Basin in the Norian to Sinemurian, followed by delta destruction and transgression in the Pliensbachian and Toarcian (Remus Member).

REF. NO.: 0161-82

SUBJECT CODES: B1 (B2, B5, B6, B7)

AUTHOR: EMBRY, A. F.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1982

TITLE: The Upper Triassic-Lower Jurassic Heiberg Deltaic Complex of the Sverdrup Basin

SOURCE: In Proceedings of the Third International Symposium on Arctic Geology, Edited by A. F. Embry and Hugh R. Balkwill, Canadian Society of Petroleum Geologists, Memoir 8, December 1982, pp. 189-217

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

In early Norian large river systems began transporting vast amounts of sediment northward across the Precambrian Shield to the Sverdrup Basin. Two deltaic centres were established in the eastern and central Sverdrup and a highly constructive deltaic complex prograded northwestward from Norian until early Pliensbachian. Much of the basin was filled to sea level and the resulting vertical succession, which in places exceeds 3000 m consists of prodelta shale and siltstone (Barrow Formation), delta front and tidal flat sandstone, siltstone and shale (Romulus Member, Heiberg Formation) and delta plain sandstone, siltstone, shale and coal (Fosheim Member, Heiberg Formation). Two marine shale units penetrate the deltaic wedge in the west and three cycles of deltaic progradation are recognizable in the west-central Sverdrup.... Farther west, a marine shelf was present lateral to the deltaic complex. ... In late Pliensbachian sediment supply to the Sverdrup Basin was greatly reduced and a widespread sand sheet of destructive delta origin (Remus Member, Heiberg Formation) was deposited as the deltaic plain was gradually transgressed. ... Norian to Pliensbachian sandstones of channel, delta front, beach and nearshore origin are reservoir strata in twelve hydrocarbon fields in the western Sverdrup. This area has a very favourable combination of reservoirs, hydrocarbon source rocks, traps and migration paths and will likely be the site of many more discoveries.

REF. NO.: 0162-82

SUBJECT CODES: A1

AUTHOR: ENGLAND, J.
Department of Geography, University of Alberta, Edmonton, Alberta
FISHER, D. A. and KOERNER, R. M.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1982

TITLE: Reconciling Glacial Geology and the Ice Core Record in Northeast Ellesmere Island

SOURCE: In Abstracts with Programs, The Geological Society of America 95th Annual Meeting, New Orleans, Louisiana, October 18-21, 1982, Volume 14, No. 7, p. 484

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During the last glaciation the northeast Ellesmere Island and northwest Greenland ice sheets left an intervening ice-free corridor occupied in part by a full glacial sea. Relative sea level curves indicate a period of sea level stability (isostatic equilibrium) at marine limit from at least 11 to 8 Ka. During this interval the absence of driftwood indicates that landfast sea ice covered the full glacial sea. Slow emergence occurred from ca. 8 to 6.2 Ka during which ice retreat was minor and summer sea ice persisted. Rapid emergence, recording rapid glacial unloading, occurred after 6.2 Ka. This amelioration is also indicated by increased driftwood abundance, by organic accumulations, and by the locally extinct marine pelecypod Limatula subauriculata. These and other Holocene paleoenvironmental changes are compared to the ice core records.

REF. NO.: 0163-83

SUBJECT CODES: A1 (A6, A7)

AUTHOR: ENGLAND, J.
Department of Geography, University of Alberta, Edmonton, Alberta

YEAR: 1983

TITLE: Isostatic Adjustments in a Full Glacial Sea

SOURCE: Canadian Journal of Earth Sciences, Volume 20, pp. 895-917

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During the last glaciation an ice-free corridor existed between the northeast Ellesmere Island and northwest Greenland ice sheets. This corridor constituted a peripheral depression in which the marine limit marks the uppermost extent of a full glacial sea. The full glacial sea is characterized by (1) ^{14}C dates on in situ marine shells that predate initial emergence (unloading) followed by (2) synchronous emergence from the marine limit throughout the peripheral depression. Relative sea-level curves from the full glacial sea confirm previous morphostratigraphic and glacioisostatic evidence for limited ice extent during the last glaciation. These curves also document the history of glacial unloading and the form of the relative sea-level curve that one would theoretically expect in the peripheral depression. The form of the curves presented here is unlike any other published emergence curves from arctic Canada or from Fennoscandia.

The relative sea-level curves for northeast Ellesmere Island show three segments: (1) an interval of stable relative sea level (isostatic equilibrium) at the marine limit between at least 11 000 and 8 000 BP; (2) an interval of slow emergence from 8 000 to 6 200 BP during which northeast Ellesmere Island ice slowly retreated; and (3) an interval of rapid emergence, caused by rapid glacial unloading, after 6 200 BP when a prominent amelioration was in progress. These relative sea-level curves are discussed in relation to other paleoclimatic changes and the deglacial history of northwest Greenland. These curves are of regional importance in that they provide a new means of distinguishing between areas that were ice covered and ice free during the last glaciation.

REF. NO.: 0164-82

SUBJECT CODES: A1 (A7)

AUTHOR: ENGLAND, J.
Department of Geography, University of Alberta, Edmonton, Alberta

YEAR: 1982

TITLE: Postglacial Emergence Along Northern Nares Strait

SOURCE: In Nares Strait and the Drift of Greenland: A Conflict in Plate Tectonics, Edited by P. R. Dawes, and J. W. Kerr, Meddelelser om Gronland, Geoscience, Volume 8, pp. 65-75.

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

During the last glaciation much of northern Nares Strait remained an ice-free corridor separating the northeast Ellesmere Island and northwest Greenland ice sheets. The disproportionate size of these ice sheets resulted in the lithosphere being differentially loaded on either side of this prominent rift valley. Postglacial emergence in this area is analyzed in order to determine whether glacio-isostatic unloading engendered any abnormal displacement along the Nares Strait fault zone. Present data suggest that synchronous shorelines dated 6000, 7000 and 8000 BP rise from north to south across northeast Ellesmere Island and northern Nares Strait towards the Greenland ice sheet. This is considered to represent the glacio-isostatic dominance of the Greenland ice sheet during the last glaciation together with earlier postglacial emergence towards northernmost Ellesmere Island which lay beyond the influence of the Greenland ice sheet. This Greenland dominance indicates that northeast Ellesmere Island lay in the depression marginal to the Greenland ice sheet. This, in turn, requires a lithospheric flexural parameter extending in an undisrupted manner across the Nares Strait rift valley. Hence, on a regional scale, it appears that the lithosphere in this area has integrated the depressions from these separated ice sheets without any observable unconformities along Nares Strait. Although postglacial faulting has followed initial glacio-isostatic unloading in other areas the present data base does not have the resolution to document similar events along Nares Strait.

REF. NO.: 0165-78

SUBJECT CODES: A1 (A7)

AUTHOR: ENGLAND, J.
Department of Geography, University of Alberta, Edmonton, Alberta

YEAR: 1978

TITLE: The Glacial Geology of Northeastern Ellesmere Island, N.W.T., Canada

SOURCE: Canadian Journal of Earth Sciences, Volume 15, pp. 603-617

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Thirty-five radiocarbon dates associated with former ice sheet margins and raised marine deposits are presented from northeastern Ellesmere Island. Along the southern margin of Hazen Plateau, and in inner Archer Fiord, a prominent morpho-stratigraphic boundary is marked by the Hazen Moraines. These moraines represent a restricted ice advance during the last glaciation and date ca. 8130 $\pm$ 200 BP. On the immediate distal side of the Hazen Moraines, eastward for 100 km towards northwestern Greenland, the majority of dates on marine limits show synchronous emergence beginning ca. 7500 BP. This zone of synchronous emergence is considered to represent an ice-free corridor isostatically unloaded between the margins of the receding Greenland and Ellesmere island ice sheets.

A more widespread till, above and beyond the Hazen Moraines, extends out of Archer Fiord - Lady Franklin Bay to Robeson and Kennedy channels. This maximum ice advance is considered to predate the last glaciation on the basis of ^{14}C and amio acid dates from ice-marginal deposits; however, alternative interpretations of the data are presented. Previous evidence suggesting an older advance of the Greenland Ice Sheet onto this coastline is confirmed. Several glaciers in the area are presently at their maximum postglacial positions.

REF. NO.: 0166-76

SUBJECT CODES: A1 (A7)

AUTHOR: ENGLAND, J.
Department of Geography
University of Alberta, Edmonton, Alberta

YEAR: 1976

TITLE: Post Glacial Isobases and Uplift Curves from the Canadian and Greenland High Arctic

SOURCE: Arctic and Alpine Research, Volume 8, No. 1, pp. 61-78

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

Local postglacial isobases are constructed over northeastern Ellesmere Island and Polaris Promontory, northwestern Greenland, for 7500 and 6000 BP. Both sets of isobases demonstrate a strong upward displacement extending from northeastern Ellesmere Island toward the Greenland Ice Sheet. This reflects two conditions: (1) the glacioisostatic dominance, but not coverage, of the Greenland Ice Sheet over northeastern Ellesmere Island and (2) an accompanying, restricted advance of the northern Ellesmere Island ice sheet during the last glaciation. Regional isobases are also constructed over the Queen Elizabeth Islands and the adjacent Greenland coast. These isobases provisionally indicate that the Queen Elizabeth Islands contribute to the westward extension of the Greenland isobases. This ridge of uplift was produced by the combined glacioisostatic depressions from the ice sheets over the Queen Elizabeth Islands and Greenland. These ice sheets, however, are not considered to have been convergent during the last glaciation. Three postglacial uplift curves from northeastern Ellesmere Island more closely parallel the general decay curves characteristic of the central and southern Canadian Arctic than do previously constructed uplift curves from northern Ellesmere Island.

REF. NO.: 0167-76

SUBJECT CODES: A1 (A7)

AUTHOR: ENGLAND, J.
Department of Geography
University of Alberta, Edmonton, Alberta

YEAR: 1976

TITLE: Late Quaternary Glaciation of the Eastern Queen Elizabeth Islands, N.W.T., Canada: Alternative Models

SOURCE: Quaternary Research, University of Washington, Volume 6, pp. 185-202

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

It has been suggested that during the last glaciation the Innuitian Ice Sheet existed over the eastern Queen Elizabeth Islands. This is based on the pattern of postglacial emergence over this area and the timing of driftwood penetration into the interisland channels. Alternative interpretations of both sets of data raise questions about the presence of the Innuitian Ice Sheet at this time. Field observations on northeastern Ellesmere Island, plus additional data pertaining to the presence of multiple tills and "old" radiometric dates on lacustrine deposits, shelly tills, and raised marine features suggest that the maximum glaciation over this region, equivalent to the Innuitian Ice Sheet, predates the last glaciation. Palaeoclimatic conditions are also discussed in relation to these data. It is suggested that during the last glaciation of the Queen Elizabeth Islands there was a convergent but not coalescent advance of the existing upland icefields. This noncontiguous ice cover over the Queen Elizabeth Islands is termed the Franklin Ice Complex. It is suggested that the term Innuitian Ice Sheet be reserved for contiguous older glaciations over this same area.

REF. NO.: 0168-78

SUBJECT CODES: A1 (A7)

AUTHOR: ENGLAND, J.
Department of Geography
University of Alberta, Edmonton, Alberta
BRADLEY, R. S.
Department of Geology and Geography
University of Massachusetts, Amherst

YEAR: 1978

TITLE: Past Glacial Activity in the Canadian High Arctic

SOURCE: Science, Volume 200, April 1978, pp. 265-270

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Field observations on northeast Ellesmere Island indicate that the maximum advance of the northwest Greenland Ice Sheet was about 100 kilometers beyond its present margin. This occurred before the outermost Ellesmere Island ice advance, which took place more than 30 000 years before present (B.P). Recession from the Ellesmere Island ice margin began at least 28 000 to 30 000 and possibly more than 35 000 years B.P. During this sequence of glacial events, significant land areas remained free of ice. The late Wisconsin ice extent along both northeast Ellesmere Island and northwest Greenland was extremely limited, leaving an ice-free corridor along Kennedy and Robeson channels. Recession from these ice margins is indicated by initial postglacial emergence around 8100 to 8400 years B.P. The relatively minor extent of late Wisconsin ice in the High Arctic probably reflects a period of extreme aridity occasioned by the buildup of the Laurentide Ice Sheet to the south.

REF. NO.: 0169-

SUBJECT CODES: I1 (I2)

AUTHOR: ATMOSPHERIC ENVIRONMENT SERVICE
Environment Canada, Ottawa, Ontario

YEAR: Unknown

TITLE: Ice Services in Canada

SOURCE: Atmospheric Environment Service, Environment Canada, Service, Downsview, Ontario

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This brochure describes the organization of Canadian Ice Services provided by the Atmospheric Environment Service (AES) of Environment Canada. Operational components include an ice reconnaissance division and program management office in Downsview, Ontario and the Ice Centre Environment Canada (ICEC) in Ottawa which incorporates an ice forecasting division, an ice climatology and applictions division and a small research and development group. Program activities include: the collection of ice information by satellite, aircraft, ships, and shore stations; the forecasting of growth, decay, and movement of ice fields; the maintenance of a library of historical ice information; the publication of reports and circulars on ice conditions and climatology; and the provision of consultative services. Research is also conducted to improve services.

REF. NO.: 0170-84

SUBJECT CODES: I2

AUTHOR: ENVIRONMENT CANADA
Atmospheric Environment Service, Ottawa, Ontario

YEAR: 1984

TITLE: Seasonal Outlook Northern Canadian Waters Summer 1984

SOURCE: Ice Centre, Analysis and Forecasting, Atmospheric Environment Service, Environment Canada, 15 p., 4 Appendices

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This outlook of the expected pattern, timing, and extent of break-up and clearing of ice from the northern waters attempts to identify areas and periods when more favorable than normal, or less favorable, ice conditions will affect navigation and other activities. It has been developed through analysis of the winter's meteorological and ice growth regimes, by using aircraft reconnaissance and analyzed satellite imagery to evaluate ice conditions in May and comparing these with earlier years' conditions, and by applying the forecast wind and temperature patterns for June to initiate the break-up process. From July onward a near normal wind and temperature regime is assumed. Significant variations from these forecast parameters will have an impact on the forecast break-up patterm and timing.

REF. NO.: 0171-77

SUBJECT CODES: B4.2 (A2, A8, B1, B4.1, B4.3, E1)

AUTHOR: FALCONER, R. K. H.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1977

TITLE: Marine Geophysical and Geological Research in Baffin Bay and the Labrador Sea, CSS Hudson 1976

SOURCE: In Report of Activities, Part B, Geological Survey of Canada, Paper 77-1B, pp. 255-260

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503

COMMENTS/SUMMARY:

In 1976 the Bedford Institute of Oceanography's ship CSS Hudson operated on an eastern Arctic cruise from July 26 to October 23. There were two primary programs for the season: (1) work in Lancaster Sound-Barrow Strait for the period August 19 - September 3 (Cruise 76-025); and (2) work in Baffin Bay and Labrador Sea prior to (Cruise 76-023) and after (Cruise 76-029) the Lancaster Sound work. The Lancaster Sound work was led by C. F. M. Lewis of Terrain Sciences Division, Ottawa and has been reported earlier (Lewis et al., 1977a). The Baffin Bay and Labrador Sea programs are the subject of this report.

REF. NO.: 0172-80

SUBJECT CODES: H5 (G1)

AUTHOR: FEDERAL ENVIRONMENTAL ASSESSMENT AND REVIEW OFFICE
Ottawa, Ontario

YEAR: 1980

TITLE: Arctic Pilot Project (Northern Component)

SOURCE: Report of the Environmental Assessment Panel, Federal Environmental Assessment Review Office, 117 p. plus Appendices

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

The Arctic Pilot Project would involve the production and liquefaction of 6.4 million cubic metres (225 million cubic feet) of natural gas per day from the Drake Point field on Melville Island and its shipment to eastern Canadian markets in icebreaking tankers. The Environmental Assessment Panel has reviewed the northern component of the project which includes the facilities on Melville Island, and shipment of liquified natural gas by two icebreaking carriers through Parry Channel, and south through Baffin Bay and Davis Strait to the approaches to a southern Canadian terminal. This report reviews various aspects of the project including the physical conditions at the proposed port facilities locations and the connecting pipelines.

REF. NO.: 0173-79

SUBJECT CODES: E3 (I1, I2)

AUTHOR: FEDERAL ENVIRONMENTAL ASSESSMENT REVIEW OFFICE
Ottawa, Ontario

YEAR: 1979

TITLE: Lancaster Sound Drilling

SOURCE: Report of the Environmental Assessment Panel, Federal Environmental Assessment Review Office, 93 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The purpose of the physical environment section of the Panel Report is to present the Panel's specific review of the Proponent's proposal to drill one exploratory well in Lancaster Sound in the summer of 1979. During the course of the assessment, the Panel considered a broad spectrum of potential impacts, ranging from the physical and biological to the socio-economic, for both site specific and regional considerations. The physical environment section reviews the following aspects of the project: currents, winds, waves and visibility, ice and icebergs, and potential seabed hazards. A bibliography of related information is also included as part of the report.

REF. NO.: 0174-74

SUBJECT CODES: B4.2

AUTHOR: KEEN, C. E.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1974

TITLE: Some Geophysical Measurements on the Northern Shelf of Baffin Bay

SOURCE: In Proceedings of the 1973 National Convention, Edited by A. E. Wren and R. B. Cruz, Canadian Society of Exploration Geophysicists, Calgary, Alberta, April 4-6, 1973, pp. 67-78

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Geophysical crossings of some of the main features of the northern Baffin Bay shelf are described. The data consist of seismic reflection, seismic refraction, gravity and magnetic measurements. The results show that the deep sedimentary basins of Melville Bay and Lancaster Sound have not experienced significant deformation with the upper 2 km of the sedimentary column which is likely to be of Cenozoic age. The areas to the north exhibit considerable normal faulting, which may be related to tensional stress developed when the Baffin Bay basin was forming to the south. Jones Sound is not a deep sedimentary basin as is Lancaster Sound, for example, and the sediments within it are terminated near its entrance by Precambrian basement. A deep sedimentary basin in Smith Sound trends northwest-southeast and may be related to the grabens on land in the Thule area. It is truncated to the west by a basement high. It is therefore tempting to speculate that the basement highs, terminating Jones Sound and the Smith Sound basin, mark the zone once occupied by a transform fault through Nares Strait which allowed the Baffin Bay basin to form.

REF. NO.: 0175-82

SUBJECT CODES: E3

AUTHOR: FISSEL, D. B.
Arctic Sciences Ltd., Sidney, B. C.

YEAR: 1982

TITLE: Tidal Currents and Inertial Oscillations in Northwestern Baffin Bay

SOURCE: Arctic, Volume 35, No. 1, March 1982, pp. 201-210

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

From moored current meter data obtained in 1978 and 1979 in western Baffin Bay and Lancaster Sound, a preliminary analysis was made of the tidal currents and inertial oscillations in the area. The tidal currents are relatively small through much of the study area. Offshore, the largest of both the diurnal and the semi-diurnal tidal currents were in all cases less than 3 cm/s in amplitude. In nearshore locations, the tidal currents can be considerably stronger due to internal tides; for example, off Cape Hay on Bylot Island, the K_1 tidal currents near the surface were determined to have an amplitude of 15 cm/s. Evidence of inertial oscillations was present in the records from the uppermost current meters on all moorings located at a nominal depth of 35 m. Typical amplitudes were 10 to 20 cm/s, with speeds as high as 35 cm/s being observed. The magnitude of inertial oscillations decreases rapidly with depth; at 250 m, they are greatly reduced in amplitude and are difficult to resolve from the semi-diurnal tidal currents. The inertial oscillations resulted, in large part, from changes in the local surface wind; at times of solid ice cover, their amplitudes were markedly reduced.

REF. NO.: 0176-81

SUBJECT CODES: E3

AUTHOR: FISSEL, D. B., LEMON, D. D., BIRCH, J. R.
Arctic Sciences Ltd., Sidney, British Columbia

YEAR: 1981

TITLE: The Physical Oceanography of Western Baffin Bay and Lancaster Sound

SOURCE: Prepared for Petro Canada Inc. and Indian and Northern Affairs, Ottawa, Ontario, by D. B. Fissel, D. D. Lemon, and J. R. Birch, Environmental Studies No. 25, Catalogue No. R71-19/25-1981E, 293 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The physical oceanographic studies described in this report were designed to provide information for the assessment of the environmental risks of exploratory drilling in Lancaster Sound and Baffin Bay. The program was intended as an intensive study of the general circulation of Western Baffin Bay and Lancaster Sound. Some site-specific programs were included, but the main purpose of the work was to fill gaps in the existing knowledge of the area circulation.

REF. NO.: 0177-81

SUBJECT CODES: E3

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1981

TITLE: Data Report No. 1: Subsurface Current Measurements in Western Baffin Bay and Lancaster Sound, 1978-1979

SOURCE: Prepared for Petro-Canada Inc., Calgary, Alberta, by D. B. Fissel and G. R. Wilton, (Available from Pallister Resources Ltd. as EAMES Report No. EN19), July 1981, 52 p.

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

In this report the subsurface current measurement program is described. Included is a presentation of measurement sites, design and operation of the subsurface moorings, accuracy and calibration of the current meters and data processing methods. In appendices to the report, the subsurface current data is presented in the form of time series plots, summary statistics and frequency distributions.

REF. NO.: 0178-78

SUBJECT CODES: E3

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1978

TITLE: Subsurface Current Measurements in Eastern Lancaster Sound, N.W.T. - Summer 1977

SOURCE: Prepared for the Institute of Ocean Sciences, Sidney, British Columbia, Prepared by D. B. Fissel and G. R. Wilton, Contractor Report Series 78-3, 72 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Two month time series records of current speed and direction, temperature and salinity were obtained at three locations in eastern Lancaster Sound, N.W.T. in the summer of 1977. At each location three Aanderaa RCM-4 current meters were used at levels near the surface (35-51 m), approximately 200 m and 550 m depth. At the near surface and 200 m levels, strong southerly flows were measured in the centre of the Sound with a net easterly flow on the southern side. The near surface currents reached speeds up to 112 cm/s with an average magnitude of 30 cm/s. The temporal variations of the currents were characterized by a great deal of low frequency activity, particularly for the north-south component in the centre of Lancaster Sound. In comparison with these low frequency variations, the diurnal and semi-diurnal tidal currents, with typical amplitudes of 7 to 10 cm/s, were insignificant at the near surface level, becoming more important at 200 m and 550 m depth. The correlation between currents at different positions are described, for both horizontal and vertical displacements. On the basis of concurrent wind measurements at a shore station on the south coast of Lancaster Sound, the estimated surface movements due to the large scale circulation pattern were generally larger than those estimated movements due directly to wind driven currents generated by the local wind.

REF. NO.: 0179-76

SUBJECT CODES: C1 (A6)

AUTHOR: BORNHOLD, B. D.
Geological Survey of Canada, Ottawa, Ontario
FINLAYSON, N. M. and MONAHAN, D.
Canadian Hydrographic Service, Ottawa, Ontario

YEAR: 1976

TITLE: Submerged Drainage Patterns in Barrow Strait, Canadian Arctic

SOURCE: Canadian Journal of Earth Sciences, Volume 13
pp. 305-311

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830

COMMENTS/SUMMARY:

Recent detailed bathymetric maps of Barrow Strait enabled a reconsideration of the Tertiary fluvial erosion model used to account for the physiography of the Canadian Acrtic Archipelago. Five distinct drainage basins were distinguished within Barrow Strait, including both dendritic and rectangular drainage patterns. The latter were controlled by normal faults along the Precambrian-Paleozoic contact in Peel Sound and Barrow Strait.

Several changes in the original model are proposed, including the placement of the main east-west drainage divide through Somerset Island and across Barrow Strait and southern Wellington Channel to Devon Island.

REF. NO.: 0180-73

SUBJECT CODES: B7 (B4.2, B4.3, B4.1, B6)

AUTHOR: KEEN, C. E. and BARRETT, D. L.
Atlantic Geoscience Center
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1973

TITLE: Structural Characteristics of Some Sedimentary Basins in Northern Baffin Bay

SOURCE: Canadian Journal of Earth Sciences, Vol. 10, pp. 1267-1278

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Geophysical measurements along tracks crossing some of the main structural features of the northern Baffin Bay shelf are described. The data consist of seismic reflection, seismic refraction, gravity, and magnetic measurements. Results in four areas - Lancaster Sound, Melville Bay, Smith Sound and Jones Sound - are presented. Magnetic and gravity data are used to define the extent of sedimentary basins in these areas. Seismic reflection measurements delineate the structural characteristics of the upper 2 km of the sedimentary strata and allow comparisons between them to be made. Seismic refraction measurements show that the upper 2 km of sediment exhibit low velocities - less than 3.2 km/s. Little deformation of the sediments is observed in any of these areas, however, the strata in Lancaster Sound and in the Melville Bay graben appear to have experienced less faulting than those in Jones Sound and Smith Sound. Normal faults are characteristic of the latter two areas. Jones Sound is a structurally complex area and is filled by a lesser thickness of sediments than is found in the other basins. These sediments are terminated near the entrance to the sound by Precambrian basement. A deeper sedimentary basin occupies Smith Sound and trends across the Nares Strait lineament. Although the data are insufficient to allow a detailed structural analysis of the strata in these regions, we speculate that the differences in sedimentary structures can be related to the formation of the Baffin Bay ocean basin.

REF. NO.: 0181-82

SUBJECT CODES: E5 (B4.4)

AUTHOR: FRENCH, H. M. and DESROCHERS, D.
University of Ottawa, Ottawa, Ontario

YEAR: 1982

TITLE: An Investigation of the Distribution of Permafrost on the Sabine Peninsula of Melville Island; N.W.T. and its Relationship to Glacial and Sea-Level History

SOURCE: Energy, Mines and Resources Canada, Geothermal Service of Canada, Earth Physics Branch Open File Number 82-7

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

The distribution of permafrost, as determined from a number of observations of subsurface temperatures in abandoned oil wells, is related to the Holocene marine emergence of the Sabine Peninsula, Melville Island, N.W.T.

REF. NO.: 0182-80

SUBJECT CODES: B4.3

AUTHOR: EARTH PHYSICS BRANCH
Department of Energy Mines & Resources
Ottawa, Ontario

YEAR: 1980

TITLE: Manuscript Maps for Gravity Map of Canada, 1980

SOURCE: Data Centre, Gravity, Geothermics and Geodynamic Division, Earth Physics Branch, Department of Energy Mines & Resources, Ottawa, Ontario, Earth Physics Branch Open File 82-11

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The complete series of Manuscript Maps for the Gravity Map of Canada 1980 are available from the Earth Physics Branch. These maps are black and white oxolid prints showing station positions and 5mGal contours. Digital data on magnetic tape are available at standard charges.

Map scale: 1:2 000 000
No. observations: 10319
Area: Latitude 68°00' - 76°00'
94°00' - 120°00'

REF. NO.: 0183-77

SUBJECT CODES: E3

AUTHOR: FROZEN SEA RESEARCH GROUP
Department of Fisheries and the Environment
Victoria, British Columbia

YEAR: 1977

TITLE: Oceanographic Data Report D'Iberville Fiord
Ellesmere Island, N.W.T.

SOURCE: Department of Fisheries and the Environment,
Institute of Ocean Sciences, Pacific Marine Science
Report 77-23, 101 p.

STATUS: Public

MAP NUMBERS: 7941

COMMENTS/SUMMARY:

Data collected during March 1977 at eleven stations in d'Iberville Fiord are presented. The data include salinity and temperature obtained with a CTD and concentrations of dissolved oxygen, silicates, phosphates, nitrates, deuterium and tritium.

REF. NO.: 0184-76

SUBJECT CODES: E3

AUTHOR: FROZEN SEA RESEARCH GROUP
Environment Canada, Victoria, British Columbia

YEAR: 1976

TITLE: Oceanographic Data Report D'Iberville Fiord, Greely Fiord, Eureka Sound Ellesmere Island, N.W.T.

SOURCE: Environment Canada, Pacific Marine Science Report 76-20, 201 p.

STATUS: Public

MAP NUMBERS: 7940, 7941

COMMENTS/SUMMARY:

Little is known about the general water circulation in d'Iberville and Greely Fiords. It is known however that a significant southgoing current flows from Nansen Sound through Eureka Sound. Data from this report were collected by traversing 230 km between the d'Iberville Fiord base and the Eureka weather station in 11 days using two especially equipped tracked vehicles. Data included in this report are limited to conductivity, temperature, pressure and the derived parameters salinity, sigma-T and sound velocity.

REF. NO.: 0185-65

SUBJECT CODES: A7 (A1)

AUTHOR: FYLES, J. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1965

TITLE: Surficial Geology, Western Queen Elizabeth Islands

SOURCE: In Report of Activities: Field, 1964, Geological Survey of Canada, Paper 65-1, pp. 3-5

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

A brief reconnaissance was made of some aspects of the Quaternary geology on the following islands: Prince Patrick, Eglington, Melville, Byam Martin, Lougheed, Emerald, Brock, Borden, and Ellef Ringnes. In addition to comments on the distribution of glacial deposits and the history of glaciation in the area, some mention is made of raised marine features of late Quaternary age. The data suggested that the marine limit varies markedly in altitude from place to place on individual islands and in passing from one island to the next.

REF. NO.: 0186-67

SUBJECT CODES: A7 (A1)

AUTHOR: FYLES, J. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Otario

YEAR: 1967

TITLE: Winter Harbour Moraine, Melville Island

SOURCE: In Report of Activities, May to October, 1966, Geological Survey of Canada, Paper 67-1, Part A, pp. 8-9

STATUS: Public .

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

The Winter Harbour moraine, on the south coast of Melville Island, marks a segment of the northwest margin of the Laurentide (continental) ice-sheet and probably was formed at the maximum stand of the ice-sheet during the last (Classical Wisconsin) glaciation. Preliminary information about the moraine was gathered during a hurried reconnaissance in 1964. With logistic support from the Polar Continental Shelf Project, further investigation of the moraine, and particularly of its relationship to emergent marine features, was undertaken during the last week of July and first week of August, 1966.

REF. NO.: 0187-63

SUBJECT CODES: A7 (A1)

AUTHOR: FYLES, J. G.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1963

TITLE: Surficial Geology of Victoria and Stefansson Islands, District of Franklin

SOURCE: Geological Survey of Canada, Bulletin 101

STATUS: Public

MAP NUMBERS: 7740, 7830, 7831

COMMENTS/SUMMARY:

Victoria and Stefansson Islands lie within the northwestern part of the region overridden by the Laurentide ice-sheet during the last (classical Wisconsin) glaciation. In general, the ice-sheet flowed northwestward across the islands, although the pattern of movement was highly complex in detail. The regional relationships of moraines, drumlinoid features, eskers, meltwater channels, and glacial lakes point to progressive glacial retreat from north to south and from west to east.

Prominent marine features record post-glacial submergence of large parts of the present lowlands. The highest earliest marine level now increases in altitude from 250 to 300 feet in the north and northwest to 600 feet or more in the southeast. Radiocarbon dates suggest that the initial maximum submergence decreased in age from northwest to southeast, and that most of the subsequent uplift took place early in post-glacial time.

REF. NO.: 0188-83

SUBJECT CODES: E5 (H1)

AUTHOR: GEO-PHYSI-CON CO. LTD.
Calgary, Alberta

YEAR: 1983

TITLE: Transient Electromagnetic Survey to Map the Distribution of Permafrost at Drake Point, Melville Island, N.W.T.

SOURCE: Earth Physics Branch Open File No. 83-16, Energy, Mines and Resources Canada, 62 p.

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

A survey using transient electromagnetic sounding methods was carried out on the Sabine Peninsula, Melville Island, N.W.T. The purpose was to evaluate the technique for characterization of permafrost conditions in the High Arctic, where in contrast with the Beaufort Area the rocks are largely consolidated. In the Sabine area the high density of geothermal wells provided good control for the interpretation. The survey revealed a permafrost thickness ranging from 100 m at the shoreline to 180 m at a site 7 km inland. In comparison the depth of the 0°C isotherm ranges from 140 to 260 m; the difference reflects the fine-grained nature of the sediments.

REF. NO.: 0189-83

SUBJECT CODES: B4.4 (E5, E6)

AUTHOR: GEOTECH ENGINEERING
Calgary, Alberta

YEAR: 1983

TITLE: Subsurface Temperature Data From Arctic Wells

SOURCE: Geothermal Service of Canada, Earth Physics Branch, Energy, Mines and Resources Canada, Earth Physics Branch Open File Number 83-11

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

All available subsurface temperature measurements made by industry in the search for hydrocarbons throughout the Mackenzie Delta/Beaufort Sea and the Arctic Islands have been collected and collated. The data collection has been used to estimate undisturbed rock temperatures, geothermal gradients and to contour regional temperatures at depths of 1, 2, 3 and 4 km below the surface. A total of 344 wells were included in the study.

EF. NO.: 0190-76

SUBJECT CODES: A5

AUTHOR: FROZEN SEA RESEARCH GROUP
Institute of Ocean Sciences
Victoria, British Columbia

YEAR: 1976

TITLE: Oceanographic Data Report, D'Iberville Fiord, Ellesmere Island, N.W.T. March to April 1975

SOURCE: Pacific Marine Science Report 76-19, Institute of Ocean Sciences, 166 p. (unpublished manuscript)

STATUS: Public

MAP NUMBERS: 7941

COMMENTS/SUMMARY:

D'Iberville Fiord is an appendage to the Nansen Sound - Greely Fiord located at 80°30'N, 79°00'W and is about 35 km by 6 km with an area of 213 km^2. Data included in this report are pressure, temperature, salinity, sigma-T and sound velocity.

REF. NO.: 0191-78

SUBJECT CODES: J (A3, A5, A6, A8, A9, D1, E1, E7, H4)

AUTHOR: GEOTERREX LTD.

YEAR: 1978

TITLE: Marine Bottom and Sub-Bottom Survey on Sites Located in Lancaster Sound and off North Eastern Baffin Island, Section III, Philpots Interpretation Report

SOURCE: Prepared for Petro-Canada Exploration Inc. September/October 1978 (COGLA Report No. 246-09-12-103)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report describes the marine bottom and sub-bottom conditions at the Philpots site off North Eastern Baffin Island. The following aspects of the investigation are described: logistics and statistics; bathymetry; side scan sonar; sub-bottom profiler data; bottom sampling program; bottom photography; the hydrocarbon "sniffer" program; high resolution seismic data collection; iceberg scours; and soil mechanics considerations. [Some of this data may be synthesized directly].

REF. NO.: 0192-83

SUBJECT CODES: H1 (E1, I1, I2)

AUTHOR: GEISEL, F. A.
ARCTEC Inc., Columbia, Maryland

YEAR: 1983

TITLE: Proposed Standard Methods for Measuring and Reporting Arctic Pressure Ridges

SOURCE: Proceedings of the Seventh International Conference on Port and Ocean Engineering Under Arctic Conditions, Helsinki, Finalnd, Vol. 3, April 1983, pp. 122-131

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper proposed a set of standard methods for measuring and reporting arctic pressure ridges. Employing these standard methods should provide pressure ridge data of maximum usefulness. By using these methods, a more complete and uniform set of arctic pressure ridge data will be compiled which can be easily interpreted and used by designers, planners, and operators.

REF. NO.: 0193-74

SUBJECT CODES: H1 (H4)

AUTHOR: GOODHART, R. R.
Canadian Industries Ltd., Calgary, Alberta

YEAR: 1974

TITLE: Linear Seismic Energy Sources - The Theory Behind Them and Potential Applications in the Canadian Arctic

SOURCE: In Proceedings of the 1973 National Convention, Edited by A. E. Wren and R. B. Cruz, Canadian Society of Exploration Geophysicists, Calgary, Alberta, April 4-6, 1973, 196 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper briefly discusses the differences between linear and point sources, and mentions some of the geophysical parameters of linear sources that affect field layout design. The following methods hold promise: 1) The Ice Geoseis System, 2) Flat-Pack Charges, and 3) Vertical Ice Aquaseis. These methods, when developed, will provide alternative geophysical tools to overcome geophysical or logistical problems. They are particularly intended to simplify field operations and reduce manpower needs, thus reducing crew support costs, which are very high in the Arctic.

REF. NO.: 0194-82

SUBJECT CODES: E6 (H3)

AUTHOR: GOODMAN, M. A.
Enertech Engineering and Research Co.,
Houston, Texas
FRANKLIN, L. J.
Panarctic Oils Ltd., Calgary, Alberta

YEAR: 1982

TITLE: Thermal Model of a New Concept for Hydrate Control During Drilling

SOURCE: In Proceedings of the Fourth Canadian Permafrost Conference - The Roger J. E. Brown Memorial Volume, Edited by H. M. French, Associate Committee on Geotechnical Research, National Research Council of Canada, Calgary, Alberta, March 1981, pp. 349-355

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Hydrate gas influx during Arctic drilling can be controlled by increasing the decomposition temperature through the use of higher mud weights. Hydrate equilbrium conditions are changed so that further decomposition is prevented. The WELLTEMP computer code has been used to simulate the drilling of an Arctic off-shore Panarctic well in which the temperature and decomposition radii in the hydrate interval are predicted. The problem formulation is described and the predicted results are interpreted and discussed.

REF. NO.: 0195-71

SUBJECT CODES: A5 (A6)

AUTHOR: GRANT, A. C.
Marine Geology, Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1971

TITLE: Distributional Trends in the Recent Marine Sediments of Northern Baffin Bay

SOURCE: Maritime Sediments, Vol. 7, No. 2, pp. 41-63

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The purpose of this investigation was to determine the nature of the recent sediments in northern Baffin Bay, and to examine their textural properties relative to water depth, bottom configuration, and the agents responsible for their transport. Sediment size distributions, sorting, mineralogy, color, organic content, carbonate content, and gravel lithology are described for 69 snapper samples of bottom sediment obtained during the 1964 oceanographic cruise of CCGS Labrador.

REF. NO.: 0196-73

SUBJECT CODES: A7 (A1)

AUTHOR: GROSSWALD, M. G.
Institute of Geography, Academy of Sciences of the U.S.S.R., Moscow, Union of Soviet Socialist Republics

YEAR: 1973

TITLE: Reconnaissance Glacial Geology Southwestern Grinnell Peninsula, Devon Island, District of Franklin

SOURCE: In Report of Activities, April to October 1972, Geological Survey of Canada, Paper 73-1, Part A, pp. 199-200

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

A reconnaissance survey of the traces of former glaciation and of Holocene changes in the relationship between land and sea in southwestern Grinnell Peninsula (NTS map-sheet 59B) was undertaken as part of a study of glacial history in the southeastern Queen Elizabeth Islands. The altitude of the upper marine limit was determined in several localities. Near base camp at the head of Barrow Harbour the limit was established at 125 m a.s.l., and at a number of other sites along the coast, from Cape Allard to Cape Hornby, and on Sheills Peninsula, well-preserved strandlines and beach ridges were found up to 110 to 125 m. Somewhat subdued terraces continue up to a level of 150 m or more, at which elevation whole thickened valves and fragments of Hiatella arctica and Mya truncata are still common. These altitudes attest to considerable postglacial crustal uplift of southwestern Grinnell Peninsula, and are higher than those recorded from southern and eastern Devon Island. Samples for radiocarbon dating were collected from three localities.

REF. NO.: 0197-81

SUBJECT CODES: J (A5, A6, D1, E1, E3, E5, E6, F1, H3, H5)

AUTHOR: GULF CANADA RESOURCES INC.

YEAR: 1981

TITLE: Whitefish Environmental Study

SOURCE: Gulf Canada internal report, Prepared by D. L. Schwab and B. D. Wright for the Arctic Islands Exploration Group, March 1981

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This report contains a summary of known conditions at the Whitefish well site. Sections describe the physical geography, bathymetry, sea ice coverage, oceanography, meterology, and sea bottom conditions. The following aspects of the surficial geology are addressed: scouring, composition, seismicity, permafrost and gas hydrates. A bibliography is included.

Report examined, copy not obtainable.

REF. NO.: 0198-84

SUBJECT CODES: A5 (A6, A7, A8, A9, B1, D1, E5, E6, F1)

AUTHOR: GULF CANADA RESOURCES INC.

YEAR: 1984

TITLE: Evaluation of Geotechnical Conditions Onshore and Offshore of Lougheed Island

SOURCE: Arctic Islands Pre-Development Engineering Study, Vol. I-E, Prepared by G. D. O'Neil, September 1984

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This section of a larger pre-development engineering study, conducted in-house by Gulf Canada Resources, contains a synthesis of shallow geological and geotechnical data in the Lougheed Island Region. Data has been obtained from operator studies at the Whitefish G-63 site, Polar Gas studies and early Geological Survey of Canada data. The following aspects of the data base are evaluated: shallow geology, offshore permafrost, onshore soil conditions, seismology, and local bathymetry.

REF. NO.: 0199-84

SUBJECT CODES: E5 (E6, H3)

AUTHOR: HARDY ASSOCIATES (1978) LTD.
Calgary, Alberta

YEAR: 1984

TITLE: Study of Well Logs in the Arctic Islands to Outline Permafrost Thickness and/or Gas Hydrate Occurrence

SOURCE: Geothermal Service of Canada, Earth Physics Branch Energy, Mines and Resources Canada, Earth Physics Branch Open File No. 84-8, Vol. 1, 215 p., Vol. 2 159 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The report outlines the distribution of permafrost and gas hydrates as determined from conventional well logs run in 151 wells in the Arctic Islands. Ice-bearing permafrost is interpreted to exist on land to depths ranging from 131 m to 860 m. Although it is also observed in the offshore the data is inadequate to map the occurrence accurately. Natural gas hydrates are interpreted in 90 of the 151 wells to depths of 1923 m.

REF. NO.: 0200-78

SUBJECT CODES: J (A5, A3, A6, A8, A9, D1, E1, E7, H4)

AUTHOR: GEOTERREX LTD.

YEAR: 1978

TITLE: Marine Bottom and Sub-Bottom Survey on Sites Located in Lancaster Sound and off North Eastern Baffin Island, Section IV, Bylot Interpretation Report

SOURCE: Prepared for Petro-Canada Exploration Inc., September/October 1978 (COGLA Report No. 246-09-12-104)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report describes the marine bottom and sub-bottom conditions at the Bylot site off North Eastern Baffin Island. The following aspects of the investigation are described: logistics and statistics; bathymetry; side scan sonar; sub-bottom profiler data; bottom sampling program; bottom photography; the hydrocarbon "sniffer" program; high resolution seismic data collection; iceberg scours; and soil mechanics considerations.

REF. NO.: 0201-78

SUBJECT CODES: J (A3, A5, A6, A8, A9, D1, E1, E7, H4)

AUTHOR: GEOTERREX LTD.

YEAR: 1978

TITLE: Marine Bottom and Sub-Bottom Survey on Sites Located in Lancaster Sound and off North Eastern Baffin Island, Section II, Byam Martin Interpretation Report

SOURCE: Prepared for Petro-Canada Exploration Inc. September/October 1978 (COGLA Report No. 246-09-12-102)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report describes the marine bottom and sub-bottom conditions at the Byam Martin site off North Eastern Baffin Island. The following aspects of the investigation are described: logistics and statistics; bathymetry; side scan sonar; sub-bottom profiler data; bottom sampling program; bottom photography; the hydrocarbon "sniffer" program; high resolution seismic data collection; iceberg scours; and soil mechanics considerations.

REF. NO.: 0202-78

SUBJECT CODES: H4

AUTHOR: GEOTERREX LTD.

YEAR: 1978

TITLE: Marine Bottom and Sub-Bottom Survey on Sites Located in Lancaster Sound and off North Eastern Baffin Island
Section I, Operations and Logistics Report

SOURCE: Prepared for Petro-Canada Exploration Inc. September/October 1978 (COGLA Report No. 246-09-12-102)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report describes the general field program during the 1978 marine geophysical investigation in Lancaster Sound and North Western Baffin Bay. The following aspects are addressed: location and purpose of the surveys; the survey ship operation e.g., equipment; personnel; chronology of events; data compilation and interpretation procedures, e.g. bathymetry corrections, side scan sonar, sub-bottom profiler, and bottom photography.

Note: The report described above comprises one section of a six volume report. Sections V, a Reconnaissance Lines Interpretation Report and Section VI, the Hydrocarbon "Sniffer" Interpretation Report, were not available for examinination at the COGLA office.

REF. NO.: 0203-75

SUBJECT CODES: H4

AUTHOR: HARKER, R. J. and BALL, J. H.
University of Wisconsin, Madison, Wisconsin

YEAR: 1975

TITLE: Design Consideration in Vibratory Core Sampling Equipment

SOURCE: Proceedings, Seventh Annual Offshore Technology Conference, Houston, Texas, May 1975, Paper OTC 2292, pp. 457-464

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper presents laboratory data obtained in a study to simulate vibratory sediment core sampling using torsional action and design equations based upon the data. Variables studied included vibratory amplitude, frequency, torque, and time-phase angle, preload, rate of penetration, tube geometry, and power requirements. Cohesive soils exhibited a reaction to the vibratory probe motion which included spring, mass, and damping effects. Relief clearance at the tip was found to be crucial in clay.

REF. NO.: 0204-84

SUBJECT CODES: H1 (E5, A8, A3)

AUTHOR: HARRISON, W. D. and MORACK, J. G.
Geophysical Institute and Physics Department
University of Alaska, Fairbanks, Alaska

YEAR: 1984

TITLE: Thermal Properties from Borehole Heating - Experience in the Canadian Beaufort Sea, 1984

SOURCE: In Abstracts and Program, Workshop on Permafrost Geophysics, Golden, Colorado, October 23 - 24, 1984
Committee on Permafrost, Polar Research Board,
National Academy of Sciences, Washington, D. C.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The University of Alaska was invited to participate in the 1984 Geological Survey of Canada spring drilling program in the Beaufort Sea. A series of 22 sub-bottom bore holes was drilled northwest of Richards Island. Two of these holes were electrically heated and their temperature responses were monitored. The results of these measurements are discussed in this paper.

REF. NO.: 0205-72

SUBJECT CODES: A1 (A7)

AUTHOR: HATTERSLEY-SMITH, G.
Defence Research Establishment
Ottawa, Ontario

YEAR: 1972

TITLE: Climatic Change and Related Problems in Northern Ellesmere Island, N.W.T., Canada

SOURCE: In Climatic Changes in Arctic Areas During the Last Ten-Thousand Years, Edited by Y. Vasari, H. Hyvarinen, and S. Hicks, A Symposium held at Oulanka and Kevo, University of Oulu, Finland, October 4-10, 1971, Acta Universitatis Ouluensis, Series A Scientiae Rerum Naturalium No. 3, Geologica No. 1, pp. 137-148

STATUS: Public

MAP NUMBERS: 7941, 7954

COMMENTS/SUMMARY:

This paper begins by summarizing our limited knowledge of the times of the onset of the climatic warming leading to general deglaciation and the subsequent fluctuations towards cooler conditions that led to the growth of ice shelves off the north coast of Ellesmere Island. Conditions on the Ward Hunt Ice Shelf, unusual oceanographic conditions in Disraeli Fiord, the deterioration of sea ice in Nansen Sound, and the peculiar structure of certain glacial lakes are reviewed. Information on the past climate obtained from deep coring on one of the main ice caps of northern Ellesmere is also examined.

REF. NO.: 0206-73

SUBJECT CODES: H1 (E3)

AUTHOR: HAUGEN, D. P. and KERUT, E. G.

YEAR: 1973

TITLE: The Arctic Data Buoy, a System for Environmental Monitoring in the Arctic

SOURCE: Aidjex Bulletin, University of Washington, Seattle, Washington, No. 22, pp. 37-53

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

An automated data buoy system has been developed for environmental monitoring in ice-covered oceans. The buoy is designed to operate for a minimum of one year, providing position and environmental data through polar-orbiting satellite telecommunications. It can be deployed by a two- or three-man crew using a small aircraft. It is capable of operating in both free-floating and frozen-in situations. An experimental unit successfully completed a five-month test at Fletcher's Ice Island (T-3) during the winter of 1971-72, and six units were deployed in the Arctic during the spring of 1972. Four of these units have been in operation for more than one year. Results to date have demonstrated the utility of the basic design, the effectiveness of the satellite communications, and the feasibility of deploying and operating a large array of such buoy systems in the Arctic Ocean.

REF. NO.: 0207-71

SUBJECT CODES: A6 (A5, E3, I2)

AUTHOR: HENDERSON, P. J.
John Hopkins University, Baltimore, Maryland

YEAR: 1971

TITLE: Textural Study of Sediments of Barrow Strait, District of Franklin

SOURCE: Maritime Sediments, Vol. 7, No. 3, pp. 126-137

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

In the late summer of 1962, the Canadian Hydrographic Service conducted an oceanographic study of Barrow Strait from the CSS Baffin. During the survey, 139 bottom sediment samples were collected. It is the purpose of this report to describe the texture of these sediments and relate it to the known oceanographic features in the area.

REF. NO.: 0208-64

SUBJECT CODES: A1 (A7)

AUTHOR: HENOCK, W. E. S.

YEAR: 1964

TITLE: Postglacial Marine Submergence and Emergence of Melville Island, N.W.T.

SOURCE: Geographical Bulletin, No. 22, pp. 105-126

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

This paper presents some of the results of a detailed investigation of emerged features on Melville Island that was carried out during the summer of 1962. Extensive coverage of the area was made possible by aircraft support.

The writer sums up previous observations on the evidence of glaciation and, on these and his own observations, postulates a multiple glaciation. He describes postglacial emerged features and the difficulties encountered in correlating them.

He discusses the significance of seven radiocarbon dates of samples collected on the island and uses them to construct a preliminary uplift curve. This curve indicates that over the last 2000 years uplift has been negligible and that Melville Island is near isostatic equilibrium. This comparatively early regression of postglacial sea from its coast is also corroborated by recent permafrost research at Winter Harbour.

REF. NO.: 0209-78

SUBJECT CODES: E3

AUTHOR: HERLINVEAUX, R. H., FISSEL, D. B. and
WILSON, S. E. G.
Institute of Ocean Sciences
Department of Fisheries and the Environment
Sidney, British Columbia

YEAR: 1978

TITLE: Oceanographic Observations in Barrow Strait and Wellington Channel, N.W.T., April 1973

SOURCE: Institute of Ocean Sciences, Pacific Marine Science Report 78-4, 170 p.

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Oceanographic measurements were obtained in Barrow Strait and Wellington Channel, N.W.T., in April, 1973 through a landfast ice-cover. Repeated vertical profiles of temperature and salinity at a fixed location showed little variation in the salinity structure but showed an intermittent temperature maximum and minimum. The temperature maximum and minimum had mean temperatures of -1.45°C and -1.59°C, respectively, with departures of approximately 0.2°C from ambient values. The near-bottom currents were weak, 20 cm/s or less, and exhibited a diurnal variation in direction but less regular changes in speed. In the upper 45 m, the current-speed generally increased with depth. The maximum observed current-speed was 44 cm/s at 45 m depth. The directions of the currents varied considerably from one level to another; differences of 40° or more, over 10 m in depth, were common. No systematic rotation of the current with depth was observed.

REF. NO.: 0210-75

SUBJECT CODES: H2 (H3)

AUTHOR: HETHERINGTON, C. R. and STRAIN, H. J.
Panarctic Oils Ltd., Calgary, Alberta

YEAR: 1975

TITLE: Innovations in Petroleum Exploration in the High Arctic

SOURCE: Proceedings, Ninth World Petroleum Congress, Tokoyo, Japan, Volume 3, Exploration and Transportation, pp. 311-322

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

For seven years Panarctic has been operating successfully in ... the Arctic Islands ... By exploring almost all the year round, even in total darkness and in temperatures to -60°F, the company is well on its way to discovering gas and oil in marketable quantities. In doing this Panarctic has overcome the harsh environment by pioneering innovative techniques including the ability to drill from the ocean ice using a conventional land rig.

REF. NO.: 0211-80

SUBJECT CODES: H2 (H3)

AUTHOR: HETHERINGTON, C. R. and FRANKLIN, L. J.
Panarctic Oils Ltd., Calgary, Alberta

YEAR: 1980

TITLE: Offshore Drilling and Production in Deep Ice Covered Waters

SOURCE: Proceedings, Tenth World Petroleum Congress, Bucharest, Romania, Vol. 3, Production, pp. 33-40

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The Canadian Arctic Islands lie north of mainland Canada ... Exploration activities have established the region to be prospective for hydrocarbon accumulations; some three-quarters of the area is under water exhibiting near permanent ice cover and water depths exceeding 400 m. The paper describes a procedure for the drilling and completion of offshore wells utilizing modified conventional land drilling rigs working from artificially thickened ice platforms. A system is described wherein a tubular bundle, consisting of flow lines and control lines, is connected to a subsea wellhead without the use of divers. Control and extended testing of the offshore well through the flow line bundle, which extends to a shore facility, has demonstrated a production system for subsea wells in ice infested waters. Two proposals for transport of gas to markets are reviewed. The pipeline proposal involves the crossing of several ice covered channels between land masses; suggested methods for laying the pipeline are discussed. The alternative method for gas delivery via year-round ice breaking LNG tankers is described.

REF. NO.: 0212-80

SUBJECT CODES: H1 (H3, H2)

AUTHOR: EKELUND, M. J. and MASTERSON, D. M.
FENCO Consultants Ltd., Calgary, Alberta

YEAR: 1980

TITLE: Floating Ice Platforms for Oil Exploration in the Arctic Islands

SOURCE: Arctic, Vol. 33, No. 1, pp. 168-183

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Exploratory drilling for oil and gas in the Arctic Islands has been in progress since 1961. A majority of the reserves are thought to lie offshore. To drill the offshore structures a method has been developed by which the natural ocean ice is artifically thickened into ice platforms which carry the weight of conventional land drilling rigs. The first ice platform well was drilled in 1974; to date 22 platforms have been built and 13 offshore wells drilled. Ice platform design includes the analysis of stresses in the ice and deflections due to ice creep under long term heavy loads. Deflections are found to be the critical factor with loss of freeboard a possible result.

REF. NO.: 0213-74

SUBJECT CODES: B4.2 (B4.3)

AUTHOR: HOBSON, G. D.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Seismic Refraction - Sverdrup Basin

SOURCE: Geological Survey of Canada, Paper 74-1, Part A

STATUS: Public

MAP NUMBERS: 7950, 7951,7953

COMMENTS/SUMMARY:

This project was continued in April - May 1973; the earlier work of 1972 has been reported (Hobson, 1973). Seismic refraction data pertaining to the sedimentary section were obtained over approximately 120 miles (190 km), gravity readings were taken at 4800-foot (1463 m) spacing from shotpoints 36 to 44, and crustal seismic shots at stations 252, 304, 308, 316, 324 and 332 were recorded at Grosvenor Island, King Christian Island and Eureka. Analysis is proceeding using reversed profile techniques to define seismic velocities and delay times related to structural geology.

REF. NO.: 0214-74

SUBJECT CODES: B4.1 (B1, B4.2, B4.3, B4.4)

AUTHOR: HOBSON, G. D.
Polar Continental Shelf Project
Ottawa, Ontario

YEAR: 1974

TITLE: A Review of Some Geophysical Data in the Sverdrup Basin

SOURCE: In Proceedings of the 1973 National Convention, Edited by A. E. Wren and R. B. Cruz, Canadian Society of Exploration Geophysicists, Calgary, Alberta, April 4 - 6, 1973, pp. 106-114

STATUS: Public

MAP NUMBERS: 7950, 7951, 7952, 7953

COMMENTS/SUMMARY:

This regional overview of the deep geology and geophysics of the Sverdrup Basin is derived from gravity, magnetics, heat flow and seismic data, largely obtained by the Geological Survey of Canada. Hobson draws the following conclusions:

- There has been much faulting within the sediments of the Sverdrup Basin;
- There have been many igneous intrusives;
- The intensity of folding and faulting decreases to south and west of Axel Heiberg Island;
- Gravity can be a useful tool;
- Magnetics defines basement and instrusives;
- Don't forget the heat-flow approach to tectonics;
- Crustal refraction is valuable, and;
- Published sections are not too much in error.

REF. NO.: 0215-73

SUBJECT CODES: B4.2 (B4.3)

AUTHOR: HOBSON, G. D.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Seismic Refraction - Sverdrup Basin

SOURCE: In Report of Activities, April to October 1972,
Geological Survey of Canada, Paper 73-1, Part A

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

A unique co-operative project involving industry and government was carried out in the Canadian Arctic Islands in April-May 1972. Seismic refraction data pertaining to the sedimentary section were obtained over approximately 230 miles, gravity over 250 miles with 4800-foot-spacing and crustal seismic data at Drake Point, King Christian Island and Eureka. A preliminary report has been submitted to the 6 oil company initial subscribers with a final report to be submitted by November 30, 1972.

Analysis is proceeding to incorporate correct water depths, refinements in timing precision, and definition of seismic velocities and positions of structures by means of reversed profile delay time studies. These data and interpretations may be purchased at any time during the four-year period of confidentiality.

REF. NO.: 0216-83

SUBJECT CODES: K

AUTHOR: THE ARCTIC INSTITUTE OF NORTH AMERICA

YEAR: 1983

TITLE: ARCTIC, Cumulative Index

SOURCE: Arctic Institute of North America, ASTIS Occasional Publication No. 10, Vol. 36, No. 1 (Supplement), March 1983

STATUS: Public

MAP NUMBERS: Entire map area

COMMENTS/SUMMARY:

The index contains citations of all long and short papers which have appeared in Arctic. Obituaries, book reviews, and AINA reports are not included. The Subject and Geographic indexes use ASTIS' broad subject and geographic categories. If a paper deals with more than one subject or geo- graphic area, it is cited more than once. Under each category, citations are sorted by first author (with anonymous entries appearing first), and then by title. The Author Index is arranged so that citations appear under the names of all authors, resulting in multiple entries for many papers. There are 1027 authors listed and a total of 1438 entries in the Author Index. Anonymous cit- ations appear at the beginning.

REF. NO.: 0217-67

SUBJECT CODES: B4.2

AUTHOR: HOBSON, G. D. and OVERTON, A.

YEAR: 1967

TITLE: A Seismic Section of the Sverdrup Basin, Canadian Arctic Islands

SOURCE: In Seismic Refraction Prospecting, Edited by A. W. Musgrave, Society of Exploration Geophysicists, Tulsa, Ohio, pp. 550-562

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

Seven seismic refraction profiles were completed in 1961 in the Canadian Arctic Islands under the Polar Continental Shelf Project of the Department of Mines and Technical Surveys. These seven profiles were shot along a line extending from a location 30 miles north of Ellef Ringnes Island, along the west coast of this same island to a point 30 miles south of the island into Belcher Channel.

The program was carried out using an S-55 helicopter with the supply support and major moves by Otter fixed-wing aircraft. Dynamite charges were successfully detonated in depths of water to 1285 feet without the use of "boosters." A Decca Survey Chain provided regional navigation but this system is not sufficiently accurate for long-range seismic refraction surveying. These seven profiles are presented in a cross section across the Sverdrup Basin, correlated by seismic velocities, indicating a thickness of approximately 40 000 feet of sediment in the center of the Basin to a formation with a horizontal velocity of 20 000 feet/second "Basement" or the base of the unmetamorphosed sediments may be 64 000 feet deep at this location.

REF. NO.: 0218-80

SUBJECT CODES: K

AUTHOR: HOBSON, G. D. and VOYCE, J.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1980

TITLE: Titles and Abstracts of Scientific Papers Supported by PCSP

SOURCE: Polar Continental Shelf Project, Energy, Mines and Resources Canada, No. 4

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This is Volume 4 of the Polar Shelf Bibliography and contains 421 new items covering recent scientific investigations in the Canadian Arctic. The bibliography is organized into the following subject categories: archeology, bathymetry, biology, botany, climatology, equipment, general, geology, geophysics, glaciology, history, hydrography, hydrology, meteorology, oceanography, oil spills, sea ice, and surveying. An author index is also provided.

REF. NO.: 0219-77

SUBJECT CODES: K

AUTHOR: HOBSON, G. D. and VOYCE, J.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1977

TITLE: Titles and Abstracts of Scientific Papers Supported by PCSP

SOURCE: Polar Continental Shelf Project, Energy, Mines and Resources Canada, No. 3

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume 3 contains 476 new items, at least 90% of which were published in 1975, 1976 and early 1977. This reflects the expanded level of scientific effort in the early and mid 1970's in the Arctic. The bibliography is organized into the following subject categories: archeology, bathymetry, biology, botany, climatology, equipment, general, geology, geophysics, glaciology, history, hydrography, hydrology, meteorology, oceanography, oil spills, sea ice, and surveying. An author list is also provided.

REF. NO.: 0220-75

SUBJECT CODES: K

AUTHOR: HOBSON, G. D. and VOYCE, J.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1975

TITLE: Titles and Abstracts of Scientific Papers Supported by PCSP

SOURCE: Polar Continental Shelf Project, Energy, Mines and Resources Canada, No. 2

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume 1 contained 453 different items collected over 14 years, while this volume contains 462 items collected over 18 months. This reflects to some degree the expanded nature of the effort of the Polar Continental Shelf Project towards support of science in the Arctic. No less than 130 principal investigators will be supported in 1975 which indicates a doubling of effort since 1972. The bibliography is organized into the following subject categories: archeology, biology, botany, climatology, equipment, general, geology, geophysics, glaciology, history, hydrography, hydrology, meteorology, oceanography, sea ice research, and toponomy. An author index is also provided.

REF. NO.: 0221-82

SUBJECT CODES: A1 (A7, G1)

AUTHOR: HODGSON, D. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1982

TITLE: Surficial Materials and Geomorphological Processes, Western Sverdrup and Adjacent Islands, District of Franklin

SOURCE: Geological Survey of Canada, Paper 81-9, 34 p.

STATUS: Public

MAP NUMBERS: 7940, 7950, 7951, 7953

COMMENTS/SUMMARY:

The islands are dominantly lowland or low dissected plateau (rarely greater than 200 m elevation), but relief is locally rugged. The islands and surrounding marine channels and basins are underlain by poorly indurated Mesozoic sandstone alternating with soft shale and siltstone, whereas areas of high relief are underlain by evaporite diapirs and igneous intrusions. Residual weathered rock and marine-reworked rock chiefly sand to clay sized and unconsolidated, are the most widespread surficial materials.

Late Tertiary and Quaternary fluvial planation and dissection developed the present gross morphology; scattered high-level deposits remain from this episode. Quaternary glacial deposits are a minor element of the landscape. Dominant Quaternary events appear to replicate those of the Mesozoic: alternating marine and subaerial episodes over much of the present land area. Sea levels repeatedly rising to near 100 m have planed the margins of most islands. This coastal lowland and the interior fluvial landscape are the two most significant components of the physiography. A wedge of marine and deltaic sediments of Holocene and in part older age overlies the coastal lowland; sediment composition is controlled by underlying and upstream source materials, particularly rock.

Fluvial processes, ranging from rilling to lateral river channel corrasion, are presently the dominant subaerial processes, despite the sparse precipitation, short summer, and underlying permafrost. Mass wasting appears less significant, but rapid mass movement is locally highly active on fine grained materials.

REF. NO.: 0222-75

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: The Terrain Mapping and Evaluation System Adopted for the Eastern Queen Elizabeth Islands

SOURCE: Geological Survey of Canada, Paper 75-1C, pp. 95-100

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

A variant of the basic T.S. Quaternary mapping system has proved workable for reconnaissance mapping of surficial materials in the High Arctic and as a source of geotechnical information. The mnemonic alphabetic notation is useful both in compiling and in using the map; other geotechnical parameters (e.g., U.S.C.S.) can be added. If this notation becomes too unweildy for machine processing, then designations can be encoded as ciphers. This system is not, however, suitable for recording complex attributes such as morphology, poorly defined parameters such as ground ice, or site-specific information such as soil bearing ratios, ground ice content as recorded in cores, etc. A second system of units therefore has been adopted complementing materials maps, which is partly derived from surficial materials and partly using other landscape attributes. The finite number of units, with numeric labels, is keyed to a descriptive and interpretative legend. This second series, which has similarities with the landscape or integrated approach, is regarded as a temporary solution until either an alternative more systematic scheme is devised, or sufficient data is assembled for a parametric approach to be used. The latter approach seems preferable in place of both biophysical and surficial materials maps; it does not require fusing of complexly related, or even unrelated, parameters into units.

REF. NO.: 0223-73

SUBJECT CODES: A7

AUTHOR: HODGSON, D. A.
Terrain Sciences Division
Geological Surveys of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Surficial Geology and Geomorphology of Central Ellesmere Island (Parts of 49 D, E, G, H, 340 B)

SOURCE: In Report of Activities, April to October 1972, Geological Survey of Canada, Paper 73-1, Part A, p. 107

STATUS: Public

MAP NUMBERS: 7302, 7940, 7941, 7950

COMMENTS/SUMMARY:

Several sample areas were examined during 1973 as a prelude to detailed airphoto interpretation and further field checking in 1973. Field work was restricted to the Fosheim Peninsula west of the Sawtooth Range with the exception of a week at the head of Vendom Fiord. Observations on the glaciation history, marine limits mass movements and other processes are made in this report.

REF. NO.: 0224-73

SUBJECT CODES: A1 (A7)

AUTHOR: HODGSON, D. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1973

TITLE: Landscape, and Late-Glacial History, Head of Vendom Fiord, Ellesmere Island

SOURCE: In Report of Activities, November 1972 to March 1973, Geological Survey of Canada, Paper 73-1, Part B, pp. 129-136

STATUS: Public

MAP NUMBERS: 7302, 7940, 7950

COMMENTS/SUMMARY:

This paper briefly describes detailed surficial geology mapping studies undertaken at the head of Vendom Fiord. The area lies on a possible pipeline route between Fosheim Peninsula and Makinson Inlet and is of particular interest as it contains large volumes of granular material of glaciofluvial and fluvial origin. A geomorphological map, with morphostratigraphic units grouped according to differences in surficial material texture is presented. Description of the landscape, late-glacial history, and several radiocarbon-dated samples are also given in this paper.

REF. NO.: 0225-71

SUBJECT CODES: J

AUTHOR: HOOD, P. J. (Editor)

YEAR: 1971

TITLE: Earth Science Symposium on Offshore Eastern Canada

SOURCE: Geological Survey of Canada, Paper 71-23, Sponsored by the National Advisory Committee on Research in the Geological Sciences and the Associate Committee on Geodesy and Geophysics of the National Research Council

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The proceedings of this symposium contain several papers on the marine geology of Baffin Bay and the Arctic Archipelago. Papers by individual authors are cited elsewhere in this bibliography.

REF. NO.: 0226-81

SUBJECT CODES: H5 (H3)

AUTHOR: HOOD, G. L.
Panarctic Oils Ltd., Calgary, Alberta
MASTERSON, D. M.
Fenco Consultants Ltd.
WATTS, J. S.
Tri Ocean Engineering Ltd.

YEAR: 1981

TITLE: Installation of a Subsea Completion in the Canadian Arctic Islands

SOURCE: Journal of Canadian Petroleum Technology, October-December 1981, pp. 41-52

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

In April 1978, the world's first Arctic subsea producing gas well was successfully completed and produced to shore by means of a wet tree and flowline bundle. This paper describes the unique design of a combination land and offshore drilling rig and air-transportable blowout preventer for drilling and completing subsea wells from a floating ice platform. The design, installation and connection of the flowline bundle and shore crossing protection system is described as an integral part of the over-all completion. The completion demonstrated the ability to develop the extensive gas reserves offshore in the Canadian Arctic Islands.

REF. NO.: 0227-73

SUBJECT CODES: A11 (A1, A5)

AUTHOR: HOPKINS, JR., W. S. and YORATH, C. J.
Institute of Sedimentary and Petroleum Geology
Calgary, Alberta

YEAR: 1973

TITLE: Palynology Report on 7 Core Samples from the Bottom of Lancaster Sound

SOURCE: Report submitted to Norlands Petroleum Ltd., (COGLA File 511-01-10-002), 4 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Interpretation of these seven assemblages is perplexing at best. Spores and pollen, characteristic of the Albian through the Miocene are present, although pre-Maestrichtian forms are rare and poorly preserved. Most of the palynomorphs are characteristic of a Paleogene age, with Eocene being most strongly suggested.

One might say these assemblages appear to be extracted from a slurry composed of the entire Eureka Sound Formation sequence. How these happened to end up on the floor of Lancaster Sound, in an excellent state of preservation, is a question I would answer with sincere evasiveness. Is it possible that during the Pleistocene, with lowered sea level, active erosion was taking place throughout the entire Eureka Sound sequence, with a resultant deposition in Lancaster Sound?

REF. NO.: 0228-67

SUBJECT CODES: A5 (A6, C1)

AUTHOR: HORN, D. R.
The University of Texas, Austin, Texas

YEAR: 1967

TITLE: Recent Marine Sediments and Submarine Topography, Sverdrup Islands, Canadian Arctic Archipelago

SOURCE: Ph.D. Thesis, University of Texas (Supervisor R. L. Folk)

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Submarine topographic features of the channels, sounds, fiords, and bays can best be explained as the products of extensive glacial excavation of a pre-existing drainage system. Statistical analyses of beach, fluvial, deltaic, and offshore marine sediments reveal characteristics that may be unique to polar deserts and ice-covered seas. Organic carbon constitutes 0.84 to 2.14% of the offshore sediments. A dual source, terrigenous and phytoplanktonic, may explain the relatively high percentage of organic carbon. Results of semiquantitative clay-mineral analyses of source rock fluvial, deltaic, and offshore marine sediments indicate that montmorillonite, kaolinite, and illite are the dominant clay minerals. A study of the roundness of quartz grains of sand, silt, and clay size reveals that the distribution of this property is bimodal.

Dissertation Abstracts Order No. 67-13,469.

REF. NO.: 0229-63

SUBJECT CODES: A5 (A6, A8, A11, C1, D1, G1)

AUTHOR: HORN, D. R.
Geological Survey of Canada

YEAR: 1963

TITLE: Marine Geology, Peary Channel, District of Franklin

SOURCE: Polar Continental Shelf Project, Geological Survey of Canada, Paper 63-11, 12 p. plus Appendices

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

This is a preliminary account of a marine geological survey of Hassel and Massey Sounds and Peary and Sverdrup Channels, Sverdrup Islands area, District of Franklin. The study was carried out from mid-March to mid-August, 1961. Sampling was conducted within an area of 10 000 square miles. The aims of the investigation were: 1) to interpret the history of terrigenous materials in an area of arid polar climate, from source through major drainage routes to a final resting place in the marine environment, 2) to outline and interpret the distribution of Recent sediments accumulating in the channels, 3) to identify and analyze microfossils in layered cores in an attempt to determine the late-Pleistocene and Recent history of the Queen Elizabeth Islands, and 4) to determine the main characteristics of the sea-floor topography. The study involved the collecting of 155 source-rock and fluvial samples, 150 grab samples in the near-shore environment, and 44 cores from offshore areas. Descriptions of the samples and cores are given in the appendices and some tentative interpretations are presented later in the report.

REF. NO.: 0230-80

SUBJECT CODES: I1 (I2, E1)

AUTHOR: HUDSON, R. D., METGE, M., PILKINGTON, G. R., WRIGHT, B. D., MCGONIGAL, D., SCHWAB, D.
Dome Petroleum Ltd. and Gulf Canada Resources Inc.
Calgary, Alberta

YEAR: 1980

TITLE: Final Report on the Field Studies and Aerial Mapping Along the North-West Edge of the Canadian Archipelago

SOURCE: Beaufort Environmental Impact Statement, Reference Work RWI 18, 9 p. and appendices

STATUS: Public

MAP NUMBERS: 7832, 7941, 7952, 7953, 7954

COMMENTS/SUMMARY:

A three week field study to investigate ice dynamics and ice features along the northwest edge of the Canadian Arctic Archipelago is described. Fourteen ground sites were visited covering a variety of ice phenomena. ... More than 2300 line km of aerial photography, yielding over 4000 square km of data, was taken. Floe sizes and ice types from more than 24 000 floes have been analyzed and are presented, giving the best statistical base so far of the Arctic's most dynamic ice zone. ... Numerous ice failure mechanisms were documented, included ride-up and local crushing within close proximity of each other. A 5 m thick MY sheet was observed to ride up to a height of 23 m on a 26 degree slope. ... Old landfast ice was noted from central Prince Patrick Island (77 degrees N) extending northwards in increasing thickness to the ice shelves of Axel Heiberg and Ellesmere Islands. This ice had massive ridges running parallel to the edge; these have been designated as multiyear hummock fields (MYHF). Their origin, formation and movements are described. Grounded shear ridges were recorded to water depths of 50 m. Large ice blocks and ice island fragments are documented and described, as well as two cases where ice rubble, behaving like a cohesionless Mohr-Coulomb material, has been extruded in significant amounts. ... Of particular interest to the group were the driving and crushing stresses in pack ice. Six sites were investigated: the detailed descriptions of their exact locations, the measurements taken and the assumptions made, are described in Appendix I: Site reports.

REF. NO.: 0231-72

SUBJECT CODES: H4

AUTHOR: HUGGETT, W. S.

YEAR: 1972

TITLE: Systems Used on Board "Parizeau", 1971

SOURCE: Polar Continental Shelf Project, Internal Report, 27 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This past field season there were three automated or semi-automated data acquisition systems carried aboard the PARIZEAU. One of them, BIODAL, has been around for quite some time and will only be touched upon. HAAPS, the second system, was the only fully automated system in that it included data processing equipment. The data acquisition part of the system was on one of the launches and the data processing part of the system was carried aboard the PARIZEAU. The third system, ROLAB, was an automated acquisition system only, and was on loan for trials from Ross Laboratories Ltd., and was fitted aboard the PARIZEAU. The data from this system was made compatible with the HAAPS processing part.

REF. NO.: 0232-74

SUBJECT CODES: H1.1 (E5)

AUTHOR: HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: A Shallow Seismic Experiment - Beaufort Sea, March 1974

SOURCE: Geological Survey of Canada, Paper 74-1, Part B, pp. 87-88

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

A shallow seismic program was undertaken to detect the presence of sub-seabottom permafrost in the presence of a thick ice cover. Sites were occupied on Kugmallit Bay where the previous marine refraction work done by Hunter (1973), and Hunter and Hobson (1974) showed that permafrost with velocities in the range of 3000 m/sec was present in depth less than 50 metres from the sea surface in water depths of less than ten feet. This paper describes early efforts to measure the thickness of unfrozen seabottom materials and detect sub-seabottom permafrost velocities.

REF. NO.: 0233-75

SUBJECT CODES: A3 (A4, H4)

AUTHOR: HUNTER, J. A. and GODFREY, R. J.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada

YEAR: 1975

TITLE: A Shallow Marine Refraction Survey, Cunningham Inlet, Somerset Island, N.W.T.

SOURCE: In Report of Activities, Part B, Geological Survey of Canada, Paper 75-1B, pp. 19-22

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

A shallow marine refraction survey was conducted in the area of Cunningham Inlet, Somerset Island, August 15-28, 1974. The objective of the survey was to obtain velocity structure of the nearshore sediments to identify type of material and possible permafrost (frozen material) conditions.

The marine refraction technique employed here has been described by Hunter (1973). A 200 m 12-hydrophone array (15 m spacing) was used with an S.I.E. RS-4 seismograph. The seismic source used was, alternately, a three-electrode sparker operated at 300 joules of 1/2 lb. geogel explosive. Work was done from a 30 foot enclosed barge, positioning of survey lines was accomplised by radar and transponders.

REF. NO.: 0234-74

SUBJECT CODES: H1 (A2, E5)

AUTHOR: HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario
HOBSON, G. D.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1974

TITLE: Seismic Refraction Method of Detecting Subsea Bottom Permafrost

SOURCE: In The Coast and Shelf of the Beaufort Sea, Edited by J. C. Reed and J. E. Sater, Arctic Institute of North America, pp. 401-416

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

For most unconsolidated marine sediments, the seismic velocity difference between frozen and unfrozen states is large. A low-velocity layer (sea water and unfrozen sediments) overlying a high-velocity layer (permafrost) constitutes a model amenable to interpretation by seismic refraction methods.

In 1972 and 1973, the Geological Survey of Canada conducted experiments to detect offshore permafrost by seismic methods in the Mackenzie delta region of the Beaufort Sea. Penetration in excess of 100 m beneath the sea bottom was achieved in shallow (less than 6 m) water using single-ended refraction profiling techniques. Interfaces with high seismic velocities, interpreted to be permafrost, have been observed along shorelines where rapid coastal recession is taking place. Permafrost has also been mapped below the sea floor in shelf areas in water depths of 35 m.

REF. NO.: 0235-76

SUBJECT CODES: H1 (E5)

AUTHOR: HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario
VEILLETTE, J.
Terrain Sciences Division
Geological Sciences Division, Ottawa, Ontario

YEAR: 1976

TITLE: Borehole Density Logging in Permafrost, Tuktoyaktuk District of Mackenzie

SOURCE: Geological Survey of Canada, Paper 76-1A, p. 417

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Recent geological survey shallow dry-hole drilling was completed at a test site near Tuktoyaktuk to provide detailed geological control for geophysical experiments. These holes provided an opportunity to test the density logging technique in ice-rich overburden materials.

Six shallow holes, with depths ranging up to 9.5 m were logged with a 1-15/16 inch gamma-gamma tool using a Gearhart-Owen portalogger unit. A good example of the results is shown in Figure 88.1 compared with the geological description. To obtain better depth resolution the chart recorder was manually driven and measurements were made at 6-inch intervals up the holes. Since the tool has not been calibrated it was not possible to obtain absolute values of density; density variation is given in counts per second from the gamma-ray detector with high count rates indicative of low density. Good correlations exist between count rate variation and the change of ice content as given by the geology to a resolution exceeding 0.5 m. Variation in ice content of unconsolidated materials at low permafrost temperatures is probably the major factor responsible for variations in density in the Tuktoyaktuk area; hence it is suggested that the density logging tool can be used reliably to detect the presence of high ice content zones.

REF. NO.: 236-78

SUBJECT CODES: H1 (E5)

AUTHOR: HUNTER, J. A., and MACAULAY, H. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario
NEAVE, K. G., and HOBSON, G. D.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1978

TITLE: Interpretation of Sub-Seabottom Permafrost in the Beaufort Sea by Seismic Methods. Part II. Estimating the Thickness of the High-Velocity Layer

SOURCE: In Proceedings of the Third International Conference on Permafrost, National Research Council of Canada, Edmonton, Alberta, Vol. 1, July 1978, pp. 521-526

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

A study of thickness determination methods for high-velocity layers has been conducted to determine the potential of mapping thickness of permafrost under the Beaufort Sea Shelf. For thin, shallow, high-velocity layers, a method described by J. H. Rosenbaum, using attenuation measurements of refracted energy, has been successful. For thicker layers, a dispersion method based on modal propagation (discussed by Rosenbaum) and a technique based on discrete reflections from the base of the layer have been tried; however, a strong modes developed in the low-velocity layer above the ice-bonded section adding considerable noise to the records. The low signal-to-noise ratio on the unprocessed records makes measurement of thickness unreliable. Signal enhancement processing may retrieve the thickness information from the records.

REF. NO.: 0237-74

SUBJECT CODES: H1 (E5)

AUTHOR: HUNTER, J. A., and GOOD, R. L.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario
HOBSON, G. D.
Polar Continental Shelf Project, Ottawa, Ontario

YEAR: 1974

TITLE: Mapping the Occurrence of Sub-Seabottom Permafrost in the Beaufort Sea by Shallow Refraction Techniques

SOURCE: Geological Survey of Canada, Paper 74-1, Part B
pp. 91-94

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This report describes some of the early work of the Geological Survey of Canada in mapping the occurrence of sub-seabottom permafrost. Seismic profiles, field equipment and techniques and some preliminary results from the Beaufort Sea Region are described.

REF. NO.: 0238-81

SUBJECT CODES: E3

AUTHOR: INDIAN AFFAIRS AND NORTHERN DEVELOPMENT, CANADA

YEAR: 1981

TITLE: The Eastern Marine Environmental Studies Program (EAMES)

SOURCE: Indian Affairs and Northern Development, Canada

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The Eastern Arctic Marine Environmental Studies program (EAMES) is a comprehensive scientific investigation of a marine Arctic ecosystem. The research for this joint government-industry effort was conducted from 1976 to 1980, and has generated a considerable body of knowledge. While data from the earlier work have already been made public, the recent completion of the field studies for the second phase of the EAMES program allows a more complete set of information and analysis to be made available. This booklet describes EAMES, including its objectives, participants and major elements. It specifies the material that is being propared for distribution, and explains how and where it can be obtained.

Summaries are given of the field studies conducted in the areas of ice, meteorology, oceanography, geomorphology, biology and socio-economic studies. A bibliography of all EAMES publications is also included.

REF. NO.: 0239-75

SUBJECT CODES: H1 (I2)

AUTHOR: INNOVATIVE VENTURES LTD.
Calgary, Alberta

YEAR: 1975

TITLE: Equipment Report (Ice Motion Records)

SOURCE: Arctic Petroleum Operators Association, Report 79-1
17 p.

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Offshore exploration in the high Arctic presents several unique problems. During the winter months, the frozen sea provides a platform for drilling using conventional land based equipment. However, the ice moves, a fact that can create serious difficulties, if the movement is too great. An arbitrary upper limit of 5% of the water depth has been established as the maximum amount of ice motion that a drill can tolerate. In order to measure ice motion, several techniques have been proposed including tellurometer, optical ranging instruments, radar transponder, navigation satellite, and acoustic. This report describes one such system for recording ice motion. Its installation and operation in the Sverdrup Basin area is described in detail. The theory behind the data collected, its analysis, and its accuracy are discussed.

REF. NO.: 0240-73

SUBJECT CODES: A5 (A6, A11)

AUTHOR: IQBAL, J.
Dalhousie University, Halifax, Nova Scotia

YEAR: 1973

TITLE: Sedimentology and Distribution of Benthonic Foraminifera in M'Clure Strait (Canadian Arctic Archipelago)

SOURCE: Master of Science Thesis, Department of Geology, Dalhousie University, Halifax, Nova Scotia, 250 p.

STATUS: Public

MAP NUMBERS: 7831, 7832, 7852

COMMENTS/SUMMARY:

Recent benthonic foraminifera in the M'Clure Strait have been studied from 40 grab samples. The foraminiferal assemblage is essentially similar to those reported from the adjacent areas of the Eastern Arctic. Distinct North Atlantic (sub-arctic) affinities are also apparent. A total of 74 species belonging to 48 genera and 27 families have been identified, described and illustrated. Of these 57 species are calcareous and the remaining 17 are arenaceous. Sedimentary analysis of 36 samples reveals that the Recent sediments in M'Clure Strait are predominantly muds and clays with small amounts of coarse material (sand and gravel) occurring in a random distribution irrespective of depth and distance from shore. The environmental parameters studied to evaluate and correlate the associated foraminiferal distribution were: bathymetry, sediment distribution, temperature and salinity. Visual analysis failed to correlate the random and patchy distribution patterns of the predominant species with these environmental parameters. The application of Factor Analysis brings out three definite faunal assemblages (or thanatotopes) based on such factors as depth, distance from shore, nature of the substrate and test composition.

REF. NO.: 0241-74

SUBJECT CODES: H3, (H2)

AUTHOR: IVES, G.
Petroleum Engineer [Journal]

YEAR: 1974

TITLE: Ice Platform Concept Proven for Arctic Offshore Drilling

SOURCE: Petroleum Engineer, June, 1974, pp. 10-14

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This report summarizes logistical considerations and the operation of Panarctic's Hecla N-52 well in Hazen Strait. The construction of the ice platform, the ice road to shore and the modified land drilling rig are all briefly described.

REF. NO.: 0242-80

SUBJECT CODES: A6 (A5, B4.2, B6)

AUTHOR: JACKSON, H. R. and BLASCO, S. M.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1980

TITLE: Geophysical and Geological Studies in the Central and Eastern Arctic Ocean

SOURCE: In Program with Abstracts, Vol. 5, Annual Meeting of the Geological Association of Canada, Dalhousie University, Halifax, Nova Scotia, May 1980, p. 63

STATUS: Public

MAP NUMBERS: 7954

COMMENTS/SUMMARY:

Two ice stations, LOREX and FRAM 1 were established in the spring of 1979 to investigate two distinct features of the Arctic Ocean basin, the Lomonosov Ridge, and the region adjacent to the Nansen (or Gakkel) Ridge. Survey techniques for LOREX included bathymetric and shallow seismic reflection profiling, sediment sampling, and sea bed photography; while at FRAM 1 deep seismic reflection and crustal refraction were carried out. The Lomonosov Ridge has a relief of 2800 metres and a width of 88 km along the drift path. Asymmetrical in shape, the American and Eurasian flanks have maximum apparent slopes of 12° and 7° respectively. Ridge morphology suggests the feature consists of an echelon fault blocks. A thin veneer of unconsolidated sediments on the ridge crest was probably deposited prior to the assumed separation from the Barents shelf. The presence of neritic dinoflagellate Luxadinium propalulum in these sediments suggests separation occurred no earlier than mid-Cretaceous. At FRAM 1 the seismic reflection data indicate the existence of 1.5 seconds of sediments infilling depressions between outcropping basement highs within 80 km of the Nansen ridge axis. Nine crustal refraction lines, 40 to 120 km in length reveal an oceanic crustal structure which is only 4 km thick. The arrivals from the M discontinuity are well defined and break over early limiting the crustal thickness. A strong shear wave arrival with the same phase velocity as the first arrival but with a greater intercept time is apparent in sediment covered areas.

REF. NO.: 0243-84

SUBJECT CODES: H1 (A1, A5)

AUTHOR: JACKSON, R. and MUDIE, P.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1984

TITLE: CESAR Cores: Geological Time Capsules

SOURCE: GEOS, Vol. 13, No. 2, pp. 15-18

STATUS: Public

MAP NUMBERS: 7954

COMMENTS/SUMMARY:

CESAR, EMR's 1983 Canadian Expedition to study the Alpha Ridge produced 16 piston cores and 14 gravity cores from a 240 km^2 area of the Alpha Ridge and its flanking basins. These probes of the Arctic Ocean floor were made from a reasearch station on the ice 400 km from the North Pole. This report briefly describes the reasons for examining the murofossils from these cores and the considerable efforts that were made to obtain them.

REF. NO.: 0244-77

SUBJECT CODES: B4.2 (B4.1, B4.3, B7)

AUTHOR: JACKSON, H.R., KEEN, C. E., and BARRETT, D. L.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1977

TITLE: Geophysical Studies on the Eastern Continental Margin of Baffin Bay and in Lancaster Sound

SOURCE: Canadian Journal of Earth Sciences, Vol. 14, pp. 1991-2001

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

The results of three crustal refraction lines on the western margin of Baffin Bay and one in Lancaster Sound are described. The refraction measurements in Baffin Bay along with earlier refraction, gravity, magnetic, and seismic reflection data are used to define the boundary between continental and oceanic crust. The results suggest that the transition from continental to oceanic material takes place in about 30 km. The seismic refraction data also suggest a sedimentary basin on the continental shelf with at least 6 km thickness of sediment which, however, thins rapidly near Baffin Island. This basin is truncated under the slope by either a basement high or carbonate rocks. Lancaster Sound is filled by about 10 km of sediments that could be either of Mesozoic or Paleozoic age based on comparisons with velocities in nearby wells. The sedimentary and structural characteristics of Lancaster Sound are discussed and related to the concepts of sea-floor spreading and continental drift.

REF. NO.: 0245-79

SUBJECT CODES: I2

AUTHOR: JACOBS, J. D.
Department of Geography
University of Windsor, Windsor, Ontario
NEWELL, J. P.
NORDCO, Ltd., St. John's, Newfoundland

YEAR: 1979

TITLE: Recent-Year-to-Year Variations in Seasonal Temperatures and Sea Ice Conditions in the Eastern Canadian Arctic

SOURCE: Arctic, Vol. 32, No. 4, pp. 345-354

STATUS: Public

MAP NUMBERS: 7067, 7302

COMMENTS/SUMMARY:

Mean summer and winter temperatures for the 1957-1978 period have been analyzed for four eastern Arctic stations. Standard deviations on the order of 3° C in winter and 1° C in summer indicate the magnitude of the interannual variations, and these departures are found to be synchronous over the region. Several indices of sea ice severity also show significant year-to-year variations, but these are not spatially coherent. Relationships between climatic parameters and sea ice are examined in order to explain these differences.

REF. NO.: 0246-78

SUBJECT CODES: A6 (B4.2, B7)

AUTHOR: JOHNSON, G. L.
Office of Naval Research
Arlington, Virginia
TAYLOR, P. T.
NORDA, Bay St. Louis, Mississippi
VOGT, P. R.
Naval Research Laboratory
Washington, D. C.
SWEENEY, J. R.
Earth Physics Branch
Department of Energy, Mines & Resources
Ottawa, Ontario

YEAR: 1978

TITLE: Arctic Basin Morphology

SOURCE: Polarforschung 48 (1/2), pp. 20-30

STATUS: Public

MAP NUMBERS: 7954

COMMENTS/SUMMARY:

The geomorphology of the Arctic is complex. Major features found within the Arctic Basin include a spreading center (Nansen Ridge); a continental fragment (Lomonosov Ridge); marginal plateaux (Morris Jesup, Yermak and Chukchi); and a large ridge complex of unknown genesis (Alpha-Mendeleev). However, enough geophysical data are now known to partially unravel the history of the Arctic Basin: 38 mybp Yermak and Morris Jesup Plateaux separated; 60 mybp Lomonosov Ridge was rifted away from the Eurasia continental block; 70-80 mybp Alpha-Mendeleev Ridge was probably shifted away from near Lomonosov Ridge by sea floor spreading; and in the late Jurassic-early Cretaceous the Arctic Alaska plate rotated away from the Canadian Arctic Archipelago to create the Canada Basin.

REF. NO.: 0247-82

SUBJECT CODES: E6 (H3)

AUTHOR: JUDGE, A.
Earth Physics Branch
Department Energy, Mines and Resources
Ottawa, Ontario

YEAR: 1982

TITLE: Natural Gas Hydrates in Canada

SOURCE: In Proceedings of the Fourth Canadian Permafrost Conference - The Roger J. E. Brown Memorial Volume, Edited by H. M. French, Associate Committee on Geotechnical Research, Calgary, Alberta, March 2-6, 1981, pp. 320-328

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The presence of hydrate in at least 20 northern Canadian wells on- and off-shore has been inferred by the nature of gas release from formations and from geophysical well-log interpretations. In addition, hydrates have been identified in gas fields in Siberia and on the north slope of Alaska. There are extensive data on temperature - pressure relationship for different hydrate compositions. Relating such curves to depth within the earth and superimposing measured geothermal gradients provides a means of predicting the depth zones of occurrence. Maximum thicknesses probably do not exceed 1800 m.

Dissociation of hydrates either by heat absorbed from drilling mud or from the pressure decrease at the drill-bit can be a significant hazard to the safety of drilling operations in the north. The problems which might result by producing conventional hydrocarbons from depths below a hydrate zone have yet to be solved.

REF. NO.: 0248-80

SUBJECT CODES: H1 (B4.4)

AUTHOR: JUDGE, A.
Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1980

TITLE: Heat Flow Measurements in the Vicinity of the North Pole

SOURCE: GEOS, Vol. 61, No. 17, p. 277

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During Lorex-79 a total of 42 gradiometer penetrations of sea-bottom sediments were completed; 22 in the Makarov Basin, 10 on the Lomonosov Ridge and 10 in the Fram Basin. A new light-weight digital recording Bullard-style thermal gradiometer with 7 thermistor sensors spaced at 40 cm intervals commonly gave sediment penetrations of 3 m using 45 kilos of lead weight in water depths to 4200 m. Using a needle probe over 300 conductivity measurements were completed on 21 cores. Bottom water temperatures and water temperature profiles were collected both over the ridge and the two adjacent basins. Temperature gradients in the sediments varied from 59 to 69 mKm^{-1} in the Makarov Basin, 40 to 60 on the Ridge flanks and crest and from 75 to 90 in the Fram Basin. Preliminary heat flows over the ridge and Basin, similar to the very few previous results reported from the region, provide some important constraints for the origin and nature of the Lomonosov Ridge.

REF. NO.: 0249-73

SUBJECT CODES: B4.4 (E5)

AUTHOR: JUDGE, A.
Earth Physics Branch
Department of Energy, Mines and Resources
Ottawa, Ontario

YEAR: 1973

TITLE: Geothermal Measurements in Northern Canada

SOURCE: In Proceedings of the Symposium on the Geology of the Canadian Arctic, Edited by J. D. Aitken and D. J. Glass, Geological Association of Canada - Canadian Society of Petroleum Geology, Saskatoon, Saskatchewan, May 1973, pp. 301-311

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Information on underground temperatures and temperature gradients is particularly important in northern Canada from a practical point of view because of the presence of permafrost and the problems created thereby. Permafrost thicknesses and temperatures are important in many phases of the petroleum industry, ranging from geophysical interpretations to the eventual design of a production well. In the mining industry it is important in slope stability of open pits, in explosive charge design, in underground ventilation design and drift and slope stability. Determination of the thermal properties of subsurface rocks penetrated enables calculation of the terrestrial heat flow which can be used to make permafrost thickness predictions and is important in an understanding of the geological processes which are acting to create the lithosphere of northern Canada.

REF. NO.: 0250-84

SUBJECT CODES: E5

AUTHOR: JUDGE, A. and TAYLOR, A.
Earth Physics Branch
Energy, Mines & Resources Canada
Ottawa, Ontario

YEAR: 1984

TITLE: Permafrost Distribution in Northern Canada: Interpretation of Well-Logs

SOURCE: In Abstracts & Program, Workshop on Permafrost Geophysics, Golden Colorado, October 23-24, 1984. Committee on Permafrost, Polar Research Board, National Academy of Sciences, Washington, D. C.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The interpretation of well-logs from 150 exploratory wells in the Arctic Islands yields a wide range of results from a base of permafrost of 131 m on Linckens Island to 860 m at Cornwallis Central Dome. In a general sense the permafrost thickness exceeds 600 m in the interior of Banks, Devon, Cornwallis, Melville, Prince Patrick and King Christian Islands and generally ranges between 300 and 600 m throughout much of the rest of the onshore areas. The shallowest permafrost in onshore areas appears to occur in the Sabine Peninsula of Melville Island, close to the present shorelines of many of the islands and in the more southerly parts of the region. Unfortunately many of the logs in the offshore wells were commenced at too great a depth to determine the absence or presence of permafrost.

REF. NO.: 0251-79

SUBJECT CODES: B4.4 (E5)

AUTHOR: JUDGE, A. S., TAYLOR, A. E. and RUTLEDGE, L.
Earth Physics Branch
Energy, Mines and Resources Canada, Ottawa, Ontario

YEAR: 1979

TITLE: Supplement To Canadian Geothermal Data Collection - Northern Wells 1977-78

SOURCE: Geothermal Service of Canada, Earth Physics Branch, Energy, Mines and Resources Canada, Earth Physics Branch Open File Number 79-13, 64 p. (includes 29 tables and 26 graphs)

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report supplements Canadian Geothermal Data Collection - Northern Wells, 1977 - 1978, reporting subsurface temperature data collected between August, 1978 and July, 1979 from wells of total depth greater than 125 m. New measurements are reported at 13 of the sites previously listed in the collection, and from one new site.

REF. NO.: 0252-83

SUBJECT CODES: H3 (H5)

AUTHOR: KAUSTINEN, O. M.
Polar Gas Project, Toronto, Ontario

YEAR: 1983

TITLE: A Polar Gas Pipeline for the Canadian Arctic

SOURCE: Cold Regions Science and Technology, Vol. 7, pp. 217-226

STATUS: Public

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

The Polar Gas Project was established in 1972 to determine the best means of moving frontier natural gas reserves from Canada's High Arctic to southern markets. ... In order to connect the natural gas reserves in the Canadian Arctic Islands, Polar Gas will have to install pipelines in two major marine crossings in the Arctic waters in the initial construction phase of the project. The two marine crossings are located at either end of Victoria Island - at Dolphin and Union Strait and at M'Clure Strait. Dolphin and Union Strait between Victoria Island and the Canadian mainland is about 19 miles wide and has a maximum depth of 400 feet. M'Clure Strait is between Victoria Island and Melville Island and is 76 miles wide with a maximum depth of 1650 feet. Different methods of construction are proposed for the two channels and these methods are described as well as outlining the technique for protecting the pipelines from potential ice scour. Polar Gas and its consultants have designed a full scale demonstration of the one-atmosphere welding technique closely parallelling the underwater environment faced at M'Clure Strait to demonstrate that the tie-ins which would be necessary for the actual construction of the marine crossings could be satisfactorily undertaken. The equipment required for the demonstration is outlined in the paper and the general procedures are described.

REF. NO.: 0253-74

SUBJECT CODES: H4

AUTHOR: KENYON, R.

YEAR: 1974

TITLE: Arctic Submarine

SOURCE: North, July/August 1974, pp. 8-9

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Publication in French

Un projet audacieux, qui tient de la science-fiction, est en cours d'elaboration par l'action concertee d'hommes d'affaires avertis, de professionnels de la technologie avancee, ainsi que d'anciens officiers de marine.

REF. NO.: 0254-77

SUBJECT CODES: H1 (D1)

AUTHOR: KERR, A.

YEAR: 1977

TITLE: Developments in Through-The-Ice Hydrographic Surveying

SOURCE: Presented at International Congress of Surveyors, Stockholm, June 1977, 13 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

It was fortuitous for the exploration companies that the Canadian government, in order to emphasize its sovereignty, decided in 1959, to establish a major project to carry out research studies in the high Arctic. This operation, known as the Polar Continental Shelf Project (P.C.S.P.), included work in many scientific disciplines. Bathymetry is fundamental to the understanding of numerous marine phenomena and as a result hydrography occupied a major part of the work. During the eighteen years that hydrographers have worked with the project they have systematically mapped most of the area surrounding and between the Queen Elizabeth Islands, including the continental shelf bordering the Arctic Ocean. The hydrographic work has been mainly of a reconnaissance nature with spot depths measured on a square grid of between two and ten kilometres. This information which was originally intended as a basis for scientific studies, has turned out to be of use to exploration companies planning their operations. With the actual discovery of oil and gas, thoughts have turned to the extraction of these resources. Consequently a need has quickly arisen for more detailed hydrographic information about these ice covered waters.

REF. NO.: 0255-74

SUBJECT CODES: H1

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1974

TITLE: Tips on Organizing Arctic Geological Field Work

SOURCE: Geological Survey of Canadaa, Paper 74-12, 11 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The Geological Survey of Canada has developed efficient methods of conducting geological field work in the Canadian Arctic Islands, and this report summarizes those methods. It deals with important and potentially dangerous or costly problems, as well as the routine matters of camp life.

REF. NO.: 0256-75

SUBJECT CODES: B6 (B7)

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1975

TITLE: Cape Storm Formation - A New Silurian Unit in the Canadian Arctic

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 23, No. 1, pp. 67-83

STATUS: Public

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

Cape Storm Formation is a new unit of limestone and dolomite that had earlier been included with the underlying Allen Bay Formation, or with an overlying formation - either the Read Bay or the Douro. The type section is 8 miles east of Cape Storm on the south coast of Ellesmere Island, where the formation is 645 feet thick. The Cape Storm Formation is of Silurian age, late Llandoverian, Wenlockian, and early Ludlovian.

At and near the type section, the Cape Storm Formation contains two members. The lower member is cliff-forming limestone, partly dolomitized; it is thickest along the south coast of Ellesmere Island, thinning and disappearing to the north. The upper member is thin-bedded dolomite and silty dolomite, grading upward to interbedded dolomite and limestone.

The Cape Storm Formation has been mapped on southern Ellesmere Island, northwest Devon Island including Grinnell Peninsula, Cornwallis Island, and Griffith Island. The upper and lower contact of the formation are conformable in all these areas, except for a narrow strip along western Grinnell Peninsula where the formation is unconformable on the Allen Bay Formation and Cornwallis Group.

REF. NO.: 0257-79

SUBJECT CODES: B7 (A6, B2, B4.2, B6)

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta
RUFFMAN, A.
Geomarine Associates Ltd., Halifax, Nova Scotia

YEAR: 1979

TITLE: The Crozier Strait Fault Zone, Arctic Archipelago, Northwest Territories, Canada

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 27, No. 1, pp. 39-52

STATUS: Public

MAP NUMBERS: 7830, 7950, 7951

COMMENTS/SUMMARY:

Newly interpreted bathymetric data show that Crozier Strait has steep, linear, north-south margins, and depths exceeding 400 m. It probably is a fault zone, a graben, formed in the Cretaceous-Tertiary Eurekan Rifting Episode, and modified by glacial and other erosion. The suggested graben lies within a Paleozoic structure, the Cornwallis Fold Belt. It appears that the faults forming it were guided partly by the structure of the fold belt, but probably were controlled ultimately by trends in the Precambrian crystalline basement. The suggested graben is in a north-trending anticline, and appears to be a downdropped keystone block. Crozier Strait appears to be part of a major north-trending fault zone that extends for several hundred kilometres. ... The strait also is being considered as a potential crossing for a gas pipeline.

REF. NO.: 0256-81

SUBJECT CODES: D1 (D2)

AUTHOR: KINGSLEY, M. C. S. and STIRLING, I.
Canadian Wildlife Service
Edmonton, Alberta

YEAR: 1981

TITLE: A Machine-Readable File of Sea Depths for the Central Canadian Arctic Archipelago

SOURCE: Arctic, Vol. 34, No. 4, p. 379

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

In connection with extensive seal surveys in the central High Arctic in 1980 and 1981, a computer file of depths was built, and will be made available to anyone who would like a copy. Limits of the area covered are: southerly, 71°N in Amundsen Gulf, 73°30'N in M'Clintock Channel, and 73°40'N in Peel Sound; northerly generally 78°10'N; westerly, 120°40'W in Amundsen Gulf, 117°20'W in M'Clure Strait, and 110°W in Hazen Strait; and easterly, 90°40'W in Lancaster Sound, 86°W in Jones Sound, and 88°W in Norwegian Bay. The file has 2343 lines; each contains: transect number, longitude (degrees and minutes), latitude (degrees, minutes, and tenths of minutes), depth class to the south, and depth class to the north.

REF. NO.: 0259-83

SUBJECT CODES: A5 (A6)

AUTHOR: KRAVITZ, J. H.
George Washington University
Washington, D. C.

YEAR: 1983

TITLE: Sediments and Sediment Processes in a High Arctic Glacial Marine Basin (Volumes I and II)

SOURCE: Ph.D. dissertation, Geoge Washington University, (cited in Dissertation Abstracts International, Vol. 44, p. 508)

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Textural parameters, mass physical properties, mineralogy, x-radiography and chemistry were used to identify and delineate lithofacies in the sediments of Kane Basin. Q-mode factor analysis was used to group the sediments into compositionally similar factors. The sediments dominated by water transport occur near the Inglefield Land coast, and extend to the northwest. Sediments dominated by ice rafting are most abundant in the vicinity of the Humboldt Glacier. They are also present in the south central part of the Basin, northwest of Inglefield Land. Examination of the areal and temporal (down core) distribution of the lithofacies indicates that the tills were deposited concomitantly. They differ primarily in terms of mineralogy and gravel composition. These differences reflect different source areas. The deposition of the tills was followed by a period when ice rafting was dominant. This was succeeded by an increase in the deposition of water-transported materials emanating primarily from Inglefield Land. Both ice rafting and water transport are going on at the present time.

REF. NO.: 0260-82

SUBJECT CODES: A5 (A6)

AUTHOR: KRAVITZ, J. H.
Office of Marine Pollution Assessment
National Oceanic and Atmospheric Administration
Washington, D. C.

YEAR: 1982

TITLE: The <2 Micrometre Fraction of Some High Arctic Glacial and Glacial Marine Sediments

SOURCE: In Arctic Geology and Geophysics, Edited by A. F. Embry and H. R. Balkwill, Proceedings of the Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, Calgary, Alberta, December 1982, Memoir 8, pp. 297-307

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Sediments are brought into Kane Basin by streams draining Inglefield Land, and to a lesser extent Washington Land and Ellesmere Island; by ice rafting from Humboldt Glacier and from the valley glaciers of Ellesmere Island. An examination of the $<2 \times 10^{-6}$ m fraction of the surficial layer of these sediments shows illite to be the dominant mineral. It decreases in abundance from east to west indicating the antecedent micas in the basement rocks underlying Humboldt Glacier are its main source. The greatest concentrations of expanding lattice clays are in a north-south trending strip on the western side of the Basin, decreasing to the east and west. Their source is a zone of relict sediment believed to be a till exposed on the floor of the Basin's western trough. The most important occurrences of chlorite are in the western Basin in association with the exposed till, and in the northern part of Kane Basin across the topographic high. Kaolinite, the least common clay mineral present, occurs significantly only in the northern Basin in conjunction with relict sediment.

An investigation of the "rock flour" component (non hydrous alumino-silicate minerals and carbonate minerals) of the $<2 \times 10^{-6}$ m fraction shows a strong modern input from Humboldt Glacier. Rock flour decreases westward, increasing slightly near Ellesmere Island. Silicate minerals in the rock flour dominate the eastern Basin while carbonate minerals dominate the western side, thus identifying the principal rocks eroded by ice.

REF. NO.: 0261-74

SUBJECT CODES: B4.2

AUTHOR: LACK, M.
Kenting Exploration Services, Calgary, Alberta

YEAR: 1974

TITLE: Some Aspects of Marine Geophysics Concerned With the Canadian Arctic

SOURCE: In Proceedings of the 1973 National Convention, Edited by A. E. Wren and R. B. Cruz, Canadian Society of Exploration Geophysicists, Calgary, Alberta, April 4-6, 1973, pp. 197-229

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

In 1970 the first industrial marine seismic data in the Arctic was obtained. This paper is merely an attempt to inject some industry data into the stream of discovery. A great deal of hard-won experience and knowledge has been obtained of the operating difficulties, the geology and geophysical data problems in the Arctic. Although by no means all problems have been solved, the geophysical data processing industry has provided great help to interpreters by the development of new computer programs and their uses. Arctic waters, from M'Clure Strait to Baffin Bay and southwards, provide perhaps the biggest problem of dealing with multiple reflections yet encountered. The use of marine seismic data can be divided into two categories: 1) to fill in close onshore control in areas such as Eureka Sound and 2) to estimate geological conditions in more open areas such as Lancaster Sound and Baffin Bay. In both cases, but especially the latter, the reflection data should be supplemented by refraction profiles and seaborne gravimeters and magnetometers.

This paper contains excellent seismic sections across several straits and channels in the Canadian Arctic Archipelago. These include: Tanquary Fiord, Eureka Sound, Lancaster Sound, Northern Baffin Bay, Maclean Strait, Jones Sound, and Lady Ann Strait.

REF. NO.: 0262-75

SUBJECT CODES: H4

AUTHOR: LARSON, V. F.
Scripps Institution of Oceanography
University of California

YEAR: 1975

TITLE: Deep-Water Coring for Scientific Purposes

SOURCE: Journal of Petroleum Technology, August, 1975, pp. 925-934

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Since 1968, the Deep Sea Drilling Project has used a dynamically positioned drillship, the Glomar Challenger, in a world-wide scientific research program for recovering sediment cores from the deep oceans and adjacent seas. Short sectios of underlying igneous and metamorphic rocks also have been recovered. The objective of this basic geologic research is to learn about the origin and history of the earth through the study of samples obtained in previously inaccessible sites. Operations have been conducted successfully in water depths greater than 20 000 feet and in polar latitudes to 77° south and 76° north. More than 120 000 feet of cores have been recovered.

Previous reports have described the drillship, positioning system, re-entry equipment, and coring bits. This paper summarizes the operational accomplishments and experience with the various systems. Coring procedures are described and improvements and new tools developed are discussed. A brief description is given of future scientific objectives and the challenging technological program that will be required to meet them.

REF. NO.: 0263-80

SUBJECT CODES: E3

AUTHOR: LEBLOND, P. H.
Department of Oceanography
University of British Columbia
Vancouver, British Columbia

YEAR: 1980

TITLE: On the Surface Circulation in Some Channels of the Canadian Arctic Archipelago

SOURCE: Arctic, Vol. 33, March 1980, pp. 189-197

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This paper advances an explanation for the presence of surface currents in opposite directions on facing sides of some of the main channels of the Canadian Arctic Archipelago. It is found that geostrophic dynamics coupled with geometrical constraints and the general direction of surface drift through the archipelago can readily account for the existence, if not all the properties, of the observed flow patterns.

REF. NO.: 0264-81

SUBJECT CODES: E3

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1981

TITLE: Data Report No. 3, CTD Data From Western Baffin Bay and Lancaster Sound, 1978 - 1979, Volume I

SOURCE: Prepared for Petro-Canada Inc., Prepared by D. D. Lemon, (available as EAMES Report EN21 from Pallister Resource Management Ltd.)

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

This report summarizes conductivity - temperature - depth (CTD) data ... Measurements were taken in Lancaster Sound and western Baffin Bay during the summers of 1978 and 1979 ... The body of this report describes the collection, calibration and processing of the data. The data is presented in two appendices: B (1978 data) and C (1979 data). Each cast is represented by a listing of pressure (dbar), temperature (degress Celsius), salinity (% per mill), depth (metres), sigma-t, specific volume anomaly (.00001 ml/gm), dynamic height (dynamic decimetres), potential energy and sound velocity (m/sec), with values being presented at each of the standard pressures down to the bottom of the cast. ...

REF. NO.: 0265-82

SUBJECT CODES: E3

AUTHOR: LEMON, D. D. and FISSEL, D. B.
Arctic Sciences Ltd., Sidney, British Columbia

YEAR: 1982

TITLE: Seasonal Variations in Currents and Water Properties in Northwestern Baffin Bay, 1978-1979

SOURCE: Arctic, Vol. 35, No. 1, pp. 211-218

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Year-long records of current speed and direction, temperature and conductivity were obtained from five current meter moorings in northwestern Baffin Bay. Significant seasonal changes in all these parameters were found, which closely followed the seasonal cycle of sea-ice cover. A general winter weakening of the near-surface currents (by a factor of 2 or more) was observed. Deeper currents exhibited a smaller decrease, resulting in a general decrease in baroclinicity during the winter. An exceptional case was observed off the north coast of Bylot Island, where the deep currents reversed. An increase in salinity combined with freezing temperatures was observed in the upper part of the water column during the winter. At some sites this uniform layer appeared to deepen at a steady rate of approximately 40-50 m per month, to a maximum depth between 200 and 250 m. It was not possible, however, to distinguish between the effects of local convection and horizontal advection in deepening the layer.

REF. NO.: 0266-81

SUBJECT CODES: I2 (E3)

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1981

TITLE: Measurements of Wind, Ice and Surface Layer Drift in Viscount Melville Sound, Volume 1 - Summer 1980

SOURCE: Prepared for Dome Petroleum Ltd., Calgary, Alberta
Prepared by D. D. Lemon, M. A. Wilson and L. E. Cuypers

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Measurements of surface-layer flow in Viscount Melville Sound were made during the summer of 1980 using air-dropped drogued drifters tracked by satellite. Simultaneous measurements of the wind field and ice motion in the area were also made. The motion of the surface layer was found to be largely controlled by the wind, with the currents being at approximately 1.5% of the wind speed, and directed about 20° to the right of the wind. In addition to the wind-controlled flow, a net easterly drift of 3 to 6 cm/sec was found in the northern half of the Sound. Ice motion data indicated that this regime is probably typical of the majority of summers.

REF. NO.: 0267-78

SUBJECT CODES: E7 (A8, H4)

AUTHOR: LEVY, E. M.
Atlantic Oceanographic Laboratory
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1978

TITLE: Visual and Chemical Evidence for a Natural Seep at Scott Inlet, Baffin Island, District of Franklin

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 78-1B, pp. 21-26

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

A visual reconnaissance of the sea surface off Scott Inlet in 1977 demonstrated the presence of slicks in an area where they were observed in 1976, although their extent was very much greater than previously thought. An extensive hydrochemical investigation was carried out, and elevated concentrations of dissolved and/or dispersed petroleum residues both at the surface and in the water column provided strong evidence for natural seepage of petroleum from the seabed.

REF. NO.: 0268-77

SUBJECT CODES: E7 (A8)

AUTHOR: LEVY, E. M.
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1977

TITLE: Scott Inlet Slick: An Arctic Oil Seep?

SOURCE: In Spill Technology Newsletter, November-December 1977, pp. 289-295

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Slicks were present at the time of our visit near Scott Inlet in the same general area where one was observed on several occasions during 1976. The slicks observed in 1977 were much more extensive in area than reported in 1976. Existing observations cannot reasonably be attributed to a point source, possibly of anthropogenic nature (e.g. an abandoned snowmobile or other wreck). At present there is not a sufficiently large sample of the slick-forming material available for a detailed analyses by petroleum geochemical methods. Because of its potential economic, political and environmental significance further investigations in the area are required to map the slick area, determine its source, etc.

REF. NO.: 0269-81

SUBJECT CODES: E7 (A8, B2)

AUTHOR: LEVY, E. M. and MACLEAN, B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1981

TITLE: Natural Hydrocarbon Seepage at Scott Inlet and Buchan Gulf, Baffin Island Shelf: 1980 Update

SOURCE: Scientific and Technical Notes, In Current Research, Part A, Geological Survey of Canada, Paper 81-1A, pp. 401-403

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Chemical, geological and geophysical investigations carried out in 1977 and 1978 have provided strong evidence at slicks, which are frequently present off the northeast coast of Baffin Island in the vicinity of Scott Inlet and Buchan Gulf are the consequence of natural seepage of petroleum from the seabed. The distributions of petroleum residue concentration anomalies found in the sea surface microlayer, in the water column and surficial bottom sediments, as well as the repeated occurrence of slicks indicated that one of the most active of the seeps is associated with a structural high near the seaward end of the submarine trough that extends across the Baffin Island continental shelf at Scott Inlet. In addition, the data also suggested that other seeps, which may be less persistent, are probably present elsewhere at Scott Trough and also off Buchan Gulf. As all the available chemical and geological data indicated that natural hydrocarbon seepage is occurring at both Scott Trough and Buchan Trough, detailed studies of these areas were carried out in September 1980. During this cruise oil droplets were observed erupting at the surface of the sea and forming iridescent patches which quickly spread into slicks. Their number and frequency of arrival was considerably greater than previously observed. This phenomemon is the most direct visual indication of seepage yet obtained in this area. In addition, the distribution of slicks is discussed and a brief summary is given of the kinds of chemical, geological and geophysical investigations carried out.

REF. NO.: 0270-80

SUBJECT CODES: E1

AUTHOR: LEWIS, C. F. M., MACLEAN, B., and
FALCONER, R. K. H.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1980

TITLE: Iceberg Scour Abundance in Labrador Sea and Baffin Bay; A Reconnaissance of Regional Variability

SOURCE: Proceedings, First Canadian Conference on Marine Geotechnical Engineering, Edited by W. J. Eden, The Associate Committee on Geotechnical Research , National Research Council of Canada, and The Canadian Geotechnical Society, Calgary, Alberta, April 25-27, 1979, pp. 79-94

STATUS: Public

MAP NUMBERS: 7302, 7503

COMMENTS/SUMMARY:

Side-scan data from parts of northern Baffin Bay, Lancaster Sound and northern Labrador shelf previously were briefly reported by Falconer (1977) and Lewis et al. (1977). This paper incorporates some of these earlier results together with recently acquired data in other areas to provide a broad overview of the regional distribution of iceberg scours and their relation to the major elements of oceanography, iceberg supply and drift in the eastern Arctic and northern Labrador areas.

In the northern part of Melville Bay off Cape York, where big icebergs commonly calve from the adjacent outlet glaciers of the Greenland ice cap, strongly developed scour features were observed in water of 235 m depth. In contrast, on the shelf south of Northumberland Island in the northern part of Baffin Bay only short, shallow and crater type scours were seen on side-scan records in an area where bergs are known to ground. Lack of more extensive iceberg scours in this area apparently is due to the presence of a very hard sea floor possibly together with a weak current regime.

Typical ice scours in Lancaster Sound are present on the sill of Maxwell Bay in 100 to 160 m water depth. Seismic profiles of the same area revealed moderate scour depths of about 2 m.

REF. NO.: 0271-77

SUBJECT CODES: E1

AUTHOR: LEWIS, C. F. M., BLASCO, S. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario
FALCONER, R. K. H. and MARTIN, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1977

TITLE: Reconnaissance of Iceberg Scour on the Shelves of Labrador Sea and Baffin Bay

SOURCE: Program with Abstracts, 1977 Annual Meeting of the Geological Association of Canada, Mineralogical Association of Canada, Society of Economic Geologists, and Canadian Geophysical Union, April 25-27, 1977, Vancouver, British Columbia, Vol. 2, p. 32

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Side-scan sonar transects, totalling 1000 km approximately, were obtained in 1976 across the continental shelves of northern Labrador Sea and northern Baffin Bay including Lancaster Sound. Iceberg scour tracks, where present, are the dominant feature of the seafloor micro relief. They occur as long, persistent, curvilinear single tracks, with younger tracks often superimposed on older tracks, where scour is abundant, or as short, crater-like marks. The former are characteristic of the northern Labrador and northern Baffin Island shelves and may be favoured by a continuous cover of unconsolidated shelf sediment and by flat banks or slopes whose contours parallel the general direction of iceberg drift. The latter type are noted on the Greenland side of northern Baffin Bay and are believed to reflect a hard or sloping seafloor, possibly with little unconsolidated sediment cover. Minor bathymetric features control scour abundance; scour is virtually absent in shallow closed depressions on bank tops and is highly concentrated on the northern flanks of cross-shelf ridges. Scour abundance diminishes with increasing water depth with approximate limits of at least 100 m in Lancaster Sound and at least 275 m on Baffin and Labrador shelves. The general distribution of ice scour occurrences correlates with known ocean currents and iceberg drift routes.

REF. NO.: 0272-77

SUBJECT CODES: A3 (A5, A6, A9, B7, E1, E5, H4)

AUTHOR: LEWIS, C. F. M., BLASCO, S. M., BORNHOLD, B. D., MCLAREN, P. and PELLETIER, B. R.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario
HUNTER, J. A. M.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario
JUDGE, A. S.
Earth Physics Branch
Energy, Mines and Resources Canada, Ottawa, Ontario
KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1977

TITLE: Marine Geological and Geophysical Activities in Lancaster Sound and Adjacent Fiords

SOURCE: In Report of Activities, Part A, Geological Survey of Canada, Paper 77-1A, pp. 495-506

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

A joint project by four divisions of the Geological Survey of Canada and the Earth Physics Branch was planned as a multi-disciplinary marine program in the central Arctic, in the area of probable future pipeline and transportation development. The objective was to advance basic knowledge of seafloor and coastal materials and of underlying bedrock structure. The expedition planned to operate from C.S.S. Hudson for 30 days in the ice-infested waters of Barrow Strait and adjacent channels. The proposed investigations related to surficial sediment distribution processes, coastal materials and processes, bedrock structures linking and dividing the Arctic Islands, and subsea thermal regime, with special reference to ice-bonded permafrost. The cruise also was planned to utilize high resolution geophysical techniques in order to determine the physical properties of near-surface seafloor sediments. Two launches, Gull and Fulmar were outfitted for diving and for sonar/seismic/sampling operations and to conduct nearshore programs in conjunction with Hudson's offshore operations. An evaluation of the Differential Omega positioning system was also scheduled. Unfortunately, the locale of the entire program had to be changed and its period cut in half when Hudson lost one of its two propellers near Prince Leopold Island en route to Resolute.

REF. NO.: 0273-74

SUBJECT CODES: A2 (A3, A5, A6, B1, B4.2, D1, H4)

AUTHOR: LEWIS, C. F. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario
HORSMAN, J. R.
Terrain Sciences Division
Geological Survey of Canada, Burlington, Ontario
ROSS, D. I.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1974

TITLE: Geological, Geophysical and Hydrographic Studies in Lancaster Sound and Maxwell Bay, District of Franklin

SOURCE: In Report of Activities, April - October 1973, Geological Survey of Canada, Paper 74-1, Part A, pp. 251-252

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

During August and September 1973 the Geological Survey participated in a Canadian Hydrographic Service cruise of CSS Baffin to obtain regional geological information from the Lancaster Sound area. The hydrographic and geological work in Maxwell Bay was controlled visually by sextant measurement of horizontal angles. Gravity and magnetic field measurements were obtained along most sounding lines in Lancaster Sound but not in Maxwell Bay. Sediment grab samples were obtained at most of the 115 bottom stations using a double Shipek sampler. Samples from inner Maxwell Bay were collected with a Ponar grab sampler. In addition, gravity cores and or camera observations were obtained at a few stations. Continuous seismic profiles, totalling 500 line miles, were obtained using Huntec single channel equipment with a sparker source in Maxwell Bay and with an air gun source of 10 cu. in. or 40 cu. in. in Lancaster Sound. The seismic and bottom station survey was designed to provide reconnaissance information concerning the nature of the seafloor, thickness of sediment, occurrence of bedrock outcrop and surficial structure.

REF. NO.: 0274-75

SUBJECT CODES: A1

AUTHOR: LICHTI-FEDEROVICH, S.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Pollen Analysis of Ice Core Samples from the Devon Island Ice Cap

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 441-444

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

An earlier study (Lichti-Federovich, 1974) indicated that pollen analysis of snow samples from the upper 0.5 m of the Devon Island Ice Cap reflected seasonal variation in the pattern of deposition. On the basis of that encouraging finding, and with the background of glacier palynology from other parts of the world (Vareshi, 1942; Godwin, 1979; Krenke and Fedorova, 1961; and Bortenschlager, 1970), it was decided to analyze the pollen of meltwater samples recovered during thermal drilling of the Devon Island Ice Cap in 1973. The samples were taken and made available by Drs. R. M. Koerner and W. S. B. Paterson of the Polar Continental Shelf Project, Department of Energy, Mines and Resources.

REF. NO.: 0275-77

SUBJECT CODES: I2

AUTHOR: LINDSAY, D. G.

YEAR: 1977

TITLE: Patterns of Break-Up, Freeze-Up and Surface Roughness of Sea Ice in Selected Channels in the Canadian Arctic

SOURCE: Polar Continental Shelf Project Internal Report, 45 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This brief description of the patterns of ice break-up, freeze-up and surface roughness for selected channels in the Canadian Arctic was prepared for the Polar Continental Shelf Project. It is not intended to be a definitive report. Its purpose is to generalize and indicate the typical trends. The Polar Continental Shelf Project has collected a large quantity of detailed information on sea ice conditions during consecutive seasons from 1961 through 1976 and this program in continuing. These records can provide the conscientious user with a great deal of information that, for simplicity, is not included in this summary.

The area considered for this study was selected because of the current interest in these channels. Similar information is available for all channels in the Canadian Arctic.

REF. NO.: 0276-69

SUBJECT CODES: I2 (I1)

AUTHOR: LINDSAY, D. G.
Polar Continental Shelf Project
Ottawa, Ontario

YEAR: 1969

TITLE: Ice Distribution in the Queen Elizabeth Islands

SOURCE: In Ice Seminar, A conference sponsored by The Petroleum Society of the Canadian Institute of Mining and Metallurgy, Calgary, Alberta, May 6-7, 1968, Special Volume 10, pp. 45-60

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The general summer sea ice conditions in the straits and channels of the Queen Elizabeth Islands are outlined and the seasonal variations are indicated. Patterns of break-up, movement and freeze-up are discussed and the area of sea ice exported, imported and ablated in specific areas is described.

REF. NO.: 0277-82

SUBJECT CODES: I2

AUTHOR: MARTEC LIMITED
Calgary, Alberta

YEAR: 1982

TITLE: Ice Edge Break-up in Lancaster Sound

SOURCE: Prepared for Dome Petroleum Limited, Calgary, Alberta, Prepared by M. Lowings and E. Banka, June 1982

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

This report investigates some of the factors that currently determine the position of the landfast ice edge in Lancaster Sound, and more importantly, other factors likely to influence its position in the future. These include ice dam formation, export of multi-year ice, ship traffic, and climatic change over the next several decades. A summary of relevant ice, climatic, and oceanographic information precedes these assessments of future interactions. The very high natural variability of ice and climatic conditions in the Arctic Archipelago is emphasized in this regard. These regional characteristics will likely determine the significance of increasing ship traffic on the future location and integrity of the landfast ice edge in Lancaster Sound.

REF. NO.: 0278-74

SUBJECT CODES: K

AUTHOR: HOBSON, G. D. and VOYCE, J.
Polar Continental Shelf Project
Ottawa, Ontario

YEAR: 1974

TITLE: Titles and Abstracts of Scientific Papers Supported by PCSP

SOURCE: Polar Continental Shelf Project, Energy, Mines and Resources Canada, No. 1

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume 1 contains 453 different items collected over the initial 14 years during the operation of the PCSP. The bibliography is organized into the following subject categories: Archeology, Biology, Botany, Climatology, Equipment, General, Geology, Geophysics, Glaciology, History, Hydrography, Meteorology, Oceanography, Sea Ice Research, and Surveying. An author list is also provided.

REF. NO.: 0279-82

SUBJECT CODES: H4 (E5)

AUTHOR: MACAULAY, H. A. and HUNTER, J. A.
Resource Geophysics and Geochemistry
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1982

TITLE: Detailed Seismic Refraction Analysis of Ice-Bonded Permafrost Layering in the Canadian Beaufort Sea

SOURCE: In Proceedings of the Fourth Canadian Permafrost Conference - The R. J. Brown Memorial Volume, Edited by H. M. French, Associate Committee on Geotechnical Research, National Research Council of Canada, Calgary, Alberta, March 2-6, 1981, pp. 256-267

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The recent application of high-resolution, multi-channel, seismic reflection techniques in the Canadian Beaufort Sea has yielded better sources of data for refraction interpretation of ice-bonded sub-sea permafrost. This paper discusses some examples of this work which demonstrate the structural detail which can be obtained.

A seismic line transecting the Beaufort Sea shelf has been interpreted with data spacings of 125 m. The results confirm early results of Hunter et al. (1978) and show detailed structural and velocity variations of ice-bonded zones.

Detailed seismic results at two off-shore drill sites have been examined. Velocity variations indicate optimum zones where ice-content is low or absent suggesting that such detailed refraction surveying can be of use in geotechnical site evaluations.

REF. NO.: 0280-84

SUBJECT CODES: H4 (E5)

AUTHOR: MACAULAY, H. A., PULLAN, S. E. and HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1984

TITLE: Velocity - Depth Structure of Offshore Permafrost - Canadian Beaufort Sea

SOURCE: In Abstracts and Program, Workshop on Permafrost Geophysics, Golden, Colorado, October 23-24, 1984. Committee on Permafrost, Polar Research Board, National Academy of Sciences, Washington, D. C., 2 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper describes the preliminary results of a study to examine the velocity depth structure of offshore permafrost in the Canadian Beaufort Sea. The technique by which the front ends of oil company records are used to detect the presence of high-velocity and hence high ice content frozen sediments, is briefly described.

REF. NO.: 0281-82

SUBJECT CODES: H2 (H1)

AUTHOR: MACINNIS, J. B.

YEAR: 1982

TITLE: Breadalbane Project: A Progress Report

SOURCE: Canadian Geographic, Vol. 102, No. 3, pp. 68-71

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

This report summarizes the results of previous expeditions to Beechy Island off the southern coast of Devon Island to locate and inspect the remains of the Breadalbane, a sunken British naval vessel. MacInnis describes the logistics of organizing a program to inspect the remains of the ship. Experience with remotely piloted vehicles and side scan sonar are also described. Recommendations for future investigtions are also made.

REF. NO.: 0282-75

SUBJECT CODES: H1

AUTHOR: MACINNIS, J. B.

YEAR: 1975

TITLE: The Underwater Arctic: Earth's Most Hostile Frontier

SOURCE: In Proceedings of The Working Diver Symposium, Marine Technological Society, U.S. Navy, Batelle Laboratories, Columbus, Ohio, pp. 196-213

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

A review of 715 Arctic ocean dives made during nine expeditions have led the author to conclude that the underwater Arctic represents the planet's most inhospitable environment. Manned dives conducted during the four seasons of the year, from such diverse northern regions as Alaska, the Canadian Archipelago and the North Pole, have confirmed that work beneath the polar ice cap is far more difficult than the same task carried out in temperate waters. In addition to the problems of ice, magnetic variability, cold and winter darkness, considerable personal energy must be expended to overcome well known surface stressors.

REF. NO.: 0283-78

SUBJECT CODES: B1 (A8, B2, B4.2, B6, B7, E7, H4)

AUTHOR: MACLEAN, B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1978

TITLE: Marine Geological-Geophysical Investigations in 1977 of the Scott Inlet and Cape Dyer - Frobisher Bay Areas of the Baffin Island Continental Shelf

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 78-1B, pp. 13-20

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Geological-geophysical investigations were undertaken from C.S.S. Hudson in 1977 in the Scott Inlet and the Cape Dyer - Frobisher Bay areas of the Baffin Island shelf.

The walls of the Scott Inlet submarine trough consist mainly of more or less flat lying strata, whereas strata forming its floor have been folded and faulted. A structural high appears to underlie the outer part of the south wall. A calcareous concretion of late Eocene age was recovered by dredging across benches on the trough wall. A persistent oil slick in the area may be caused by seepage from the rock formations.

Bedrock geology of the southeastern Baffin Island shelf was further defined by geophysical profiling and the recovery between Cumberland Sound and Frobisher Bay of shallow drill cores of Precambrian gneiss and limestone of probably Ordovician age.

REF. NO.: 0284-83

SUBJECT CODES: B1 (B4.2, B6, E7)

AUTHOR: MACLEAN, B. and WILLIAMS, G. L.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Regional Bedrock Geology of the Baffin Island Shelf

SOURCE: Abstract, Symposium on The Origin, History and Potential of Sedimentary Basins in Eastern and Offshore Canada, Atlantic Geoscience Society, p. 101

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

On the northeastern Baffin shelf the presence of Paleozoic rocks beneath younger sequences shoreward of the continent-ocean transition zone has been suggested from seismic refraction results, but it has not been possible to confirm this by sampling. Upper Cretaceous (Senonian) marine sediments sampled at Home Bay and Buchan Trough occur extensively along the northeastern shelf beneath a variable cover of Lower Tertiary sediments.

Post-Ecocene erosion has bevelled much of the southeastern Baffin shelf and developed deep transverse troughs on the northeastern shelf.

The presence of an active submarine oil seep, recovery of samples of promising source rocks by seafloor sampling and exploratory drilling results indicate that conditions favourable for the generation of hydrocarbons have existed in the area.

REF. NO.: 0285-83

SUBJECT CODES: H4 (B1, B4.2, B6, B7)

AUTHOR: MACLEAN, B. and WILLIAMS, G. L.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Geological Investigations of Baffin Island Shelf in 1982

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 83-1B, pp. 309-315

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Marine geological and geophysical studies of the Baffin Island continental shelf, carried out from CSS Hudson in 1982, were concerned primarily with the collection of bedrock samples. Biostratigraphic and lithostratigraphic analyses of the samples permitted identification of units previously only observed on seismic profiles. Palynological studies indicate the presence of Upper Cretaceous strata at Home Bay, and Lower Cretaceous strata off Padloping Island and in the outer part of Cumberland Sound. Cores obtained from Hudson Strait are lithologically similar to Lower Paleozoic rocks outcropping on Coats and Southampton islands in northern Hudson Bay. Surficial sediment samples were taken to define correlations and depositional history of Quaternary sediments on the southeastern Baffin shelf.

REF. NO.: 0286-84

SUBJECT CODES: A3 (A5, A6, B1, B4.1, B4.2, B4.3, B6, G1, H4)

AUTHOR: MACLEAN, B., WOODSIDE, J. M. and GIROUARD, P.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1984

TITLE: Geological and Geophysical Investigations in Jones Sound, District of Franklin

SOURCE: In Current Research, Part A, Geological Survey of Canada, 84-1A, pp. 359-365

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Studies in Jones Sound from CSS Baffin in conjunction with Canadian Hydrographic Service in 1983 included profiling with geophysical and echosounding systems, collection of surficial sediment samples in deep water areas and a few nearshore ice-front localities, as well as local aerial and onshore investigation of coast and beach. Much of the immediate seafloor in deeper parts of the Sound is composed of fine sediments that appear to be predominantly clay. Glacial till and other acoustically hard and texturally coarser materials, up to gravel size, also are represented. Bedrock units of possible Precambrian to Paleozoic or younger age tentatively are inferred on the basis of adjacent onshore geology and analogies of seismic and magnetic data with those from other east coast offshore areas. Preliminary gravity data indicate free-air anomally values of -100 to -120 mgal in the eastern part of the Sound and less negative values in the west. A magnetic anomaly in excess of 1000 nT occurs south of King Edward Point.

REF. NO.: 0287-81

SUBJECT CODES: E7 (B6, B7)

AUTHOR: MACLEAN, B. and FALCONER, R. K. H.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia
LEVY, E. M.
Atlantic Oceanographic Laboratory
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1981

TITLE: Geological, Geophysical and Chemical Evidence for Natural Seepage of Petroleum off the Northeast Coast of Baffin Island

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 29, No. 1, pp. 75-95

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Chemical, geological and geophysical studies indicate that surface slicks and oil and gas bubbles erupting at the sea surface off northeastern Baffin Island originate from natural seepage of petroleum from the seabed. The continental shelf in this area is cut by two deep submarine troughs that extend seaward from the mouths of the fiords at Scott Inlet and Buchan Gulf. Anomalies in petroleum residue concentrations have been found in the surface microlayer, water column, and unconsolidated sea-floor sediments in both the Scott and Buchan Trough areas. Bedrock samples indicate that the stratigraphic succession includes marine rocks of Late Cretaceous and Tertiary ages. Reflection seismic data indicate that older sedimentary rocks may also be represented. Free-air gravity, seismic and magnetic data suggest a thicker sedimentary section at Scott than at Buchan. The most continuous seep is at the outer part of Scott Trough, where seepage apparently originates with strata flanking a basement high near the south wall. Seepage at other localities may be more sporadic.

REF. NO.: 0288-78

SUBJECT CODES: I2

AUTHOR: SEAKEM OCEANOGRAPHY LTD.
Sidney, British Columbia

YEAR: 1978

TITLE: Radar Tracking of Ice in the Griffith Island Area of Barrow Strait, N.W.T.

SOURCE: Prepared for the Institute of Ocean Sciences, Sidney, British Columbia, Prepared by M. R. MacNeill, B. R. De Lange Boom and D. Ramsden, Contractor Report Series 78-2, 105 p.

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

As part of a coordinated program to study both ice and water movements in the Lancaster Sound and Barrow Strait regions of the Arctic Archipelago during the summer of 1977, the Arctic Marine Group again sponsored a radar ice tracking program. In 1977, the site of the radar camp was the most southeasterly point of Griffith Island overlooking both Barrow Strait and Resolute Passage.

At the same time as the ice tracking program was being carried out, seven satellite tracked buoys were deployed in Barrow Strait south of Griffith Island. Also, late in July, four current meter strings which collected continuous data were moored in Eastern Lancaster Sound. Several automatic meteorological stations logged wind and air temperature data from various locations in Barrow Strait, including Griffith Island.

REF. NO.: 0289-71

SUBJECT CODES: B4.1 (B4.3)

AUTHOR: MANCHESTER, K. S. and ROSS, D. I.
Atlantic Oceanographic Laboratory
Bedford Institute of Oceanography
Dartmouth, Nova Scotia
KEEN, M. J. and CLARKE, D. B.
Department of Geology, Dalhousie University
Halifax, Nova Scotia

YEAR: 1971

TITLE: Geologic Structure of Baffin Bay and Davis Strait Determined by Various Geophysical Techniques

SOURCE: Bulletin, Abstract of Presentation at the International Arctic Geology Symposium, San Francisco, February 1-4, 1971, American Association of Petroleum Geologists, Vol. 54, No. 12, pp. 2494-2495

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Between 1963 and 1966, approximately 10 000 miles of sea-magnetometer and bathymetry data was collected in the Baffin Bay, Davis Strait, and Labrador Sea areas. The analysis of these data has shown no clear northward continuation of the linear magnetic anomalies which are associated with the Mid-Labrador Sea Ridge. Previous geologic investigations of the terrestrial Teritiary basalts of the Davis Strait area have shown however, that the lavas are similar enough in chemical composition to be petrogenetically related.

The planned 1970 field work, consisting of sea magnetometer, gravity, bathymetry, seismic reflection profiling, seismic refraction measurements, and dredging, should enable the seaward extent and possible chemical evolution of the "aseismic ridge" of Davis Strait and the crustal type, structure and sedimentary thickness of Baffin Bay to be determined. The analysis of these data may enable more substantial comment to be given on the pattern of sea-floor spreading between Greenland and Canada.

REF. NO.: 0290-82

SUBJECT CODES: I1 (I2)

AUTHOR: ARCTIC SCIENCES LIMITED
Sidney, British Columbia

YEAR: 1982

TITLE: The Ice Environment of Eastern Lancaster Sound and Northern Baffin Bay

SOURCE: Prepared for Petro-Canada Inc., Prepared by J. R. Marko, Published by Northern Affairs Program, Indian and Northern Affairs, Ottawa, Environmental Studies No. 26, 201 p. and Appendices

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The sea-ice-and iceberg-related components of the 1978-1979 Petro-Canada-EAMES environmental programs have made major contributions to our knowledge of the Lancaster Sound-Baffin Bay ice cover. ... The present report integrates the new results with earlier data and interpretations to provide a current state of knowledge description of the Lancaster Sound-western Baffin Bay ice environment. ... information was sought on the numbers, physical dimensions, trajectories and general histories of icebergs and on the distributions and movements of sea-ice. ... The results considered here include: 1) descriptions of seasonal changes in the ice cover in terms of fractional coverage of the surface, ice-thickness, -age and -floe sizes. Emphasis was placed upon representation of a year-to-year variability usually in terms of estimated mean and extremal conditions. Identifications were made of location and extents of landfast/consolidated ice and the ranges of dates associated with its formation, break-up and clearing, 2) descriptions of the seasonal sea-ice motions include their spatial- and time-dependences and their relationships to the atmospheric and oceanographic driving forces, and 3) quantitative physical data on the regional iceberg population. ...

REF. NO.: 0291-82

SUBJECT CODES: I1

AUTHOR: MARKO, J. R., BIRCH, J. R. and WILSON, M.A.
Arctic Sciences Ltd., Sidney, British Columbia

YEAR: 1982

TITLE: A Study of Long-Term Satellite-Tracked Iceberg Drifts in Baffin Bay and Davis Strait

SOURCE: Arctic, Vol. 35, No. 1, pp. 234-240

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Long-term, satellite-tracked iceberg trajectories were analyzed relative to the larger spatial and temporal scales of iceberg drift in Baffin Bay and Davis Strait. Berg movements were concentrated in the core of the Baffin Current which flows along the continental slope in a primarily southerly direction. The net rate of southward movements was found to be governed by a combination of grounding and landfast ice entrapment which tended to be of particular significance in areas of the coastal shelf adjacent to major submarine canyon systems.

REF. NO.: 0292-78

SUBJECT CODES: I2 (I1)

AUTHOR: ARCTIC SCIENCES LIMITED
Sidney, British Columbia

YEAR: 1978

TITLE: A Satellite Imagery Study of Eastern Parry Channel

SOURCE: Prepared for the Institute of Ocean Sciences, Sidney, British Columbia, Prepared by J. R. Marko, Contractor Report Series 78-5, 134 p.

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830

COMMENTS/SUMMARY:

NOAA and Landsat satellite imagery have been used to study the patterns of ice movement in the eastern half of Parry Channel, extending from Lancaster Sound to the western end of Barrow Strait. Relatively little year-to-year variation (one or two weeks) was noted in the timings of major steps in the break-up of winter ice, provided that similar positions obtained from the stable cross-channel edge of winter landfast ice. Some correlations were noted between the positioning of this edge and the average winter ice velocities of the mobile ice in the eastern postion of the channel.

A year-round, cross-channel gradient was found in the ice-floe velocities, with the largest magnitude easterly flows occurring in the southern portion of the Channel. The westerly flows observed in north-eastern Lancaster Sound appear to be deflected south and/or southwestward south of Cape Warrender. Westerly motion in the northern Channel, west of Admiralty Inlet, alternates with strong easterly motion, giving an overall average eastward drift. A northward, possibly periodic, drift was observed in the eastern half of Wellington Channel which could be correlated with episodes of strong westerly flow in the northern Channel. Similarly opposed northward eastern and southward western flows were observed in McDougall Sound, and Prince Regent and Admiralty Inlets. Ice motion in mid-Channel areas is highly irregular and apparently governed by the large eddy-like structures which appear to the north of Prince Regent and Admiralty Inlets.

REF. NO.: 0293-77

SUBJECT CODES: I2 (I1)

AUTHOR: MARKO, J. R.
Sidney, British Columbia

YEAR: 1977

TITLE: A Satellite-Based Study of Sea Ice Dynamics in the Central Canadian Arctic Archipelago

SOURCE: Prepared for the Institute of Ocean Sciences, Sidney, British Columbia, Contractor Report Series 77-4, 106 p.

STATUS: Public

MAP NUMBERS: 7220, 7503, 7740, 7830, 7831, 7951

COMMENTS/SUMMARY:

NOAA and Landsat satellite imagery, as well as historical ice chart data, have been used to establish the characteristic distributions and movements of sea ice in the central Arctic Archipelago. ..., to produce characteristic late summer open water areas extending along the northern edge of Viscount Melville Sound and reaching as far north as the multiyear ice edge in Byam Martin Channel.

Ice floe displacement data indicate that large-scale ice motion first ceased in the north-south oriented side channels of Parry Channel. The directions of ice-drift in these side channels, e.g. Byam and Austin Channels, were largely determined by surface winds. Ice speeds were significantly larger when the wind and prevailing water-current velocities were, more or less, parallel. In Parry Channel, on the other hand, evidence indicted that macroscopic ice motion was dominated by surface current, and possible internal icepack forces.

Qualitative and quantitative ice data were used to construct scenarios whereby oil spilled in the Sverdrup Basin may work its way downstream into the biologically-critical areas of Barrow Strait and Lancaster Sound.

REF. NO.: 0294-68

SUBJECT CODES: A5 (A1, A6, A11, C1, E3, G1, I2)

AUTHOR: MARLOWE, J. I.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1968

TITLE: Sedimentology of the Prince Gustaf Adolf Sea Area, District of Franklin

SOURCE: Geological Survey of Canada, Paper 66-29, 53 p. and Appendices

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

The Prince Gustaf Adolf Sea area is located on the continental shelf bordering the Arctic Ocean. It is underlain principally by moderately deformed siltstone, sandstone, and shale formations of Mesozoic to Tertiary age that form part of the Sverdrup Basin structural province, and by unconsolidated sand and gravel of the Arctic Coastal Plain (Beaufort Formation). Physiographic features of the area suggest that the sea bottom has been exposed previously to subaerial processes of erosion. On a broad scale, channels form a dendritic pattern, the gradient of which is generally toward the Arctic Ocean. Smaller scale features suggest that ice action has been effective in shaping the present sea bottom. Under present conditions, sand is transported from the islands by ephemeral streams and deposited in relatively shallow depths near shore. Mud covers the greater part of the area. However, sandy layers occur in the sub-bottom at nearshore stations, indicating that hydraulic energy levels at those stations have been higher in the past than they are at present. Core samples show that two major stratigraphic units are present in the sediment of Prince Gustaf Adolf Sea. These are (1) an upper, yellow-brown, generally structureless unit containing foraminiferal remains and abundant oxidized, detrital pyrite; and (2) an underlying, grey unit that contains fine bedding structures, fresh, detrital pyrite, and no faunal remains.

REF. NO.: 0295-68

SUBJECT CODES: A5 (A6)

AUTHOR: MARLOWE, J. I.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1968

TITLE: Unconsolidated Marine Sediments in Baffin Bay

SOURCE: Journal of Sedimentary Petrology, Vol. 38, No. 4, pp. 1065-1078

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Sediment in Baffin Bay is predominantly mud, with minor amounts of sand and gravel. Median grain sizes are generally related to bottom topography, being coarsest over topographic highs and finer in the central basin. Slight variations in median grain size of mud deposits in the central basin occur in a pattern that coincides with the boundary of the Baffin Land Current, which suggests that this current is capable of transporting coarser sediment than adjacent water masses. Scattered pebbles and grains of coarse sand reflect the continuous influence of ice-rafting in the area.

Sediment texture is generally slightly coarser with depth below the bottom, indicating a decrease in current competence with time. Such a decrease is in accord with the idea of a post-glacial general rise in relative sea level in the Arctic which is indicated from other lines of evidence.

Beds of sandy sediment occur in several cores taken from the deepest part of Baffin Bay. Some of this sand is terrigenous, and is arkosic in composition. It was transported to its present deep-sea sites by downslope-moving bottom currents or suspended-flow phenomena. Much of the sand is composed of mud aggregates, however, and it appears on the basis of sedimentary structures that the beds containing these features were deposited as "fluxoturbidites" or submarine slumps.

REF. NO.: 0296-74

SUBJECT CODES: H1 (H4)

AUTHOR: MACINNIS, J. B.
Undersea Research Ltd., Toronto, Ontario

YEAR: 1974

TITLE: Arctic Diving: Operational Results of Five Expeditions

SOURCE: The Working Diver - 1974, A Symposium Sponsored by by The United States Navy, The Marine Technology Society, March 1974, 27 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Between 1970 and 1974 the author led or participated in five scientific diving expeditions to the high Arctic. ... Diving operations were conducted from various platforms including a surface support vessel, a jet helicopter, and structures built on the ice. Climate conditions ranged from summer to winter, and temperatures between 50°F above and below zero. On one diving day a chill factor of -90°F was recorded. Each expedition had doctorate level ocean scientists whose disciplines included marine biology, marine geology, and diving medicine. Throughout one month-long expedition, human and equipment performance was studied during two hundred and five dives by an engineering psychologist. ... After supervision of over three hundred arctic dives, the author believes that the combination of polar surface and underwater stressors represents the earth's most hostile working environment. However, the increasing quest for energy resources implies future working dives to arctic depths of at least 500 m. Considerably more field performance data is required before such dives can be conducted with maximum safety and efficiency.

REF. NO.: 0297-65

SUBJECT CODES: A5 (A1, A6, A11, C1, E3, G1, I2)

AUTHOR: MARLOWE, J. I.
Bedford Institute of Oceanography
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1965

TITLE: Sedimentology of the Prince Gustaf Adolf Sea Area, District of Franklin, Polar Continental Shelf Project

SOURCE: Geological Survey of Canada, Report B.I.O. 65-15, (Unpublished Manuscript), 85 p.

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

This manuscript is essentially a draft version of the contents of Geological Survey of Canada paper 66-29. Bottom topography marine sediments and fauna are described. Refer to Ref. No. 0294-68 for a more detailed summary of the contents.

REF. NO.: 0298-64

SUBJECT CODES: A5 (G1, A6)

AUTHOR: MARLOWE, J. I.
Bedford Institute of Oceanography
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Marine Geology, Western Part of Prince Gustaf Adolf Sea, District of Franklin, Polar Continental Shelf Project

SOURCE: Bedford Institute of Oceanography, Report B.I.O. 64-9, [Unpublished Manuscript], 23 p.

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

The area covered in this report includes the western half of Prince Gustaf Adolf Sea, parts of Wilkins and Desbarats Straits, and the northern entrance to Byam Martin Channel.

The study was carried out to provide information which will lead to an understanding of the recent geological history of the western Arctic Islands. Bottom samples were collected from selected stations in the inter-island channels. The stations were selected on the basis of a study of soundings made during the previous season.

REF. NO.: 0299-64

SUBJECT CODES: A5 (A6, A1)

AUTHOR: MARLOWE, J. I.
Bedford Institute of Oceanography
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Marine Geology Program, Prince Gustaf Adolf Sea

SOURCE: In Summary of Activities: Field, 1963, Paper 64-1, p. 6

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

An investigation of sedimentation in Prince Gustaf Adolf Sea was continued during the 1963 field season. ... The purpose of the investigation was to provide information on the sedimentary environment and late Pleistocene history of the region. To do this, sea-bottom core samples were obtained with a piston-type coring device. ... Undisturbed laminae suggest that no bottom fauna existed during the time of deposition of this fine sediment. A light brown upper layer, common to all cores taken, contains no fine bedding and has abundant microfaunal remains. A textural coarsening sometimes accompanies the change in colour in the tops of the cores. Studies are planned to relate this widespread change in sediment type to provenance and depositional environment. Fine- to medium-grained quartzose sand layers in the lower parts of some cores may be related to lower stands of sea-level during late Pleistocene glacial stages. The bottom topography of the western part of Prince Gustaf Adolf Sea suggests that subaerial erosion may have influenced its present form.

REF. NO.: 0300-63

SUBJECT CODES: A5 (A6, A11, C1, G1)

AUTHOR: MARLOWE, J. I. and VILKS, G.
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1963

TITLE: Marine Geology Program, Polar Continental Shelf Project

SOURCE: In Summary of Activities: Field 1962, Geological Survey of Canada, Paper 63-1, p. 4

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

An investigation of sedimentation in Prince Gustaf Adolf Sea and Maclean Strait, in the western Queen Elizabeth Islands, was carried out by Geological Survey personnel. The purpose of the project was to provide information on the total sedimentary environment. To do this samples were collected from outcrops and stream beds, as well as from the near-shore and offshore bottom zones. Preliminary examination of samples taken from detailed traverses across the sublittoral zone of the west coast of Ellef Ringnes Island indicates that the sediments of that area are texturally complex, a characteristic which suggests that ice has the dominant role in sublittoral transport and erosion. A distinctive, extremely cold-water fauna is present in the near-shore samples so far examined. Core samples taken from the channels west and south of Ellef Ringnes Island are lutite with frequent pebbles. A light-coloured upper layer overlies a darker layer in most of the cores and probably represents a drastic change in conditions of sedimentation. Bathymetric data indicate strongly that the channels occupy a drowned area of terrestrial drainage. Submarine valleys, with a local relief of 200-300 metres, trend along the axes of the channels, and some shoal features appear to be seaward extensions of presently emerged islands.

REF. NO.: 0301-63

SUBJECT CODES: A5 (A6, A11, G1, I1)

AUTHOR: MARLOWE, J. I. and VILKS, G.
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1963

TITLE: Marine Geology, Eastern Part of Prince Gustaf Adolf Sea, District of Franklin

SOURCE: Geological Survey of Canada, Paper 63-22, 23 p.

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

This preliminary report is based on field observation and a partial compilation of data from the marine geology program carried out during the summer of 1962 in Prince Gustaf Adolf Sea and adjacent channels. The area of investigation includes the east half of Prince Gustaf Adolf Sea, Maclean Strait, Desbarats Strait, and the sea between Ellef Ringnes and Bathurst Islands, all in the District of Franklin. The purpose of the study was to provide data that will lead to an understanding of the sedimentary environment and to the reconstruction of the recent physiographic history of the area. To do this, sediment samples were collected from the sea bottom in the inter-island channels, from selected areas in the near-shore zone, and from the beds of streams discharging into the areas of potential interest.

This paper describes the physical environment, coastal topography, submarine topography, sediment texture and distribution and the abundance and distribution of foraminifera.

REF. NO.: 0302-79

SUBJECT CODES: E7

AUTHOR: LEVY, E. M.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1979

TITLE: Further Chemical Evidence for Natural Seepage on the Baffin Island Shelf

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 79-1B, pp. 379-383

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

A preliminary analysis of the 1978 data concerning dissolved and dispersed petroleum residues in the water column and surface microlayer of the Baffin Island shelf provided further evidence for natural seepage of petroleum from the seabed at Scott Inlet, Buchan Gulf, and possibly northeast of Bylot Island. A model was proposed to account for the observed distributions.

REF. NO.: 0303-82

SUBJECT CODES: J (A2, A5, A6, A7, A9, B1, D1, E1, G1, I1, I2)

AUTHOR: MARTEC LTD.

YEAR: 1982

TITLE: Queen Elizabeth Islands Environmental Overview

SOURCE: Prepared for Dome Petroleum Ltd. and Gulf Canada Resources Inc., Prepared by F. Banke, P. Chandler, K. Thomas, G. Tidmarsh, and D. Wilson, March 1982

STATUS: Proprietary

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

This report is a comprehensive review of the Queen Elizabeth Islands. Particular emphasis is placed on the physical oceanography climatology and sea ice distribution. Section 5 contains a brief description of the Marine Physical Features including oceanography, ice conditions, bathymetry, marine geology and icebergs. An extensive bibliography is also included.

REF. NO.: 0304-78

SUBJECT CODES: H1

AUTHOR: MARTIN, P.

YEAR: 1978

TITLE: Summary of Technical Developments in AIDJEX

SOURCE: AIDJEX Bulletin, University of Washington, Seattle, Washington, No. 40, pp. 1-5

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Early in the planning for AIDJEX it was recognized that the success of the program depended on the availability of reliable automatic data acquisition and transmission systems (data buoys) and accurate positioning systems. These systems would involve an extention of existing technologies, including adaptation to arctic operating conditions. Since these development tasks were of central importance to the experiment, and were not within the scope of any single research component, responsibility for them was assigned to the project office. The approach adopted was to contract for the system's engineering development and prodution, with the project office staff being responsible for stating system requirements, monitoring contractor performance, and deploying and operating the systems. About ten person-years of effort were devoted to these tasks under the AIDJEX office contract with the National Science Foundation.

REF. NO.: 0305-80

SUBJECT CODES: H3 (H2)

AUTHOR: MASTERSON, D. M. and KIVISILD, H. R.
Fenco Consultants Ltd., Calgary, Alberta

YEAR: 1980

TITLE: Floating Ice Platforms: Offshore Oil Exploration

SOURCE: Journal of the Structural Division, Vol. 106, No. 1, pp. 133-143

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Offshore exploratory drilling from thickened, floating ice platforms in the Canadian arctic islands is described. Design procedures, based on elastic plate theory and finite element analysis, are used in conjunction with a reduced elastic modulus to predict long-term deflections. Construction of the platforms is carried out using tracked vehicles with drill towers and hydraulically driven screw pumps.

REF. NO.: 0306-80

SUBJECT CODES: I1 (I2)

AUTHOR: MAXWELL, J. B.

YEAR: 1980

TITLE: The Climate of the Canadian Arctic Islands and Adjacent Waters

SOURCE: Environment Canada, Atmospheric Environment Service, Vol. 1, ISSN 0068-7715

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This study presents a broad overview of the climatic factors pertinent to the Canadian Arctic Islands and their adjacent waters. The emphasis is on probability estimates of extremes of temperature, wind, and precipitation, as well as the duration of critical weather types. The subjects of energy exchange, wind chill, blizzards, sea state and sea ice, temperature inversion frequencies, and typical synoptic patterns are treated as completely as time and data permitted. A sub-division of the study area into climatic regions is presented in the final chapter.

REF. NO.: 0307-68

SUBJECT CODES: E3 (H4)

AUTHOR: MUENCH, R. D.
Department of Oceanography
University of Washington, Seattle, Washington
DUNBAR, M. J. and TIDMARSH, W. G.
Marine Sciences Centre
McGill University, Montreal, Quebec

YEAR: 1968

TITLE: A Preliminary Report of Baffin Bay - North Water Project Field Work During 1968

SOURCE: The Baffin Bay - North Water Project, Report No. 3, The Arctic Institute of North America, Research Paper No. 48

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Two field projects were attempted during the summer of 1968, both aimed at obtaining direct current measurements and concurrent hydrographic observations in the Kane Basin - northern Baffin Bay region. The first of the projects was attempted during June 1968. A three man scientific party equipped with two recording current meters, two direct readout current meters, a gasoline powered winch, reversing bottles and thermometers and biological collection gear were flown by Polar Continental Shelf aircraft from Resolute Bay, N.W.T. to Alexandra Fiord on the western shore of Kane Basin. Because of logistics problems, weather and poor ice surface conditions the project had to be cancelled.

The second project was undertaken in September 1968 in cooperation with the U.S. Coast Guard. A total of about three weeks of Westwind's time was assigned to the scientific party for the conduction of oceanographic research in the Smith Sound - northern Baffin Bay area. A number of current meter stations were established and 18 days of records were obtained from each of four current meters.

REF. NO.: 0308-71

SUBJECT CODES: E5 (G1, A8)

AUTHOR: MCCANN, S. B. and HANNELL, F. G.
Department of Geography
McMaster University, Hamilton, Ontario

YEAR: 1971

TITLE: Depth of the "Frost Table" on Arctic Beaches, Cornwallis and Devon Islands, N.W.T., Canada

SOURCE: Journal of Glaciology, Vol. 10, No. 58, pp. 155-157

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

Although it seems unlikely that permafrost extends for any great distance offshore (Brewer, 1958), permanently frozen ground at shallow depth is encountered below the intertidal zone of Arctic beaches. Experience on the gravel beaches of southern Cornwallis and Devon Islands in the Canadian Arctic Archipelago (lat. 74°N.) indicates that the depth of the active layer, down to the frost table, in the contemporary beach zone reaches a maximum of 50-60 cm in mid- to late August. These values accord with those reported from engineering investigations at Milne Inlet in northern Baffin Island (Samson and Tordon, 1969).

REF. NO.: 0309-69

SUBJECT CODES: A5 (G1)

AUTHOR: MCCANN, S. B.
Department of Geography
McMaster University, Hamilton, Ontario
OWENS, E. H.
Marine Sciences Branch
Canadian Hydrographic Service
Ottawa, Ontario

YEAR: 1969

TITLE: The Size and Shape of Sediments in Three Arctic Beaches, Southwest Devon Island, N.W.T., Canada

SOURCE: Arctic and Alpine Research, Vol. 1, No. 4, pp. 267-278

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

The general characteristics of arctic beaches are considered. Sample data on size distribution characteristics and roundness due to abrasion of modern beach material from three beaches in the Cape Ricketts-Radstock Bay area of southwest Devon Island are presented. The area is one of limited wave action due to the inhibiting effect of sea ice. Sorting and roundness values of the beach material provide indirect measures of wave energy and allow comparisons to be made with beaches in other environments. Changes in mean size, sorting and roundness values both along and across the beaches suggest longshore transport by wave action.

REF. NO.: 0310-72

SUBJECT CODES: G1 (A5, A6, A8, H5)

AUTHOR: MCCANN, S. B., JAMES, W., COGLEY, J.G., and TAYLOR, R. B.

YEAR: 1972

TITLE: A Hydrological and Coastal Reconnaissance of South Central Ellesmere Island

SOURCE: Department Environment, Water Resources Branch, Glaciology Division, Project No. G-72.16, Contract KW412-2-1162, 125 p.

STATUS: Unpublished contract report

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

South central Ellesmere Island was visited in July 1972 to reconnoitre hydrological and marine conditions in general, and in particular those likely to affect construction and safe maintenance of an oil pipeline through the area, and of a marine terminal on Makinson Inlet. The report summarizes what is known of the geology, geomorphology and climate of the area, and presents the findings of the reconnaissance on drainage and channel characteristics, sedimentation, hydrological regimes, sea and beach ice conditions, and coastal morphology.

REF. NO.: 0311-82

SUBJECT CODES: A1 (A5, A6, A7, A8, E1, G1)

AUTHOR: MCLAREN, P.
Pacific Geoscience Centre
Geological Survey of Canada
Sidney, British Columbia

YEAR: 1982

TITLE: The Coastal Geomorphology, Sedimentology and Processes of Eastern Melville and Western Byam Martin Islands, Canadian Arctic Archipelago

SOURCE: Geological Survey of Canada, Bulletin 333, 39 p.

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

The coasts of eastern Melville and western Byam Martin Islands have emerged approximately 100 m during the Holocene and are still undergoing isostatic recovery at the rate of approximately 0.35 cm/year. During deglaciation, glacial-marine sediments consisting of 33% sand, 45% silt and 22% clay with variable amounts of gravel and larger sized material reflecting local lithologies were deposited in Byam Channel. SCUBA observations show that there is little present sedimentation on the sand-silt-clay facies but grounding ice blocks result in considerable sediment reworking. Ice keels impinging on the substrate leave long linear scour tracks approximately 2 m deep which are flanked on either side by embankments 1 m high. The ice scour tracks are terminated by a crater which is surrounded by an embankment composed of excavated substrate. On rocky bottoms, where the sand-silt-clay facies is absent, ice scour features contain boulders that are freshly torn from the underlying bedrock. The three principal coastal types and the processes which created each are described in detail in this publication.

REF. NO.: 0312-81

SUBJECT CODES: A5 (A7)

AUTHOR: MCLAREN, P.
Pacific Geoscience Centre
Geological Survey of Canada
Sidney, British Columbia

YEAR: 1981

TITLE: River and Suspended Sediment Discharge into Byam Channel, Queen Elizabeth Islands, Northwest Territories, Canada

SOURCE: Arctic, Vol. 34, No. 2, pp. 141-146

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

During 1974, a stream from a small drainage basin (117 km^2) on the east coast of Melville Island discharged approximately 1.63×10^7 m^3 water containing 7.08×10^7 kg suspended sediment discharge into the adjacent channels. The results suggest that much of this sediment is not deposited in the channels; rather it is incorporated into the active delta fronts or possibly transported out of Byam Channel above a pycnocline. The values agree well with a hydrological study on nearby Bathurst Island ... Recent attention has focussed on the Mecham River which flows into Bridport Inlet, the site of a proposed LNG terminal which is to be situated on an active delta front. Values extrapolated from this study indicate that design criteria must consider typical runoffs of 1.2×20^8 m^3 with peak mean daily discharges in excess of 9.0×10^6 m^3 per day and suspended sediment loads of 5.0×10^8 kg per year.

REF. NO.: 0313-80

SUBJECT CODES: G1 (A5, A8)

AUTHOR: MCLAREN, P.
Pacific Geoscience Centre
Geological Survey of Canada
Sidney, British Columbia

YEAR: 1980

TITLE: Trends in Sediment Distributions: A Method to Predict Oil Spill Movement in the Coastal Zone

SOURCE: Spill Technology Newsletter, Vol. 5, No. 3, pp. 76-87

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

... This paper attempts to show the relationships among grain-size characteristics between a possible source and a possible deposit and therefore, by inference, a transport path for sediment movement. This transport path can then be used to predict the probably direction that oil will take and/or the fate of oil in the coastal environment.

REF. NO.: 0314-78

SUBJECT CODES: H4

AUTHOR: MCLAREN, P.
Atlantic Geoscience Centre
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1978

TITLE: Cruise Report, M. V. Gulf Star

SOURCE: Energy, Mines and Resources, Internal Report, Atlantic Geoscience Centre, Bedford Institute of Oceanography, 15 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

The M. V. Gulf Star was chartered by Petro-Canada in a joint GCS-Petro-Canada research program. The purpose was to survey the coastal environments of eastern Lancaster Sound and eastern Baffin Island with respect to geomorphology, sedimentology and processes as well as biological habitats.

REF. NO.: 0315-75

SUBJECT CODES: E1 (A5, A6, A8)

AUTHOR: MCLAREN, P.
Terrain Sciences Division
Geological Survey of Canada

YEAR: 1975

TITLE: Under-Ice Diving Observations in the Coastal Environments of Southeast Melville and Western Byam Martin Islands

SOURCE: In Report of Activities, April to October 1974, Geological Survey of Canada, Paper 75-1, Part A, pp. 475-477

STATUS: Public

MAP NUMBERS: 7831, 7830, 7951

COMMENTS/SUMMARY:

The 1974 field season completed a two-year coastal process study. In addition to re-examining formerly established profiles and zonals, the nearshore environments (to 100 foot depths) were extensively observed by the use of SCUBA diving. A total of 93 dives, making up 50 underwater hours, were successfully completed. At 25 different locations the sea floor and/or sea ice were studied using underwater photography, augering, coring, slope measurements, and sample collection. Four different bottom environments were recognized.

REF. NO.: 0316-74

SUBJECT CODES: H1 (A5)

AUTHOR: MCLAREN, P.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Arctic Diving Observations at Resolute Bay, N.W.T. and the North Pole

SOURCE: In Report of Activities, Part B, November 1973 to March 1974, Geological Survey of Canada, Paper 74-1, pp. 257-258

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

While conducting coastal studies on Melville Island, N.W.T., the author concluded that direct sea bottom observation using SCUBA would enhance conventional marine sampling and sensing techniques. From April 19 to May 3, 1974, the author, with David Frobel, enjoyed an opportunity to dive with Dr. J. B. MacInnes', Arctic IV diving expedition at Resolute Bay, N.W.T. and the North Pole. The purposes were as follows: (1) to obtain diving experience in Arctic water with a professional diving team; (2) to assess the feasibility of performing simple measurement and sampling techniques underwater; and (3) to make observations on sea ice and sediment pertinent to drift-ice geological processes. A total of 10 dives comprising 9 underwater hours were made by Geological Survey personnel in support of these objectives.

REF. NO.: 0317-74

SUBJECT CODES: G1 (A6, A7, A8, E3, E5)

AUTHOR: MCLAREN, P.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Coastal Erosion - Sedimentation, Southeast Melville and Western Byam Martin Islands, District of Franklin

SOURCE: In Report of Activities, April to October 1973, Geological Survey of Canada, Paper 74-1, Part A, pp. 267-268

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

The purpose of this project is to gain an understanding of the processes operating in an Arctic coastal zone. To study sediment types and their rates of change, a series of 19 profiles were established. Each was surveyed twice during the summer and a frost table profile for each one. Eight areas encompassing regions of geological interest and "typical" stretches of coast were chosen for detailed study. The work in such areas, referred to as "zonals" consisted of three profiles, 100 m apart. Detailed contour maps were made at each zonal and the data will also be developed into sedimentary facies models. Sediments in both profiles and zonal were sampled extensively. Other aspects of the first summer's work included periodic photography of the coast (oblique and vertical), a qualitative and quantitive study of the factors affecting the frost table, a map of the areas of maximum ice push, a detailed study of a raised delta, tide ranges and the effects of ice on the tide, ice conditions in Byam Martin Channel and finally, many observations of the coastal geomorphology.

REF. NO.: 0318-77

SUBJECT CODES: K

AUTHOR: CHRISTIE, R. L.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada
Calgary, Alberta

YEAR: 1977

TITLE: Publications on the Geology of the Arctic Islands (District of Franklin) by the Geological Survey of Canada

SOURCE: Geological Survey of Canada, Paper 76-28, July, 1976, 37 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The purpose of this paper is to provide a list of publications by officers of the Geological Survey that describe and illustrate the geology of the Canadian Arctic Islands and surrounding continental shelves (the District of Franklin). The list is meant to be current rather than complete; thus, Geological Survey Papers, Information Circulars, and Reports of Activities that are superseded by Bulletins, Memoirs, or later Papers have been omitted. A publication is retained in the list if it contains material not covered by a later publication.

REF. NO.: 0319-75

SUBJECT CODES: H1 (H4)

AUTHOR: MCLAREN, P. and FROBEL, D.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Under-Ice Scuba Techniques for Marine Geological Studies

SOURCE: Geological Survey of Canada, Paper 75-18, 13 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

SCUBA techniques were used in an under-ice diving program to examine coastal processes in a high arctic environment. It proved to be a valuable method of study, and geological techniques of observation, sampling, photography and in situ shear vane measurements were undertaken successfully. Divers clad in variable-volume dry suits were able to withstand up to an hour in below freezing water. Major problems encountered were cramped and cold feet and the regulator freezing open which resulted in a free flow of air. With experience, many problems were overcome and a dive procedure developed ensuring maximum work efficiency and safety. The cost, including a compressor, to outfit one diver completely was approximately $3170.00. It is hoped that more scientists will be able to use this relatively simple technology to arrive at both questions and answers necessary to understand the arctic marine environment.

REF. NO.: 0320-81

SUBJECT CODES: G1 (A8)

AUTHOR: MCLAREN, P.
Pacific Geoscience Centre
Geological Survey of Canada
Sidney, British Columbia
BARRIE, W. B.
SEMPELS, J. M.
Petro-Canada Inc., Calgary, Alberta

YEAR: 1981

TITLE: The Coastal Morphology and Sedimentology of Cape Hatt: Implications for the Baffin Island Oil Spill Project (BIOS)

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 81-1B, pp. 153-162

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Cape Hatt, a small peninsula that protrudes into Eclipse Sound at the north end of Baffin Island is the site for an experimental oil spill to take place in the summer of 1981. Three small bays are required: one as a control; a second to study the effects of oil spilled on the surface and allowed to impinge the shoreline; and a third to use an oil-dispersant mix for comparison with the oil-only experiment.

The chosen site contains at least 13 bays potentially suitable for the experiments. Analyses of data from baseline studies in 1980 have resulted in selection of 3 suitable bays (bays 9, 10 and 11). Geomorphic and sedimentologic criteria indicate that the processes of winds, waves and ice action are greatest in bay 10 and least in bay 11. On the assumptions that cross-contamination must be minimal and longevity of the oil in the environment is desirable to ensure reasonable and measurable detrimental effects, we suggest that bay 10 should be used for control, bay 11 for the oil-dispersant mix and bay 9 for the oil-only experiments.

REF. NO.: 0321-75

SUBJECT CODES: A3 (A4, E5, H1, A5)

AUTHOR: MCLAREN, P.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario
SCOTT, W. J. and HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: The Implications of Geophysical Studies on the Permafrost Regime and Surficial Geology, Melville Island and Byam Channel, N.W.T.

SOURCE: In Report of Activities, Part B, Geological Survey of Canada, Paper 75-1B, pp. 39-45

STATUS: Public

MAP NUMBERS: 7830

COMMENTS/SUMMARY:

Seismic and resistivity techniques were utilized by J. A. Hunter and W. J. Scott respectively to investigate the occurrence of offshore permafrost. This was in conjunction with a coastal process study (McLaren, 1974a, 1975) on the east coast of Melville and west coast of Byam Martin Island. Unfortunately, unusually bad ice conditions precluded the use of marine surveying and studies were limited to selected dive-hole locations.

This paper describes the survey techniques employed, onshore observations of the coastal zone, and offshore observations from diving and drill holes.

REF. NO.: 0322-73

SUBJECT CODES: A5 (B1)

AUTHOR: MCMILLAN, N. J.
Tenneco Oil and Minerals Ltd., Calgary, Alberta

YEAR: 1973

TITLE: Surficial Geology of Labrador and Baffin Island Shelves

SOURCE: In Earth Science Symposium on Offshore Eastern Canada, Edited by P. Hood, Geological Survey of Canada, Paper 71-23, pp. 451-468

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The shelves of Labrador and Baffin Island are smooth plains in contrast to the rugged, glaciated and fiord-indented land to the west. These shelves are mainly underlain by sedimentary rocks that have also been glaciated. The abrupt boundary between Precambrian rocks and shelf sediments occurs at tectonic hinge lines which are marked by the marginal channels described by the Holtedahls. Eastward-moving continental glaciers, underloaded with debris, became loaded with available erodable sediments at the trace of the tectonic hinge line thus causing the marginal channels. Hundreds of bottom samples from Baffin Bay and Labrador Sea have been described in the literature since 1900. The extent of the sedimentary component of these grab samples and gravity cores seems to coincide with the presence of sedimentary bedrock. ... It is tentatively concluded that the sedimentary component of bottom samples is part of the ground moraine which has moved only a few miles from its origin elsewhere on the shelf. Analysis of alleged ground moraine tends to show that in the southern part of the Labrador Shelf at 53° N the bedrock is of Tertiary age. Progressively northward the rocks are older. At 58° N, only Lower Cretaceous rocks are present on the western part of the shelf.

REF. NO.: 0323-73

SUBJECT CODES: B1 (A6, C1, D1)

AUTHOR: MCMILLAN, N. J.
Aquitaine Company of Canada Ltd., Calgary, Alberta

YEAR: 1973

TITLE: Shelves of Labrador Sea and Baffin Bay, Canada

SOURCE: In The Future Petroleum Provinces of Canada - Their Geology and Potential, Edited by R. G. McCrossan, Canadian Society of Petroleum Geologists, Calgary, Alberta, Memoir 1, pp. 473-517

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The area of this study extends from 50°N to 78°N along the continental shelf and slope of eastern Canada. The shelf is between 25 and 200 miles (40-320 km) wide and lies in water ranging in depth from 300 feet (100 m), in a few places, to approximately 1000 feet (300 m). On an average, depth is between 450 and 800 feet (140-240 m). Some exploration permits from the Canadian Government extend to beyond 6000 feet (1800 m).

This paper contains descriptions of the physiography, surficial geology, bedrock geology, tectonic history, stratigraphy and economic geology of shelf area including the area underlying northeastern Baffin Bay.

REF. NO.: 0324-78

SUBJECT CODES: B1 (B3, B6, B7)

AUTHOR: PETRO CANADA INC.
Calgary, Alberta

YEAR: 1978

TITLE: 1978 Canadian Arctic Islands Geological Field Operation (Lancaster Sound Segment)

SOURCE: Petro Canada Resources Internal Report, Prepared by J. R. H. McWhae, P. R. Gunther, and B. Shade (COGLA File No. 246-01-12-100)

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

This report contains the results of a geological field operation in the Lancaster Sound region. Field procedures, structural geology, stratigraphy, and laboratory studies are reported.

REF. NO.: 0325-82

SUBJECT CODES: B4.2 (B7, B4.1, F1)

AUTHOR: MENZIES, A. W.
Esso Resources Canada Limited, Calgary, Alberta

YEAR: 1982

TITLE: Crustal History and Basin Development of Baffin Bay

SOURCE: In Nares Strait and the Drift of Greenland: A Conflict in Plate Tectonics, Edited by P. R. Dawes, J. W. Kerr, Meddelelser om Gronland, Geoscience Vol. 8, pp. 295-312

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Lack of definitive magnetic anomaly stripe data in Baffin Bay and Davis Strait imposes severe limitations on the extension of the Labrador Sea sea-floor spreading model into these areas. Using refraction and earthquake seismicity data to examine crustal and mantle structure, a case is presented for the existence of oceanic crust in Baffin Bay, and a bridge of continental crust connecting Greenland and Baffin Island across Davis Strait. Reconstruction or closure of Greenland with Labrador and Baffin Island is made by first defining their respective continental-oceanic crust boundaries, and then by juxtaposing these boundaries. The two sets of motion implied by Srivastava's (1978) interpretation of the magnetic anomaly pattern in the Labrador Sea are used to develop an opening motion for Labrador Sea and Baffin Bay. The Baffin Bay opening began in Paleocene time (anomaly 24) and ceased about Eocene time (anomaly 20). This motion is along a strike-slip fault crossing through Davis Strait which resulted in Baffin Bay opening as a rhombochasm with a bridge of continental crust being maintained in Davis Strait. The suggested origin of Baffin Bay requires appreciable movement to have occurred either along Nares Strait or in the Canadian Arctic Archipelago.

REF. NO.: 0326-82

SUBJECT CODES: B2 (B1, B6, B7)

AUTHOR: MEYERHOFF, A. A.
Associated Resource Consultants Inc.
Tulsa, Oklahoma

YEAR: 1982

TITLE: Hydrocarbon Resources in Arctic and Subarctic Regions

SOURCE: In Arctic Geology and Geophysics, Edited by A. F. Embry and H. R. Balkwill, Proceedings of the Third International Symposium Arctic Geology, Canadian Society of Petroleum Geologists, Calgary, Alberta, Memoir 8, pp. 451-536

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

This paper provides an overview of the discovered and potential petroleum basins in the arctic and sub-arctic. Within the Canadian Archipelago the following basins are examined: the Sverdrup Basin, the Banks Island graben, Foxe Basin, Jones Basin, Nares Strait (Kane) Basin, Baffin Shelf, and the Lancaster Basin.

REF. NO.: 0327-64

SUBJECT CODES: H4 (B4.2)

AUTHOR: MILNE, A. R. and CLARK, S. R.

YEAR: 1964

TITLE: Resonances in Seismic Noise Under Arctic Sea-Ice

SOURCE: Bulletin Seismic Society of America, Vol. 54, No. 6, pp. 1797-1809

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Spectrograms of underwater seismic noise between 0.2 and 2.0 cps from the bottom of relatively shallow ice-covered seas show a line structure which indicates that vertical resonances occur within layers bounded at depth by the Mohorovicic discontinuity. The line structure appears with most clarity when recognizable transients are excluded. Under these quasi-stationary noise conditions, measurements of pressure spectra indicate that the seismic noise of the observed level can be generated by a vertical bobbing of the ice field as a whole.

REF. NO.: 0328-83

SUBJECT CODES: H2 (H3)

AUTHOR: MOORE, S. D.

YEAR: 1983

TITLE: Panarctic Pushes Ahead with Arctic Drilling Program

SOURCE: Petroleum Engineer, Vol. 55, No. 2, February, 1983, pp. 26, 28, 32, 34

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This article describes the Panarctic Oils Ltd. drilling program and the equipment used in the Canadian Arctic Islands. Ice platform design, rig design, drilling operations, drilling through gas hydrates, and subsea completions are all discussed.

REF. NO.: 0329-82

SUBJECT CODES: H4 (E5)

AUTHOR: MORACK, J. L.
Physics Department and Geophysical Institute
University of Alaska, Fairbanks, Alaska
ROGERS, J. C.
Department of Electrical Engineering, Michigan
Technological University, Houghton, Michigan

YEAR: 1982

TITLE: Marine Seismic Refraction Measurements of Near-Shore Subsea Permafrost

SOURCE: Proceedings of the Fourth Canadian Permafrost Conference - The Roger J. E. Memorial Volume, Edited by H. M. French, Associate Committee on Geotechnical Research, National Research Council of Canada, Calgary, Alberta, March 2-6, 1981, pp. 249-255

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Marine permafrost studies have been conducted near shore in Prudhoe Bay, Alaska. Sound velocities, measured in the ocean sediments were used to determine the location of frozen materials. Velocities above 2500 m/s were judged to indicte frozen materials while lesser velocities were associated with non-frozen materials. A study area 1 km by 0.5 km was established in waters ranging from 0.4 to 3 m deep near shore. Over 100 velocity measurements were made in the area. These measurements show a broad variation in frozen material velocities and a definite trend toward lower velocities with increasing distance from shore. Velocities near 4000 m/s were typically found within a few hundred metres from shore while at 1 km from shore the frozen material velocities were approximately 3000 m/s. No significant variation in frozen material velocities was observed in the direction parallel to the shore-line. The depth to the top of the frozen materials was found to vary widely over the study area suggesting a highly irregular and discontinuous material with little or no continuity to its upper surface. Typical depths to high velocity refractors ranged from about 5 m within 100 m of shore to about 25 m at 1 km from shore.

REF. NO.: 0330-78

SUBJECT CODES: A5 (I2, D1)

AUTHOR: MORISON, S. R. and TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Physical Characteristics and Seasonal Changes in an Arctic Estuarine Environment

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 78-1B, pp. 101-106

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Cunningham Inlet exhibits distinct seasonal changes in water mass, primarily because of variable fluvial discharge resulting from limited source water, i.e. snowmelt. In summer there is a pronounced halocline at a depth of 1 to 3 m, with freshwater flowing over the more dense saline water. Suspended sediment from rivers is the main source of clayey silt covering much of the inlet bottom. Bedrock outcrops along the shallow entrance to the inlet and unconsolidated sediments along the shores are the other major sources of sediment found on the inlet bottom. This paper describes the field methods employed, the physical characteristics of Cunningham Inlet (tides, ice conditions, temperature, suspended sediment) and the marine sediment characteristics.

REF. NO.: 0331-82

SUBJECT CODES: E7 (A7, A8, B2, H1)

AUTHOR: MACLEAN, B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1982

TITLE: Investigations of Baffin Island Shelf from Surface Ship and Research Submersible in 1981

SOURCE: Scientific and Technical Notes In Current Research, Part A, Geological Survey of Canada, Paper 82-1A, pp. 445-447

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Between September 9 and October 13, 1981, Atlantic Geoscience Centre (AGC) and Atlantic Oceanographic Laboratory (AOL), Bedford Institute of Oceanography, carried out a geological/chemical cruise (81-055) on the Baffin Island shelf using the surface ship "M. V. Pandora II" and the research submersible "Pisces IV". This cruise was a follow-up to previous AGC bedrock and reconnaissance surficial geological investigations and to AGC and AOL oil seep studies in this area (e.g. MacLean and Falconer, 1979; MacLean et al., 1981a, b; Levy and MacLean, 1981). This report outlines the nature of the investigations and the preliminary results.

REF. NO.: 0332-61

SUBJECT CODES: B4.2

AUTHOR: MORRISON, H. F.

YEAR: 1961

TITLE: Seismic Investigations in the Sverdrup Basin, Queen Elizabeth Islands

SOURCE: MSc Thesis, McGill University, Montreal, Quebec, [Unpublished], 76 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

This thesis presents the results of a reconnaissance seismic program carried out by the Geophysics Division of the Geological Survey of Canada during the months April to August, 1960, in the Queen Elizabeth Islands, N.W.T. The seismic investigations were a part of a continuing, comprehensive, Arctic research program directed by the Polar Continental Shelf Project (P.C.S.P.). The P.C.S.P. was created by a Federal Cabinet directive in 1959 and is a division of the Department of Mines and Technical Surveys. The seismic operations in the summer of 1960 were of a preliminary and reconnaissance nature designed to measure the thickness of the sedimentary section in as many localities as possible and to lay the foundations for detailed investigations in following years.

REF. NO.: 0333-71

SUBJECT CODES: E3

AUTHOR: MOYNIHAN, M. J.
MUENCH, R. D.
University of Washington
Seattle, Washington

YEAR: 1971

TITLE: Oceanographic Observations in Kane Basin and Baffin Bay, May and August-October 1969

SOURCE: United States Coast Guard, Oceanographic Report No. 44, CG 373-44, Washington, D. C., October 1971, 14 p.

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Oceanographic conditions in Kane Basin during the spring and in northern Baffin Bay during the late summer and early fall of 1969 are described. Preliminary results of current meter measurements taken through the ice in Kane Basin are discussed. Vertical sections of temperature and salinity are presented and the relationship of these variables to Baffin Bay-North Water, Baffin Bay Deep Water and the general circulation of Baffin Bay is discussed. Analyses of isentropic diagrams and dynamic topography are also presented. Listings of physical and chemical station data are included.

REF. NO.: 0334-80

SUBJECT CODES: A11 (A5)

AUTHOR: MUDIE, P. J.

YEAR: 1980

TITLE: Palynology of Later Quaternary Marine Sediments, Eastern Canada

SOURCE: PhD Thesis, Department of Geology, Dalhousie University, Halifax, Nova Scotia, 638 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

Studies of pollen, spores and dinoflagellate cysts in later Quaternary marine sediments on the Eastern Canadian continental margin were undertaken in order to assess whether palynology is a useful tool for investigating the paleoecological history of marine sediments in glaciated shelf regions. The area covered by this investigation extends from Nova Scotia to Baffin Bay and encompasses nearshore to upper slope environments in Cool Temperate to Arctic climatic regions. Because no comprehensive Quaternary palynological studies have previously been made, baseline data on present palynomorph distribution patterns, taxonomy, preservation and methods of transport are described in this thesis. These new data were applied in biostratigraphic studies of later Quaternary sediments on the Nova Scotian and Labrador shelves.

REF. NO.: 0335-82

SUBJECT CODES: A11

AUTHOR: MUDIE, P. T.
Department of Geology, Dalhousie University
Halifax, Nova Scotia

YEAR: 1982

TITLE: Dinoflagellate Cysts in Holocene Sediments, Eastern Canadian Arctic

SOURCE: In Palynology Proceedings, Edited by J. D. Nichols, 14th Annual Meeting, American Association of Stratigraphic Palynologists, New Orleans, Louisiana, October 7-10, 1981, Vol. 6, p. 288

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Dinoflagellate cyst assemblages are illustrated for Holocene sediments from the Eastern Canadian Arctic region, including Hudson and Davis Straits, Baffin Bay and the West Greenland Shelf. Most of the Arctic cyst assemblages are characterized by very low species diversity and the dominance of a species similar to ?Multispinula minuta described by Harland et al. (1980) from the Beaufort Sea. However, nearshore cyst assemblages are distinguished by the codominance of ?Multispinula minuta, Brigantedinium simplex and the presence of species resembling Spiniferites frigidus and Leiosphaera scrobiculata. Assemblages from sediments beneath the warm West Greenland Current are clearly distinguished from the cold Arctic water assemblages by the dominance of Operculodinium centrocarpum, accompanied by diverse Spiniferites species and Nematosphaeropsis labyrinthea. [abstract only].

REF. NO.: 0336-72

SUBJECT CODES: E3

AUTHOR: MUENCH, R. D.
University of Washington
Seattle, Washington

YEAR: 1982

TITLE: Oceanographic Conditions in the Northern Baffin Bay Region

SOURCE: United States Coast Guard, Oceanographic Report No. 54, CG 373-54, Washington, D. C., August, 1970, pp. 1-10

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Physical oceanographic conditions observed in northern Baffin Bay during midsummer 1970 are described. Spatial distributions of temperature and salinity are discussed using vertical sections and horizontal plan views. Circulation is discussed with the aid of dynamic topographies, temperature-salinity analyses and isentropic diagrams, and computed geostrophic volume transports are presented. Gross physical oceanographic conditions observed during midsummer 1970 are compared with those observed during previous summers.

REF. NO.: 0337-71

SUBJECT CODES: E3

AUTHOR: MUENCH, R. D.
University of Washington
Seattle, Washington

YEAR: 1971

TITLE: Oceanographic Conditions in Smith Sound and Northern Baffin Bay, September, 1968

SOURCE: Oceanographic Observations in Baffin Bay during July-September, 1968, United States Coast Guard, Oceanographic Report No. 37, CG 373-37, February, 1971, pp. 1-20

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Oceanographic conditions in Smith Sound, northern Baffin Bay, Disko Bay, and southeastern Baffin Bay during the summer of 1968 are described. Vertical sections of temperature and salinity are presented and the relationship of these variables to Baffin Bay - North Water and the general circulation of Baffin Bay is discussed. Zooplankton collections in the Smith Sound Region and macrobenthos collections in Disko Bay and several West Greenland Fiords are reported on. Listings of the physical and chemical station data are included.

REF. NO.: 0338-83

SUBJECT CODES: H1 (H2)

AUTHOR: MUNGALL, C.
GEOS [Journal]

YEAR: 1983

TITLE: CESAR - 60 Days on the Ice - An Exercise in Inventiveness and Cooperation

SOURCE: GEOS, Vol. 12, No. 2, pp. 17, 19, 21

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

... 43 men and women have this spring maintained a research station on the ice 400 km southwest of the North Pole. For 60 days they have been modern explorers, using the latest scientific techniques to probe one of the last frontiers - the Arctic Ocean floor.

This non-technical article briefly addresses the scope of the CESAR project, the scientific work and scientists involved and some of the logistics of supply and operating a camp on the polar ice pack.

REF. NO.: 0339-82

SUBJECT CODES: I2 (E1)

AUTHOR: METGE, M.
[Consultant], Calgary, Alberta
HOARE, R. D. and PILKINGTON, G. R.
Dome Petroleum Ltd., Calgary, Alberta
MCGONIGAL, D., SCHWAB, D. and WRIGHT, B.
Gulf Canada Resources Inc., Calgary, Alberta

YEAR: 1982

TITLE: Extreme Ice Pile-Ups and Multi-Year Hummock Fields

SOURCE: Proceedings of Workshop on Sea Ice Ridging and Pile-Up, National Research Council of Canada, Associate Committee on Geotechnical Research, Calgary, Alberta, 22-24 October 1980, National Research Council Technical Memorandum No. 134, 106 p.

STATUS: Public

MAP NUMBERS: 7932, 7951, 7952, 7953

COMMENTS/SUMMARY:

Multi-year hummock fields are formed by very large grounded ice pile-ups which, with time, ablate at their surface and float away. This process has significant implications in the design of deep water platforms for the Beaufort Sea. This paper briefly describes the logistics and results of a field program to investigate extreme ice pile-ups and multi-year hummock fields in the Arctic Ocean adjacent to the Queen Elizabeth Islands.

REF. NO.: 0340-84

SUBJECT CODES: H1 (E5)

AUTHOR: NEAVE, K. G. and SELLMANN, P. V.

YEAR: 1984

TITLE: Some Aspects of Interpreting Seismic Data for Information on Shallow Subsea Permafrost

SOURCE: In Abstracts & Program, Workshop on Permafrost Geophysics, Golden, Colorado, October 23-24, 1984, Committee on Permafrost, Polar Research Board, National Academy of Sciences, Washington, D. C.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Refraction analysis of oil-industry seismic records has been able to delineate the boundary of cold relict permafrost near the coast. A more elusive target has been to outline the top and extent of the warmer subsea permafrost.

There are three problems associated with finding the extent of warmer ice-bonded sediments. First, the boundary is not sharp because no strong contrast is observed in the seismic velocities offshore. This implies that the temperature and salinity usually change gradually and produce gradients in the ice content and ice bonding. The second problem is that shallow gas shifts the velocity ranges for both thawed and bonded sediments and makes the interpretation of velocity and depth much more uncertain. The third problem is that the signal-to-noise ratios are poor on the records, partly because of the shallow gas attenuation, so that identification of first arrivals for refraction interpretation is difficult in many cases.

REF. NO.: 0341-74

SUBJECT CODES: H1 (A3, A4, A5, A9)

AUTHOR: BANISTER TECHNICAL SERVICES
Montreal, Quebec

YEAR: 1974

TITLE: Byam Channel Sub-Bottom Analysis, Stations 715 to 1040, Procedures and Results

SOURCE: Prepared for Polar Gas Project, Prepared by D. J. Babala, Banister Technical Services Technical Memorandum 74-101, September 1974, 93 p.

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

Acoustic data for 5 km of the 30 km 1974 Byam Channel, Polar Gas Project through-the-ice survey have been analyzed with respect to bottom sediment distribution, sediment type, and major physical properties. For the first time the Bancqes acoustic model has been applied to a major pipeline route selection program in the Arctic.

The engineering properties of the sediments presented are considered to be predictions as they have been determined indirectly. Insofar as possible, these predictions have been checked against the physical analysis of core samples in the same area. Results show a meaningful correlation between the acoustic predictions and the core data both in the mean and statistical variance of the data.

REF. NO.: 0342-76

SUBJECT CODES: A7 (A1)

AUTHOR: NETTERVILLE, J. A., DYKE, A. S., THOMAS, R. D., and DRABINSKY, K. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Terrain Inventory and Quaternary Geology, Somerset, Prince of Wales, and Adjacent Islands

SOURCE: Geological Survey of Canada, Paper 76-1A, pp. 145-154

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

Terrain studies were conducted on Somerset, Prince of Wales, and adjacent smaller islands in the eastern Canadian Arctic during summer 1975 to provide information on the distribution and characteristics of the surface materials and the processes affecting them. Geomorpnic and geologic information was provided by the authors; soils and vegetation data will be the subject of a future report by S. C. Zoltai and V. Woo. Where possible glacial and nonglacial materials and landforms were examined in order to describe the Quaternary history of the area.

REF. NO.: 0343-82

SUBJECT CODES: B4.3 (B4.1, B4.2, B7)

AUTHOR: NEWMAN, P. H.
Department of Geology
Dalhousie University, Halifax, Nova Scotia

YEAR: 1982

TITLE: Marine Geophysical Study of Southern Nares Strait

SOURCE: In Nares Strait and the Drift of Greenland: A Conflict in Plate Tectonics, Edited by P. R. Dawes and J. W. Kerr, Meddelelser om Gronland, Geoscience, Vol. 8, pp. 255-260

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Bathymetry and gravity contour maps of southern Nares Strait (herein termed North Water Bay) based mainly on previously unpublished data, together with seismic reflection and magnetic data, indicate the preservation of two major sedimentary basins. These basins are elongate approximately parallel to major onshore faults. Both are filled with disturbed strata.

Kane Basin to the north is probably filled with five to ten km of gently northeast-dipping sediments, disturbed by minor northeast-trending faults.

Gravity modelling indicates a possible, fault-bounded, basalt-filled 'fracture' off southeastern Ellesmere Island. This structure may continue northeastward into Nares Strait as a sediment-filled trough. This indicates only that Nares Strait is a fault-bounded feature, and not necessarily that there has been any horizontal motion, major or otherwise, along it.

REF. NO.: 0344-80

SUBJECT CODES: H3 (H1, H2)

AUTHOR: OIL AND GAS JOURNAL

YEAR: 1980

TITLE: New Pipe-Lay Method Proposed for Under Water

SOURCE: Oil & Gas Journal, Vol. 78, No. 13, pp. 132-134

STATUS: Public

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

Polar Gas has developed a new method for constructing a marine pipeline under ice-covered waters. They plan to apply the method to cross M'Clure Strait between Melville and Victoria Islands in the Canadian High Arctic. Under study during the past two years, this method has been named the "ice-hole bottom pull" technique. The name is derived from the fact that this method will use series of ice holes rather than a continuous ice trench to enable construction crews to pull 914 mm (36 in.) diameter pipe strings into place on the bottom of the strait. This paper briefly describes the proposed pull method, pipejoining technology and ice scouring prevention.

REF. NO.: 0345-80

SUBJECT CODES: H3

AUTHOR: OILWEEK

YEAR: 1980

TITLE: Northern Frontier Exploration: High Arctic Hits a Winning Streak

SOURCE: Oilweek, Vol. 31, No. 23, pp. 35, 36, 38, 40

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This offshore update describes recent drilling sucesses in the Canadian High Arctic, particularily on Panarctic's acreage. Production economics are discussed and predictions for future oil and gas markets are given.

REF. NO.: 0346-82

SUBJECT CODES: H1 (E5)

AUTHOR: OSTERKAMP, T. E. and HARRISON, W. D.
Geophysical Institute, University of Alaska,
Fairbanks, Alaska

YEAR: 1982

TITLE: Temperature Measurements in Subsea Permafrost Off the Coast of Alaska

SOURCE: Proceedings of the Fourth Canadian Permafrost Conference - The Roger J. E. Brown Memorial Volume, Edited by H. M. French, Associate Committee on Geotechnical Research, National Research of Canada, Calgary, Alberta, March 2-6, 1981, pp. 238-248

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Temperature measurements have been made in shallow, small-diameter boreholes in the Beaufort, Chukchi, and Bering seas off the Alaskan coasts since 1975. Methods for making access holes with light-weight equipment are described. These included augering, water jet drilling, rotary water jet drilling, and driving. Pipe or tubing was placed in the access holes and logged at discrete, closely-spaced depth intervals, usually one metre, to obtain the temperature profiles. The depth to ice-bonded permafrost, as determined by temperature measurements, increases with distance off-shore when the soil conditions are constant. However, ice-bonded permafrost may be found near the sea bed in areas of very fine-grained compact soils even when these occur far off-shore. The thermal data has been used to investigate the nature of heat and salt transport processes in subsea permafrost and to construct thermal models which infer its distribution and thickness in a general way.

REF. NO.: 0347-70

SUBJECT CODES: B4.2 (B6)

AUTHOR: OVERTON, A.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1970

TITLE: Seismic Refraction Surveys, Western Queen Elizabeth Islands and Polar Continental Margin

SOURCE: Canadian Journal of Earth Sciences, Vol. 7, No. 2, pp. 346-365

STATUS: Public

MAP NUMBERS: 7832, 7951, 7952

COMMENTS/SUMMARY:

The Arctic seismic program of 1964 and 1965 comprised two refraction profiles between Prince Patrick Island and Melville Island, and one refraction profile extending 192 km onto the ocean northwest of Brock Island. Numerous intermediate layer and upper mantle events were also recorded on paths not confined to the profiles, thus allowing a "time-term" analysis for these events.

High-velocity layers within the sedimentary section cause a velocity inversion problem, whereby the lower velocity and depth of the underlying basement complex is not revealed by the seismic refraction method. A negative correlation between crustal time-terms and Bouguer gravity values is noted to be partly due to the effect of varying proportions of low-velocity - low-density rocks and high-velocity - high-density rocks with a few km of depth.

REF. NO.: 0348-70

SUBJECT CODES: G1 (A7, A8, E1, I2)

AUTHOR: OWENS, E. H. and MCCANN, S. B.
Department of Geography
McMaster University, Hamilton, Ontario

YEAR: 1970

TITLE: The Role of Ice in the Arctic Beach Environment With Special Reference to Cape Ricketts, Southwest Devon Island, Northwest Territories, Canada

SOURCE: American Journal of Science, Vol. 268, May 1970, pp. 397-414

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

The effects of ice on the form of the beach zone at Cape Ricketts, southwest Devon Island, in particular in the formation of ice mounds and ice-push ridges, are described. Consideration of meteorological data for Resolute, Cornwallis Island, and of ice cover data for the Barrow Strait-Lancaster Sound sea area provides information for a broader discussion of the role of ice in the beach environment.

REF. NO.: 0349-81

SUBJECT CODES: G1 (A5)

AUTHOR: OWENS, E. H.
Woodward-Clyde Consultants
Victoria, British Columbia
TAYLOR, R. B. and FORBES, D. L.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia
MILES, M.
Miles and Associates, Victoria, British Columbia

YEAR: 1981

TITLE: Coastal Geology Mapping: An Example From the Sverdrup Lowland, District of Franklin

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 81-1B, pp. 39-48

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

A system for coastal geology mapping is discussed which has been tested at scales ranging from 1:4800 to 1:125 000, in a variety of Canadian coastal environments including the Sverdrup Lowland. The system is compatible with the surficial geology mapping schemes used by the Geological Survey of Canada. Initially, the coast is progressively subdivided into shore units, zones and components which are the building blocks used to define the physical coastal characteristics and a limited number of replicate shore types. Use of standardized codes allows a direct comparison between coasts of different geographic areas. All available coastal information is systematically listed on coding sheets and a summary of the primary coastal elements is shown on the maps using coded descriptors. Also displayed on the maps is the distribution of replicate shore types.

REF. NO.: 0350-72

SUBJECT CODES: B4.1 (B1, B4.3, B7)

AUTHOR: PALLISTER, A. E.
Kenting Limited, Calgary, Alberta
BOURNE, S. A.
Phoenix Ventures, Calgary, Alberta

YEAR: 1972

TITLE: Geology of Offshore Areas of the Canadian Arctic Islands Based on Geophysical Data

SOURCE: The Journal of Canadian Petroleum Technology, Vol. 11, No. 1, January-March 1972, pp. 75-79

STATUS: Public

MAP NUMBERS: 7220, 7503, 7831, 7832, 7952, 7953

COMMENTS/SUMMARY:

Surface geologic exposures in the Arctic Islands are excellent, as is the case in most of the world's deserts. The sparse subsurface information from boreholes is limited to only a few islands. The geology of the inter-island areas is much more speculative. Preliminary interpretations based on erosion and isostatic readjustments after the melting of the continental ice sheet may have to be revised after a review of the geophysical data which are now becoming available. Hypotheses concerning block faulting with horst and graben development represent a conservative approach whereas the consideration of rift and drift hypotheses gains popularity. Recently obtained reconnaissance data indicate the possibility that a distinct geologic section exists offshore compared to the onshore boundaries. This conclusion is based on regional geophysical data obtained by government and industry. Magnetic and gravity surveys cover much of the Arctic Archipelago. Seismic profiles in marine areas of southern Arctic Islands indicate a wide range of large structures, and refraction probes are useful in defining the velocity, and thus the possible geologic age, of these sediments.

REF. NO.: 0351-71

SUBJECT CODES: B1 (B4.1, B4.3, B7)

AUTHOR: PALLISTER, A. E.
Kenting Exploration Services Ltd., Calgary, Alberta
BOURNE, S. A.
Pallister and Associates, Calgary, Alberta

YEAR: 1971

TITLE: Geology of Offshore Areas of Canadian Arctic Islands Based on Geophysical Work

SOURCE: Proceedings, International Arctic Geology Symposium, Pacific Section, American Assocation of Petroleum Geologists, San Francisco, California, February 1971, p. 2500, [abstract only]

STATUS: Public

MAP NUMBERS: 7220, 7503, 7831, 7832, 7952, 7953

COMMENTS/SUMMARY:

Surface geologic exposures in the Arctic Islands are excellent as is the case in most of the world's deserts. The sparse subsurface information from boreholes is limited to only a few islands. Geology of the inter-island areas is much more speculative. Preliminary interpretations based on erosion and isostatic readjustments after the melting of the continental ice sheet may have to be revised after a review of geophysical data which is becoming available. Block faulting with horst and graben development becomes a conservative approach while consideration of rift and drift hypothesis gain popularity. Recently obtained reconnaissance data indicate the possibility that an entirely new geologic section exists offshore. This conclusion is based on regional geophysical data obtained by Government and industry. Magnetic and gravity surveys cover much of the Arctic Archipelago. Seismic profiles in marine areas of the southern Arctic Islands indicate a wide range of large structures. Refraction probes are useful in defining the velocity, and thus the possible geologic age, of these sediments.

REF. NO.: 0352-69

SUBJECT CODES: J

AUTHOR: PAMENTER, B.
Oilweek, Calgary, Alberta

YEAR: 1969

TITLE: Polarquest Door to Arctic Offshore

SOURCE: Oilweek, November 3, 1969, pp. 36-38, and p. 54

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

"Polarquest" is the third and largest exploration package presented to the petroleum industry on a subscription basis. Pallister and Associates, a division of Kenting Ltd., has planned a $20 million, four year operation to provide basic offshore exploration studies for an area of 350,000 square miles of the Canadian Arctic Archipelago. Twelve distinct programs have been offered and subscribers may participate in any or all of the programs for a portion of the cost of each. The following programs are being offered: geological program; bathymetric program; environmental program; aeromagnetic program; gravity program; seismic refraction program; seismic reflection program; logistics program; feasibility program; stratigraphic drilling program; oceanographic program; and a magneto-telluric program. This article provides a brief description of the scope of each program.

REF. NO.: 0353-84

SUBJECT CODES: E3 (I2)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1984

TITLE: Panarctic et al. Buckingham O-68 Oceanographic Data Report 1984

SOURCE: Panarctic Oils internal report, Prepared for Canada Oil & Gas Lands Administration, Department of Energy, Mines and Resources, Canada, Prepared by M. P. Van Ieperen, September 1984.

STATUS: Proprietary

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

Ice movement, tides, surface currents and the saline and thermal characteristics of the water column were measured in the Panarctic et al Buckingham 0-68 area during the 1983-1984 drilling season. The measurements were taken to address environmental concerns and in support of the drilling operation. The results of the ice movement and tide measurements are in good agreement with previous results. The results of the current measurements are not. The water structure at the rig showed considerable temporal variability, likely caused by regional differences in mixing rate and internal wave activity.

REF. NO.: 0354-83

SUBJECT CODES: E² (12)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1983

TITLE: Norwegian Bay Ice Motion and Oceanographic Study 1981/1982

SOURCE: Panarctic Oils Ltd. internal report, Prepared for Arctic Islands Operating Advisory Committee, Arctic Islands Exploration Group, Prepared by M. P. Van Ieperen, March 1983.

STATUS: Proprietary

MAP NUMBERS: 7940, 7950

COMMENTS/SUMMARY:

During the winter and spring of 1982, ice motion and ocean currents were measured in Norwegian Bay, which is located in the eastern Sverdrup Basin. The survey, a continuation of the AIOAC 1981 Oceanographic Survey, was conducted to obtain basic data for possible future hydrocarbon exploration in the area. A comparison of the 1982 with the 1981 ice motion data shows large differences among the stations; the ocean current data from both years, however, agree well.

REF. NO.: 0355-83

SUBJECT CODES: E3 (I2)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1983

TITLE: Panarctic et al Cape MacMillan 2K-15 Oceanographic Data Report 1983

SOURCE: Panarctic Oils Ltd. internal report, Prepared for Regional Engineer, Engineering Branch, Canada Oil & Gas Lands Administration, Yellowknife, Northwest Territories, September 1983.

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Ice movement, tides, surface currents and vertical water structure were measured at Panarctic's offshore site Cape MacMillan 2K-15 in 1983. The water structure was typical of the High Arctic, but showed considerable temporal variation.

REF. NO.: 0356-82

SUBJECT CODES: E3 (I2)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1982

TITLE: Norwegian Bay Ice Motion and Oceanographic Study 1980/1981

SOURCE: Panarctic Oils Ltd. internal report, Prepared for Arctic Islands Operating Advisory Committee, Arctic Islands Exploration Group, Prepared by M. P. Van Ieperen, February 1982.

STATUS: Proprietary

MAP NUMBERS: 7940, 7950

COMMENTS/SUMMARY:

Ice motion, ocean currents and tides were measured at several localities in Norwegian Bay during the 1980-81 winter period. Tidal analysis suggests that the bulk of tidal energy enters Norwegian Bay from Jones Sound.

REF. NO.: 0357-82

SUBJECT CODES: H2 (H3)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1982

TITLE: Panarctic Oils Ltd. Fifteenth Annual Report, 1982

SOURCE: Panarctic Oils Ltd., 29 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Panarctic Oils Ltd., an industry/government consortium, is owned more than 50 percent by the Government of Canada through Petro-Canada Exploration, Inc., the Canadian national oil company, with the remainder of the shares held by 36 largely Canadian corporate or individual Shareholders. Panarctic explores for oil and natural gas in the Canadian Arctic Islands north of the Canadian mainland and, to date, has discovered natural gas reserves of 18 trillion cubic feet, which represent a 25 percent addition to the remaining gas reserves of Western Canada. There are also indications of possible commercial crude oil and, with continued exploration, Panarctic expects to develop commercial crude oil reserves. These large reserves will supply the energy needs of Canada far into the future and provide surpluses for export.

REF. NO.: 0358-66

SUBJECT CODES: B4.4

AUTHOR: PATERSON, W. S. B. and LAW, L. K.
Polar Continental Shelf Project
Department of Mines and Technical Surveys, Ottawa

YEAR: 1966

TITLE: Additional Heat Flow Determinations in the Area of Mould Bay, Arctic Canada

SOURCE: Canadian Journal of Earth Sciences, Vol. 3, pp. 237-246

STATUS: Public

MAP NUMBERS: 7831, 7952

COMMENTS/SUMMARY:

Seven determinations of geothermal heat flow were made in the general area of southern Prince Patrick Island in the Canadian Arctic Archipelago. Measurements were made from sea ice in water depths of between 200 and 600 m. The mean heat flow for the two stations on the continental shelf in the Arctic Ocean was (0.46 ± 0.08) x 10^{-6} cal cm^{-2} s^{-1}. The mean heat flow for the five stations in the channels to the east of Mould Bay was (1.46 ± 0.16) x 10^{-6} cal cm^{-2} s^{-1}. The instrument and field methods are described. Errors due to the instrument and to the environment are discussed.

REF. NO.: 0359-78

SUBJECT CODES: E3

AUTHOR: PECK, G. S.

YEAR: 1978

TITLE: Arctic Oceanographic Data Report 1977, Western Viscount Melville Sound

SOURCE: Fisheries & Environment of Canada, Internal Report, Ocean and Aquatic Sciences, Central Region Data Report Series No. 78-3, 150 p.

STATUS: Public

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

This report contains current, tidal and CTD data collected during a short Arctic field program in March and April, 1977. Current meters were moored across M'Clure and Prince of Wales Straits and CTD measurements were taken along these two transects and a third in Viscount Melville Sound. Tide gauges were deployed by the Canadian Hydrographic Service to enable sounding reductions to be made, with an additional instrument being specifically deployed for our program. Details of the field program are available in a separate report.

REF. NO.: 0360-79

SUBJECT CODES: J (A2, A3, A4, A5, A6, A8, C1, E1, E2, E3, E4, E5, E6, E7)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Ottawa, Ontario

YEAR: 1979

TITLE: Review of Surficial Geology and Engineering Hazards in the Canadian Offshore

SOURCE: Proceedings, First Canadian Conference on Marine Geotechnical Engineering, The National Research Council of Canada and the Canadian Geotechnical Society, Calgary, Alberta, April 1979, pp. 6-46

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This paper reviews the surficial geology and engineering hazards of the Canadian offshore. A brief section deals with the Canadian Arctic Archipelago region. Marine surficial geology, the Arctic Island channels, ice scouring, fault traces, gas hydrates and the current regime are all discussed.

REF. NO.: 0361-79

SUBJECT CODES: J (A2, A3, A4, A5, A6, A8, C1, E1, E2, E3, E4, E5, E6, E7)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Ottawa, Ontario

YEAR: 1979

TITLE: Review of Surficial Geology and Engineering Hazards in the Canadian Offshore

SOURCE: Maritime Sediments, Vol. 15, Nos. 2 and 3, August-December 1979, pp. 55-91

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This paper reviews the surficial geology and engineering hazards of the Canadian offshore. A brief section deals with the Canadian Arctic Archipelago. Marine surficial geology, the Arctic Island channels, ice scouring, fault traces, gas hydrates and the current regime are all discussed.

REF. NO.: 0362-74

SUBJECT CODES: A6 (A2, A5, B1, B3, B4.1, B6, B7)

AUTHOR: PELLETIER, B. R., ROSS, D. I., KEEN, C.E.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia
KEEN, M. J.
Department of Geology
Dalhousie University, Halifax, Nova Scotia

YEAR: 1974

TITLE: Geology and Geophysics of Baffin Bay

SOURCE: In Offshore Geology of Eastern Canada, Geological Survey of Canada, Paper 74-30, Vol. 2, pp. 247-258

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

Analysis of bottom samples obtained in Baffin Bay over a period of some years and comparison of the results with bathymetric data show that sedimentation in the bay is clastic and follows a classical pattern. The pattern is distorted by ice-rafted sediments, which, although present everywhere in the bay, are concentrated around the periphery where the ice drift follows the route established by the surface currents. A calcareous muddy layer in cores from the deep basin indicates a significant supply of carbonate detritus from the west. Interpretation of geophysical data obtained in the bay and Arctic sounds indicates that the bay may have been formed by seafloor spreading. Evidence is presented to support the hypothesis that Baffin Bay and Nares Strait provide a link between spreading in the Labrador Sea area of the northern Atlantic and the Arctic Ocean. It is suggested that the continental shelves and sounds adjacent to the bay may have been part of a shallow Paleozoic basin ruptured along its longitudinal axis during the formation of the Baffin Bay ocean basin.

REF. NO.: 0363-73

SUBJECT CODES: A5

AUTHOR: PELLETIER, B. R.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1973

TITLE: Clastic Sedimentation in Arctic Fluvial-Deltaic-Marine Systems, District of Franklin, Canada

SOURCE: Report of Activities, Part B: November 1972 to March 1973, Paper 73-1, Part B, Geological Survey of Canada, pp. 87-88

STATUS: Public

MAP NUMBERS: 7951, 7952

COMMENTS/SUMMARY:

A suite of sediments from an Arctic river and associated delta on the south side of Marie Bay, Melville Island was subjected to textural analysis at Acadia University, while a comparable suite of sediments from the north side of Marie Bay, as well as samples from adjacent channels were analysed in the laboratory of the Atlantic Geoscience Centre. From the 90 samples studied, the textural parameters examined include the following: mean diameter, standard deviation, entropy, modality, percent gravel sand, mud, silt, clay and the silt/clay ratio. A separate pattern of sedimentation was revealed for each environment studied.

REF. NO.: 0364-68

SUBJECT CODES: H4 (H1)

AUTHOR: PELLETIER, B. R.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1968

TITLE: The Submersible PISCES Feasibility Study in the Canadian Arctic

SOURCE: Maritime Sediments, Vol. 4, No. 2, August, pp. 69-72

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503, 7830, 7831, 7940, 7950

COMMENTS/SUMMARY:

During a six-week period in August and September of 1968, the submersible PISCES, owned and operated by Hydrodynamics International of Vancouver, Canada, made a series of dives in the waters of the Canadian Arctic Archipelago to assess the feasibility of using this vehicle to undertake geological research, exploration, and mapping of the sea floor. The operations were carried out from the CCGS LABRADOR of the Canadian Department of Transport and were in concert with programs of the Johns Hopkins University, Maryland, the Defence research Establishment Pacific and the Pacific Oceanographic Group of the Fisheries Research Board of Canada, both located on Vancouver Island, British Columbia, and the Atlantic Oceanographic Laboratory at the Bedford Institute, Dartmouth, Nova Scotia.

This paper reports on the operation of the submersible PISCES, its usefulness for geological mapping and other oceanographic studies and its potential role in future marine studies.

REF. NO.: 0365-67

SUBJECT CODES: A5

AUTHOR: PELLETIER, B. R.
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1967

TITLE: Sedimentation in Arctic Waters of the Western Queen Elizabeth Islands; District of Franklin, Canada

SOURCE: Maritime Sediments, Vol. 3, No. 4, October 1967, pp. 90-99

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953

COMMENTS/SUMMARY:

This report is a preliminary statement of continuing studies of sedimentation carried out since 1960 in Canadian Arctic waters under the direction of the Polar Continental Shelf Project (Department of Energy, Mines and Resources). The program includes investigations in the following sedimentary environments: lacustrine, fluvial, inshore deltaic, inshore non-deltaic, channel, and offshore marine (i.e. Arctic continental shelf). The major area of study is in the western portion of the Queen Elizabeth Islands.

REF. NO.: 0366-66

SUBJECT CODES: J (A5, A6, A11, B1, B6, B7, C1, D1, E3, I2)

AUTHOR: PELLETIER, B.R. and COLLIN, A.E.
Bedford Institute of Oceanography
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1966

TITLE: Canadian Arctic Archipelago and Baffin Bay

SOURCE: In The Encyclopedia of Oceanography, Encyclopedia of Earth Sciences Series, Vol. 1, Edited by Rhodes W. Fairbridge, Reinhold Publishing Corporation, New York, New York, pp. 157-168

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This overview of the Canadian Arctic Archipelago examines the following topics relevant to this compilation: temperature, salinity, bathymetry, general circulation, geology, sediments, foraminefera, sea ice, and the origin of the arctic channels. An excellent reference list for the period up to 1966 is provided.

REF. NO.: 0367-66

SUBJECT CODES: C1 (A1, A6)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1966

TITLE: Development of Submarine Physiography in the Canadian Arctic and Its Relation to Crustal Movements

SOURCE: In Continental Drift, The Royal Society of Canada Special Publications, No. 9, Edited by G. D. Garland, pp. 77-101

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report deals primarily with the development of submarine physiography in the Canadian Arctic, and is based on the hypothesis of Fortier and Morley (1956) that the Arctic Archipelago is a geological unity and that the network of inter-island channels is a submerged river system of Tertiary age, which previously drained a continuous land mass. The new soundings, and the palaeontological and lithological evidence obtained with bottom grabbers and cores, offer additional support to the general theory of subaerial erosion of a pre-exising single land mass by streams. Certain lines of topographic evidence indicate that modification of such river valleys by valley glaciers also took place (Pelletier 1961, 1962, 1963; Horn, 1963) and was followed by widespread submergence. This submergence was followed by an interval of post-Pleistocene emergence, according to the comprehensive study of relict strand lines and raised marine deposits carried out by Craig and Fyles (1960). This emergence may be continuing although the gravity data of Sobczak (1963) tentatively indicate that the western part of the Archipelago and adjacent continental shelf may be in isostatic equilibrium.

REF. NO.: 0368-65

SUBJECT CODES: A5 (A6, C1, D1)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1965

TITLE: Bottom Studies on the Arctic Continental Shelf (Polar Continental Shelf Project)

SOURCE: Report of Activities: Field, 1964, Geological Survey of Canada, Paper 65-1, p. 12

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953

COMMENTS/SUMMARY:

This is a continuing reconnaissance program of sampling bottom sediments of the Arctic Ocean in an area extending from the western coast of Borden, Brock, and Prince Patrick Islands, to the edge of the Continental Shelf and upper Continental Slope. Soundings were also made in order to obtain a map and profile of the submarine topography in this area.

On the basis of field observations the bottom sediments consist mostly of fine to coarse sand in the inner shelf area and fine sand, silt, and mud on the outer area of the Continental Shelf. The soundings show the occurrences of submarine valleys at 400 metres depth in the inner shelf area, and the merging of these valleys onto the floor of the outer part of the Continental Shelf.

The tentative interpretation based on these field observations is that the inner shelf is a drowned area of relief that was formed under conditions of subaerial erosion; that such erosion comprised normal fluvial action in pre-Pleistocene time followed by valley glaciation.

REF. NO.: 0369-64

SUBJECT CODES: A5 (A6, A11, C1, D1)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institue of Oceanography
Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Marine Geology Program - Arctic Ocean

SOURCE: Summary of Activities: Field, 1963, Geological Survey of Canada, Paper 64-1, pp. 6-7

STATUS: Public

MAP NUMBERS: 7952

COMMENTS/SUMMARY:

Offshore sampling begun in 1960 over the Arctic continental shelf adjacent to the western Queen Elizabeth Islands was continued. In 1963 the study extended 50 miles across the shelf between the northwestern tips of Borden and Prince Patrick Islands.

Work was undertaken to obtain data on bottom topography, sediments and fauna. Soundings were made by means of a line and metre block, and bottom samples were obtained by means of coring tubes and grab samplers.

Submarine topographic features exist similar to those on adjacent islands. Long, deep valleys and broad plateau-like features and shoulders extend offshore from the islands 40 to 50 miles, and then merge into the relatively uniform surface of the continental shelf proper. Between Borden, Brock and Prince Patrick Islands, shallows occur at 35 to 50 metres below sea level. A few miles east and west of these shallows are depths greater than 400 metres, suggesting drowned topographic basins separated by a submerged watershed.

Sediments consist of silts and muds in the troughs at greater depths, and coarse quartz sands and polymict gravels at shallow depths, which is similar to sediments on coastal segments of adjacent islands.

REF. NO.: 0370-64

SUBJECT CODES: A2 (A3, A5, A6, C1)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedfort Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Marine Geology Program - Eastern Arctic Islands

SOURCE: Summary of Activities: Field, 1963, Geological Survey of Canada, Paper 64-1, pp. 7-8

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

The was part of an oceanographic program of the Bedford Institute of Oceanography carried out aboard the CCGS "Labrador" of the Department of Transport. Studies were made in the waters between and including northern Baffin Bay and Hall Basin to the north, in that narrow stretch of water separating Greenland from Ellesmere Island. The program included an oceanographic investigation of Jones Sound lying between Devon and Ellesmere Islands.

The purpose of the geological project was to obtain bottom samples, data, and geophysical records. Records, soundings, and samples indicate a geological unity of the Arctic Islands as previously suggested by Fortier and Morley and that this geological unity also extends to northern Greenland at least. In the extreme north there does not appear to be a major rift system. The submarine topographic features as well as these features of the adjacent shores suggest a purely physiographic origin of subaerial erosion by rivers and glaciers (along earlier structural trends, presumably), followed by submergence and presently emergence.

REF. NO.: 0371-63

SUBJECT CODES: A5 (A6)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1963

TITLE: Sedimentation and Submarine Topography of the Continental Shelf, Western Queen Elizabeth Islands

SOURCE: Summary of Research: Field, 1962, Geological Survey of Canada, Paper 63-1, pp. 4-5

STATUS: Public

MAP NUMBERS: 7953

COMMENTS/SUMMARY:

This is a continuing study begun in 1960; this year reconnaissance traverses were made across parts of the continental shelf between Ellef Ringnes and Borden Islands, and extended to the upper continental slope. Bottom grab samples and, in some cases, short cores were obtained. Initial observations on the nature of the continental shelf and its sediments are presented.

REF. NO.: 0372-63

SUBJECT CODES: J (A2, A3, A5, A6, A8, A11)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1963

TITLE: Contributions of the Marine Geology Unit of the Geological Survey of Canada to the Polar Continental Shelf Project, District of Franklin, 1962

SOURCE: Geological Survey of Canada, Unpublished Topical Report 69, 15 p. [abstract only]

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The purpose of this report is to summarize the activities of that part of the marine geology group of the Geological Survey of Canada which is participating in the Polar Continental Shelf project. Programs and results of previous field seasons were reviewed earlier (Topical Report 47), and are summarized here together with current projects. Future programs for field and laboratory studies are also presented. Some conclusions and applications involving the earlier research programs are given by means of illustrations. These illustrations demonstrate the direction that certain programs in the future will take. References are made to earlier reports and to projected publications of the near future.

REF. NO.: 0373-62

SUBJECT CODES: A2 (A5, A6, C1, H1)

AUTHOR: PELLETIER, B. R.
Geological Survey of Canada
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

YEAR: 1962

TITLE: Submarine Geology Program, Polar Continental Shelf Project, Isachsen, District of Franklin

SOURCE: Geological Survey of Canada, Paper 61-21, 12 p.

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953, 7954

COMMENTS/SUMMARY:

The purpose of this report is to describe the organization and working methods of a submarine geology project that commenced in April 1960 in the inshore and offshore waters of the western Queen Elizabath Islands, District of Franklin.

The submarine geology program was designed to investigate conditions of sedimentation, the distribution and nature of sediments on the Arctic shelf, and to determine the geological history of these sediments. Fossils were collected in order to establish ecological niches, and eventually to distinguish between indigenous and transported faunas. From such studies it is anticipated than an interpretation of past climatological events can be made. Submarine topography was also studied in order to interpret, partly, the physiographic history of the Arctic continental shelf and adjacent island channels.

A broad sampling program was undertaken to obtain information on the source of the sediments forming the marine deposit, the alteration of this material during sedimentary transport, and its present nature. To trace the various stages of textural and mineralogical alteration, samples were collected from outcrops, river beds, deltas, bottoms of protected bays, island channels and from offshore areas on the continental shelf. All samples were sent to the laboratories of the Geological Survey at Ottawa, for palaeontological, mechanical, petrographic, spectrographic, and X-ray analyses.

REF. NO.: 0374-84

SUBJECT CODES: H1 (E5)

AUTHOR: PETERSEN, J. K., KAWASAKI, K., OSTERKAMP, T. E., and SCOTT, J. H.

YEAR: 1984

TITLE: Well Logging in Permafrost

SOURCE: In Abstracts and Program, Workshop on Permafrost Geophysics, Golden, Colorado, October 23-24, 1984. Committee on Permafrost, Polar Research Board, National Academy of Sciences, Washington, D.C.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Exploration geophysics has proven to be very valuable for the detection and delineation of permafrost. Of the many geophysical methods used, well logging can not only be used for detection and delineation but also for the in-situ determination of many physical properties of permafrost. Well log evaluation in permafrost can be conveniently divided into several classes of logs, two of which are, logs from large diameter drill holes, usually drilled through the permafrost for oil field development, and logs from holes that have been drilled specifically for the geophysical or geotechnical evaluation of the permafrost.

The compensated bulk density agrees fairly well with the bulk densities found in the drill holes as determined by sampling. Moisture content in the permafrost as determined by the calibrated neutron log does not agree very well with the moisture contents determined in the laboratory. Logs of a hole drilled through a buried artificial ground ice mass showed that the natural gamma log count rate decreases significantly in the vicinity of the ice, indicating that the natural gamma log could prove very useful for the detection and delination of massive ice.

REF. NO.: 0375-76

SUBJECT CODES: A7

AUTHOR: ZOLTAI, S. C.
Northern Forest Research Centre
Environment Canada
Edmonton, Alberta
WOO, V.
Soil Science Department
University of Manitoba
Winnipeg, Manitoba

YEAR: 1976

TITLE: Soils and Vegetation of Somerset and Prince of Wales Islands, District of Franklin

SOURCE: Geological Survey of Canada, Paper 76-1B, pp. 143-145

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

The soils and vegetation of Somerset Island and the northern part of Prince Wales and surrounding islands, an area of about 43 500 km^2 were surveyed in conjunction with terrain studies of surficial geology, geomorphology, and geophysical conditions. The objectives of this survey were: 1) to determine and map the vegetation of the area, 2) to determine and map the soils of the area, and 3) to determine conditions and areas that are sensitive to disturbances. In this paper a summary of the findings is presented.

During the survey all major terrain types, which were identified in the terrain studies, were visited and information was gathered on the soils and vegetation. The soil and vegetation were described at 200 sites, but many more informal observations were made. Detailed studies were carried out at 24 sites; at each site a soil pit was excavated at least 50 cm below the permafrost table and detailed sampling was made.

REF. NO.: 0376-76

SUBJECT CODES: A5

AUTHOR: BOYD, R. W. and PIPER, D. J. W.
Departments of Geology and Oceanography
Dalhousie University, Halifax, Nova Scotia

YEAR: 1976

TITLE: Baffin Bay Continental Shelf Clay Mineralogy

SOURCE: Maritime Sediments, Vol. 12, No. 1, pp. 17-18

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

We have used X-ray diffraction analysis of the carbonate-free fraction ($<50 \times 10^{-6}$ m) of about 50 sediment samples to try to distinguish sources of fine sediment. A preliminary interpretation of the first 14 of these analyses is given by Piper and Slatt (1976) who describe the methods used, which in general follow those of Biscaye (1965). About 35 of the samples are surficial, the remainder are resedimented material (mostly mudflows) from the central basin of the Bay, believed derived from shelf sediments during Pleistocene glaciation.

Almost all samples contain significant amounts of illite-mica, chlorite, montmorillonite, kaolinite, quartz and feldspars in the $<2 \times 10^{-6}$ m fraction.

Most sediments can be interpreted as representing mixtures from four main sources: 1) a clastic sedimentary source; 2) a source rich in carbonate; the paleozoic limestones and shales of Devon and Ellesmere Islands constitute this source; 3) a source with abundant illite/mica, a high feldspar to quartz ratio, and crystalline rock fragments abundant in the sand fraction; 4) a fourth source is inferred, although it is not well represented by any single sample. It is a clastic sedimentary source rich in montmorillonite and probably also chlorite.

REF. NO.: 0377-80

SUBJECT CODES: H1, H5

AUTHOR: POLAR GAS PROJECT
Toronto, Ontario

YEAR: 1980

TITLE: Byam Martin (North) Channel Survey, March/May 1980

SOURCE: Polar Gas Project, Internal Report, February 1980, Panarctic Call No. CA7 PG/80.B95, 7 p.

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Polar Gas planned to conduct a hydrographic survey of the Byam Martin (North) Channel to determine the feasibility of a pipeline crossing. The proposed crossing is approximately 93 km wide and in excess of 400 metres deep and is located between Sabine Peninsula on Melville Island and Lougheed Island.

The objective of this proposed study was to undertake a detailed survey of the proposed crossing between Melville Island and Lougheed Island and to obtain information necessary for a detailed feasibility study and cost estimate for a pipeline crossing of the channel.

Information required will be gathered along the survey corridor as follows:

1. Continuous ice thickness profile across the width of the channel.
2. Continuous sea bottom profile using a specially designed hydrographic probe. Readings will be taken through the ice every 200/250 metres, with closer spacing at shore approaches.
3. Continuous sub-bottom profile.
4. Soil samples taken every 2 km.
5. A side scan sonar record taken at every survey probe location.
6. Current and tide measurements at selected locations.

A cost estimate for this survey is also included in this report.

REF. NO.: 0378-80

SUBJECT CODES: H3 (H2, H5)

AUTHOR: POLAR GAS LTD.
Toronto, Ontario

YEAR: 1980

TITLE: Tour of Byam Martin Channel (North) Field Survey

SOURCE: Polar Gas Project Internal Report, April 1980,
Panarctic Library Call No. CA7 P6/80.T51, 11 p.

STATUS: Proprietary

MAP NUMBERS: 7831, 7951

COMMENTS/SUMMARY:

Polar Gas has informed the National Energy Board of its intention to present an alternative to the present filing which will utilize the "Y" Line configuration to connect Delta gas with Arctic Islands gas in a common pipeline system to southern Canada. To confirm the feasibility of the Byam Martin Channel crossing, Polar Gas is conducting a survey which will determine the bathymetric, channel bottom and ice characteristics at the crossing location. The purpose of this report is to review the results of survey work completed to date and to examine the methods and equipment used to obtain the survey data. Ice conditions across the Byam Martin Channel can be observed, and arctic weather conditions will be experienced which will be similar to conditions expected during construction of the crossings.

REF. NO.: 0379-79

SUBJECT CODES: J (A3, A5, A6, A9, D1, E3, I2)

AUTHOR: POLAR GAS LTD.
Toronto, Ontario

YEAR: 1979

TITLE: M'Clure Strait Marine Geophysical Investigation

SOURCE: Polar Gas Project, Internal Report, April 1979, Panarctic Library Call No. CA7 PG/79.M18, one appendix

STATUS: Proprietary

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

During late 1978 and early 1979, Polar Gas carried out a series of office studies and a major field investigation of M'Clure Strait. The program was intended to establish the physical characteristics of the Strait in sufficient detail to allow determination of the feasibility of laying a large diameter gas pipeline from Dundas Peninsula, Melville Island to Peel Point, Victoria Island. This report describes the activities and results of the program and provides the physical data base for a crossing feasibility report by R. J. Brown & Associates.

Ice conditions, tides and currents, bottom profile, bottom conditions and weather conditions are described in this report. Section 1 of the Appendix contains a report by Engineering Service Ltd. on the interpretation of sub-bottom data from M'Clure Strait. Section 2 of the Appendix is a report by EBA Engineering Consultants Ltd. on seabed samples (Ref. No.: 0463-79).

REF. NO.: 0380-78

SUBJECT CODES: J (A2, A5, A6, A7, A8, A9, B1, B5, B6, B7, D1, E1, E3, E5, F1, G1, H1, H3, H4, I1, I2)

AUTHOR: POLAR GAS LTD.
Toronto, Ontario

YEAR: 1978

TITLE: Facilities, Volume III

SOURCE: Polar Gas Project, Support Documents submitted to the National Energy Board and the Department of Indian Affairs and Northern Development, Parts A and B

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume III is one of a series of support documents submitted to the National Energy Board for a certificate of public convenience and necessity authorizing the construction of pipeline facilities. Part A is an introduction to this portion of the submission. Part B comprises a summarized evaluation of the following aspects of the physical environment: seismicity, coastal processes, sea bed morphology, bedrock geology, seabed soils, geotechnical properties, permafrost, oceanography, sea ice, and ice scour. Other topics such as the use of sea ice as a working platform, frost heave and thaw subsidence are also briefly addressed.

REF. NO.: 0381-78

SUBJECT CODES: J (A5, A6, A7, B1, H3, H5)

AUTHOR: POLAR GAS LTD.
Toronto, Ontario

YEAR: 1978

TITLE: Public Interest, Volume V

SOURCE: Polar Gas Project, Support Documents submitted to the National Energy Board and the Department of Indian and Northern Development, Part A - Environmental Statement

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume V is one of a series of support documents submitted to the National Energy Board for a certificate of public convenience and necessity authorizing the construction of pipeline facilities. Part A - the environmental statement, consists of four chapters: Introduction, Summary, Project Overview, and Environmental Research. The Project Overview section is particularly useful as it describes the full range of proposed construction activities and the logistics of the program. The Environmental Research section gives a concise summary of the following: atmospheric environment, terrestrial environment, fresh and salt water environments and land use.

REF. NO.: 0382-80

SUBJECT CODES: H1 (E3)

AUTHOR: POUNDER, E. R.
Marine Sciences Centre
McGill University, Montreal, Quebec

YEAR: 1980

SOURCE: GEOS, Vol. 61, No. 17, April 22, 1980, p. 278
[abstract only]

TITLE: Physical Oceanography in the Central Arctic

STATUS: Public

MAP NUMBERS: 7954

COMMENTS/SUMMARY:

As part of LOREX 79, ice station ICEMAN was established April 4, 1979 at 88°41'N, 175°43'E and operated to May 28, 1979 (89°52.3'N, 48°26'W). During the first few days of the drift ICEMAN passed over the Lomonosov Ridge, recording a minimum depth of 956 m. Oceanographic measurments were made daily for 40 days. Each day a profile of current, conductivity, temperature and depth was made to a maximum depth of 1400 mm using an RCM-4 Aanderaa current meter. CTD readings were continuous but the meter had to be stopped to give correct current readings so that current profiles were only sampled, if frequently. Each run took about 8 hours. In addition, another Aanderaa meter was moored at 5 m and sampled currents every 10 minutes throughout the experiment and an Inter-Ocean current meter moored at 40 m was used for frequent time-series readings. Current directions are uncertain to about $\pm$ 20°. Direction was sensed with a compass, the directing field is small and the magnetic variation near the pole is uncertain and rapidly changing. Some good calibrations on variation were obtained from sun shots but there was a long period of overcast in the middle of the experiment. Currents were generally small, often below the effective threshold of 3 cm s^{-1}. On the average they were directed toward the Ridge from the Atlantic side. On the assumption (very uncertain) of temporal and spatial invariance of currents, an estimate is made of the volume transport across the Ridge in the vicinity of the North Pole.

REF. NO.: 0383-76

SUBJECT CODES: A7 (A1)

AUTHOR: PREST, V. K.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Quaternary Geology

SOURCE: In Geology and Economic Minerals of Canada, Part B, Economic Geology Report No. 1, Ch. XII, Edited by R. J. W. Douglas, Geological Survey of Canada, Department of Energy, Mines and Resources, Canada, pp. 675-764

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This section of the major reference work on the Geology of Canada summarizes the quaternary geology of Canada. Various portions of the section deal with the older glacial and non-glacial record, the classical Wisconsin, post-glacial events and economic considerations. The Arctic Lowlands, Western Canadian Shield, the Fox-Baffin Glacier Complex, and the Queen Elizabeth Islands Glacier Complex are discussed in detail.

REF. NO.: 0384-52

SUBJECT CODES: B1 (A7)

AUTHOR: PREST, V. K.
Geological Survey of Canada
Ottawa, Ontario

YEAR: 1952

TITLE: Notes on the Geology of Parts of Ellesmere and Devon Islands, Northwest Territories

SOURCE: Geological Survey of Canada, Paper 52-32

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

The following notes mainly concern the east coast of Ellesmere Island and the south coast of Devon Island, along which the writer observed the geology from shipboard or made brief 3- to 4-hour stops ashore by means of helicopter or small boat. Brief mention is also made of Eureka Sound, Slidre Fiord, on the west coast of Ellesmere Island, and of Graham Island off the southwest coast of Ellesmere, from which places the writer was supplied with samples by the geographical and biological observers. Specimens representative of the bedrock were collected wherever possible, and fossils were collected from bedrock and raised beaches. Shells were also collected from the present-day beach at Thule, Greenland, the most northerly place where they were seen, for comparative purposes.

The main objective on trips ashore was to gather information on the character and attitude of the bedrock and, where fossiliferous, to gather representative suites at selected or general horizons that might serve to establish the age of the rocks as well as provide scientific data on these northern fossil assemblages. Information was also gathered on the Pleistocene deposits, with special note being made of the raised beaches and their pelecypod content.

REF. NO.: 0385-75

SUBJECT CODES: I2

AUTHOR: RAMSEIER, R. O. and DRAPIER-ARSENAULT, L.
Department of the Environment
Ottawa, Ontario
CAMPBELL, W. J. and WILSON, K. L.
U.S. Geological Survey
Tacoma, Washington
WEEKS, W. F.
U.S. Army Cold Regions Research and
Engineering Laboratory, Hanover, United States

YEAR: 1975

TITLE: Ice Dynamics in the Canadian Archipelago and Adjacent Arctic Basin as Determined by ERTS-1 Observations

SOURCE: Canadian Society of Petroleum Geologists, Memoir 4, pp. 853-877

STATUS: Public

MAP NUMBERS: 7503, 7832, 7952, 7951, 7953

COMMENTS/SUMMARY:

ERTS-1 "Quicklook" imagery for the period March to November 1973 has been utilized to study sea ice in the Canadian archipelago and in the adjacent Arctic basin. The imagery, which provides extensive coverage of the area of interest, contains detailed information on variations in sea ice dynamics and ice morphology on a time scale ranging from several days to seasons. Because of the sidelap of the ERTS-1 orbits over the study area, recognizable ice floes could be tracked on repetitive daily images for time periods as long as 6 days. Information on ice drift velocities, compactness, floe size, fast ice and ice melt patterns, and dates of breakup and freezeup were obtained. Although details of the ice motion were complex, it was possible to delineate some general patterns such as the advection of ice southward through the islands of the archipelago toward Viscount Melville Sound, eastward out of Lancaster Sound, and westward out of Amundsen Gulf. Ice drift velocities of greater than 58 km/day were measured in Lady Ann Strait while values of 20 to 30 km/day were common in Amundsen Gulf.

REF. NO.: 0386-82

SUBJECT CODES: F1 (B7)

AUTHOR: REID, I.
Department of Geology
Dalhousie University, Halifax, Nova Scotia
FALCONER, R. K. H.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1982

TITLE: A Seismicity Study in Northern Baffin Bay

SOURCE: Canadian Journal of Earth Sciences, Vol. 19, pp. 1518-1531

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

A temporary seismograph network was operated in a seismically active region of northern Baffin Bay during part of September-October 1978. The array comprised three portable smoked-paper seismographs on Baffin Island and three ocean-bottom seismographs in Baffin Bay. During the experiment a number of earthquakes were recorded sufficiently well to be located by an iterative procedure. Two seismicity regimes are distinguished. The first is a narrow onshore zone of shallow (less than 10 km) earthquakes near and parallel to the coast. Most of this activity was concentrated in the Cape Jameson region of Baffin Island, with one earthquake of magnitude 3. A second, more diffuse group of events was offshore in Baffin Bay. These were deeper (less than or equal to 50-60 km) and indicated a possible trend normal to the coast. They may be associated with the fault plane of the 1933 magnitude 7.3 Baffin Bay earthquake. The seismicity results and the Baffin Island-Baffin Bay margin structure deduced from earthquake and explosion travel times are in agreement with previous studies.

REF. NO.: 0387-77

SUBJECT CODES: E3

AUTHOR: RENEWABLE RESOURCES CONSULTING SERVICES LTD.

YEAR: 1977

TITLE: A Review of Ocean Currents and Surface Winds of Lancaster Sound

SOURCE: Prepared for Norlands Petroleums Ltd., Prepared by P. H. R. Stepney, 65 p. (Norlands Petroleums Lancaster Sound Study Report NR20, available from Pallister Resource Management Ltd.)

STATUS: Public

MAP NUMBERS: 7503, 7220

COMMENTS/SUMMARY:

Norlands Petroleums Ltd. of Calgary is anticipating drilling an offshore exploratory oil well in Lancaster Sound, N.W.T. The Arctic Waters Advisory Committee has given Norlands an Approval in Principal outlining various activities which must be performed before being issued a drilling permit; part of the Approval is a set of environmental study requirements. Renewable Resources Consulting Services Ltd. was contracted by Norlands Petroleums Ltd. to undertake a study of ocean currents and surface winds in Lancaster Sound. Renewable Resources was required to "identify all information that is available on the oceanographic characteristics of Lancaster Sound," prepare a "summary of the literature detailing surface current directions and velocities and temperature and salinity profiles throughout the Sound," and to "identify the wind characteristics of the Sound and the relationship between wind readings from ships and wind readings for land stations."

This report describes the methods by which this task was accomplished. A fairly detailed review of current studies is included.

REF. NO.: 0388-82

SUBJECT CODES: B4.2 (B1, B3, B6, B7)

AUTHOR: RICE, P. D. and SHADE, B. D.
Petro-Canada Exploration Inc.,
Calgary, Alberta

YEAR: 1982

TITLE: Reflection Seismic Interpretation and Seafloor Spreading History of Baffin Bay

SOURCE: In Arctic Geology and Geophysics, Edited by A. F. Embry and H. R. Balkwill, Proceedings of the Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, Calgary, Alberta, Memoir 8, pp. 245-265

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The interpretation of over 30000 km of multichannel reflection seismic in the general Lancaster Sound-Baffin Bay-Davis Strait area provides the following new information: (1) The extinct spreading centre is, locally at least, asymmetrically located within the present-day Baffin Bay basin; (2) During the Cretaceous-Tertiary opening of the Baffin Bay area the bounding plates did not behave in a rigid manner; (3) Portions of Davis Strait may be floored by continental crust; (4) The geology of the Greenland and Baffin Island shelves is markedly different; (5) Paleozoic and older sediments may be more extensively distributed than previously suspected; and (6) The five regional unconformities seen in Bylot Basin can be related to the tectonic history of the area. This new information, in particular the non-rigid behaviour of the bounding plates, has been used to modify existing Baffin Bay spreading scenarios. Unlike previous reconstructions, the resulting model honours both the geophysical interpretation of the Labrador Sea and the mounting geological evidence that minimal translation took place along the Wegener Transform Fault in Nares Strait.

REF. NO.: 0389-73

SUBJECT CODES: B4.3

AUTHOR: ROSS, D. I.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1973

TITLE: Free Air and Simple Bouguer Gravity Maps of Baffin Bay and Adjacent Continental Margins

SOURCE: Marine Sciences Directorate, Department of the Environment, Marine Science Paper 12, also Geological Survey of Canada, Paper 73-37, 11 p.

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503, 7950

COMMENTS/SUMMARY:

Free air and simple Bouguer gravity anomaly maps of Baffin Bay are given at a scale of 1:2 million and described along with the regional physiography of the area. The data used in compiling the maps have been obtained on a number of Bedford Institute of Oceanography cruises and from other Government and Industrial sources. While the coverage is reconnaissance in nature it is sufficient to define the major features in the area. The maps therefore provide a good regional framework within which future detailed surveys can be interpreted.

REF. NO.: 0390-73

SUBJECT CODES: A6

AUTHOR: SADLER, H. E.
Defence Research Establishment
National Defence Headquarters, Ottawa, Ontario

YEAR: 1973

TITLE: On the Oceanography of Makinson Inlet

SOURCE: Arctic, Vol. 26, No. 1, March 1973, pp. 76-77

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

This short note describes a few observations from a reconnaissance survey of Makinson Inlet. Bathymetric salinity, temperature and shoreline observations are reported.

REF. NO.: 0391-65

SUBJECT CODES: B4.2

AUTHOR: SANDER, G. W. and OVERTON, A.
Earth Physics Branch
Energy Mines and Resources, Ottawa, Ontario

YEAR: 1965

TITLE: Deep Seismic Refraction Investigation in the Canadian Arctic Archipelago

SOURCE: Geophysics, Vol. 30, No. 1, pp. 87-96

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

During 1962 and 1963, the Dominion Observatory conducted refraction seismic surveys in the islands north of the Canadian mainland. These surveys are part of a project of the Government of Canada to explore the Polar Continental Shelf. The operation consisted of three stationary recording units and a shooting party which traversed the frozen sea in a tractor train. Three refraction-seismic profiles form a continuous section from the Canadian Shield through the Franklinian Geosyncline and the Sverdrup Basin to the Arctic Ocean. Post Devonian sediments in the Sverdrup Basin were found to be 10 km thick. The lower, basic portion of the crust is indicated by a velocity of 7.3 km/sec at a depth of 24 km and the base of the crust at 38 km.

REF. NO.: 0392-84

SUBJECT CODES: B1 (B2, B6, B7)

AUTHOR: SCHAU
Geological Survey of Canada
Ottawa, Ontario

YEAR: 1984

TITLE: Geology of Northern Melville Peninsula

SOURCE: Geological Survey of Canada, Open File No. 1046

STATUS: Public

MAP NUMBERS: 7067, 7502

COMMENTS/SUMMARY:

This open file consists of one preliminary map of the Melville Peninsula at a scale of 1:500,000. Schau has compiled geology by Blackadar (1960), Chandler, Frisch (1974, 1975, 1982), Heywood (1967, 1974), Mazinski (1980), Okulitch (1978), Sandford (1977), Schau (1975) and Trettin (1973). A brief summary of the geology is also included.

REF. NO.: 0393-82

SUBJECT CODES: J (A2, A6, A7, B1, B6, B7, F1, F2, G1)

AUTHOR: SEMPELS, J.
Petro-Canada Inc.
Calgary, Alberta

YEAR: 1982

TITLE: Geological Environments of the Eastern Arctic

SOURCE: Prepared for the Northern Affairs Program, Department of Indian and Northern Affairs, Eastern Arctic Marine Environmental Studies (EAMES) Program

STATUS: Public

MAP NUMBERS: 7067, 7220, 7302, 7503, 7950

COMMENTS/SUMMARY:

This report is a detailed review of the geological environment of the Eastern Arctic region which falls within the EAMES study area. Physiography, surficial geology, coastlines and vegetation are described for the Baffin and Bylot coasts, the Lancaster Plateau and the Fox Basin. The offshore physiography of Smith Sound, Jones Sound, Lancaster Sound and Baffin Bay are briefly described. Further sections address the Tectonic History of the region, the bedrock geology, the glacial geology including sea level changes and regional seismicity. An extensive list of references is also included.

REF. NO.: 0394-82

SUBJECT CODES: G1

AUTHOR: SEMPELS, J.
Petro-Canada Inc.
Calgary, Alberta

YEAR: 1982

TITLE: Coastlines of the Eastern Arctic

SOURCE: Arctic, Vol. 35, No. 1, pp. 170-179

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

A computer approach was developed and used to analyse the characteristics of coastlines present in the eastern Arctic. Results of this analysis indicate that: 1) almost 75% of all coastlines include a beach; 2) backshores are mostly steep and made up of bedrock; 3) beaches are made up mostly of coarse sediments; 4) the two most abundant types of coastal zones consist of steep rocky backshores without beach, and steep rocky backshores with colluvium and continuous boulder beaches; 5) the average slope of backshores and the size of the dominant beach sediment decrease towards the north; 6) fetch has little influence on coastal characteristics; and 7) coastal characteristics are determined primarily by the physiography of the adjacent land and by the nature of backshores.

REF. NO.: 0395-75

SUBJECT CODES: H4

AUTHOR: SKIDMORE, G. and BIRCHAM, J.
British Aircraft Corp., Ltd.

YEAR: 1975

TITLE: Development of an Unmanned Cable Controlled Submersible Vehicle for Surveying and Sampling Exposed Subsea Rock Shelves

SOURCE: Offshore Technology Conference, Houston, Texas, May 5-8, 1975, Paper No. OTC 2347, 12 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

In geological survey work on the U.K. Continental Shelf, the Institute of Geological Sciences found a need for new equipment to extend their operating capability beyond that of the conventional diver. To meet this requirement British Aircraft Corporation have developed and built and Unmanned Cable Controlled Submersible (CONSUB) which has recently completed a successful series of sea trials. During these trials, which took place around the Northern coast of the U.K. and in Norwegian waters, CONSUB successfully carried out photographic and video survey work together with retrieval of geological rock core samples.

REF. NO.: 0396-64

SUBJECT CODES: A11

AUTHOR: WAGNER, F. J. E.
Geological Survey of Canada

YEAR: 1964

TITLE: Faunal Studies, Polar Continental Shelf Project

SOURCE: Summary of Activities: Office and Laboratory, 1963, Geological Survey of Canada, Paper 64-2, p. 31

STATUS: Public

MAP NUMBERS: 7952, 7953

COMMENTS/SUMMARY:

Identification of microfaunas collected by B. R. Pelletier in 1962 from the Arctic Ocean west of the Queen Elizabeth Islands was commenced and completed in 1963. Thirty-four more species of Foraminifera were added to those previously listed from the Polar Continental Shelf Project area (Wagner, GSC Paper 61-27, 1962). An additional 16 molluscs, 8 ostracods, 3 annelids and 2 bryozoans were also found in the 1962 collections. Conclusions reached in Paper 61-27 regarding depth zonation of the faunas and indicator species are essentially unchanged. However, a finer zonation of faunas on the continental shelf now appears possible.

REF. NO.: 0397-70

SUBJECT CODES: B4.3

AUTHOR: SOBCZAK, L. W. and WEBER, J. R.
Earth Physics Branch
Energy, Mines and Resources
Ottawa, Ontario

YEAR: 1970

TITLE: Gravity Measurements over the Queen Elizabeth Islands and Polar Continental Margins

SOURCE: Gravity Map Series, Earth Physics Branch, Energy, Mines and Resources, Nos. 115, 116, 14 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The Dominion Observatory has made about 8,800 gravity measurements over the Queen Elizabeth Islands and Arctic Ocean between 1960-1968. Measurements were made both on land and on the sea-ice of the ocean and inter-island areas. The Bouguer anomaly field shows that negative anomalies occur over sedimentary basins and mountainous areas, positive anomalies occur along moderatly folded regions and large positive anomalies occur over the ocean. With the exception of the anomalies over the ocean and mountainous regions, the anomalies correlate well with (1) changes in lithologies of Paleozoic and Precambrian rocks, (2) evaporite and basic rocks, and (3) changes in thicknesses of clastic and carbonate sediments. The Archipelago region west of 90°W longitude has a mean elevation of 15 m and an average Bouguer anomaly of 6 mgal and appears to be in isostatic equilibrium. This suggests that the large thickness (10 km) of clastic sediments is compensated.

REF. NO.: 0398-65

SUBJECT CODES: B4.3 (H1)

AUTHOR: SOBCZAK, L. W.
Earth Physics Branch
Energy, Mines and Resources, Ottawa, Ontario

YEAR: 1965

TITLE: Completed Gravity Program, Polar Continental Shelf Project

SOURCE: Polar Continental Shelf Project, internal report, 16 p.

STATUS: Public

MAP NUMBERS: 7503, 7740, 7830

COMMENTS/SUMMARY:

The purpose of the gravity survey this year was to establish and extend a homogeneous network of gravity stations over the sea ice of the Arctic Ocean and Ballantyne Strait and over the land area of Somerset Island and Prince of Wales Island as proposed by Sobczak (1964). A total of 1250 gravity stations were occupied in these areas. Nearly 500 gravity observations were taken over the sea ice including a traverse 230 miles in length with station intervals of 20 miles at a bearing of 335 degrees from Cape Andreasen. Over Somerset Island and Prince of Wales Island 750 gravity observations were completed at intervals of 6 to 8 miles. The participating members, dates, instruments and number of stations in the various areas of the survey are summarized and the areas completed from 1960 to 1965 on the P.C.S.P. are outlined. A control station network consisting of 10 primary stations was established over Somerset Island and Prince of Wales Island. This is an extension of the earlier control network completed in 1963. Two new procedures, a turbine engine helicopter, the Bell 204B, and a depth recorder, the Dual channel Oscillo-riter, were employed to extend the gravity survey efficiently and to record the deeper water depths quickly over the sea ice of the Arctic Ocean.

REF. NO.: 0399-63

SUBJECT CODES: B4.3

AUTHOR: SOBCZAK, L. W., WEBER, J. R., GOODACRE, A. K. and BISSON, J.
Dominion Observatory, Ottawa, Ontario

YEAR: 1963

TITLE: Preliminary Results of Gravity Surveys in the Queen Elizabeth Islands with Maps (No. 12-Sverdrup Islands, No. 13-Prince Patrick Island, No. 14-Melville Island, No. 15-Devon Island)

SOURCE: Dominion Observatory, Gravity Map Series, 2 p. with maps

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

During the field seasons of 1960, 1961 and 1962, officers of the Dominion Observatory joined with those of the Polar Continental Shelf Project in extensive gravity surveys in the Queen Elizabeth Islands. The current interest of the petroleum exploration industry in these regions make it desirable that the geophysical information obtained on these surveys be released to the public as soon as possible. Therefore, the gravity data for some 3250 stations have been compiled in the form of Bouguer anomalies and four preliminary contour maps, Nos. 12, 13, 14, and 15, prepared for immediate release. The gravity stations on land and water were established at approximately 10 km intervals; their positions are indicated on the maps by single and double circles. The former represent detail stations, and the latter control stations. The locations and numbers of the control stations are illustrated separately. Principle facts of all stations and description of control stations are available upon request from the Dominion Observatory.

REF. NO.: 0400-63

SUBJECT CODES: B4.3

AUTHOR: SOBCZAK, L. W.
Dominion Observatory, Ottawa, Ontario

YEAR: 1963

TITLE: Regional Gravity Survey of the Sverdrup Islands and Vicinity with Map

SOURCE: Dominion Observatory, Gravity Map Series, No. 11, 19 p.

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The results of gravity surveys carried out in 1959 and 1960 are presented in the form of an anomaly map from which five profiles are drawn to analyze the major features of the Bouguer anomaly field. The observations are correlated with magnetic and geological information and the interpretation of the gravity data is based on measured densities and densities computed from seismic velocities. On the basis of a density contrast of 0.14 gm/cc and an anomaly change of 63 mgals over a distance of 120 miles, the calculations indicate depths to basement varying from 6,800 feet near Isachsen to possibly 42,000 feet near the axis of the Sverdrup Basin. A broad positive Bouguer anomaly over Peary Channel is partly attributed to a corresponding broad lens of basic rocks extending from an outcrop on the Fay Islands. A sharp negative anomaly over Peary Channel north of the Dumbbell gypsum dome suggests a similar but larger submerged dome.

REF. NO.: 0401-84

SUBJECT CODES: B4.3 (B6, B7)

AUTHOR: SOBCZAK, L. W.
Earth Physics Branch
Department of Energy, Mines and Resources
Ottawa, Ontario
OVERTON, A.
Geological Survey of Canada
Department of Energy, Mines and Resources
Ottawa, Ontario

YEAR: 1984

TITLE: Shallow and Deep Crustal Structure of the Western Sverdrup Basin, Arctic Canada

SOURCE: Canadian Journal of Earth Sciences, Vol. 21, pp. 902-919

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

An analysis of gravity data along two detailed profiles over the western Sverdrup Basin in the Canadian Arctic supports a seismic refraction model. Drill holes as deep as 5.4 km near the profiles provide excellent density control. Mean densities in the thickest part of the basin exceed those in the thinner parts by an average of 0.13 Mg/m^3. Bouguer anomalies corrected for the effect of water, sedimentary, and crystalline layers indicate significant anomalies that vary in width from 20 to 275 km and in amplitude from 3 to 46 mGal. These can all be explained by density structures within the sedimentary column. Sedimentary thickness along the profiles varies from 9 to 17.4 km, crystalline thickness varies from 18 to 33 km, and the total crustal thickness varies from 34 to 42 km. The analysis also shows: (1) negative gravity effects of about 60 to 120 mGal due to the mass deficiency of the water and sediments are offset by positive gravity effects of similar magnitude due to crustal thinning; (2) isostatic compensation of water and sediments by a mantle antiroot is evident from a regional free-air anomaly near zero and the apparent inverse variation of sedimentary thickness with the thickness of the crystalline crust; (3) in the thickest part of the basin, undulations at the sedimentary-crystalline boundary are in phase with and smaller in amplitude than undulations at the crust-mantle boundary; conversely, in the thinnest part of the basin, these undulations are out of phase and larger in amplitude.

REF. NO.: 0402-74

SUBJECT CODES: F1 (F2)

AUTHOR: STEVENS, A. E.
Seismology Divison, Earth Physics Branch
Department of Energy, Mines and Resources
Ottawa, Ontario

YEAR: 1974

TITLE: Seismicity of Northern Canada

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 22, No. 4, December 1974, pp. 387-404

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The increasing knowledge of general seismicity patterns in northern Canada follows the expansion of the Canadian seismograph network in the north. Most large and major earthquakes in this century have been located, but there is only a partial record of moderate earthquakes. A knowledge of minor earthquakes in northern Canada begins only in the early 1960's because of a previcus lack of suitable recording stations. Examples of recent seismic activity on Baffin Island, on Prince Patrick Island, northeast of Melville Island and in the northeastern Yukon illustrate that present earthquake locations delineate areas of significant seismic activity but in general are not known with sufficient accuracy to be used to map active faults. In northern Canada the known seismic history is too short to predict that new areas of significant seismic activity will not occur in the foreseeable future.

REF. NO.: 0403-83

SUBJECT CODES: A1 (A7)

AUTHOR: STEWART, T. G. and ENGLAND, J.
Department of Geography
University of Alberta
Edmonton, Alberta

YEAR: 1983

TITLE: Holocene Sea-Ice Variations and Paleoenvironmental Change, Northernmost Ellesmere Island, Northwest Territories, Canada

SOURCE: Arctic and Alpine Research, Vol. 15, No. 1, pp. 1-17

STATUS: Public

MAP NUMBERS: 7954

COMMENTS/SUMMARY:

More than 70 samples of Holocene driftwood between present sea level and the marine limit are plotted on an emergence curve from Clements Markham Inlet (82°40'N). Three periods of driftwood abundance and sparsity are recognized. These are interpreted as indications of climatically induced changes in summer sea ice conditions. Period 1 extends from initial driftwood entry ca. 8900 BP. During this period driftwood penetration increases with greatest abundance (= reduced summer sea ice) ca. 6000 to 4200 BP. During Period 2 (ca. 4200 to 500 BP) driftwood penetration is sparse whereas in Period 3 (after 500 BP) driftwood bordering the present shoreline exceeds all the samples in the previous periods. Driftwood dates from elsewhere in the Canadian and Greenland High Arctic show similar periods. In Clements Markham Inlet the initiation of abundant driftwood penetration corresponds with the deposition in marine sediments of fossil bryophytes (25 species) dated 6400 BP. This increased plant productivity is also interpreted as indicating summer warmth/higher precipitation associated with the greater open water. Accompanying these bryophytes is the disjunct marine pelecypod Limatula (Lima) subariculata which presently has a subarctic-boreal distribution. This paleoenvironmental information is discussed in relation to Holocene ice core records and the history of Arctic Ocean sea ice stability.

REF. NO.: 0404-79

SUBJECT CODES: H1 (A6)

AUTHOR: SWEENEY, J. F.

YEAR: 1979

TITLE: Arctic Seafloor: Past and Present

SOURCE: GEOS, Winter, pp. 2-5

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

In April and May of 1979 about 30 scientists, chiefly from EMR, will conduct a series of geophysical surveys across the Lomonosov Ridge, a major submarine feature of the Arctic seafloor. They will work from three camps on drifting pack ice close to the North Pole, and their research will cast light on one of the key unknowns in our understanding of Arctic Basin development.

REF. NO.: 0405-82

SUBJECT CODES: H4 (E7)

AUTHOR: SYVITSKI, J. P. M., FADER, G. B., JOSENHANS, H. W., MACLEAN, B. and PIPER, D. J. W.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1982

TITLE: Seabed Investigations of the Canadian East Coast and Arctic Using PISCES IV

SOURCE: Geoscience Canada, Vol. 10, No. 2, pp. 59-68

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

The aim of this paper is to provide the reader with information on the Canadian submersible PISCES IV and its effectiveness in reaching a wide range of scientific objectives during a program carried out in the Eastern Canadian offshore in 1981. In conjunction with a survey schedule involving shipboard water and sediment sampling and geophysical profiling, the staff of the Atlantic Geoscience Centre (Geological Survey of Canada) and associates from abroad participated in 35 dives on five separate cruises; each to a different geographic region and for distinctive program objectives. In general, our work involved an investigation of geologic problems and phenomena identified by previous surface ship surveys through use of site specific submersible sampling and photography.

Most of the studies conducted with PISCES IV in 1981 were outside of the Canadian Arctic Archipelago. One investigation of submarine hydrocarbon seepage, however, was completed near the Scott Trough on the Baffin Shelf. Other useful observations pertaining to the investigation of megaflutes, suspended particulate matter, iceberg scour and slump features are discussed.

REF. NO.: 0406-75

SUBJECT CODES: A1 (A7)

AUTHOR: TARNOCAI, C.
Soil Research Institute
Winnipeg, Manitoba
BOYDELL, A. N.
Terrain Sciences Division
Geological Survey of Canada
Ottawa, Ontario

YEAR: 1975

TITLE: Biophysical Study of the Boothia Peninsula and Northern Keewatin

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 423-424

STATUS: Public

MAP NUMBERS: 7502, 7740

COMMENTS/SUMMARY:

Boothia Peninsula and a portion of northern District of Keewatin (north of latitude 68°), an area of approximately 64,000 (25,000 square miles km^2), was surveyed for a biophysical study. A. N. Boydell provided the landform/materials input and C. Tarnocai covered the soils and vegetation, as well as delineating the ecoregion. This paper contains the preliminary results of the soil, vegetation, and ecoregion studies.

In 311 stops along helicopter traverses, information was obtained relating to soils and vegetation, and soil samples and plant specimens were collected. Detailed studies also were carried out on 8 sites. On these sites detailed soil studies were conducted using an electric hammer. With this tool a soil trench was extended into the perennially frozen portion of the soil to a depth of approximately 1.5 metres. In addition to this, foot traverses were carried out where soil or vegetation changes took place due to changes in elevation or parent material. Here again, the soils and vegetation were examined along the traverse. All these field activities resulted in the collection of 117 soil samples, 40 soil moisture and ice content core samples, 11 14_C dating samples (of cryoturbated organic matter) and approximately 150 plant specimens.

REF. NO.: 0407-76

SUBJECT CODES: A7 (A1)

AUTHOR: TARNOCAI, C.
Canada Soil Survey
University of Manitoba
Winnipeg, Manitoba

YEAR: 1976

TITLE: Soils of Bathurst, Cornwallis, and Adjacent Islands, District of Franklin

SOURCE: Terrain Sciences Division, Geological Survey of Canada, Paper 76-1B, pp. 137-141

STATUS: Public

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

Soils on Bathurst, Cornwallis, and adjacent small islands, an area of approximately 11 000 square miles, were studied during the 1975 field season. This soil study was one component of the terrain inventory initiated by the Terrestrial-Environmental Program for the Environmental-Social Program, Northern Pipelines.

During the field work, 248 stops were made along helicopter traverses. Information obtained from these sites includes a general description of the terrain, a description of the soil based on soil pits dug to the frost table and a description of vegetation around the soil pit. In most cases, either a soil parent material sample was collected or all horizons of the soil profile were sampled. In addition, detailed studies also were carried out at 6 sites. At these sites detailed soil studies were conducted using an electric hammer to dig into the perennially frozen portion of the soil to a depth of 1 to 1.5 m. The field activities resulted in the collection of 275 soil samples, 50 soil moisture and ice content core samples, and 10 samples for carbon dating.

This interim report is intended to provide a general description of soil parent materials and dominant soil types and a discussion of the soil development.

REF. NO.: 0408-83

SUBJECT CODES: G1 (A1)

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1983

TITLE: Characteristics and Formation of Shingle Beach Ridges Along Barrow Strait, Northwest Territories

SOURCE: In Program with Abstracts, Volume 8, Joint Annual Meeting, Geological Association of Canada, Mineralogical Association of Canada, Canadian Geophysical Union, May 11-13, 1983, University of Victoria, Victoria, British Columbia, p. A68 [abstract only]

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Flights of emergent beach ridges extend to the Holocene marine limit at 76 to 120 m a.s.l. At the present shoreline, beach ridges are composed of poorly to moderately sorted, subangular pebbles (4 to 32 mm) and swash ridges are superimposed across the steep beach face slope. Development of major shingle beach ridges is a function of wave exposure, sediment availability and topographic slope. Beach crest elevation decreases westward from 2.8 to 1.5 m along Barrow Strait in response to the shorter annual duration and extent of open water. The size and number of beach ridges increases with increased supply of sediment. Beach ridges of similar elevation separated by well defined swales develop across marine benches, whereas stepped beach ridges form across steeper coastal slopes. Modern storm-swash ridges form at least once every two years but reworking of the entire modern beach is only experienced during infrequent high-energy wave events that coincide with extensive open water and spring tides. Such events were only observed twice during 12 years of observation. These storms have eroded both modern and raised beach deposits but have not produced any new beach ridges comparable in size to the raised beach ridges. Along northern Somerset Island, four distinctive beach ridges have formed during the last 1400 years. Since the average rate of emergence in the study area was less than 0.5 m/century during the last 5000 years, modern beaches have been subjected to ice and wave processes for longer time spans than beaches that developed during rapid emergence immediately following deglaciation.

REF. NO.: 0409-80

SUBJECT CODES: G1 (A7, A8, E5, I2)

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1980

TITLE: Coastal Reconnaissance for Marine Terminal Planning in the Sverdrup Basin, Northwest Territories, Volume 1, Main Report

SOURCE: Prepared for Strategic Studies Branch, Transport Canada, Research and Development Centre, Montreal, Quebec, 147 p. (also available as Geological Survey of Canada Open File No. 693)

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

Baseline coastal information is presented for Cornwall, Cameron, King Christian and south Ellef Ringnes Islands, N.W.T., from which a selection and assessment of potential marine terminal sites is made. Oblique aerial and ground photos of the coasts are displayed in accompanying volumes. Six main morphologic coastal types are distinguished. The shores most sensitive to disturbance are those underlain by ground ice and anchor ice and those of the silt-clay coastal plain which are composed of sediment of high plasticity. Well-drained beach ridge and sandflat coasts are better suited for locating marine terminal facilities. A total of eleven coastal sites are recommended as potential marine terminals. From these, the best potential site is chosen for each of the four islands examined.

REF. NO.: 0410-80

SUBJECT CODES: G1

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1980

TITLE: Coastal Environments Along the Northern Shore of Somerset Island, District of Franklin

SOURCE: In The Coastline of Canada, Edited by S. B. McCann, Geological Survey Paper 80-10, pp. 239-250

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Six coastal environments were distinguished along northern Somerset Island: 1) high rock cliff, 2) low rocky shore with pocket beaches, 3) gravel beach, 4) sand and gravel plain, 5) deltaic, and 6) estuarine. The first four environments were differentiated using morphologic and sedimentologic characteristics which were closely related to the underlying bedrock. The last two environments were differentiated on the basis of processes. Wide variations in the effects of sea ice and waves on shoreline stability were indicated by observations of coastal processes, both seasonally and geographically, during 1972-1976. Geographically, the shores west of Cape Rennell were affected more by sea ice whereas the shores farther east were affected by higher energy waves. Beach change was greatest, hence beach stability least, between Cunningham Inlet and Garnier Bay and along the more exposed capes along northwestern Somerset Island.

REF. NO.: 0411-76

SUBJECT CODES: G1 (A6, A7, A8, E1, E3, H4)

AUTHOR: TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Nearshore Observations Along the East Coast of Melville Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 76-1B, pp. 43-58

STATUS: Public

MAP NUMBERS: 7830

COMMENTS/SUMMARY:

Apart from collecting information on nearshore bottom topography, the research described in this report involved experimentation with and testing of commonly used oceanographic instruments in a shallow nearshore arctic environment.

The nearshore work took place during the month of August 1973 from a base camp established along 'Frustration Bay', a small bay north of King Point, Melville Island.

The nearshore was congested with mobile multi-year ice which continually shifted north and south along the coast. Consequently extensive boat work was prevented and detailed surveys were limited to 'Frustration Bay' and one additional traverse along the coast as far south as Consett Head. Echo sounding, side-scan sonar, bottom sediment sampling, and some spot measurements of nearshore currents, salinity and temperature within 'Frustration Bay', were carried out. Horizontal control for the marine research was provided by aerial photographs which were used to locate the physiographic features sighted on during the boat traverses.

REF. NO.: 0412-75

SUBJECT CODES: G1 (A7)

AUTHOR: TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Coastal Investigations of Northern Somerset Island and Barrow Strait, District of Franklin

SOURCE: Report of Activities, April to October 1974, Geological Survey of Canada, Paper 75-1, Part A, pp. 501-504

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

A series of 41 beach profiles were established along the coast of Somerset Island within previously selected characteristic coastal environments. These environments vary from well developed raised beach terraces, intermittently broken by high cliffed shores, to tundra pond-barrier island environments and wide sand beaches.

Throughout the 1974 field season an estuarine study was conducted in Cunningham Inlet. The study also included the collection of discharge, suspended sediment and water chemistry measurements at three of the streams entering the west side of Cunningham Inlet.

Similar research to that conducted on Somerset Island was initiated on Bathurst and Lowther islands in early August. An aerial reconnaissance was made by helicopter of the entire south coast of Bathurst Island and the smaller offshore islands. In addition, profiles established in 1972 by the author at Hooker Bay, west Bathurst (Taylor, 1973a) were reprofiled to obtain the rate in beach profile change over the two-year period. New beach profiles were established along the southeast coast of Bathurst particularly around Cape Capel, where nearshore bathymetry was also obtained.

REF. NO.: 0413-74

SUBJECT CODES: G1 (H4)

AUTHOR: TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Nearshore Studies Using Small Water-Craft Along East Melville Island, District of Franklin

SOURCE: Report of Activities, Part A, April to October 1973, Geological Survey of Canada, Paper 74-1, Part A, pp. 271-272

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

The aim of the current research is to test the usefulness of existing instruments and techniques for studying nearshore characteristics and processes in a High Arctic environment. Echo sounding, sub-bottom profiling, side scan sonar, bottom sampling, and measurement of oceanographic parameters were all attempted in support of the "Coastal Erosion and Sedimentation" study on eastern Melville Island.

The detailed nearshore investigations were conducted in a small bay north of King Point on eastern Melville Island with additional traverses along the coast as far south as Rea Point. All of the research was done from a 19 foot pneumatic boat powered initially by an 18 horsepower motor and later by a 40 horsepower motor.

REF. NO.: 0414-74

SUBJECT CODES: G1 (A5, A7, A8, E1)

AUTHOR: TAYLOR, R. B.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: A Coastal Investigation of Northern Somerset Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 74-1, Part A, pp. 269-270

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

The prime objective of this project is to define and characterize the various coastal environments and to analyze the nearshore processes and their effects on beach stability.

Initially the coastal morphology and relief were mapped between Garnier Bay in the east and Pressure Point in the west using aerial photography, topographic maps and a reconnaissance flight. The general study was then followed by a detailed investigation of coastal conditions and beach profile change at one location where a set of ten survey stations had been established by the author in July of 1972. Additional research at this locale involved a systematic sampling of the beach sediments, observation of the effects of rivers and sea ice on the beach plan and profile, and the determination of the frost able depth at each of the ten survey stations.

REF. NO.: 0415-84

SUBJECT CODES: G1 (A3, A5, A6, A7, D2, E2, H4)

AUTHOR: TAYLOR, R. B. and FROBEL, D.
Atlantic Geoscience Centre
Geological Survey of Canada
Dartmouth, Nova Scotia

YEAR: 1984

TITLE: Coastal Surveys, Jones Sound, District of Franklin

SOURCE: Current Research, Part B, Geological Survey of Canada, Paper 84-1B, pp. 25-32

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

In 1983, low-altitude video tapes were made of the coast of Jones Sound; launch surveys were completed off five tidewater glaciers along the northeast coast of Devon Island. Large submarine glacial deposits off northeast Devon Island suggest that some of the valley glaciers once stood 2 to 7 km offshore for a considerable time before rapidly retreating to near their present position. Today, the proglacial tidewater environments in bays resemble those of the slowly retreating shallow-water glaciers in Glacier Bay, Alaska. Most of the Devon Island tidewater glaciers are grounded and are fringed by an ice-proximal shelf. Ice-front thickness is commonly 55 to 76 m but at the face of larger glaciers, it exceeds 100 m. Sediment gravity flows, observed across the ice-proximal shelf foreslope, are an important agent in the transfer and deposition of sediment in the proglacial basins.

REF. NO.: 0416-84

SUBJECT CODES: H1 (E5, H4.4)

AUTHOR: TAYLOR, A. and JUDGE, A.
Earth Physics Branch
Energy, Mines and Resources Canada, Ottawa, Ontario

YEAR: 1984

TITLE: Obtaining Precise Temperature Measurements in Suspended Offshore Petroleum Exploration Wells

SOURCE: In Abstracts and Program, Workshop on Permafrost Geophysics, Golden, Colorado, October 23-24, 1984. Committe on Permafrost, Polar Research Board, National Academy of Sciences, Washington, D.C.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This paper describes a fully integrated system, currently under development, for the acquisition of precise temperatures from suspended offshore petroleum exploration wells. Our design target was a system that would measure and record a dozen to twenty temperatures in the upper 1000 m of an offshore well in up to 400 m of water, at intervals of a day or less for at least two years. It was assumed that permission to omit the surface plug could be obtained and that the measured depth need only be limited by the location of the next, deeper regulatory plug.

REF. NO.: 0417-81

SUBJECT CODES: E7 (B4.4, H3)

AUTHOR: TAYLOR, A. E. and JUDGE, A. S.
Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1981

TITLE: Measurement and Prediction of Permafrost Thickness, Arctic Canada

SOURCE: Proceedings, 51st Annual Meeting, Society of Exploration Geophysicists, Los Angeles, California, October 1981, 13 p.

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This paper describes the content of a presentation to the 51st Annual Meeting of the Society of Exploration Geophysicists. Permafrost occurrence, definitions and concepts are briefly reviewed. The techniques used by the authors to measure the thickness of permafrost and ice bonded layers is also described. Permafrost thickness prediction methods are outlined and three case histories - from the Mackenzie Delta region, the Arctic Islands and the Ungava area of Northern Quebec - are presented.

REF. NO.: 0418-77

SUBJECT CODES: E5 (B4.4)

AUTHOR: TAYLOR, A. E. and JUDGE, A. S.
Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1977

TITLE: Canadian Geothermal Data Collection - Northern Wells 1976-77

SOURCE: Geothermal Service of Canada, Earth Physics Branch, Energy, Mines and Resources Canada, Earth Physics Branch, Series No. 10, 194 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The assessment and solution of many problems which may occur in the development of northern regions require a knowledge of subsurface temperatures. This volume supplements three earlier volumes in this series, and it reports new measurements at 37 of the sites listed in the previous volumes and observations from 8 new sites. A total of 86 determinations of permafrost thickness have been reported in the collection to date. Determined thicknesses in the Arctic Islands range from 144 m to 728 m, in the Mackenzie Delta from 0 m to 700 m and in the remainder of the Northern Mainland from 0 m to in excess of 700 m.

REF. NO.: 0419-75

SUBJECT CODES: E5 (B4.4)

AUTHOR: TAYLOR, A. E. and JUDGE, A. S.
Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1975

TITLE: Canadian Geothermal Data Collection - Northern Wells 1974

SOURCE: Geothermal Service of Canada, Earth Physics Branch, Energy, Mines and Resources Canada, Earth Physics Branch, Series No. 3, 127 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The assessment and solution of many problems which may occur in the development of northern regions require a knowledge of subsurface temperatures. This volume supplements the first in this series, and reports new measurements at 25 of the sites listed in the first volume and observations from nine new sites. A total of 59 determinations of permafrost thickness have been reported in the collection to date. Determined thicknesses in the Arctic Islands range from 140 m to 675 m, in the Mackenzie Delta from 50 m to 700 m and in the remainder of the Northern Mainland from 0 m to in excess of 500 m.

REF. NO.: 0420-75

SUBJECT CODES: A5 (A3, A6, E1, E5, H4)

AUTHOR: TAYLOR, R. B. and LEWIS, C. F. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Nearshore Marine Geological Reconnaissance at Cunningham Inlet, Somerset Island, N.W.T.

SOURCE: In Report of Activities, April to October 1974, Geolgocial Survey of Canada, Paper 75-1, Part A, pp. 505-507

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

A geological reconnaissance of the seabed at the mouth of Cunningham Inlet was carried out from August 16 to 27 using the 'Hudson Barge' which had been transported to Cunningham Inlet by the C.S.S. Hudson. Sediment grab samples, gravity cores, echo sounding, and side scan sonar records were collected in support of the beach and nearshore studies which also were being carried out along the north shore of Somerset Island. The survey vessel also carried a 300 joule sparker reflection seismic system, which unfortunately suffered recorder malfunction during the period of work in Cunningham Inlet. Shallow seismic refraction profiles were run by J. A. Hunter of Resource Geophysics and Geochemistry Division to provide estimates of thickness of unconsolidated marine deposits and to test for the presence of frozen ground. A 19-foot pneumatic boat provided an effective auxiliary platform for many of the data collection operations. Horizontal control for the offshore work was provided by a trisponder system, rented from ComDev Marine Ltd., which consisted of a master read-out unit on board the barge providing distances from two remote units located at known positions on shore.

REF. NO.: 0421-76

SUBJECT CODES: D1 (H1)

AUTHOR: THOMPSON, E. F.

YEAR: 1976

TITLE: Final Field Report, P.C.S.P., Survey Belcher Channel and Penny Strait

SOURCE: Polar Continental Shelf Project, Internal Report, Project File No. 6600-76-1, March-May 1976, 82 p.

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

Project instructions called for a bathymetric survey of Belcher Channel and Northern Penny Strait. In conjunction with this program, closely spaced soundings were to be taken in a corridor through Belcher Channel and along two proposed pipeline crossings (one between Grinnell Peninsula and Cornwall Island, and one between Bathurst Island and Grinnell Peninsula). The above projects were completed with a total of 8705 spot soundings taken.

REF. NO.: 0422-77

SUBJECT CODES: E3 (H1)

AUTHOR: INNOVATIVE VENTURES LTD.
Calgary, Alberta

YEAR: 1977

TITLE: Oceanographic Data Report for Hecla C-58, Spring 1977 Data

SOURCE: Prepared for Panarctic Oils Ltd., Prepared by M. P. Van Ieperen, August 1977, Panarctic Library Call No. CA7 .POIV/77.012, 24 p. plus appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

In February, 1977 Panarctic Oils Ltd. requested Innovative Ventures Ltd. to undertake certain oceanographic measurements at their Hecla C-58 drilling position. This position is west of Sabine Peninsula, Melville Island, at 76°17'N 111°21'W. The terms of reference stated that one current meter had to be placed at a depth of 10 m below the ice surface and that current readings had to be obtained every one hour, until the site was abandoned. Temperature and salinity profiles had to be taken at the location from the ice surface to the ocean floor at the time of installation and of recovery of the current meter. This report also contains, in addition to the requested data, time series of salinity and temperature and vertical current profile data. These characteristics became automatically available since the Aanderaa meter was equipped with temperature and salinity sensors during the entire period of interest.

REF. NO.: 0423-71

SUBJECT CODES: B3 (B1)

AUTHOR: TRETTIN, H. P.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1971

TITLE: Canada Basin and Lomonosov Ridge: Inferences Based on Precambrian and Lower Paleozoic Geology of Canadian Arctic Islands

SOURCE: International Arctic Geology Symposium, American Association of Petroleum Geologists, Pacific Section, San Francisco, February 1-4, 1971, p. 2509 [abstract only]

STATUS: Public

MAP NUMBERS: 7952, 7953, 7954

COMMENTS/SUMMARY:

Canada basin truncates and post-dates a belt of north-trending structures in the central part of the Arctic Islands. The trends, though exhibited by Phanerozoic strata, are interpreted as rejuvenated Precambrian basement features because they cut across Phanerozoic basin axes and parallel exposed Precambrian structures on the south. The maximum possible age of the Canada basin, therefore, is the age of these trends - about 1.7 b.y. A geanticline, characterized by volcanism and plutonism, rose out of a late Proterozoic geosyncline and occupied the northern rim of the Arctic Islands and adjacent present offshore region, from Cambrian to Devonian time.

Lomonosov Ridge - a belt of north-trending structures in northernmost Ellesmere Island lines up with the southern extremity of Lomonosov Ridge. The structures, formed in sialic metasedimentary and metavolcanic rocks, are partly pre-late Middle Ordovician. The belt aligned with Lomonosov Ridge was elevated relative to terrane on the east during 2 Paleozoic orogenies but not during the Tertiary orogeny. A short distance inland the north-trending belt terminates against west-trending structures subparallel with the axis of the Franklinian geosyncline. The zone of intersection, marked by ultrabasic intrusions, was a site of repeated crustal extension on a scale of miles.

REF. NO.: 0424-71

SUBJECT CODES: B3 (B7, B1)

AUTHOR: TRETTIN, H. P.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1971

TITLE: Early Paleozoic Evolution of Northern Parts of Canadian Arctic Islands

SOURCE: International Arctic Geology Symposium, American Association of Petroleum Geologists, Pacific Section, San Francisco, February 1-4, 1971, pp. 2509-2510

STATUS: Public

MAP NUMBERS: 7952, 7953, 7954

COMMENTS/SUMMARY:

This abstract describes the evolution of the northern part of the Canadian Arctic Archipelago. The sedimentation and structural development of the geosycline which occupied the northern part of the Arctic Islands in late Proterozoic time is described. The sequence of events from Middle Cambrian to Mississippian time is traced. A case is made for the trough having formed due to subsidence of the continental crust rather than by seafloor spreading because deep-water sediments lie on shallow water sediments, not volcanics.

REF. NO.: 0425-72

SUBJECT CODES: B1 (B4.2, F1)

AUTHOR: TRETTIN, H. P.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1972

TITLE: The Innuitian Province

SOURCE: In Variations in Tectonic Styles in Canada, Edited by R. A. Price and R. J. W. Douglas, The Geological Association of Canada, Special Paper No. 11, pp. 83-179 (with contributions by T. O. Frisch, L. W. Sobczak, J. R. Weber, L. K. Law, I. DeLaurier, E. R. Niblett and K. Whitham)

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

The purpose of this paper is a systematic discussion of the Innuitian Province that permits comparison with other structural provinces of Canada. The general organization and major headings follow the nonhistorical outline adopted for this symposium in general, but the detailed organization follows an historical order wherever possible. An excellent summary of the geological history of the Canadian Arctic Islands has been published recently by Thorsteinsson and Tozer (in Douglas, 1970, pp. 549-590). Information included in that widely known report - which represents the state of knowledge of 1965 - is treated here more briefly than recent information and interpretations. The two syntheses should be used together for a complete, balanced picture.

This section is divided into the following headings; introduction, stratigraphic analysis, geological structure, non-granitic intrusions, granitic plutons, metamorphism, Cenozoic uplift, deep structure and geophysical characteristics, synthesis and conclusions.

REF. NO.: 0426-73

SUBJECT CODES: A5 (A6, E1, E3)

AUTHOR: UNDERWATER SPECIALISTS
Calgary, Alberta

YEAR: 1973

TITLE: Scuba Diving Investigations Byam and Austin Channels, May - June, 1973

SOURCE: Prepared for Banister Pipeline Ltd., Calgary, Alberta and Montreal Engineering Co. Ltd., Montreal, Quebec, Prepared by D. G. Claughton, June, 1973, Panarctic Library Call No. CA7 .US/73.S12

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

Underwater Specialists of Calgary, Alberta performed a number of submarine investigations at select locations near the shorelines of Byam Martin and Bathurst Islands. These investigations were discussed in two separate reports.

Report No. 1 was a written description of the following dives: lateral trench off Bathurst Island shore, May 25, 1973; lateral survey line on east side of Byam Martin Island, May 26, 1973; and near ice floes off N.W. side of Byam Martin Island, May 27, 1973. Photographs taken during these surveys were generally of such poor quality that they were omitted from the report. Report No. 2 was a series of photographs together with a written explanation of ice floes on a lateral survey line on west side of Byam Martin Island, June 16, 1973.

REF. NO.: 0427-75

SUBJECT CODES: H1 (H4)

AUTHOR: VEILLETTE, J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Helicopter Portable Drill for High Arctic Programs

SOURCE: In Report of Activities, April to October 1974, Geological Survey of Canada, Paper 75-1, Part A, pp. 427-429

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Shallow permafrost coring was conducted during summer 1974 on Banks Island, in cooperation with J. S. Vincent (Project 740065), on Ellesmere Island with D. A. Hodgson (Project 720081), and on Boothia Peninsula with A. N. Boydell (Project 740074). While providing some subsurface data for these areas, the main objective of the drilling program was to test under field conditions a new helicopter portable drill, the J.K.S. 300. Such factors as portability, mechanical performance, maintenance needs, and operation costs were assessed.

During fall 1973 research was initiated with the objective of locating or developing a helicopter-portable drill tailored to Division sampling needs in remote permafrost areas, such as the Arctic Islands.

This report describes the requirements of a particular drill rig, and its field performance.

REF. NO.: 0428-75

SUBJECT CODES: H1 (H4)

AUTHOR: VEILLETTE, J.
Terrain Sciences Division
Geological Survey of Canada

YEAR: 1975

TITLE: Modified CRREL Ice Coring Augers

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 425-426

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

A modification to provide additional storage room for cuttings for the CRREL auger and permit a longer core run is described here. The auger was designed to be used with the J.K.S. 300 drill. The main addition consists of steel deflectors located near the top of the barrel at 180° to each other and used to divert excess cuttings through openings in the barrel into the inside of the tube.

The auger was thoroughly tested during the summer 1974 in a variety of permafrost soils in the Arctic Islands. Runs up to 15 inches were secured using the full storage capacity of the barrel. Cut-off rotational pressures observed on the hydraulic gauge were established for safe procedures and average runs were in the vicinity of one foot. Shorter runs were made in soils, with a tendency to develop "mud rings" between the flights. Movement of cuttings was facilitated by oiling the barrel outside surface between successive runs. There is an indication that the loose density of cuttings could be even less than half the in situ density. Best results were obtained in friable material such as ice, frozen sand and gravelly sands.

REF. NO.: 0429-74

SUBJECT CODES: I2 (H1)

AUTHOR: VERRALL, R. I. and GANTON, J. H.
MILNE, A. R.
Defence Research Establishment Pacific
Victoria, British Columbia

YEAR: 1974

TITLE: An Ice Drift Measurement in Western Parry Channel

SOURCE: Arctic, Vol. 27, No. 1, pp. 47-52

STATUS: Public

MAP NUMBERS: 7830, 7831, 7832

COMMENTS/SUMMARY:

A description is given of the drift of ice in Western Parry Channel during the spring and summer of 1970. Ice-buoys, planted in the fast ice of this region in April 1970, were located at approximately two-week intervals by Canadian Forces aircraft overflights. The ice in M'Clure Strait drifted to the west, whereas in Viscount Melville Sound the ice drift seemed to have no definite trend. The drift after the middle of July when the ice was broken was compared to the ice motion calculated using Zubov's rule. The comparison yields a respectable agreement. Also, information pertaining to the longevity of ice-buoys in both polar and winter ice is given.

REF. NO.: 0430-77

SUBJECT CODES: A11 (A1)

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1977

TITLE: Trends in the Marine Environment of the Canadian Arctic Archipelago During the Holocene

SOURCE: In Polar Oceans, Edited by M. J.Dunbar, Proceedings of the Polar Oceans Conference, McGill University, Montreal, Quebec, May, 1974, Arctic Institute of North America, pp. 643-653

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830, 7831, 7832, 7951, 7952, 7953

COMMENTS/SUMMARY:

Changes in marine paleoenvironment in the Canadian Arctic Archipelago are discussed on the basis of foraminiferal assemblages in bottom sediments. In Lancaster Sound during glacial recession (18 000 to 6000 years BP), bottom waters were less mobile than at present. In the Northwest Passage the present circulation was established at 6000 BP. In Prince of Wales Strait during the marine maximum the circulation was in the opposite direction to what it is now. In the northwestern Queen Elizabeth Islands the channels have become shallower during the Holocene, while the extent of summer ice has remained close to that found at present.

REF. NO.: 0431-76

SUBJECT CODES: A11 (A5, E1)

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1976

TITLE: Foraminifera of an Ice-Scoured Nearshore Zone in the Canadian Arctic

SOURCE: First Internationl Symposium on Benthonic Foraminifera of the Continental Margin, Part A, Ecology and Biology, Maritime Sediments Special Publication 1, pp. 267-277

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

Benthonic foraminifera were studied in 19 cores collected by SCUBA divers in Byam Channel in the Canadian Arctic Archipelago. The divers observed that the nearshore Byam Channel sea floor was considerably modified by ice scouring. The three most dominant species in the first 10 cm of core were identified as Spiroplectammina biformis, Textularia torquata, and Trochammina nana, which are typical of the nearshore waters surrounding the Queen Elizabeth Islands. In the first 2 cm of core the ratio of calcareous to arenaceous species increases at localities closer to the Viscount Melville Sound. In the subsurface layers (2 to 5 cm) calcareous species occur in significantly greater numbers than in the surface layer throughout the study area. A distinctive subsurface layer in most of the cores may indicate that ice scouring normally does not overturn the sediment. The increasing abundance of calcareous species with depth in the cores suggests that Byam Channel once had longer open-water seasons than it does today.

REF. NO.: 0432-75

SUBJECT CODES: A11

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1975

TITLE: Comparison of Globorotalia Pachyderma (Ehrenberg) in the Water Column and Sediments of the Canadian Arctic

SOURCE: Journal of Foraminiferal Research, Vol. 5, No. 4, pp. 313-325

STATUS: Public

MAP NUMBERS: 7220, 7503, 7831, 7832, 7951, 7952, 7953

COMMENTS/SUMMARY:

Planktonic foraminifera were collected from the water column and sediments of the Beaufort Sea and the Northwest Passage of the Canadian Arctic Archipelago at 175 localities. The mean maximum diameter of specimens collected in the sediment is significantly larger (238 microns) in comparison to specimens collected in the water column (197 microns). The specimens from sediments also have significantly larger mean numbers of chambers per test (11) in comparison to 9 for the living population. These results indicate that in the Arctic environment the preservation is selective towards the larger and older Globorotalia pachyderma. The preserved assemblage of variants contains significantly larger percentages of specimens with 4 chambers in the last whorl and in the quadrate growth stage. By comparing the living and fossil assemblages, a minimum average loss of 80 percent is estimated as due to dissolution or destruction by predators. The normalform tests and tests from a highly productive population with short turnover periods may suffer a much greater destruction and consequently leave very little evidence in the sediments. Surface textures of preserved specimens are not significantly different from the surface textures of encrusted specimens from the water column, indicating that in the Arctic environment the addition of calcite to the test terminates with the death of the individual.

REF. NO.: 0433-74

SUBJECT CODES: A11

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1974

TITLE: Foraminiferal, Molluscan and Lithologic Study of Sediment Cores from the Beaufort Sea and Northwest Passage

SOURCE: Geological Survey of Canada, Paper 74-1, Part B, pp. 127-128

STATUS: Public

MAP NUMBERS: 7503, 7830, 7831,7832

COMMENTS/SUMMARY:

Foraminifera were identified and counted from ten sediment cores collected during Hudson '70. Sediments older than Pleistocene were not recovered. The dominant foraminiferal genera in these Upper Pleistocene-Holocene sediments are Islandiella and Elphidium, which are useful indicators of changes in paleoenvironment. In general, Islandiella teretis is dominant throughout the cores collected in the Viscount Melville Sound and Barrow Strait, but Elphidium incertum dominates the sediment at the southwestern end of Prince of Wales Strait. The former species is generally found in deeper waters of the Canadian Arctic Archipelago and the latter in the shallow localities of areas influenced by estuarine waters.

REF. NO.: 0434-79

SUBJECT CODES: E3 (H1)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1979

TITLE: Atmospheric and Oceanographic Data Report N.E. Cornwall and Edinburgh Sea Stations

SOURCE: Panarctic Oils Ltd. Internal Report, Prepared by M. P. Van Ieperen, AIEG Ice Movement Program 1977-1978, February 1979, Panarctic Library Call No. CA7 .PO/79.A75, 33 p. plus references and appendices

STATUS: Proprietary

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

This report presents and discusses atmospheric and oceanographic data from N.E. Cornwall and Edinburgh Sea stations occupied during the 1977-1978 AIEG Ice Movement Program. The measurements, taken from late January to early June 1978, were in support of this program. The purpose of the measurements was to assess the magnitude and relative importance of the stresses acting on the ice surface. The following forces have been investigated: the wind stress acting on the ice surface; the water stress acting on the underside of the ice; the force resulting from the inclination of the sea surface relative to an equipotential surface; and the force resulting from thermal effects. It is surmised that thermal effects and the elastic properties of the ice cover mainly determined the magnitude of the ice motion in the area. The weather stations and current meters used for this investigation were supplied by Innovative Ventures Ltd. (now Northern Seatech Ltd.), who also installed and serviced the equipment. To improve the chances of good data recovery, two sensors per parameter were used where possible. The apparent redundancy proved to be necessary since the failure rate of the sensors was high. The stations were installed in late January.

REF. NO.: 0435-73

SUBJECT CODES: A11 (A5)

AUTHOR: VILKS, G.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1973

TITLE: Planktonic Foraminifera in the Water Column and Sediments in the Canadian Arctic

SOURCE: Geological Survey of Canada, Paper 73-1, Part B, p. 95

STATUS: Public

MAP NUMBERS: 7220, 7503, 7830

COMMENTS/SUMMARY:

The distribution of planktonic foraminifera in the surface waters of the Arctic Ocean is affected adversely by the cover of ice and the vicinity of land. Large numbers of planktonic foraminifera are found in the open water during the summer in the southeastern Beaufort Sea and at the eastern end of Lancaster Sound. The former is an area of upwelling and the latter an area of extensive lateral mixing.

In addition to the productivity in the surface waters, the distribution of planktonic foraminifera in the sediment is dependent on the preservation rates of the tests and the supply rates of terrestrial material. On the continental shelf off the Mackenzie River delta the relatively small numbers of planktonic foraminifera reflect the high local terrestrial sedimentation, but in the eastern end of the Lancaster Sound and Baffin Bay the paucity of preserved planktonic foraminifera reflect poor conditions of preservation in additon to high sedimentation rates of terrestrial material. ... The high numbers of planktonic foraminifera in the mixed waters of eastern Lancaster Sound and northern Baffin Bay produce only thin-shelled adults, which are dissolved after death. The stratified waters of McClure Strait, Viscount Melville Sound and the Beaufort Sea contain high percentages of the robust adults, which are preserved in the sediments. Therefore, layers rich in planktonic foraminifera in the Arctic sediment cores are indicative of low sedimentation rates and open, but stratified surface water. Such waters are typical of semi-permanent polynya and open leads in the cover of ice.

REF. NO.: 0436-72

SUBJECT CODES: A11

AUTHOR: VILKS, G.

YEAR: 1972

TITLE: Report on Planktonic Foraminifera in Six Sediment Cores from Lancaster Sound

SOURCE: Report to Norlands Petroleum Ltd., 1972, (COGLA File 511-01-10-003), 3 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Globigerina pachyderma (Ehrenberg) is the only planktonic species. The sinistrally coiled phenotype is by far the most abundant, therefore the sediments were not deposited earlier than Pleistocene. In general, surface sediments are barren of planktonic foraminifera despite the high summer standing crops in the water column. A subsurface layer of sediments can be traced in cores 1, 3 and 6 in terms of a large number of well preserved planktonic foraminifera. The excellent preservation state is indicated by the unusually large percentages of normalform G. pachyderma.

REF. NO.: 0437-70

SUBJECT CODES: A11 (A6)

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1970

TITLE: Circulation of Surface Waters in Parts of the Canadian Arctic Archipelago Based on Foraminiferal Evidence

SOURCE: ARCTIC, Vol. 23, No. 2, pp. 100-111

STATUS: Public

MAP NUMBERS: 7831, 7832, 7952

COMMENTS/SUMMARY:

Planktonic foraminifera are present both in bottom sediments and surface waters on the shelf area averaging 400 m in depth to the west of a line between Cape M'Clure and Cape Meecham, but in M'Clure Strait proper to the east of this line in the surface waters only. The evidence is used to suggest a slow net eastward movement of water from the ocean through M'Clure Strait in the past with increased rates at the present time.

REF. NO.: 0438-70

SUBJECT CODES: A11

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia
ANTHONY, E. H.
Zoology Department
University of Guelph, Guelph, Ontario
WILLIAMS, W. T.
C.S.I.R.O., Computing Research Section
Canberra City, Australia

YEAR: 1970

TITLE: Application of Association - Analysis to Distribution Studies of Recent Foraminifera

SOURCE: Canadian Journal of Earth Sciences, Vol. 7, No. 6, pp. 1462-1469

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Counts of species of foraminifera from 75 samples of sediment from East Bay, MacKenzie King Island, in the Canadian Arctic were converted to a matrix of presence-absence data (56 species x 75 stations). These were submitted to both normal and inverse association-analysis as a preliminary test of the application of that multivariate method to problems in marine ecology. The results are compared with observations made at the time the survey was carried out. Although the pattern of sampling was not the most suitable for association-analysis, the results indicate that the method may prove quite informative.

REF. NO.: 0439-69

SUBJECT CODES: A11 (A1, A6)

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1969

TITLE: Recent Foraminifera in the Canadian Arctic

SOURCE: Micropaleontology, Vol. 15, No. 1, pp. 35-60

STATUS: Public

MAP NUMBERS: 7831, 7951, 7952

COMMENTS/SUMMARY:

The recent foraminifera in the ice-covered seas of the Canadian Arctic were found to be distributed in two bathymetric zones with their common boundary at about the 200 m isobath. The information was used to support a theory of a regional lowering of sea level during the Holocene. The rate of sedimentation during the past 8000 years is indicated to be 4.4 cm per 1000 years.

REF. NO.: 0440-65

SUBJECT CODES: A5 (A6, A11)

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1965

TITLE: Bottom Sediment and Foraminiferal Studies in Satellite Bay, Prince Patrick Island, District of Franklin

SOURCE: In Report of Activities: Field, 1964, Geological Survey of Canada, Paper 65-1, pp. 15-16

STATUS: Public

MAP NUMBERS: 7952

COMMENTS/SUMMARY:

During the 1964 field season sampling of bottom sediments was carried out in Satellite Bay, Prince Patrick Island, District of Franklin. The purpose of the sampling was to investigate the distribution of benthonic foraminifera in the nearshore regions exposed to the Arctic Ocean and to relate fauna to the bathymetry type of sediment, and distance from the shore of the bay. In the field logistics were provided by the Polar Continental Shelf Project based at Mould Bay, Prince Patrick Island.

One hundred and nineteen sampling stations were distributed in 17 2-or 3-mile traverses extending seaward from selected points on the shore. Samples were taken at depths ranging from 3 to 252 m.

The soundings show irregular bottom topography with features typical of glaciated valleys, such as, steep submarine slopes, U-shaped cross-sections, and undulating longitudinal section. In the western head region of the bay there is a marked depression with a local topographic difference of about 50 m.

REF. NO.: 0441-64

SUBJECT CODES: A5 (A6, A11)

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Bottom Sediment and Foraminiferal Studies in East Bay, Mackenzie King Island

SOURCE: In Summary of Activities: Field, 1963, Geological Survey of Canada, Paper 64-1, pp. 8-9

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

During the field season sampling of bottom sediments was carried out along the shores of East Bay, Mackenzie King Island. The purpose of sampling was to commence a detailed study of bottom fauna and to determine the relationship of faunal distribution to bathymetry and bottom sediments in an enclosed bay of the Arctic.

A total of 176 oceanographic stations were distributed in 22 2-mile traverses extending seaward from selected points of the shore. Samples were taken at depths ranging from 4 to 283 m.

Field observations indicate that the bottom topography is irregular, forming deeps at both south and north shores of the bay. In the north-shore deep the sediment is black, but in the shallower waters of the middle of the bay the typical colour is brown to light brown. Typical benthonic cold-water foraminifera that occur above 200 m elsewhere in the area are found at depths close to 300 m in East Bay.

REF. NO.: 0442-64

SUBJECT CODES: A11 (A5, A6, I2)

AUTHOR: VILKS, G.
Atlantic Oceanographic Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Foraminiferal Study of East Bay, Mackenzie King Island, District of Franklin

SOURCE: Geological Survey of Canada, Polar Continental Shelf Project, Paper 64-53, 26 p.

STATUS: Public

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

The area of this study was chosen to provide information on the Foraminifera of an Arctic inshore environment. Results show that the population is dominated by areanaceous agglutinated forms and that the number of species decreases toward the shore although the number of individuals increases. Each of three bathymetric zones is apparently dominated by a particular species and the whole population is indicative of a cold environment with lengthy annual ice cover.

REF. NO.: 0443-83

SUBJECT CODES: A7 (A1)

AUTHOR: VINCENT, J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1983

TITLE: La Geologie du Quaternaire et la Geomorphologie de L'Ile Banks, Arctique Canadien

SOURCE: Geological Survey of Canada, Memoire 405, 102 p. (publication in French)

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

Banks Island, situated on the edge of the North American Continent, is a polar desert where a long sequence of Quaternary events are preserved and where continental ice sheets, spreading from a dispersal centre to the southeast, reached their maximum extent on at least three occasions. This memoir describes in detail the sequences of events through the Quaternary. The deposits related to all of these events are described and named and their stratigraphy is established. Limits of extent of Laurentide ice in the southwestern Archipelago are proposed for the early and Late Wisconsinan.

REF. NO.: 0444-82

SUBJECT CODES: A7 (A1)

AUTHOR: VINCENT, J.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1982

TITLE: The Quaternary History of Banks Island, N.W.T., Canada

SOURCE: Geographie Physique et Quaternaire, Vol. XXXVI, Nos. 1-2, pp. 209-232

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

An attempt has been made to provide a framework for Quaternary events on Banks Island. Firstly, at the scale of the entire island, it has been shown that continental ice reached and covered part of the study area during three distinct glacial stages (the Banks, Thomsen and Amundsen glaciations), and that each of these stages was separated by interglaciations.

Secondly, the Banks Island reconstruction provides some insight into possible style of glaciation and related events that may also have occurred on other islands of the Arctic Archipelago.

Thirdly, this study provides new insight into the behavior of the continental ice sheets since the style of glaciation was the same during the Banks and Thomsen glaciations as well as during the two stades of the Amundsen Glaciation.

Finally, the terrestrial stratigraphic record reported on Banks Island goes back further than any yet known in the Arctic Archipelago and, together with those of southern Alberta and the Yukon, is one of the longest records available in Canada.

REF. NO.: 0445-78

SUBJECT CODES: A7 (A1)

AUTHOR: VINCENT, J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Limits of Ice Advance, Glacial Lakes, and Marine Transgressions on Banks Island, District of Franklin: A Preliminary Interpretation

SOURCE: In Current Research, Part C, Geological Survey of Canada, Paper 78-1C, pp. 53-62

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

Three glaciations with associated marine and glaciolacustrine phases on Banks Island are recognized for the first time. The oldest (Banks Glaciation) affected all but the northwest part of the island; glacial lakes Egina and Storkerson were formed during deglaciation. Ice of the Thomsen Glaciation of pre-Sangamonian age covered the south and east and flowed down Thomsen River valley. Associated with it are glacial lakes Parker and Dissection in the northeast and a marine transgression, the Big Sea, which followed the ice during deglaciation and inundated much of western, central, and eastern Banks Island. The youngest, or Amundsen Glaciation, of probable Early or Middle Wisconsinan age involved two icelobes that impinged on the east and southwest coasts creating glacial lakes Raddi, Masik, Rufus, De Salis, Cardwell, and Sarfarssuk at their limit. Ice of the Viscount Melville Glaciation, possibly equivalent to the Amundsen Glaciation and probably also of Wisconsinan age, impinged on the north coast and created glacial lakes Ballast and Ivitaruk. The East Coast Submergence, which inundated the east coast up to 120 m, may be equivalent to the Meek Point Sea that covered the west up to 20 m; both possibly relate to Early or Middle Wisconsinan deglaciation. The Schuyter Point Sea of Late Wisconsinan - Holocene age drowned the east coast up to 25 m and is possibly a transgression that occurred in an icefree area. Sand Hills Readvance in Thesiger Bay and Russell Readvance on the northeast coast are possibly late readvances of Amundsen and Viscount Melville ice, respectively.

REF. NO.: 0446-78

SUBJECT CODES: A7 (A1)

AUTHOR: VINCENT, J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Lithostratigraphy of the Quaternary Sediments East of Jesse Bay, Banks Island, District of Franklin

SOURCE: In Current Research, Part A, Geological Survey of Canada, Paper 78-1A, pp. 189-193

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

The detailed study of sediments in coastal sections east of Jesse Bay on Banks Island has revealed the existence of three or possibly four separate glacial events. Associated with each of these events, both before and after ice advance, are sequences of marine and terrestrial bone, peat, shell, and wood bearing sediments. The lithostratigraphic correlation of the sequences is presented and a brief description of the units is given.

REF. NO.: 0447-75

SUBJECT CODES: A7 (A1)

AUTHOR: VINCENT, J., TUCKER, C. M., and EDLUND, S. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1975

TITLE: Surficial Geology Inventory, Banks Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 75-1, Part A, pp. 431-434

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

This report describes a program initiated by the Geological Survey of Canada to conduct a surficial geology mapping program on Banks Island. Mapping, site description, the Pleistocene history, geological processes and vegetation are briefly mentioned.

REF. NO.: 0448-64

SUBJECT CODES: A11

AUTHOR: WAGNER, F. J. E.
Atlantic Oceanography Laboratory
Bedford Institute Dartmouth, Nova Scotia

YEAR: 1964

TITLE: Faunal Report - II, Marine Geology Program, Polar Continental Shelf Project, Isachsen, District of Franklin (Unpublished Manuscript)

SOURCE: Bedford Institute of Oceanography, Report B.I.O. 64-1, 15 p.

STATUS: Public

MAP NUMBERS: 7952, 7953

COMMENTS/SUMMARY:

This report is the second on material collected by Geological Survey of Canada personnel in conjunction with the Polar Continental Shelf Project. The area of study covers a section of the floor of the Arctic Ocean off the western edge of the Queen Elizabeth Islands. The lines of traverse extend seaward about 115 miles northwest from Ellef Ringnes Island and about 95 miles northwest from the tip of Borden Island. Because this area overlaps part of that sampled in 1960, nine of the 1960 stations are repeated, along with the twenty new stations located in 1962. Eight of the stations are located on drowned headlands, three in the intervening channels, sixteen on the continental shelf and two on the continental slope. Depths of water at these stations are between 180 m and 1239 m, with the majority being in the 350- to 600-m range.

REF. NO.: 0449-62

SUBJECT CODES: A11 (A5)

AUTHOR: WAGNER, F. J. E.
Atlantic Oceanography Laboratory
Bedford Institute, Dartmouth, Nova Scotia

YEAR: 1962

TITLE: Faunal Report, Submarine Geology Program, Polar Continental Shelf Project, Isachsen, District of Franklin

SOURCE: Geological Survey of Canada, Paper 61-27, 7 p.

STATUS: Public

MAP NUMBERS: 7952, 7953

COMMENTS/SUMMARY:

During the 1960 field season, 16 offshore stations were located by personnel of the Polar Continental Shelf Project and the geological Survey of Canada (Collin 1961; Pelletier, 1961) along two lines off the western margin of the Queen Elizabeth Islands. One additional station was located in Isachsen Bay. Depths of the water at these stations are between 143 and 1239 m.

The main aims of the faunal study are these: 1) to add to the already known data regarding depth range, optimum depth, preferred bottom-conditions, temperature tolerance, etc. of the various species now living in Arctic waters, 2) to determine faunal zones and their index species, and 3) to apply these data to interpret the fossil faunas from both sea-bottom cores and raised beaches. This report deals with Recent organisms from the surface of the sea bottom at 15 of the 17 above-mentioned stations. No samples were available from the other two stations, nor were long core samples available at this time for stratigraphic studies.

REF. NO.: 0450-79

SUBJECT CODES: I2

AUTHOR: WALSH, J. E. and JOHNSON, C. M.
Laboratory for Atmospheric Research
University of Illinois, Urbana

YEAR: 1979

TITLE: An Analysis of Arctic Sea Ice Fluctuations, 1953-77

SOURCE: Journal of Physical Oceanography, Vol. 9, pp. 580-591

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Arctic sea ice data from the 1953-77 period are digitized onto a set of 300 monthly grids covering the polar cap. Each grid contains 1648 ice concentration points at a spacing of 1° latitude (60 n mi). The synthesis of the regional ice data sets is described. The digitized data are used to evaluate quantitatively the normal seasonal cycle of ice extent, the 25 year extremes for winter and summer, and the longitudinal dependence of the variance and trend of ice extent. Interannual variations of ice extent exceeding 5° latitude are found at most longitudes. The time series of total Arctic ice extent shows a statistically significant positive trend and correlates negatively with recent high-latitude temperature fluctuations. Empirical orthogonal functions of longitude are used to identify the major spatial and temporal scales of ice fluctuations within the 25-year period. The dominant spatial mode is an asymmetric mode in which the North Atlantic anomaly is opposite in sign to the anomaly over the remainder of the polar cap. A tendency for ice anomalies to persist for several months is apparent in the lagged autocorrelations of the amplitudes of the dominant ice eigenvectors. The month-to-month persistence of the ice anomalies is considerably greater than the persistence of the high-latitude meteorological anomaly fields of sea level pressure, surface temperature and 700 mb height.

REF. NO.: 0451-74

SUBJECT CODES: E6

AUTHOR: BILY, C. and DICK, J. W. L.
Imperial Oil Limited, Calgary, Alberta

YEAR: 1974

TITLE: Naturally Occurring Gas Hydrates in the Mackenzie Delta, N.W.T.

SOURCE: Bulletin of Canadian Petroleum Geology, Vol. 22, No. 3, pp. 340-352

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Two exploratory wells drilled in the Mackenzie Delta area of the Northwest Territories in 1972 by Imperial Oil Limited encountered shallow sand reservoirs containing gas hydrates - an ice-like mixture of natural gas and water. These hydrocarbon-bearing sands underlie a thick zone of permafrost and are within the required pressure-temperature regime for naturally occurring gas hydrates. A significant increase in the amount of formation gas in the drilling mud occurred during penetration of these hydrate-bearing sands. Although wireline logs and drill cuttings indicated the sands to be very porous, test results showed their permeability to be extremely low. This is characteristic of hydrate-filled reservoirs. Because hydrates decompose at warm temperatures, yielding very high pressures if confined, it is dangerous to attempt to recover hydrated core with a conventional core barrel. Problems due to mud gasification, which occurs while drilling hydrates, can be minimized by using cool mud and by casing off the hydrate zones before drilling to deeper objectives.

REF. NO.: 0452-66

SUBJECT CODES: J (A1, A2, A7, B1, B3, C1, E1, G1, I2)

AUTHOR: BIRD, B.

YEAR: 1966

TITLE: The Physiography of Arctic Canada With Special Reference to the Area South of Parry Channel

SOURCE: The Johns Hopkins Press, Baltimore, Maryland
318 p., plus index

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Up to 1966 this was the only work dedicated to describing the physiography of Arctic Canada. The following aspects of the marine environment are covered in this book: the geological history of northern Canada, the development of drainage systems, the Pleistocene Glaciations, the marine transgression, the geomorphic role of river, lake and sea ice, and the Arctic coasts.

REF. NO.: 0453-79

SUBJECT CODES: J (A2, A5, A6, A9, E3)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1979

TITLE: Technical Reassessment of M'Clure Strait Crossing

SOURCE: Prepared for Polar Gas Project, July, 1979,
Panarctic Library Call No. CA7 .PGRJ/79.T26

STATUS: Proprietary

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

In March and April 1979 Polar Gas organized an on-ice survey of one of these crossings - M'Clure Strait, between Peel Point on Victoria Island and Dundas Peninsula on Melville Island. The purpose of the survey was to gather environmental data to enable a reassessment to be made of the feasibility of the submarine pipeline crossing.

The objective of this report is to review the technical feasibility of the crossing, the pipeline design and the construction method in the light of the new survey data. The report is arranged in the following way: Chapter 2 presents the summary and conclusions of the report, Chapter 3 discusses the results of the survey, and Chapter 4 describes the effect of the survey data on the pipeline design, and the pipeline installation method. Various sections of the report describe the bottom topography, ice thickness, currents and bottom soils.

REF. NO.: 0454-78

SUBJECT CODES: H5

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1978

TITLE: Preliminary Appraisal of M'Clure Strait and Dolphin and Union Strait Crossings

SOURCE: Prepared for Polar Gas Project, January, 1978, Panarctic Library Call No. CA7 .PGRJ/78.P61

STATUS: Proprietary

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

Polar Gas asked RJBA to carry out an appraisal of the technical feasibility of 36-inch submarine pipeline crossings of McClure Strait (between Melville Island and Victoria Island) and Dolphin and Union Strait (between Victoria Island and the Canadian Mainland). Many of the construction methods described in this report are the same as those developed for other Polar Gas Marine Crossings, and extensively described in previous reports and in project documentation. In order to avoid duplication, this report includes frequent cross-references to previous reports. The report is arranged in the following way. Chapter two presents a summary of the whole report, and its conclusions. Chapter three summarizes the environmental data available, and includes design criteria. Chapter four describes the pipeline design. Chapter five describes the design of the proposed installation method: Section 5.1 describes the application to these two crossings of the ice-based bottom pull technique, which has been considered in detail for other crossings, and Section 5.2 describes a model study of ice-based surface tie-ins in McClure Srait, in a substantially greater water depth than had been studied previously. Finally, Chapter six presents an overall schedule for the construction of each crossing, an installation schedule for the installation of the marine pipeline itself, and a cost estimate.

REF. NO.: 0455-76

SUBJECT CODES: J (A5, A6, A8, A9, B1, D1, G1, E3)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
MONTREAL ENGINEERING COMPANY LIMITED
BANISTER PIPELINES LTD.
Montreal, Quebec

YEAR: 1976

TITLE: Environmental Design Criteria for Barrow Strait East Technical Assessment

SOURCE: Prepared for Polar Gas Project, Prepared by N. A. Brass, August, 1976, Panarctic Library Call No. CA7 .PGRJ/76.E52

STATUS: Proprietary

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Polar Gas proposes to transport gas by pipeline from the Arctic Islands region to markets in the south. The proposed pipeline includes a number of marine crossings. This study is concerned with a technical assessment of the pipeline crossing over "Barrow Strait East" from Cornwallis Island to Somerset Island, a distance of 57.6 km. R. J. Brown and Associates was commissioned by Montreal Engineering Company Limited on behalf of the Polar Gas Group, to perform a technical assessment of the Barrow Strait East submarine pipeline crossing on the basis of a specialized pull vessel, bottom pull installation method. This report sets out and describes the environmental criteria which has been developed from data gathered together and evaluated in order to perform the technical assessment. Information relating to environmental conditions presented in this study was selected and reduced to a form suitable for use in the technical assessment. The following environmental criteria are described: bottom topography and soils; climatic conditions; and hydrographic conditions.

REF. NO.: 0456-75

SUBJECT CODES: D1 (A6, E1, H4)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1975

TITLE: Evaluation of Bottom Bathymetry in Barrow Strait East and West

SOURCE: Prepared for Polar Gas Project, May, 1975,
Panarctic Library Call No. CA7 .PGRJ/75.E81

STATUS: Proprietary

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

In order to transport natural gas by pipeline from the Arctic Islands to the mainland it has been determined that a pipeline must be installed across Barrow Strait. Two possible crossing sites in Barrow Strait are under consideration. These sites have been arbitrarily named Barrow Strait East and Barrow Strait West based on their relative locations. Barrow Strait East lies between Cornwallis Island and Somerset Island while Barrow Strait West lies between Bathurst Island and Prince of Wales Island.

Certain echogram records obtained in Barrow Strait for Geological Survey of Canada by the CSS Baffin during 1961 and 1962 were acquired by Montreal Eningeering Co. R. J. Brown and Associates were commissioned by Montreal Engineering Co. to perform an evaluation of the bottom bathymetry for crossings in Barrow Strait East and West, using the Government records.

A summary of these findings and conclusions are presented in Part 2 and a more detailed review of each crossing are contained in Parts 4 and 5. In order to put the relative value of the forementioned echogram records into prospective, a brief discussion on how these records were obtained is presented in Part 3. Contour plans and detail drawings of bottom roughness for each alignment are included in Appendix 1 at the back of this report.

REF. NO.: 0457-74

SUBJECT CODES: J (A5, A6, A7, A9, E1, E3, F1, F2)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.,
MONTREAL ENGINEERING COMPANY LIMITED
BANISTER PIPELINES LTD.
Montreal, Quebec

YEAR: 1974

TITLE: Environmental Design Criteria for Austin Channel Feasibility Study

SOURCE: Prepared for Polar Gas Project, March, 1974,
Panarctic Library Call No. CA7 .PGRJ/74.E52

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

This report presents results of a preliminary analysis of certain environmental information of interest in the planning, design and construction of a submarine pipeline across the Austin Channel in the Queen Elizabeth Islands in the Canadian Arctic.

The proposed pipeline crossing which at this time is considered a feasibility route and not necessarily the final route, would link land pipelines on Byam Martin Island and Bathurst Island.

For the purpose of presenting the various criterion, this report is divided into three main sections, these are: (1) Bottom Topography and Soils, (2) Climatical Conditions, and (3) Hydrographic Conditions. A bibliography of information is included.

Data on bottom current velocities, sub-bottom soils and other environmental data are presented.

REF. NO.: 0458-73

SUBJECT CODES: A9 (A5, A6, E3, H1)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1973

TITLE: Phase I of Marine Survey for Byam Channel and Austin Channel, N.W. Territories of Canada

SOURCE: Prepared for Montreal Engineering Co. Ltd., August, 1973, Panarctic Library Call No. CA7 .PGRJ/73.35, 25 p. plus Drawings

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

A field survey program was initiated to collect data on bottom soils, currents and enviromental conditions, during April and May of 1973, of Byam and Austin channels in the Northwest Territories of Canada. Bottom soil samples were collected at 3000 feet intervals along the selected pipeline route across the channels. Surface, mid-depth and bottom currents were recorded for one lunar month period at three and five locations in Byam and Austin Channels respectively. Three weather stations were installed in the vicinity of the selected pipeline route and wind recordings were obtained. Ice thickesses and bottom depths of the channels were measured along the selected route. The field and laboratory tests on soil samples were performed by R. M. Hardy and Associates (see Ref. Nos.: 0464-73, 0465-73, and 0466-73). The bottom profiles, core samples and soil properties are presented here. The current meter recordings were translated from the magnetic tapes and plots of velocity versus time were obtained and the maximum currents were established. The wind recordings were processed and a correlation with the meteorological data at Rea Point was obtained.

REF. NO.: 0459-72

SUBJECT CODES: B1 (A2)

AUTHOR: CHRISTIE, R. L., COOK, D. G., NASSICHUK, W. W., TRETTIN, H. P. and YORATH, C. J.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1972

TITLE: Excursion A66, The Canadian Arctic Islands and the Mackenzie Region [Field Guide]

SOURCE: XXIV International Geological Congress, Edited by D. J. Glass, Montreal, Quebec

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The Canadian Arctic includes one of the largest archipelagos of the world: the land and enclosed marine waters are more than 650 000 square miles in area; almost 950 000 square miles (243 000 km^2) if the offshore continental margin and slope are included. This sparsely vegetated and thinly populated region extends about 1500 miles (2400 km) from southeastern to western extremities, and 1200 miles (1920 km) from the mainland of North America to the northern tip of the northernmost island. Although, in the past, the Canadian Arctic was one of the world's most inaccessible regions and the scene of journeys involving incredible hardships, accessibility now has increased greatly through a network of air routes and airfields. Ice-breakers and ice-strengthened ships reach, almost annually, the larger islands and the settlements along the north coast of the mainland. Systematic geological study of the archipelago by the Geological Survey of Canada began in 1947; since about 1959 there has been an increasing pace of geophysical and surface exploration and of wildcat well drilling. The major oil discovery in northern Alaska in 1968 resulted in an even greater increase in oil exploration in the Canadian Arctic, both on the mainland and in the islands.

This guidebook contains the following sections dealing with the geology of the Arctic Archipelago: Prehistory and Discovery in the Canadian Arctic; General Geology; Mackenzie Region; Central Stable Region; Franklinian Geosyncline; Sverdrup Basin; and Quaternary Geology.

REF. NO.: 0460-80

SUBJECT CODES: F1 (E4, F2)

AUTHOR: DAVENPORT, A. G., NOVAK, M., and ATKINSON, G.
Faculty of Engineering Science
University of Western Ontario, London, Ontario

YEAR: 1980

TITLE: A Study of Seismicity and Seismic Effects for the Design of the Polar Gas Pipeline

SOURCE: Prepared for Polar Gas Project, January, 1980,
Panarctic Library Call No. CA7 PGWO/80.S77, 54 p.

STATUS: Proprietary

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The objective of this report is to describe the nature and extent of the seismic hazard to the proposed Polar Gas Pipeline. The scope of the study is broken down first into a study of the historical data on earthquakes in Northern Canada (Chapter 2). These are analyzed statistically and predictions of the one-in-100-year earthquake acceleration are made for various sections of the pipeline (Chapter 3). Allowances are included for statistical uncertainties in the relationships used in the analysis. In Chapters 4 and 5 the seismically induced mechanisms causing failure or damage to pieplines are discussed. These inlcude the effects of landslides, overstressing the pipe, liquefaction etc. An example is given which illustrates the approach to assessing the risks of overstressing.

REF. NO.: 0461-79

SUBJECT CODES: H4 (E3)

AUTHOR: DOBROCKY SEATECH LIMITED

YEAR: 1979

TITLE: Polar Gas Pipeline Survey Ocean Current Measurement Program Dolphin and Union Strait, N.W.T.

SOURCE: Prepared for Kenting Explorations Services Ltd., Calgary, Alberta [for Polar Gas], Prepared by R. K. Kashino, September, 1979, Panarctic Library Call No. CA7 .PGDS/79.P53, 180 p.

STATUS: Proprietary

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During the months of August and September 1979 a pipeline route survey was conducted across Dolphin and Union Strait between Lady Franklin Point (on Victoria Island) and Cape Krusenstern (mainland N.W.T.) for the Polar Gas Group. This is a report of the ocean current study carried out by Dobrocky Seatech Limited, under contract to Kenting Exploration Services Ltd; Kenting Exploration was under contract to Polar Gas.

Ocean current speed and direction, water temperature, and salinity data were collected at five sites along the proposed route. At each site an array of two current meters (one current meter near bottom and one current meter 5 to 10 m below the surface) was deployed. The first data were recorded on August 28, 1979; the last data were recorded on September 24, 1979.

This report describes the program conducted by Dobrocky Seatech Limited and presents the data collected in graphical form. A printout of the data in tabular form is under separate cover.

REF. NO.: 0462-81

SUBJECT CODES: A7 (B1, G1)

AUTHOR: EBA ENGINEERING CONSULTANTS LTD.
Edmonton, Alberta

YEAR: 1981

TITLE: Geotechnical Engineering Overview of Melville and Victoria Islands, Phase II

SOURCE: Prepared for Polar Gas Project, Combined Pipeline System Study, February 1981, Panarctic Library Call No. CA7 .PGEB/81.G25, 100 p. plus one appendix

STATUS: Proprietary

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

This report describes terrain conditions along the proposed overland pipeline route from the Sabine Peninsula of Melville Island to Lady Franklin Point at the south end of Victoria Island. Soil texture and geotechnical properties are described in detail for several genetic soils. Pipeline design and construction considerations are also addressed. A small section describes potential borrow resources along the proposed route.

Some useful stratigraphic information is contained in the numerous borehole logs for locations near coastal areas.

REF. NO.: 0463-79

SUBJECT CODES: A9 (A3, A5, A6, H1)

AUTHOR: EBA ENGINEERING CONSULTANTS LTD.
Edmonton, Alberta

YEAR: 1979

TITLE: Geotechnical Evaluation of Seabottom Soils at a Proposed Marine Pipeline Crossing, M'Clure Strait, N.W.T.

SOURCE: Prepared for Polar Gas Project, July, 1979, Part of Polar Gas Report "M'Clure Strait Marine Geophysical Investigation, April 1979", Panarctic Library Call No. CA7 .PG/79.M1B, 26 p. plus 3 appendices

STATUS: Proprietary

MAP NUMBERS: 7831

COMMENTS/SUMMARY:

A total of twelve core samples were obtained along the 121 km proposed M'Clure Strait pipeline crossing. Most of the seabottom samples are believed to be of a waterlain till (i.e. a glacial derived soil sedimented through a water environment). This hypothesis is primarily based on gradation analysis and seems to confirm previously published geological reports. Near the south side of the strait, the cored sediments (Cores 1, 281B) are stratified and more uniform in texture. This suggests a deposit of deltaic origin. According to the classification test data, the sediments behave as low plastic clays (CL) with a natural moisture content of between 16 and 43 percent. They are soft with a measured undrained shear strength of less than 8 kPa for nine of the ten samples tested (the other measured 15.2 kPa). The strength data must be interpreted recognizing that a high degree of sample disturbance is present. The data does suggest that the sediments may be slightly overconsolidated with respect to emperical correlations for normally consolidated soils. However, no over-consolidation was apparent from the consolidation test data.

Sabina Ramage - Lady Franklin Point

REF. NO.: 0464-74

SUBJECT CODES: A9 (A5, D1, A8, E5)

AUTHOR: R. M. HARDY & ASSOCIATES LTD.
Edmonton, Alberta

YEAR: 1974

TITLE: Polar Gas Project Report on Laboratory Testing on Sea Bottom Sediments Water Program 1973, Volume I and II

SOURCE: Prepared for Montreal Engineering Company Ltd., [for Polar Gas Ltd.], Prepared by G. McCormick, February, 1974, Panarctic Library Call No. CA7 .PGHR/73.R24 V.1 and V.2

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950

COMMENTS/SUMMARY:

At the request of Mr. A. S. Demers, P. Eng., Project Co-ordinator, Polar Gas Project, Montreal Engineering Company Limited, R. M. Hardy & Associates Ltd. undertook laboratory testing of sea bottom sediments from nine proposed pipeline crossings in the Hudson Bay and the arctic islands area of northern Canada. These crossings are: Byam Channel, Franklin Strait, Roes Welcome Sound, Hudson Strait One, Hudson Strait Two, Barrow Strait East, Barrow Strait West, Fisher Strait, and Maury Channel.

Volume I contains the summarized soil report, location maps, core logs, the field exploration report and a description of the laboratory testing program.

Volume II contains summaries of the laboratory tests, soils gradation curves, triaxial test results, erosion test results, critical water content results and friction test results.

REF. NO.: 0465-73

SUBJECT CODES: A9 (A5, A6)

AUTHOR: R. M. HARDY & ASSOCIATES LTD.
Edmonton, Alberta

YEAR: 1973

TITLE: Polar Gas Project Addendum to Report on Laboratory Testing of Sea Bottom Sediments, December, 1973

SOURCE: Prepared for Montreal Engineering Co. Ltd., [for Polar Gas Ltd.], Prepared by G. McCormick, Panarctic Library Call No. CA7 .PGHR/73.R24

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7951

COMMENTS/SUMMARY:

At the request of Mr. A. S. Demers, P. Eng., Project Co-ordinator, Polar Gas Project, Montreal Engineering Company Limited, R. M. Hardy & Associates Ltd., undertook laboratory testing of sea bottom sediments from nine proposed pipeline crossings in the Hudson Bay and the arctic islands area of northern Canada. These crossings are: Byam Channel, Franklin Strait, Roes Welcome Sound, Hudson Strait One, Hudson Strait Two, Barrow Strait East, Barrow Strait West, Fisher Strait, and Maury Channel.

This addendum to Volume I and II of the report by R. M. Hardy & Associates Ltd. is essentially a repeat of the section entitled "Soils Report". New information is included on core logs, laboratory testing, soils gradation and triaxial tests.

REF. NO.: 0466-73

SUBJECT CODES: A9 (A5, A8, E5, G1, H1)

AUTHOR: R. M. HARDY & ASSOCIATES LTD.
Edmonton, Alberta

YEAR: 1973

TITLE: Polar Gas Project Geotechnical Investigation, Spring 1973

SOURCE: Prepared for Montreal Engineering Co. Ltd., September, 1973, Panarctic Library Call No. CA7 .PGHR/73.M52, 32 p. plus 4 appendices

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

This report describes a geotechnical investigation of Austin and Byam channels for a proposed pipeline crossing. The following aspects of the project are addressed: area description, permafrost, logistics, sampling and testing methodology; sea ice testing; thaw settlement; winter construction of earthwork; and erosion. The following information is contained in the appendices: maps, plans, charts; data on sea water and ice; test hole logs; and explanation sheets.

REF. NO.: 0467-84

SUBJECT CODES: H1 (H4)

AUTHOR: HEFFLER, D. E.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1984

TITLE: RALPH - An Instrument to Monitor Seabed Sediments

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 84-1B, pp. 47-52

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

RALPH is an instrument designed at the Atlantic Geoscience Centre to study the dynamics of seabed sediments in nearshore and continental shelf waters. The sensors include current meters, a depth gauge and an optical transmissometer. A time-lapse camera takes photographs of the seabed in synchronism with the sensor samples. All the data are logged internally and the system can operate autonomously for more than one month.

RALPH was deployed on the shoreface at Martinique Beach, Nova Scotia, in June 1983 to study a summer-accreting beach. The combination of photographs of the bed and logged data from the sensors offer insight into the formation and stability of various bedforms.

RALPH is being extensively used for nearshore studies and in continental shelf areas of interest to petroleum exploration.

REF. NO.: 0468-73

SUBJECT CODES: B6 (B3)

AUTHOR: HILLS, L. V.
Department of Earth Sciences
University of Calgary, Calgary, Alberta

YEAR: 1973

TITLE: Beaufort Formation, Western Queen Elizabeth Islands

SOURCE: In Report of Activities, Geological Survey of Canada, Part A: April to October 1972, Paper 73-1, p. 202

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953

COMMENTS/SUMMARY:

Field work was designed to collect material from the lignite beds on Banks Island for insect studies to be conducted by Dr. J. Mathews, re-collect leaf litter from the lignite bed on Banks Island, and to examine and collect lithologic and palynologic material from Brock, Ellef Ringnes and Meighen Islands.

REF. NO.: 0469-62

SUBJECT CODES: H1 (B4.2)

AUTHOR: HOBSON, G. D.
Resource Geophysics and Geochemistry
Geological Survey of Canada

YEAR: 1962

TITLE: Seismic Exploration in the Canadian Arctic Islands

SOURCE: Geophysics, Vol. XXVII, No. 2, pp. 253-273

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

The Polar Continental Shelf Project, a broad program of research in the Canadian Arctic, was started in 1959. Seismic studies were undertaken by the Geological Survey of Canada. Refraction and reflection techniques were employed in the first stages of a reconnaissance program during May, June, July and August 1960.

Certain new techniques were developed during this seismic program in the high Arctic. The crew operated from motor toboggans in 1960 but helicopters will be used more extensively in the future for a more efficient operation. Adverse weather conditions such as blizzards, low temperatures, white-outs, wind, and rain are a hindrance to operations at various times of the year.

The sea ice appears to present no great noise problem to standard recording techniques. Several air shots were recorded in direct comparison with surface shots but the gain in energy level is not enough to justify using the method. The records from various locations within the Sverdrup Basin indicate that both reflection and refraction techniques are satisfactory. A cross-section illustrates the results of the 1960 program.

REF. NO.: 0470-74

SUBJECT CODES: A7 (A1)

AUTHOR: HODGSON, D. A. and HASELTON, G. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Reconnaissance Glacial Geology, Northeastern Baffin Island

SOURCE: Geological Survey of Canada, Paper 74-20, 10 p. plus Map 1395A

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

Surficial geological materials and the principal glacial depositional landforms of northeastern Baffin Island have been mapped at a scale of 1:500 000. Major end moraines on Bylot Island are outlined. Surficial materials, largely coarse glacial till and fluvial deposits, are thickest and most varied in two zones - at the heads of fiords, coincident with the Cockburn Moraine System, and on the outer coast where glacial ice issued from the fiords onto the continental shelf.

REF. NO.: 0471-74

SUBJECT CODES: H4 (A3, E1)

AUTHOR: HUNTEC (70) LIMITED
Toronto, Ontario

YEAR: 1974

TITLE: Polar Gas Project Marine Geophysical Survey Operations 1973

SOURCE: Prepared for Montreal Engineering Company Limited, [for Polar Gas Ltd.], January, 1974, Panarctic Library Call No. CA7 .PGHL/74.P53

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950, 7951

COMMENTS/SUMMARY:

A marine geophysical survey, to gather bathymetric, bottom morphologic and sub-bottom geologic information, was performed by Huntec (70) Limited for Montreal Engineering Company, Limited as part of the Polar Gas Project for 1973. Two launches, Polar Gas II and III and a mother vessel, Percy M. Crosbie were used for surveying selected areas.

Surveying of both the nearshore and mid-channel lines was done with Polar Gas III whereas the Percy M. Crosbie was used to gather data from mid-channel only. When surveying from the mother vessel, the recording facilities of either survey launch on board the Percy M. Crosbie, but primarily those of Polar Gas II, were used.

A total of 153, 185 and 256 hours respectively of bathymetric, side scan sonar, and sub-bottom data were collected in 315 hours of surveying.

REF. NO.: 0472-78

SUBJECT CODES: H5 (A9, D1, E3)

AUTHOR: INTERNATIONAL PIPELINE ENGINEERS, INC.
Houston, Texas

YEAR: 1978

TITLE: Polar Gas Project Preliminary Appraisal of Bellot Strait Crossing

SOURCE: Prepared for Polar Gas Project, January, 1978, Panarctic Library Call No. CA7 .PGIP/78.P53, p. 32

STATUS: Proprietary

MAP NUMBERS: 7503, 7740

COMMENTS/SUMMARY:

Polar Gas is planning to construct a large diameter natural gas pipeline from the High Arctic Islands to a point of connection with the TransCanada Pipeline System near Longlac, Ontario. The northern part of the route entails major crossings of several straits and channels between these Arctic Islands. One of the crossings, Bellot Strait, between Somerset Island and Boothia Peninsula is the subject of this study. Polar Gas conducted field investigtions of six possible crossings of Bellot Strait. These locations are shown on Appendix I, Bellot Strait Crossing Alternatives. Kenting Exploration Services Limited conducted a limited marine survey of Location 1.

REF. NO.: 0473-70

SUBJECT CODES: E5 (H4, B4.4)

AUTHOR: JESSOP, A. M.
Division of Seismology, Dominion Observatory,
Ottawa, Ontario

YEAR: 1970

TITLE: How to Beat Permafrost Problems

SOURCE: Oilweek, January 12, 1970, pp. 22-24

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The techniques for the accurate measurement of temperature in deep boreholes have existed for some time within government and university research laboratories. Up to the present, the oil and gas industry has not needed these techniques, but they are now beginning to be needed. This is an example of the value of pure research and of continuous contact between industrial and research establishments. Temperature measurements will not solve all the permafrost problems of the industry, but it will help in defining exactly what some of the problems are.

REF. NO.: 0474-76

SUBJECT CODES: H1 (E5)

AUTHOR: JUDGE, A. S.
Earth Physics Branch
Energy Mines and Resources Canada, Ottawa, Ontario
MACAULAY, H. A. and HUNTER, J. A.
Resource Geophysics and Geochemistry Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: An Application of Hydraulic Jet Drilling Techniques to Mapping of Sub-Seabottom Permafrost

SOURCE: In Report of Activities, Part C, Geological Survey of Canada, Paper 76-1C, pp. 76-78

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

During April 1976, five experimental holes were drilled into the seabottom of the Beaufort Sea Shelf near the Mackenzie Delta. Thermistor cables were installed in all holes and temperatures were read at periodic intervals during the weeks following installation. Accurate measurements of sub-seabottom temperatures indicated permafrost was present.

REF. NO.: 0475-79

SUBJECT CODES: H4

AUTHOR: KENTING EXPLORATION SERVICES LIMITED
Calgary, Alberta

YEAR: 1979

TITLE: Dolphin and Union Strait Marine Geophysical Investigation

SOURCE: Prepared for Polar Gas, Combined Pipeline Systems Study, August, 1979, Panarctic Library Call No. CA7 .PGKE/79.D57

STATUS: Proprietary

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This report presents the results of a marine survey conducted by Kenting Exploration Services Limited of Calgary, Alberta for The Polar Gas Combined Pipeline System Survey on the Dolphin and Union Straits area of the Coronation Gulf, N.W.T.

The combination of geophysical, bottom sampling and oceanographic data were accumulated to determine the nature of the seabed, the shallow sub-bottom features as they pertain to the initial design criteria of a marine pipeline crossing and the current speed and direction.

The geophysical data showed generally a flat surface with a layer of sediments up to 4 m in thickness with the occasional suggestion of bedrock outcrops and till-like material. The crossing profile agreed in general with the published hydrographic data. The current meter data showed low velocity layers (1.5 kts) on the bottom of the crossing and anomalously high velocity area near surface on the Lady Franklin Point side which may be due to meteorlogical conditions.

REF. NO.: 0476-77

SUBJECT CODES: J (A3, A5, A6, B4.4, D1, E1, E2, H4)

AUTHOR: KENTING EXPLORATION SERVICES LIMITED
Calgary, Alberta

YEAR: 1977

TITLE: Interpretation Report Arctic Islands Marine Survey 1977

SOURCE: Prepared for Montreal Engineering Company Limited, Prepared by D. M. Danyluk, J. D. Fellows, J. B. Henry, and G. A. Tite, Panarctic Library Call No. CA7 .PGKE/78.I56, 32 p. plus map box

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950

COMMENTS/SUMMARY:

The Arctic Islands Marine Survey, 1977, was conducted by Kenting Exploration Services Limited for Montreal Engineering Company, Limited, acting on behalf of Polar Gas in the Parry Islands of the Canadian Archipelago.

Bottom information was collected in East Barrow Strait and McDougall Sound by means of echo sounding, side scanning sonar and deep and shallow seismic profiling. Bathymetric data indicates East Barrow Strait topography to be more gentle than that in McDougall Sound. Ice scours, encountered in East Barrow Strait, were generally less than a metre deep. Bottom sediments, usually less than 8 metres thick, are classified as glacial tills, and perhaps could be categorized as basal tills. No evidence of rock outcrop was seen by the side scan, nor were boulder fields interpreted. Bedrock appears to be seismically homogeneous, with a much higher velocity than overlying sediments.

REF. NO.: 0477-77

SUBJECT CODES: H4 (H2, A3, B4.2, A5)

AUTHOR: KENTING EXPLORATION SERVICES LIMITED
Calgary, Alberta

YEAR: 1977

TITLE: Operations Report Arctic Islands Marine Survey, 1977

SOURCE: Prepared for Montreal Engineering Company Limited, Prepared by J. D. Fellows, Panarctic Library Call No. CA7 .PGKE/77.066

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950

COMMENTS/SUMMARY:

The Arctic Islands Marine Survey, 1977, was conducted by Kenting Exploration Services Limited for Montreal Engineering Company Limited during the period July 20, 1977 to September 18, 1977, in the Parry islands area of the Canadian Archipelago. The channels investigated were East Barrow Strait between Cornwallis Island and Somerset Island and secondly McDougall Sound between Cornwallis Island and Bathurst Island. A combined bathymetric, sea floor topography, geophysical survey, coring program was conducted to determine the nature of the seabed, the shallow sub-bottom features and the suitability of these channels for the installation of a large pipeline.

The East Barrow Strait survey was completed on August 29th and consisted basically of seven parallel cross channel lines at 150 m spacing and 5 short cross lines at each fore-shore. Detailed bathymetric data were acquired on all lines, side scan sonar data were obtained on all short cross lines and three alternating channel crossing lines, high resolution shallow seismic and deeper seismic data were acquired on the four other alternating lines plus the centre line. Fifteen cores were taken along the crossing corridor.

The McDougall Sound survey was incomplete due to adverse weather conditions, a broken-down boat and the very rough ocean bottom which necessitated two other attempted channel crossings.

REF. NO.: 0478-84

SUBJECT CODES: H1

AUTHOR: KURFURST, P. J. and NIXON, F. M.
Terrain Sciences Division
Geologicial Survey of Canada, Ottawa, Ontario
MORAN, K.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1984

TITLE: Drilling and Sampling in Frozen Seabottom Sediments Southern Beaufort Sea

SOURCE: In Current Research, Part B, Geological Survey of Canada, Paper 84-1B, pp. 193-195

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Various drilling and sampling equipment, using different techniques, has been employed to drill and collect marginally frozen samples of seafloor sediments. Different types of corers and samplers are described and their performance is evaluated.

REF. NO.: 0479-65

SUBJECT CODES: B4.4

AUTHOR: LAW, L. K. and PATERSON, W. S. B.
Polar Continental Shelf Project
Ottawa, Ontario
WHITHAM, K.
Dominion Observatory, Ottawa, Ontario

YEAR: 1965

TITLE: Heat Flow Determinations in the Canadian Arctic Archipelago

SOURCE: Canadian Journal of Earth Sciences, Vol. 2, pp. 59-71

STATUS: Public

MAP NUMBERS: 7832

COMMENTS/SUMMARY:

Three heat flow determinations were made in M'Clure Strait between Prince Patrick and Banks Islands in the northwestern part of the Arctic Archipelago of Canada. The three stations lie within 55 km of a point some 130 km SSW of Mould Bay, Prince Patrick Island, and yield a weighted mean heat flow of $0.84 \pm 0.09 \times 10^{-6}$ cal cm^{-2} s^{-1}, or 57% only of the worldwide continental average. The measurements were made from sea ice in water depths of some 430 m using a thermal probe and portable equipment carried in a fixed-wing aircraft. Consequently in the absence of any known major perturbing effect, it must be concluded that the structure responsible for the supression of vertical magnetic field variations at Mould Bay observatory does not extend 130 km to the south, is not produced by an anomalously high near-surface temperature, or is of late-Quaternary origin.

REF. NO.: 0480-71

SUBJECT CODES: A6 (D1, D2)

AUTHOR: LOKEN, O. H.
Inland Waters Branch, Department of Energy, Mines and Resources, Ottawa, Ontario
HODGSON, D. A.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1971

TITLE: On the Submarine Geomorphology Along the East Coast of Baffin Island

SOURCE: Canadian Journal of Earth Sciences, Vol. 8, No. 2, pp. 185-195

STATUS: Public

MAP NUMBERS: 7220

COMMENTS/SUMMARY:

A reconnaissance survey was made of the submarine geomorphology along the east coast of Baffin Island using an echo sounder. The survey focused on: (1) the continental slope, (2) the continental shelf, and (3) the fiords. The depth contours on the continental slope are roughly parallel to the coastline. The overall steepness of the slope is typically 2-3°, with the steeper sections near the top. Small irregularities of unknown origin are commonly found in the slope profiles. Transverse troughs with depths of almost 900 m are the most distinct features of the 30-50 km wide continental shelf. The fiords of east Baffin Island show the typical fiord characteristics and reach a maximum depth of 900 m.

REF. NO.: 0481-76

SUBJECT CODES: A1 (A7, A11)

AUTHOR: LOWDON, J. A. and BLAKE, JR., W.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: Geological Survey of Canada Radiocarbon Dates XVI

SOURCE: Geological Survey of Canada, Paper 76-7, 21 p.

STATUS: Public

MAP NUMBERS: Entire study area.

COMMENTS/SUMMARY:

This list includes 83 radiocarbon age determinations on 80 geological samples made by the Radiocarbon Dating Laboratory. They are on samples from various areas as follows: Nova Scotia (8), Quebec (5), Ontario (7), Manitoba (8), Saskatchewan (1), Alberta (1), British Columbia (16), Yukon Territory (22), Northwest Territories, Mainland (5), Northwest Territories, Arctic Archipelago (9), United States of America (1). Details of background and standard for the 2 L and 5 L counters during the period from April 1, 1975 to August 4, 1976 are summarized in Tables 1 and 2, Table 3 gives the number of counts used to determine the average background and standard counting rates; and Table 4 lists the number of different background and standard gas preparations used for counting.

REF. NO.: 0482-77

SUBJECT CODES: A9 (A5, B1, B6, B7, E5, H1)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
Montreal, Quebec

YEAR: 1977

TITLE: Tunnel Drilling Investigations 1977, Geotechnical Report

SOURCE: Prepared for Polar Gas Project, Prepared by A. S. Demers, September, 1977, Panarctic Library Call No. CA7 .PGME/77.T72

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

The Tunnel Drilling Investigations forming part of the 1977 Polar Gas field programs were undertaken in the period March to June to provide geologic data on subsurface conditions along sections of the proposed pipeline route across Crozier, Pullen, and East Barrow Straits.

Nine holes were drilled at the following locations: two shallow on-ice-based holes in Crozier Strait - west channel, one shallow and two deep land-based holes at Crozier Strait - east channel, the shallow hole being adjacent to one of the deep holes, two shallow on-ice-based holes in Pullen Strait, and two shallow land-based holes in East Barrow Strait.

REF. NO.: 0483-77

SUBJECT CODES: J (A5, A9, B1, B4.4, B6, B7, E3, E5, H1)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
Montreal, Quebec

YEAR: 1977

TITLE: Winter Research Program 1977

SOURCE: Prepared for Polar Gas Project, September 1977,
Panarctic Library Call No. CA7 .PGME/77.W36

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

The report provides a summary account and summary data for the three main components of the overall program namely: (a) the on-ice survey of channels along a proposed pipeline route from King Christian/Ellef Ringnes Islands to Bathurst/Melville Islands; (b) the drilling investigations for potential tunnels along the proposed pipeline route from Bathurst Island to Somerset Island; and (c) the current metering of Crozier and Pullen Straits. In addition, data on ice thicknesses in McDougall Sound are included in the report.

REF. NO.: 0484-76

SUBJECT CODES: A9 (A4, A5, B6, B7, E5, H1, H5)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
Montreal, Quebec

YEAR: 1976

TITLE: Foreshore Drilling 1976 Geotechnical Report

SOURCE: Prepared for Polar Gas Project, September 1976,
Panarctic Library Call No. CA7 .PGME/76.F52

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

The Foreshore Drilling Investigations of the 1976 Polar Gas Winter Program were undertaken to provide data for assessing methods of protecting marine pipelines against ice scour in the foreshore areas of Byam and Austin Channels. Eleven holes were drilled in four foreshore areas - on the east side of Melville Island, on the east and west sides of Byam Martin Island, and on the west side of Bathurst Island. For the purposes of the study, the foreshore areas were considered to extend offshore to the 45 m water depth. Continuous coring of bedrock, water pressure testing in some boreholes, and borehole thermal measurements to determine the boundaries of permafrost were the main parts of the investigations. Diamond drill cores and samples of unconsolidated sediments were logged in the field, and laboratory analysis was performed on selected rock cores and soil samples. In order to acquire basic data about the onshore soils and unconsolidated marine sediments, samples and standard penetration tests were taken at selected intervals. The drilling was performed during April and May 1976.

This report presents a description of the field operations, logs of all drill holes, photographs of drill core, the results of laboratory testing, and an interpretation of subsurface conditions.

REF. NO.: 0485-76

SUBJECT CODES: J (A5, A7, A9, E3, E5, H1, H5, I2)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
BANISTER PIPELINES
Montreal, Quebec

YEAR: 1976

TITLE: Winter Research Program 1976

SOURCE: Prepared for Polar Gas Project, Prepared by A. S. Demers, September 1976, Panarctic Library Call No. CA7 .PGME/76.R26

STATUS: Proprietary

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

As part of a continuing series of field research programs designed to supply data required to assess the feasibility of constructing a marine gas pipeline in the Canadian Arctic, the 1976 Winter Program was conducted by Montreal Engineering Co., Ltd. and Banister Pipelines during March, April and May 1976.

Overall objective of the program was to acquire additional data on ice, oceanographic, and subsurface conditions along sections of the proposed pipeline route. Activities included foreshore subsurface investigations, ocean current metering, water and ice temperature and salinity measurements, ice thickness surveys, and ice movement studies. This report describes the activities and details the data acquired through them.

REF. NO.: 0486-74

SUBJECT CODES: J (A2, A3, A5, A6, A9, B1, B4.2, B5, E1, E3, E4, E5, H4, H5)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
BANISTER PIPELINES LTD.
R. J. BROWN AND ASSOCIATES LTD.,
Montreal, Quebec

YEAR: 1974

TITLE: Marine Survey Program 1973, Volume One

SOURCE: Prepared for Polar Gas Project, March 1974,
Panarctic Library Call No. CA7 .PGME/74.M17 V.1

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950, 7951

COMMENTS/SUMMARY:

The principal objective of the program is to provide data to establish marine design criteria for the crossings on a route leading from Melville Island to the Mainland and across Northern Hudson Bay to the Ungava Peninsula. A secondary objective is to provide similar data for crossings on routes from King Christian Island to Bathurst and Cornwallis Islands.

The following principal activities were undertaken to provide the required information: (a) acoustic depth soundings to determine bottom profiles and bottom roughness; (b) continuous seismic profiling to determine sub-bottom stratification; (c) side scan sonar surveys to detect ice scouring, reefs, faults, outcrops and other obstructions which would interfere with the pipeline; (d) collection and analysis of bottom soil samples; and (e) recording of wave heights and frequencies, tide levels, and water temperatures.

The report has been prepared in two volumes. Volume One describes the field work undertaken and briefly summarizes the extent of data obtained, including small scale bottom profile drawings of each crossing surveyed. Volume Two presents a concise and detailed record of the survey work accomplished in the form of drawings and tables. Interpreted results of the survey are presented separately in reports prepared by the outside consultants participating in the program.

REF. NO.: 0487-74

SUBJECT CODES: A3 (B4.2, H5)

AUTHOR: MONTREAL ENGINEERING COMPANY LIMITED
BANISTER PIPELINES LTD.
R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1974

TITLE: Marine Survey Program 1973, Volume Two

SOURCE: Prepared for Polar Gas Project, March 1974,
Panarctic Library Call No. CA7 .PGME/74.M17 V.2

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950, 7951

COMMENTS/SUMMARY:

This volume of the report contains a detailed record of the locations of marine surveys and the extent of data collected. The information is presented in the form of Horizontal Control Record drawings which show each survey line and the vessel's track generally determined by the Range Positioning System. Position fixes were normally taken at five minute intervals and their location identified on the drawing by a four digit number representing the clock time at which each fix was taken. It should be noted that the track shown is that actually followed by the vessel rather than a precalculated line. A table showing the date, vessel used, and the extent of use of each piece of survey equipment has been included on each drawing. The data are shown in italics where navigation was done by radar or dead reckoning. Locations where bottom core samples have been taken and current meters installed are also shown.

REF. NO.: 0488-74

SUBJECT CODES: H5 (A9, B1, B6, B7)

AUTHOR: MONTREAL ENGINEERING COMPANY, LIMITED
BANISTER PIPELINES LTD.
Montreal, Quebec

YEAR: 1974

TITLE: Tunnelling as an Alternative for Arctic Marine Pipelines

SOURCE: Prepared for Polar Gas Project, February 1974,
Panarctic Library Call No. CA7 .PGME/74.T71

STATUS: Proprietary

MAP NUMBERS: 7503, 7830, 7950, 7951

COMMENTS/SUMMARY:

The report reviews primarily the state of the art of rapid tunnelling and derives the costs and schedules of potential tunnels along a route between Melville Island and Boothia Peninsula via Cornwallis Island.

From a preliminary analysis of the geologic conditions along this route, we have tentatively concluded that tunnelling construction is technically feasible and can be carried out within the time frame currently being considered for the overall project. Only a detailed geologic investigation will substantiate this conclusion.

In this report the bedrock geological conditions between Melville, Byam Martin, Bathurst, Cornwallis and Somerset Islands are reviewed.

REF. NO.: 0489-66

SUBJECT CODES: B4.2 (B6)

AUTHOR: OVERTON, A.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1966

TITLE: Seismic Refraction Surveys, Western Queen Elizabeth Islands and Polar Continental Margin

SOURCE: In Report of Activities, November 1965 to April 1966, Geological Survey of Canada, Paper 66-2, pp. 20-24

STATUS: Public

MAP NUMBERS: 7831, 7951, 7952

COMMENTS/SUMMARY:

During 1964 and 1965, explosion seismic studies were conducted in an area centring on Prince Patrick Island, N.W.T. The work was an extension of the seismic investigations of sedimentary thicknesses by Hobson (1962, 1966) and similar studies extending to the crust and upper mantle by Sander and the writer (1965).

The data obtained in this study enables seismic velocities for the underlying sedimentary rocks to be determined. Inferences as to the nature and depth of the underlying bedrock are made.

REF. NO.: 0490-61

SUBJECT CODES: B4.1

AUTHOR: GREGORY, A. F., MORLEY, L. W. and BOWER, M. E.
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1961

TITLE: Airborne Geophysical Reconnaissance in the Canadian Arctic Archipelago

SOURCE: Geophysics, Vol. XXVI, No. 6, pp. 727-737

STATUS: Public

MAP NUMBERS: Queen Elizabeth Islands

COMMENTS/SUMMARY:

Profiles of total magnetic intensity and gamma radioactivity were obtained along a series of widely-spaced flight lines across the main tectonic regions of the Canadian Arctic Archipelago. The interpretation of these data and the calculated depths-to-basement substantiate the recognized regional structures, confirm general geological continuity between the islands, and provide some additional structural detail. Results of particular interest are the maximum depths-to-basement in the sedimentary basins (10 000 ft. or greater), the interpretation of the structure of the Precambrian arches, the extent of nonbasement igneous activity, the apparent absence of disturbed ferromagnetic rocks on the Polar Continental Shelf except near the edge where a few deep basement-type anomalies were observed, and the occurrence of anomalous radioactivity in certain sedimentary rocks on Bathurst Island. Remarkable magnetic anomalies, which in profile show a central minimum with marginal maxima, are characteristic of known gypsum domes in the Sverdrup Basin.

REF. NO.: 0491-80

SUBJECT CODES: E5 (A9, H5)

AUTHOR: ACRES CONSULTING SERVICES LIMITED
Niagara Falls, Ontario

YEAR: 1980

TITLE: Offshore Permafrost Analysis

SOURCE: Prepared for Petro-Canada Inc. (Arctic Pilot Project), Calgary, Alberta, Arctic Pilot Project support document to the National Energy Board, Exhibit 80

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Permafrost levels at the site have been established from the test hole logs compiled by Geocon Ltd. during two field investigations. The LNG terminal is to be constructed by driving sheet-pile cells into the sea bottom, and subsequently filling them with crushed stone. The average embedment depth is 20 m. Although the cells will not penetrate the permafrost, there may be problems with settlement if permafrost thawing occurs due to the warm water discharge.

The work conducted by Acres consists of a two-dimensional heat transfer analysis which gives temperature profiles and thaw front depths for a typicl vertical section through the terminal. This report describes the study approach, the results of the analysis, and recommendations and conclusions.

REF. NO.: 0492-79

SUBJECT CODES: A9 (A7, E3, G1, H5)

AUTHOR: EBA ENGINEERING CONSULTANTS LTD.
Edmonton, Alberta

YEAR: 1979

TITLE: Arctic Pilot Project Melville Island Pipeline Geotechnical Evaluation, Volume 1 - Report

SOURCE: Prepared for The Alberta Gas Trunk Line Company Ltd., Prepared by W. Roggensack and D. Hayley, Arctic Pilot Project support document to the National Energy Board, Exhibit 60, 138 p., references, glossary and route maps

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

A geotechnical field program was undertaken during 1978 to expand the existing data base for a proposed natural gas pipeline across Melville Island. A few select boreholes were located in close proximity to the coastline, and as such provided useful stratigraphic data and thermal data. Volume 1 of this report describes the general geologic conditions on Melville Island, the geotechnical properties of the surficial soils, ground ice conditions, slope movement and instability, and erosional features. Two route maps showing borehole locations are also included.

REF. NO.: 0493-79

SUBJECT CODES: A9 (A7, E3)

AUTHOR: EBA ENGINEERING CONSULTANTS LTD.
Edmonton, Alberta

YEAR: 1979

TITLE: Arctic Pilot Project Melville Island Pipeline Geotechnical Evaluation, Volume 2 - Appendices

SOURCE: Prepared for The Alberta Gas Trunk Line Company Ltd., Prepared by W. Roggensack and D. Hayley, Arctic Pilot Project support document to the National Energy Board, Exhibit 61

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

A geotechnical field program was undertaken during 1978 to expand the existing data base for a proposed natural gas pipeline across Melville Island. A few select boreholes were located in close proximity to the coastline, and as such provided useful stratigraphic data and thermal data. Volume 2 of this report contains 10 appendices which include the following aspects of the project: the drilling program, 1978 field data, Polar Gas field data, colluvial slope studies, slope instability studies, ground temperature data, laboratory results, location maps, route photomosaics, alternate route photomosaics.

REF. NO.: 0494-81

SUBJECT CODES: F2 (F1)

AUTHOR: FENCO CONSULTANTS LTD.
Calgary, Alberta

YEAR: 1981

TITLE: Seismic Risk at Bridport Inlet and Drake-Point, Melville Island, N.W.T.

SOURCE: Prepared for Petro-Canada Inc., (Arctic Pilot Project), Calgary, Alberta, Arctic Pilot Project support document to the National Energy Board, Exhibit 358, 19 p. plus appendices and figures

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

The methodology for estimating seismic risk in Canada has undergone more extensive changes than previously foreseen in a previous FENCO report. Accordingly, the primary purpose of the present study is to re-examine seismic risk by means of revised attenuation formulae, and procedures, which Energy, Mines and Resources has recently made public. In addition, the earthquake data are updated, the zonation is amended, seismic source parameters are estimated by maximum likelihood and the near peak acceleration attenuation relation is tentatively modified to account for recently acquired strong- motion, near-field data from California.

In the current study, seismic risk is assessed by employing the so-called modified average number technique, wherein the historical earthquakes are released from their presumed epicenters (Weicher & Milne, 1979). In this approach, there are three distinct steps. Firstly, zones of uniform earthquake occurrence are identified on the basis of geological and tectonic judgment. Secondly, magnitude recurrence curves are developed from a consideration of the region's historical seismicity. Thirdly, risk estimates are obtained, for any representative ground-motion parameter (e.g., peak acceleration, intensity, etc.) by summing, or integrating, over the various seismic sources in the spirit of Cornell (1968). In this report the assessment of seismic risk includes sites near Bridport Inlet and Drake Point.

REF. NO.: 0495-80

SUBJECT CODES: H5 (A9, E1, I2)

AUTHOR: FENCO CONSULTANTS LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Conceptual Design for Bridport Inlet Harbour Facilities

SOURCE: Prepared for Petro-Canada Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 106, 86 p., one appendix

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This report initially reviews the site conditions in the vicinity of the proposed terminal facility. The LNG harbour layout is examined in detail. Design considerations for berthing forces, ice forces, steel sheet pile walls, construction methodology and scour protection are then addressed. Some useful environmental design criteria are also contained in this report.

REF. NO.: 0496-80

SUBJECT CODES: F2 (A9, F1)

AUTHOR: FENCO CONSULTANTS LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Assessment of Seismic Risk for Bridport Wharf

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project, Prepared by S. H. Zemell, Arctic Pilot Project support document to the National Energy Board, Exhibit 105, 7 p. plus two appendices

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This brief letter report describes a seismic risk evaluation for the Bridport Wharf based on a method described by Basham et al (1979). A zone of high earthquake occurrence has been identified which was considered to be the sole source contributing to seismic risk at the Bridport Wharf. The zone consists of the western portion of the Sverdrup Basin and Sverdrup Ridge, together with the Gustaf-Lougheed Arch. Curves of per annum risk against peak acceleration and peak velocity were developed. It was concluded that the peak acceleration per annum risk of 1% corresponds to 7 m/s and 6.8% g, respectively.

REF. NO.: 0497-80

SUBJECT CODES: A9 (A5, A6, A7, A8, D1, E5, H1, H5)

AUTHOR: GEOCON (1975) LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Extension of Bathymetry and Geotechnical Surveys Proposed LNG Dock Facilities Bridport Inlet, Melville Island, N.W.T.

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 335, 45 p. plus four appendices

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Presented in this report are the results of surveys conducted at Bridport Inlet, Melville Island to expand on previous studies conducted during 1978. The purpose of this work was to expand bathymetry and subsurface information in the offshore area and to obtain geotechnical information at the proposed airstrip, quarry, ware- house, and gravel borrow areas.

This report contains detailed descriptions of the local geology, offshore bathymetry and subsurface conditions, granular resources, field logistics, sea bottom cross sections, and the results of numerous geotechnical tests.

REF. NO.: 0498-80

SUBJECT CODES: E5 (A9, H5)

AUTHOR: GEOCON (1975) LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Preliminary Thermal Study Processing, Storage and Dock Facilities, LNG Terminal, Bridport Inlet

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 114, 13 p. plus two appendices

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This preliminary study was prepared to assess the effects of various thermal components on existing permafrost at the site of proposed terminal facilities at Bridport Inlet. One-dimensional analyses with simplified boundary conditions were performed to obtain an order of magnitude estimate of the permafrost aggradation or degradation in the vicinity of the proposed facilities. Soil profiles, thermal properties, and frost heave are examined in this report.

REF. NO.: 0499-79

SUBJECT CODES: H5 (A5, A9, E5)

AUTHOR: GEOCON (1975) LTD.
Calgary, Alberta

YEAR: 1979

TITLE: Slope Stability Analyses of Proposed Offshore Embankments, Proposed LNG Facilities, Bridport Inlet

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 116, 32 p. plus two appendices

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Geocon (1975) Ltd. was retained by Petro-Canada to conduct a geotechnical study for proposed offshore structures for a planned LNG Terminal which is part of the Arctic Pilot Project within Bridport Inlet on Melville Island. This report deals with the proposed LNG Terminal consisting of a wharf for LNG tankers, containment areas for LNG storage and process barges, and an accommodation barge. The work presented herein is a continuation of geotechnical and bathymetric surveys performed by Geocon during March and April, 1978. These surveys indicated the sea bottom to be underlain by loose silty sands at the surface, becoming denser with depth and a sea bottom slope at the proposed LNG dock of about 5 horizontal to 1 vertical. These conditions required detailed geotechnical analyses to develop designs for the proposed offshore embankments and circular sheet pile cells. Presented herein are background information and analyses, and results of soil parametric studies conducted to develop the proposed offshore structures.

REF. NO.: 0500-79

SUBJECT CODES: F2 (A9, F1, H5)

AUTHOR: GEOCON (1975) LTD.
Calgary, Alberta

YEAR: 1979

TITLE: Seismic Parameters for Designing the Proposed LNG Facilities, Bridport Inlet

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 115, 10 p. plus one appendix

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This report discusses seismic hazards with recommendations for earthquake design for the proposed LNG Terminal at Bridport Inlet, Melville Island. Detailed analyses of earthquake data show a greater design acceleration than had previously been assumed for consideration of liquefaction potential. Geocon (1975) Ltd. has recommended a greater embedment of the proposed wharf cell structure and that the containment dykes be moved further toward shore so as they may be founded on permafrost.

REF. NO.: 0501-78

SUBJECT CODES: A9 (A5, A6, A7, A8, E5, H1, H5)

AUTHOR: GEOCON (1975) LTD.
Calgary, Alberta

YEAR: 1978

TITLE: Bathymetry and Geotechnical Surveys Proposed LNG Dock Facilities Bridport Inlet, Melville Island, N.W.T.

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project, Arctic Pilot Project support document to the National Energy Board, Exhibit 112, 50 p. plus six appendices, 13 figures

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

Geocon (1975) Ltd. was retained by Petro-Canada to carry out a geotechnical and bathymetry survey within Bridport Inlet at Melville Island in the Northwest Territories. It is understood that the overall objective of the survey was to confirm the suitability of the selected location for a proposed Arctic Pilot Project LNG Terminal and provide preliminary geotechnical parameters for its design.

The survey consisted of: a) bathymetric sounding of the sea bottom between about the 2 m and 30 m water depths; b) putting down of 13 offshore boreholes and 3 onshore boreholes to establish the sea bottom and onshore conditions and obtain soil samples for laboratory testing and, c) a reconnaissance of potential granular materials.

The site investigation was carried out by a field party of 13 men living in a tent camp at the work site.

The following are described in detail: Investigation methodology, geology, bathymetry, the subsurface conditions, perma- frost and granular resources.

REF. NO.: 0502-82

SUBJECT CODES: A9 (A5, A6, A8, D1, E5, H1, H5)

AUTHOR: TERRATECH LTD.
Montreal, Quebec

YEAR: 1982

TITLE: Geotechnical Investigation Proposed LNG Harbour Facilities Arctic Pilot Project Bridport Inlet, Melville Island

SOURCE: Prepared for Petro-Canada, Inc., Calgary, Alberta, (Arctic Pilot Project), Arctic Pilot Project support document to the National Energy Board, Exhibit 360, Terratech Report No. 1543-0-1, 42 p. plus 9 appendices and 6 drawings

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

The services of Terratech Ltd. were retained by Petro-Canada to carry out and report on a geotechnical investigation with a view to optimizing a potential LNG dock site at Bridport Inlet, N.W.T. This report contains all factual information relating to the present field program and related laboratory program and includes a discussion of the observations and results. Included within the report are borehole logs and geotechnical tests, depth soundings, water potability tests, concrete aggregate testing and general site conditions at the time of the field study.

Several drawings are contained in the report. These include the following information: site bathymetry, borehole locations, and geological cross sections for the east site, shoal site and the shallows area at Bridport Inlet.

REF. NO.: 0503-75

SUBJECT CODES: G1 (E1, E5)

AUTHOR: MCCANN, S. B. and TAYLOR, R. B.
Department of Geography
McMaster University, Hamilton, Ontario

YEAR: 1975

TITLE: Beach Freezeup Sequence at Radstock Bay, Devon Island, Arctic Canada

SOURCE: Arctic and Alpine Resources, Vol. 7, No. 4, pp. 379-386

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

Freezeup conditions in the beach and nearshore zone at Radstock Bay in the fall of 1971 are described and provide a basis for a more general discussion of the factors involved. The timing and duration of the freezeup process and the type of ice conditions produced at the shore are considered. The basic control on the process is the rate at which temperature declines in the fall, but wind and wave conditions, the type and amount of pack ice present both offshore and at the beach, and the amount of snowfall in the period are of major significance. In 1971, the final immobilization of the beach did not occur until October 4, though the process began a month earlier; storm-wave action and the grounding of resistant pack ice at the shore were important.

REF. NO.: 0504-73

SUBJECT CODES: H1 (H4)

AUTHOR: MILNE, A. R.

YEAR: 1973

TITLE: Methods for Launch and Recovery of Sea Bottom Instrument Packages

SOURCE: Underwater Journal, October, 1973, pp. 213-220

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The journey to the sea-bottom of sensors and recorders and the return of recorded information are two essential stages in a successful visit by a self-contained instrument package. Launching procedures, whether free-fall or controlled, will depend on the relationship of sensors to bathymetry. Recovery techniques are basically those of acquiring stored information and range from the use of underwater telemetry to a return of all the hardware. Techniques are described for launching and recovering instrument packages which are applicable to shallow and deep water as well as temperate and frozen seas.

REF. NO.: 0505-76

SUBJECT CODES: A7 (A1)

AUTHOR: ENGLAND, J.
Department of Geography
University of Alberta, Edmonton, Alberta

YEAR: 1976

TITLE: Late Quaternary Glaciation of the Eastern Queen Elizabeth Islands, N.W.T., Canada: Alternative Models

SOURCE: Quaternary Research, Vol. 6, pp. 185-202

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

It has been suggested that during the last glaciation the Innuitian Ice Sheet existed over the eastern Queen Elizabeth Islands. This is based on the pattern of postglacial emergence over this area and the timing of driftwood penetration into the interisland channels. Alternative interpretations of both sets of data raise questions about the presence of the Innuitian Ice Sheet at this time. Field observations on northeastern Ellesmere Island, plus additional data pertaining to the presence of multiple tills and "old" radiometric dates on lacustrine deposits, shelly tills, and raised marine features suggest that the maximum glaciation over this region, equivalent to the Innuitian Ice Sheet, predates the last glaciation. Palaeoclimatic conditions are also discussed in relation to these data. It is suggested that during the last glaciation of the Queen Elizabeth Islands there was a convergent but not coalescent advance of the existing upland icefields. This noncontiguous ice cover over the Queen Elizabeth Islands is termed the Franklin Ice Complex. It is suggested that the term Innuitian Ice Sheet be reserved for contiguous older glaciations over this same area.

REF. NO.: 0506-74

SUBJECT CODES: H1

AUTHOR: PATERSON, W. S. B.
Inland Waters Branch
Department of Environment, Ottawa, Ontario

YEAR: 1974

TITLE: Thermal Core Drilling in Ice Caps in Arctic Canada

SOURCE: In Ice Core Drilling, Edited by
J. F. Splettstoesser, University Nebraska Press,
Lincoln, Nebraska, pp. 113-116

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The CRREL shallow-hole thermal coring drill has been used to drill a 131 m borehole through the Meighen Ice Cap and three holes (230, 299 and 299 m) in the ice cap on Devon Island. Three of the four holes reached bedrock; in the 230 m hole, the drill became frozen in and was lost. Operating conditions, the performance of the drill, and problems encountered are described.

REF. NO.: 0507-78

SUBJECT CODES: A1 (A7)

AUTHOR: MCLAREN, P. and BARNETT, D. M.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1978

TITLE: Holocene Emergence of the South and East Coasts of Melville Island, Queen Elizabeth Islands, Northwest Territories, Canada

SOURCE: Arctic, Vol. 31, No. 4, pp. 415-427

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

Twenty-five radiocarbon dates from the coast of Melville Island show that there has been up to 100 m of Holocene emergence. This evidence of post-glacial rebound suggests there was significant late-Wisconsin glacier cover on or near the island. The Winter Harbour moraine on the south coast is thought to mark the maximum northward advance of the Laurentide Ice. However, emergence for this area appears to be essentially complete, whereas the northeast coast is still recovering at a rate of approximately 0.35 cm/yr. Ice cover in the region to the northeast must, therefore, have been thicker and/or lasted longer than in the peripheral areas of the Laurentide Ice, lending support to the concept of an Innuitian Ice Sheet, rather than local ice masses over the central Queen Elizabeth Islands. Unfortunately, there is an absence of fresh glacial landforms and stratigraphy that can be attributed to the Innuitian Ice Sheet. We suggest that this ice sheet may have had a thermal regime below the pressure melting point, thus depriving the ice of much of its erosive and depositional capabilities, but with a sufficient mass to account for the observed pattern of emergence.

REF. NO.: 0508-78

SUBJECT CODES: G1 (E1, I2)

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1978

TITLE: Beach Changes, Northern Somerset Island

SOURCE: Proceedings of the 4th International Conference on Port and Ocean Engineering under Arctic Conditions (POAC), Memorial University, Newfoundland, pp. 904-914

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Investigations of coastal morphology and processes were begun along northern Somerset Island in 1972 and were continued until 1976. Observations in 1972 and 1973 were restricted to 'Staples' beach, but in 1974, several beaches, representative of the coastline from Aston Bay to Garnier Bay, were selected for detailed study. Beach changes at three of these beaches - 'Staples', 'Rennell' and 'Cunningham' - are presented in this paper. Surveys at varying frequencies at each of the beaches illustrate changes experienced over the short terms, e.g., a storm, and over the longer term of three to five years. Effects on the beach of higher energy waves from different directions are examined together with the volumetric changes in beach sediment.

REF. NO.: 0509-78

SUBJECT CODES: E1 (G1, I2)

AUTHOR: TAYLOR, R. B.
Atlantic Geoscience Centre
Geological Survey of Canada, Dartmouth, Nova Scotia

YEAR: 1978

TITLE: The Occurrence of Grounded Ice Ridges and Shore Ice Piling Along the Northern Coast of Somerset Island, N.W.T.

SOURCE: Arctic, Vol. 31, No. 2, pp. 133-149

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Massive shore ice piles and grounded ice ridges up to 30 m high were examined along the northern coast of Somerset Island between 1973 and 1976. The ice ridges, composed of 1 to 2 m thick ice blocks and occasionally thicker multi-year ice blocks, occurred most frequently along the north and west shores of capes and headlands. 'Cape Fisher' was the site of shore ice piling during each of the four years and one set of ice piles, built 15-60 m inland existed three years. Effects of grounded ice ridges on nearshore morphology were minimal but ice-push features were observed as much as 185 m inland across the beach.

REF. NO.: 0510-82

SUBJECT CODES: J (A6, E3, G1, I1, I2)

AUTHOR: DOME PETROLEUM LTD.
ESSO RESOURCES CANADA LTD.
GULF CANADA RESOURCES INC.
Calgary, Alberta

YEAR: 1982

TITLE: Marine Physical Environment - Chapter 1

SOURCE: Beaufort Sea-Mackenzie Delta Environmental Impact Statement, Vol. 3B, Northwest Passage Setting, Chapter 1, pp. 1.3-1.68

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Volume 3B of the Environmental Impact Statement provides the environmental setting for the marine shipping corridor which lies to the east of the Beaufort Sea. The region extends from approximately Banks Island through Viscount Melville Sound, Lancaster Sound, Baffin Bay and Davis Strait, to 60° north latitude in the Labrador Sea. Emphasis has been placed on those subjects deemed to be most relevant for the purposes of assessing possible impacts of shipping operations on the environment (Volume 4) and for addressing associated socio-economic issues (Volume 5). The information has also been used to evaluate the potential impacts of hypothetical major oil spills originating from ships (Volume 6) and to identify future research and monitoring proposals (Volume 7).

Volume 3B was prepared with the assistance of several environmental consulting firms including: LGL Ltd., D. F. Dickens Engineering Consulting, Meteorological and Environmental Planning Ltd. (MEP), Arctic Sciences Ltd., Woodward-Clyde Consultants, and ESL Environmental Sciences Ltd.

REF. NO.: 0511-81

SUBJECT CODES: E6 (H3)

AUTHOR: FRANKLIN, L. J.
Panarctic Oils Ltd.
Calgary, Alberta

YEAR: 1981

TITLE: In Situ Hydrates

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 45, (abstract only)

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

In the Polar regions, and also at deep water locations in temperate regions, in situ hydrates penetrated in exploration drilling create drilling problems of some substance. Traditional techniques for dealing with gas contained in the drilling mud have been shown to be ineffective when the gas source is from melting hydrates. A procedure is described whereby melting of in situ hydrates can be controlled by temperature and pressure manipulation in a manner that permits safe and economical drilling of hydrate-bearing sections. The procedures recommended require no special equipment of significance and they have been illustrated in the field to be effective. A hypothetical geological setting is described and illustrated to indicate conditions where in situ hydrates might be expected to be in lateral association with free gas. In the model discussed, the gas locked in the hydrate form might be recoverable without requirement for surface facilities other than normal gas production equipment currently utilized for production of low pressure gas fields.

REF. NO.: 0512-81

SUBJECT CODES: H3 (H1, H5)

AUTHOR: HOOD, G. L.
Panarctic Oils Limited
Calgary, Alberta

YEAR: 1981

TITLE: Arctic Islands Offshore Drilling and Production Systems: An Eight Year Review

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 64, (abstract only)

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The first offshore well to be drilled in the Arctic Islands was from an ice platform in the spring of 1974. Since that time, all procedures and equipment which were first developed for the initial well have undergone extensive evolutionary development. In the spring of 1978, for the first time, a well was completed with a flowline to shore, again using the stable ocean ice as a work platform. Current wells are being drilled with heavier, more sophisticated equipment, with advances in ice platform construction, where urethane foam is integrated in the ice.

REF. NO.: 0513-81

SUBJECT CODES: H5

AUTHOR: KAUSTINEN, O. M.
Polar Gas Project
Toronto, Ontario

YEAR: 1981

TITLE: Pipelining Gas from the Canadian High Arctic

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 72, (abstract only)

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Recent discoveries suggest that huge natural gas reserves may lie in the Canadian Arctic Islands and Mackenzie Delta: energy pricing trends already support production of proven reserves. Since large volumes are most efficiently transported via pipeline, the challenge is to design a 5000 km (3100 mi) pipeline that can be constructed and operated in the extremely demanding arctic climate.

The paper details the techniques to be adopted for both the land and marine based portions of this unique project. Of particular interest is the extended discussion of the ice hole bottom pull developed by Polar Gas to lay marine pipelines in 503 m (1650 ft) depths under solid ice that varies from 2 to 12 m (7 to 39 ft) in thickness. Recently developed one atmosphere bottom connection technology also received careful attention as an integral component of marine design.

Pipelining natural gas from the high arctic is now economically viable in light of exploration discoveries and pricing trends, and it is technically feasible by means of the procedures described and developed within this paper.

REF. NO.: 0514-81

SUBJECT CODES: H3 (H1)

AUTHOR: RAMSDEN, H.
Global Marine Development Inc.
Newport Beach, California

YEAR: 1981

TITLE: Air Cushion Drilling Systems for Landfast Ice

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 108, (abstract only)

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Air cusion vehicles float on a cushion of air confined by a flexible skirt and can pass from solid ground across swamp, tundra, ice, and water. This ability gives the air cushion drilling rigs and transporters a flexibility unmatched by any other means of drilling or moving cargo and people in level Arctic regions. Air cushion vehicles are not new, but there is a changing need for them in new applications.

For use in a frozen Arctic environment, GMDI has designed an Air Cushion Drilling System (ACDS). This large air cushion drill barge carries a complete, self-contained drill rig including supplies and crew quarters. Once on location at the prospective drilling site, the air cushion "skirt" is retracted and the hull centered in a pool cut in the ice. Drilling is accomplished while the barge is floating in this pool. The defense system prevents ice from reforming in the pool, enabling the barge to maintain its position over the well bore.

In spite of its potentially large scale, one enormous advantage with the ACDS in working with small or marginal oil fields is that, when work at a site is completed, it can be easily moved to a new location.

REF. NO.: 0515-81

SUBJECT CODES: B6 (B4.1, B7)

AUTHOR: RICE, P. D. and SHADE, B. D.
Petro-Canada Inc.
Calgary, Alberta

YEAR: 1981

TITLE: The Geology and Geophysics of Baffin Bay

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 109, (abstract only)

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The Canadian Baffin Bay continental shelf extends 1200 km from Cape Dyer northwestward to Coburg Island. Width of the shelf varies from 35 km to 100 km. Baffin Bay tectonics can be related to Cretaceous incipient rifting and Early Tertiary sea-floor spreading. Oceanic basin developed upon either; a) the ancestral Hudsonian Canadian - Greenland shield or; b) erosional remnants of Early Paleozoic strata. Incipient rifting, related to the breakup of Laurasia, resulted in large rotational fault blocks oriented parallel or tangential to the present day shelf. Infilling Cretaceous diachronous continental and marginal marine clastic sediments gave way through a series of stand-stills and erosional cycles to eventual transgression and marine conditions. Early Tertiary sea-floor spreading resulted in the formation of major transecting normal faults and the Lancaster Aulacogen, along with a major alteration of sedimentation patterns. Extensive multichannel seismic coverage in Bylot Basin, Baffin Bay and Davis Strait has revealed substantial new information of the geological history upon the original Precambrian orthogonal fracture system.

REF. NO.: 0516-81

SUBJECT CODES: H5

AUTHOR: SINCLAIR, G. W.
Arctic Pilot Project
Petro-Canada Inc., Calgary, Alberta

YEAR: 1981

TITLE: The Arctic Pilot Project

SOURCE: Third International Symposium on Arctic Geology, Canadian Society of Petroleum Geologists, June 28 - July 1, 1981, Calgary, Alberta, p. 117, (abstract only)

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

The Arctic Pilot Project is designed to test the feasibility of producing 7.1 million cubic metres per day of natural gas from wells in the Arctic Islands, transporting the gas by a 160 km buried pipeline, transforming the gas into liquefied natural gas (LNG), and shipping the LNG by icebreaking carrier to a regasification plant in southeastern Canada - all on a year-round basis.

The project has been called a "pilot" because it is designed at the minimum scale necessary to prove the technical and economic feasibility of delivering Arctic Islands natural gas by ship. It will be one-tenth the size of any full-scale alternative for the delivery of Arctic gas.

The project will require an estimated five years to design and construct. During the subsequent 20 year operating life, the project will transport a total of 55 billion cubic metres of liquefied natural gas. As a pilot the project will provide valuable operating experience for construction, production and transportation in the remote Arctic environment as well as advance technology and operating experience in ice-breaking transportation.

REF. NO.: 0517-83

SUBJECT CODES: K

AUTHOR: ARCTIC SCIENCE AND TECHNOLOGY INFORMATION SYSTEM

YEAR: 1983

TITLE: Bibliography of the Lancaster Sound

SOURCE: Arctic Science and Technology Information System, Edited by J. C. Finlay, Vol. 11

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The Resource Management Plan for Lancaster Sound Region Hydrocarbon Development is a long-term plan for development of potential hydrocarbon resources in the Lancaster Sound region. It has been prepared by the Consolidex Magnorth Oakwood Lancaster Sound Joint Venture, a group of Calgary-based petroleum companies holding the Lancaster Sound leases which were formerly held by Norlands Petroleums Ltd. The purpose of the Resource Management Plan, and its accompanying support documents and background reports, is to provide information about the companies' proposal to drill a single expendable test well. This information is given within the context of projected activities and social and environmental effects which would follow an oil discovery in Lancaster Sound. This bibliography contains 23 reports, including the Resource Management Plan itself, 15 support documents, 5 background reports, and 2 other publications.

REF: NO.: 0518-77

SUBJECT CODES: E3 (I2)

AUTHOR: BARBER, F. G. and HUYER, A.
Fisheries and Environment Canada

YEAR: 1977

TITLE: On the Oceanography of Jones Sound, N.W.T.

SOURCE: Fisheries and Marine Service, Fisheries and Environment Canada, Manuscript Report Series - Canada, Marine Sciences Directorate, No. 40, 48 p.

STATUS: Public

MAP NUMBERS: 7302, 7950

COMMENTS/SUMMARY:

Distributions of salinity, temperature and dissolved oxygen in Jones Sound indicate the movement of a surface water from the central archipelago and a deeper water from Baffin Bay. The extent that the region becomes icefree each year can be reflected in surface distributions and a particular area of open water, the North Water, likely contributes to an annual variation observed at depths below the surface layer.

REF. NO.: 0519-80

SUBJECT CODES: H5

AUTHOR: KAUSTINEN, O. M.

YEAR: 1980

TITLE: Polar Gas Adapting Proven Technology for Arctic Lines

SOURCE: Pipe Line Industry, Vol. 53, No. 2, August 1980, pp. 39-42

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This article describes results of Polar Gas' $75 million investment in various studies to determine the best means of transporting gas from the Arctic Islands to market. The "ice hole bottom pull" method of laying a submarine pipeline is described.

REF. NO.: 0520-80

SUBJECT CODES: B7 (B6)

AUTHOR: KERR, J. W.
Institute of Sedimentary and Petroleum Geology
Geological Survey of Canada, Calgary, Alberta

YEAR: 1980

TITLE: Structural Framework of Lancaster Aulacogen, Arctic Canada

SOURCE: Geological Survey of Canada Bulletin No. 319, 24 p.

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

... The paper provides a geological framework for future tectonic, economic and environmental studies in and around Lancaster Sound. It summarizes the origin and history of Lancaster Aulacogen, a downfaulted feature within it, by integrating the geology known on land and at sea.

REF. NO.: 0521-75

SUBJECT CODES: I2

AUTHOR: LINDSAY, D. G.

YEAR: 1975

TITLE: Sea-ice Atlas of Arctic Canada, 1961-68

SOURCE: Polar Continental Shelf Project, Information Canada Cat. No. M78-4/1975, 213 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The results of aerial sea ice observations made by the Polar Continental Shelf Project, Department of Energy, Mines and Resources, at various intervals between March and November, from 1961 through 1968 are shown in this atlas. Most of the observations were made in Parry channel, and in the general region of the Queen Elizabeth Islands and adjacent Arctic Ocean.

The atlas shows the geographical distribution and extent of the various types of sea ice, and their characteristic features at different specific and identified times throughout the years. The observations recorded on each map were made over as short a period as operationally feasible - usually three to eight days - in order to give a more or less simultaneous overall view of the state and extent of sea ice over the Canadian arctic at selected intervals. The atlas is thus an historical record of the sea ice since 1961; it also provides sequential observations on the dynamic and constantly changing phenomena which dominate the marine areas of arctic Canada.

REF. NO.: 0522-82

SUBJECT CODES: B7 (B3, B4.3)

AUTHOR: SOBCZAK, L. W.
Gravity and Geodynamics Division
Earth Physics Branch, Ottawa, Ontario

YEAR: 1982

TITLE: Fragmentation of the Canadian Arctic Archipelago, Greenland, and Surrounding Oceans

SOURCE: In Nares Strait and the Drift of Greenland: A Conflict in Plate Tectonics, Edited by P. R. Dawes and J. W. Kerr, Meddelelser om Gronland, Geoscience, Vol. 8, pp. 221-236

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Fragmentation of the Canadian Arctic Archipelago, Greenland and surrounding ocean basins is indicated mainly by a pattern of northeast-trending fractures and northwest-trending arches and rifts. Based on a comparison of this structural pattern with experimentally produced fracture patterns, a new evolutionary concept for the Cenozoic era is proposed for the region. The Eurasia Basin and North Atlantic sea-floors developed as rift-generated tensional zones separated by a later developed dextral transform shear zone, here named the Nansen Shear Zone. Sub-parallel to and some 2000 km southwest of this shear couple is another less well-developed system comprised of M'Clure Strait and Baffin Bay which were initiated by rifting and later connected by a dextral transform shear zone, here named the Parry Channel Shear Zone. The landmass between these two transform couples (Greenland and the Queen Elizabeth Islands) probably was and is acted upon by a sinistral force couple as a result of spreading between these couples and is probably partially responsible for generating internal deviatoric tensional and compressional stresses noted from earthquake data. Fractures and arch axes within the Queen Elizabeth Islands have similar directions to respective features within the North Atlantic sea-floor; stresses may have similar orientations in both regions. Nares Strait may be a poorly-developed sinistral transform shear zone that joins rift-generated ocean basins: the Erasia Basin to the north and Baffin Bay to the south.

REF. NO.: 0523-70

SUBJECT CODES: B1 (B2, B6, B7)

AUTHOR: J. C. SPROULE AND ASSOCIATES LTD.
Calgary, Alberta

YEAR: 1970

TITLE: Geology of the William R. Sheeky Permits, Viscount Melville Sound, Canadian Arctic Islands

SOURCE: Report prepared for William R. Sheeky, COGLA Report No. 598-1-10-5

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This report summarizes the state of geological knowledge for the Viscount Melville Sound region in 1970. The regional stratigraphy, structure and hydrocarbon potential is described in detail. Stratigraphic sections are included.

REF. NO.: 0524-73

SUBJECT CODES: A11

AUTHOR: STEHMAN, C. F. and GREGORY, M.
Department of Geology
Dalhousie University, Halifax, Nova Scotia

YEAR: 1973

TITLE: A Preliminary Account of Benthonic and Planktonic Foraminifera in Baffin Bay, Davis Strait and the Labrador Sea

SOURCE: Earth Science Symposium on Offshore Eastern Canada, Geological Survey of Canada, Paper 71-23, pp. 499-507

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

Benthonic and planktonic foraminifera were obtained in both sediment samples and plankton tows from Baffin Bay, Davis Strait, and the Labrador Sea. Benthoic foraminifera show little order in their species distribution. Form variation in certain species shows some potential for future paleooceanographic work. Only two species of planktonic foraminifera were observed in the study area.

REF. NO.: 0525-76

SUBJECT CODES: G1 (A5, A7, A8, E5)

AUTHOR: STEPHEN, W. J.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1976

TITLE: A Reconnaissance Study of the Coastal Processes on Banks Island, District of Franklin

SOURCE: Geological Survey of Canada, Paper 76-1A, pp. 271-272

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

This report describes the results of a reconnaissance study of coastal processes on Banks Island. Coastlines are classified according to the contemporary processes operating on them. A representative number of beach profile sites were selected so that their change over the open-water season could be measured and related to, for example, active layer depth. Beach samples were obtained to enable changes in particle morphology over the summer to be detected. An underwater examination of the nearshore zone at selected beach sites to inspect, and if possible, to measure shallow-water bottom features.

REF. NO.: 0526-72

SUBJECT CODES: B4.3

AUTHOR: STEPHENS, L. E., SOBCZAK, L. W., and
WAINWRIGHT, E. S.
Earth Physics Branch
Energy Mines and Resources Canada

YEAR: 1972

TITLE: Gravity Measurements on Banks Island, N.W.T.

SOURCE: Gravity Map Series, Earth Physics Branch, Energy,
Mines and Resources Canada, 4 p.

STATUS: Public

MAP NUMBERS: 7831, 7832

COMMENTS/SUMMARY:

The regional gravity survey of Banks Island was completed in 1971 in response to requests from the oil industry. The survey of Banks Island is an important link between previous gravity surveys to the north and south, the results of which have already been published in the Gravity Map Series of the Earth Physics Branch by Sobczak and Weber (1970) and Hornal, Sobczak, Burke and Stephens (1970) respectively. On Banks Island, stations were located at intervals varying from 6 to 8 miles as in previous surveys designed to complete the national gravity mapping program. A gravity control network was established on the island to provide an accurate gravity datum for the survey and for more detailed surveys carried out by the oil industry.

REF. NO.: 0527-79

SUBJECT CODES: H5

AUTHOR: WOLCOTT, D. M.
Petro-Canada Inc.

YEAR: 1979

TITLE: Canadian Arctic LNG Pilot Project Detailed

SOURCE: Oil and Gas Journal, Vol. 77, No. 8, February, 1979, pp. 116-124

STATUS: Public

MAP NUMBERS: 7830, 7831, 7951

COMMENTS/SUMMARY:

This statement by the Petro-Canada senior vice-president in charge of project development briefly explains the Pilot Project's objectives, problems, and research and development activities.

REF. NO.: 0528-80

SUBJECT CODES: J

AUTHOR: WORKING GROUP ON THE LANCASTER SOUND REGIONAL STUDY
Department of Indian Affairs and Northern Development, Ottawa, Ontario

YEAR: 1980

TITLE: Selected Physical Characteristics of the Lancaster Sound Region: Background Report No. 1

SOURCE: Department of Indian Affairs and Northern Development, Edited by D. C. McKay, 104 p.

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503

COMMENTS/SUMMARY:

This report is one of five background reports prepared as part of the current study of marine and land-use options (Green Paper) for the Lancaster Sound region in the Northwest Territories. These reports are based on existing data, and together represent a body of information on which further discussion, analysis, and planning can be based. Information topics were selected on the basis of their relevancy to a particular resource use, or to provide a regional perspective of combined current or potential resource uses. ...

REF. NO.: 0529-80

SUBJECT CODES: J

AUTHOR: WORKING GROUP ON THE LANCASTER SOUND REGIONAL STUDY
Department of Indian Affairs and Northern Development, Ottawa, Ontario

YEAR: 1980

TITLE: Preliminary Data Atlas / Canada

SOURCE: Department of Indian Affairs and Northern Development

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503

COMMENTS/SUMMARY:

This atlas of 83 maps, together with the accompanying map descriptions, summarizes most of the data that formed the information base for the draft green paper. The maps illustrate aspects of the physical environment of the Lancaster Sound region, vegetation, animal distributions, regional infrastructure, present resource use and potentials, proposals for the protection of sensitive ecological sites, potential national parks, shipping, potential hydrocarbon development, and potential marine pollution.

REF. NO.: 0530-83

SUBJECT CODES: A6 (B1, B7, H1)

AUTHOR: WEBER, J. R.
Earth Physics Branch
Energy, Mines and Resources, Ottawa, Ontario

YEAR: 1983

TITLE: Maps of the Arctic Basin Sea Floor: A History of Bathymetry and its Interpretation

SOURCE: Arctic, Vol. 36, No. 2, pp. 121-142

STATUS: Public

MAP NUMBERS: 7832, 7952, 7953, 7954

COMMENTS/SUMMARY:

The history of oceanographic exploration of the Arctic Ocean basin from the beginning of this century to the present is summarized. Soviet, U.S. and Canadian contributions after World War II are described in some detail including sounding methods and navigational techniques. The major bathymetric charts of the Arctic Ocean basin from 1954 on are discussed. Comparison of the Lorex bathymetric map with other maps reveals that the Lomonosov Ridge is accurately positioned on early Soviet maps but is grossly in error on later U.S. and Canadian maps. It is shown that map makers relied too much on early U.S. submarine data (the only such data that were declassified) and that the latest General Bathymetric Map of the Oceans is therefore suspect of being inaccurate in areas where publicly available sounding data are scant.

REF. NO.: 0531-82

SUBJECT CODES: F1 (A1, B4.2)

AUTHOR: WETMILLER, R. J. and FORSYTH, D A.
Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1982

TITLE: Review of Seismicity and Other Geophysical Data Near Nares Strait

SOURCE: In Nares Strait and the Drift of Greenland: A Conflict in Plate Tectonics, Edited by P. R. Dawes and J. W. Kerr, Meddelelser om Gronland, Geoscience 8, pp. 261-274

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Nares Strait is aseismic even to small magnitude levels, in contrast to nearby active areas in Baffin Bay, the Lincoln Sea and the Sverdrup Basin. Activity immediately to the south of the Strait is infrequent and minor. The nature of Lg propagation suggests a discontinuity in the continental crust at the southern terminus of Nares Strait while seismicity in the Lincoln Sea seems most logically related to an extension of the activity in the Sverdrup Basin. Intense seismic activity in Baffin Bay appears to be confined south of latitude 75°N. Focal mechanisms for recent earthquakes in Baffin Bay and north of Greenland do not support the hypothesis of large left-lateral displacements along Nares Strait. Free air gravity anomalies indicate that some of the seismicity of northern Baffin Bay and Baffin Island may be related to glacial rebound or uncompensated sedimentary loads acting on zones of weakness. The aseismic nature of Nares Strait under the action of stresses due to local glacial unloading or regional north-south compression argues against the presence of a relatively young shear zone of major crustal or lithospheric dimension.

REF. NO.: 0532-76

SUBJECT CODES: I2 (E1)

AUTHOR: SUN OIL COMPANY LIMITED
Calgary, Alberta

YEAR: 1976

TITLE: Statistical Study of Late Winter Ice Thickness Distribution in the Arctic Islands, Volumes 1-7, 9-11

SOURCE: APOA Project 96, Prepared by V. F. Wetzel, June, 1976 (Available from Pallister Resource Management Ltd.)

STATUS: Public

MAP NUMBERS: 7950, 7951, 7952, 7953

COMMENTS/SUMMARY:

In the five year period, 1971 through 1975, 4690 miles of seismic lines were run from which were obtained over 62 000 ice thickness measurements. The thickest ice measured was 65 feet, while the thinnest ice measured was 3 feet. Averages varied according to location and year and ranged from a high of 22.2 feet to a low of 5.7 feet.

Contents:

REF. NO.: 0533-82

SUBJECT CODES: K

AUTHOR: ARCTIC SCIENCE AND TECHNOLOGY INFORMATION SYSTEM (Edited by C. R. Goodwin)

YEAR: 1982

TITLE: APOA Bibliography

SOURCE: The Arctic Institute of North America, Calgary, Alberta, Publication No. 1, ISSN 0225-5170

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

The Arctic Petroleum Operators' Association (APOA) was formed in 1970 by a group of petroleum companies operating in the Canadian Arctic. The purpose of the APOA is to promote joint research in the arctic, and to provide liaison between industry, government, and universities on arctic research related to petroleum development. Most APOA research has been directed towards obtaining engineering and environmental data, and towards adapting established operating techniques and equipment to meet the unique operating conditions of the arctic. In some cases the results of APOA research projects are released to the general public immediately, while in other cases the reports are released after a protected period of up to five years.

The purpose of the APOA Bibliography is to make other northern researchers more aware of the amount and type of research being conducted by the APOA, and to provide detailed author, subject and geographic access to this research. This third edition of the bibliography contains all APOA-conducted to APOA-funded research reports in the ASTIS database as of October 1982, a total of 359 documents. The bibliography includes only research sponsored by the APOA as a whole, and not the much larger amount of research done by individual member companies. All reports in this bibliography have been released to the public. The bibliography will be updated periodically as additional reports are released.

REF. NO.: 0534-78

SUBJECT CODES: H2

AUTHOR: WHITE, C.
Faculty of Engineering
University of Waterloo, Waterloo, Ontario

YEAR: 1978

TITLE: The Construction and Maintenance of Ice Airstrips

SOURCE: Faculty of Engineering, Internal Report,
University of Waterloo, Waterloo, Ontario, 29 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

Factors affecting the useability of ice airstrips are examined for application in future ice airstrips of the Government of the Northwest Territories. The maximum allowable load on an ice strip is estimated from the ice thickness, and then other factors such as ice temperature, cracks, tides, and fatigue are taken into account. Removing snow cover is the easiest method to increase load bearing capacity, but surface flooding, flooding snow, compacting snow and ice reinforcement are also possible. An airstrip should be oriented in the direction of the prevailing wind. Usually the dimensions should be 1800 by 45 m with a 100 by 100 m apron. A 5 to 8 cm snow cover, and outline and lead-in barrels should be used. Ice condition and aircraft loading records should be kept. The present MOT standards for ice airstrips appear to be adequate. Data for the ice and sea level climate at Pond Inlet for the last three years is used to investigate the applicability of Stefan's equation to predict ice growth. The strength and composition of sea ice in Pond Inlet is determined.

REF. NO.: 0535-79

SUBJECT CODES: H5

AUTHOR: WOLCOTT, D. M.
Petro-Canada Inc., Calgary, Alberta

YEAR: 1979

TITLE: Arctic LNG Pilot Project Detailed

SOURCE: The Oil and Gas Journal, February, 1979, pp. 116-124

STATUS: Public

MAP NUMBERS: 7830, 7831

COMMENTS/SUMMARY:

This article summarizes the proposed developments for the Arctic Pilot Project. The following topics are discussed: the group of companies involved in the project; the objective of the project; its location; the environment on Melville Island; the calculated gas reserves; the Drake Field development; the pipeline and terminal facilities; the liquefaction plant; storage; and shipping.

REF. NO.: 0536-69

SUBJECT CODES: H1 (D2)

AUTHOR: YEATON, G.

YEAR: 1969

TITLE: The Utilization of a Hovercraft and the Fixed Strut Sounding Assembly in the Canadian Arctic

SOURCE: Polar Continental Shelf Project, Internal Report, 33 p.

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

This report describes a hydrographic survey carried out in the Beaufort Sea area during the period 23 June to 14 September, 1969, utilizing a Westland SRN-6 hovercraft and the fixed strut depth sounding assembly.

The aim of the 1969 summer operation was to continue evaluation and development of the technique of hydrographic survey using hovercraft, while carrying out a regular hydrographic survey of specified areas in Arctic Canada.

REF. NO.: 0537-75

SUBJECT CODES: H2 (H3, H1)

AUTHOR: FENCO LIMITED
Calgary, Alberta

YEAR: 1975

TITLE: Ice Platform Construction Resolute Bay, N.W.T., November - December 1974

SOURCE: Prepared for Sun Oil Company Limited, APOA Project 81, May 1975, 23 p. plus appendices (available from Pallister Resource Management Ltd.)

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

In October, 1974 Sun Oil Company retained FENCO to provide engineering services, monitoring and quality control and a final report on construction of five thin ice pads for use in Sun Oil research programs. The test program called for ice platforms to be built by freezing thin layers of ice about 100 feet offshore in the bay area at Resolute. Four of the platforms were 400 feet by 300 feet and required 40 inches of ice buildup. The remaining platform was 400 feet square with 15 inches of built-up ice. Before work teams arrived, a few days were spent surveying the pads and arranging equipment.

This report gives a detailed description of the program and the ice buildup including ice temperature, salinity, density and strength measurements.

REF. NO.: 0538-75

SUBJECT CODES: E3

AUTHOR: INNOVATIVE VENTURES LTD.
Calgary, Alberta

YEAR: 1975

TITLE: Cape Grassy Current Study

SOURCE: Prepared for Panarctic Oils Ltd., August, 1975,
Panarctic Library Call No. CA7 .POIV/75.C13

STATUS: Proprietary

MAP NUMBERS: 7951, 7952

COMMENTS/SUMMARY:

A project for installing five current meters was presented to IVL as part of a study for the Cape Grassy wellsite. These are near surface current meters, installed in the suspected current channels near Emerald Isle. Installation was started on the first of June as the spring melt season started. This proved to be a handicap for installation, and also caused the early removal of some meters. In conjunction with these, CDT profiling was performed. These results are also presented in this report. In all cases the current meters used were Aanderaa, Model RCM4 recording instruments. The five fixed locations record temperature, conductivity, current speed and direction. As the name implies, CDT profiles recorded conductivity, depth and temperature.

REF. NO.: 0539-74

SUBJECT CODES: J (A3, A5, B6, B7, E1, H4

AUTHOR: GEOMARINE ASSOCIATES LTD.
Halifax, Nova Scotia

YEAR: 1974

TITLE: An Interpretation of the Surficial and Subbottom Geology of the Pullen and Crozier Strait Crossings

SOURCE: Prepared for Ocean Research Equipment Ltd., Prepared by A. Ruffman, March 1974, in connection with the Small Boat Survey conducted for Montreal Engineering Co. Ltd., funded by the Polar Gas Project, Panarctic Library Call No. CA7 .PGGA/74.I57, 74 p. plus appendices

STATUS: Proprietary

MAP NUMBERS: 7830, 7950, 7951

COMMENTS/SUMMARY:

In August and September 1973 Ocean Research Equipment Ltd. (ORE) conducted seabed surveys for Montreal Engineering Co. Ltd., in conjunction with their joint feasibility study with Banister Pipelines of gas pipeline routes in the high Arctic Islands of Canada. ORE operated in 5 of the interisland passages: Pullen Strait and Crozier Strait in the south and Danish Strait, Hassel Sound and Hendricksen Strait in the north. Geomarine Associates Ltd., was contracted by ORE to provide on-board geologic advice and survey assistance as well as to interpret the survey data if requested to do so by Montreal Engineering. This report presents the results of the survey of Pullen and Crozier Straits. The following topics are discussed: equipment and personnel, operations bathymetry, seismic survey, surficial geology, ice scour, and bedrock geology.

REF. NO.: 0540-80

SUBJECT CODES: J (A5, A6, D1, E3, I2)

AUTHOR: POLAR GAS PROJECT
Toronto, Ontario

YEAR: 1980

TITLE: Byam Martin (North) Channel Survey (March/May 1980)

SOURCE: Internal Report, Polar Gas Project, February 1980,
Panarctic Library Call No. CA7 .PG/80.B95

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Polar Gas will conduct a hydrographic survey of the Byam Martin (North) Channel to determine the feasibility of a pipeline crossing. The crossing is approximately 93 km wide and in excess of 400 m deep and is located between Sabine Peninsula on Melville Island and Lougheed Island. To undertake a detailed survey of the proposed crossing between Melville Island and Lougheed Island and to obtain information necessary for a detailed feasibility study and cost estimate for a pipeline crossing of the channel. Information required will be gathered along the survey corridor as follows: 1) continuous ice thickness profile across the width of the channel, 2) continuous sea bottom profile using a specially designed hydrographic probe. Readings will be taken through the ice every 200/500 m with closer spacing at shore approaches, 3) continuous sub-bottom profile, 4) soil samples taken every 2 km, 5) a side scan sonar record taken at every survey probe location, and 6) current and tide measurements at selected locations.

REF. NO.: 0541-81

SUBJECT CODES: K

AUTHOR: ACRES CONSULTING SERVICES LIMITED
Toronto, Ontario

YEAR: 1981

TITLE: Bibliography of Oceanographic Atlases Covering Canadian Ocean Waters

SOURCE: Marine Environmental Data Service, Department of Fisheries and Oceans, Ottawa, Ontario, Contractor Report No. 6

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report is a bibliography of atlases primarily containing physical oceanographic material from Canadian waters. Entries are organized alphabetically by author, and contents are summarized in a parameter code. Where it is possible a full bibliographic reference and abstract are provided with each entry. Geographic maps of Canada for each parameter, which are annotated by reference numbers, are also presented. These allow quick reference to material by geographic area and parameter. Finally, a list is provided of the information sources consulted in the compilation of this report.

REF. NO.: 0542-77

SUBJECT CODES: J (A5, A9, D1, E3, H5, I2)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1977

TITLE: Preliminary Appraisal of Maclean Strait and Desbarats Strait Crossings

SOURCE: Prepared for Montreal Engineering Company Ltd., Prepared by T. C. Schultz, March 1977, Panarctic Library Call No. CA7 .PGRJ/77.P61

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Maclean Strait and Desbarats Strait are the two widest and deepest channels on the proposed pipeline route from Ellef Ringnes Island and King Christian Island to Bathurst Island. An ice-based marine survey of these two channels is to be carried out in the near future. A limited amount of environmental data does however already exist. The objective of this study is to review the exising data, to find out whether anything in this existing data indicates that the pipeline crossings of the two channels are not technically feasible. The following environmental data are reviewed: bathymetry, currents, bottom soils, and ice distribution.

REF. NO.: 0543-75

SUBJECT CODES: H4 (I2)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1975

TITLE: Report on 1975 Marine Survey Program in the Arctic Islands

SOURCE: Prepared for Montreal Engineering Company Ltd., Prepared by N. A. Brass, March 1977, Panarctic Library Call No. CA7 .PGRJ/75.R25, 5 appendices

STATUS: Proprietary

MAP NUMBERS: 7740, 7830

COMMENTS/SUMMARY:

This operations report describes a marine survey program in Barrow Strait West, Peel Sound and Franklin Strait. The following aspects of the program are described: equipment and personnel; route selection; field operations; profiling; and horizontal control. The five appendices contain the following: daily field log, survey log, equipment, aerial photographs, and drawings.

REF. NO.: 0544-75

SUBJECT CODES: J (A3, A6, A9, D1, E3, H1, H4)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1975

TITLE: Summary Report on Status of Survey and Data Reduction for Marine Crossings from Queen Elizabeth Islands to Boothia Peninsula

SOURCE: Prepared for Polar Gas Project, February 1975, Panarctic Library Call No. CA7 .PGRJ/75.S86

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950, 7951

COMMENTS/SUMMARY:

The objective of this report is to present under one cover, the status of survey information and data reduction for all marine crossings involved in bringing natural gas from production areas in the High Arctic Islands to mainland Canada by pipeline. In addition, a summary of crossing characteristics and survey activities to date is presented for each marine crossing. It is intended that this report be used as a guide and ready reference for general discussion and planning activities, and that it be updated after each major field program. This presentation covers, in summary form, survey data acquired, reduced and analyzed for each marine crossing from the Queen Elizabeth Islands to Boothia Peninsula. The marine crossings considered herein are those involved in the three alternative pipeline routes from Melville Island to Boothia Peninsula and those from King Christian Island to Bathurst and Cornwallis Islands.

The status of survey was assessed by reviewing original individual records and other survey data for all marine crossings. Consideration was given to their usefulness in reduction and analysis for further studies. In addition the method and accuracy by which the records were acquired were taken into account in determining their value. Excluded from this report are all activities, survey and office studies related to ice conditions, including build-up and break-up, ice strength, ice movement, ice scour and right-of-way preparation.

REF. NO.: 0545-74

SUBJECT CODES: J (A5, A9, A6, D1, E3, H4)

AUTHOR: R. J. BROWN AND ASSOCIATES LTD.
Montreal, Quebec

YEAR: 1974

TITLE: Marine Survey Report on Currents and Bottom Soils for Arctic Islands and Hudson Bay Areas Water Program, 1973

SOURCE: Prepared for Montreal Engineering Company Limited, February 1974, Panarctic Library Call No. CA7 .PGRJ/74.M17

STATUS: Proprietary

MAP NUMBERS: 7503, 7740, 7830, 7950

COMMENTS/SUMMARY:

A study of the marine environment across several marine crossings in Arctic Islands area and in the Hudson Bay area was conducted under Phase II of Polar Gas Research Program, during the period July through October 1973. This report summarizes the findings of the survey conducted by R. J. Brown and Associates, i.e. current metering, bottom soil sampling and water temperature recording. Soil samples analysis, current meter data, and sea state conditions are presented in Chapters 1, 2 and 3 respectively. A detailed description of the equipment and techniques utilized in obtaining bottom soil samples, current and sea state conditions are presented.

REF. NO.: 0546-84

SUBJECT CODES: J (A7, A9, B1, D1, E3, F1, G1, H5, I2)

AUTHOR: HARDY ASSOCIATES (1978) LTD.
Calgary, Alberta

YEAR: 1984

TITLE: Volume IV - Environmental Evaluation, Bent Horn Production Project, Application for Development Plan Approval

SOURCE: Prepared for Panarctic Oils Ltd., Calgary, Alberta, July 1984, Panarctic Library Call No. CA7 PO/84.B23 V4, 104 p.

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Panarctic Oils Ltd. proposes to produce its oil reserves on Cameron Island, Northwest Territories, shipping the oil via tanker to markets on Canada's east coast. The total estimated production of 335 000 m^3 will be from Panarctic et at W. Bent Horn A-02. The development of this well, the first in the Arctic Islands, will contribute to Canadian oil self-sufficiency and generate revenue to support the Company's exploration program in the area. This environmental report is prepared to meet the general requirements of an Initial Environmental Evaluation and the project specific guidelines prepared by Indian and Northern Affairs Canada in March 1984.

Various sections of this report describe the proposed project including the following aspects of the physical environment in the vicinity of Cameron Island: climate, bedrock geology, seismicity, coastal geomorphology, physiography, soils, ice cover, bathymetry, currents, and ice movement. The ice cover, bathymetry, currents and waves of the Northwest Passage and Baffin Bay-Davis Strait are also briefly addressed.

REF. NO.: 0547-83

SUBJECT CODES: E3 (D1)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1983

TITLE: Gordon Head Shoal Oceanographic Study, 1981-1982

SOURCE: Prepared for Petro-Canada Explortion Inc, - Phillips Petroleum Canada Ltd., Prepared by M. P. Van Ieperen, February 1983, Panarctic Library Call No. CA7 .PO/83.G53, 41 p.

STATUS: Proprietary

MAP NUMBERS: 7950

COMMENTS/SUMMARY:

During the winter and spring of 1982 the water depth, ice motion, ocean currents and tides were measured in the Gordon Head shoal area, located in the Canadian Archipelago, east of Cornwall Island. The survey, a continuation of the 1981 survey, was conducted to obtain basic data from possible future hydrocarbon exploration in the area. Ice motion was measured with four wireline stations and one JMR (Doppler) station. Within the section of this report dealing with ocean currents the following aspects are described: field program, speed and direction, mean flow, spectral analysis and tide stream analysis.

REF. NO.: 0548-82

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1982

TITLE: Sculpin K-08, Meteorologic and Oceanographic, Data Report - 1982

SOURCE: Internal Report, Prepared by M. P. Van Ieperen, November 1982, Panarctic Library Call No. CA7 .PO/82.S14

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Meteorologic and oceanographic measurements were made during the 1982 drilling season by Panarctic at the offshore drill site Sculpin K-08. The measurements were taken in compliance with the 1980 Canada Oil and Gas Drilling Regulations. The following meteorological statistics are presented: average, maximum and minimum air temperature, wind rose, and horizontal and vertical visibility. The ocean currents were weak. The predominant directions were southerly to westerly. The surface layer was isothermal in January and May and isohaline in May. Generally, the 1982 meteorologic and oceanographic results agree well with the results from previous measurements in the region.

REF. NO.: 0549-82

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1982

TITLE: Cape Mamen F-24, Meteorologic and Oceanographic, Data Report - 1982

SOURCE: Internal Report, Prepared by M. P. Van Ieperen, November 1982, Panarctic Library Call No. CA7 .PO/82.C15

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

Meteorologic and oceanographic observationss were made during the 1982 drilling season by Panarctic at the offshore drill site Cape Mamen F-24. The measurements were taken in compliance with the 1980 Canada Oil and Gas Drilling Regulations. The following meteorological statistics are presented: average, maximum and minimum air temperature, wind rose, and horizontal and vertical visibility. The ocean currents were weak. The predominant direction was southerly. The surface layer was isothermal in January and May and isohaline in May. Generally, the 1982 meteorologic and oceanographic results agree well with the results from previous measurements in the region.

REF. NO.: 0550-81

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1981

TITLE: Oceanographic Summary Report of Current, Tide, Temperature and Salinity Data (1974-1980)

SOURCE: Internal Report, Prepared by M. P. Van Ieperen, February 1981, Panarctic Library Call No. CA7 .PO/81.017, 21 p. plus three appendices

STATUS: Proprietary

MAP NUMBERS: 7950, 7951, 7952, 7953

COMMENTS/SUMMARY:

Panarctic's ocean current, tide temperature and salinity data collected since 1974 in the High Arctic are presented partly in graphical and partly in numerical form, irrespective of data quality. This data summary facilitates rapid identification and ease of abstraction of historical data for Panarctic's future drilling operations and for oil spill contingency planning. Its purpose is also to aid government scientists in assessing the present level of understanding of the physical oceanography in the High Arctic. Consequently this report will aid in the identification of possible data gaps related to environmental concerns. Because of the large volume of data involved, this report does not contain a detailed analysis of the data but only summarizes the main conclusions. However, since it is significant for oil spill contingency planning, a discussion of the flow dynamics in the High Arctic is included

REF. NO.: 0551-80

SUBJECT CODES: E3 (I2)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Balaena D-58, Char G-07, Oceanographic Data Report 1980

SOURCE: Prepared for Assistant Director, Renewable Resources Northern Affairs Program, Department of Indian Affairs & Northern Development, Yellowknife, N.W.T., Prepared by M. P. Van Ieperen, September 1980, Panarctic Library Call No. CA7 .PO/80.B12, 16 p. plus appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

CTD profiles, ocean currents, tides, ice movements and meteorological parameters were measured by Panarctic Oils Ltd. in 1980 at its High Arctic offshore drilling sites Balaena D-58 and Char G-07. Most of these measurements were taken in compliance with the DIAND-issued Drilling Authorities for these sites. The CTD profiles at both sites showed quasi-mixed surface layers, which increased in depth with time, and weakly stratified sub-surface layers. At Char, considerable thermal activity in the surface layer was noted. The residual surface flows at Balaena and Char were weak and easterly. Autospectra of the current data showed most of the energy to be contained in the east/west components and at semi-diurnal frequencies.

REF. NO.: 0552-80

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1980

TITLE: Whitefish H-63A, Oceanographic Data Report 1980

SOURCE: Prepared for Assistant Director Renewable Resources Northern Affairs Program, Department of Indian Affairs & Northern Development, Yellowknife, N.W.T., Prepared by M. P. Van Ieperen, September 1980, Panarctic Library Call No. CA7 .PO/80.W33, 17 p. plus appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

CTD profiles, ocean currents, tides and meteorological parameters were measured by Panarctic Oils Ltd. in 1980 at Whitefish G-63, partly in compliance with Drilling Authority and partly for future field development. The winter and spring profiles were very similar all showing strongly density-stratified surface layers and weakly stratified sub-surface layers. Considerable temperature structure was observed. The overall residual surface flow was weak and southerly. The mid-depth and near-bottom residual and maximum flows did not significantly differ from the surface flows. Auto-spectra of the data showed the tidal flow to be induced both by diurnal and semi-diurnal tidal constituents. Daily-mean sea level changes were strongly correlated with atmospheric pressure anomalies.

REF. NO.: 0553-79

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1979

TITLE: Whitefish H-63, Oceanographic Data Report 1979

SOURCE: Prepared for Assistant Director Renewable Resources Northern Affairs Program, Department of Indian Affairs & Northern Development, Yellowknife, N.W.T., Prepared by M. P. Van Ieperen, October 1979, Panarctic Library Call No. CA7 .PO/80.W83, 17 p. plus appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

CTD profiles, ocean currents and tides were measured by Panarctic Oils Ltd. in 1979 at Whitefish G-63 in compliance with Drilling Authority #911. The general features of the winter and spring CTD profiles were similar; however considerable variability in the fine and micro-structure was observed. For both periods, the temperature of the surface layer was close to its freezing point but the layer was never well-mixed. The lowest temperatures were measured at 50 m depth and the highest near the bottom. The density profiles showed a stable water column. Spectral analysis of the current record showed the tidal flow to be induced both by diurnal and semi-diurnal tidal constituents.

REF. NO.: 0554-79

SUBJECT CODES: E3

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1979

TITLE: Hazen F-54, Oceanographic Data Report 1979

SOURCE: Prepared for Assistant Director Renewable Resources, Northern Affairs Program, Department of Indian Affairs & Northern Development, Yellowknife, N.W.T., Prepared by M. P. Van Ieperen, September 1979, Panarctic Library Call No. CA7 .PO/79.H33,

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

CTD profiles, ocean currents and tides were measured by Panarctic Oils Ltd. in 1979 at Hazen F-54 in compliance with Drilling Authority #912. The winter CTD profiles showed a relatively warm and fresh surface layer and the spring profiles a quasi-mixed surface layer. Below these layers, the temperature and salinity increased with depth. Considerable fine-and micro-structure was observed. The flow was generally in a southerly direction. Spectral analysis of the current record showed the tidal flow to be mainly induced by semi-diurnal tidal constituents. The tidal records showed the tides to be mixed and semi-diurnal with neap and spring tide variations. Significant changes in the mean-sea level were observed. These were strongly correlated with atmospheric pressure anomalies.

REF. NO.: 0555-78

SUBJECT CODES: E3 (H1)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1978

TITLE: Roche Point O-43, Oceanographic Data Report 1978

SOURCE: Prepared for Department of Indian & Northern Affairs, Prepared by M. P. Van Ieperen, October 1978, Panarctic Library Call No. CA7 .PO/78.R56, 29 p. plus 8 appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This report presents and discusses oceanographic data collected in 1978 at Panarctic et al AIEG Roche Point O-43. These measurements were taken in accordance with the conditions of approval from Drill Authority No. 892, issued on December 14, 1977 by the Department of Indian and Northern Affairs. The following oceanographic measurements were requested: 1) Ocean current measurements at a depth of 10 m below the ice surface, 2) Temperature and salinity measurements from the ice surface to the ocean floor at the time of installation and recovery of the current meter, 3) Tidal measurements throughout the construction and drilling periods. The above measurements were carried out by Fenco Consultants Ltd., Calgary, with the sub-contracted assistance of Dobrocky Seatech Ltd., Victoria, B. C. The well site is located north of Melville Island, in Hecla Bay at 76°43'N and 109°46'W. The water depth is 165 m.

REF. NO.: 0556-78

SUBJECT CODES: E3 (H1)

AUTHOR: PANARCTIC OILS LTD.
Calgary, Alberta

YEAR: 1978

TITLE: Cape Grassy I-34, Oceanographic Data Report 1978

SOURCE: Prepared for Department of Indian & Northern Affairs, Prepared by M. P. Van Ieperen, 30 p. plus 8 appendices

STATUS: Proprietary

MAP NUMBERS: 7951

COMMENTS/SUMMARY:

This report presents and discusses oceanographic data collected in 1978 at Panarctic Norcen, AIEG et al Grassy I-34 well site. These measurements were taken in accordance with the conditions for approval from Drill Authority No. 848, issued on January 6, 1978 by the Department of Indian and Northern Affairs. The following oceanographic measurements were requested: 1) Ocean current measurements at a depth of 10 m below the ice surface, 2) Temperature and salinity profiles from the ice surface to the ocean floor at the time of installation and recovery of the current meter, 3) Tidal measurements continually during the construction and drilling periods. The above measurements were carried out by Fenco Consultants Ltd., Calgary, with the sub-contracted assistance of Dobrocky Seatech Ltd., Victoria, B. C. The well site is located north of Melville Island, in Hecla Bay at 76°24'N and 113°11'W. The water depth is 232 m.

REF. NO.: 0557-83

SUBJECT CODES: K

AUTHOR: GEOLOGICAL SURVEY OF CANADA

YEAR: 1983

TITLE: Open File Catalogue

SOURCE: Geological Survey of Canada, December 1983, 49 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This publication contains a numerical listing of open files of the Geological Survey of Canada. These files have been cross-referenced by author and geography location according to the national topographic map series.

REF. NO.: 0558-84

SUBJECT CODES: E3 (I2)

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1984

TITLE: An Oceanographic Survey of the Canadian Arctic Archipelago, March 1983

SOURCE: Prepared for Institute of Ocean Sciences, Sidney, British Columbia, Prepared by D. B. Fissel, D. D. Lemon, and D. N. Knight, Canadian Contractor Report of Hydrography and Ocean Sciences, No. 16, 355 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

... Over a fourteen-day period, March 20 to April 2, 1983, 53 profiles of temperature and salinity were determined at 42 locations within the Canadian Arctic Archipelago. Samples for dissolved nutrient analysis were collected at 19 of these sites. As in March 1982, a progressive warming of waters was evident in the main thermocline between the western boundary of the Archipelago and the central sills. A cooling of the underlying Atlantic Water also occurred with the large horizontal gradients found further west, over the continental shelf and western entrances to the Archipelago. In 1983, thermocline waters were cooler than in 1982 in some areas, notably in eastern M'Clure Strait and in Maclean Strait. Atlantic Waters within the Archipelago were apparently warmer in 1983, although in view of observational uncertainties this conclusion cannot be made with confidence. ... Baroclinic flows were generally towards Parry Channel within the Archipelago and weak ... except in Penny Strait ... In western Lancaster Sound, flows of up to 12 cm/s were estimated. Over the continental shelf of the Arctic Ocean currents were weak in 1983. ...

REF. NO.: 0559-83

SUBJECT CODES: E3 (I2)

AUTHOR: FISSEL, D. B., CUYPERS, L., LEMON, D. D. and BIRCH, J. R.
Arctic Sciences Ltd.
Sidney, British Columbia
CORNFORD, A. B., LAKE, R. A., SMILEY, B. D., MACDONALD, R. W. and HERLINVEAUX, R. H.
Institute of Ocean Sciences
Sidney, British Columbia

YEAR: 1983

TITLE: Arctic Data Compilation and Appraisal, Volume 6: Queen Elizabeth Islands: Physical Oceanography - Temperature, Salinity, Currents and Water Levels

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences, No. 5, Institute of Ocean Sciences, Sidney, British Columbia, 214 p.

STATUS: Public

MAP NUMBERS: 7940, 7941, 7950, 7951, 7952, 7953, 7954

COMMENTS/SUMMARY:

This inventory contains a catalogue of physical oceanographic data from the Queen Elizabeth Islands. Times and locations of measurements are listed and displayed graphically for temperature-salinity, current meter, water level and drifter data. Meteorological and ice information are not included. Yearly plots showing the locations of all measurements are included, as are indexes by area and measurement types. References and sources are listed for all data included in the inventory.

REF. NO.: 0560-84

SUBJECT CODES: E3 (I2)

AUTHOR: ARCTIC SCIENCES LTD.
Sidney, British Columbia

YEAR: 1984

TITLE: An Oceanographic Survey of the Canadian Arctic Archipelago, March - 1982

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences, No. 15, Prepared for Institute of Ocean Sciences, Prepared by D. B. Fissel, D. N. Knight, and J. R. Birch, Sidney, British Columbia, 415 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The results of a CTD survey of the Canadian Arctic Archipelago are presented. Over a 19 day period, March 19 to April 6, 1982, 70 CTD stations were occupied. In addition, nutrient samples were collected at 30 of these locations.

The baroclinic component of the near-surface geostrophic circulation relative to the deeper water within the Archipelago indicates a net movement into Parry Channel from the north, west and south. The resulting eastward current exits through Lancaster Sound. The strongest geostrophic flows, exceeding 15 cm/s, were found in Penny Strait and Byam Martin Channel. More typically, the near-surface geostrophic currents range from 1 to 8 cm/s.

REF. NO.: 0561-72

SUBJECT CODES: J (A5, A9, D1, E3, E5, H1, I2)

AUTHOR: FENCO LTD.
Toronto, Ontario

YEAR: 1972

TITLE: Lincken Shoal, Arctic Archipelago - Ice, Soil and Hydrographic Survey

SOURCE: Prepared for Sun Oil Company, Richardson, Texas, July, 1972, 21 p. plus appendices (COGLA Report No. 54-5-10-35)

STATUS: Public

MAP NUMBERS: 7950, 7951

COMMENTS/SUMMARY:

The purpose of this investigation was to establish the main topographic, geotechnical and ice features at the specified site. Topographic and hydrogrpahic features were determined by echo and hand soundings which were carried out within an area of 3 square miles with more detail in the shoal area. Currents and tides were measured a mile from the shoal. Ice thickness and the deformation in the study area were observed. Strength and elasticity of ice were tested at various places over the survey area. The existence of an island, 100 feet across, was affirmed. This island is surrounded by a shoal. This shoal, less than 7 feet below top of ice, was covered by bottom fast ice. Currents of 0.4 knots and tides of 18 inches were observed. The drilling program established the presence of permafrost below depths of 2 to 15 feet below sea bottom. The permafrost, which extended to the depths penetrated by the deep boreholes, contained zones of unfrozen soil. The principal soil stratum is sand, interlayed by silt in places although in one hole silty and sandy gravel occurred.

REF. NO.: 0562-78

SUBJECT CODES: H4 (A6, I2)

AUTHOR: CANADIAN HYDROGRAPHIC SERVICE
Ottawa, Ontario

YEAR: 1978

TITLE: Pilot of Arctic Canada: Sailing Directions

SOURCE: Department of Fisheries and the Environment,
Vol. II, Third Edition, 279 p. plus an index

STATUS: Public

MAP NUMBERS: 7067, 7220, 7302, 7502, 7503, 7940, 7941, 7950

COMMENTS/SUMMARY:

The Third Edition of the Sailing Directions for Arctic Canada, Volume II, 1978 has been prepared by J. W. Roberts, and was compiled from Canadian Government and other information sources including British and United States Sailing Directions. This edition supersedes the Pilot of Arctic Canada, Volume II, Second Edition, 1968, and Supplement No.3 (1974) to that edition, which are cancelled. The Sailing Directions for Arctic Canada, Volume II, is complementary to the Pilot of Arctic Canada, Volume I.

The following areas, relevant to this bibliography, are described: Foxe Basin - Fury and Hecla Strait, Prince Regent Inlet - Gulf of Boothia - Committee Bay, Northeast Coast of Baffin Island, Parry Channel - East, Baffin Bay, Nares Strait, and Jones Sound to Tanquary Fiord.

REF. NO.: 0563-81

SUBJECT CODES: H4 (A6, I2)

AUTHOR: CANADIAN HYDROGRAPHIC SERVICE
Ottawa, Ontario

YEAR: 1981

TITLE: Pilot of Arctic Canada: Sailing Directions

SOURCE: Department of Fisheries and the Environment,
Vol. III, Third Edition, 293 p. plus an index

STATUS: Public

MAP NUMBERS: 7740, 7830, 7831, 7832, 7950, 7951, 7952, 7953

COMMENTS/SUMMARY:

The third edition of the Sailing Directions for Arctic Canada, Volume III was compiled from Canadian Government and other informational sources including British and United States Sailing Directions. This edition supersedes the Pilot of Arctic Canada, Volume III, Second Edition. The Sailing Directions for Arctic Canada, Volume III, is complementary to the pilot of Arctic Canada, Volume I, which gives a more general description of navigation in Canadian Arctic waters.

The following areas, relevant to this bibliography are described: Beaufort Sea - East Part, Dease Strait - Queen Maud Gulf, Victoria Strait to Parry Channel, Parry Channel - West, Parry Islands, and the Sverdrup Islands.

REF. NO.: 0564-82

SUBJECT CODES: H4 (A6, E3, H1, I2)

AUTHOR: CANADIAN HYDROGRAPHIC SERVICE
Ottawa, Ontario

YEAR: 1982

TITLE: Pilot of Arctic Canada: Sailing Directions

SOURCE: Department of Fisheries and the Environment,
Vol. I, Third Edition, 281 p. plus an index

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The Sailing Directions, Arctic Canada, Volume I, is complementary to Volumes II and III of the Arctic Canada Sailing Directions, which give detailed descriptions and directions for the eastern and western Canadian Arctic, respectively. This volume contains general information that is pertinent to the whole Canadian Arctic.

The followiing aspects of the Arctic marine environment are discussed in this volume: navigational information, physiography, exploration, geographical information, regulations, ice conditions, arctic survival and seabed (including currents). A Gazetteer of Place Names is also included.

REF. NO.: 0565-75

SUBJECT CODES: H4 (H1)

AUTHOR: MACINNIS, J. B.
Undersea Research Ltd., Toronto, Ontario

YEAR: 1975

TITLE: Polar Search, Rescue and Diving Mission

SOURCE: Canadian Geographical Journal, Vol. 90, No. 1, January, pp. 25-28

STATUS: Public

MAP NUMBERS: N/A

COMMENTS/SUMMARY:

With Canada's flag fixed on the North Pole, five Canadians carrying out 14 dives and collectively spending 10 man-hours under the ice below, seven more parachuting from the air to the Pole, and others engaging in search-and-rescue operations. The dives beneath the ice at the Pole were made over a 58-hour period April 28-30. This part of the larger exercise was one of 15 major projects undertaken by the Arctic IV expedition of the James Allister MacInnis Foundation. It was a two-month expedition based on Resolute, Cornwallis Island, N.W.T., between Bathurst and Devon Islands. (Arctic IV and its three predecessor expeditions were all centred on Resolute and were carried out at different seasons from 1970 to 1974).

REF. NO.: 0566-74

SUBJECT CODES: H1 (H4)

AUTHOR: MACINNIS, J. B.
Undersea Research Ltd., Toronto, Ontario

YEAR: 1974

TITLE: Field Work - Arctic Underwater Expeditions, 1970-73

SOURCE: Polar Record, Vol. 17, No. 107, pp. 147-149

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

Between 28 August and 1 September 1970, Dr. MacInnis took a four-man expedition to Resolute Bay, Northwest Territories, to make a preliminary study of diving equipment in Arctic conditions and a brief reconnaissance of local marine biology and geology. His group made 21 SCUBA (self-contained underwater breathing apparatus) dives, spending some 20 man-hours under water at depths up to 13 m. The dives varied in length from 20 to 150 minutes, with an average of 47 minutes. Two members of the team then spent a brief period examining shallow-water conditions in the Mackenzie River delta.

Between 11 and 19 February 1971, Dr. MacInnis returned to Resolute Bay with nine-man team to continue work during winter conditions. They made 40 SCUBA dives, which averaged about 40 minutes in length, under an ice cover 1.5 m thick. Between 22 November and 22 December 1972, Dr. MacInnis again returned to Resolute Bay with a team of 15 men and a newly designed underwater station, Subigloo, a transparent acrylic sphere 2.4 m in diameter. This time they made more than 200 dives, during which they placed Subigloo below the ice cover at a depth of about 13 m.

REF. NO.: 0567-43

SUBJECT CODES: G1 (A7, E1, I2)

AUTHOR: MANNING, T. H.

YEAR: 1943

TITLE: The Foxe Basin Coasts of Baffin Island

SOURCE: Geographical Journal, Vol. 101, pp. 225-251

STATUS: Public

MAP NUMBERS: 7067

COMMENTS/SUMMARY:

This paper describes Manning's early exploration of the Foxe Basin coastline. The following topics are addressed in this account: previous exploration, travel itinerary, physiography, rivers, Eskimos, tides, and ice conditions.

REF. NO.: 0568-77

SUBJECT CODES: G1 (A1, A5, A7, E1, E5, H4)

AUTHOR: MCLAREN, P.
University of South Carolina, South Carolina

YEAR: 1977

TITLE: The Coasts of Eastern Melville and Western Byam Martin Islands: Coastal Processes and Related Geology of a High Arctic Environment

SOURCE: PhD. Thesis, University of South Carolina, 317 p.

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

The coasts of eastern Melville and western Byam Martin Islands have emerged approximately 100 m during the Holocene and are still undergoing isostatic recovery at the rate of approximately 0.35 cm/yr. During deglaciation, glacial-marine sediments consisting of 33% sand, 45% silt and 22% clay with variable amounts of gravel and larger sized material reflecting local bedrock lithologies were deposited in Byam Channel. SCUBA observations showed that moving ice block impinging on the substrate leave long linear scour tracks approximately 2 m deep which are flanked on either side by embankments 1 m high. The ice scour tracks are terminated by a crater which is surrounded by an embankment composed of excavated substrate. On rocky bottoms, where the sand-silt-clay facies is absent, ice scour features contain boulders that are freshly torn from the underlying bedrock. Where the shallow sandy facies is thick (>3 m), the sand acts as a buffer against ice scouring and the gravel content of the sand-silt-clay facies cannot be added to the beach. The sandflat coast is formed as the shallow sandy facies emerges. Electrical resistivity and shallow seismic techniques, borehole information and coastal observations suggest that ice-bonded permafrost may be rare or absent in Byam Channel. Onshore, frozen ground was generally encountered less than one metre below the surface.

REF. NO.: 0569-74

SUBJECT CODES: G1 (E1, E5)

AUTHOR: MCLAREN, P.
Terrain Sciences Division
Geological Survey of Canada, Ottawa, Ontario

YEAR: 1974

TITLE: Ice, Observations in an Arctic Coastal Zone, Melville and Byam Martin Islands, N.W.T.

SOURCE: Ice News Bulletin of the International Glaciological Society, 1st Issue, 1974, No. 44

STATUS: Public

MAP NUMBERS: 7830, 7951

COMMENTS/SUMMARY:

As part of a coastal geology project along the east coast of Melville Island and west coast of Byam Martin Island, the role of ice was examined. Frost table profiles were measured in conjunction with an extensive network of beach profiles, and a quantitative approach was taken to determine the distribution of frozen ground. In coarse, poorly sorted sediments, the frost table was shallow (30-50 cm), but it became considerably deeper in silts and clays (>150 cm). Study of the effects of nearshore ice on the coast revealed areas more prone to ice activity than others and demonstrated that ice push may be an important mechanism in providing sediment to a prograding beach sequence.

REF. NO.: 0570-83

SUBJECT CODES: E3

AUTHOR: BIRCH, J. R., FISSEL, D. B., and LEMON, D. D.
Arctic Sciences Ltd.
Sidney, British Columbia
CORNFORD, A. B., LAKE, R. A., SMILEY, B. D.,
MACDONALD, R. W. and HERLINVEAUX, R. H.
Institute of Ocean Sciences
Sidney, British Columbia

YEAR: 1983

TITLE: Arctic Data Compilaton and Appraisal, Volume 3, Northwest Passage: Physical Oceanography - Temperature, Salinity, Currents and Water Levels

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences No. 5, Institute of Ocean Sciences, Sidney, British Columbia, 262 p.

STATUS: Public

MAP NUMBERS: 7220, 7502, 7503, 7740, 7830, 7831, 7832

COMMENTS/SUMMARY:

This inventory contains a catalogue of physical oceanographic data from the Northwest Passage. Times and locations of measurements are listed and displayed graphically for temperature-salinity, current meter, water level and drifter data. Meteorological and ice information are not included. Yearly plots showing the locations of all measurements are included, as are indexes by area and measurement types. References and sources are listed for all data included in the inventory.

REF. NO.: 0571-83

SUBJECT CODES: E3

AUTHOR: BIRCH, J. R., FISSEL, D. B., and LEMON, D. D.
Arctic Sciences Ltd.
Sidney, British Columbia
CORNFORD, A. B., HERLINVEAUX, R. H., LAKE, R. A., and SMILEY, B. D.
Institute of Ocean Sciences
Sidney, British Columbia

YEAR: 1983

TITLE: Arctic Data Compilation and Appraisal, Volume 5, Baffin Bay: Physical Oceanography - Temperature, Salinity, Currents and Water Levels

SOURCE: Canadian Data Report of Hydrography and Ocean Sciences No. 5, Institute of Ocean Sciences, Sidney, British Columbia, 373 p.

STATUS: Public

MAP NUMBERS: 7220, 7302, 7950

COMMENTS/SUMMARY:

This inventory contains a catalogue of physical oceanographic data from the Baffin Bay. Times and locations of measurements are listed and displayed graphically for temperature-salinity, current meter, water level and drifter data. Meteorological and ice information are not included. Yearly plots showing the locations of all measurements are included, as are indexes by area and measurement types. References and sources are listed for all data included in the inventory.

REF. NO.: 0572-64

SUBJECT CODES: H5 (A5, D1, G1, I1)

AUTHOR: GAJDA, R. T.
Geographical Branch
Department of Mines and Technical Surveys
Ottawa, Ontario

YEAR: 1964

TITLE: Radstock Bay, N.W.T., Compared with Resolute Bay, N.W.T., as a Potential Airbase and Harbor

SOURCE: Geolographical Branch, Department of Mines and Technical Surveys, Paper 37, 34 p.

STATUS: Public

MAP NUMBERS: 7503, 7830

COMMENTS/SUMMARY:

This report presents results of geographical reconnaissance surveys of the settlement at Resolute and the area of Radstock Bay, carried out during the summers of 1948, 1949 and 1959. Some meteorological factors influencing sea and air navigation in northern areas have also been included. The original results have already been utilized by various federal government departments, particularly the Departments of National Defence, Transport and Northern Affairs, but because of the more general need for geographical information about many parts of the north, it was decided to publish this report. It is hoped that this will be of assistance to those who are concerned with the application of northern terrain characteristics and other geographical conditions to problems connected with site selection, construction, communication and transportation requirements.

REF. NO.: 0573-76

SUBJECT CODES: I2 (E1)

AUTHOR: NORCOR ENGINEERING AND RESEARCH LIMITED
Yellowknife, N.W.T.

YEAR: 1976

TITLE: Multi-Year Pressure Ridge Study, Queen Elizabeth Islands

SOURCE: Arctic Petroleum Operators Association, Project 102, Prepared by D. Dickins, October 1976

STATUS: Public

MAP NUMBERS: 7951, 7953

COMMENTS/SUMMARY:

This report represents the findings of a field study conducted to obtain fundamental data on multi-year pressure ridges in the Queen Elizabeth Islands area. The program included a 2500 km (1560 mi) reconnaissance flight which provided photographic information on ice conditions needed to select the study location. The field study investigated the geometry and the sail/keel depths of 12 floating multi-year ridges. The base camp was situated in MacLean Strait (78°26'N, 105°10'W) 8 km (5mi) off Ellef Ringnes Island. During the period from May 11 to June 13, 1976, measurements were taken of ridges located within a 10 km (6.3 mi) radius of the base camp.

The report was prepared by NORCOR Engineering and Research Limited for Sun Oil Company Limited, the operator of the Arctic Petroleum Operators Association Project #102.

REF. NO.: 0574-72

SUBJECT CODES: G1

AUTHOR: MCCANN, S. B.
Department of Geography
McMaster University, Hamilton, Ontario

YEAR: 1972

TITLE: Beach Processes in an Arctic Environment

SOURCE: Coastal Geomorphology, Proceedings Volume, Third Annual Geomorphology Symposia Series, Binghamton, New York, September 28-30, 1972, pp. 141-155

STATUS: Public

MAP NUMBERS: 7503

COMMENTS/SUMMARY:

Data on ice conditions, ablation sequences, beach profiles, beach sediments, wave conditions, and freeze-up sequences have been collected during four field seasons, 1968-71, in the Radstock Bay area of S.W. Devon Island (74°N, 91°W) in the Canadian Arctic Archipelago. From these observations it is possible to build up a reasonable picture of the beach conditions and annual regime in this particular area of the Arctic and, perhaps more important, to gain an insight into the year to year variation in the intensity of operation of beach processes. In this latter regard the field data have been supplemented by wind data from the Resolute meteorological station and ice reconnaissance data for the Barrow Strait-Lancaster Sound sea area, for a ten year period 1959 - 1968.

The paper considers the special characteristics of Arctic beaches and discusses the annual beach regime in the study area. Considerable importance is attached to freeze up conditions in the fall as one determinant of beach conditions and the operation of beach processes during the following summer. The magnitude and frequency of periods of significant wave actions are considered in relation to the probability of simultaneous occurrence of ice free ocean, suitable winds and ice free beaches, and the effects of three major storms during the study period are evaluated. The study has applications in the selection of landing beaches and in the construction of coastal installations.

REF. NO.: 0575-63

SUBJECT CODES: D2 (E3)

AUTHOR: COLLIN, A. E.
Polar Continental Shelf Project
Ottawa, Ontario

YEAR: 1963

TITLE: The Waters of the Canadian Arctic Archipelago

SOURCE: In Proceedings of the Arctic Basin Symposium, Arctic Institute of North America and Office of Naval Research, U. S. Navy, Hershey, Pennsylvania, October 1962, pp. 128-136

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

The waters of the Canadian Arctic Archipelago constitute a network of shallow channels connecting the Arctic Ocean with Baffin Bay and Hudson Strait. The archipelago system contains some 16 major passages that range in width from 10 to 120 km and in depth to over 700 m.

Arctic oceanographic observations have been carried out in recent years by the Fisheries Research Board and by the Marine Sciences Branch of the Department of Mines and Technical Surveys. Much of this work has been directed toward fisheries research and has been concentrated in Foxe Basin and Lancaster Sound. Oceanographic observations have been recorded in all the main channels of the archipelago and in such areas as Lancaster Sound the data of four oceanographic cruises are now available.

Information used in this discussion results largely from observations carried out aboard the icebreaker LABRADOR in the eastern Arctic in 1956 and 1957 and at stations established on the sea ice along the western Arctic coast and in the northwestern channels of the archipelago in the spring of 1960 and 1961. Observations taken from the ice island T-3 during the summer of 1958 have been used in the description of the oceanographic conditions of the Arctic Ocean.

The following aspects of the Canadian Arctic Archipelago waters are described: bathymetry, sea ice, circulation, salinity, temperature and volume transport.

REF. NO.: 0576-61

SUBJECT CODES: H1 (A5, D2, E3)

AUTHOR: COLLIN, A. E.
Polar Continental Shelf Project
Ottawa, Ontario

YEAR: 1961

TITLE: Oceanographic Activities of the Polar Continental Shelf Project

SOURCE: Journal Fisheries Research Board of Canada, Vol. 18, No. 2, pp. 253-358

STATUS: Public

MAP NUMBERS: 7951, 7952, 7953

COMMENTS/SUMMARY:

One of the primary research objectives of the Canada Department of Mines and Technical Surveys' Polar Continental Shelf Project has been a detailed investigation of the characteristics and movement of the waters overlying the polar continental shelf and passing through the channels of the Canadian Arctic Archipelago. The program included sub-surface observations of temperature, salinity, and dissolved oxygen. Bottom samples and plankton collections were made at all stations, and at selected locations micro-thermal measurements were taken within the shallow seasonal layer which forms directly under the ice.

Since the project was initiated in 1958, two field seasons have been completed at Isachsen, N.W.T., with encouraging results. During the summer of 1959 emphasis was placed on the development of equipment and techniques by which precise oceanographic observations could be taken on the ice using a light, single-engine aircraft as the means of transportation.

This paper details the procedures and equipment used in these early surveys and the results of the investigations.

REF. NO.: 0577-51

SUBJECT CODES: J (A5, A6, E3, G1)

AUTHOR: DUNBAR, J. J.
Department of Zoology
McGill University, Montreal, Quebec

YEAR: 1951

TITLE: Eastern Arctic Waters

SOURCE: Fisheries Research Board of Canada, Bulletin No. 88, 31 p.

STATUS: Public

MAP NUMBERS: 7067, 7220, 7302, 7502, 7503, 7950

COMMENTS/SUMMARY:

The purpose of the work is to bring together in one place all that has been done in the investigation of the physical oceanography of the Canadian Eastern Arctic Region. Since the behaviour of the waters on the Canadian side of the Labrador Sea, Davis Strait, Baffin Bay and northward is not intelligible without taking into account the waters of west Greenland, the eastern geographic limit has been put at Cape Farewell. Thus the work of Danish oceanographers in Greenland is included. On the North American side, the southern limit of study is the Strait of Belle Isle. Besides the bodies of water already mentioned, the area of reference includes Ungava Bay, Hudson Strait, Hudson Bay, James Bay, Foxe Basin and Channel; the Gulf of Boothia and Prince Regent Inlet; Lancaster and Jones Sounds, and the narrow waters between northwest Greenland and Ellesmere Island up to the Lincoln Sea.

We are concerned here essentially with sea water in the fluid state; but since a large proportion of the area is frozen over during the winter, and since both sea ice and freshwater ice are elements of varying dominance also during the summer, ice conditions are included in so far as they affect the movement and behaviour of the water.

REF. NO.: 0578-67

SUBJECT CODES: E3

AUTHOR: DUNBAR, M. J.
Marine Sciences Centre
McGill University, Montreal, Quebec
DUNBAR, M.
Defence Research Telecommunications Establishment
Ottawa, Ontario
NUTT, D. C.
Department of Geography
Dartmouth College, Dartmouth, Nova Scotia

YEAR: 1967

TITLE: The Baffin Bay-North Water Project, Report Number 1

SOURCE: The Arctic Institute of North America, Research Paper No. 45, December 1967, 71 p.

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

Late in 1966 the Arctic Institute undertook a comprehensive study of the "North Water", an area in Smith Sound and northern Baffin Bay which generally remains unfrozen or lightly covered throughout the winter and forms a center of ice disintegration and removal during the summer. The primary objective of the study was to determine the cause of the "North Water" and to conduct a thorough examination of the entire Baffin Bay oceanographic system, including the effects on the surrounding land areas.

This publication reviews historical and scientific data, the North Water problem and the Arctic Ocean water source.

REF. NO.: 0579-77

SUBJECT CODES: H5 (A5, A9)

AUTHOR: GIRGRAH, M. and SHAH, V. K.
Department of Public Works of Canada
Ottawa, Ontario

YEAR: 1977

TITLE: Construction of a Deep-Sea Dock in the Arctic

SOURCE: Proceedings, Fourth International Conference on Port and Ocean Engineering Under Arctic Conditions, Memorial University of Newfoundland, St. John's, Newfoundland, September 26-30, 1977, Vol. I, pp. 370-381

STATUS: Public

MAP NUMBERS: 7220, 7503

COMMENTS/SUMMARY:

This paper describes the design and construction of the first deep-sea dock in the Canadian Arctic at the site of a lead and zinc, now called Nanisivik. Site conditions including the geotechnical characteristics of the nearshore and offshore sediments are described.

REF. NO.: 0580-69

SUBJECT CODES: E3 (A6)

AUTHOR: TIDMARSH, W. G.
McGill University, Montreal, Quebec
CARMACK, E. C., OVERLAND, J. and MUENCH, R. D.
University of Washington, Seattle, Washington

YEAR: 1969

TITLE: A Preliminary Report of Field Work During 1969: April - May Kane Basin Program and the September Cape York Program

SOURCE: The Baffin Bay - North Water Project, Report Number 5, The Arctic Institute of North America, Research Paper No. 56, December 1969

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

As part of its continuing comprehensive study of the "North Water" phenomenon, the Arctic Institute of North America established and occupied an oceanographic station on sea ice in Kane Basin during the period May 3 to May 20, 1969. The objectives were to make physical measurements and obtain biological samples from an area previously unsurveyed during the winter months. Through the period of occupation, physical oceanographic measurements were made to determine the water structure in the area and the nature of water exchange through Nares Strait. Of special interest was the time dependence of net directional water transport through Kane Basin and the passage of water which could be later identified as that resulting in the formation of Baffin Bay Bottom Water.

REF. NO.: 0581-71

SUBJECT CODES: K

AUTHOR: BARBER, F. G. and HUYER, A.
Marine Sciences Branch
Department of Energy, Mines and Resources

YEAR: 1971

TITLE: On the Water of the Canadian Arctic Archipelago, An Atlas Presentation of 1961 and 1962 Data

SOURCE: Marine Sciences Branch, Department of Energy, Mines and Resources, Manuscript Report Series No. 21, 76 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This atlas summarizes work from 1961 and 1962 data gathering efforts for various localities in the Arctic Archipelago. Based on temperature and salinity profiles various efforts to calculate volume transport have been made.

REF. NO.: 0582-71

SUBJECT CODES: E3

AUTHOR: AVIS, R. A. and COACHMAN, L. K.
Department of Oceanography
University of Washington, Seattle, Washington

YEAR: 1971

TITLE: Current Measurements in Smith Sound - Northern Baffin Bay, September 1968

SOURCE: Baffin Bay - North Water Project, Scientific Report No. 2, The Arctic Institute of North America, 27 p.

STATUS: Public

MAP NUMBERS: 7302

COMMENTS/SUMMARY:

The Arctic Institute's Baffin Bay - North Water Project is a long-term international interdisciplinary research program which has as its primary objective the determination of the cause or causes of the large semi-permanent polynya in northern Baffin Bay and Smith Sound. During the 1968 Westwind cruise, two Braincon model BR 316 recording current meters were installed in Smith Sound. Both were installed 100 m below the surface.

This report describes the reduction and analysis of the current meter data.

REF. NO.: 0583-68

SUBJECT CODES: E3

AUTHOR: PALFREY, Jr., K. M. and DAY, G. G.

YEAR: 1968

TITLE: Oceanography of Baffin Bay and Nares Strait in the Summer of 1966 and Current Measurements in Smith Sound, Summer 1963

SOURCE: United States Coast Guard Oceanographic Report No. 16, November 1968, 86 p. plus appendices

STATUS: Public

MAP NUMBERS: 7220, 7302

COMMENTS/SUMMARY:

The data collected from USCGC EDISTO, during what may be the most comprehensive and synoptic investigation of Baffin Bay and Nares Strait, is presented. Measurements of temperature, salinity and dissolved oxygen have been treated in the classic manner with emphasis on developing the circulation and transport budget of Baffin Bay.

The several water masses in Baffin Bay are redefined with the aid of T-S diagrams and the distribution of these water masses in the circulation patterns are discussed with the aid of dynamic calculations and isentropic analysis.

Transport calculations suggest that the West Greenland Current is relatively unimportant in the budget of Baffin Bay in that the larger portion of this water mass exits the region after a short residence time.

REF. NO.: 0584-57

SUBJECT CODES: E3

AUTHOR: BAILEY, W. B.
Fisheries Research Board of Canada
Atlantic Oceanographic Group
St. Andrews, New Brunswick

YEAR: 1957

TITLE: Oceanographic Features of the Canadian Archipelago

SOURCE: Journal of the Fisheries Research Board of Canada, Vol. 14, No. 5, pp. 731-769

STATUS: Public

MAP NUMBERS: 7220, 7302, 7503, 7830, 7831, 7950

COMMENTS/SUMMARY:

Oceanographic data collected during the first cruise of H.M.C.S. Labrador to the Canadian Arctic in August and September 1954 permit comparisons of the vertical temperature and salinity structures in Baffin Bay, the Canadian Archipelago and the Arctic Ocean. From a comparison of the temperature-salinity characteristics of the waters in the Arctic Ocean (Beaufort Sea) with those in Baffin Bay it is found that: (a) the surface waters of the Arctic Ocean are much less saline than those in Baffin Bay but minimum temperatures are the same (-1.8°C), (b) the waters of the upper 200 m in Baffin Bay are denser than those found at corresponding depths in the Arctic Ocean, (c) below 200 m, Arctic waters are the denser, and below 500 m they are denser than any waters found in Baffin Bay, and (d) waters found at 250 m in the Beaufort Sea, at 500 m in Smith Sound, and at 1250 m in central Baffin Bay, have identical temperature and salinity characteristics. Dynamic calculations of currents and volume transports of waters through the channels leading into Baffin Bay are described.

REF. NO.: 0585-81

SUBJECT CODES: K

AUTHOR: SANSCARTIER, L. and KEELEY, J. R.
Marine Environmental Data Service
Department of Fisheries and Oceans, Ottawa, Ontario

YEAR: 1981

TITLE: Oceanographic Atlases of Canadian Waters: A Bibliography

SOURCE: Marine Environmental Data Service, Department of Fisheries and Oceans, Ottawa, Ontario, Technical Report No. 10

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This report extends the work carried out by Acres Consulting Co. to compile a bibliography of atlases containing information about the waters around Canada. The goal is to identify, as completely as possible, all material relating to physical oceanography only. Other material, relating to biology, has also been included but the coverage of this is not complete. The information is arranged in alphabetical order by author. A geographical breakdown of the contents of the atlases is given in a series of maps. Where possible, an abstract has been included to describe the contents of each atlas listed.

REF. NO.: 0586-77

SUBJECT CODES: H1 (E5)

AUTHOR: HNATIUK, J. and RANDALL, A. G.
Gulf Oil Canada Limited, Calgary, Alberta

YEAR: 1977

TITLE: Determination of Permafrost Thickness in Wells in Northern Canada

SOURCE: Canadian Journal of Earth Sciences, Vol. 14, pp. 375-383

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

Accurate interpretation of geophysical data, design of safe casing strings for drilling and production operations, and determination of the potential for existence of gas hydrates in and immediately below the permafrost zone are only possible if the thickness of the permafrost zone can be accurately determined.

Freezing of interstitial water in soils has little effect on many of the physical properties of the soil, however, large changes in elastic properties and electrical resistivity do result. This makes it feasible to determine the thickness of the permafrost zone using techniques which measure changes in acoustic and electrical properties of the soils adjacent to the wellbore. This paper discusses the characteristic response which occurs as the borehole logging tool passes upwards from unfrozen sediments into the permafrost zone. It is this response which indicates the base of the permafrost zone and allows determination of permafrost thickness. Conclusive evidence of permafrost thickness and confirmation of permafrost thickness inferred from acoustic and electrical data is obtained from temperature data obtained subsequent to well suspension. Techniques utilized to obtain these temperature data are outlined in this paper.

REF. NO.: 0587-73

SUBJECT CODES: E5

AUTHOR: JUDGE, A.
Seismology Division, Earth Physics Branch
Energy, Mines and Resources Canada
Ottawa, Ontario

YEAR: 1973

TITLE: The Prediction of Permafrost Thicknesses

SOURCE: Canadian Geotechnical Journal, Vol. 10, No. 1, 11 p.

STATUS: Public

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

With a knowledge of the mean annual ground temperatures, the general lithology at a given location and a regional distribution of the geothermal flux from the earth's interior, it is possible to make reasonable estimates of the presence or absence of permafrost and its thickness. The prediction is complicated by changes of the local surface temperature in the past due to a variety of factors ranging from changes of climate to forest fires. Several sites in the Canadian Arctic Archipelago where heat flow analyses have been conducted are described.

REF. NO.: 0588-65

SUBJECT CODES: A7 (A1, G1)

AUTHOR: ST-ONGE, D.
Direction de la Geographie
Ministere des Mines et des Releves Techniques
Ottawa, Ontario

YEAR: 1965

TITLE: La Geomorphologie de l'lle Ellef Ringnes, Territoires du Nord-Quest, Canada

SOURCE: Direction de la Geographie, Etude Geographique No. 38 (Geographical Paper No. 38), 42 p. plus bibliography

STATUS: Public

MAP NUMBERS: 7950, 7951, 7953

COMMENTS/SUMMARY:

This report describes the geomorphology of Ellef Ringnes Island. The following topics are discussed: cryogenic processes; nivation, erosion, surface hydrology, and glaciation.

REF. NO.: 0589-84

SUBJECT CODES: J (A6, B1, B4.1, B4.2, B4.3, D1, H5, I1, I2)

AUTHOR: KENTING LTD.
Calgary, Alberta

YEAR: 1984

TITLE: Polarquest Prospectus

SOURCE: Prepared by Kenting Ltd., a copy of the prospectus was provided by Mr. Jeff Pallister of Pallister Resource Management Ltd.

STATUS: Proprietary data at present

MAP NUMBERS: Entire study area

COMMENTS/SUMMARY:

This prospectus describes the entire data package available on the Polarquest Operation. At the present time Pallister Resources Management Ltd. is attempting to locate all reports relevant to the operation. These will be catalogued and reproduced once an agreement is reached with the data owners. Information in the prospectus describes the following programs: geological, bathymetric, environmental, aeromagnetics, gravity, seismic reflection, seismic refraction and feasibility.

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Subject

A11

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8.0 COMMON REFERENCES FOR THE ARCTIC ARCHIPELAGO AND THE QUEEN ELIZABETH ISLANDS

Arctic Archipelago

Ref. No.	Primary Subject Code	Author
A	**Surficial (Marine) Geology**	
0099-72	A1	BLAKE
0117-62	A6	COLLIN
0129-60	A7	CRAIG and FYLES
0151-83	A1	BLAKE
0185-65	A7	FYLES
0222-75	A7	HODGSON
0228-67	A5	HORN
0383-76	A7	PREST
0481-76	A1	LOWDON and BLAKE
B	**Underlying Bedrock**	
0013-72	B6	ROY
0023-76	B1	THORSTEINSSON and TOZER
0042-79	B3	KERR
0067-82	B7	BALKWILL and FOX
0143-73	B1	DRUMMOND
0182-80	B4.3	EARTH PHYSICS BRANCH
0189-83	B4.4	GEOTECH ENGINEERING LTD.
0249-73	B4.4	JUDGE
0251-79	B4.4	JUDGE et al
0261-74	B4.2	LACK
0459-72	B1	CHRISTIE et al
0522-82	B7	SOBCZAK
C	**Geological Evolution and Development of Arctic Island Channels**	
0367-66	C1	PELLETIER
E	**Seabed Modifying Processes and Hazards**	
0049-80	E6	FRANKLIN
0199-84	E5	HARDY ASSOCIATES (1978) LTD.
0247-82	E6	JUDGE
0250-84	E5	JUDGE and TAYLOR
0418-77	E5	TAYLOR and JUDGE
0419-75	E5	TAYLOR and JUDGE
0558-84	E3	FISSEL et al
0587-73	E5	JUDGE

Ref. No.	Primary Subject Code	Author
F	**Natural Seismicity**	
0402-74	F1	STEVENS
0460-80	F1	DAVENPORT et al
H	**Data Acquisition Techniques**	
0116-75	H4	CLINK and EINARSSON
0210-75	H2	HETHERINGTON and STRAIN
0211-80	H2	HETHERINGTON and FRANKLIN
0254-77	H1	KERR
0519-80	H5	KAUSTINEN
I	**Seasonal Distribution of Sea Ice**	
0011-82	I2	INSTITUTE OF OCEAN SCIENCES
0012-83	I2	INSTITUTE OF OCEAN SCIENCES
0170-84	I2	ENVIRONMENT CANADA
0275-77	I2	LINDSAY
0306-80	I1	MAXWELL
0450-79	I2	WALSH and JOHNSON
0521-75	I2	LINDSAY
J	**Composite Studies**	
0021-83	J	BEDFORD INSTITUTE OF OCEANOGRAPHY
0109-68	J	BOSTOCK
0225-71	J	HOOD
0352-69	J	PAMENTER
0360-79	J	PELLETIER
0361-79	J	PELLETIER
0366-66	J	PELLETIER and COLLIN
0372-63	J	PELLETIER
0380-78	J	POLAR GAS LTD.
0381-78	J	POLAR GAS LTD.
0452-66	J	BIRD
0510-82	J	DOME PETROLEUM LTD. et al
K	**Bibliographies and Indexes**	
0028-76	K	EYRE
0120-84	K	CANADA OIL AND GAS LANDS ADMINISTRATION
0216-83	K	THE ARCTIC INSTITUTE OF NORTH AMERICA
0218-80	K	HOBSON and VOYCE
0219-77	K	HOBSON and VOYCE
0220-75	K	HOBSON and VOYCE
0278-74	K	HOBSON and VOYCE
0318-77	K	CHRISTIE
0557-83	K	GEOLOGICAL SURVEY OF CANADA
0581-71	K	BARBER and HUYER
0585-81	K	SANSCARTIER and KEELEY
0589-81	K	ACRES CONSULTING SERVICES LTD.

Queen Elizabeth Islands

Ref. No.	Primary Subject Code	Author
A	**Surficial (Marine) Geology**	
0090-76	A1	BLAKE
0121-70	A6	CONTINENTAL SHELF DATA SYSTEMS
0166-76	A1	ENGLAND
0167-76	A1	ENGLAND
0334-80	A11	MUDIE
B	**Underlying Bedrock**	
0133-80	B4.1	DELAURIER et al
0332-61	B4.2	MORRISON
0391-65	B4.2	SANDER and OVERTON
0397-70	B4.3	SOBCZAK and WEBER
0399-63	B4.3	SOBCZAK et al
0400-63	B4.3	SOBCZAK
0425-72	B1	TRETTIN
0490-61	B4.1	GREGORY et al
D	**Bathymetry**	
0258-81	D1	KINGSLEY and STIRLING
I	**Seasonal Distribution of Sea Ice**	
0085-64	I2	BLACK
0086-63	I2	BLACK
0276-69	I2	LINDSAY
J	**Composite Studies**	
0303-82	J	MARTEC LTD.

PART II

Appendices

APPENDIX A GSC Sample Locations

APPENDIX A GSC Sample Locations

CRUISE NUMBER	SAMPLE NUMBER	SAMPLE TYPE	LATITUDE	LONGITUDE
74021	75	CAMERA	74.52499	-89.20999
74021	77	CAMERA	74.38333	-89.00833
74021	116	CAMERA	74.45333	-97.72499
74021	71	CAMERA	74.34999	-91.51833
74021	119	CAMERA	74.40166	-97.75000
74021	67	CAMERA	74.32000	-91.07333
74021	113	CAMERA	74.42499	-96.28166
74021	88	CAMERA	74.16499	-89.42999
74021	105	CAMERA	74.62999	-92.50666
74021	94	CAMERA	74.76166	-83.21999
74021	98	CAMERA	74.34333	-83.50000
74021	102	CAMERA	74.32000	-92.60499
74021	91	CAMERA	74.44500	-86.30999
74021	154	CAMERA	73.49333	-95.79166
74021	152	CAMERA	73.52499	-96.04999
74021	149	CAMERA	73.55999	-97.10499
74021	147	CAMERA	73.55833	-96.87500
74021	140	CAMERA	73.53333	-96.24499
74021	136	CAMERA	73.83333	-96.05499
74021	63	CAMERA	74.53999	-94.24666
74021	131	CAMERA	74.14833	-96.93833
74021	128	CAMERA	74.14666	-87.23666
74026	154	CAMERA	73.49333	-95.79167
74026	131	CAMERA	74.14833	-96.93833
74026	136	CAMERA	73.83333	-96.05500
74026	140	CAMERA	73.53333	-96.24500
74026	77	CAMERA	74.38333	-89.00833
74026	75	CAMERA	74.52500	-89.21000
74026	84	CAMERA	73.89333	-88.40833
74026	88	CAMERA	74.16500	-89.43000
74026	71	CAMERA	74.35000	-91.51833
74026	91	CAMERA	74.44500	-86.31000
74026	94	CAMERA	74.76167	-83.22000
74026	67	CAMERA	74.32000	-91.07333

*	74C26	98	CAMERA	74.47667	-83.50000
*	74C26	102	CAMERA	74.32000	-92.66500
*	74026	105	CAMERA	74.63000	-92.50667
*	74C26	113	CAMERA	74.42500	-94.28167
*	74C26	116	CAMERA	74.45333	-97.72500
*	74C26	63	CAMERA	74.54000	-94.24667
*	74C26	119	CAMERA	74.40167	-97.75000
*	74026	147	CAMERA	73.55833	-96.87500
*	74026	128	CAMERA	74.14667	-97.23667
*	74026	149	CAMERA	73.56000	-97.10500
*	74C26	152	CAMERA	73.52500	-96.05000
*	76C25	41	CAMERA	72.96300	-83.66000
*	76C25	19	CAMERA	74.52500	-91.36700
*	76C25	20	CAMERA	74.54200	-91.38300
*	76025	17	CAMERA	74.41500	-91.40200
*	76025	21	CAMERA	74.53000	-91.37000
*	76C25	22	CAMERA	74.54300	-90.64000
*	76C25	24	CAMERA	74.18700	-88.75700
*	76C25	43	CAMERA	73.18400	-85.38300
*	76025	36	CAMERA	73.14600	-84.98400
*	76C25	29	CAMERA	74.59400	-85.01800
*	76C25	18	CAMERA	74.43000	-91.42500
*	76025	14	CAMERA	74.67200	-90.95100
*	76025	32	CAMERA	74.77200	-83.24200
*	76C25	34	CAMERA	73.07300	-84.83580
*	76C25	35	CAMERA	73.09800	-84.59800
*	76025	12	CAMERA	74.75000	-91.02500
*	81C45	15	CAMERA	74.45333	-81.28333
*	81045	20	CAMERA	73.75000	-81.15000
*	81C45	21	CAMERA	73.76500	-81.16333
*	81C45	15C	CAMERA	74.45333	-81.28333
*	81C45	20C	CAMERA	73.75000	-81.14999
*	81C45	21C	CAMERA	73.76500	-81.16333
*	NAH1D1K 1982	17	CORE	7C.72026	-125.34917
*	NAH1D1K 1982	19	CORE	7C.74000	-125.38306
*	72090	1	CORE	74.21217	-85.84788
*	72C90	2	CORE	74.20000	-85.35000
*	72C90	3	CORE	74.13233	-84.20540
*	72C90	4	CORE	74.05157	-86.50042
*	72C90	5	CORE	74.03820	-82.94368
*	72C90	8	CORE	74.39629	-84.20705
*	72C90	6	CORE	74.20017	-85.35007
*	72090	7	CORE	74.25485	-86.65843
*	72C90	9	CORE	74.29007	-83.69595
*	73C14	57	CORE	74.32167	-87.97000
*	73C14	51	CORE	74.09167	-88.91833
*	73C14	55	CORE	74.16667	-87.45833
*	73C14	15	CORE	73.92500	-89.35000
*	73014	28	CORE	74.15000	-88.63333
*	73014	31	CORE	73.96167	-87.31667
*	73C14	34	CORE	74.01667	-86.91667
*	73C14	27	CORE	74.23333	-88.63333
*	73C14	44	CORE	73.97000	-87.21667
*	73014	17	CORE	74.25000	-87.95000
*	73014	49	CORE	74.26333	-88.90000
*	74021	93	CORE	74.76333	-83.19999
*	74021	61	CORE	74.77999	-88.71999
*	74021	62	CORE	74.54166	-94.24833
*	74021	138	CORE	73.53499	-96.30666
*	74021	90	CORE	74.44666	-86.31833
*	74021	65	CORE	74.15166	-91.19833
*	74021	95	CORE	74.76166	-83.21999
*	74021	85	CORE	73.89333	-88.40833
*	74021	15C	CORE	73.52333	-96.04333
*	74021	81	CORE	73.89999	-88.55499

* 74021	70	CORE	74.34999	-91.51833
* 74021	78	CORE	74.20500	-89.29666
* 74021	76	CORE	74.40666	-89.02000
* 74021	145	CORE	73.55833	-96.87500
* 74021	60	CORE	74.65666	-88.57000
* 74021	57	CORE	74.78166	-79.00000
* 74021	121	CORE	74.29833	-97.73333
* 74021	124	CORE	74.19833	-97.73666
* 74021	117	CORE	74.40166	-97.75000
* 74021	72	CORE	74.51999	-89.13333
* 74021	129	CORE	74.15333	-96.96333
* 74021	55	CORE	75.16000	-78.59999
* 74021	53	CORE	75.70666	-78.37500
* 74021	52	CORE	75.75333	-78.37500
* 74026	69	CORE	74.35167	-91.55167
* 74026	76	CORE	74.40667	-89.02000
* 74026	78	CORE	74.20500	-89.29667
* 74026	90	CORE	74.44667	-86.31833
* 74026	70	CORE	74.35000	-91.51833
* 74026	81	CORE	73.90000	-86.55500
* 74026	72	CORE	74.52000	-89.13333
* 74026	95	CORE	74.76167	-83.22000
* 74026	85	CORE	74.19667	-89.57000
* 74026	93	CORE	74.76333	-83.20000
* 74026	68	CORE	74.32000	-91.06667
* 74026	117	CORE	74.40167	-97.75000
* 74026	45	CORE	76.41333	-77.52000
* 74026	448	CORE	76.41333	-77.52000
* 74026	46	CORE	76.41333	-77.38667
* 74026	48	CORE	75.53667	-79.73333
* 74026	50	CORE	75.54000	-79.60333
* 74026	51	CORE	75.67667	-78.83500
* 74026	52	CORE	75.75333	-78.37500
* 74026	53	CORE	75.70667	-75.06333
* 74026	55	CORE	75.16000	-78.60000
* 74026	129	CORE	74.15333	-96.96333
* 74026	57	CORE	74.78167	-79.00000
* 74026	65	CORE	74.15167	-91.19833
* 74026	145	CORE	73.55833	-96.87500
* 74026	138	CORE	73.53500	-96.30667
* 74026	61	CORE	74.78000	-88.72000
* 74026	121	CORE	74.29833	-97.73333
* 74026	60	CORE	74.65667	-88.57000
* 74026	124	CORE	74.19833	-97.73667
* 74026	150	CORE	73.52333	-96.04333
* 76025	PCC6	CORE	74.28667	-91.06833
* 76025	PCC2	CORE	74.79200	-90.92000
* 76025	PCC7	CORE	74.53167	-91.37500
* 76025	PCC1	CORE	74.59333	-88.83333
* 76025	PCC5	CORE	74.67217	-90.99167
* 76025	PCC8	CORE	74.54000	-90.64167
* 76025	PCC9	CORE	74.18667	-88.75667
* 76025	PCC3	CORE	74.86333	-90.82333
* 76025	PCC4	CORE	74.71167	-91.10500
* 76025	PC17	CORE	72.96333	-83.66000
* 76025	PC15	CORE	73.07667	-84.36333
* 76025	GC3	CORE	74.70867	-90.92000
* 76025	GC5	CORE	74.75000	-91.02500
* 76025	PC14	CORE	74.65667	-83.23000
* 76025	PC18	CORE	73.02883	-83.80167
* 76025	PC13	CORE	74.79167	-83.24167
* 76025	PC12	CORE	74.75833	-83.25000
* 76025	PC16	CORE	73.12500	-84.85833
* 76025	PC11	CORE	74.57333	-85.02167
* 76025	PC10	CORE	74.59433	-85.01833

•	76025	PC19	CORE	73.18917	-85.38333
•	81C45	4	CORE	73.46667	-84.83333
•	81C45	14	CORE	74.46750	-84.50000
•	81C45	5	CORE	73.55000	-84.73333
•	81C45	9	CORE	73.93333	-84.50000
•	81C45	10	CORE	73.99667	-84.49000
•	81C45	11	CORE	74.11667	-84.50000
•	81C45	12	CORE	74.25000	-84.50000
•	81C45	6H	CORE	73.94500	-80.62333
•	81C45	5H	CORE	73.99499	-80.57666
•	81C45	4H	CORE	74.16999	-81.26999
•	81C45	3H	CORE	74.33333	-81.29999
•	81C45	2H	CORE	74.49166	-80.61833
•	81C45	1H	CORE	74.12333	-81.56500
•	81045	21C	CORE	73.76500	-81.16333
•	81C45	20B	CORE	73.75000	-81.14999
•	81C45	19B	CORE	73.86999	-81.18333
•	81C45	18B	CORE	73.91999	-81.26666
•	81C45	17B	CORE	74.02499	-81.26666
•	81C45	16B	CORE	74.25499	-81.26666
•	81C45	15B	CORE	74.45333	-81.28333
•	81045	14B	CORE	74.46749	-84.50000
•	81C45	12B	CORE	74.25000	-84.50000
•	81C45	11B	CORE	74.11666	-84.50000
•	81045	3	CORE	73.11167	-84.72000
•	81C45	9B	CORE	73.93333	-84.50000
•	81045	5B	CORE	73.54999	-84.73333
•	81045	4B	CORE	73.46666	-84.83333
•	81C45	3B	CORE	73.11183	-83.71999
•	81045	2B	CORE	73.09166	-84.42083
•	81C45	10B	CORE	73.99666	-84.44999
•	81045	17	CORE	74.02500	-81.26667
•	81C45	16	CORE	74.25500	-81.26667
•	81C45	15	CORE	74.45333	-81.28333
•	81C45	18	CORE	73.92000	-81.26667
•	81C45	19	CORE	73.87000	-81.18333
•	81C45	20	CORE	73.75000	-81.15000
•	81C45	21	CORE	73.76500	-81.16333
•	81C45	6	CORE	73.94500	-80.62333
•	81C45	4	CORE	74.17000	-81.27000
•	81C45	3	CORE	74.33333	-81.30000
•	81C45	2	CORE	74.49167	-80.61833
•	81C45	1	CORE	74.12333	-81.56500
•	81C45	2	CORE	73.09167	-84.42083
•	81C45	5	CORE	73.99500	-80.57667
•	82031	CA-1	CORE	71.20833	-75.00000
•	83008	11	CORE	75.84167	-80.11667
•	83008	16	CORE	76.26500	-82.30000
•	83008	8A	CORE	76.19167	-86.06583
•	74021	66	DREDGE	74.32000	-91.14833
•	74021	97	DREDGE	74.45999	-83.50833
•	74026	C5	DREDGE	74.46000	-83.50833
•	74026	04	DREDGE	74.31833	-91.14833
•	76025	16	DREDGE	74.33000	-91.36667
•	74021	86	DRILL	74.18833	-89.51666
•	74021	92	DRILL	74.40333	-86.44500
•	74021	73	DRILL	74.52499	-89.20500
•	74021	69	DRILL	74.35333	-91.55166
•	74021	58	DRILL	74.78166	-79.00000
•	74021	68	DRILL	74.32000	-91.06666
•	74021	83	DRILL	73.89666	-88.45833
•	74C26	83	DRILL	73.89667	-88.45833
•	74C26	69	DRILL	74.35167	-91.55167
•	74C26	58	DRILL	74.77167	-78.98833
•	74C26	86	DRILL	74.18833	-89.51667

*	74026	47	DRILL	76.45833	-77.26000
*	74026	73	DRILL	74.52500	-89.20500
*	74026	92	DRILL	74.40333	-86.44500
*	74026	68	DRILL	74.32000	-91.06667
*	63090	8	GRAB	77.88040	-110.11000
*	63090	9	GRAB	77.87080	-110.07000
*	63090	200	GRAB	77.90460	-110.11000
*	63090	201	GRAB	77.90420	-110.10500
*	63090	202	GRAB	77.90330	-110.10250
*	63090	203	GRAB	77.89630	-110.07500
*	63090	104	GRAB	77.85480	-110.72750
*	63090	7	GRAB	77.88750	-110.14250
*	63090	87	GRAB	77.86130	-110.88500
*	63090	88	GRAB	77.86130	-110.88500
*	63090	6	GRAB	77.89130	-110.15750
*	63090	18	GRAB	77.86330	-110.14000
*	63090	16	GRAB	77.88540	-110.16500
*	63090	17	GRAB	77.87630	-110.15250
*	63090	103	GRAB	77.85380	-110.76900
*	63090	18A	GRAB	77.84750	-110.12000
*	63090	18B	GRAB	77.83250	-110.10000
*	63090	18C	GRAB	77.81670	-110.08000
*	63090	1	GRAB	77.89420	-110.17250
*	63090	2	GRAB	77.89420	-110.17250
*	63090	3	GRAB	77.89420	-110.17000
*	63090	4	GRAB	77.89330	-110.16750
*	63090	5	GRAB	77.89290	-110.16500
*	63090	102	GRAB	77.85170	-110.83000
*	63090	77	GRAB	77.83460	-110.84250
*	63090	76	GRAB	77.83460	-110.84500
*	63090	75	GRAB	77.83460	-110.84500
*	63090	117A	GRAB	77.83210	-110.81500
*	63090	117	GRAB	77.83290	-110.82000
*	63090	15	GRAB	77.89040	-110.17000
*	63090	115	GRAB	77.83420	-110.80000
*	63090	114	GRAB	77.83420	-110.82500
*	63090	113	GRAB	77.83420	-110.83500
*	63090	112	GRAB	77.83420	-110.84000
*	63090	111	GRAB	77.83420	-110.84250
*	63090	116	GRAB	77.83380	-110.75500
*	63090	101	GRAB	77.85040	-110.85250
*	63090	100	GRAB	77.84960	-110.86500
*	63090	99	GRAB	77.84960	-110.87000
*	63090	98	GRAB	77.84920	-110.87250
*	63090	97	GRAB	77.84920	-110.87500
*	63090	96	GRAB	77.84920	-110.87500
*	63090	83	GRAB	77.84670	-110.70750
*	63090	82	GRAB	77.84170	-110.76500
*	63090	81	GRAB	77.83790	-110.80500
*	63090	80	GRAB	77.83630	-110.82750
*	63090	79	GRAB	77.83540	-110.83750
*	63090	78	GRAB	77.83500	-110.84000
*	63090	85	GRAB	77.87250	-110.81750
*	63090	84	GRAB	77.87290	-110.81750
*	63090	95	GRAB	77.86830	-110.74250
*	63090	94	GRAB	77.86540	-110.80250
*	63090	93	GRAB	77.86290	-110.84500
*	63090	92	GRAB	77.86210	-110.86500
*	63090	91	GRAB	77.86130	-110.87750
*	63090	11C	GRAB	77.83420	-110.84500
*	63090	38	GRAB	77.90420	-110.30000
*	63090	39	GRAB	77.90420	-110.30000
*	63090	40	GRAB	77.90330	-110.30000
*	63090	41	GRAB	77.90250	-110.29750
*	63090	90	GRAB	77.86130	-110.88250

63C90	37	GRAB	77.90420	-110.30000
63C90	54	GRAB	77.87170	-110.33000
63C90	53	GRAB	77.88540	-110.32000
63C90	52	GRAB	77.89790	-110.31000
63C90	51	GRAB	77.89920	-110.30500
63C90	50	GRAB	77.90170	-110.30500
63C90	49	GRAB	77.90290	-110.30250
63C90	48	GRAB	77.90380	-110.30250
63C90	47	GRAB	77.90420	-110.30250
63C90	46	GRAB	77.90420	-110.30250
63C90	86	GRAB	77.87040	-110.31500
63C90	42	GRAB	77.90000	-110.29500
63C90	21	GRAB	77.89420	-110.18000
63C90	22	GRAB	77.89330	-110.18000
63C90	23	GRAB	77.89250	-110.18000
63C90	24	GRAB	77.89000	-110.18500
63C90	25	GRAB	77.88540	-110.19000
63C90	26	GRAB	77.87670	-110.20000
63C90	27	GRAB	77.86420	-110.21750
63C90	10	GRAB	77.89460	-110.17500
63C90	11	GRAB	77.89460	-110.17500
63C90	12	GRAB	77.89420	-110.17500
63C90	13	GRAB	77.89330	-110.17500
63C90	14	GRAB	77.89250	-110.17250
63C90	43	GRAB	77.89580	-110.28500
63C90	44	GRAB	77.88670	-110.27000
63C90	28	GRAB	77.90420	-110.29750
63C90	29	GRAB	77.90420	-110.29750
63C90	30	GRAB	77.90420	-110.29750
63C90	31	GRAB	77.90380	-110.29500
63C90	32	GRAB	77.90330	-110.29500
63C90	33	GRAB	77.90170	-110.28500
63C90	34	GRAB	77.89880	-110.26750
63C90	35	GRAB	77.89250	-110.23000
63C90	19	GRAB	77.89460	-110.17750
63C90	20	GRAB	77.89460	-110.17750
63C90	185	GRAB	77.78830	-110.27000
63C90	186	GRAB	77.78920	-110.27000
63C90	187	GRAB	77.79170	-110.27000
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63C90	189	GRAB	77.80580	-110.27000
63C90	190	GRAB	77.81670	-110.27000
63C90	173	GRAB	77.78670	-110.27000
63C90	174	GRAB	77.78670	-110.27000
63C90	175	GRAB	77.78710	-110.27250
63C90	176	GRAB	77.78750	-110.27500
63C90	177	GRAB	77.78880	-110.27750
63C90	178	GRAB	77.79040	-110.28250
63C90	179	GRAB	77.79630	-110.29250
63C90	180	GRAB	77.80250	-110.31500
63C90	181	GRAB	77.81420	-110.34450
63C90	154	GRAB	77.77960	-110.67500
63C90	155	GRAB	77.78000	-110.67500
63C90	156	GRAB	77.78000	-110.67250
63C90	157	GRAB	77.78000	-110.67000
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63C90	89	GRAB	77.86130	-110.88500
63C90	205	GRAB	77.78500	-110.16500
63C90	206	GRAB	77.78500	-110.16500
63C90	208	GRAB	77.78790	-110.14500
63C90	207	GRAB	77.78580	-110.16000
63C90	209	GRAB	77.80080	-110.12250
63C90	210	GRAB	77.81540	-110.08500
63C90	191	GRAB	77.78710	-110.27000

63C90	192	GRAB	77.78710	-110.27C00
63090	193	GRAB	77.7c710	-110.26750
63C90	194	GRAB	77.78750	-110.26500
63C90	195	GRAB	77.7c810	-110.26400
63090	19c	GRAB	77.79170	-110.26000
63090	197	GRAB	77.79500	-110.25000
63C90	19c	GRAB	77.80330	-110.22500
63090	199	GRAB	77.81450	-110.19500
63C90	182	GRAB	77.78670	-110.27C00
63090	183	GRAB	77.7c710	-110.27000
63090	184	GRAB	77.78750	-110.27C0C
63C90	143	GRAB	77.79750	-110.24500
63C90	132	GRAB	77.80080	-110.7C500
63090	133	GRAB	77.80080	-110.7C250
63090	134	GRAB	77.80130	-110.69500
63090	135	GRAB	77.80250	-110.66000
63C90	127	GRAB	77.80670	-110.71250
63C90	128	GRAB	77.80710	-110.70750
63C90	129	GRAB	77.80710	-110.7CCCC
63C90	13C	GRAB	77.80750	-110.69250
63090	131	GRAB	77.80790	-110.68750
63090	119	GRAB	77.82460	-110.76000
63090	12C	GRAB	77.82460	-110.78CCC
63090	121	GRAB	77.82460	-110.77750
63090	122	GRAB	77.82500	-110.77250
63090	123	GRAB	77.82580	-110.76250
63C90	124	GRAB	77.82710	-110.74250
63090	125	GRAB	77.82960	-110.69750
63090	126	GRAB	77.83290	-110.63750
63090	126A	GRAB	77.83750	-110.56250
63C90	109	GRAB	77.83420	-110.64500
63C90	159	GRAB	77.78040	-110.65500
63C90	142	GRAB	77.78830	-110.66250
63090	161	GRAB	77.78250	-110.5b750
63C90	162	GRAB	77.78460	-110.52750
63C90	146	GRAB	77.78000	-110.67500
63C90	145	GRAB	77.78000	-110.67500
63090	147	GRAB	77.78000	-110.67500
63090	148	GRAB	77.78080	-110.67000
63C90	149	GRAB	77.78130	-110.66750
63090	15C	GRAB	77.78250	-110.65000
63090	141	GRAB	77.78420	-110.67000
63C90	151	GRAB	77.78560	-110.64000
63090	14C	GRAB	77.78170	-110.67500
63090	139	GRAB	77.78040	-110.67750
63090	138	GRAB	77.78040	-110.67750
63C90	137	GRAB	77.78040	-110.67750
63C90	136	GRAB	77.78000	-110.68000
63C90	153	GRAB	77.80000	-110.55750
63C90	152	GRAB	77.79170	-110.60500
64090	43	GRAB	73.37500	-76.20833
64090	42.3	GRAB	73.67667	-76.51667
64090	42.2	GRAB	73.96667	-76.75000
64090	42.1	GRAB	74.25833	-77.01667
64090	42	GRAB	74.91667	-78.80000
64090	43.1	GRAB	73.58333	-75.16667
64C90	41	GRAB	75.08333	-77.03333
64090	40.1	GRAB	75.15000	-76.18333
64090	41.1	GRAB	75.00000	-78.CCCCC
64090	49	GRAB	75.88333	-76.71667
64090	49.1	GRAB	75.64167	-76.95000
64090	49.2	GRAB	75.37500	-77.24167
64C90	49.3	GRAB	75.10000	-77.46667
64090	40	GRAB	75.21667	-75.30000
64090	50	GRAB	74.53333	-77.93333

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•	64090	50.2	GRAB	74.63000	-75.85000
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•	64090	49.4	GRAB	74.80000	-77.71667
•	64090	208	GRAB	77.40666	-117.26000
•	64090	209	GRAB	77.41958	-117.31500
•	64090	66	GRAB	77.37083	-117.01750
•	64090	67	GRAB	77.37166	-117.01500
•	64090	68	GRAB	77.37333	-117.01000
•	64090	69	GRAB	77.36000	-116.99250
•	64090	36	GRAB	77.32630	-117.15750
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•	64090	60	GRAB	77.38166	-117.11750
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•	64090	65	GRAB	77.40000	-117.07000
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•	64090	79	GRAB	77.36833	-116.82000
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•	64090	204	GRAB	77.38330	-117.16000
•	64090	205	GRAB	77.38541	-117.17000
•	64090	206	GRAB	77.38916	-117.18500
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*	70021	83	GRAB	72.70583	-118.32999
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*	73014	51	GRAB	74.09167	-88.91833
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*	73014	50	GRAB	74.18000	-88.90833
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*	73014	75	GRAB	73.81333	-88.65167
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*	74021	100	GRAB	74.14166	-92.53333
*	74021	96	GRAB	74.75833	-83.23333
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*	74021	79	GRAB	74.20166	-89.30833
*	74021	74	GRAB	74.52499	-89.20999
*	74021	123	GRAB	74.25333	-97.73166
*	74021	54	GRAB	75.70666	-75.06333
*	74021	64	GRAB	74.53999	-94.24666
*	74021	104	GRAB	74.62999	-92.50666
*	74021	118	GRAB	74.40166	-97.75000
*	74021	122	GRAB	74.29666	-97.73166
*	74021	120	GRAB	74.34833	-97.74333
*	74021	106	GRAB	74.76833	-92.17499
*	74021	115	GRAB	74.45499	-97.72999
*	74021	114	GRAB	74.26333	-95.91833
*	74021	112	GRAB	74.42499	-94.29499
*	74021	108	GRAB	74.80999	-93.14666
*	74021	107	GRAB	74.76666	-92.75000
*	74026	118	GRAB	74.40167	-97.75000
*	74026	115	GRAB	74.45500	-97.73000
*	74026	114	GRAB	74.26333	-95.91833
*	74026	112	GRAB	74.42500	-94.29500
*	74026	108	GRAB	74.81000	-93.14667
*	74026	107	GRAB	74.76667	-92.75000
*	74026	106	GRAB	74.76833	-92.17500
*	74026	120	GRAB	74.34833	-97.74333
*	74026	104	GRAB	74.63000	-92.50667
*	74026	97	GRAB	74.46000	-83.60833
*	74026	103	GRAB	74.47000	-92.56667
*	74026	101	GRAB	74.32000	-92.63167
*	74026	96	GRAB	74.75833	-83.23333
*	74026	127	GRAB	74.15833	-97.24667

*	74026	151	GRAB	73.52500	-96.05000
*	74026	148	GRAB	73.56000	-97.10500
*	74026	153	GRAB	73.49667	-95.79167
*	74026	146	GRAB	73.55833	-96.87500
*	74026	139	GRAB	73.53333	-96.24833
*	74026	137	GRAB	73.54667	-96.60333
*	74026	135	GRAB	73.83500	-96.05667
*	74026	130	GRAB	74.15333	-96.96333
*	74026	89	GRAB	74.44833	-86.34833
*	74026	126	GRAB	74.14500	-97.75000
*	74026	125	GRAB	74.19833	-97.73167
*	74026	123	GRAB	74.25333	-97.73167
*	74026	122	GRAB	74.29667	-97.73167
*	74026	74	GRAB	74.52500	-89.21000
*	74026	66	GRAB	74.31833	-91.14833
*	74026	64	GRAB	74.54000	-94.24667
*	74026	54	GRAB	75.70667	-75.06333
*	74026	87	GRAB	74.16500	-89.43000
*	74026	86	GRAB	74.18833	-89.51667
*	74026	79	GRAB	74.20167	-89.30833
*	74026	49	GRAB	75.54000	-79.68333
*	74026	82	GRAB	73.89500	-88.46500
*	74026	B574-56	GRAB	76.41333	-77.52000
*	75090	4	GRAB	73.40833	-96.00000
*	75090	1	GRAB	73.40000	-95.60333
*	75090	2	GRAB	73.40000	-95.79167
*	75090	3	GRAB	73.40167	-95.85167
*	75090	5	GRAB	73.41000	-96.07500
*	75090	6	GRAB	73.41667	-96.15000
*	75090	7	GRAB	73.42500	-96.23333
*	75090	8	GRAB	73.43333	-96.28667
*	75090	9	GRAB	73.44167	-96.38333
*	75090	10	GRAB	73.44333	-96.43333
*	75090	11	GRAB	73.45000	-96.46833
*	76025	SH11	GRAB	74.54167	-91.38333
*	76025	VV1	GRAB	74.51667	-88.58333
*	76025	SH1	GRAB	74.87667	-90.80833
*	76025	SH19A	GRAB	73.07333	-84.25833
*	76025	SH2	GRAB	74.86333	-90.82333
*	76025	SH3	GRAB	74.79000	-90.93500
*	76025	SH4	GRAB	74.75000	-91.02500
*	76025	SH5	GRAB	74.71167	-91.10500
*	76025	SH6	GRAB	74.70833	-91.10667
*	76025	SH7	GRAB	74.67167	-90.95167
*	76025	SH8	GRAB	74.41500	-91.40167
*	76025	SH9	GRAB	74.43000	-91.42500
*	76025	SH18	GRAB	74.79000	-89.23667
*	76025	SH16	GRAB	74.59500	-85.01833
*	76025	SH15	GRAB	74.61500	-85.01667
*	76025	SH14	GRAB	74.65833	-85.01667
*	76025	SH13	GRAB	74.54333	-90.64000
*	76025	SH12	GRAB	74.53000	-91.37000
*	76025	SH1C	GRAB	74.52500	-91.36667
*	76025	SH26	GRAB	72.98333	-83.66000
*	76025	SH22	GRAB	73.21000	-85.15333
*	76025	SH21	GRAB	73.14833	-84.94833
*	76025	SH2C	GRAB	73.09833	-84.53833
*	76025	SH19B	GRAB	73.07333	-84.35833
*	76025	SH24	GRAB	73.17167	-85.04667
*	76025	SH25	GRAB	73.12500	-84.85833
*	76025	SH23	GRAB	73.19333	-85.17167
*	76025	SH27	GRAB	73.02833	-83.80167
*	76025	SH28	GRAB	73.19000	-85.38333
*	77024	41	GRAB	74.54999	-90.27499
*	77024	42	GRAB	74.18166	-85.97499

* 77C24	31	GRAB	73.91666	-82.CCCCC
* 77C24	40	GRAB	74.40166	-90.36999
* 77C24	38	GRAB	74.11666	-90.38166
* 77C24	37	GRAB	73.97833	-90.38166
* 77C24	36	GRAB	74.17833	-94.24333
* 77C24	35	GRAB	74.33333	-94.26333
* 77C24	34	GRAB	74.45999	-94.27833
* 77C24	33	GRAB	74.6C999	-94.33999
* 77C24	29	GRAB	73.69999	-75.91666
* 78C26	82	GRAB	74.53166	-80.C0999
* 78C26	83	GRAB	74.76499	-78.C2499
* 78C26	84	GRAB	74.40933	-77.99416
* 78C26	85	GRAB	74.C9449	-77.95166
* 78C26	86	GRAB	74.11499	-76.CC166
* 78C26	81	GRAB	74.28333	-80.C3999
* 78C26	88	GRAB	74.99033	-76.C3066
* 78C26	87	GRAB	74.53666	-76.C7166
* 78C26	77	GRAB	73.76666	-76.C1499
* 78C26	89	GRAB	76.00749	-76.69466
* 78C26	78	GRAB	73.75499	-77.98333
* 78C26	79	GRAB	73.79499	-79.96833
* 78C26	80	GRAB	74.02833	-80.C1499
* 81C45	21A	GRAB	73.76500	-81.16333
* 81C45	20	GRAB	73.75000	-81.15000
* 81C45	19	GRAB	73.87000	-81.18333
* 81C45	21	GRAB	73.76500	-81.16333
* 81C45	18	GRAB	73.92000	-81.26667
* 81C45	1	GRAB	74.65833	-94.68000
* 81C45	2	GRAB	73.09167	-84.42083
* 81C45	3	GRAB	73.11167	-84.72CCC
* 81C45	20A	GRAB	73.75000	-81.14999
* 81C45	4	GRAB	73.46667	-84.63333
* 81C45	5	GRAB	73.55000	-84.73333
* 81C45	6	GRAB	73.65833	-84.68333
* 81C45	7	GRAB	73.75833	-84.63333
* 81C45	8	GRAB	73.80833	-84.55000
* 81C45	9	GRAB	73.93333	-84.5CCCC
* 81C45	10	GRAB	73.99667	-84.45000
* 81C45	14	GRAB	74.46750	-84.50000
* 81C45	13	GRAB	74.42500	-84.36667
* 81C45	12	GRAB	74.25000	-84.50000
* 81C45	11	GRAB	74.11667	-84.5CCCC
* 81C45	17	GRAB	74.02500	-81.26667
* 81C45	14A	GRAB	74.46749	-84.5CCCC
* 81C45	13	GRAB	74.42499	-84.36666
* 81C45	12A	GRAB	74.25000	-84.5CCCC
* 81C45	15A	GRAB	74.45333	-81.28333
* 81C45	11A	GRAB	74.11666	-84.5CCCC
* 81C45	10A	GRAB	73.99666	-84.44999
* 81C45	9A	GRAB	73.93333	-84.50000
* 81C45	8	GRAB	73.80833	-84.54999
* 81C45	7	GRAB	73.75833	-84.63333
* 81C45	6	GRAB	73.65833	-84.68333
* 81C45	16A	GRAB	74.25499	-81.26666
* 81C45	5A	GRAB	73.54999	-84.73333
* 81C45	4A	GRAB	73.46666	-84.83333
* 81C45	17A	GRAB	74.02499	-81.26666
* 81C45	3A	GRAB	73.11183	-83.71999
* 81C45	15	GRAB	74.45333	-81.28333
* 81C45	2A	GRAB	73.09166	-84.42083
* 81C45	1	GRAB	74.65833	-94.87499
* 81C45	18A	GRAB	73.91499	-81.26666
* 81C45	16	GRAB	74.25500	-81.26667
* 81C45	19A	GRAB	73.86499	-81.16333
* 83C08	L-1C6[illegible]	GRAB	75.81333	-83.25000

*	83008	3	GRAB	75.80833	-80.75000
*	83008	1	GRAB	75.89000	-83.80833
*	83008	L-100	GRAB	75.74667	-83.25833
*	83008	L-101	GRAB	75.75667	-83.26667
*	83008	L-102	GRAB	75.77000	-83.25667
*	83008	L-103	GRAB	75.77167	-83.25667
*	83008	L-105	GRAB	75.79000	-83.25667
*	83008	L-114	GRAB	75.60000	-80.14167
*	83008	L-107	GRAB	75.74833	-83.20833
*	83008	L -108	GRAB	75.74667	-83.18333
*	83008	L-109	GRAB	75.74500	-83.18333
*	83008	L-110	GRAB	75.79333	-82.74500
*	83008	L-111	GRAB	75.69667	-82.74167
*	83008	L-112	GRAB	75.60000	-80.14167
*	83008	L-113	GRAB	75.60000	-80.14167
*	83008	L-115	GRAB	75.54667	-80.08333
*	83008	L-116	GRAB	75.47917	-80.37500
*	83008	22	GRAB	75.22667	-82.11617
*	83008	23	GRAB	76.07000	-82.16667
*	83008	24	GRAB	76.35833	-81.51667
*	83008	25	GRAB	76.11667	-85.15000
*	83008	26	GRAB	76.32500	-88.51667
*	83008	27	GRAB	75.89167	-87.25833
*	83008	28	GRAB	75.97167	-86.88333
*	83008	29	GRAB	75.93667	-86.70833
*	83008	30	GRAB	75.98333	-87.28333
*	83008	31	GRAB	76.07500	-87.66667
*	83008	32	GRAB	75.89167	-87.42500
*	83008	33	GRAB	76.09667	-87.01667
*	83008	34	GRAB	76.07333	-86.49833
*	83008	35	GRAB	76.05000	-86.05000
*	83008	20	GRAB	76.22500	-83.46667
*	83008	21	GRAB	75.88333	-81.50000
*	83008	4	GRAB	75.95667	-79.83533
*	83008	5	GRAB	75.74833	-85.16517
*	83008	6	GRAB	76.13333	-85.50000
*	83008	7	GRAB	76.25833	-87.92167
*	83008	8	GRAB	76.19167	-86.66583
*	83008	9	GRAB	76.18000	-86.89833
*	83008	10	GRAB	75.73833	-80.59167
*	83008	12	GRAB	76.05333	-80.10000
*	83008	13	GRAB	76.40333	-83.02333
*	83008	14	GRAB	76.28000	-82.56500
*	83008	15	GRAB	76.33000	-82.60167
*	83008	17	GRAB	76.24167	-82.77667
*	83008	18	GRAB	76.18333	-83.00000
*	83008	19	GRAB	76.30000	-83.13583
*	83008	L-104	GRAB	75.77833	-83.25500

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APPENDIX B Cruise Report Index

APPENDIX B

CRUISE REPORT INDEX

This compilation of cruise reports for the study area was obtained from the AGC data atlas. The atlas is a graphic reference to marine geophysical data collected by the Marine Geophysics Section of the Bedford Institute of Oceanography for the years 1963-70 and by the Atlantic Geoscience Centre of the Geological Survey of Canada located at the Bedford Institute of Oceanography for the years 1971-83.

The 1984 cruises were not yet included in the atlas and as such are not contained in this index. Some data from older cruises which were not ready for release were also missing and are not included here. An update to the atlas is planned for March 1985.

The following abbreviations are used to indicate the type of data gathered on each cruise.

PARAMETER CODES

B - Bathymetry
H - Huntec
M - Magnetics
BR - Brutiv Camera Sled
G1 - Gravity meter 1
G2 - Gravity meter 2
GL - Gloria Side-Scan
SI - Bio Side-Scan
SM - Sea Marc Side-Scan
SO - Sonobuoy
VF - V-fin
MCS - Multi-Channel Seismics
OBS - Ocean Bottom Seismometer
3.5B - 3.5 Khz. Bathymetry
REFL - Reflection
REFR - Refraction

CRUISE REPORTS

CRUISE	SHIP	PARAMETERS RECORDED
	1963	
63-012	LABRADOR	B, M
	1964	
64-020	LABRADOR	B, M
	1965	
65-022	LABRADOR	B, M
	1965	
65-022	LABRADOR	B, M
	1966	
66-022	LABRADOR	REFL, REFR, SO
	1969	
69-050	HUDSON	B, M, G1, SO, REFL, REFR
	1970	
70-021	BAFFIN	B, M, G1
70-028	DAWSON	B, M, REFL
	1971	
71-032	HUDSON	B, M, G1, REFL, REFR, SO
	1973	
73-014	BAFFIN	M, G1, REFL
	1974	
74-026	LABRADOR	B, M, G1, SO, REFL, REFR
74-015	BAFFIN	M, G1

CRUISE	SHIP	PARAMETERS RECORDED
	1976	
76-023	HUDSON	B, M, G1, H, SI, SO, REFL, REFR
76-025	HUDSON	B, M, G1, H, SI, SO, REFL, REFR
	1977	
77-024	HUDSON	B, M, G1
77-008	BAFFIN	M
	1981	
81-045	HUDSON	B, M, G1, H, SI, REFL
	1982	
82-034	HUDSON	B, M, H, REFL

APPENDIX C Navigation Charts

APPENDIX C - Canadian Hydrographic Service Navigation Charts

Listed below are all the Canadian Hydrographic Service Navigation Charts for the Canadian Arctic Archipelago study area. This information has been obtained from Index Map 4 - Arctic, Catalogue of Nautical Charts and Related Publications, Canadian Hydrographic Service, February, 1982.

Chart No.	Area	Scale	Year
7067	Spicer Islands to West Entrance of Fury and Hecla Strait	500 000	1971
7083	Cambridge Bay to Shepherd Bay	500 000	1973
7212	Bylot Island and Adjacent Channels	250 000	1969
7220	Lancaster Sound, Eastern Approaches	500 000	1979
7250	Pond Inlet	80 000	1977
7282	Strathcona and Adams Sounds	75 000	1977
	Arctic Bay	40 000	1977
	Nanisivik Mines	5 000	1977
7292	Dundas Harbour	25 000	1962
7302	Lady Ann Strait to Smith Sound	500 000	1978
7330	Craig Harbour	50 000	1956
7371	Alexandra Fiord	25 000	1973
7410	Spicer Islands to Fury and Hecla Strait	200 000	1974
7411	Spicer Islands to Longstaff Bluff	200 000	1973
	Bray Island Anchorage	85 700	1973
7413	Fury and Hecla Strait	150 000	1962
	Labrador Narrows	75 000	1962
7452	South Ooglit Island to North Ooglit Islands	75 000	1966
	Hall Beach	12 500	1966
7455	Igloolik and Approaches	40 000	1960
7465	Frustration Bay and Approaches	25 000	1957
	Needle Cove and Approaches	12 000	1957
7470	Longstaff Bluff and Approaches	25 000	1956
7502	Gulf of Boothia and Committee Bay	500 000	1981
7503	Cape Crauford to Cornwallis Island including Admiralty Inlet and Prince Regent Inlet	500 000	1976
7527	Erebus and Radstock Bays	50 000	1974
7533	Resolute Bay	12 000	1976
7550	Bellot Strait and Approaches	75 000	1958
7551	Bellot Strait	25 000	1958
7740	M'Clintock Channel, Larsen Sound and Franklin Strait	500 000	1981

Chart No.	Area	Scale	Year
7829	Barrow Strait, Western Portion	200 000	1972
7830	Cornwallis Island to Stefansson Island	500 000	1974
7831	Viscount Melville Sound and M'Clure Strait	500 000	1981
7832	Eglinton Island to Cape Kellett	500 000	1971
7833	Prince of Wales Strait	250 000	1972
	Jesse Harbour Strait	25 000	1972
	Princess Royal Islands	100 000	1972
7851	Plans of Harbours in the Canadian Arctic		
	Batty Bay	74 400	1955
	Elizabeth Harbour	180 000	1955
	Victoria Harbour	49 500	1955
	Port Neill	36 600	1955
	Port Bowen	49 200	1955
	Winter Harbour	29 300	1955
7920	Tanquary, Slidre and Glacier Fiords		
	Tanquary Fiord	100 000	1973
	Glacier Fiord	100 000	1973
	Sherwood Beach	10 000	1973
	Slidre Fiord	50 000	1973
	Beaching Area	20 000	1973
7930	Hell Gate and Cardigan Strait	75 000	1974
7935	Crozier Strait and Pullen Strait	100 000	1980
7940	Eureka Sound and Southern Approaches including Baumann Fiord	300 000	1979
7941	Nansen Sound and Greely Fiord	300 000	1973
7950	Jones Sound, Norwegian Bay and Queens Channel	500 000	1974
7951	Bathurst Island to Borden Island	500 000	1972
7952	Cape Manning to Borden Island	500 000	1972
7953	Borden Island to Cape Stallworthy	500 000	1972
7954	Cape Stallworthy to Cape Discovery	500 000	1974

APPENDIX D AES Ice Distribution Data

APPENDIX D - AES Ice Distribution Data

DATA HOLDINGS ARCTIC CANADA - INVENTORY OF ICE CLIMATOLOGY AND APPLICATIONS DIVISION - ICE BRANCH - A.E.S. - ENVIRONMENT CANADA

DATA NAME	GEOGRAPHIC AREA	CONTENT	ORIGIN	HISTORICAL TIME SPAN	SEASONAL PERIOD	FORMAT	CHART SCALE	AVAILABILITY	REMARKS
Ice Summary and Analysis	Canadian Arctic	Ice cover, ice type/age, ice edges. Mean surface pressure patterns. Temperature data. Seasonal write-up and discussion	A.E.S.	1964-73	Break-up to Freeze-up	Annual booklet containing seasonal write-up and chart series (pressure pattern and ice charts per 2 week intervals	1:20M	Free viewing on site. Copies available at normal cost recovery	Series in English only. New edition in both official languages
Ice Atlas (W.E.Markham)	Canadian Arctic Waterways. -mostly north of 65°N Lat.	Ice distribution Ice thickness Ice type/age Topography, Ice decay/melt, Floe size, Ice boundaries, Maps and diagrams, Snow cover, Fog data, wind/air flow Temperatures Iceberg information	A.E.S.	1958-74	May to October	Atlas binder with fold-out keys to charts. Charts in color (200 pp)	1:15M approx	As above	Both languages printed side by side
Current Ice Conditions	Great Lakes Gulf of St. Lawrence Newfoundland Waters Labrador coast Hudson Bay, Strait Rose Basin Davis St., Baffin Bay Queen Elizabeth Is. Beaufort Sea and Western Arctic Alaskan shelf Lancaster Sound Approaches to Eureka	Ice cover Ice type/age Ice edges Ice floe size Topography Melt stage Leads	A.E.S.	1974-pres. 1964-pres. " " " " " " " " " " " "	Freeze-up to Break-up " Break-up to Freeze-up " " " " " " " " "	Daily operational ice charts showing conditions for 2000 GMT prepared for facsimile transmission	1:1M to 1:2M	Free viewing on site. Copies made at normal cost recovery. Copies of older charts have been placed on 35mm microfilm	These are operational charts produced at Ice Central and concentrate on areas of offshore activity. They are based on all available real-time data sources and not all geographical areas are completely covered during the entire season

DATA HOLDINGS ARCTIC CANADA - INVENTORY OF ICE CLIMATOLOGY AND APPLICATIONS DIVISION - ICE BRANCH - A.E.S. - ENVIRONMENT CANADA

DATA NAME	GEOGRAPHIC AREA	CONTENT	ORIGIN	HISTORICAL TIME SPAN	SEASONAL PERIOD	FORMAT	CHART SCALE	AVAILABILITY	REMARKS
Ice Summary and Analysis	Canadian Arctic	Ice cover, ice type/age, ice edges. Mean surface pressure patterns. Temperature data. Seasonal write-up and discussion	A.E.S.	1964-73	Break-up to Freeze-up	Annual booklet containing seasonal write-up and chart series (pressure pattern and ice charts per 2 week intervals	1:20M	Free viewing on site. Copies available at normal cost recovery	Series in English only. New edition in both official languages
Ice Atlas (W.E.Markham)	Canadian Arctic Waterways. -mostly north of 65°N Lat.	Ice distribution Ice thickness Ice type/age Topography, Ice decay/melt, Floe size, Ice boundaries, Maps and diagrams, Snow cover, Fog data, wind/air flow Temperatures Iceberg information	A.E.S.	1958-74	May to October	Atlas binder with fold-out keys to charts. Charts in color (200 pp)	1:15M approx	As above	Both languages printed side by side
Current Ice Conditions	Great Lakes Gulf of St. Lawrence Newfoundland Waters Labrador coast Hudson Bay, Strait Foxe Basin Davis St., Baffin Bay Queen Elizabeth Is. Beaufort Sea and Western Arctic Alaskan shelf Lancaster Sound Approaches to Eureka	Ice cover Ice type/age Ice edges Ice floe size Topography Melt stage Leads	A.E.S.	1974-pres. 1964-pres. " " " " " " " " " " "	Freeze-up to Break-up " Break-up to Freeze-up " " " " " " " "	Daily operational ice charts showing conditions for 2000 GMT prepared for Facsimile transmission	1:1M to 1:2M	Free viewing on site. Copies made at normal cost recovery. Copies of older charts have been placed on 35mm microfilm	These are operational charts produced at Ice Central and concentrate on areas of offshore activity. They are based on all available real-time data sources and not all geographical areas are completely covered during the entire season

DATA HOLDINGS ARCTIC CANADA - INVENTORY OF ICE CLIMATOLOGY AND APPLICATIONS DIVISION - ICE BRANCH - A.E.S. - ENVIRONMENT CANADA

DATA NAME	GEOGRAPHIC AREA	CONTENT	ORIGIN	HISTORICAL TIME SPAN	SEASONAL PERIOD	FORMAT	CHART SCALE	AVAILABILITY	REMARKS
Weekly Composite Ice Charts	Great Lakes Gulf & Nfld. Hudsons Bay and Approaches Eastern Arctic Western Arctic	Ice Cover, Ice type/age, Ice edges, Ice floe size, Topography, Melt stage, Leads (weekly mean temperatures at 5 locations)	A.E.S.	1973-pres. 1969-pres. 1971-pres. 1968-pres. 1968-pres.	Freeze-up to Break-up Break-up to Freeze-up "	Charts prepared 3x per week (M,W,F) for distribution by mail	1:4M	Free viewing on site. Copies made at normal cost. Copies of older charts have been placed on 35mm microfilm	Most recent years have been re-printed in annual sets. Note: Calendar dates are not generally re-printed in annual sets
Weekly Historical Charts	Canadian Arctic (Mainly Northern)	As above without temperatures but with mean pressure pattern	A.E.S.	1958-74	May to October	Historical ice charts prepared for repetitive calendar dates 1 week apart	1:6M	Free viewing on site. Copies available at normal cost recovery	Also available on microfilm in 35mm rolls. These charts have been digitized as data bases for AES Cdn. Ice Atlases
Weekly Historical Charts	Eastern Canada (Hudsons Bay, Baffin Bay & southward not including Great Lakes	As above	A.E.S.	1958-74	Year round	As above	1:6M	As above	As above
Laser Profilmeter Data	Sampling of all operational ice reconnaissance areas (limited amount for Great Lakes)	Ice surface topography	Airborne remote sensing program (A.E.S.)	1973-pres.	Seasonal according to area of operation	Paper trace-original analogue and magnetic tape. 2-3 times per week in most areas except less frequent in Great Lakes		Limited viewing on sensitive nature ings. Copies of be made at cost	site due to light of older record-magnetic tape can plus handling
Laser Profilmeter Data	As above	As above but in statistical format	As above	1973-82	As above	Data sheets 8-1/2x14 (original hard copy of hand analysis of above analogue traces		Free viewing on site or copies can be provided per cost recovery of overhead and duplication charges	Ice Ridge Height frequencies on a per Km flight line basis-hand analysis program

DATA HOLDINGS ARCTIC CANADA - INVENTORY OF ICE CLIMATOLOGY AND APPLICATIONS DIVISION - ICE BRANCH - A.E.S. - ENVIRONMENT CANADA

DATA NAME	GEOGRAPHIC AREA	CONTENT	ORIGIN	HISTORICAL TIME SPAN	SEASONAL PERIOD	FORMAT	CHART SCALE	AVAILABILITY	REMARKS
S.L.A.R. Side-Looking Aperture Radar	Up to 100 Km on each side of flight line- all normal operational areas. (limited remote sensing performed over the Great Lakes)	Ice distribution Ice type/age, Ice topography, Ice boundaries, Floe size, Icebergs, Leads/Cracks	A.E.S. airborne remote sensing program	Feb/78 to present	Seasonal according to area of operation	Transparent acetate film in rolls (original)	mostly 1:1M	Free viewing on site. Copies or prints can be made at cost plus overhead	There are minimum order charges applicable
Satellite Imagery	All Canadian Ice covered areas	Ice cover Ice edge Ice decay	ERTS and Landsat	1973-pres.	Daily during operational seasonal	Photographs as per orbit and track- mostly daytime	1:5K	Free viewing on site. No facility for reproduction	Copies may be ordered via Canadian Centre for Remote Sensing
Visual and Infrared	As above	Leads/Fracture Snow cover Floe size	As above	1974-pres.	Daily	As above but in Fiche format		As above	As above
Satellite Imagery	As above	As above	NOAA series	Mar/72 to Mar/79	Daily	Photographs as above	1:20K approx	As above	Requests for copies directed toward source.
Visual and Infrared and (HRR)	As above	As above	TIROS-N	Mar/79 to present	Daily	Photographs as above	1:25K	As above	As above
Satellite Imagery (Visual)	As above	As above	ESSA	May/70 to Sept/74	Daily	Photographs as above	1:50K	As Above	Quality generally poor by today's standards

DATA HOLDINGS ARCTIC CANADA - INVENTORY OF ICE CLIMATOLOGY AND APPLICATIONS DIVISION - ICE BRANCH - A.E.S. - ENVIRONMENT CANADA

DATA NAME	GEOGRAPHIC AREA	CONTENT	ORIGIN	HISTORICAL TIME SPAN	SEASONAL PERIOD	FORMAT	CHART SCALE	AVAILABILITY	REMARKS
Ice Observations	Hudsons Bay & Approaches, Eastern and Western Arctic, Alaskan Shelf and Arctic Ocean areas	Ice cover Ice type/age Ice thickness Ice topography Ice floe size Surface melt Snow cover Leads/cracks Ice boundaries	A.E.S. Ice recon-naissance program via aircraft and ship platforms	1958-pres.	Freeze-up to Break-up season	Charts & Microfilm rolls. Flights as above approx. 2-3 times per week	1:1M and 1:2M	Free viewing on site. Purchase of copies at cost plus overhead	Note: All booklets on this page were prepared on the basis of one issue per geographic area per season (year). This program has been terminated and copies will be available only as long as supplies last
Ice Observations	As above	As above	As above	1964-1970	As above	Booklet of photo reductions of ice observation charts on a yearly basis	1:10M	As above	

APPENDIX E Polar Gas Reports

APPENDIX E Polar Gas Reports

POLAR GAS NO.	CONTRACTOR	TITLE	YEAR	EXAMINED	REF.NO. (this study)	COMMENTS
A-100	MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD.	Report on Winter Research Program 1974 - App.I, Bottom Profile Data	1974	No		
A-101	MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD. R.J. BROWN	Report of Winter Research Program, 1974 Appendix II, Current Meter Data, Appendix III, Bottom Soils Analysis	1974	No		
A-104	MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD.	Report on Winter Research program 1976	1976	Yes	0485-76	geotechnical, ice and current data
A-105	MONTREAL ENGINEERING CO. LTD.	Report on Winter Research Program 1977	1977	Yes	0483-77	geotechnical and current data
A-200	MONTREAL ENGINEERING CO. LTD. BANISTER TECHNICAL SERVICES	Report on Ice Research Program September 1973	1973	No		
A-201	POLAR GAS	Sea Ice Studies Program	1974	No		
A-209	BANISTER TECHNICAL SERVICES	Comparison of Direct Profiling with Through-The-Ice Profiling, Rea Point, NWT, Spring 1974	1974	Yes	0156-74	acoustic soil properties
A-221	PEISTER, K. and LINDSAY, D.	Sea Ice Reconnaissance Program Summer 1973	1973	No		
A-222	LINDSAY, D.	Sea Ice in the Canadian Arctic Archipelago	1973	No		
A-300	MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD. R.J. BROWN & ASSOCIATES LTD.	Report on Marine Survey Program 1973, Volume 1, March 1974	1974	Yes	0486-74	marine geology data

NO.	CONTRACTOR	TITLE		EXAMINED	REF.NO. (this study)	COMMENTS
A-301	MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD. R.J. BROWN & ASSOCIATES	Report on Marine Survey Program, Volume II, 1973	1974	Yes	0486-74	Marine geology data
A-302	R.J. BROWN & ASSOCIATES	Marine Survey Report on Currents and Bottom Soils for Arctic Islands and Hudson Bay Areas Water Program, 1973	1973	No		
A-303	R.J. BROWN & ASSOCIATES	Report on 1975 Marine Survey in The Arctic Islands, December 1975	1975	No		
A-308	HUNTEC ('70) LTD.	Marine Geophysical Survey, Operations 1973 (for Montreal Engineering Co. Ltd.)	1973	Yes	0471-74	Operations report
A-313	R.M. HARDY & ASSOCIATES	Report on Laboratory Testing on Sea Bottom Sediments, Summer Marine Survey, 1977	1977	No		Geotechnical laboratory data
A-314	CANADIAN ENGINEERING SURVEYS INC.	Report on Ground/Marine Survey, 1973	1973	No		
A-316	MONTREAL ENGINEERING CO. LTD.	Channel Crossing Investigations: Phase II - Marine Surveys Phase III - Technical Report	1973	Yes	0487-74 0486-74	Marine geology data
A-318	KENTING EXPLORATION SERVICES LTD. for MONTREAL ENGINEERING CO. LTD.	Interpretation Report Arctic Islands Marine Survey 1977	1977	Yes		Marine geology data
A-319	KENTING EXPLORATION SERVICES LTD. for MONTREAL ENGINEERING CO. LTD.	Operations Report Arctic Islands Marine Survey, 1977	1977	Yes	0477-77	Operations report

NO.	CONTRACTOR	TITLE		EXAMINED	REF.NO. (this study)	COMMENTS
A-320	KENTING EXPLORATION SERVICES LTD.	Arctic Islands Marine Islands Data Interpretation Plans and Profiles	1977	Yes	0154-77	Marine geology data
A-321	R.J. BROWN AND ASSOCIATES	Phase I of Marine Survey for Byam Channel and Austin Channel N.W.T. of Canada	1973	Yes	0458-73	Marine geology, currents and geotechnical data
A-330	DOBROCKY SEATECH LTD., OCEANGRAPHIC SERVICES for KENTING EXPLORATION SERVICES LTD.	Polar Gas Pipeline Survey Ocean Current Measurement Program "Dolphin and Union Strait" N.W.T. Sept. 1977	1977	Yes	0461-79	Out of study area
A-331	KENTING EXPLORATION SERVICES LTD.	Dolphin & Union Strait Marine Geophysical Investigation, Augst 1979 (Combined Pipeline System Study)	1979	Yes	0475-79	Out of study area
A-332	POLAR GAS PROJECT	"M'Clure Strait" Marine Geophysical Investigation, April 1979 (re Combined Pipeline System Study)	1979	Yes	0379-79	No marine data
A-333	POLAR GAS PROJECT	Byam Martin (North) Channel March/ May, 1980	1980	Yes	0377-80	No marine data
A-613	UNDERWATER SPECIALISTS: DIVISION OF FORMULOG	(Submarine) Scuba Diving Investigations Byam and Austin Channels, May-June, 1973	1973	Yes	0426-73	Diving observations
A-700	R.J. BROWN & ASSOCIATES	Evaluation of Bottom Bathymetry in Barrow Strait East & West	1975	Yes	0456-75	Marine bathymetry
A-703	INTERNATIONAL PIPELINE ENG., INC.	Preliminary Appraisal of Bellot Strait Crossing	1978	Yes	0472-78	Marine bathymetry

NO.	CONTRACTOR	TITLE		EXAMINED	REF NO. (this study)	COMMENTS
A-704	R.J. BROWN & ASSOCIATES	Preliminary Appraisal of MacLean Strait and Desbarats Strait Crossings, March 1977	1977	Yes	0542-77	Some marine geology data
A-707	R.J. BROWN & ASSOCIATES	Technical Reassessment of McClure Strait Crossing, July 1979	1979	Yes	0453-79	Some marine geology data
A-708	R.J. BROWN & ASSOCIATES	Preliminary Appraisal of McClure Strait and Dolphin and Union Strait Crossings	1978	Yes	0454-78	Some marine geology data
A-709	R.J. BROWN & ASSOCIATES MONTREAL ENGINEERING CO. LTD. BANISTER PIPELINES LTD.	Environmental Design Criteria for Barrow Strait East Technical Assessment - August 1976	1976	Yes	0455-76	Some marine geology data
A-710	GEOMARINE ASSOCIATES	An Interpretation of the Surficial and Subbuttom Geology of the Pullen and Crozier Strait Crossings	1974	No		
A-800	R.J. BROWN & ASSOCIATES	Pipeline Design and Technical Assessment of Installation Methods for Austin Channel Feasibility Study	1974	No		
A-801	R.J. BROWN & ASSOCIATES	Pipeline Design and Technical Assessment of Installation Methods for Austin Channel Feasibility Study, February 1974	1974	No		
A-805	HATCH ASSOCIATES LTD.	Pipeline Tunnel-Sea Bed Connection Feasibility Report	1975	No		
A-900	MONTREAL ENGINEERING CO. LTD. for BANISTER PIPELINES	Tunnelling as an Alternative for	1974	Yes	0488-74	Overview only

NO.	CONTRACTOR	TITLE		EXAMINED	REF.NO. (this study)	COMMENTS
A-903	MONTREAL ENGINEERING CO. LTD.	Tunnel Drilling Investigations Geotechnical Report	1977	Yes	0482-77	Marine geology and bedrock data
A-906	R.J. BROWN & ASSOCIATES	Technical Reassessment of Pipeline Installation in Byam and Austin Channels, August 1976	1976	No		
A-1002	MONTREAL ENGINEERING CO. LTD.	Foreshore Drilling 1976, Geotechnical Report	1976	Yes	0484-76	Marine geology and bedrock data
A-1005	R.J. BROWN & ASSOCIATES, BANISTER PIPELINES and MONTREAL ENGINEERING CO. LTD.	Environmental Design Criteria for Austin Channel Feasibility Study	1974	Yes	0457-74	Some marine data
A-1008	BANISTER TECHNICAL SERVICES	Byam Channel Sub-bottom Analysis Stations 715 to 1040, Procedures and Results	no date given	Yes	0341-75	Some marine data
A-1017	COMPUTING DEVICES OF CAN. LTD. for MONTREAL ENGINEERING LTD.	A Multi-discipline Feasibility Survey for the Collection of Depth, Sub-bottom Profile and Side-Scan Sonar Data in the Byam Martin and Austin Channels, NWT	1973	No		
A-1018	R.J. BROWN & ASSOCIATES BANISTER PIPELINES and MONTREAL ENGINEERING CO.	Environmental Design Criteria for Austin Channel Feasibility Study	1974	No		
B-637	R.M. HARDY & ASSOC. LTD. for MONTREAL ENGINEERING CO. LTD.	Polar Gas project, Geotechnical Investigation, September, 1973	1973	Yes	0466-73	Logistics, operations, laboratory data
B-638	R.M. HARDY & ASSOC. LTD. for MONTREAL ENGINEERING CO. LTD.	Report on Laboratory Testing on Sea Bottom Sediments, Water Program, 1973, Vol. I, Feb/74	1974	Yes	0464-74	Laboratory data

NO.	CONTRACTOR	TITLE		EXAMINED	REF.NO. (this study)	COMMENTS
B-640	R.M. HARDY & ASSOC. LTD. for MONTREAL ENGINEERING CO. LTD.	Addendum to Report on Laboratory Testing of Sea Bottom Sediments, Vol. III, Dec./73	1973	Yes	0465-73	Laboratory data
B-650	FACULTY ENGINEERING SCIENCE, UNIVERSITY OF WESTERN ONTARIO	A Study of Seismicity and Seismic Effects for the Design of the Polar Gas Pipeline	1980	Yes	0460-80	Seismicity regional data
B-651	POLAR GAS	Tour of Byam Martin Channel (North Field Survey (Re Ice Studies and Underwater acoustic equipment)	1980	Yes	0378-80	Overview only

APPENDIX F Arctic Pilot Project Reports

APPENDIX F Relevant Arctic Pilot Project Reports

NEB EXHIBIT NO.	CONTRACTOR	TITLE	YEAR	EXAMINED	REF. NO. (this study)	COMMENTS
*	R.M. HARDY & ASSOCIATES LTD.	Landscape Survey - Eastern Melville Island, N.W.T.	1978	No	-	
*	GEOCON (1975) LTD.	Seismic Parameters for Designing the Proposed LNG Facilities, Bridport Inlet.	1979	Yes	0500-79	seismicity, seismic design data
*	GEOCON (1975) LTD.	Bathymetry and Geotechnical Surveys Proposed LNG Dock Facilities, Bridport Inlet, Melville Island, NWT.	1979	Yes	0501-78	bathymetric, geotechnical data
*	GEOCON (1975) LTD.	Extension of Bathymetry and Geotechnical Surveys Proposed LNG Dock Facilities, Bridport Inlet, Melville Island, NWT.	1980	Yes	0497-80	bathymetric, geotechnical data
*	FROZEN SEA RESEARCH GROUP	An Oceanographic Study of the Bridport Inlet, Melville Island, N.W.T. (Unpublished manuscript, Part I)	1979	No	-	
79	FROZEN SEA RESEARCH GROUP	As above, Part II	1979	No	-	
*	FROZEN SEA RESEARCH GROUP	As above, Part III	1979	No	-	
*	GEOCON (1975) LTD.	Slope stability Analyses of Proposed Offshore Embankments: Proposed LNG Facilities, Bridport Inlet, Melville Island, N.W.T.	1979	Yes	0499-79	geotechnical data

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•	NATIONAL ENERGY BOARD (NEB)	Exhibit No. not determined

NEB EXHIBIT NO.	CONTRACTOR	TITLE	YEAR	EXAMINED	REF. NO. (this study)	COMMENTS
•	ACRES CONSULTING SERVICES LTD.	Environmental Impact of Thermal Discharge	1979	No		
*	FENCO CONSULTANTS LTD.	Conceptual Design for Bridport Inlet Harbour Facilities	1980	Yes	0495-80	proposed harbour design
*	NORCOR ENGINEERING AND RESEARCH LTD.	Proposal for Winter Baseline Studies at Bridport Inlet	1977	No		
*	EBA ENGINEERING CONSULTANTS LTD.	Geotechnical evaluation - Melville Island Pipeline, Arctic Pilot Project, Vol. I	1979	Yes	0492-79	surficial geology, geotechnical properties
*	EBA ENGINEERING CONSULTANTS LTD.	Geotechnical evaluation - Melville Island Pipeline, Arctic Pilot Project, Vol. II	1979	Yes	0462-81	surficial geology, geotechnical properties
*	EBA ENGINEERING CONSULTANTS LTD.	Geotechnical evaluation - Melville Island Pipeline, Arctic Pilot Project, Appendices	1980	Yes	0493-79	geotechnical and thermal data
64	FENCO CONSULTANTS LTD.	Assessment of Seismic Risk for Bridport Wharf	1980	Yes	0494-81	seismicity data
64	FENCO CONSULTANTS LTD.	Assessment of Seismic Risk for Bridport Wharf	1980	Yes	0496-80	seismicity data
68	CARR AND DONALD AND ASSOCIATES	Arctic Pilot Project, LNG Harbour and Dock Study	1978	Yes		harbour design
80	ACRES CONSULTING SERVICES LIMITED	Offshore Permafrost Analysis	1980	Yes	0491-80	permafrost and geotechnical data

TABLE G.1 GSC Field Work North of Latitude 60°

DISTRICT OF FRANKLIN AND ARCTIC OFFSHORE

INSTITUTE OF SEDIMENTARY & PETROLEUM GEOLOGY

Map No.	Scientific Officer	Project
1	Christie	Melville Project
2	Embry	Mesozoic Stratigraphy and Basin Analysis
1	Higgins	Carboniferous & Permian Biostratigraphy & Conodonts
(3)	McMillan	Petroleum Geology - Tertiary, Mesozoic & Paleozoic
4	Nassichuk	Stratigraphy & Paleontology of Upper Paleozoic
5	Ricketts	Coal Deposits
(6)	Stott	Synthesis of Cenozoic & Mesozoic Rocks
7	Thorsteinsson	Cornwallis and Adjacent Smaller Islands
(8)	Terttin	Geology of the Innuitian Region

PRECAMBRIAN GEOLOGY

9	Baragar	Volcanic Rocks...Circum Ungava (Gas Cache)
(10)	Card, Davidson, Hoffman	Precambrian Shield Volume
11	Iannelli	Thule Basin
12	Jackson	Operation Borden
13	Schau	Granulites in Northern Canada

ATLANTIC GEOSCIENCE CENTRE

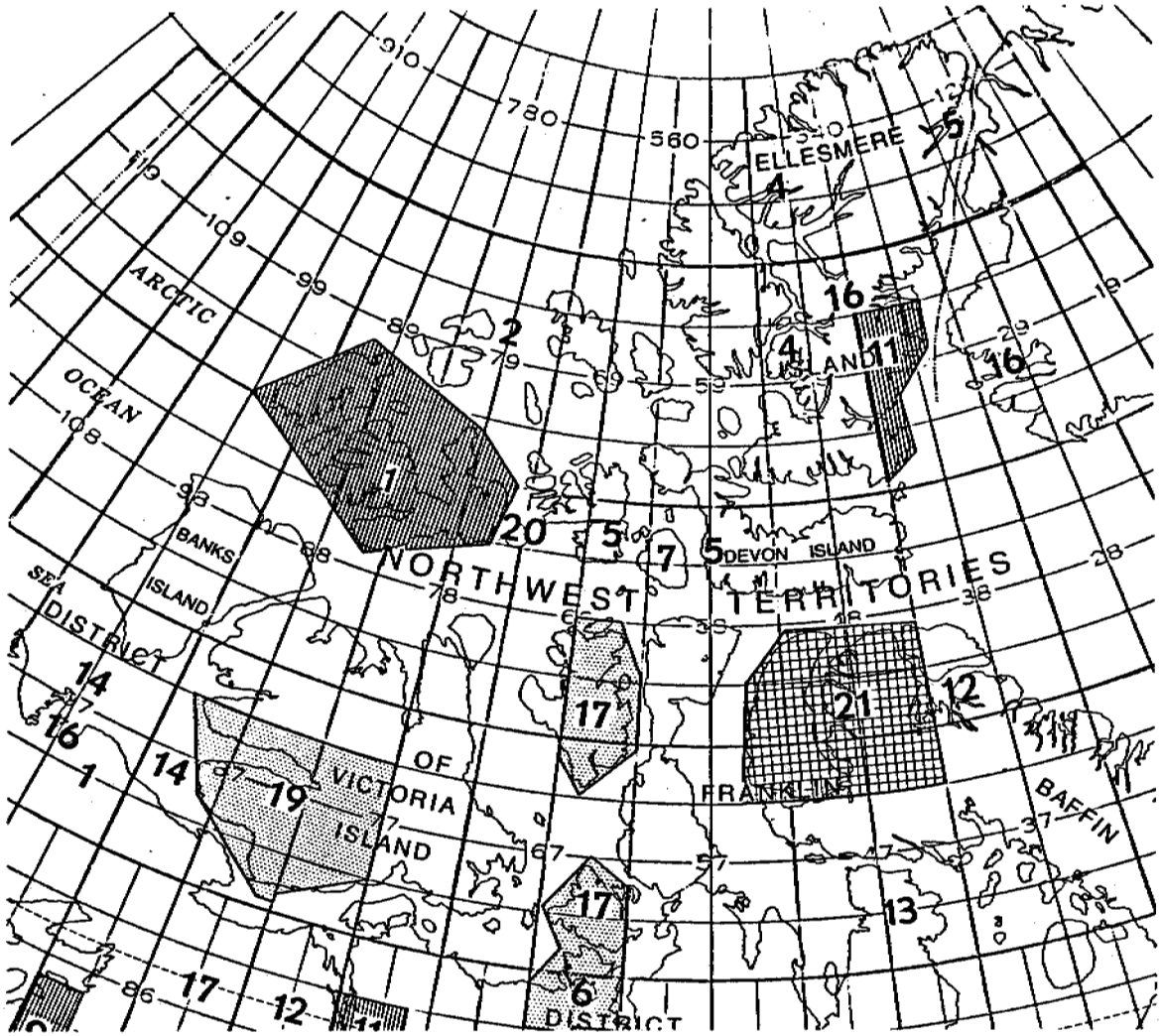
14	Blasco	Surficial Geology & Geomorphology

TERRAIN SCIENCES

16	Blake	Quaternary Geochronology, Arctic Islands
17	Dyke	Quaternary Geology...Prince of Wales, Is.
(18)	Edlund	Vegetation Distribution...Surficial Materials
19	Sharpe	Quaternary Geology, Southwestern Victoria Island

RESOURCE GEOPHYSICS & GEOCHEMISTRY

20	Bower	Ocean Aeromagnetics
21	Knappers	Aeromagnetic Survey - Northern Baffin Island



Drawing No. G.1 1984 GSC Field Work in Canadian Arctic Archipelago

G.2 Bedford Institute of Oceanography

The following excerpts were taken from the BIO REVIEW '83.

Coastal Geology Surveys - R. B. Taylor

The coastal program at AGC can be divided into three sections: (a) systematic coastal inventories; (b) process-oriented studies; and (c) short-term applied studies.

We anticpate expanding our coastal reconnaissance studies to Jones Sound, N.W.T. (a joint program with the Canadian Hydrographic Service) and to other parts of the Newfoundland Coast in 1983. Attention will also focus on the refinement and further development of a computer coastal information system.

Other specific problems identified for attention in the next few years include: (1) documenting the characteristics of gravel and mixed sand and gravel beach deposits; (2) developing methods for measuring gravel transport, and (3) predicting equilibrium shore profiles in gravels.

Finally, a developing thrust is to bridge the information gap between onshore and offshore surveys. The nearshore zone is a difficult environment to work in. It includes the surf zone where ice action is intense, and where major research vessels cannot operate. For these reasons, little information on the nearshore is available despite its physical, ecological, and economic importance. We are, therefore, undertaking nearshore surveys and developing projects to look at

nearshore sediment transport processes as an integral part of AGC's coastal geology program.

Oceanographic Atlases

R. A. Clarke

While major oceanographic expeditions were mounted during the seventies, no atlases were prepared at BIO partially because our data processing staff was occupied with important software development to analyze and reduce the large volumes of data recorded by modern electronic instruments. In the past two years we have initiated a program to prepare and publish atlases of much of the oceanographic data collected during the seventies. During 1982/83, we have published four atlases on physical and chemical oceanographic observations in the Northwestern Gulf of St. Lawrence; South Atlantic, Drake Passage, Pacific and Canadian Arctic - 1970; Denmark Strait - 1973; and the Gulf Stream System - 1972.

EAMES: The Arctic Archive

G. Seibert

The Eastern Arctic Marine Environment Studies (EAMES) program produced one of the largest collections of new biophysical data on a remote northern environment. The program was conducted from 1976 to 1980 in Baffin Island and Lancaster Sound, a region with strong petroleum production potential. The program's primary objectives were: to collect, collate and interpret environmental data necessary for an Environmental Impact Statement (EARP, see chapter 4); to provide data for the development of oil spill contingency plans; and to gain an appreciation of the factors that could affect the efficiency and safety of drilling operations.

Physical oceanographic data archived are limited to those collected during the summer of 1978, winter of 1978-79, and summer of 1979. They include:

- -time series measurements of subsurface currents, temperature, and salinity obtained from moored current meters
- -vertical profiles of current shear
- -geographical positions of satellite-tracked surface drifter buoys and iceberg floes
- -geographical positions of icebergs derived from land-based radar tracking stations
- -time series measurements of water level fluctuations obtained from submerged pressure gauges
- -remote sensing measurements of type and amount of ice cover
- -and auxiliary meteorological information such as surface winds, atmospheric pressure, cloud types and cover, and air temperature.

Seabed II — G. B. Fader

Towfishes have been designed to carry sophisticated electronic equipment that helps chart the ocean floor and provides data on what lies underneath. The towfish Seabed I, developed by the Department of Energy, Mines and Resources and Huntec ('70) Ltd. of Toronto, Pioneered the use of acoustic remote sensing for analyzing the composition of seafloor sediments. It produces high resolution seismic reflection pictures of the ocean floor and subfloor and information on sediment characteristics. The system operates in water depths of up to 300 m,

and is now used routinely in geological, geophysical, and seabed engineering studies.

Seabed II is a 5-year project to produce a new generation submersible capable of operating at greater depths and ranges than Seabed I. With it, marine geologists will be able to study the geology of the deeper areas of the continental shelf, continental slope, and the deep ocean.

The project, jointly funded by the National Research Council and the Department of Energy, Mines and Resources will cost 5.5 million dollars. The departments of Energy, Mines and Resources, Fisheries and Oceans, and National Defence as well as the National Research Council of Canada are supporting the project with technological and scientific guidance and project management. The Department of Fisheries and Oceans is providing ship time for system evaluation and testing.

Huntec ('70) Ltd. will design and build two systems: a slow speed higher speed shallow water (500 m) once.

Seabed II will provide information on sediment type and distribution, seabed stability, and seabed morphology. Such data will enhance our understanding of the ocean floor's geologic history and of the processes acting upon it. Detailed maps of various sediment parameters, and of beforms, morphology, stability, and seafloor hazards may be produced from the data collected.

G.3 Institute of Ocean Sciences (IOS)

Source: ISO 1982 Annual Review of Activities

Scientific Officers: R. Lake, H. Melling

Northwest Passage observations were carried out in conjunction with the Bayfield Laboratory and CHS, Central Region. IOS studies centred on the western part of the Parry Channel; while contract work included a CTD survey which covered most of the channels in the archipelago, with a concentration of effort in Amundsen Gulf. Observations included surface currents, water level measurements, and CTD profiles in western viscount Melville Sound, M'Clure Strait and Prince of Wales Strait. Data analysis is underway and two long-term moorings will be recovered from M'Clure Strait in the spring of 1983. The channel flow experiment used pressure height gauges placed on both sides of Prince of Wales Strait at 20 m depth to estimate flow at that level. During the spring of 1982 a string of current meters placed across the Strait at the same depth was utilized to determine directly the width-average flow at that time and hence calibrate the differential pressures measured by the gauges. It is anticipated that a year-long record from these gauges, to be recovered in August 1983, will allow the corresponding variations in flow to the inferred.

Scientific Officer: D. R. Topham

Work was also completed on the formation of gas hydrates during oil well blowouts at depth and its implication in terms of the circulation resulting therefrom. Staff also became involved with experiments to determine the possibility of subsea containment of underwater oil well

blowout. Advice was requested on experiments carried out in Florida during February 1982 and on the subsequent interpretation of results. A major portion of the study on the transfer function of conductivity cells from conductivity-temperature-depth instruments was completed. This work is of particular importance to the interpretation of oceanographic data taken in the presence of fine structure in temperature and salinity. A start was made towards the planned study of ice/water/topography interactions in shallow Arctic seas while laboratory experiments were carried out to investigate dense convection currents along a sloping bottom. These small scale experiments illuminate observations made in nature on a much larger scale.

IOS 1983 Annual Review of Activities

Scientific Officers: R. Lake, H. Melling

A second year of field data were collected providing water level, water structure and current velocity information in and adjacent to the NW Passage. Analysis to date has provided information on surface current patterns in Prince of Wales Strait and Viscount Melville Sound and an understanding of the upward flux of heat from the Atlantic water in the region which warms the subsurface waters of the Northwest Passage which, when brought to the surface over sills in the central archipelago, contributed to the formation of polynyas or of thin unstable sea-ice covers. Water level data collected over 15 months in Prince of Wales Strait will permit determination of integrated channel flow from cross-channel pressure differences.

G.4 Supply and Services Canada

Recently awarded contracts from the R & D Bulletin

No. 140, November, 1984.

Contractor	File Reference (Contract Serial)	Summary	Value
EBA Engineering Consultants Limited Edmonton, Alta.	02SQ 23235-4-0542 (OSQ84-00241)	Acquisition of downhole temperature measurements in the Beaufort Sea	$10,856.
Memorial University of Newfoundland St. John's, Nfld.	09SC 23420-4-M722 (OSC84-004380	Palynological analysis of Beaufort Sea and Arctic Basin seabed sediment core samples (Dr. E. Burden, Department of Energy Sciences	$25,188.
J. R. McCrossan Calgary, Alta.	01SG 23294-4-0797 (OSG84-00144)	Compilation of geologic data to produce geologic and structural maps of the Arctic islands	$11,200.
Caulfield Creative Arts Limited Sherwood Park, Alta.	08SB 97708-4-5044 (8SB84-00389)	Analysis and data processing of seismic bottom sounding data	$ 5,390.

No. 139, October, 1984

A. I. Zolnai Calgary, Alberta	01SG 23294-4-0724	Map compilation of geological data for the Arctic Archipelago	$21,600.

G.5 NOGAP Projects - Indian and Northern Affairs Canada

The Northern Oil and Gas Action Program (NOGAP) is a program of Indian and Northern Affairs Canada. Its stated objective is to accelerate socio-economic, environmental and technical research and planning to support government policy, program and regulatory responsibilities and to achieve a state of prepardedness for northern hydrocarbon production.

In February, 1984, the Minister of Indian and Northern Affairs announced that NOGAP would be a $130 million program extending over seven years (1984-85 to 1990-91). The purpose of the program would be to accelerate preparation for the major northern hydrocarbon production expected to occur in one early 1990's.

On May 17, 1984, Treasury Board approved resources in the amount of $72.265 million (1984-85) and 232 person-years to enable parties to conduct the first four years of the program. Participants included the departments of Fisheries and Oceans, Environment, Transport, Indian and Northern Affairs, Energy, Mines and Resources and National Museums of Canada and the governments of Yukon and the Northwest Territories.

Although NOGAP is designed, in part, to increase in-house expertise, some of the agencies involved may choose to contract as much as 50-90% of all research. INAC will pursue its policy of contracting out much of its environmental research projects to private consultants, while still supporting government scientists who can demonstrate competitive or unique capabilities.

INAC's environmental research efforts to be funded through NOGAP in 1984-85 will concentrate on the following themes.

- Granular Resources Inventory and Management
- Physical Environmental Assessment
- Regional Terrestrial Environment - Impact Assessment
- Offshore Environmental Ecosystems Monitoring
- Disturbance of Marine Mammals by Industry Traffic
- Modelling Impacts of Industry on Mammals
- Contaminants - Quality of Marine Food Species
- Caribou - Industrial Development
- Terrain Disturbance by Vehicles
- Ground Thermal Regimes

NOGAP CONTACTS FOR INFORMATION ON RESEARCH AND PLANNING PROJECTS IN FUNDED FEDERAL DEPARTMENTS AND TERRITORIAL GOVERNMENTS

1. Dr. J. G. Fyles
   Chief Geologist
   Geological Survey of Canada
   Energy, Mines and Resources
   Canada
   601 Booth Street
   Ottawa, Ontario, K1A OE8
   (613) 995-4249

2. W. D. Brakel
   Economic and Environmental
   Affairs Advisor
   Environment Canada
   804, 9942 - 108th Street
   Edmonton, Alberta, T5K 2J5
   (403) 420-2554

3. Ken Yuen
   Chief, Ocean Science Affairs
   Fisheries and Oceans
   200 Kent Street
   Ottawa, Ontario, K1A OE6
   (613) 990-0311

4. Rick Hurst
   Environmental Studies
   Coordinator
   Renewable Resources and
   Northern Environment Branch
   Indian and Northern Affairs
   Canada
   Les Terrasses de la Chaudiere
   Ottawa, Ontario
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6. Ian Marr
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Transport Canada
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(613) 593-6985

7. Lorne Matthews
Regional Planning Advisor
Energy, Mines and Resources Secretariat
Government of the Northwest Territories
Yellowknife, N.W.T.
X1A 2L9
(403) 873-7588

8. Bruce Demchuk
Major Projects Branch
Department of Economic Development and Tourism
Government of Yukon
Whitehorse, Yukon
Y1A 2C6
(403) 667-5387

Relevant NOGAP Projects

RESPONSIBLE DIRECTORATE: Northern Environment

PROJECT TITLE: Regional Terrestrial Environment; Impact Assessment (A6)

PROGRAM DESCRIPTION:

The program is designed to allow DIAND the capability of addressing the environmental impacts of site specific projects for which there is little or no baseline information. As such the program must be sensitive to changing industrial initiatives and development scenarios. Specific projects in Year 1 will include, among others, a research and monitoring program for the proposed Bent Horn Project on Cameron Island and a contribution to the ongoing research being co-ordinated by the GNWT Department of Renewable Resources into methods of deterring bears.

SUB-PROJECTS

A6-1 TITLE: Coastal Oil Spill Sensitivity Mapping, Byam Channel, NWT

CONTRACTOR: Pat McLaren

CONTACT: Brian MacLean

SC. AUTH.: David Livingstone

NEP. COST: 20K

PRESENT STATE: In Progress

DESCRIPTION/COMMENTS: The objective is to provide the physical coastal information required for effective oil spill countermeasures and contingency planning on the proposed shipping route from the Sverdrup Basin (Byam Channel, Byam Martin Channel and Austin Channel) with the following broad objectives:

i) Define and map the physical environments of the coasts bordering on these Channels;

ii) Assess and map the physical sensitivity of these environments to oil pollution.

iii) Assemble existing 35 mm slides of the shoreline with appropriate annotation describing the coastal environments and their physical sensitivity;

iv) Prepare a report including maps describing both the physical environment and physical sensitivity as they pertain to oil spill contingency planning.

A603 **TITLE:** Sverdrup Basin Ice Navigation Study

CONTRACTOR: Aland Sneyd (Canarctic)

CONTACT: R. Hurst

SC. AUTH.: David Livingstone

NEP. COST: (Co-funded by DOT, DIAND, DOE, Canarctic, 40K
Total cost approx. 180 K)

PRESENT STATE: Contract Negotiations

DESCRIPTION/COMMENTS: Designed to gather ice information necessary to ensure safe and reliable commercial shipping in the Sverdrup Basin, ascertaining routing options for a vessel enroute to Bent Horn/Cameron Island. Involves research to characterize the normal and extreme variations in the breakup of the ice bridges at the most probable entry points into the Sverdrup Basin identify and describe the nature of repetitive or cyclical open water leads; determine the location, extent and consistent year-to-year patterns of first-year ice; and describe the distribution and movement of multi-year ice before and after the ice bridge collapses.

G.6 Other Contracts and Government Programs

Energy, Mines and Resources has awarded a $62,000 contract to R.N. Edwards of the Department of Physics, University of Toronto, Toronto, Ontario, for the development of an offshore magneto-resistive sounding apparatus and Arctic test of the application to permafrost sounding.

Nordco Limited, St. John's Nfld. is the recipient of a $14,970 Department of Energy, Mines and Resources grant in connection with an underwater acoustic drill modelling experiment.

Frontier Geoscience Energy Program

The new Frontier Geoscience Energy Program is aimed at stimulating increased energy exploration and development by improving knowledge of the geology of Canada's long coastline.

The federal cabinet gave approval to the program in June, after a three-year process of planning and development which included extensive consultations throughout the country. It is being conducted by the Earth Sciences Sector of Energy, Mines and Resources Canada (EMR) which will gather, analyze and make available information on the geology of offshore and northern areas.

The Frontier Geoscience Energy Program is a $20-million a year initiative. In the current fiscal year, about $7 million will be spent on initial surveys and data gathering in the North and offshore, EMR reports.

Once the program is fully in place in fiscal 1986-87, approximately $8 million will be earmarked annually for the Atlantic Geoscience Centre (AGC), a division of EMR's Geological Survey of Canada. AGC is housed at the Bedford Insitute of Oceanography and is the main federal agency involved in the application of earth science research in the marine environment off the east coast.

A priority is greater development of the unique scientific, technical and logistics knowledge and expertise necessary to carry out work in the North offshore.

The Frontier Geoscience Energy Program will focus on six major areas of activity: four regional, a northern logistics support function and a basic geoscience research function. The four regions are the East Coast, West Coast, Western Arctic (Beaufort Sea, Mackenzie Delta, Mackenzie Valley) and the Arctic Islands.

This area is the least explored of all frontier regions. A number of large oil and gas discoveries have generated interest in the Arctic Islands. Basic geological work in the area will provide the knowledge base for estimating potential resources and for planning exploration activities.

A group of high-level corporate executives from the petroleum and mineral exploration industry, acting as an advisory committee, has been consulted regularly and has given its support to the Sector's plans and priorities.

Above excerpts taken from Offshore Resources, Vol. 2, No. 415, Sept./Oct. 1984, p. 25.

APPENDIX H University Grants

APPENDIX H - Federally Sponsored University Research

The following citations were obtained from the data base of the Information Exchange Centre (IEC), Canadian Institute for Scientific and Technical Information (CISTI). Only those grants considered pertinent to the subject area and geographic region covered by this study have been included here. The tabulation covers the period from 1971 to 1983. The data base is not necessarily complete and up to date.

TITLE: Geophysical studies in Baffin Bay
AUTHOR: KEEN, M.
ORIGIN: Geology; Dalhousie University, Halifax, Nova Scotia
DATES: 1971/72
AMOUNT: $6,500.

TITLE: 1) Seismic reflection studies in Baffin Bay, and on our Eastern Seaboard
2) Tiltmeter studies in Nova Scotia
AUTHOR: KEEN, M.J.
ORIGIN: Geology; Dalhousie University, Halifax, Nova Scotia
DATES: 1971/72
AMOUNT: $12,200.

TITLE: 1) Seismic Reflection Studies in Baffin Bay, and on our Eastern Seaboard
2) Tiltmeter studies in Nova Scotia
AUTHOR: KEEN, M.J.
ORIGIN: Geology, Dalhousie University, Halifax, Nova Scotia
DATES: 1972/73
AMOUNT: $12,200.

TITLE: Baffin Bay North Water Project (U)
AUTHOR: LOVE, H.W.
ORIGIN: Arctic Studies, Universite de Montreal, Quebec
DATES: 1972/73
AMOUNT: $7,500.

TITLE: Economic potential and ecological preservation of the Arctic and Atlantic continental margins and adjoining marginal marine environments
AUTHOR: BARTLETT, G.A.
ORIGIN: Geological Sciences; Queen's University, Kingston, Ontario
DATES: 1973/74
AMOUNT: $8,150.

TITLE: Baffin Bay North Water Project
AUTHOR: LOVE, H.W.
ORIGIN: Arctic Studies, McGill University, Montreal, Quebec
DATES: 1973/74
AMOUNT: $7,500.

TITLE: 1) Beach and nearshore environments in the eastern Arctic Archipelago, 2) Barrier islands and sand spits in the southern Gulf of St Lawrence
AUTHOR: McCANN, S.B.
ORIGIN: Geography; McMaster University, Hamilton, Ontario
DATES: 1975/76
AMOUNT: $8,400.

TITLE: 1) Beach and nearshore environments in the eastern Arctic Archipelago, 2) Barrier islands and sand spits in the southern Gulf of St. Lawrence
AUTHOR: McCANN, S.B.
ORIGIN: Geography; McMaster University, Hamilton, Ontario
DATES: 1976/77
AMOUNT: $9,828.

TITLE: Research study of the glacio-climatology of the north water polynya-northern Baffin Bay - on behalf of ENV $10,000.
AUTHOR: MULLER, F.
ORIGIN: Geography, McGill University, Montreal, Quebec
DATES: 1976/77
AMOUNT: $0.

TITLE: Field studies of the Arctic sea ice in 1977 in the western end of Barrow Strait between Griffith Island and Somerset Island, with supporting work on equipment design modification, maintenance and calibration - on behalf of Energy, Mines and Resources
AUTHOR: POUNDER, E.R. and LANGLEBEN, M.P.
ORIGIN: Physics; McGill University, Montreal, Quebec
DATES: 1977/78
AMOUNT: $68,031.

TITLE: Studies on quaternary marine benthic ostracodes from the Canadian Arctic Archipelago and Beaufort Sea area of the Arctic Ocean
AUTHOR: RITCHIE, J.C. and BRIGGS, W.M.
ORIGIN: Botany; University of Toronto, Ontario
DATES: 1978/79
AMOUNT: $5,500.

TITLE: Analysis of geotechnical military engineering in the Arctic - on behalf of DND
AUTHOR: MORGENSTERN, N.R.
ORIGIN: Civil Engineering; The University of Alberta, Edmonton, Alberta
DATES: 1978-79
AMOUNT: $206,550.

TITLE: Study geotechnical military engineering in the Arctic
AUTHOR: MORGENSTERN, N.R.
ORIGIN: Civil Engineering; The University of Alberta, Edmonton, Alberta
DATES: 1978/79
AMOUNT: $100,000

TITLE: Marine seismic studies of the Canadian margin and Arctic Ocean
AUTHOR: REID, I.D.
ORIGIN: Geology; Dalhousie University, Halifax, Nova Scotia
DATES: 1979/80
AMOUNT: $8,000.

TITLE: Trace metal marine geochemistry and Arctic Hydrography
AUTHOR: MOORE, R.M.
ORIGIN: Oceanography, Dalhousie University, Halifax, Nova Scotia
DATES: 1979/80
AMOUNT: $8,500.

TITLE: Marine seismic studies of the Canadian margin and Arctic Ocean
AUTHOR: REID, I.D.
ORIGIN: Geology, Dalhousie University, Halifax, Nova Scotia
DATES: 1979/80
AMOUNT: $8,000.

TITLE: To study geotechnical military engineering in the Arctic
AUTHOR: MORGENSTERN, N.R.
ORIGIN: Civil Engineering; The University of Alberta, Edmonton, Alberta
DATES: 1979/80
AMOUNT: $123,554.

TITLE: Amino acid age determination on wood and bone samples from the Arctic Archipelago - on behalf of Energy, Mines and Resources
AUTHOR: RUTTER, N.W.
ORIGIN: Geology; The University of Alberta, Edmonton, Alberta
DATES: 1980/81
AMOUNT: $1,885.

TITLE: Analysis of geotechnical military engineering in the Arctic - on behalf of DND
AUTHOR: MORGENSTERN, N.R.
ORIGIN: Civil Engineering, The University of Alberta, Edmonton, Alberta
DATES: 1980/81
AMOUNT: $110,570.

TITLE: Study geotechnical military engineering in the Arctic
AUTHOR: MORGENSTERN, N.
ORIGIN: Civil Engineering; The University of Alberta, Edmonton, Alberta
DATES: 1981/82
AMOUNT: $39,809.

TITLE: Investigate the distribution of permafrost on the Sabine Peninsula of Melville Island, Northwest Territories and its relationship to the glacial and sea level history - on behalf of Energy, Mines and Resources
AUTHOR: FRENCH, H.
ORIGIN: Geography; University of Ottawa, Ontario
DATES: 1981/82
AMOUNT: $7,000.

TITLE: Amino acid age determination on wood, bone and shell samples from the Arctic Archipelago - continuation of behalf of Energy, Mines and Resources
AUTHOR: RUTTER, N.W.
ORIGIN: Geology; The University of Alberta, Edmonton, Alberta
DATES: 1982/83
AMOUNT: $3,600.

TITLE: Geological development of Sverdrup Basin
AUTHOR: MIALL, A.D.; SCHWERDTNER, W.M. and NORRIS, G.
ORIGIN: Geology; University of Toronto, Ontario
DATES: 1982/83
AMOUNT: $4,000.

TITLE: Numerical and inverse models for determination of circulation patterns in parts of Northwest Passage in the Canadian Arctic
AUTHOR: UNNY, T.E.
ORIGIN: Civil Engineering, University of Waterloo, Ontario
DATES: 1982/83
AMOUNT: $4,000.

APPENDIX I Operation Polarquest Data

APPENDIX I - Summary of Operation Polarquest Data

PART 1 GEOLOGICAL PROGRAM

Survey No.	Location	Available Information
701A	Arctic Islands	Geological maps, stratigraphic logs and descriptions, reports, contour maps, oil and gas prospects
A701B	Barrow Strait	
701C	Lougheed	
A701D	Viscount Melville	
A701G	Banks Geology	
711A	Eglinton	
711B	Isachsen	

PART 2 BATHYMETRIC PROGRAM

A702A	Northwest Passage	Bathymetric maps, geobathymetric maps, geological cross-sections, interpretation reports
A702B	Edinburgh	

PART 3 ENVIRONMENTAL PROGRAM

A703A	Environment	Oceanographic, sea ice, meteorology, climatology

PART 4 AEROMAGNETICS PROGRAM

A36	Liot Point	Field intensity maps, anomaly analysis, contour maps, interpretation reports
A704A	M'Clure	
A704B	Lancaster	
704C	Eureka	
704D	Jones Sound	
A704E	Prince Patrick	
A704F	Bathurst	
A704G	Minto	
A704H	Coastal Plain	
A704I	Resolute	

PART 5 GRAVITY PROGRAM

705C	Hazen	Bouger gravity maps
715A	Banks Island	Free air gravity maps
A715E	Caledonia	Station location maps
7152	Axel Heiberg - Ellesmere	Regional and residual maps Operation reports

PART 6 SEISMIC REFRACTION PROGRAM

Survey No.	Location	Available Information
706C	Belcher	Shotpoint location maps, refraction plots, interpretation reports, playback sections, seismological sections
A50	Panarctic	
A717K	Burnett Bay	
727A	Byam Martin	
727B	North Bathurst	
727J	Lady Ann Strait	
727K	Devon - Cornwallis	

PART 7 SEISMIC REFLECTION PROGRAM

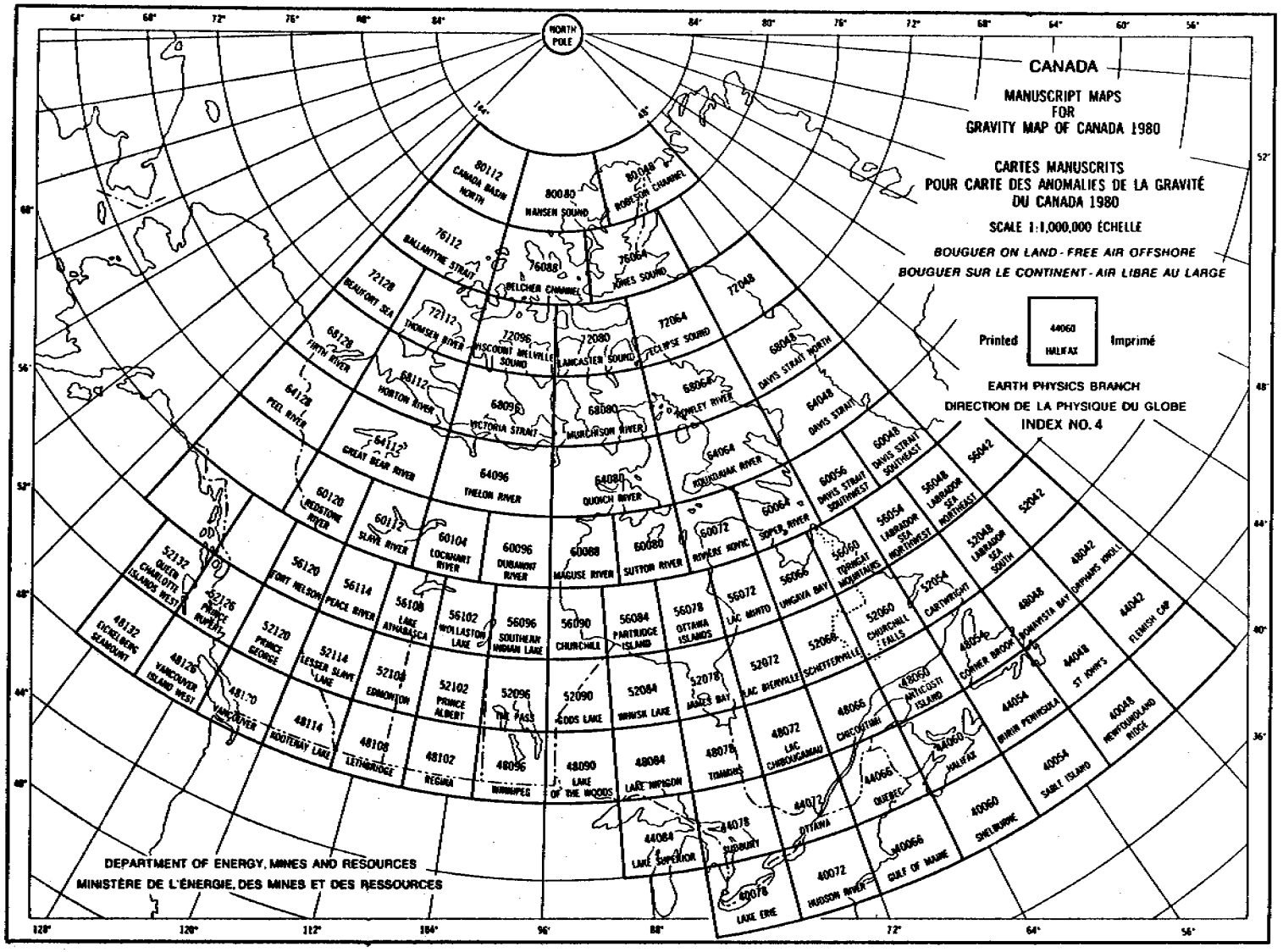
A707B	Mackenzie King	Field reports, station plans, playback sections, shotpoint maps, operations reports, velocity data, interpretation reports
717A	West Banks	
A717C	Parry	
717B	Storkerson	
A717C	Lancaster Sound	
717D	Fosheim	
717E	Bjorne	
717F	Hell Gate	
717G	Arctic Bay	
717H	Prince Regent	
717I	Wellington	
717J	Grinnell	
A717K	Burnett Bay	
717L	Thesiger Bay	
A717M	Lancaster Sound	
A717N	Viscount	
717O	Smith Sound	
717P	Greely/Nansen	
717Q	Raanes	
717R	Cornwallis	
717S	Warrender	
717T	Barrow	
717U	Peel	
717V	Prince Leopold	
717W	Coburg	
A727L	Lancaster Sound '72	

PART 8 FEASIBILITY PROGRAM

A709A	Offshore Drilling	only planned

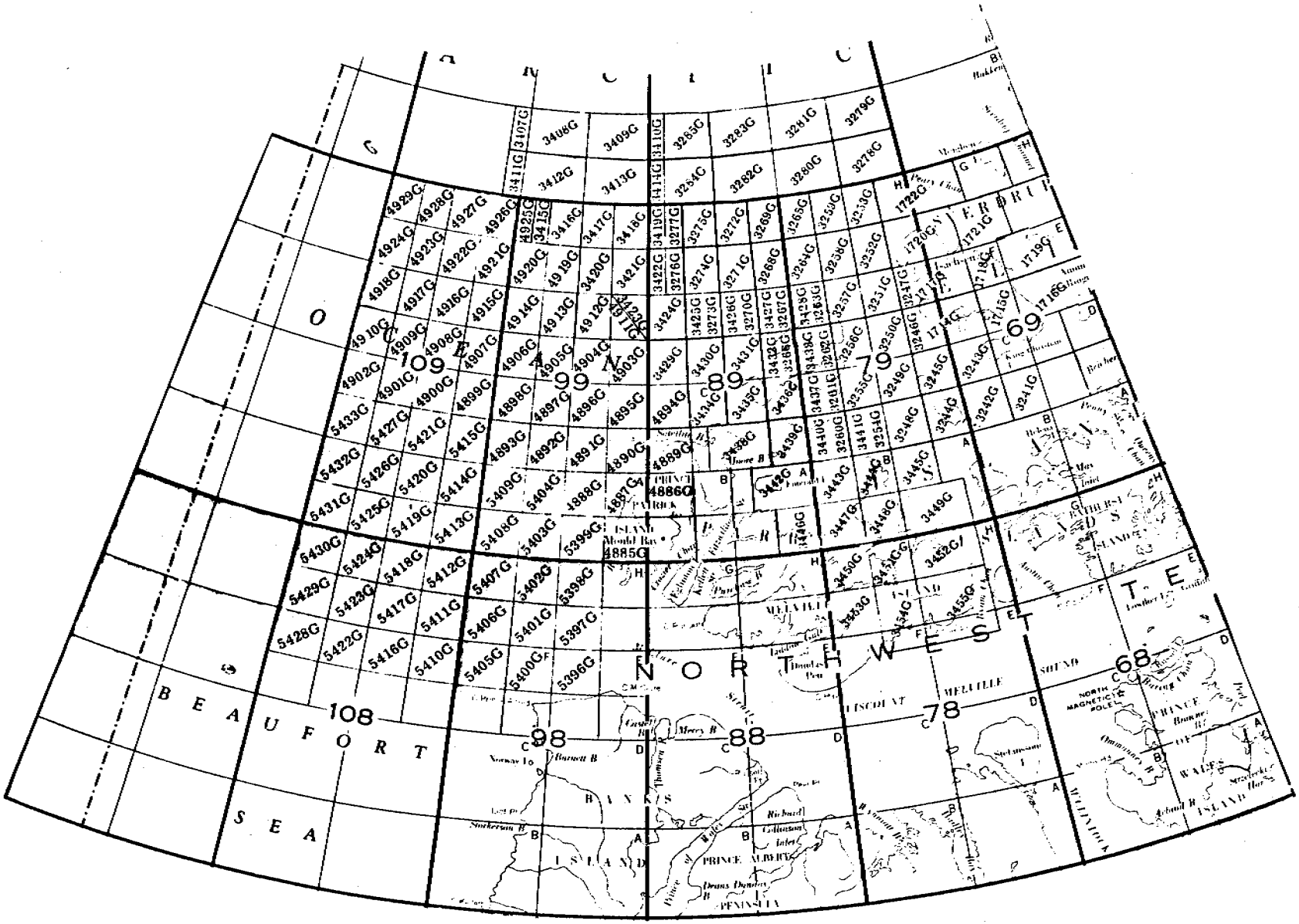
NOTE: Refer to Ref. No. 0589-84 for further details on Operation Polarquest

APPENDIX J Gravity Maps

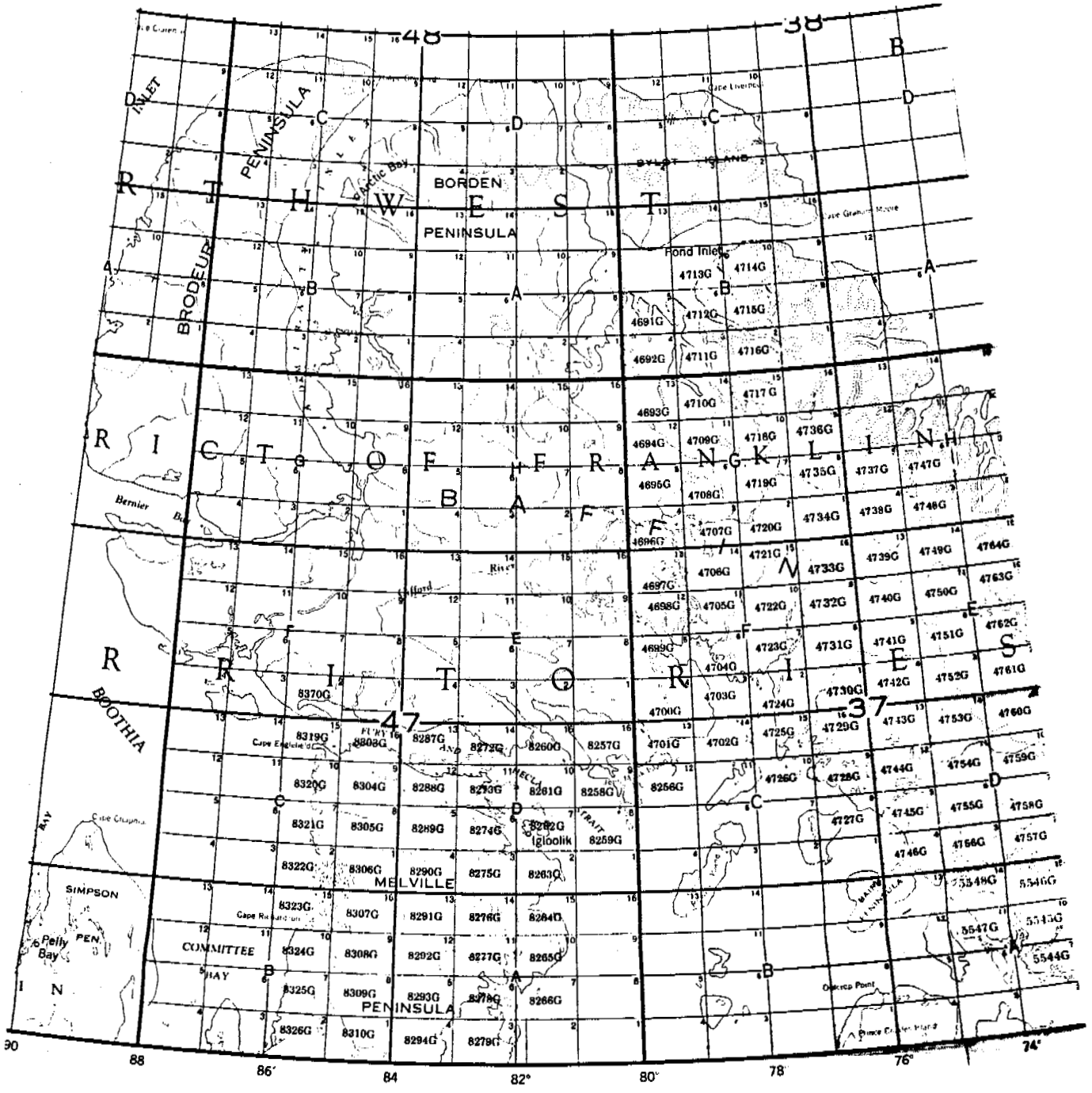


Drawing J.1 Manuscript Maps for Gravity Map of Canada 1980

APPENDIX K Aeromagnetic Maps

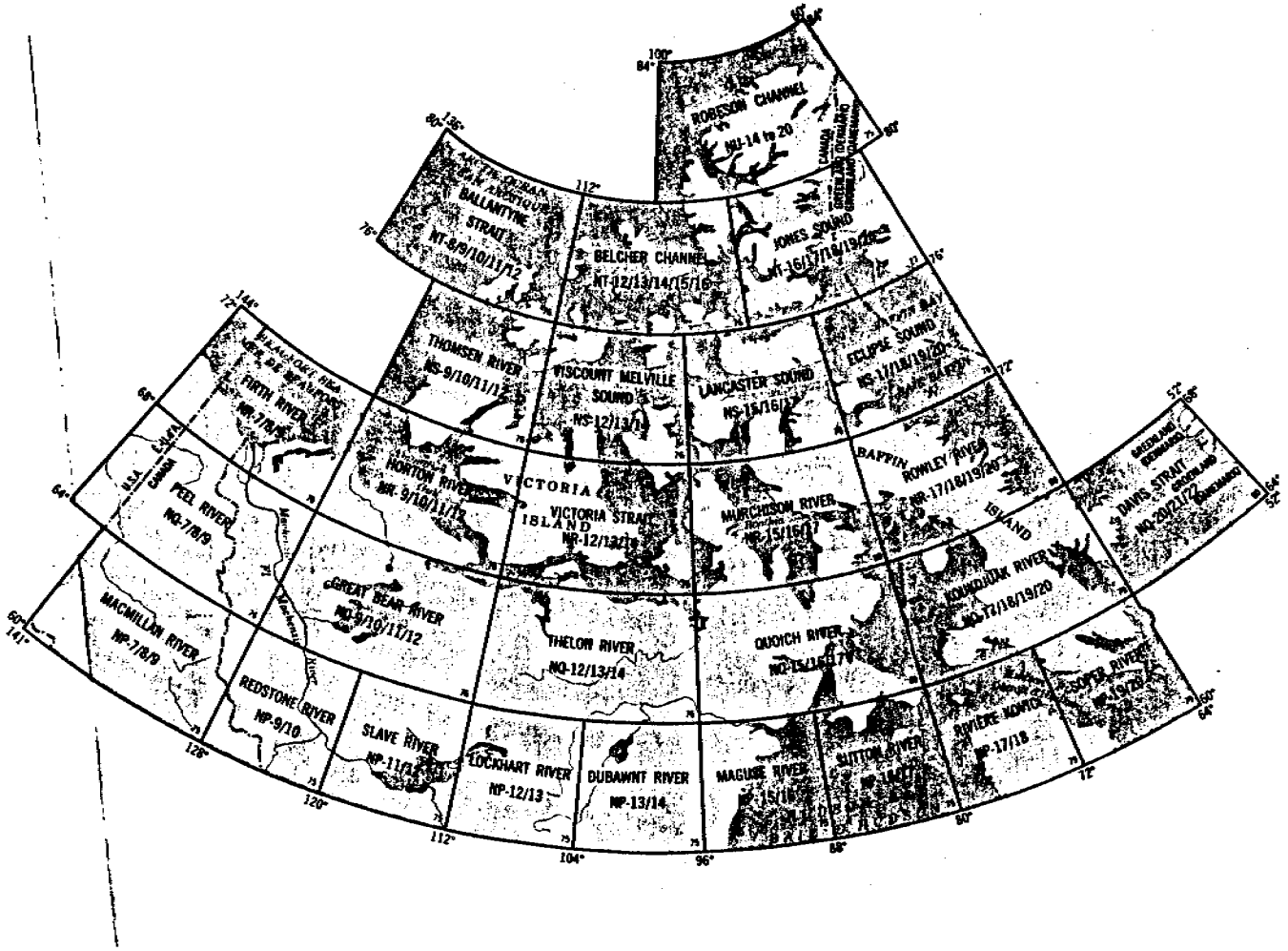


Drawing K.1 Geophysical Series (Aeromagnetic)
Index 16, Arctic Archipelago

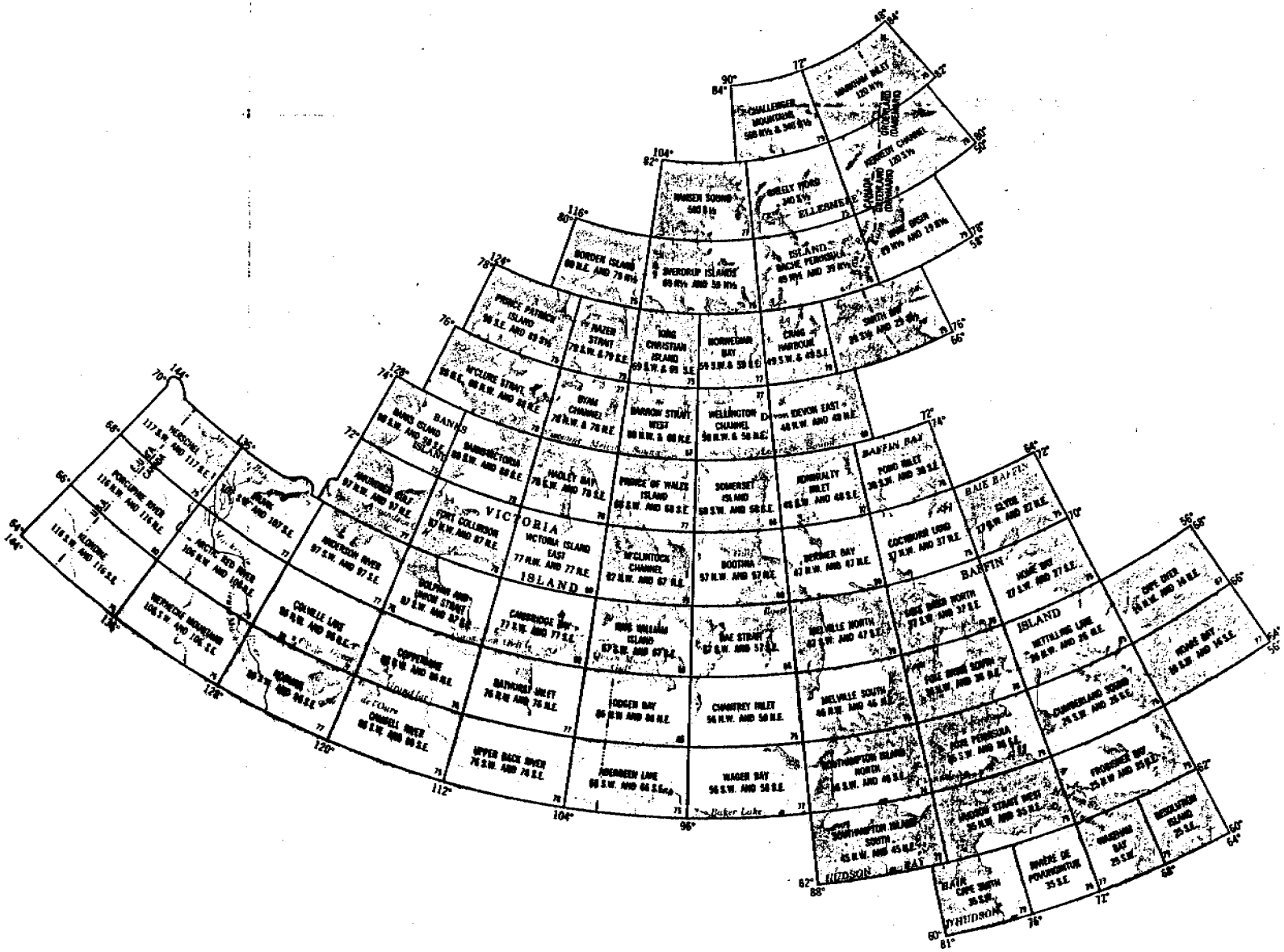


Drawing K.2 Geophysical Series (Aeromagnetic) Index 17
Melville Peninsula, Baffin Island

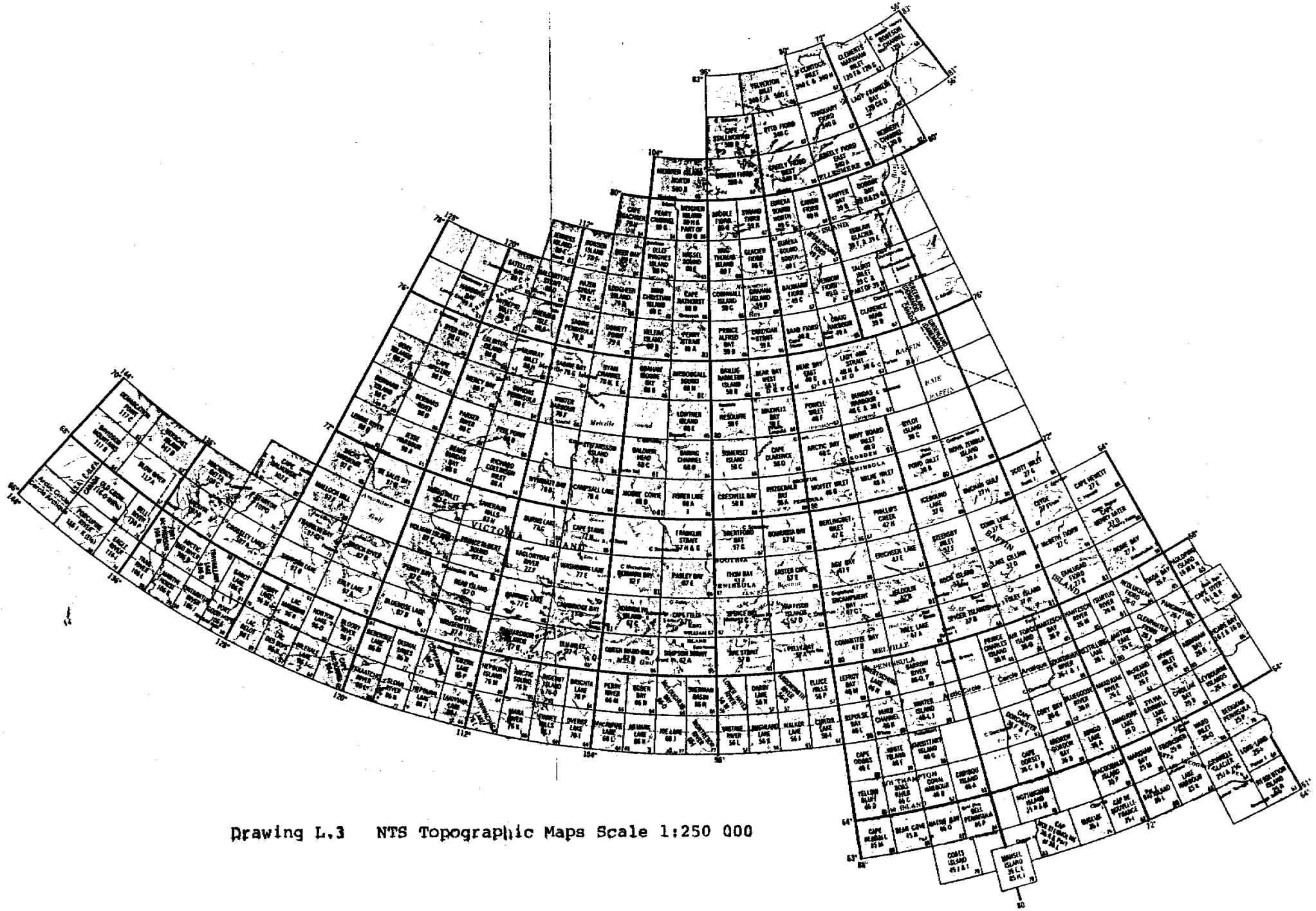
APPENDIX L Topographic Maps



Drawing No. L.1 NTS Topographic Maps, Scale 1:1 000 000



Drawing L.2 NTS Topographic Maps Scale 1:500 000



Drawing L.3 NTS Topographic Maps Scale 1:250 000

APPENDIX M COGLA Reports

APPENDIX M - Released Geophysical and Geological Reports Canada Lands

This compilation contains all the listings of geophysical and geological reports which have been released in accordance with the provisions of the Canada Oil and Gas Act. The following geographic areas within or overlapping into the study area (see Geological Map Drawing No. M.1) are covered in various sections of this listing: Baffin Bay, Arctic Islands, Arctic Lowlands and the Beaufort Sea.

The released geophysical/geological data has been tabulated by geographical region, operator and report number or program number. All projects completed before December 31, 1978 are included, with the exception of those located in areas where a moratorium on exploration activity is in effect, and those for which a written commitment for a longer confidential period was made prior to May, 1976.

This list has been taken from "Released Geophysical and Geological Reports - Canada Lands", COGLA, July 1984. Refer to Ref. No. 0120-84 for a more complete citation.

DINA CODING OF NORTHERN REPORT NUMBERS (PRIOR TO JANUARY 1, 1982)

This report number format was used by DINA for all geophysical/geological reports within its jurisdiction prior to January 1, 1982. The report number is formatted as follows:

ABC-DE-FG-HIJK

The letters correspond to a numeric code, where:

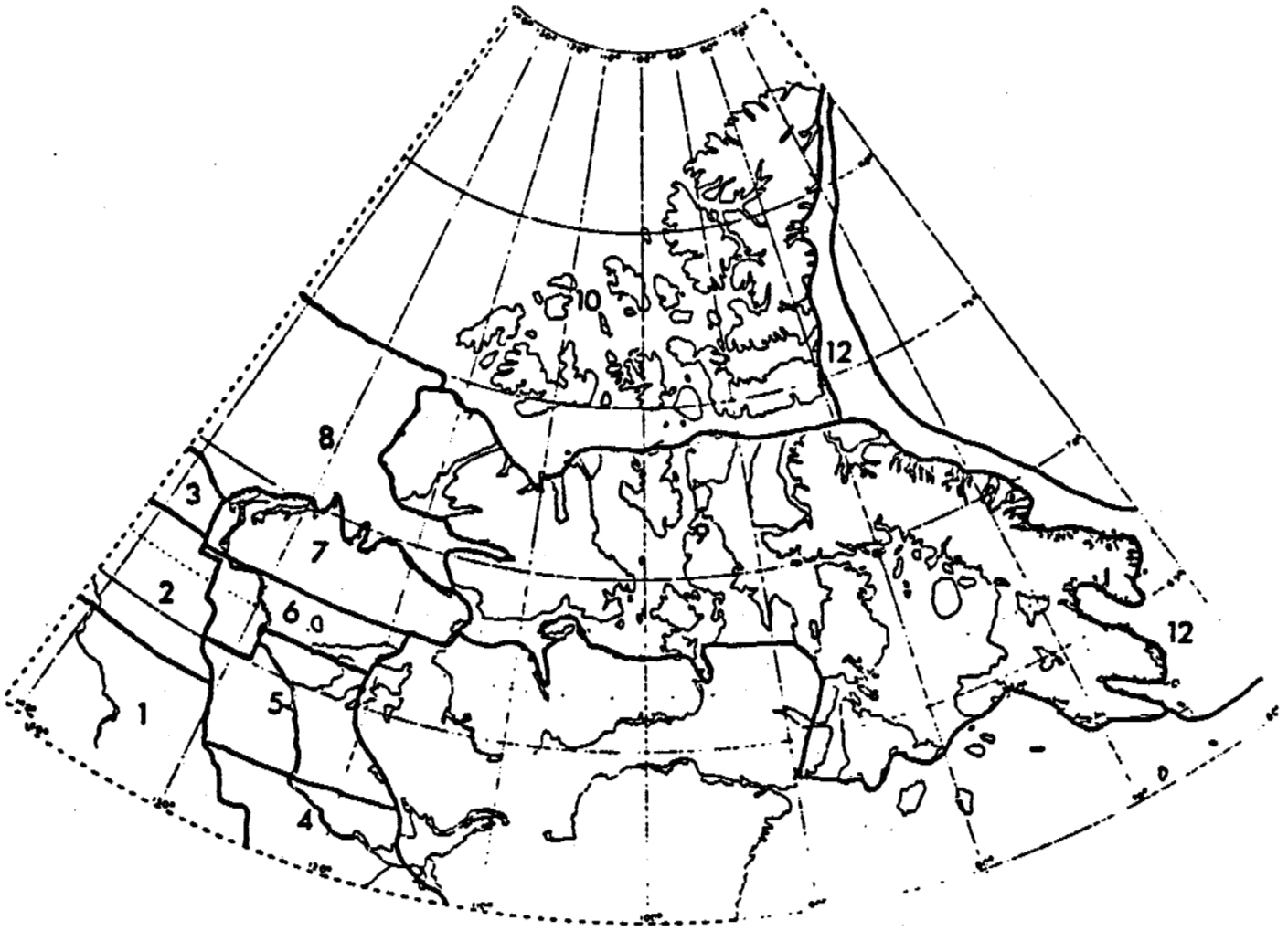
ABC identifies operator or company

DE identifies type of work, with

EOLOGICAL AREAS

CANADA OIL AND GAS
LANDS ADMINISTRATION
NORTHERN EXPLORATION REGION

Miles
0 500 1000 1500
0 500 1000 1500 2000 2500
Kilometres



1. LIARD PLATEAU
2. EAGLE PLAIN
3. YUKON ARCTIC COASTAL PLAIN
4. GREAT SLAVE PLAIN
5. GREAT BEAR PLAIN
6. PEEL PLATEAU
7. DELTA
8. BEAUFORT SEA
9. ARCTIC LOWLANDS
10. ARCTIC ISLANDS
12. BAFFIN BAY, DAVIS STRAIT

01 - surface geological mapping
02 - photogeologic interpretation
03 - geological evaluation
04 - geochemical surveys
05 - offshore geological surveys
06 - seismic reflection and refraction, on land and ice
07 - aermagnetometer
08 - gravity meter
09 - marine seismic, reflection and refraction
10 - research geophysical work

FG identifies the geological region (see attached map), with

01 - Liard Plateau
02 - Eagle Plain
03 - Yukon Arctic Coastal Plain
04 - Great Slave Plain
05 - Great Bear Plain
06 - Peel Plateau
07 - Mackenzie Delta
08 - Beaufort Sea
09 - Arctic Lowlands
10 - Arctic Islands
12 - Baffin Bay/Davis Strait

HIJK numerical sequence of reports as received from this company or operator. For example, a typical report would be coded as:
053-06-07-00013, which identifies a reflection seismic report in the Mackenzie Delta area shot by XYZ Oils Ltd., and which is the thirteenth report for this company.

AREA/REGION: BEAUFORT SEA 08/MER DE BEAUFORT 08

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
CANADA SUPERIOR	1978	025-09-08-00029	78-08-11	SEISMIC PROGRAM	1977.0
UNION	1969	028-09-08-00064	69-07-02	MARINE SEISMIC SURVEY AKLAVIK PROSPECT	38.6
HBOG	1971	038-09-08-00026	71-09-28	SEISMIC SURVEY WEST BANKS ISL	45.1
HBOG	1974	038-06-08-00044	74-04-01	SEISMOGRAPH SURVEY BLOW RIVER YT	120.7
HBOG	1974	038-15-08-00046	74-04-28	GEOTECHNICAL RPT. TENT IS. BLOWR., YT	.0
HBOG	1975	038-06-08-00045	75-02-27	OPERATION REPORT TENT ISLAND C PROJECT YT	14.5
CHEVRON	1968	045-08-08-00082	68-09-15	GRAVITY SURVEY LIVERPOOL BAY	
CHEVRON	1972	045-09-08-00131	72-09-07	SEISMIC SURVEY MACKENZIE DELTA	41.8
AIOG	1970	054-09-08-00012	70-09-04	SEISMIC SURVEY WESTERN BANKS INLAND	112.7
AIOG	1970	054-09-08-00032	71-08-13	MARINE REFL SEISMIC SURVEY W BANKS ISL	169.0
AIOG	1972	054-09-08-00065	72-08-26	MARINE REFL SEISMIC SURVEY E HERSCHEL ISL	270.4
AIOG	1976	054-06-08-00104	76-04-15	SEISMIC SURV MACKENZIE-GARRY-UNARK-PELLY	130.4
MOBIL	1968	057-07-08-00059	68-09-30	INTERP AEROMAG BEAUFORT SEA	.0
MOBIL	1969	057-09-08-00057	69-08-25	MARINE SEISMIC SURVEY FRANKLIN BAY	523.1
TEXACO	1958	058-09-08-00002	60-09-01	MARINE STRATOMETER ANDERSON RIVER	22.2
TEXACO	1969	058-09-08-00007	69-08-11	EVALUATION NICHOLSON PEN!	82.1
TEXACO	1970	058-07-08-00008	70-02-24	AEROMAG INTERP MACKENZIE DELTA	.0
AMOCO	1971	060-09-08-00113	71-06-15	INTERP SEISMIC DATA BEAUFORT SEA	985.0
TOTAL	1970	096-09-08-00036	70-08-30	SEISMIC RECORD SECTIONS - BANKS ISL	630.9
TOTAL	1970	096-09-08-00018	70-09-03	MARINE SEISMIC OFFSHORE BANKS ISLAND	1,102.4
SIEBENS	1970	098-09-08-00007	70-08-15	MARINE SEISMIC LIVERPOOL BAY	165.8
SIEBENS	1973	098-09-08-00009	73-08-24	MARINE SEISMIC LIVERPOOL BAY	46.7
PETRO-CANADA	1974	246-09-08-00073	74-09-10	SEISMIC SURVEY BEAUFORT SEA	365.3
PETRO-CANADA	1974	246-09-08-00075	74-09-25	SEISMIC SURVEY HERSCHEL ISL	366.9
GOBLES	1971	250-06-08-00005	71-02-13	SEISMIC SURVEY MACKENZIE BAY AREA	33.8
GOBLES	1971	250-08-08-00007	71-05-20	GRAVITY-MAGNETOMETER MACKENZIE DELTA	.0
HUNT	1968	331-09-08-00022	68-10-11	MARINE SURVEY MACKENZIE BAY AREA	209.2
HUNT	1970	331-09-08-00017	70-09-03	MARINE SEISMIC BEAUFORT SEA	80.0
HUNT	1971	331-09-08-00024	71-09-11	MARINE SEISMIC BEAUFORT SEA	3,308.9
HUNT	1972	331-09-08-00027	72-09-15	VELOCITY ANALYSIS LINES BEAUFORT SEA	
HUNT	1972	331-09-08-00025	72-09-18	MARINE SEISMIC BEAUFORT SEA	148.0

AREA/REGION: BEAUFORT SEA 08/MER DE BEAUFORT 08

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
EUREKA	1972	528-09-08-00001	72-09-14	FINAL SEISMIC BEAUFORT ENTERPRISE	434.5
EUREKA	1972	528-09-08-00008	73-08-31	SEISMIC SECTIONS BEAUFORT SEA	.0
EUREKA	1976	528-09-08-00014	76-09-18	MARINE SEISMIC BEAUFORT SEA	408.8
EUREKA	1977	528-09-08-00016	77-08-08	SEISMIC RECORD SECTIONS	.0
EXPLOR-ALTA	1972	533-09-08-00001	72-11-01	SEISMIC OPER ESKIMO LAKES	.0
ELFEX	1969	581-09-08-00102	69-08-30	SEISMIC MALLOCH HILL - W. FRANKLIN BAY	144.8
ELFEX	1970	581-09-08-00053	70-05-13	SEISMIC SURVEY CAPE DALHOUSIE	37.0
ELFEX	1970	581-09-08-00050	70-08-14	OPER SEISMIC CAPE BATHURST-DALHOUSIE	684.0
ELFEX	1970	581-09-08-00052	70-08-23	SEISMIC LIVERPOOL BAY - CAPE DALHOUSIE	386.3
ELFEX	1970	581-09-08-00054	70-09-24	MARINE VIBRO HUTCHISON BAY	463.5
ELFEX	1970	581-09-08-00153	70-11-20	SEISMIC RECORD SECTIONS - HUTCHISON BAY	.0
ELFEX	1971	581-09-08-00114	71-06-30	INTERPRETATION SEISMIC HUTCHINSON BAY	.0
ELFEX	1971	581-09-08-00113	71-07-18	INTERP SEISMIC HUTCHISON BAY	62.8
ELFEX	1972	581-09-08-00106	72-09-08	INTERPRET. SEISMIC OFFSHORE EAST COAST BATHURST	.0
ELFEX	1972	581-09-08-00063	72-09-08	SEISMIC BEAUFORT - CAPE BATHURST	61.2
ELFEX	1973	581-09-08-00071	73-04-01	INTERPRETATION SEISMIC BEAUFORT SEA	1,195.8
ELFEX	1972	581-08-08-00070	73-05-07	GRAVITY INTERP BEAUFORT SEA-MACKENZIE DELTA	.0
ELFEX	1972	581-09-08-00110	73-08-01	INTERP MARINE SEISMIC MACKENZIE BAY	.0
ELFEX	1972	581-09-08-00108	74-04-30	INTERPRETATION HUTCHISON BAY-BEAUFORT SEA	16.0
ELFEX	1974	581-06-08-00124	74-10-31	PROCESSING RPT BEAUFORT SEA	.0
SUPERTEST	1965	605-01-08-00001	65-09-30	GEOLOGY INTERIOR PLAINS AREA - ARCTIC COASTAL	
PANCANADIAN	1972	651-09-08-00014	72-08-15	SHALLOW WATER SEISMIC-TRENT & SHOALWATER BAY	241.4
AQUITAINE	1969	673-09-08-00001	69-09-02	MARINE SEISMIC REPORT-BEAUFORT SEA	342.8
AQUITAINE	1969	673-09-08-00002	69-09-02	SEISMIC RFL INTERPRETATION-BEAUFORT SEA	.0
AQUITAINE	1969	673-09-08-00003	69-09-02	SEISMIC RFLECTION PROCESSING EXPERIMENTS	.0
AQUITAINE	1970	673-09-08-00042	71-08-13	MARINE VIBROSEIS REPORT-BEAUFORT SEA	1,796.0
AQUITAINE	1976	673-09-08-00076	76-09-30	SEISMIC RECORD SECTIONS	.0
AQUITAINE	1976	673-09-08-00078	76-09-30	INTERP REPORT 1976 SURVEY-BEAUFORT SEA	101.4
NASSAU EXPLORATION	1966	677-01-08-00001	66-08-01	GEOLOGY: BEAUFORT SHELF AREA	
CANADA TRUST	1969	682-09-08-00004	69-08-12	SEISMIC & GEOL EVAL BEAUFORT SEA	109.4

AREA/REGION: BEAUFORT SEA 08/MER DE BEAUFORT 08

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE SURVEYED
KENTING	1969	693-09-08-00007	69-07-31	SEISMIC & GEOL DATA MACKENZIE BAY	193.1
KENTING	1969	693-09-08-00009	69-09-03	SEISMIC & GEOLOGY: SMOKING HILLS	408.8
KENTING	1969	693-09-08-00015	70-07-30	ADDENDUM TO MACKENZIE BAY PROJ	16.1
KENTING	1969	693-09-08-00010	70-07-31	EVAL AMUNDSEN GULF PROJECT	38.6
KENTING	1969	693-09-08-00018	70-08-31	EVALUATION OF THE BANKS PROJECT	164.2
KENTING	1969	693-09-08-00035	70-08-31	EVAL OF WARREN PROJ BEAUFORT SEA WT	135.2
KENTING	1969	693-09-08-00017	70-09-30	EVALUATION OF THE ATKINSON PROJECT	177.0
KENTING	1970	693-09-08-00027	70-09-30	EVALUATION OF THE WEST BANKS AREA	217.3
KENTING	1971	693-09-08-00043	71-07-31	MARINE SEISMIC EVALUATION STORKERSON PROJECT	304.2
KENTING	1969	693-09-08-00038	71-08-31	EVAL OF PULLEN-BEAUFORT SEA	188.3
DIGICON	1968	704-09-08-00003	68-09-30	MARINE SEISMIC SURVEY-BEAUFORT SEA	3,218.8
DIGICON	1969	704-09-08-00002	69-09-03	MARINE SEISMIC AMUNDSEN GULF	487.6
DIGICON	1969	704-09-08-00001	69-09-15	SEISMIC & GEOLOGIC REPORT-AMUNDSEN GULF	16.1
GEOPHOTO	1973	705-09-08-00011	73-09-27	SHALLOW WATER PROGRAM-MACKENZIE BAY-BEAUFORT	502.1
CANADIAN EXPORT	1970	718-09-08-00001	70-08-31	EVALUATION LIVERPOOL BAY	275.2
CANADIAN EXPORT	1970	718-09-08-00002	70-09-30	ADDENDUM-ARCTIC. 1003 LIVERPOOL & 857 ATKINSON	524.0
CANADIAN EXPORT	1971	718-09-08-00003	71-08-31	EVAL. OF THE BEAUFORT SEA PROJECT	239.8
CANADIAN EXPORT	1972	718-09-08-00004	72-08-24	MARINE SEISMIC REPORT-BEAUFORT SEA	334.8
CANADIAN EXPORT	1973	718-09-08-00005	73-08-20	SEISMIC INTERPRETATION E. BEAUFORT	
CANADIAN EXPORT	1973	718-09-08-00006	73-08-30	SEISMIC DATA INTERPRETATION- W BEAUFORT	434.5
SABRE	1970	763-09-08-00001	70-08-31	MARINE SEISMIC EVALUATION-BANKS ISLAND AREA	56.0
SABRE	1970	763-09-08-00002	71-08-13	INTERPRET. OF SEISMIC DATA-WEST COAST BANKS IS	.0
ULSTER	1970	775-09-08-00003	72-05-30	INTERPRET. SEISMIC WEST COAST BANKS ISLAND	963.0
VOYAGEUR	1970	777-09-08-00001	71-08-13	MARINE SEISMIC 1970/71 BEAUFORT SEA YT & NWT	169.0
VOYAGEUR	1971	777-09-08-00002	71-09-30	INTERPRETATION MARINE SEISMIC BEAUFORT SEA	.0
VOYAGEUR	1975	777-09-08-00003	75-07-29	SEISMIC RECORD SECTIONS BEAUFORT SEA	.0
WORLDWIDE	1970	783-09-08-00001	72-05-30	INTERPRETATION SEISMIC WEST COAST BANKS ISLAND	.0
BOW VALLEY	1969	786-09-08-00001	69-08-04	SHALLOW MARINE SEISMIC RICHARD ISLAND	98.2
BOW VALLEY	1971	786-03-08-00002	71-12-28	REGIONAL STUDY MACKENZIE DELTA-BEAUFORT SEA	.0
BOW VALLEY	1973	786-06-08-00004	73-05-20	SEISMIC INTERPRETATION MACKENZIE DELTA NWT	971.0
CONT SHELF DATA	1969	788-05-17-00002	69-11-15	BATHYMETTRY MAPS	

AREA/REGION: BEAUFORT SEA 08/MER DE BEAUFORT 08

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE SURVEYED
RAGAN J	1971	813-07-08-00005	71-09-23	AIRBORNE GEOPHYSICAL SURVEY BEAUFORT SEA NWT	.0
CONFEDERATION	1970	817-01-08-00001	70-07-01	GEOLOGY AMUNDSEN GULF AREA NWT	
GAI-GMX	1972	822-08-08-00001	71-12-29	GRAVITY MAPS-MACKENZIE DELTA-BEAUFORT SEA	.0
GAI-GMX	1972	822-07-08-00001	74-07-09	SHIPBORNE & LAND GRAV. MAPS-BEAUFORT-MACKEN.	.0
A.P.O.A.	1970	824-05-08-00301	70-05-16	1970 BOTTOM SAMPLING-BEAUFORT SEA	
A.P.O.A.	1971	824-01-08-00402	70-08-01	GEOLOGICAL SAMPLING-BEAUFORT SEA	
A.P.O.A.	1971	824-01-08-00401	70-09-01	OFFSHORE PERMAFROST-SOUTHERN BEAUFORT SEA	
A.P.O.A.	1971	824-21-08-01703	71-04-30	MICROPALEONTOLOGIC-MINERALOGIC ANALYSIS	
A.P.O.A.	1971	824-21-08-01901	71-11-10	SEA-BED SCOURING INVESTIGATION-BEAUFORT SEA	
A.P.O.A.	1972	824-21-08-03201	72-12-01	SEA-BED SCOURING INVESTIGATION-BEAUFORT SEA	
PHOENIX VENTURES	1971	833-09-08-00001	71-08-30	SEISMIC CROSS-SECTIONS-MACKENZIE DELTA-BEAUFORT	.0
PHOENIX VENTURES	1971	833-09-08-00003	71-09-15	SHOTPOINT MAPS - CROSS SECTIONS: MACKENZIE	
PHOENIX VENTURES	1971	833-09-08-00004	71-09-30	SEISMIC CROSS-SECTIONS-MAPS MACKENZIE DELTA	.0
G.S.I.	1971	838-09-08-00002	71-08-28	SEARCH PRUDHOE II MARINE SEISMIC MACKENZIE DELTA	229.3
G.S.I.	1972	838-09-08-00003	72-07-21	EXPERIMENTAL RECORDING & PROCESSING MACKENZIE BAY	12.9
G.S.I.	1976	838-09-08-00008	76-09-01	SEISMIC RECORD SECTIONS BEAUFORT SEA	871.2
G.S.I.	1978	838-09-08-00011	78-08-15	MARINE SEISMIC	462.0
BEAUFORT DELTA	1976	842-21-08-00001	76-09-15	GEOTECHNICAL-GEOPHYSICAL-GEOTHERMAL BEAUFORT SEA	

AREA/REGION: ARCTIC LOWLANDS 09/BASSES TERRES DE L'ARCTIQUE 09

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE SURVEYED
CDC OIL & GAS LTD.	1976	016-08-09-00013	76-05-08	GRAVITY SURVEY	
TEXACO	1971	017-06-09-00053	71-12-13	SEISMIC & GRAVITY SURVEY BANKS ISL	193.1
TEXACO	1972	017-06-09-00059	72-12-05	SEISMIC SURVEY BANKS ISLAND	354.1
CANADIAN SUPERIOR	1962	025-02-09-00002	65-05-03	PHOTOGEOL EVAL CENTRAL ARCTIC ISL	
CANADIAN SUPERIOR	1962	025-02-09-00003	65-09-03	PHOTOGEOL EVAL W ARCTIC FRANKLIN	
CANADIAN SUPERIOR	1962	025-02-09-00004	65-05-03	PHOTOGEOL LOUGHEED, W. CAMERON, NW ELLEF RINGES	
CANADIAN SUPERIOR	1962	025-02-09-00005	62-05-03	PHOTOGEOL BORDON, MACKENZIE KING, BROCK IS.	
UNION	1973	028-07-09-00063	73-06-18	AEROMAG RECONN SURVEY N COPPERMINE	.0
UNION	1973	028-07-09-00062	73-07-17	AEROMAGNETIC SURVEY VICTORIA ISLAND	.0
UNION	1973	028-01-09-00066	73-08-20	GEOLOGY VICTORIA ISL & ADJACENT MAINLAND	
SHELL	1964	037-02-09-00063	64-09-01	PHOTOGEOL BANKS ISL- FRANKLIN DIST	
CHEVRON	1972	045-06-09-00117	72-03-15	SEISMIC SURVEY BANKS ISLAND	178.6
CHEVRON	1975	045-06-09-00136	75-04-14	SEISMIC SURVEY BANKS ISLAND	233.4
AIOG	1971	054-02-09-00015	71-06-20	PHOTOGRAM N PRINCE OF WALES RUSSELL ISL	
TEXACO	1971	058-09-09-00014	71-09-30	MARINE SEISMIC FROBISHER-BAFFIN ISL	217.3
AMOCO	1969	060-07-09-00139	69-06-29	AEROMAGNETIC SURVEY S BANKS ISLAND	.0
AMOCO	1973	060-07-09-00153	73-07-17	AEROMAGNETIC SURVEY VICTORIA ISLAND	.0
MURPHY	1971	063-06-09-00013	71-05-19	SEISMIC SURVEY PRINCE ALBERT PENINSULA	344.8
MURPHY	1971	063-08-09-00014	71-05-19	GRAVITY SURVEY PRINCE ALBERT-VICTORIA ISL	.0
MURPHY	1970	063-07-09-00024	71-08-22	INTERPRETATION REPORT AIRBORNE MAGNETIC SURVEY	.0
UNITED GEOPH.	1977	065-06-09-00001	77-05-16	SEIS SURVEY BANKS IS.	.0
SIEBENS	1969	098-03-09-00010	69-09-30	GEOLOGY EAST BAFFIN ISLAND	
PETRO-CANADA	1970	246-01-09-00035	70-08-14	GEOL BANKS-VICTORIA-ARCTIC ISL	
PETRO CANADA	1978	246-01-09-00100	78-08-10	GEOLOGY LANCASTER SOUND	
NORLANDS	1973	511-09-09-00014	74-04-31	INTERP VISCOUNT MELVILLE SOUND	.0
NORLANDS	1973	511-09-09-00013	75-03-31	SONO INTERP WELLINGTON CHANNEL	.0
NORLANDS	1975	511-09-09-00015	76-04-30	FINAL SHOTPOINT LOCATION MAPS PHILPOTS	.0
PACIFIC SILVER	1972	517-01-09-00001	72-06-30	GEOL FOXE BASIN DIST OF FRANKLIN	
COLUMBIAN NORTHLAND	1972	520-03-09-00001	72-03-04	GEOLOGY FOXE BASIN DIST FRANKLIN	
BRENNER, A	1974	531-07-09-00008	73-02-12	MAGNET-ELECTROMAG MINTO INLET	.0
KERR MCGEE	1970	551-07-09-00005	70-07-14	AEROMAG SURVEY PRINCE OF WALES ISL	.0

AREA/REGION: ARCTIC LOWLANDS 09/BASSES TERRES DE L'ARCTIQUE 09

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
KERR MCGEE	1971	551-09-09-00007	71-09-31	SEIS & GRAV BROWNE BAY-PRINCE OF WALES ISL	62.8
KERR MCGEE	1972	551-06-09-00008	72-05-18	SEISMIC SURVEY PRINCE OF WALES ISL	511.8
COLUMBIA	1973	556-07-09-00003	73-07-31	AEROMAGNETIC SURVEY KING WILLIAM ISL	.0
COLUMBIA	1973	556-06-09-00001	73-10-31	REPROCESSING OF SEISMIC DATA BANKS ISL	.0
COLUMBIA	1973	556-02-09-00004	74-02-01	PHOTOGEOLOGIC MCCLINTOCK BASIN AREA	
COLUMBIA	1974	556-01-09-00005	74-08-15	GEOLOGY SOUTHERN MCCLINTOCK BASIN	
ELFEX	1966	581-01-09-00027	66-08-05	OPER MERIDEN 1966-VICTORIA & BANKS	
ELFEX	1971	581-02-09-00085	71-08-15	FRACT-ANAL STORKERSON RIVER-BANKS ISL	2,932.3
ELFEX	1970	581-06-09-00064	71-11-30	SEISMIC & GRAV SURVEY BANKS ISL	.0
ELFEX	1972	581-01-09-00082	72-09-14	ETUDE PALYNOLOGIQUE MISSION BANKS	
ELFEX	1973	581-06-09-00123	73-04-26	SEISMIC SURVEY BANKS ISL	385.0
ELFEX	1973	581-06-09-00111	73-04-29	SEISMIC SURVEY BANKS ISL	321.9
ELFEX	1973	581-01-09-00078	73-08-15	SEDIMENT DATA INTERPID H-49	
ELFEX	1973	581-01-09-00079	73-08-15	PALYN INTERPID INLET H-49 PRINCE PATRICK	
ELFEX	1973	581-06-09-00112	73-11-20	SEISMIC SURVEY BANKS ISL	66.0
ELFEX	1973	581-01-09-00121	74-01-15	PALYN RPT ELFEX TEXACO TIRITCHIK M-48	
ELFEX	1973	581-01-09-00128	74-02-15	LAB STUDY ELFEX ANDREASEN L-32	
ELFEX	1974	581-01-09-00137	74-04-15	PALYN ASSEMBLAGES BANKS ISL & ADJ	
ELFEX	1974	581-01-09-00138	74-04-15	STRAT BANKS-EGLINTON-ANDERSON PL	
ELFEX	1974	581-06-09-00130	74-12-17	SEISMIC SURV BANKS ISL	671.1
ELFEX	1974	581-06-09-00136	74-03-02	SEISMIC & GRAV SEA OTTER-BANKS ILS	140.0
ELFEX	1974	581-06-09-00134	75-05-31	INTERP BANKS ISL-ABLE CREEK	176.0
ELFEX	1974	581-08-09-00148	75-12-01	PREPARATION-INTEGRATION GRAVITY BANKS ISLAND	.0
STROM	1973	593-02-09-00001	74-04-31	PETROLEUM POTENTIAL WALKER BAY-VICTORIA ISL	
JOUBIN, J.R.	1963	602-01-09-00001	63-12-01	OIL SHALES OF SOUTHAMPTON ISLAND	
J.C. SPROULE	1974	604-01-09-00016	74-12-31	SURFACE GEOLOGICAL MAP-CANADIAN ARCTIC ISLANDS	
PANARCTIC	1973	624-06-09-01000	73-12-31	GEOPHYS REPORT-BANKS ISLAND	.0
PANARCTIC	1973	624-06-09-01001	74-02-15	SEISMIC LINES-BANKS ISLAND	883.6
PANARCTIC	1973	624-08-09-00140	74-09-20	GRAVITY REPORT-BANKS ISLAND-THOMPSON RIVER	.0
PANARCTIC	1974	624-06-09-01002	74-12-31	SEISMIC LINES-BANKS ISLAND	352.5
PANARCTIC	1974	624-06-09-01003	75-04-07	SEISMIC LINES-BANKS ISLAND	495.7

AREA/REGION: ARCTIC LOWLANDS 09/BASSES TERRES DE L'ARCTIQUE 09

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PANARCTIC	1978	624-06-09-01004	78-04-15	SEISMIC LINES: BANKS ISLAND	490.0
ALMINEX	1968	635-02-09-00008	68-08-31	PHOTOGEOL-STEFANSON ISL-PR ALBERT-VICTORIA	
ALMINEX	1969	635-01-09-00006	69-01-31	GEOLOGY SAMPLES-GLAUKOS RIVER-VICTORIA ISL	
ALMINEX	1969	635-01-09-00007	69-08-05	GEOL N PRINCE ALBERT PEN-VICTORIA ISL	
NORCEN	1972	650-06-09-00003	72-11-23	SEISMIC EVALUATION-JESSE BAY PROJECT	.0
NORCEN	1972	650-06-09-00004	72-12-11	ANALYSIS OF INTERFERENCE OBSERVATIONS-JESSE BAY	
NORCEN	1972	650-06-09-00005	72-12-18	ANALYSIS OF INTERFERENCE OBSERVATIONS-JESSE BAY	
NORCEN	1973	650-02-09-00006	73-03-30	TERRAIN ANALYSIS & AREAL GEOLOGY-SE BANKS ISLAND	
PACIFIC	1973	667-01-09-00046	73-08-18	GEOLOGIC REPORT-BOOTHIA PENINSULA	
SIGNAL	1970	672-07-09-00001	70-09-30	AEROMAGNETIC RECONNAISSANCE-FOXE BASIN	.0
AQUITAINE	1971	673-01-09-00005	71-05-03	PALYNOSTRAT COMPILATION-HUDSON BAY AREA	
AQUITAINE	1971	673-06-09-00043	71-05-13	SEISMIC REPORT-PRINCE ALBERT PEN-VICTORIA ISL	38.6
AQUITAINE	1971	673-01-09-00008	71-07-31	STRAT STUDIES-AQUITAINE SOGEPET-FOXE BASIN	
AQUITAINE	1971	673-01-09-00049	71-07-31	FIELD REPORT-FOXE BASIN	
AQUITAINE	1971	673-01-09-00050	71-07-31	FIELD SECTIONS-FOXE BASIN	
ACUITAINE	1971	673-01-09-00009	71-10-15	FIELD & LAB REPORT: BYLOT ISLAND	
AQUITAINE	1971	673-01-09-00051	71-10-15	FIELD REPORT & PHOTOGEOLOGICAL INTERP	
AQUITAINE	1971	673-01-09-00045	71-12-31	PALYNOSTRATIGRAPHIC STUDY-FOXE BASIN	
AQUITAINE	1971	673-01-09-00047	71-12-31	GOECHEMICAL STUDY-FOXE BASIN	
AQUITAINE	1971	673-01-09-00048	71-12-31	BIOSTRAT & GEOCHEMICAL STUDY-FOXE BASIN	
AQUITAINE	1971	673-01-09-00046	72-01-07	BIOSTRAT & SEDIMENT STUDY ROWLEY M-04	
HUNTEC	1969	678-07-09-00007	69-07-23	AEROMAG SURVEY BANKS ISL W	
CANADA TRUST	1970	682-03-09-00001	70-08-31	GEOL RPT AMUNDSEN GULF	
CANADA TRUST	1972	682-03-09-00010	72-12-31	GEOLOGIC & SEISMOLOGIC INTERP-AMUNDSEN GULF	.0
KENTING	1970	693-09-09-00018	70-08-30	ARCTICQUEST: BANKS PROJECT	
KENTING	1970	693-09-09-00017	70-09-30	ARCTICQUEST ATKINSON PENN.	
KENTING	1970	693-09-09-00027	70-09-30	POLARQUEST: WEST BANKS AREA	
KENTING	1971	693-08-09-00036	71-08-31	GRAV SURV POLARQUEST 1971-BANKS ISL	.0
KENTING	1971	693-09-09-00039	71-08-31	SEISMIC REFL SURV-BARROW ST	856.2
KENTING	1971	693-09-09-00056	71-09-07	MARINE SEISMIC INTERP BELCHER CHANNEL	53.1
KLOVAN J	1969	707-01-09-00005	69-07-30	UPPER DEVONIAN STRATIGRAPHY-BANKS ISLAND	

AREA/REGION: ARCTIC LOWLANDS 09/BASSES TERRES DE L'ARCTIQUE 09

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
TEXAS GULF	1969	709-07-09-00001	69-07-11	AEROMAGNETIC SURVEY-HUDSON BAY ISLANDS	.0
TEXAS GULF	1969	709-07-09-00002	70-01-31	REVIEW INTERPRETATION-AEROMAG-HUDSON BAY ISL	.0
TOLTEC	1970	771-01-09-00002	70-08-20	GEOL OF PERMITS ON PRINCE OF WALES ILS	
TOLTEC	1970	771-08-09-00003	70-08-31	GRAV & MAGNET SURV-PRINCE OF WALES ILS	.0
TROY	1971	772-01-09-00001	71-03-15	SUMMARY OF INVESTIGAT.-GEOLOGICAL-AMUNDSEN GULF	
TROY	1972	772-01-09-00003	72-09-28	GEOLOGICAL INVESTIGATION-PRINCE REGENT ISLAND	
WRIGHT, D.A.	1970	784-01-09-00005	70-06-28	GEOLOGY: BRODEUR PENN.	
SMITH D	1969	790-01-09-00001	69-08-17	GEOLOGY NE VICTORIA ISLAND GROUP	
SMITH D	1969	790-01-09-00002	69-08-17	GEOLOGY VICTORIA ISLAND	
DEMINEX	1970	807-06-09-00001	71-04-09	SEISMIC & GRAVITY BANKS ISLAND	791.8
DEMINEX	1973	807-06-09-00004	73-12-02	SEISMIC & GRAVITY SURVEY BANKS ISLAND	164.2
DEMINEX	1973	807-08-09-00003	73-12-02	GRAVITY SURVEY BANKS ISLAND	.0
RAGAN J	1971	813-07-09-00007	71-10-03	AIRBORNE GEOPHYSICAL SURVEY STEFANSSON ISLAND	.0
RAGAN J	1971	813-07-09-00006	71-10-14	AIRBORNE GEOPHYSICAL SURVEY MINTO INLET	.0
REDWOOD	1971	837-03-09-00001	71-08-01	SUMMARY INVESTIGATIONS AMUNDSEN GULF	
REDWOOD	1971	837-03-09-00002	71-08-01	SUMMARY INVESTIGATIONS PRINCE OF WALES	

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
GULF	1971	002-06-10-00057	71-12-01	FINAL SEISMIC RPT AMUNDSEN RINGNES ISL	32.2
GULF	1971	002-06-10-00058	72-04-25	FINAL REFL SEISMIC SURV ELLEF RINGNES ISL	391.1
GULF	1972	002-06-10-00060	72-06-04	FINAL SEISMIC RPT-EGLINTON ISL	162.5
GULF	1972	002-06-10-00064	72-08-20	FINAL SEISMIC RPT-ELLESMERE ISL	119.1
GULF	1973	002-06-10-00067	73-08-24	FINAL SEISMIC RPT-AMUND RINGNES ISL	25.8
DOME	1961	005-01-10-00009	61-08-31	AREAL GEOL & CONTOUR MAP-ELLEF RINGNES ISL	
DOME	1961	005-01-10-00008	61-09-02	GEOL RECONN RPT WINTER HARBOUR	
DOME	1970	005-08-10-00018	70-08-09	GRAVITY SURVEY 1970-KING CHRISTIAN ISLAND	.0
DOME	1970	005-08-10-00019	70-10-15	GRAVITY SURVEY 1970-MEIGHEN ISLAND	.0
DOME	1972	005-06-10-00024	72-03-31	FINAL REFL SURVEY RPT-KING CHRISTIAN ISL	273.6
DOME	1972	005-08-10-00025	72-04-28	GRAVITY SURVEY-KING CHRISTIAN ISL	.0
DOME	1972	005-08-10-00023	72-05-12	GRAVITY SURVEY-HAIG THOMAS ISLAND	.0
DOME	1972	005-02-10-00029	72-05-15	PHOTOGRAMMETRIC STUDY-MEIGHEN ISLAND	
DOME	1972	005-02-10-00030	72-05-15	PHOTOGRAM STUDY-ELLEF RINGNES ISL	
DOME	1973	005-08-10-00034	73-03-31	GRAV TECTONIC MAP CANADIAN ARCTIC	
DOME	1972	005-06-10-00037	73-05-09	SEISMIC SURVEY-MEIGHEN ISLAND	495.7
DOME	1973	005-06-10-00046	73-06-01	SEISMIC LINES KING CHRISTIAN ISLANDS	410.4
DOME	1973	005-01-10-00036	73-07-05	GEOLOGICAL FIELD WORK-ARCTIC ISLANDS	
DOME	1978	005-06-10-00065	78-10-30	SEISMIC SECTIONS DUNDAS PENN.	
HOME	1972	006-06-10-00009	72-10-21	SEISMIC SURVEY REPORT-ELLEF RINGNES ISLAND	175.4
ESSO	1971	007-06-10-00132	71-10-31	SEISMIC AND GRAVITY HOODOO DOME	222.1
ESSO	1971	007-06-10-00149	71-10-31	SEISMIC AND GRAVITY AXEL HEIBERG ISLAND	507.0
ESSO	1972	007-08-10-00148	72-05-31	GRAVITY PROGRAM GOOD FRIDAY BAY	.0
ESSO	1972	007-01-10-00122	72-07-30	SURF PARTY AXEL HEIBERG & ELLESMERE ISL	
ESSO	1973	007-06-10-00160	73-05-31	SEISMIC & GRAVITY-GOOD FRIDAY-CORNWALL-AMUND RING	.0
ESSO	1973	007-01-10-00145	73-08-16	1973 ARCTIC ISLANDS FIELD PARTY	
ESSO	1974	007-06-10-00166	74-05-25	GEOPHYSICAL SURVEY-CORNWALL ISLAND	103.0
ESSO	1974	007-01-10-00164	74-08-01	MAPPING ELLESMERE & GUNNERS ISLANDS	
TEXACO	1972	017-06-10-00063	72-10-30	SEISMIC SURVEY PRINCE PARTICK ISLAND	677.6
TEXACO	1962	017-01-10-00016	62-08-15	GEOL STUDY-QUEEN ELIZABETH ISL	
TEXACO	1968	017-06-10-00031	68-08-29	SEISMIC & GRAVITY SURVEYS-SABINE BAY	70.8

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
TEXACO	1969	017-02-10-00029	69-06-15	AREAL GEOL & SABINE-MELVILLE	
TEXACO	1969	017-01-10-00035	69-09-10	GEOL RPT-LI FIORD-BUKKEN FIORD-AXEL HEIBERG	
TEXACO	1970	017-05-10-00039	70-02-20	BATHYMETRIC ARCTIC ISLANDS	
TEXACO	1970	017-07-10-00054	70-06-15	AEROMAGNETIC SURVEY MEIGHEN ISL	.0
TEXACO	1970	017-01-10-00046	70-08-29	GEOL RPT W QUEEN ELIZABETH IS.	
TEXACO	1970	017-08-10-00055	70-09-31	GRAVITY SURVEY MELVILLE ISLAND	.0
TEXACO	1971	017-07-10-00052	71-04-01	AEROMAGNETIC SURVEY	.0
TEXACO	1971	017-01-10-00049	71-07-13	GEOL RPT E MELVILLE ISL	
TEXACO	1971	017-01-10-00050	71-08-04	GEOLOGY CENT. QUEEN ELIZABETH IS.	
TEXACO	1972	017-01-10-00058	72-08-28	GEOL RPT STRAND FIORD AXEL HEIBERG	
TEXACO	1972	017-08-10-00063	72-10-30	GRAVITY SURVEY PRINCE PATRICK ISL	.0
TEXACO	1973	017-06-10-00064	73-04-30	SEISMIC SURVEY MELVILLE ISLAND	212.4
CANADIAN SUPERIOR	1962	025-01-10-00007	63-05-09	OROGENIC PALEOZOIC SEDIMENT W CAN ARCTIC	
CANADIAN SUPERIOR	1962	025-02-10-00001	65-05-03	PHOTOGEOL EVAL E ARCTIC ISLANDS	
CANADIAN SUPERIOR	1962	025-02-10-00004	62-05-03	PHOTOGEOL: LOUGHEED - W. CAMERON - RINGNES ISL.	
CANADIAN SUPERIOR	1962	025-02-10-00005	62-05-03	PHOTOGEOL: BORDEN - MACKENZIE KING BROCK ISL.	
CANADIAN SUPERIOR	1971	025-01-10-00022	71-07-29	GEOL RPT STRAND FIORD AXEL HEIBERG ISL	
CANADIAN SUPERIOR	1971	025-03-10-00023	71-07-29	PETROGRAPHIC REPORT 3 SANDSTONE SPECIMENS	
CANADIAN SUPERIOR	1972	025-06-10-00025	72-05-25	SEISMIC SURVEY AXEL HEIBERG ISLAND	61.2
UNION	1961	028-02-10-00039	61-06-30	PHOTOGEOL-BORDEN-MACKENZIE & BROCK ISL	
SHELL	1961	037-01-10-00117	59-08-21	RECONN AIR TRIP QUEEN ELIZABETH ISL	
SHELL	1962	037-01-10-00116	62-09-11	GEOL RECONN ARCTIC ISLANDS	
SHELL	1963	037-02-10-00050	66-07-02	PHOTOGEOL CORNWALLIS-BATHURST-MELVILLE	
HBOG	1972	038-06-10-00039	73-03-06	OPERATIONS REPORT ELLEF RINGNES ISLAND	72.4
HBOG	1974	038-06-10-00043	74-03-04	SEISMIC SURVEY ELLEF RINGNES ISL	64.4
HBOG	1976	038-06-10-00048	76-05-11	OPERATIONS SEISMIC SURVEY DANISH ST	62.0
HBOG	1977	038-06-10-00053	77-04-06	SEIS SURVEY SABINE PENN	57.0
B.P.	1959	039-01-10-00012	59-08-22	RECONNAISSANCE CANADIAN ARCTIC ISL	
B.P.	1964	039-01-10-00013	64-07-30	GEOLOGY CORNWALLIS ISLAND AREA	
B.P.	1965	039-01-10-00014	65-06-27	GEOL EUREKA AREA-ELLES. & AXEL HEIB. ISL	
B.P.	1965	039-01-10-00015	65-07-10	GEOLOGY ELLEF RINGNES ISLAND	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
B.P.	1965	039-01-10-00016	65-08-12	GEOLOGY MELVILLE ISLAND	
B.P.	1970	039-06-10-00024	70-07-04	SEISMIC PRINCE PATRICK-EMERALD-BROCK-VANIER	6,051.3
B.P.	1971	039-07-10-00017	71-06-21	AIRBORNE MAGNET SURV GRAHAM ISL	.0
B.P.	1972	039-06-10-00025	72-05-28	SEISMIC & GRAVITY SURVEY EMERALD ISLE	128.8
CHEVRON	1962	045-01-10-00007	59-08-21	RECONN FLIGHT-QUEEN ELIZABETH ISL	
CHEVRON	1970	045-02-10-00094	70-05-01	PHOTOGEOL PRINCE WALES & SOMERSET ISL	
CHEVRON	1971	045-01-10-00110	71-07-27	GEOLOGY BANKS ISLANDS	
CHEVRON	1972	045-01-10-00107	72-08-18	GEOL ARCTIC ISL-MELVILLE-BATHURST-CORNWALLIS	
CHEVRON	1972	045-06-10-00119	73-03-20	SEISMIC MELVILLE ISLAND	368.6
CHEVRON	1973	045-01-10-00108	73-08-02	GEOL SVERDRUP BASIN CORNWALL-AXEL HEIBERG ISL	
NORCAN	1963	047-02-10-00001	63-04-20	PHOTOGEOL MELVILLE PRINCE PATRICK-BANKS ISL	
ASHLAND	1974	052-06-10-00002	74-06-21	SEISMIC: COLVILLE LAKE	
AIOG	1969	054-07-10-00008	69-07-23	AEROMAGNETIC SURVEY BANKS ISLAND W	.0
AIOG	1969	054-01-10-00006	69-08-15	GEOL BORDEN-MACKENZIE-HECLA-GRIPER ISL	
AIOG	1969	054-01-10-00011	69-08-15	GEOL INVESTIGATIONS ELLEF RINGNES ISL	
AIOG	1970	054-08-10-00030	70-07-31	GRAVITY STUDY SVERDRUP BASIN	.0
AIOG	1970	054-01-10-00022	70-08-01	GEOL SURVEY W QUEEN ELIZABETH	
AIOG	1971	054-10-10-00024	71-04-26	EXP SEISMIC STUDIES W CORNWALL AREA	.0
AIOG	1971	054-06-10-00023	71-05-13	SEISMIC SURVEY W CORNWALL AREA	103.0
AIOG	1971	054-08-10-00033	71-05-17	GRAVITY SURVEY S W CORNWALL AREA	.0
AIOG	1971	054-04-10-00026	71-05-31	ARCTIC GEOCHEM SURVEY W CORNWALL ISL	
AIOG	1971	054-04-10-00027	71-05-31	ARCTIC GEOCHEM SURVEY KRISTOFFER BAY	
AIOG	1971	054-14-10-00018	71-06-03	SUN GROSVENTRE & PATTERSON A001	
AIOG	1971	054-06-10-00019	71-06-04	SEISMIC REPORT KRISTOFFER BAY	107.8
AIOG	1971	054-08-10-00020	71-06-04	GRAVITY REPORT KRISTOFFER BAY	.0
AIOG	1971	054-08-10-00029	71-06-13	GRAVITY SURVEY WEST CAMERON AREA	.0
AIOG	1971	054-02-10-00016	71-06-15	PHOTOGRAMMETRIC BATHURST ISLAND	
AIOG	1972	054-05-10-00036	72-04-22	OPER LINCKENS ISL SOIL SAMPLING PROGRAM	
AIOG	1972	054-05-10-00035	72-05-23	ICE-SOIL HYDROGRAPHIC - LINCKEN SHOAL.	
AIOG	1972	054-08-10-00034	72-06-01	GRAV SURV DANISH ST KING CHRISTIAN AREA	.0
AIOG	1972	054-06-10-00047	72-06-22	SEISMIC SURVEY MACLEAN STRAIT AREA	437.8

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
AIOG	1972	054-06-10-00094	72-07-31	SEISMIC RECORD SECTIONS MACLEAN ST	.0
AIOG	1972	054-09-10-00048	72-09-12	SEISMIC SURVEY EDINBURGH SEA	196.3
AIOG	1973	054-06-10-00080	73-05-18	SEISMIC RPT CAPE BUTLER-GRAYLING & FINDLAY	679.2
AIOG	1973	054-06-10-00068	73-06-03	SEISMIC RPT KING CHRISTIAN ISL AREA 1&2	143.2
AIOG	1973	054-06-10-00067	73-06-07	SEISMOGRAPH E SABINE & ROCHE POINT AREAS	355.7
AIOG	1974	054-06-10-00074	74-04-13	SEISMOGRAPH SURVEY HECLA & GRIPER BAY	172.2
AIOG	1974	054-06-10-00070	74-04-25	SEISMOGRAPH SURVEY ROCHE POINT AREA	127.1
AIOG	1974	054-06-10-00090	74-05-15	SEISMOGRAPH SURVEY WHITEFISH AREA	85.3
AIOG	1974	054-06-10-00095	74-05-27	SEISMIC SURVEY MOORE BAY SANDY PT AREA	275.2
AIOG	1974	054-06-10-00099	74-05-31	SEISMIC SURVEY CLEVERLY PT-EMERALD ISL	48.3
AIOG	1974	054-06-10-00072	74-06-07	SEISMOGRAPH SURVEY HECLA AREA	37.0
AIOG	1975	054-10-10-00096	75-05-08	KRISTOFFER BAY EXPERIMENTAL CDP SEISMIC	8.0
AIOG	1975	054-10-10-00097	75-05-19	CAPE ALLISON DETAIL CDP SEISMIC LINE	22.5
AIOG	1976	054-06-10-00100	76-08-01	SEISMIC LINES-ARCTIC ISL	.0
AIOG	1976	054-09-10-00100	76-08-18	SEISMIC RECORD SECTIONS HAZEN ST	.0
AIOG	1976	054-09-10-00103	76-08-29	MARINE SURV & GRAVITY ARCTIC ISL	302.6
AIOG	1976	054-08-10-00114	76-09-15	MARINE GRAVITY PROFILES	.0
AIOG	1976	054-09-10-00113	76-09-15	SEISMIC RECORDS SECTIONS-ARCTIC ISLANDS	.0
AIOG	1977	054-08-10-00110	77-05-09	GRAVITY SURVEY, OPS REPORT	.0
AIOG	1977	054-06-10-00108	77-09-15	SEISMIC SECTIONS	.0
MOBIL	1964	057-01-10-00043	64-08-24	GEOLOGY OF CORNWALLIS & GRIFFITH ISLANDS	
MOBIL	1965	057-01-10-00044	65-08-29	GEOLOGY MELVILLE & BATHURST ISLAND	
MOBIL	1965	057-08-10-00045	65-08-29	GRAVITY SURVEY MELVILLE & BATHURST ISL	.0
MOBIL	1966	057-08-10-00046	66-08-25	GRAVITY SURVEY AXEL HEIBERG-ELLESMERE ISL	.0
MOBIL	1967	057-01-10-00049	67-08-23	GEOL CORNWALL-AXEL HEIBERG-AMUND RINGNES	
MOBIL	1967	057-08-10-00050	67-08-23	GRAV SURV AXEL HEIBERG-CORNWALL-AMUND RINGNES	.0
MOBIL	1968	057-08-10-00048	68-08-14	GRAV SURV ELLEF RINGNES-KING CHRISTIAN	.0
MOBIL	1968	057-01-10-00073	68-08-23	GEOL GREELY FIORD-ELLESMERE ISL	
MOBIL	1972	057-01-10-00083	72-08-22	GEOLOGY ELLESMERE ISLAND	
MOBIL	1972	057-08-10-00082	72-08-23	GRAV SURVEY E AXEL HEIBERG-W CENTRAL ELLESMERE	.0

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MOBIL	1975	057-01-10-00098	75-08-11	GEOL BYLOT-CORNWALL-CAMERON-AXEL HEIBERG ISL	
MOBIL	1976	057-10-10-00093	76-04-08	EXP SEISMIC PROCESSING FLAT SOUND	32.2
MOBIL	1976	057-04-10-00109	76-05-01	REGIONAL GEOCHEMICAL ANALYSIS-ARCTIC ISLANDS	
MOBIL	1976	057-06-10-00096	76-05-28	SEISMIC SURV CORNWALL-AMUND RINGNES ISL	473.2
MOBIL	1976	057-09-10-00099	76-09-16	MARINE SEISMIC SURV CORNWALL ISL AREA	91.7
MOBIL	1977	057-06-10-00105	77-03-11	SEIS SURVEY AMUND RINGES	104.0
MOBIL	1977	057-09-10-00108	77-09-04	GEOPHYSICAL OPER. REPORT-BELCHER CHANNEL AREA	166.0
CANADIAN HOMESTEAD	1961	059-01-10-00001	60-09-05	GEOL CORNWALLIS ISL-ARCTIC ARCHIPELAGO	
CANADIAN HOMESTEAD	1961	059-01-10-00002	61-08-15	GEOLOGY AMUNDSEN GULF REGION	
AMOCO	1971	060-09-10-00138	71-08-31	MARINE SEISMIC CORNWALL ISL	
CANADA CITIES SER	1971	062-08-10-00029	71-07-02	GRAVITY AXEL HEIBERG & ELLESMERE ISLAND	
CANADA CITIES SER	1971	062-01-10-00028	71-09-15	GEOL AXEL HEIBERG & W. COAST ELLESMERE	
CANADA CITIES SER	1971	062-09-10-00034	71-09-15	SEISMIC HARE-GREELY & SKARRE FIORD	132.0
CANADA CITIES SER	1972	062-06-10-00032	72-09-29	SEISMIC ELLESMERE ISL-NANSEN SOUND	22.5
CANADA CITIES SER	1972	062-01-10-00040	73-08-10	GEOLOGY OFFSHORE-BAFFIN ISLAND	
CANADA CITIES SER	1971	062-01-10-00041	73-08-15	GEOLOGY NORTHERN ELLESMERE ISLAND	
CANADA CITIES SER	1973	062-01-10-00042	73-08-25	EVALUTION SVERDRUP BASIN	
MURPHY	1972	063-01-10-00015	72-09-30	GEOLOGY AXEL HEIBERG & ELLESMERE ISLANDS	
MURPHY	1973	063-06-10-00018	73-04-20	SEISMIC SURVEY STRAND FIORD PROJECT	51.5
MURPHY	1973	063-08-10-00019	73-04-20	GRAVITY STRAND FIORD - AXEL HEIBERG ISL	.0
MURPHY	1974	063-06-10-00023	74-04-30	SEISMIC SURVEY NORFOLK - DEVON ISLAND	90.1
MURPHY	1974	063-08-10-00022	74-04-30	GRAVITY DATA NORFOLK INLET- DEVON ISLAND	.0
GREAT PLAINS	1959	076-01-10-00015	59-09-15	GEOLOGY PARRY ISLAND-ARCTIC ARCHIPELAGO	
GREAT PLAINS	1961	076-01-10-00019	60-09-14	GEOLOGY CORNWALLIS-BATHURST & S MELVILLE	
GREAT PLAINS	1961	076-02-10-00016	60-11-30	PHOTOGEOL MELVILLE-BATHURST-CORNWALLIS	
GREAT PLAINS	1960	076-02-10-00021	60-11-31	PHOTOGEOL ANAL EUREKA SD	
GREAT PLAINS	1961	076-01-10-00022	61-08-31	GEOL W ELLESMERE & AXEL HEIBERG ISL	
GREAT PLAINS	1961	076-02-10-00020	61-12-31	AREAL GEOLOGY EUREKA SOUND AREA	
GREAT PLAINS	1961	076-02-10-00025	61-12-31	PHOTOGEOLOGY WESTERN BATHURST ISLAND	
GREAT PLAINS	1961	076-02-10-00026	61-12-31	PHOTOGEOLOGY SOUTHERN DEVON ISLAND	

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GREAT PLAINS	1972	076-01-10-00027	72-07-10	GEOLOGY NORTHEASTERN ELLESMERE ISLAND	
GREAT PLAINS	1973	076-08-10-00028	73-08-02	GRAV VENDOM FIORD-ELLESMERE ISL	.0
GREAT PLAINS	1973	076-01-10-00029	73-08-16	GEOLOGY NORTHEASTERN ELLESMERE ISLAND	
GREAT PLAINS	1974	076-06-10-00035	74-04-14	SEISMIC SURVEY BATHURST ISLAND	111.0
GREAT PLAINS	1974	076-09-10-00036	74-09-07	MARINE SEISMIC KANE BASIN-OFFSHORE ELLESMERE	558.5
GREAT PLAINS	1974	076-06-10-00034	74-12-12	SEISMIC SURVEY S BATHURST ISLAND	132.0
CANADIAN MONTANA	1963	155-01-10-00001	63-08-27	GEOL CAN ARCTIC ARCHIPELAGO	
CANADIAN MONTANA	1963	155-01-10-00002	63-08-30	GEOL N RANSTOCK AREA-DEVON ISL	
CANADIAN MONTANA	1963	155-01-10-00003	63-08-30	GEOL CANROBERT HILLS-MELVILLE	
PEMBINA	1963	158-01-10-00001	62-08-31	GEOL CAN ARCTIC ARCHIPELAGO YT & NWT	
TRANSALTA	1970	166-01-10-00001	71-01-06	PROGRESS REPORT BRODEUR PENINSULA	
GRIDOIL FREEHOLD	1963	173-01-10-00002	63-07-28	GEOL RECONN RPT-CANADIAN ARCTIC ISL	
BANFF	1963	216-07-10-00012	69-07-23	AEROMAGNETIC SURVEY BANKS ISLAND WEST	.0
PETRO-CANADA	1970	246-01-10-00034	70-08-20	GEOL W ELLESMERE ISL	
PETRO-CANADA	1971	246-01-10-00050	71-07-30	GEOLOGY BANKS ISLAND	
PETRO-CANADA	1971	246-01-10-00045	71-08-15	GEOLOGY DEVON ISLAND	
PETRO-CANADA	1971	246-01-10-00046	71-08-15	GEOLOGY ELLESMERE ISLAND	
PETRO-CANADA	1971	246-01-10-00047	71-08-15	BIOSTRATIGRAPHY ARCTIC ISLAND	
PETRO-CANADA	1971	246-01-10-00048	71-08-15	BIOSTRATIGRAPHY SOUTHERN ELLESMERE ISL	
PETRO-CANADA	1971	246-01-10-00044	71-08-19	STRAT & SEDIMENT SVERDRUP BASIN	
PETRO-CANADA	1971	246-01-10-00049	71-08-07	GEOL CENTRAL ELLESMERE ISL	
PETRO-CANADA	1972	246-01-10-00051	72-08-15	GEOL WESTERN SVERDRUP BASIN	
PETRO-CANADA	1973	246-01-10-00059	73-08-02	GEOLOGY ELLESMERE ISLAND	
PETRO-CANADA	1974	246-01-10-00064	74-07-13	GEOLOGY SOUTHERN ELLESMERE ISLAND	
PETRO-CANADA	1974	246-01-10-00065	74-08-10	GEOLOGY GREELY FIORD-ELLESMERE & AXEL HEIBERG ISL	
PETRO-CANADA	1975	246-06-10-00072	75-03-14	SEISMIC MT. LOCKWOOD AREA-ELLESMERE ISL	75.6
PETRO-CANADA	1975	246-06-10-00070	75-05-13	SEISMIC STANG BAY AREA-AXEL HEIBERG	341.2
PETRO-CANADA	1973	246-06-10-00074	75-05-31	SEISMIC S ELLESMERE ISL	869.1
PETRO-CANADA	1975	246-01-10-00071	75-08-01	GEOL. ELLESMERE-BATHURST-CORNWALL & AXEL HEIBERG	
PETRO-CANADA	1978	246-01-10-00101	78-07-25	GEOLOGICAL FIELD OPERATIONS - MCLURE STRAIT	
PETRO-CANADA	1978	246-06-10-00097	78-12-31	REGIONAL SEISMIC - NORWEGIAN BAY	

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PEEL PLATEAU	1961	271-01-10-00005	60-09-15	GEOLOGY MELVILLE & HELENA ISLANDS NWT & YT	
CANADIAN AMCO	1960	318-01-10-00001	60-09-15	GEOLOGY DEVON-AMUND RINGNES ISL & DUNDAS	
CANADIAN AMCO	1961	318-01-10-00002	61-09-21	GEOL. BANKS-MELVILLE-ELLEF RINGNES-DEVON ISL	
UNITED CANSO	1961	352-02-10-00014	61-12-31	PHOTOGEOLOGY EASTERN ARCTIC ISLANDS	
UNITED CANSO	1961	352-01-10-00015	62-08-15	GEOLOGY BANKS ISLAND	
UNITED CANSO	1970	352-08-10-00040	70-07-31	SEA ICE GRAV SURV SVERDRUP BASIN	.0
ARAB OILS	1961	503-01-10-00001	61-09-21	GEOL W MELVILLE-N BATHURST-ELLEF ISL	
BANKENO	1960	505-01-10-00004	61-08-31	GEOL CORNWALLIS-DEVON-BATHURST ISL	
BANKENO	1960	505-01-10-00001	61-12-30	GEOLOGY CORNWALLIS-BATHURST ISL	
BANKENO	1961	505-01-10-00003	61-09-22	GEOLOGY CANADIAN ARCTIC ARCHIPELAGO	
BANKENO	1962	505-01-10-00005	62-07-11	GEOLOGY N CORWALLIS-BAILLIE HAMILTON	
BANKENO	1962	505-01-10-00002	62-09-11	GEOLOGY ELLESMERE-AXEL HEIBERG-BATHURST-MELVILLE	
NORLANDS	1972	511-02-10-00001	72-04-30	ASPECTS EXPL IN CANADIAN ARCTIC YT & NWT	
NORLANDS	1972	511-01-10-00003	72-08-31	PLANKT FORAMINIFERA CORES LANCASTER SOUND	
NORLANDS	1972	511-01-10-00002	72-09-29	PALYN CORE SAMPLES BOTTOM LANCASTER SOUND	
NORLANDS	1972	511-09-10-00006	73-05-31	INTERP SEISMIC LANCASTER SOUND	.0
NORLANDS	1972	511-09-10-00008	73-06-30	INTERP W LANCASTER-WELLINGTON-BARROW	.0
NORLANDS	1973	511-09-10-00012	74-07-31	INTERPRETATION DATA ADMIRALTY	.0
NORLANDS	1973	511-09-10-00009	74-09-30	MARINE SEISMIC INTERP QUALITY CONTROL	4,270.0
NORLANDS	1974	511-09-10-00032	74-06-01	SEISMIC INTERP. - BELCHER CH-PENNY STR!	328.3
NORLANDS	1975	511-09-10-00017	75-11-01	INTERP WELLINGTON-VISCOUNT-MCCLURE ST	.0
NORLANDS	1977	511-10-10-00028	77-07-31	SEISLOG PROCESSING-LANCASTER SOUND AREA	.0
CENPET	1963	512-08-10-00001	63-04-18	GRAVITY SURVEY - BATHURST ISL.	
PLAINS	1960	518-01-10-00001	60-09-30	GEOLOGY ELLEF RINGNES & MELVILLE ISLAND	
CONSUMERS CO-OP	1963	519-01-10-00001	63-08-27	GEOLOGY CANADIAN ARCTIC ARCHIPELAGO	
COWELL R	1961	521-01-10-00003	70-04-20	GEOLOGY SOUTHERN ELLESMERE ISL	
COWELL R	1961	521-01-10-00004	70-04-20	GEOLOGY VISCOUNT MELVILLE SOUND	
COYNE J	1962	522-01-10-00002	62-09-01	PRELIMINARY REPORT ELLEF RINGNES ISLAND	
COYNE J	1963	522-01-10-00003	62-08-01	SUPPLEMENTARY REPORT ELLESMERE ISLAND	
COYNE J	1963	522-01-10-00001	63-08-27	GEOL PROGRESS RPT BATHURST ISL	

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
DOMINION	1959	526-01-10-00004	59-08-31	GEOLOGY EASTERN BATHURST ISLAND	
DOMINION	1960	526-01-10-00001	60-07-15	GEOL PRINCE OF WALES-RUSSELL ISL	
DOMINION	1960	526-01-10-00005	60-07-15	GEOL ELLEF-AMUND RINGNES & N BATHURST ISL	
DOMINION	1960	526-01-10-00003	60-08-15	GEOLOGY PART ELLEF & AMUND RINGNES ISLAND	
DOMINION	1960	526-01-10-00006	60-08-31	SUPPLEMENT GEOLOGY EASTERN BATHURST ISL	
DOMINION	1961	526-01-10-00008	61-08-31	GEOL SUMMARY CALEDONIAN R ANTICLINE	
BRENNER A	1974	531-07-10-00007	74-02-05	MAG-ELECTROGMAG MAXWELL-BAY	.0
BRENNER A	1974	531-07-10-00009	74-02-05	MAG-ELECTROGMAG ELLESMERE	.0
BRENNER A	1974	531-07-10-00006	74-02-12	MAG-ELECTROGMAG GREELY FIORD	.0
GRAHAM J	1962	534-01-10-00002	62-09-11	GEOL MELVILLE & ELLEF RINGNES ISL	
PHILIPS	1973	536-08-10-00001	73-05-15	GRAV INTERP HAZEN ST	.0
PHILIPS	1973	536-08-10-00002	73-05-31	GRAVITY SURVEY MACLEAN STRAITS	.0
PHILIPS	1974	536-08-10-00003	74-06-06	GRAVITY SURVEY GUSTAV ADOLF SEA	.0
PHILIPS	1976	536-06-10-00004	76-06-08	SEISMIC SURV HAZEN ST-SVERDRUP BASIN	104.6
JACOBSON-MCGILL	1961	546-01-10-00001	61-08-01	PREL GEOL MAP AXEL HEIBERG	
AQUA-TERRA	1972	547-08-10-00001	73-02-28	AEROMAG W MELVILLE-BATHURST ISL	.0
AQUA-TERRA	1972	547-07-10-00003	73-06-15	AEROMAG KING CHRISTIAN-DEVON ISL	.0
RUBEO, J	1970	561-01-10-00001	70-06-03	GEOLOGY SOUTH-CENTRAL ELLESMERE ISL	
PANARCTIC SYNDICATE	1960	574-01-10-00001	60-08-01	PRELIMINARY REPORT ARCTIC ISLANDS YT & NWT	
PANARCTIC SYNDICATE	1961	574-01-10-00002	61-09-21	GEOL RECONN CAN ARCTIC ARCH YT & NWT	
PANARCTIC SYNDICATE	1962	574-01-10-00006	62-09-03	GEOLOGY CANADIAN ARCTIC ARCHIPELAGO YT & NWT	
ELFEX	1963	581-01-10-00002	63-08-15	MISSION RECONNAISSANCE ARCHIPEL ARCTIQUE CANADIEN	
ELFEX	1963	581-01-10-00005	63-08-27	GEOL RECONN AXEL HEIBERG-ELLESMERE ISL	
ELFEX	1963	581-01-10-00001	63-08-31	GEOL SW DEVON ISL	
ELFEX	1964	581-08-10-00011	64-07-18	INTERPRETATION GRAVITY BATHURST ISLAND	.0
ELFEX	1964	581-01-10-00009	64-07-29	RECONNAISSANCE GEOLOGIQUE MACKENZIE-EAGLE PLAIN	
ELFEX	1964	581-01-10-00006	64-08-01	ANAL. MICROLITHOLOGIQUE ILES ELLLESMERE-AXEL ARC	
ELFEX	1964	581-08-10-00007	64-08-11	GRAV BATHRUST ISL-FRANKLIN DIST	.0
ELFEX	1964	581-01-10-00008	64-08-27	GEOL RESULTS BATHURST ISL	
ELFEX	1964	581-01-10-00010	64-09-02	OPERATION ORIENT-ELLESMERE DEVON-CORNWALLIS	
ELFEX	1965	581-03-10-00013	65-05-12	MISSION UTILISATION SISMIQUE ZONE ARCTIQUE	.0

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
ELFEX	1965	581-03-10-00014	65-07-15	COUPES STRATIGRAPHIQUES-ANTE PENNSYLVANNIENNES	
ELFEX	1965	581-03-10-00015	65-07-15	PERMO-PENNSYLVANNIENS COUPES TERRAIN ARCTIQUE CAN	
ELFEX	1965	581-03-10-00016	65-07-15	MICROPALEONTOLOGIQUE DEPOTS POST-HERCYNIENS ARCH	
ELFEX	1965	581-03-10-00025	65-07-15	ETUDE PALYNOPLANCTOLOGIQUE COUPES DE TERRAIN	
ELFEX	1965	581-08-10-00012	65-08-20	ETUDE GRAVIMETRIQUE ANDERSON PLAIN	.0
ELFEX	1965	581-01-10-00023	65-08-31	RAPPORT GEOLOGIQUE ILES ARCTIQUES DE L'OUEST	
ELFEX	1966	581-03-10-00021	66-05-01	DEPOTS POST-HERCYNIENS ARCTIQUE CANADIEN	
ELFEX	1966	581-07-10-00018	66-07-31	INTERPRETATION AEROMAGNETIQUES MACKENZIE-ANDERSON	.0
ELFEX	1966	581-06-10-00019	66-08-11	SISMIQUE MACKENZIE-BORDEN-BROCK-PRINCE PAT	548.8
ELFEX	1966	581-07-10-00020	66-08-15	INTERPRETATION AEROMAGNETIQUE ARCTIQUE-CANADIEN	.0
ELFEX	1966	581-07-10-00024	66-08-15	AEROMAGNETIMETRE ILE DE BANKS	.0
ELFEX	1966	581-03-10-00026	66-11-15	ETUDE MICROSTRATIGRAPHIQUE COUPES DE TERRAIN	
ELFEX	1966	581-03-10-00028	66-11-15	ETUDE PALYNOLOGIQUE TRIAS-JURASSIQUE ARCTIQUE CAN	
ELFEX	1966	581-03-10-00029	66-11-15	RESULTATS ANALYSES MINERAUX ARCTIQUE CANADIEN	
ELFEX	1966	581-03-10-00032	66-11-15	ETUDE PALYNOLOGIQUE ILES BANKS & MELVILLE	
ELFEX	1966	581-03-10-00033	66-11-15	ETUDE PALYNOPLANCTOLOGIQUE ARCTIQUE CANADIEN	
ELFEX	1966	581-03-10-00035	66-11-15	ETUDE MICROGRAPHIQUE COUPES DE TERRAIN BANKS ISL	
ELFEX	1966	581-06-10-00036	66-12-30	REINTERPRET. SEISMIQUE-MACKENZIE-BORDEN-PATRICK	.0
ELFEX	1967	581-01-10-00044	67-08-26	GEOLOGIE OPERATION PRINCE PATRICK	
ELFEX	1966	581-06-10-00037	68-05-01	ETUDE GEOCHIMIQUE MACKENZIE KING-BORDEN-BROCK	
ELFEX	1969	581-06-10-00048	69-07-07	SEISMIC SURVEY MACKENZIE KING-BORDEN ISL	128.8
ELFEX	1970	581-01-10-00101	70-03-29	ETUDE PHOTOGEOLOGIQUE ELLEF RINGNES	
ELFEX	1970	581-02-10-00080	70-04-25	PHOTOGEOLOGIQUE MACKENZIE KING	
ELFEX	1970	581-02-10-00081	70-04-25	NOTE CARTE PHOTOGEOLOGIE ILE BORDEN	
ELFEX	1970	581-06-10-00057	70-04-28	REFL TESTS MACKENZIE KING-CAPE NOREM	83.7
ELFEX	1970	581-06-10-00056	70-06-11	SEISMIC SURV MACKENZIE KING ISL	83.7
ELFEX	1970	581-21-10-00090	70-06-15	RESULTATS PETROGRAPHIE ORGAN. INSOLUBLES	
ELFEX	1970	581-06-10-00143	70-07-27	INTERP SEISMIC MACKENZIE KING BORDEN ISL	
ELFEX	1970	581-06-10-00058	70-09-24	SEISMIC MACKENZIE KING-BORDEN ISL	790.2
ELFEX	1966	581-06-10-00050	70-10-31	FINAL INTERP MACKENZIE KING-BORDEN ISL	.0
ELFEX	1970	581-06-10-00055	70-10-31	FINAL INTERP: MACKENZIE KING - BORDEN ISLAND	.0

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
ELFEX	1970	581-01-10-00087	70-11-01	MICROPALEONTOLOGY HOODOO DOME F-27	
ELFEX	1970	581-01-10-00100	70-11-01	ETUDE MICROSTRATIGRAPHIQUE ELF CAPE NOREM A-80	
ELFEX	1971	581-01-10-00132	71-08-22	GEOL BANKS-PRINCE PATRICK-MACKENZIE KING ISL	
ELFEX	1971	581-04-10-00095	71-09-15	ETUDE GEOCHIMIQUE JAMESON BAY C-31	
ELFEX	1971	581-04-10-00096	71-09-15	LITHOLOGIE-SEDIMENTOLOGIE JAMESON C-31	
ELFEX	1971	581-04-10-00098	71-09-15	ETUDE BIOSTRATIGRAPHIQUE ELF JAMESON BAY C-31	
ELFEX	1971	581-06-10-00068	72-01-30	INTERP RPT PRINCE PATRICK ISL	
ELFEX	1971	581-04-10-00088	72-03-01	SEDIMEN ELF ET AL STROKERSON BAY A-15	
ELFEX	1971	581-04-10-00089	72-03-01	GEOCHEM STUDY ORGANIC MATTER-WELL STORKENSON	
ELFEX	1972	581-06-10-00065	72-11-01	SEISMIC SURV PRINCE PATRICK ISL	667.6
ELFEX	1972	581-01-10-00069	72-11-15	SEDIMENT DATA BP PANARCTIC SATELLITE F-68	
ELFEX	1972	581-01-10-00118	72-11-15	SEDIMENT DATA SATELLITE BAY F-68	
ELFEX	1972	581-08-10-00066	72-11-30	GRAV SURVEY PRINCE PATRICK ISL	.0
ELFEX	1973	581-01-10-00099	72-02-15	OSTRACOD STUDY ELF JAMESON BAY C-31 & SATEL F-68	
ELFEX	1973	581-06-10-00122	73-04-29	SEIS & GRAV INTREPID INLET-PRINCE PATRICK	40.2
ELFEX	1973	581-04-10-00086	73-05-15	GEOCHEM SAMPLES-PRINCE PATRICK ISL	
ELFEX	1973	581-06-10-00072	73-06-02	SEISMIC PRINCE PATRICK ISL	182.0
ELFEX	1973	581-06-10-00144	73-06-15	SEISMIC & GRAV SURV INTREPID INLET	516.6
ELFEX	1974	581-06-10-00139	74-05-26	SEISMIC HAZEN ST	278.4
ELFEX	1974	581-06-10-00125	74-10-28	SEISMIC LANDS END PROSP PRINCE PATRICK ISL	142.0
ELFEX	1975	581-10-10-00149	75-03-05	ELECTROMAG PERMAFROST SEA OTTER-BANKS ISL	.
ELFEX	1972	581-06-10-00142	76-02-01	INTERP RPT PRINCE PATRICK	.0
ELFEX	1973	581-06-10-00145	76-02-01	INTERP PRINCE PATRICK ISL	179.0
NORPET	1970	586-01-10-00001	70-07-28	GEOLOGY SOUTHEASTERN ELLESMERE ISLAND	
NORPET	1970	586-01-10-00002	70-08-29	GEOLOGICAL REPORT - NORTHERN ELLESMERE ISLAND	
ROBERTSON RESEARCH	1973	588-03-10-00006	73-01-30	MICROPALAEONTOLOGY: CAPE NOREM A-80	
ROBERTSON RESEARCH	1973	588-03-10-00007	73-01-30	MICROPALAEONTOLOGY: DRAKE POINT L-67	
ROBERTSON RESEARCH	1973	588-03-10-00008	73-01-30	MICROPALAEONTOLOGY: HOODOO DOME H-37	
ROBERTSON RESEARCH	1974	588-03-10-00001	74-01-01	MICROPALAEONTOLOGY: DART CORE LANCASTER SD	
ROBERTSON RESEARCH	1974	588-03-10-00002	74-01-01	MICROPALAEONTOLOGY: MARIE BAY D-02	
ROBERTSON RESEARCH	1974	588-03-10-00003	74-01-01	MICROPALAEONTOLOGY: JAMESON BAY C-31	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
ROBERTSON RESEARCH	1974	588-03-10-00004	74-01-01	MICROPALAEONTOLOGY: HECLA J-60	
ROBERTSON RESEARCH	1974	588-03-10-00005	74-01-01	MICROPALAEONTOLOGY: WILKINS E-60	
ROBERTSON RESEARCH	1974	588-03-10-00009	74-01-01	MICROPALAEONTOLOGY: DOME H-40	
ROBERTSON RESEARCH	1974	588-03-10-00010	74-01-01	MICROPALAEONTOLOGY: KITSON RIVER C-71	
ROBERTSON RESEARCH	1974	588-03-10-00011	74-01-01	MICROPALAEONTOLOGY: SANDY POINT L-46	
ROBERTSON RESEARCH	1974	588-03-10-00020	74-01-01	MICROPALAEONTOLOGY: SATELLITE F-68	
ROBERTSON RESEARCH	1974	588-03-10-00021	74-01-01	MICROPALAEONTOLOGY: BROCK C-50	
ROBERTSON RESEARCH	1974	588-03-10-00022	74-01-01	MICROPALAEONTOLOGY: ROMULUS C-42	
ROBERTSON RESEARCH	1974	588-03-10-00029	74-01-01	MICROPALAEONTOLOGY: GRAHAM C-52	
ROBERTSON RESEARCH	1974	588-03-10-00058	74-01-01	MICROPALAEONTOLOGY: VICTORIA ISL. F-36	
ROBERTSON RESEARCH	1974	588-03-10-00059	74-01-01	MICROPALAEONTOLOGY: POLLUX G-60	
ROBERTSON RESEARCH	1974	588-03-10-00060	74-01-01	MICROPALAEONTOLOGY: BROCK I-20	
ROBERTSON RESEARCH	1974	588-03-10-00065	74-01-01	MICROPALAEONTOLOGY: DRAKE PT D-68	
ROBERTSON RESEARCH	1974	588-03-10-00067	74-01-01	MICROPALAEONTOLOGY: POLLUX G-60	
ROBERTSON RESEARCH	1974	588-03-10-00076	74-01-01	MICROPALAEONTOLOGY: SKYBATTLE BAY C-15	
ROBERTSON RESEARCH	1974	588-04-10-00038	74-09-15	PALEOTEMPERATURE ELF WILKINS E-60	
ROBERTSON RESEARCH	1974	588-04-10-00039	74-09-15	GEOCHEMISTRY ELF JAMESON BAY C-31	
ROBERTSON RESEARCH	1974	588-04-10-00040	74-09-15	GEOCHEMISTRY ELF UMINMAK H-07	
ROBERTSON RESEARCH	1974	588-04-10-00041	74-09-15	GEOCHEMISTRY PANARCTIC MARIE BAY D-02	
ROBERTSON RESEARCH	1974	588-04-10-00042	74-09-15	GEOCHEMISTRY ELF CAPE NOREM A-80	
ROBERTSON RESEARCH	1974	588-04-10-00043	74-09-15	PALAEOTEMPERATURE PANARCTIC KING CHRISTIAN N-06	
ROBERTSON RESEARCH	1974	588-04-10-00044	74-09-15	PALAEOTEMPERATURE PANARCTIC HOODOO DOME F-27	
ROBERTSON RESEARCH	1974	588-04-10-00045	74-09-15	GEOCHEMISTRY PANARCTIC DRAKE PT-L-67	
ROBERTSON RESEARCH	1974	588-04-10-00046	74-09-15	GEOCHEMISTRY PANARCTIC CORNWALLIS DOME K-40	
ROBERTSON RESEARCH	1974	588-04-10-00047	74-09-15	GEOCHEMISTRY PANARCTIC HOMESTEAD HECLA J-60	
ROBERTSON RESEARCH	1974	588-04-10-00048	74-09-15	PALAEOTEMPERATURE SUN ET AL YOUNG INLET D-21	
ROBERTSON RESEARCH	1974	588-04-10-00049	74-09-15	PALAEOTEMPERATURE PANARCTIC TOWSON POINT F-63	
ROBERTSON RESEARCH	1974	588-04-10-00050	74-09-15	PALAEOTEMPERATURE PANARCTIC DEMINEX GARNIER O-21	
ROBERTSON RESEARCH	1974	588-04-10-00051	74-09-15	PALAEOTEMPERATURE PANARCTIC FOSHEIM N-27	
ROBERTSON RESEARCH	1974	588-04-10-00052	74-09-15	GEOCHEMISTRY SUN ET AL KITSON RIVER C-71	
ROBERTSON RESEARCH	1974	588-04-10-00053	74-09-15	GEOCHEMISTRY SUN ET AL ALLISON RIVER N-12	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
ROBERTSON RESEARCH	1974	588-04-10-00054	74-09-15	PALAEOTEM PANARCTIC AMUND CENTRAL DOME H-40	
ROBERTSON RESEARCH	1974	588-04-10-00055	74-09-15	PALAEOTEMPERATURE BP ET AL PANARCTIC HOTSPUR J-20	
ROBERTSON RESEARCH	1974	588-04-10-00056	74-09-15	PALAEOTEMPERATURE SUN ET AL SKYBATTLE C-15	
RESEARCH	1974	588-04-10-00037	74-09-15	GEOCHEMICAL STUDY PANARCTIC SANDY PT L-46	
RIDGEFIELD	1970	592-01-10-00001	70-08-29	GEOLOGY NORTHERN ELLESMERE ISLAND	
RUBEO T	1970	595-01-10-00004	70-06-03	GEOLOGY SOUTH CENTRAL ELLESMERE ISLAND	
HOLMES D	1974	596-01-10-00002	74-08-15	LITHOFACIES STUDY SVERDRUP BASIN	
SHEEKEY W	1961	598-01-10-00004	61-08-25	GEOLOGY MELVILLE-BANKS-EGLINTON ISLANDS	
SHEEKEY W	1962	598-01-10-00003	62-09-10	GEOL & OVERBURDEN STUDY MARIE BAY-MELVILLE	
SHEEKEY W	1970	598-01-10-00005	70-08-05	GEOLOGY VISCOUNT MELVILLE SOUND	
J.C. SPROULE	1961	604-01-10-00013	61-09-06	RECONNAISSANCE-TRICEETEE ARCTIC PERMITS	
J.C. SPROULE	1961	604-01-10-00001	61-12-31	STRAT SECTION BUCHANAN LAKE-AXEL HEIBERG	
J.C. SPROULE	1962	604-01-10-00014	62-12-31	SELECTED STRAT SECTIONS	
J.C. SPROULE	1963	604-01-10-00007	63-08-26	RECONNAISSANCE OIL SAND-GEOLOGY NW MELVILLE ISL	
J.C. SPROULE	1969	604-01-10-00011	71-12-31	ISOPACH MAPS CANADIAN ARCTIC ISLANDS	
J.C. SPROULE	1974	604-06-10-00015	74-12-15	STRUCTURAL STUDY OF ARCTIC ISLANDS	
J.C. SPROULE	1974	604-01-10-00017	74-09-15	LITHOFACIES MAPS-EXPLORATORY NOTES CANA ISLAND	
J.C. SPROULE	1974	604-01-10-00018	74-09-15	COMMENTARY ISPOPACH MAPS STRAT INTERVALS	
J.C. SPROULE	1974	604-01-10-00020	74-09-15	COMMENTARIES MELVILLE-BATHURST ISLAND AREA	
THOUVENELLE B	1961	611-01-10-00001	61-09-06	GEOLOGY WARRINGTON BAY AREA-MELVILLE ISLAND	
THOUVENELLE B	1962	611-01-10-00002	62-08-31	GEOLOGY WARRINGTON BAY-MELVILLE ISLAND	
THOUVENELLE B	1969	611-01-10-00003	70-08-29	GEOLOGY NORTHERN ELLESMERE ISLAND	
TOLMIE J	1962	613-01-10-00002	62-09-11	SUMMARY GEOLOGICAL WORK-CANADIAN ARCTIC ARCH	
TRANS WESTERN	1967	615-01-10-00001	67-06-30	GEOLOGY OIL PROSPECTS BANKS ISLAND	
TRANS WESTERN	1967	615-01-10-00002	67-08-31	GEOLOGY & PETROLEUM PROSPECTS CANADIAN ARCTIC ISL	
TRICEETEE	1959	616-02-10-00003	59-02-28	PHOTOGEOLOGICAL MAP SOUTHERN CORNWALLIS ISLAND	
TRICEETEE	1960	616-02-10-00004	60-08-01	PHOTOGEOLOGIC EVALUATION BORDEN-MACKENZIE-BROCK	
TRICEETEE	1961	616-01-10-00007	61-08-31	STRATIGRAPHIC SECTIONS - CENTRAL ARCTIC ISLANDS	
TRICEETEE	1962	616-02-10-00005	62-08-01	PHOTOGEOLOGIC EVALUATION E MELVILLE-BYAM ISL	
TRICEETEE	1962	616-01-10-00006	62-08-31	STRATIGRAPHIC SECTIONS - EASTERN ARCTIC ISLANDS	
TRICEETEE	1963	616-01-10-00009	63-01-31	STRUCTURAL CONTOUR MAP BEAR CORNER ANTICLINE	

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TRICEETEE	1963	616-01-10-00011	63-01-31	STRUCTURAL CONTOUR MAP TRAPPERS COVE	
TRICEETEE	1963	616-01-10-00012	63-01-31	STRUCTURAL CONTOUR MAP SHERWOOD ANTICLINE	
TRICEETEE	1963	616-01-10-00010	63-02-27	STRUCTURAL CONTOUR MAP BROCK ANTICLINE	
TRICEETEE	1963	616-01-10-00013	63-02-27	STRUCTURAL CONTOUR MAP VANIER ANTICLINE	
TRICEETEE	1963	616-01-10-00008	63-08-31	STRATIGRAPHIC SECTIONS ARCTIC ISLANDS	
PANARCTIC	1968	624-06-10-12001	68-05-31	SEISMIC LINES MELVILLE ISLAND WEST	228.5
PANARCTIC	1968	624-06-10-12002	68-05-31	SEISMIC LINES EMERALD ISLE	51.5
PANARCTIC	1968	624-06-10-12003	68-06-30	SEISMIC LINES-MELVILLE ISLAND	143.2
PANARCTIC	1968	624-01-10-00001	68-08-31	GEOLOGY NE BATHURST ISL & NW DEVON ISL	
PANARCTIC	1968	624-06-10-12004	68-09-13	SEISMIC LINES SABINE PENINSULA	640.5
PANARCTIC	1969	624-06-10-21001	69-04-14	SEISMIC LINES LOUGHEED-EDMUND WALKER ISL	225.3
PANARCTIC	1969	624-06-10-17001	69-04-15	SEISMIC LINES-KING CHRISTIAN ISLAND	41.8
PANARCTIC	1969	624-06-10-24001	69-04-15	SEISMIC LINES AMUND RINGNES ISLAND	104.6
PANARCTIC	1969	624-06-10-25000	69-04-15	FINAL GEOPHYS REPORT-CORNWALL IS	.0
PANARCTIC	1969	624-06-10-25001	69-04-15	SEISMIC LINES-CORNWALL ISLAND	111.0
PANARCTIC	1969	624-06-10-12005	69-06-30	SEISMIC LINES SABINE PENINSULA	25.8
PANARCTIC	1969	624-06-10-22001	69-08-15	SEISMIC LINES ELLEF RINGNES ISLAND	585.8
PANARCTIC	1969	624-01-10-00015	69-09-01	STRAT STUDY ELLESMERE & E AXEL HEIBERG ISL	
PANARCTIC	1969	624-06-10-31001	69-09-30	SEISMIC LINES ELLESMERE ISL-FOSHEIN PEN	112.7
PANARCTIC	1970	624-06-10-12007	70-06-15	SEISMIC LINES - CENTRAL SABINE PENINSULA	127.1
PANARCTIC	1970	624-01-10-00013	70-07-23	GEOLOGICAL REPORT CORNWALL ISLAND	
PANARCTIC	1970	624-01-10-00028	70-08-04	STRATIGRAPHIC STUDY SHERARD BAY	
PANARCTIC	1970	624-06-10-31002	70-08-04	SEISMIC LINES-ROMULUS-ELLESMERE ISL	72.4
PANARCTIC	1970	624-01-10-00014	70-08-08	STRAT-STRUCT STUDY AXEL HEIBERG ISL	
PANARCTIC	1970	624-06-10-12006	70-10-10	SEISMIC LINES S SABINE PEN-MELVILLE ISL	207.6
PANARCTIC	1971	624-06-10-12009	71-04-07	SEISMIC LINES SABINE PENINSULA MELVILLE ISL	167.4
PANARCTIC	1971	624-06-10-18000	71-04-17	FINAL GEOPHYS REPORT-BROCK IS	.0
PANARCTIC	1971	624-06-10-18001	71-04-17	SEISMIC LINES BROCK ISLAND	202.8
PANARCTIC	1971	624-06-10-17002	71-04-27	SEISMIC LINE KING CHRISTIAN ISLAND	9.7
PANARCTIC	1971	624-06-10-06001	71-05-17	SEISMIC LINES EGLINTON ISLAND	156.1
PANARCTIC	1971	624-06-10-22002	71-06-13	SEISMIC LINES MALLOCH DOME ELLEF RINGNES ISL	342.8

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PANARCTIC	1971	624-01-10-00024	71-07-02	STRATIGRAPHIC SUMMARY WHITSUNDAY BAY DIAPER	
PANARCTIC	1971	624-01-10-00027	71-07-03	STRAT TRAVERSE NE RAANES PEN-ELLESMERE ISL	
PANARCTIC	1971	624-01-10-00023	71-07-11	STRATIGRAPHIC STUDY FOSHEIM & BJORNE PEN	
PANARCTIC	1971	624-01-10-00025	71-08-01	JURASSIC STRATIGRAPHY REINDEER PENINSULA	
PANARCTIC	1971	624-01-10-00026	71-08-09	OUTCROP EXAM STOKES RANGE N BATHURST ISL	
PANARCTIC	1971	624-01-10-00022	71-08-22	STRAT STUDY BATHURST & MELVILLE ISL	
PANARCTIC	1971	624-06-10-10000	71-08-31	GEOPHYS REPORT-PRINCE PATRICK ISLAND	.0
PANARCTIC	1971	624-06-10-10001	71-08-31	SEIS LINES INTREPID INLET & SATEL BAY AREAS	595.5
PANARCTIC	1971	624-06-10-22003	71-09-29	SEISMIC LINES NOICE PENINSULA ELLEF RINGNES IS	275.2
PANARCTIC	1971	624-06-10-22004	71-11-27	SEISMIC LINES ISACHSEN PEN-ELLEF RINGNES ISL	257.5
PANARCTIC	1971	624-06-10-12008	71-11-30	SEISMIC LINES DUNDAS PENINSULA-MELVILLE ISL	66.0
PANARCTIC	1969	624-06-10-17000	72-04-07	SHOT POINT MAPS-KING CHRISTIAN ISLAND	.0
PANARCTIC	1972	624-06-10-17003	72-04-07	SEISMIC LINES KING CHRISTIAN ISLAND	45.1
PANARCTIC	1969	624-08-10-00016	72-04-10	GRAVITY-CORNWALL-AMUND RINGNES-CORNW-K CHRISTIAN	.0
PANARCTIC	1972	624-06-10-12010	72-04-12	SEISMIC LINES DUNDAS PENINSULA-MELVILLE IS	231.8
PANARCTIC	1972	624-06-10-22005	72-04-17	SEIS LINES-KRISTOFFER BAY-MALLOCH-ELLEF RINGNE	225.3
PANARCTIC	1972	624-06-10-22008	72-04-25	SEISMIC LINES NOICE PENINSULA ELLEF RINGNES IS	225.3
PANARCTIC	1972	624-06-10-31004	72-04-30	SEISMIC LINES-CAPE LOCKWOOD-ELLESMERE IS	354.1
PANARCTIC	1972	624-06-10-12012	72-05-10	SEISMIC LINES-HECLA-MELVILLE ISLAND	114.3
PANARCTIC	1972	624-06-10-30000	72-05-15	SHOT POINT MAPS-AXEL HEIBERG ISLAND	.0
PANARCTIC	1972	624-06-10-30001	72-05-15	SEISMIC LINES MAY POINT AXEL HEIBERG IS	72.4
PANARCTIC	1969	624-06-10-24000	72-05-20	SHOT POINT MAPS-AMUND RINGNES ISLAND	.0
PANARCTIC	1972	624-06-10-24002	72-05-20	SEISMIC LINES AMUND RINGNES ISLAND	72.4
PANARCTIC	1972	624-06-10-22007	72-05-27	SEISMIC LINES ISACHSEN DOME ELLEF RINGNES	111.0
PANARCTIC	1972	624-06-10-12013	72-06-11	SEISMIC LINES-S SABINE PEN-MELVILLE ISL	206.0
PANARCTIC	1972	624-06-10-31005	72-08-31	SEISMIC LINES AXEL HEIBERG ISLAND	27.4
PANARCTIC	1972	624-06-10-22006	72-10-30	SEISMIC LINES ISACHSEN PEN ELLEF RINGNES IS	865.9
PANARCTIC	1972	624-06-10-31003	72-10-31	SEISMIC LINES-FOSHEIM PROSP-ELLESMERE ISL	727.4
PANARCTIC	1972	624-06-10-12011	72-11-26	SEISMIC LINES APPOLLO-ZEUS-RAGLAN-MELVILLE	260.7
PANARCTIC	1969	624-06-10-31000	73-03-01	SHOT POINT MAPS-ELLESMERE ISLAND	.0
PANARCTIC	1973	624-06-10-31006	73-03-01	SEISMIC LINES-ELLESMERE ISLAND	318.7

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PANARCTIC	1976	624-04-10-00198	76-05-30	HYDROCARB SOURCE FACIES ANAL-BAR HARBOUR E-76	
PANARCTIC	1976	624-06-10-12023	76-05-31	SEISMIC LINES-MELVILLE ISLAND	146.5
PANARCTIC	1976	624-06-10-22011	76-05-31	SEISMIC LINES-ELLEF RINGNES ISLAND	43.5
PANARCTIC	1976	624-06-10-22012	76-05-31	SEISMIC LINES-ELLEF RINGNES ISLAND	149.7
PANARCTIC	1976	624-04-10-00208	76-06-01	GEOCHEM CHARAC OIL-STAINED LIM EAST CORNWALL IS	
PANARCTIC	1976	624-04-10-00210	76-06-01	GEOCHEM CHARAC DST OIL & GAS -W HECLA P-62	
PANARCTIC	1976	624-04-10-00211	76-06-01	HYDROCARBON FACIES ANALYSIS-SABINE BAY A-07	
PANARCTIC	1976	624-03-10-00191	76-06-30	PALEONVIRONMENTS OF HECLA P-62 WELL 3390-3516 FT	
PANARCTIC	1976	624-03-10-00192	76-06-30	MICROPALEONTOLOGY AND PALYNOLOGY-FLEETWOOD M-21	
PANARCTIC	1976	624-02-10-00176	76-07-02	LANDSAT REMOTE SENSING EVALUATION DUNDAS AREA	
PANARCTIC	1976	624-04-10-00209	76-08-01	VIS KEROGEN & VITRIN BY MARTIN-BATHST-MELVIL IS	
PANARCTIC	1976	624-04-10-00204	76-09-01	GEOCHEMICAL CHARACTERIZATION-JACKSON BAY G-16-16A	
PANARCTIC	1976	624-04-10-00207	76-09-01	VISUAL KEROGEN ASSESSMENT-W MELVILLE-EGLINTON IS	
PANARCTIC	1976	624-04-10-00203	76-10-01	VISUAL KEROGEN ASSESSMENT-TEXEX KING PT W B-53	
PANARCTIC	1976	624-04-10-00206	76-10-01	GEOCHEM CHARACTER-JACKSON BAY G-16 7 HECLA M-25	
PANARCTIC	1977	624-06-10-12020	77-04-20	SEIS SURVEY MELVILLE IS	324.0
PANARCTIC	1977	624-06-10-12021	77-05-20	SEIS SURVEY MELVILLE IS	.0
PANARCTIC	1977	624-06-10-12022	77-04-20	SEIS SURVEY MELVILLE IS	.0
PANARCTIC	1977	624-06-10-13004	77-04-15	SEIS SURVEY BATHURST IS	.0
PANARCTIC	1977	624-06-10-16004	77-11-15	SEISMIC LINES - CAMERON ISLAND	521.4
PANARCTIC	1977	624-09-10-21003	77-09-30	SEISMIC LINES-MARINE AREAS-ARCTIC ISLANDS	1,010.7
PANARCTIC	1978	624-06-10-12024	78-05-23	SEISMIC LINES MELVILLE ISLAND	18.9
PANARCTIC	1978	624-06-10-21003	78-08-31	SEISMIC LINES LOUGHEED ISLAND	
ATLAS	1976	638-07-10-00002	76-10-01	MAG-ELECTOMAG SURVEY-DEVON ISLAND	.0
NORCEN	1965	650-07-10-00002	65-12-31	AEROMAG INTERPRETATION-MELVILLE ISLAND	.0
PACIFIC	1967	667-03-10-00001	67-07-10	RECONN FLIGHT COVERING ARCTIC 15 PERMITS	.0
PACIFIC	1970	667-06-10-00025	70-06-06	REFRACTION SURVEY-NORWEGIAN BAY & GRAHAM IS	27.4
PACIFIC	1970	667-06-10-00028	70-06-06	SEISMIC EXPERIMENT-NORWEGIAN BAY	27.4
PACIFIC	1970	667-01-10-00020	70-08-20	GEOLOGY OF ELLESMERE & AXEL HEIBERG ISLANDS	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PANARCTIC	1974	624-06-10-20001	74-05-24	SEISMIC LINES-HAZEN ST-MACKENZIE KING ISL	328.3
PANARCTIC	1969	624-06-10-21000	74-05-29	SHOT POINT MAPS-LOUGHEED ISLAND	.0
PANARCTIC	1974	624-06-10-21002	74-05-29	SEISMIC LINES-PAT BAY-LOUGHEED ISLAND	473.2
PANARCTIC	1971	624-06-10-06000	74-06-07	SHOT POINT MAPS-EGLINTON ISLAND	.0
PANARCTIC	1974	624-06-10-06002	74-06-07	SEISMIC LINES-EGLINTON ISLAND	115.9
PANARCTIC	1974	624-06-10-16002	74-12-27	SEISMIC LINES-BYAM MARTIN CH-CAMERON ISL	618.0
PANARCTIC	1974	624-06-10-13002	74-12-31	SEISMIC LINES-BATHURST ISLAND	972.1
PANARCTIC	1974	624-06-10-16000	75-01-31	SHOP POINT MAPS-CAMERON ISLAND	.0
PANARCTIC	1974	624-06-10-16001	75-01-31	SEISMIC LINES-CAMERON ISLAND	735.5
PANARCTIC	1975	624-06-10-03000	75-04-07	SEISMIC LINES-PRINCE OF WALES ISLAND	.0
PANARCTIC	1975	624-06-10-03001	75-04-07	SEISMIC LINES-PRINCE OF WALES ISLAND	529.5
PANARCTIC	1975	624-06-10-13003	75-04-15	SEISMIC LINES-BATHURST-HELENA & VANIER ISL	328.3
PANARCTIC	1975	624-06-10-12018	75-05-15	SEISMIC LINES-MELVILLE ISLAND	67.6
PANARCTIC	1975	624-03-10-00218	75-05-30	FACIES & DIAGENESIS OF CARBONATE CORES CAMERON IS	.0
PANARCTIC	1975	624-06-10-12017	75-06-04	SEISMIC LINES-MELVILLE ISLAND	231.8
PANARCTIC	1975	624-06-10-12016	75-06-07	SEISMIC LINES-MELVILLE ISLAND	1,200.6
PANARCTIC	1975	624-06-10-12019	75-06-25	SEISMIC LINES-MELVILLE ISLAND	115.9
PANARCTIC	1968	624-06-10-12000	75-12-31	SHOT POINT MAPS-MELVILLE ISLAND	.0
PANARCTIC	1975	624-06-10-16003	75-12-31	SEISMIC LINES-CAMERON ISLAND	151.3
PANARCTIC	1975	624-06-10-16005	75-12-31	SEISMIC RECORD SECTIONS CAMERON ISLAND	.0
PANARCTIC	1976	624-03-10-00195	76-02-28	PALYNOL TAXA LIST-MOCKLIN PT D-23-ELLEF RINGNES	
PANARCTIC	1976	624-04-10-00199	76-03-01	VITRINITE REFLECT ANALYSIS-POLLUX G60-EMERALD K33	
PANARCTIC	1976	624-04-10-00200	76-03-01	ORGANIC GEOCHEMICAL ANALYSES-BENTHORN F-72A	
PANARCTIC	1976	624-04-10-00202	76-03-01	HYDROCARBON ANALYSIS-DOMINEX BATHURST CAL R J-34	
PANARCTIC	1976	624-04-10-00204	76-03-01	HYDROCARBON ANALYSES-SUN KR PAN YOUNG INLET M-40	
PANARCTIC	1976	624-03-10-00196	76-03-31	PALAEONTOLOGICAL EXAMINATIONS-POLLUX G-60	
PANARCTIC	1976	624-04-10-00201	76-04-01	VISU KEROGEN & VITRINITE REFL-BATHURST & MELVILLE	
PANARCTIC	1976	624-03-10-00193	76-04-30	MICROPALAEONTOLOGY & PALYNOLOGY-CORNWALL ISLAND	
PANARCTIC	1976	624-03-10-00194	76-04-30	MICROPALAEONTOLOGY & PALYNOLOGY-BENTHORN N-72	
PANARCTIC	1976	624-04-10-00197	76-04-30	HYDROCARB SOURCE FACIES ANAL-SABINE H-49	
PANARCTIC	1976	624-06-10-00263	76-05-17	GEOPHYSICAL REPORT BATHURST ISLAND	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PANARCTIC	1973	624-14-10-00109	73-03-27	PAN KRISTOFFER STRAT H017	
PANARCTIC	1973	624-14-10-00110	73-04-07	PAN KRISTOFFER STRAT C056	
PANARCTIC	1973	624-14-10-00114	73-04-16	PAN KRISTOFFER STRAT L045	
PANARCTIC	1973	624-14-10-00115	73-04-22	PAN KRISTOFFER STRAT I047	
PANARCTIC	1973	624-06-10-13000	73-04-30	SHOT POINT MAPS-BATHURST ISLAND	.0
PANARCTIC	1973	624-06-10-13001	73-04-30	SEISMIC LINES-BATHURST ISLAND	336.4
PANARCTIC	1973	624-14-10-00108	73-04-30	PAN KRISTOFFER STRAT C036	
PANARCTIC	1973	624-14-10-00113	73-05-07	PAN KRISTOFFER STRAT E027	
PANARCTIC	1973	624-14-10-00119	73-05-14	PAN ELVE POINT STRAT A041	
PANARCTIC	1973	624-14-10-00120	73-05-25	PAN ELVE POINT STRAT K050	
PANARCTIC	1973	624-14-10-00111	73-05-30	PAN JACKSON BAY STRAT B016	
PANARCTIC	1973	624-14-10-00112	73-06-06	PAN JACKSON STRAT P044	
PANARCTIC	1973	624-14-10-00129	73-10-07	PAN DOME BAY STRAT P058	
PANARCTIC	1973	624-14-10-00117	73-10-22	PAN NOICE STRAT H041	
PANARCTIC	1973	624-14-10-00116	73-10-31	PAN NOICE W STRAT B024	
PANARCTIC	1973	624-14-10-00118	73-11-07	PAN NOICE W STRAT N033	
PANARCTIC	1973	624-06-10-12014	73-11-09	SEISMIC LINES-MELVILLE ISLAND	1,448.5
PANARCTIC	1969	624-06-10-22000	73-11-14	FINAL GEOPHYS REPORT-ELLEF RINGNES IS	.0
PANARCTIC	1972	624-06-10-22009	73-11-14	SEISMIC LINES-ELLEF RINGNES ISLAND	632.5
PANARCTIC	1973	624-06-10-27001	73-12-31	SEISMIC LINES-ELLESMERE ISLAND	730.7
PANARCTIC	1973	624-06-10-27000	74-03-15	FINAL GEOPHYS REPORT-ELLESMERE, AXEL HEIBERG	.0
PANARCTIC	1974	624-06-10-27002	74-03-15	SEISMIC LINES-BAUMANN-FIORD-ELLESMERE ISLAND	86.9
PANARCTIC	1974	624-06-10-06000	74-05-29	GEOPHYS REPORT, EGLINGTON IS	.0
PANARCTIC	1974	624-06-10-11000	74-04-22	GEOPHYS REPORT, EMERALD IS	.0
PANARCTIC	1974	624-06-10-07000	74-04-12	SHOT POINT MAPS-BYAM MARTIN ISLAND	.0
PANARCTIC	1974	624-06-10-07001	74-04-12	SEISMIC LINES-BYAM MARTIN ISLAND	175.4
PANARCTIC	1974	624-06-10-11000	74-05-11	SHOT POINT MAPS-EMERALD ISLE	.0
PANARCTIC	1974	624-06-10-11001	74-05-11	SEISMIC LINES-EMERALD ISLE	347.6
PANARCTIC	1974	624-06-10-12015	74-05-15	SEISMIC LINES-MELVILLE ISLAND	212.4
PANARCTIC	1974	624-14-10-00130	74-05-23	PAN AREA POINT STRAT K032	
PANARCTIC	1974	624-06-10-20000	74-05-24	SHOT POINT MAPS-MACKENZIE KING ISLAND	

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OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
PACIFIC	1970	667-01-10-00032	70-08-20	PALYN OF AXEL HEIBERG & ELLESMERE ISL	
PACIFIC	1971	667-01-10-00041	71-08-15	GEOLOGICAL REPORT - AXEL HEIBERG ISLAND	
PACIFIC	1972	667-06-10-00034	72-10-31	GEOPHYS REPORT - COMPOSITE MAPS - NORWEGIAN BAY	.0
PACIFIC	1973	667-01-10-00053	73-08-02	GEOL REPORT - GREELY FIORD - ELLESMERE ISL	
PACIFIC	1973	667-01-10-00055	73-08-02	GEOLOGICAL WORK - ELLESMERE ISLAND	
PACIFIC	1974	667-06-10-00035	74-05-26	REFLECTION SEIS & GRAVITY - NORWEGIAN BAY	304.2
PACIFIC	1975	667-06-10-00052	75-06-01	REFL SEISMIC-CAMERON-HELENA-CORNWALL ISL	539.1
PACIFIC	1976	667-06-10-00056	76-05-18	REFLECTION SEIS-CAMERON-HELENA ISLANDS	624.4
PACIFIC	1977	667-06-10-00059	77-03-16	SEIS SURVEY EAST CORNWALL	.0
PACIFIC	1977	667-06-10-00062	77-04-19	SEIS SURVEY CAMERON, HELENA	99.0
AQUITAINE	1971	673-09-10-00058	71-08-31	AIR GUN SURVEY-WEST PARRY CHANNEL	869.1
AQUITAINE	1972	673-01-10-00063	72-08-15	GEOLOGY OF THE CANADIAN ARCTIC ARCHIPELAGO	
AQUITAINE	1977	673-09-10-00081	77-05-29	SEIS SURVEY CAPE NOREM	.0
HUNTEC	1963	678-07-10-00001	64-08-31	AEROMAG INTERP SVERDRUP BASIN	.0
HUNTEC	1963	678-07-10-00002	64-08-31	AEROMAG INTERP SVERDRUP BASIN	.0
HUNTEC	1963	678-07-10-00003	64-08-31	AEROMAG INTERP SVERDRUP BASIN	.0
HUNTEC	1963	678-07-10-00004	64-08-31	AEROMAG INTERP SVERDRUP BASIN	.0
HUNTEC	1963	678-07-10-00005	64-08-31	AEROMAG INTERP SVERDRUP BASIN	.0
CANADA TRUST	1967	682-03-10-00009	67-12-31	GEOLOGY & PETROLEUM PROSPECTS-ARCTIC ISLANDS	
KENTING	1970	693-07-10-00022	69-09-08	AEROMAG RECONN-NORTHWEST PASSAGE	.0
KENTING	1970	693-05-10-00011	70-04-30	GEOBATH INTERP NORTHWEST PASSAGE	.0
KENTING	1970	693-05-10-00012	70-04-30	GEOBATH INTERP SVERDRUP BASIN	.0
KENTING	1970	693-06-10-00025	70-06-15	OPER POLARQUEST-BELCHER CHANNEL	.0
KENTING	1970	693-07-10-00023	70-08-15	AEROMAG RECONN JONES SOUND	.0
KENTING	1970	693-08-10-00013	70-08-15	INTERP GRAV SURV-HAZEN ST	.0
KENTING	1970	693-09-10-00014	70-09-30	MARINE SEISMIC PROGRAM-PARRY CHANNEL AREA	4,828.2
KENTING	1970	693-09-10-00024	70-09-30	SEISMO-GEOLOGICAL MAPS/CROSS-SECTIONS-PARRY CH	.0
KENTING	1970	693-01-10-00020	70-11-15	GEOL RPT BARROW ST-ARCTIC ISL	
KENTING	1970	693-01-10-00021	70-11-15	AREAL GEOL & CONTOUR MAPPING-LOUGHEED PROJ	
KENTING	1970	693-01-10-00073	70-11-15	GEOLOGIC REPORT-VISCOUNT MELVILLE SOUND AREA	
KENTING	1971	693-09-10-00053	71-08-23	MARINE SEISMIC EVAL SMITH SOUND-COBURG	695.3

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
KENTING	1971	693-09-10-00049	71-08-27	MARINE SEISMIC LINES & MAPS-HELL GATE	468.3
KENTING	1971	693-09-10-00051	71-08-27	HELL GATE RPT-OPER POLARQUEST	
KENTING	1971	693-07-10-00031	71-08-31	AEROMAG SURV AXEL HEIBERG W ELLESMERE	.0
KENTING	1971	693-09-10-00042	71-09-01	MARINE SEISMIC EVAL-FOSHEIM	402.4
KENTING	1971	693-09-10-00069	71-09-01	MARINE SEISMIC EVAL-GREELY-NANSEN	328.3
KENTING	1971	693-09-10-00046	71-09-04	MARINE SEISMIC MAPS & LINES-RAANES	284.9
KENTING	1971	693-09-10-00041	71-09-05	MARINE SEISMIC EVAL BJORNE-NORWEGIAN BAY	321.9
KENTING	1971	693-08-10-00034	71-09-08	GRAV SURV AXEL HEIBERG-ELLESMERE ISL	.0
KENTING	1971	693-09-10-00040	71-09-08	MARINE SEISMIC EVAL GRINNELL-NORWEGIAN BAY	418.4
KENTING	1971	693-09-10-00045	71-09-13	MARINE SEISMIC MAPS & LINES-WELLINGTON	318.7
KENTING	1971	693-09-10-00047	71-09-13	MARINE SEISMIC MAPS & LINES-CORNWALLIS	482.8
KENTING	1971	693-09-10-00052	71-09-17	MARINE SEISMIC MAPS & LINES-BARROW	169.0
KENTING	1971	693-09-10-00048	71-09-18	MARINE SEISMIC LINES & MAPS - PRINCE REGENT	325.1
KENTING	1971	693-09-10-00057	71-09-20	MARINE SEISMIC LINES & MAPS - PRINCE LEOPOLD	334.8
KENTING	1971	693-09-10-00037	71-09-24	MARINE SEISMIC INTERP LANCASTER SOUND	1,641.6
KENTING	1971	693-09-10-00050	71-09-24	MARINE SEISMIC LINES & MAPS-WARRENDER	507.0
KENTING	1971	693-09-10-00059	71-09-24	SEISMIC SURV LANCASTER SOUND - EXTENSION RPT	.0
KENTING	1971	693-09-10-00032	71-09-25	SEISMIC INTERP MELVILLE SOUND	4,023.5
KENTING	1971	693-09-10-00033	71-09-30	MARINE SEISMIC EVAL ARCTIC BAY	338.0
KENTING	1971	693-09-10-00055	71-10-31	POLARQUEST 71 - OPER & PROCESSING	.0
KENTING	1971	693-01-10-00066	71-12-31	AREAL GEOL & STRUCT CONTOUR MAP-EGLINTON	
KENTING	1971	693-01-10-00067	72-03-15	AREAL GEOL & STRUCT CONTOUR MAP-ISACHSEN	
KENTING	1972	693-09-10-00054	72-08-27	SEISMIC LANCASTER SE - EXTENSION	132.0
KENTING	1972	693-09-10-00068	72-08-31	MARINE SEISMIC EVAL-BYAM MARTIN	85.3
KENTING	1972	693-09-10-00070	72-08-31	MARINE SEISMIC EVAL CORNWALLIS	669.5
KENTING	1972	693-09-10-00058	72-09-24	SEISMIC LANCASTER SD - EXTENSION	91.7
KENTING	1974	693-05-10-00072	74-08-31	CRUISE RPT EASTERN ARCTIC ISL	
GLOBAL ARCTIC	1968	701-03-10-00008	68-07-12	GEOLOGICAL REPORT-ARCTIC ISLANDS	
GEOPHOTO	1964	705-02-10-00012	63-11-01	PHOTOGEOLOGIC EVALUATION-BORDEN-BROCK IS	
GEOPHOTO	1964	705-02-10-00013	63-11-01	PHOTOGEOLOGIC EVALUATION-WESTERN ARCTIC ISLANDS	
GEOPHOTO	1964	705-02-10-00001	64-07-01	PHOTOGEOLOGIC EVALUATION-EASTERN ARCTIC ISLANDS	

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
GEOPHOTO	1964	705-02-10-00003	64-07-01	PHOTOGEOLOGIC EVALUATION-CENTRAL ARCTIC ISLANDS	
GEOPHOTO	1964	705-02-10-00004	64-07-01	PHOTOGEOLOGIC EVALUATION-DISTRICT OF FRANKLIN	
GEOPHOTO	1972	705-02-10-00010	72-08-01	MORPHOSTRUCTURAL ANALYSIS-ARCTIC ISLANDS	
KLOVAN J	1972	707-01-10-00003	72-09-01	MEGASPORE PALYNOLOGY-MELVILLE ISLAND	
KLOVAN J	1973	707-01-10-00004	73-08-13	STRATIGRAPHY & SEDIMENTOLOGY-MELVILLE ISL GROUP	
KLOVAN J	1974	707-01-10-00001	74-07-26	MIDDLE-UPPER DEVONIAN CLASTIC WEDGE-FRANKLIN SYN	
KLOVAN J	1974	707-01-10-00007	74-08-13	STRATIGRAPHY & SEDIMENTOLOGY-ELLESMERE ISLAND	
KLOVAN J	1972	707-01-10-00002	74-08-24	STRATIGRAPHY & SEDIMENTOLOGY-MELVILLE ISLAND	
ALLIED ROXANA	1970	729-01-10-00001	70-07-28	GEOLOGICAL REPORT-ELLESMERE-DEVON-BAFFIN IS	
GOLDEN WEST	1970	734-01-10-00001	70-07-28	GEOLOGICAL REPORT-ELLESMERE-DEVON-BAFFIN IS	
PHOENIX RESOURCES	1970	742-01-10-00002	69-07-02	GEOLOGICAL REPORT-SABINE PENINSULA-MELVILLE IS	
PHOENIX RESOURCES	1969	742-06-10-00010	69-07-23	SEISMIC SURVEY - SABINE PENINSULA	7.9
PHOENIX RESOURCES	1969	742-08-10-00001	69-10-24	SVERDRUP BASIN GRAVITY SURVEY-ARCTIC IS	.0
PHOENIX RESOURCES	1970	742-06-10-00005	70-04-29	SEISMIC SURVEY-POLYNIA ISLANDS	185.1
PHOENIX RESOURCES	1970	742-06-10-00006	70-05-10	SEISMIC SURVEY-GRAHAM ISLAND	188.3
PHOENIX RESOURCES	1970	742-06-10-00009	70-06-17	SEISMIC SURVEY-BATHURST ISLAND	167.4
PHOENIX RESOURCES	1970	742-06-10-00007	70-07-22	SEISMIC SURVEY-MELVILLE ISLAND	128.8
L.L.& E.	1969	744-01-10-00001	69-07-16	RECONNAISSANCE FIELD TRIP-ARCTIC ISLAND	
WESTCOAST	1969	780-01-10-00003	69-08-20	GEOLOGICAL RECONNAISSANCE MEADOW RIVER-ELLESMERE	
WESTCOAST	1973	780-08-10-00011	73-08-02	GRAVITY SURVEY VENDOM FIORD ELLESMERE ISLAND	.0
WESTCOAST	1973	780-01-10-00010	73-08-19	GEOLOGY VENDOM FIORD AREA	
WESTCOAST	1974	780-06-10-00013	74-03-25	SEISMIC SURVEY VENDOM FIORD	56.3
WRIGHT D	1969	784-01-10-00002	69-08-22	GEOLOGY SOUTHWESTERN SVERDRUP BASIN-LOUGHEED ISL	
WRIGHT D	1969	784-01-10-00001	69-08-30	GEOLOGY SOUTHERN ELLESMERE ISLAND	
WRIGHT D	1969	784-01-10-00003	69-08-30	GEOLOGY CENTRAL ELLESMERE ISLAND	
WRIGHT D	1969	784-01-10-00004	70-08-11	GEOLOGY YELVERTON INLET-NORTHERN ELLESMERE ISL	
HAMMOND E	1969	787-01-10-00001	69-06-30	GEOLOGY AXEL HEIBERG & MELVILLE ISLANDS	
HAMMOND E	1970	787-01-10-00002	70-08-29	GEOLOGY CENTRAL ELLESMERE ISLAND	
OPEKAR	1969	789-01-10-00001	69-08-30	GEOLOGY SVERDRUP BASIN ARCTIC ARCHIPELAGO	
NORTHERN	1969	791-01-10-00001	69-08-10	GEOL AXEL HEIBERG ISLAND CANADIAN ARCTIC ISLAND	
ARMITAGE R	1970	794-01-10-00001	70-07-28	GEOLOGY VENDOM FIORD-MAKINSON INLET ELLESMERE ISL	

AREA/REGION: ARCTIC ISLANDS 10/ILES DE L'ARCTIQUE 10

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
CNW	1969	795-01-10-00001	69-08-30	GEOLOGY CENTRAL ELLESMERE ISLAND	
RUPERTSLAND	1970	797-01-10-00001	70-08-20	GEOLOGY CANON FIORD-ELLESMERE ISLAND	
RUPERTSLAND	1970	797-01-10-00002	70-08-29	GEOLOGY NORTHERN ELLESMERE ISLAND	
ROBBINS B	1970	806-01-10-00001	70-07-28	GEOLOGY CENTRAL ELLESMERE ISLAND	
B.X. DEVELOPMENTS	1970	808-01-10-00001	70-07-28	GEOLOGY SOUTHWESTERN ELLESMERE-BRODEUR-BAFFIN	
KUMA	1970	809-01-10-00001	70-07-28	GEOLOGY REPORT SOUTH ELLESMERE ISL	
KUMA	1970	809-01-10-00002	70-08-07	GEOLOGY EASTERN AXEL HEIBERG ISLAND	
KUMA	1970	809-01-10-00003	70-08-10	GEOLOGY NORTHERN ELLESMERE ISLAND	
KUMA	1971	809-01-10-00004	70-08-10	GEOLOGY SOUTH ELLESMERE ISLAND	
RAGAN J	1971	813-07-10-00008	71-10-18	AIRBORNE GEOPHYSICAL SURVEY OTTO FIORD	
PATRICK	1971	828-01-10-00001	71-03-15	SUMMARY INVESTIGATIONS LANCASTER SOUND	
HORN RIVER	1973	830-03-10-00005	73-03-31	DEPOT POINT PROSPECT AXEL HEIBERG CAN ARCTIC ISL	
NORTHERN BEAVER	1970	832-01-10-00001	70-07-28	GEOL ELLESMERE & DEVON ISLAND-CANADIAN ARCTIC ISL	
PHOENIX VENTURES	1973	833-09-10-00002	73-06-15	SEISMIC X-SECTIONS SVERDRUP VENTURE	
PHOENIX VENTURES	1973	833-06-10-00005	73-06-15	SVERDRUP VENTURE 73 SEISMIC EVALUATION	527.9
G.S.I.	1974	838-09-10-00004	74-11-10	MARINE GEOPHYSICAL SURVEY SVERDRUP BASIN	9,524.4
G.S.I.	1976	838-09-10-00009	76-09-15	MARINE SEISMIC ARCTIC ISLAND	371.0
G.S.I.	1977	838-09-10-00010	77-09-11	FINAL REPORT-NOW EXCLUSIVE HIGH ARCTIC PROJECT	294.0
GSC	1972	840-06-10-00002	72-05-31	SEISMIC-GRAVITY SVERDRUP BASIN	450.6

AREA/REGION: BAFFIN BAY-DAVIS STRAIT 12/BAIE BAFFIN-DETROIT DE DAVIS 12

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
GULF	1971	002-09-12-00069	71-08-20	FINAL MARINE SEISMIC-BAFFIN BAY	555.2
GULF	1973	002-09-12-00084	73-03-28	FINAL RPT GRAV SURV CUMBERLAND SE BAFFIN I	.0
GULF	1973	002-09-12-00084	73-10-28	FINAL MARINE SEISMIC CUMBERLAND SE BAFFIN I	3,579.3
GULF	1974	002-09-12-00099	74-09-01	FINAL MARINE SEISMIC-NORTH BAFFIN BAY	1,660.9
ESSO	1972	007-07-12-00184	72-08-21	SENSITIVITY MAGNETOMETER SURVEY	.0
ESSO	1972	007-09-12-00147	72-10-13	SEISMIC SURV CUMBERLAND AREA	1,664.8
ESSO	1973	007-09-12-00165	73-08-18	SEISMIC RPT EASTERN CANADA OFFSHORE	3,057.9
ESSO	1974	007-08-12-00306	74-11-07	GRAV SURV CUMBERLAND-N LABRADOR	.0
ESSO	1974	007-09-12-00173	74-11-07	MARINE SEISMIC SURV-CUMBERLAND & N LABRADOR	1,866.9
ESSO	1975	007-09-12-00191	75-10-27	SEISMIC RECORD SECTIONS E CANADA OFFSHORE	.0
ESSO	1975	007-09-12-00181	75-12-31	SEISMIC SECTIONS REPROCESSING	.0
ESSO	1975	007-09-12-00319	76-11-04	FINAL REPORT-REPROCESSING and RE-INTERPRETATION	.0
ESSO	1977	007-09-12-00329	77-09-26	1977 SEISMIC REPORT - CUMBERLAND	437.9
CDC OIL & GAS LTD.	1966	016-07-12-00004	66-06-15	AEROMAG RECONN. PRINCE CHARLES ISLAND	
TEXACO	1974	017-09-12-00062	74-08-23	SEISMIC SURV-BUTTON POINT N BAFFIN BAY	136.8
SHELL	1971	037-09-12-00115	71-08-09	SEISMIC REPORT BAFFIN BAY	.0
SHELL	1971	037-09-12-00133	72-09-12	SEISMIC REPORT DAVIS STRAIT	2,858.3
SHELL	1973	037-01-12-00127	73-08-25	GEOL BYLOT ISL & ADJ AREAS BAFFIN IS	
SHELL	1975	037-09-12-00135	75-01-15	SEISMIC REPROCESSING INTERP BAFFIN BAY	.0
SHELL	1975	037-09-12-00151	75-01-15	REPROCESSING MARINE SEISMIC DAVIS STRAIT	.0
SHELL	1975	037-09-12-00154	75-01-15	REPROCESSING MARINE SEISMIC BAFFIN BAY	.0
SHELL	1975	037-09-12-00152	75-06-15	INTERPRETATION MARINE SEISMIC BAFFIN BAY	.0
SHELL	1975	037-09-12-00153	75-06-15	COMPUTER PROCESSING MARINE SEISMIC BAFFIN BAY	.0
SHELL	1975	037-09-12-00150	75-06-22	SEISMIC RECORD SECTIONS DAVIS ST	.0
SHELL	1975	037-09-12-00158	75-08-01	INTERPRETATION TRADE DATA DAVIS STRAIT	.0
SHELL	1975	037-09-12-00159	75-09-09	SEISMIC REPORT BAFFIN BAY	2,011.8
SHELL	1975	037-01-12-00155	75-09-27	GEOL CAPE DYER AREA-BAFFIN IS	
SHELL	1975	037-09-12-00162	75-10-17	MARINE SEISMIC DAVIS STRAIT	4,007.4
SHELL	1975	037-09-12-00146	75-10-20	PROGRESS REPORT MARINE SEISMIC DAVIS STRAIT	365.3
SHELL	1976	037-09-12-00161	76-09-28	SEISMIC SURVEY BAFFIN BAY	524.0

AREA/REGION: BAFFIN BAY-DAVIS STRAIT 12/BAIE BAFFIN-DETROIT DE DAVIS 12

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
SHELL	1976	037-09-12-00168	76-10-30	SEISMIC SURVEY DAVIS STRAIT	1,059.0
SHELL	1978	037-09-12-00216	78-05-01	SEISMIC INTERP. - DAVIS STR/LABRADOR	
HBOG	1973	038-08-12-00042	73-10-17	MARINE SEISMIC SHIPBORNE GRAV DAVIS ST	.0
HBOG	1973	038-09-12-00041	73-10-23	MARINE SEISMIC REPORT DAVIS STRAIT	3,428.0
HBOG	1975	038-09-12-00052	75-11-15	SEISMIC SURVEY DAVIS STRAIT	1,857.2
B.P.	1971	039-07-12-00023	72-08-21	AEROMAG SURV SE BAFFIN-DAVIS ST	.0
B.P.	1971	039-07-12-00023	72-08-21	AEROMAG SURV SE BAFFIN-DAVIS ST	.0
B.P.	1972	039-09-12-00021	72-09-15	MARINE SEISMIC SURVEY CUMBERLAND SOUND	17.7
B.P.	1975	039-09-12-00037	75-11-04	SEISMIC SURV OFFSHORE BAFFIN ISL-CUMBERLAND S	635.7
B.P.	1976	039-09-12-00039	76-10-16	MARINE REFL SURV CUMBERLAND SOUND	693.7
B.P.	1977	039-09-12-00040	77-12-31	GOVT RPT TIE LINE EASTCAN KARLSEFNI-BP CUMB SD	80.6
MOBIL	1975	057-09-12-00084	75-01-31	MARINE SEISMIC BAFFIN BAY	191.5
MOBIL	1975	057-09-12-00091	75-05-31	INTERP MARINE SEISMIC BAFFIN BAY	355.7
CANADA CITIES SER	1971	062-09-12-00026	71-10-12	MARINE SEISMIC OFFSHORE BAFFIN IS	437.8
CANADA CITIES SER	1971	062-09-12-00030	71-11-01	RPT ON BAFFIN BAY AREA	.0
CANADA CITIES SER	1972	062-09-12-00036	72-09-30	FINAL BAFFIN BAY- DAVIS STRAIT	1,174.9
CANADA CITIES SER	1973	062-09-12-00044	73-10-10	GEOL & GEOPHYS RPT LABRADOR & N E NEWFOUNDLAND	.0
CANADA CITIES SER	1973	062-09-12-00038	73-10-30	SEISMIC REFL-GRAV & MAGN SURV BAFFIN ISL	247.0
CANADA CITIES SER	1974	062-09-12-00043	74-10-22	REFRACTION SURVEY BAFFIN BAY	70.8
CANADA CITIES SER	1975	062-09-12-00047	75-09-15	MARINE SEISMIC OFFSHORE BAFFIN ISL	1,699.5
CANADA CITIES SER	1976	062-04-12-00046	76-11-15	REPORT MATURATION LABRADOR SEA-NWT	
SIEBENS	1970	098-09-12-00008	70-10-08	SEISMIC SURVEY BAFFIN ISLAND	544.0
PETRO-CANADA	1978	246-09-12-00100	78-08-10	GEOLOGICAL FIELD OPERATIONS	
PETRO-CANADA	1978	246-09-12-00102	78-09-30	HI-RES SECTIONS: BYAM MARTIN SITE	
PETRO-CANADA	1978	246-09-12-00103	78-10-05	HI-RES SECTIONS: PHILPOTS SITE	
PETRO-CANADA	1978	246-09-12-00104	78-10-05	HI-RES SECTIONS: BYLOT SITE	
PETRO-CANADA	1978	246-09-12-00098	78-10-28	FINAL REPORT: BAFFIN BAY	6036.7
PETRO-CANADA	1978	246-09-12-00099	78-11-30	REGIONAL SEISMIC: BAFFIN BAY	
NORLANDS	1975	511-09-12-00016	75-10-18	MARINE SEISMIC LANCASTER-MELLVILLE SOUND	3,680.7
NORLANDS	1975	511-09-12-00018	75-11-01	INTERPRETATION LANCASTER SOUND	.0

AREA/REGION: BAFFIN BAY-DAVIS STRAIT 12/BAIE BAFFIN-DETROIT DAVIS 12

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
NORLANDS	1975	511-09-12-00019	75-11-01	INTERP PHILPOTS AREA BAFFIN BAY	.0
NORLANDS	1976	511-01-12-00022	76-08-29	EVALUATION FIELD SAMPLES BYLOT ISLAND	
NORLANDS	1976	511-01-12-00023	76-08-29	BIOSTRATIGRAPHY BYLOT ISLAND	
NORLANDS	1976	511-01-12-00021	76-09-08	GEOLOGY BYLOT ISLAND	
EUREKA	1972	528-09-12-00004	72-09-30	SEISMIC BAFFIN BAY-LANCASTER-DAVIS ST	5,938.7
EUREKA	1973	528-09-12-00010	73-10-11	SEISMIC SECTIONS & SP MAPS BAFFIN BAY	.0
EUREKA	1975	528-09-12-00009	75-10-15	FINAL SEIS LANCASTER-BAFFIN BAY-DAVIS ST	2,283.7
EUREKA	1976	528-09-12-00013	76-10-01	FINAL MARINE BAFFIN BAY	85.3
EUREKA	1977	528-09-12-00015	77-10-01	SEISMIC RECORD SECTIONS - BAFFIN BAY	640.0
AQUA-TERRA	1975	547-03-12-00004	76-12-31	GEOPHYSICAL REP AND TOTAL MAGN INTENSITY MAPS	.0
BAFFIN BAY	1973	562-09-12-00002	73-09-01	INTERPRET SEISMIC-GRAVITY BAFFIN BAY	1,553.0
BAFFIN BAY	1973	562-09-12-00001	73-12-01	INTERPRETATION SEISMIC BAFFIN BAY	.0
BAFFIN BAY	1975	562-09-12-00004	75-10-03	MARINE SEIS & GRAV LANCASTER SD-BAFFIN BAY	1,784.8
SOGEPET LTD.	1963	602-01-12-00001	63-12-01	OIL SHALES SOUTHAMPTON ISLAND	
C.G.G.	1973	626-09-12-00001	73-10-17	MARINE SEISMIC SURVEY-DAVIS STRAIT	737.1
C.G.G.	1974	626-09-12-00002	73-10-27	MARINE SEISMIC SURVEY-BAFFIN-LABRADOR	1,939.3
AQUITAINE	1971	673-04-12-00068	71-04-30	GEOCHEM STUDIES-HUDSON BAY-NORTHERN IS	
AQUITAINE	1971	673-04-12-00004	71-05-05	SAMPLE STUDY FROM BYLOT ISLAND	
AQUITAINE	1971	673-09-12-00012	71-09-23	SEISMIC REFL-BYLOT ISL-ECLIPSE SOUND	96.6
AQUITAINE	1971	673-01-12-00009	71-10-10	FIELD AND LABORATORY REPORT-BYLOT ISLAND	
AQUITAINE	1971	673-09-12-00059	71-10-12	MARINE SEISMIC SURVEY-CUMBERLAND SOUND	841.7
AQUITAINE	1974	673-09-12-00060	74-11-13	SEIS-CUMBERLAND SOUND SP & FROBISHER BAY	1,475.8
AQUITAINE	1975	673-09-12-00075	75-10-20	MARINE SEISMIC REFLECTION-DAVIS STRAIT	965.6
AQUITAINE	1976	673-09-12-00077	76-10-07	SEIS REFLECTION SURV-FROBISHER & CUMBERLAND	2,248.3
AQUITAINE	1978	673-09-12-00089	78-06-30	REPROC. 1977 FROBISHER BAY SEISMIC	
KENTING	1971	693-09-12-00060	71-09-24	MARINE SEISMIC EVAL-NORTHWEST BAFFIN BAY	579.4
KENTING	1971	693-09-12-00062	71-09-24	MARINE SEISMIC EVAL-LANCASTER DELTA	305.8
KENTING	1971	693-09-12-00062	71-10-10	MARINE SEISMIC RPT-BAFFINQUEST 1971	3,141.5
KENTING	1971	693-03-12-00061	71-12-24	GEOL RPT BAFFIN BAY & DAVIS ST	
KENTING	1974	693-05-12-00071	74-11-01	CRUISE RPT S BAFFIN ISL & DAVIS ST	

AREA/REGION: BAFFIN BAY-DAVIS STRAIT 12/BAIE BAFFIN-DETROIT DE DAVIS 12

OPERATOR/EXPLOITANT	YEAR AN	REPORT/RAPPORT	Y.M.D. FINISHED A.M.J TERMINE	TITLE/TITRE	KM SEISMIC KM SISMIQUE
TEXAS GULF	1971	709-09-12-00003	71-10-11	SEISMIC REFRACTION SURVEY-HUDSON BAY	453.9
GETTY	1972	733-09-12-00001	72-08-20	SEISMIC SURVEY-OFFSHORE BAFFIN IS	750.0
GETTY	1973	733-09-12-00002	73-10-07	MARINE SEIS SURVEY-DAVIS STRAIT-BAFFIN IS	1,968.3
LYON, W	1971	745-09-12-00001	71-09-19	SEISMIC SURVEY-BAFFIN ISLAND-LABRADOR SEA	80.5
WRIGHT D	1970	784-01-12-00005	70-06-28	GEOLOGY. BRODEUR PENINSULA-BAFFIN ISLAND	
GEOTERREX	1971	823-07-12-00001	72-08-21	AEROMAG SE-CENTRAL BAFFIN	
A.P.O.A.	1977	824-05-12-13827	76-12-01	SED ANALYSIS-CORES-DAVIS STRAIT-FLEMISH PASS	
A.P.O.A.	1977	824-05-12-13809	77-09-15	LAB TESTING OF SEA BED SAMPLES-DAVIS STRAIT	
HIGH COUNTRY	1971	829-09-12-00002	71-10-22	FIELD OPS BAFFIN ISLAND-LABRADOR OFFSHORE	82.1
HIGH COUNTRY	1971	829-09-12-00001	71-10-30	SEISMIC OFFSHORE LABRADOR & BAFFIN ISLAND	82.1
RAM	1973	834-09-12-00002	76-11-01	SEISMIC INTERP CUMBERLAND-NORTH LABRADOR	.0
G.S.I.	1971	838-09-12-00001	71-09-19	MARINE SEISMIC FINAL REPORT DAVIS STRAIT	962.4
G.S.I.	1973	838-09-12-0005	73-11-09	SEISMIC - DAVIS STRAIT - LABRADOR	2243.6

APPENDIX N Government and Industry Contacts

APPENDIX N Useful Government and Industry Contacts (December 1984)

Government

Dr. D. L. Christie (403) 284-0110
Institute for Sedimentary and Petroleum Geology
Geological Survey of Canada
3303 - 33rd Street N.W.
Calgary, Alberta
T2L 2A7

Mr. Ricki J. Hurst (819) 997-0044
Environmental Research Coordinator
Northern Environment Directorate
Indian and North Affairs Canada
6th Floor
Les Terrasses de la Chaudiere
Hull, Quebec

Dr. A. Judge (613) 995-5369
Earth Physics Branch
Energy, Mines and Resources, Canada
Observation Crescent
Ottawa, Ontario

Dr. B. MacLean (902) 426-3703
Atlantic Geoscience Centre
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Dr. B. Pelletier (613) 995-4165
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A OE8

Mr. David B. Reade (613) 992-9550
Head, National GEOSCAN Centre
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A OE8

Industry

Mr. Trevor Albone (416) 869-2600
Polar Gas Project
34th Floor
Commerce Court West
Toronto, Ontario

Mr. Brent Allerdice
Mr. George Sinclair (403) 296-8000
(former Vice-President - Arctic Pilot Project)
Petro Canada Resources
Frontier Development
P.O. Box 2844
Calgary, Alberta
T2P 3E3

Mr. John Greenslade, Sr. Project Engineer (403) 269-0311
Mr. Gordon Hood, Manager of Operations
Mr. M. P. Van Ieperen, Senior Scientist
Panarctic Oils Ltd.
815 - 8th Avenue S. W.
Calgary, Alberta

Mr. Bob Koenig (403) 269-8655
District Manager, Frontier
Suncor Inc. Resources Group
500 - 4th Avenue S. W.
Calgary, Alberta

Mr. Yos Lussenberg (403) 233-4352
Mr. Brian Wright
Frontier Development Division
Gulf Canada Resources Inc.
401 - 9th Avenue S. W.
P.O. Box 130
Calgary, Alberta
T2P 2H7

Consultants, Individuals

Dr. Gordon Jones (403) 265-1161
1902, 727 - 6th Avenue S. W.
Calgary, Alberta
T2P OV1

Mr. Jeff Pallister (403) 236-2394
Pallister Resource Management Ltd.
105, 4116 - 64th Avenue S. E.
Calgary, Alberta
T2C 2B3

Dr. B. Roggensack (403) 451-2121
EBA Engineering Consultants
14535 - 118 Avenue
Edmonton, Alberta
T5L 2M7

APPENDIX O Industry Seismic Data

APPENDIX O Industry Geophysical Data

Industry geophysical data for shallow marine sediments in the Arctic Island regions are relatively scarce. The only known programs which were examined for this compilation were those by Polar Gas between several islands in 1973 and 1977 and those of Petro Canada in Lancaster Sound-Baffin Bay in 1978.

The Polar Gas Data is described in Ref. Nos. 0486-74 and 0487-74 and will be the subject of this appendix. The data locations were digitized and placed on magnetic tape. Individual seismic lines from 1973 are referenced according to the Plate No. and date. Digitized data from 1977 are referenced according to Figure No. and Line No. A copy of important data pertinent to each plate has been included with this section. These tables and lists describe where echo sounder, side scan, reflection seismic and core data were gathered on each line.

Digitized Polar Gas Geophysical Data (1973)

Plate No.	Date	Magnetic Tape File No.	File Name
Plate 1	73/08/27	48	DIGP1-0730837
1	73/08/26	49	DIGP1-730826
1	73/08/27	50	DIGP1-730827
1	73/08/28	51	DIGP1-730828
1	73/08/29	52	DIGP1-730829
1	not given	53	DIGP1-CORE
Plate 2	73/08/30	54	DIGP2-00730830
2	73/08/30	55	DIGP2-0730830
2	73/09/02	56	DIGP2-0730902
2	73/08/30	57	DIGP2-730830
2	73/09/01	58	DIGP2-730901
2	73/09/02	59	DIGP2-730902
2	not given	60	DIGP2-CORE
Plate 3	73/08/23	61	DIGP3-00730823
3	73/08/23	62	DIGP3-0730823
3	73/08/24	63	DIGP3-0730824
3	72/08/24	64	DIGP3-720824
3	73/08/23	65	DIGP3-730823
3	73/08/24	66	DIGP3-730824
Plate 4	73/09/02	67	DIGP4-730902
4	73/09/06	68	DIGP4-730906
4	73/10/07	69	DIGP4-731007
Plate 5	73/09/12	70	DIGP5-730912
Plate 6	73/09/12	71	DIGP6-730912
Plate 7	73/08/26	72	DIGP7-0730826
7	73/08/25	73	DIGP7-730825
7	73/08/26	74	DIGP7-730826
Plate 8	73/08/23	75	DIGP8-730823

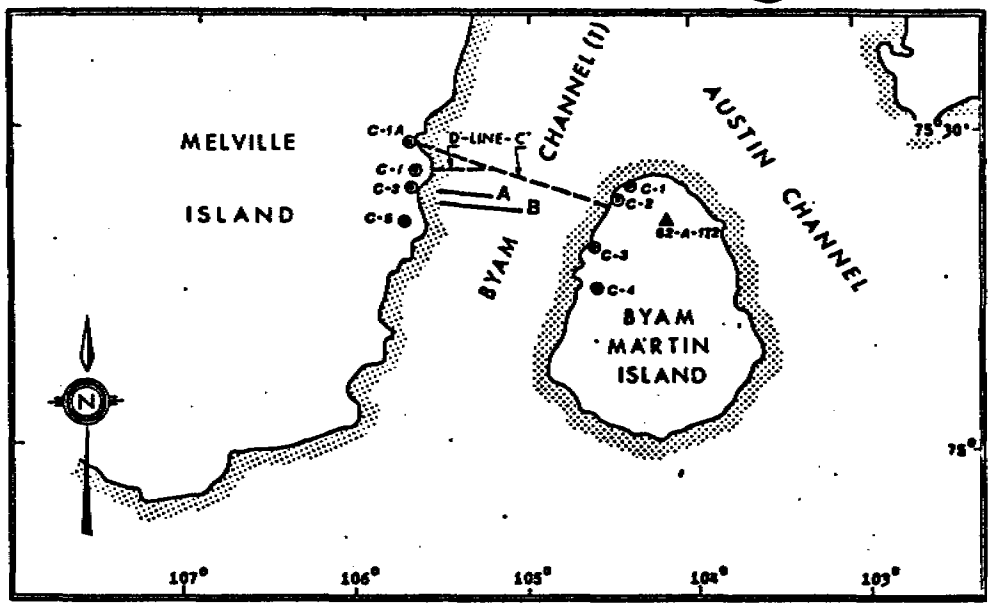
Plate No.	Date	Magnetic Tape File No.	File Name
Plate 9	73/08/17	76	DIGP9-00730817
9	73/08/17	77	DIGP9-0730817
9	73/08/19	78	DIGP9-0730819
9	73/08/16	79	DIGP9-730816
9	73/08/17	80	DIGP9-730817
9	73/08/18	81	DIGP9-730818
9	73/08/19	82	DIGP9-730819
9	73/09/06	83	DIGP9-730906
9	73/09/14	84	DIGP9-730914
9	73/09/16	85	DIGP9-730916
9	73/09/17	86	DIGP9-730917
9	73/10/06	87	DIGP9-731006
9	not given	88	DIGP9-CORE
Plate 10	73/09/12	37	DIGP10-730912
10	73/09/16	38	DIGP10-730916
10	not given	39	DIGP10-CORE
Plate 11	73/09/09	40	DIGP11-00730909
11	73/09/09	41	DIGP11-0730909
11	73/09/10	42	DIGP11-0730910
11	73/09/08	43	DIGP11-730908
11	73/09/09	44	DIGP11-730909
11	73/09/10	45	DIGP11-730910
11	not given	46	DIGP11-CORE
Plate 12	73/09/10	47	DIGP12-730910

Digitized Polar Gas Geophysical Data (1977)

Figure No.	Line No.	Magnetic Tape File No.	File Name
Figure 11	134	0	DIGF11-134
11	135	1	DIGF11-135
Figure 13	129	2	DIGF13-129
13	130	3	DIGF13-130
13	131	4	DIGF13-131
13	132	5	DIGF13-132
13	133	6	DIGF13-133
13	134	7	DIGF13-134
13	410	8	DIGF13-410
13	420	9	DIGF13-420
13	430	10	DIGF13-430
13	431	11	DIGF13-431
13	432	12	DIGF13-432
13	433	13	DIGF13-433
13	450	14	DIGF13-450
13	451	15	DIGF13-451
Figure 18	143	16	DIGF18-143
Figure 29	20	17	DIGF29-20
29	21	18	DIGF29-21
29	22	19	DIGF29-22
29	23	20	DIGF29-23
29	41	21	DIGF29-41
29	42	22	DIGF29-42
29	44	23	DIGF29-44
29	45	24	DIGF29-45
29	451	25	DIGF29-451
29	452	26	DIGF29-452
29	46	27	DIGF29-46
29	461	28	DIGF29-461
29	47	29	DIGF29-47
29	48	30	DIGF29-48
29	49	31	DIGF29-49
29	60	32	DIGF29-60
29	61	33	DIGF29-61
29	62	34	DIGF29-62
29	63	35	DIGF29-63
29	not given	36	DIGF29-CORE

TABLE OF CO-ORDINATES

(SHORAN JULY 1956 DATUM) STA.	U.T.M. ZONE 13 (metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
(AUG '69 AND SEPT '63 ADJUSTMENT) (SHORE SURVEY 7210-1-M-4)				
62-A-172	8 363 996.0	823 515.8	75°21'42:74	104°09'58:99
C-4	8 359 899.15	812 700.62	75°16'18:8	104°33'08:91
C-1 (BYAM)	8 369 305.72	814 207.12	75°24'37:8	104°29'41:09
C-3	8 362 107.18	810 638.09	75°20'46:05	104°37'23:87
C-5	8 362 099.06	479 146.51	75°20'40:75	105°44 18:17
C-2	8 378 395.00	479 901.20	75°29'28:70	105°43'07:28
C-1 (MELVILLE)	8 371 009.39	480 968.82	75°25'33:75	105°40'39:11
APPROX. W. END LINE 1 'A' C-3	8 369 594.32	480 794.15	75°24'48:13	105°40'59:27
APPROX. W. END LINE 1 'C' C-1A	8 378 337.37	480 098.47		
(OCT. 7/63 ADJUSTMENT) (7210-1-M-2)				



KEY PLAN
SCALE 1:1 000 000

NOTES:

1. ALL R.P.S. NAVIGATION ON THIS PLAN WAS DONE FROM C-2 AND C-5 (MELVILLE ISLAND).
2. NAVIGATION DONE BY R.P.S.
3. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT.
4. NOTE LOCATION OF CORE SAMPLES.
5. SEE ALSO C.E.S. DWG. No. 7210-3-M-8A FOR LINE 'C' AND 'D'.
6. NO CURRENT METERS SET.
7. NOTE THAT ALL SHORE SURVEYS WERE DONE AFTER MARINE WORK. THUS CO-ORDINATES FOR SHORE SURVEY MONUMENTS AR NOT NECESSARILY THOSE USED FOR PRECALCULATION OF MARINE NAVIGATION.
8. REFERENCE - CANADIAN ENGINEERING SURVEYS Co. LTD. DWG. No. 7210-3-M-8.

LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ◉ OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- ● UNSURVEYED NAVIGATION BASE STATIONS
- ✦ CORE 1-18 - INDICATES CORE LOCATION
- —o—o—o— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —+—+—+— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —▣—▣—▣— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —•—•—•— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —o—o—o— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —▽—▽—▽— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)

PLATE 1

HORIZONTAL CONTROL RECORD

BYAM CHANNEL - LINE 1, 'A' & 'B'

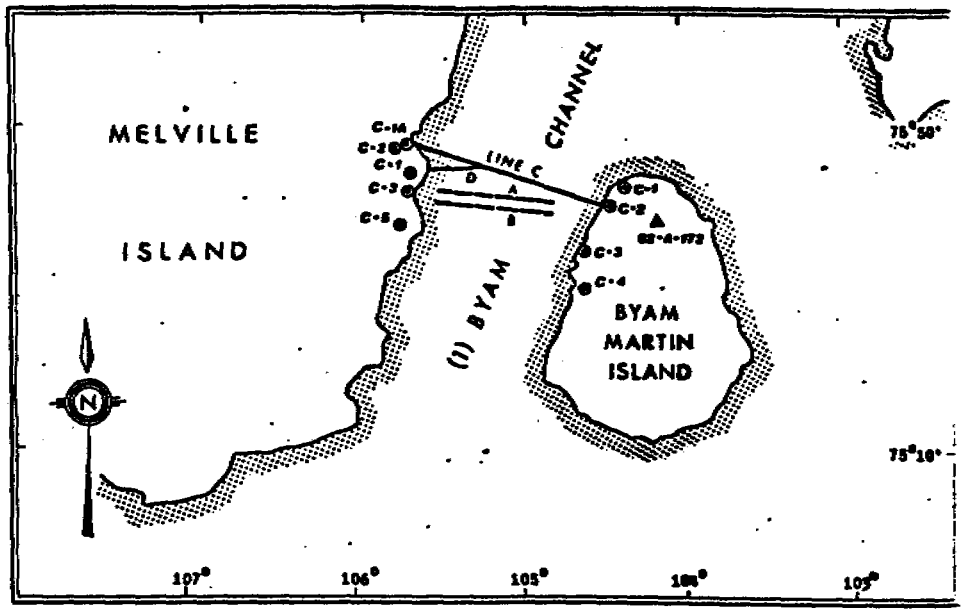
TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5 KHz PINGER	
		LINE 1A			FROM CROSBIE	
AUG.27 PG III 0317-0645	AUG.26 1600-1650 AUG.26/27 2046-0206	AUG.26/27 CROSBIE 2100-0150 AUG.27 PG III 0317-0645	AUG.26 CROSBIE 1930-2310 AUG.26/27 CROSBIE 2351-0206 AUG.27 PG III 0317-0500 0535-0645	AUG.27 CROSBIE 0030-0200	AUG.26 1600-1930 2015-2230	
		LINE 1B				
AUG.27 PG III 1030-1813 AUG.29 PG III 1025-1754	AUG.28 1100-2210 AUG.29 CORES 1-1 to 1-18	AUG.27 PG III 1100-1810 AUG.28 CROSBIE 1310-1805 1815-2214 AUG.29 PG III 1055-1745	AUG.27 PG III 1045-1430 1450-1810 AUG.29 PG III 1055-1754	AUG.27 PG III 1045-1430 AUG.28 CROSBIE 1310-1610 1650-2214	AUG.28 1050-1810 1850-2216 AUG.29 CORES 1-2 to 1-18	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF CO-ORDINATES

STA.	U.T.M. ZONE 13 (SHORAN JULY 1956 DATUM) N (METRES)	E (METRES)	GEOGRAPHIC LAT.	LONG.
8	(AUG '69/SEPT '63 ADJUSTMENT; SEE C.E.S. DWG. No. 7210-1-M-8)			
62-A-172	8 363 996.0	523 515.8	75°21'42"74	104°09'58"99
C-6	8 353 839.15	512 700.62	75°16'18"8	104°33'8"91
C-1 (BYAM)	8 369 305.7	514 207.1	75°25'37"4	104°29'41"08
C-3	8 362 107.16	510 638.09	75°20'46"05	104°37'25"87
C-2 APPROX. E END OF LINE	8 368 397.61	514 118.39	75°24'08"17	104°29'55"43
C-1A APPROX. W END LINE 3-C	8 378 337.87	480 096.47	75°29'26"93	105°42'41"80
C-1 (MELVILLE)	8 371 009.39	480 968.82	75°25'33"75	105°40'39"11
C-2	8 378 398.8	479 901.2	75°29'28"70	105°43'07"28
C-3 APPROX. W END LINE 1-A	8 369 894.32	480 794.15	75°24'48"13	105°40'59"27
C-5	8 362 099.06	479 146.51	75°20'40"75	105°44'18"17
(OCT '69 ADJUSTMENT; SEE C.E.S. DWG. No. 7210-1-M-2)				



KEY PLAN
SCALE 1:1 000 000

NOTES:

1. ALL R.P.S. NAVIGATION ON THIS PLAN WAS DONE FROM C-2 AND C-5 (MELVILLE ISLAND), AND C-1, C-3, C-4 AND 62-A-172 (BYAM MARTIN ISLAND).
2. ALL NAVIGATION DONE BY TWO-RANGE R.P.S., EXCEPT WHERE INDICATED (SEE LEGEND BELOW).
3. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT SAVING TIME.
4. NOTE LOCATION OF CORE SAMPLES.
5. SEE ALSO C.E.S. DWG. No. 7210-3-M-8 FOR LINE 1 - "A" & "B".
6. NO CURRENT METERS SET.
7. NOTE THAT ALL SHORE SURVEYS WERE DONE AFTER MARINE WORK; THUS CO-ORDINATES FOR SHORE SURVEY MONUMENTS ARE NOT NECESSARILY THOSE USED FOR PRECALCULATION OF MARINE NAVIGATION.
8. REFERENCE - CANADIAN ENGINEERING SURVEYS Co. LTD. DWG. No. 7210-3-M-8A.

LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ⊙ OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- ✦ CORE SAMPLE LOCATIONS
- 1230 — 1235 CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —□—□—□— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —▽—▽—▽— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —●—●—●— CROSSING LOCATION BY 1 R.P.S. RANGE AND 1 RADAR FIX

PLATE 2

HORIZONTAL CONTROL RECORD

BYAM CHANNEL - LINE 1,'C'&'D'

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5KHz PINGER	
					FROM CROSBIE	HUNTEC SPARKER
		LINE I-C				
AUG.30	AUG.30	AUG.30	AUG.30	AUG.30	AUG.30	SEPT.2
PG III	0920-1100	PG III	PG III	CROSBIE	0930-1100	CROSBIE
0100-0150		*0100-0150*	*0100-0150*	0920-1050		1450-1610
0150-0330	AUG.31	0150-0330	0150-0330		AUG.31	1820-2246
0330-0535		*0330-0535*	*0330-0535*			
0535-0652	CORES	0535-0652	0535-0652		CORES	
	C-1 to C-13				1-1C to 1-11C	
AUG.30/31		CROSBIE	AUG.30/31			
PG III.		0920-1110	PG III			
2152-0900	SEPT.1		2152-0900		SEPT.1	
	CORES				CORES	
	C-14 to C-19				1-15C to 1-19C	
	SEPT.2				SEPT.2	
	1505-2000				1432-1625	
	2000-2246				1740-2000	
					2010-2120	
					2130-2246	
		LINE I-D				
SEPT.1			SEPT.1			
PG III			PG III			
1520-1815			1520-1815			
SEPT.1/2			SEPT.1/2			
PG III			PG III			
2002-0025			2002-0025			

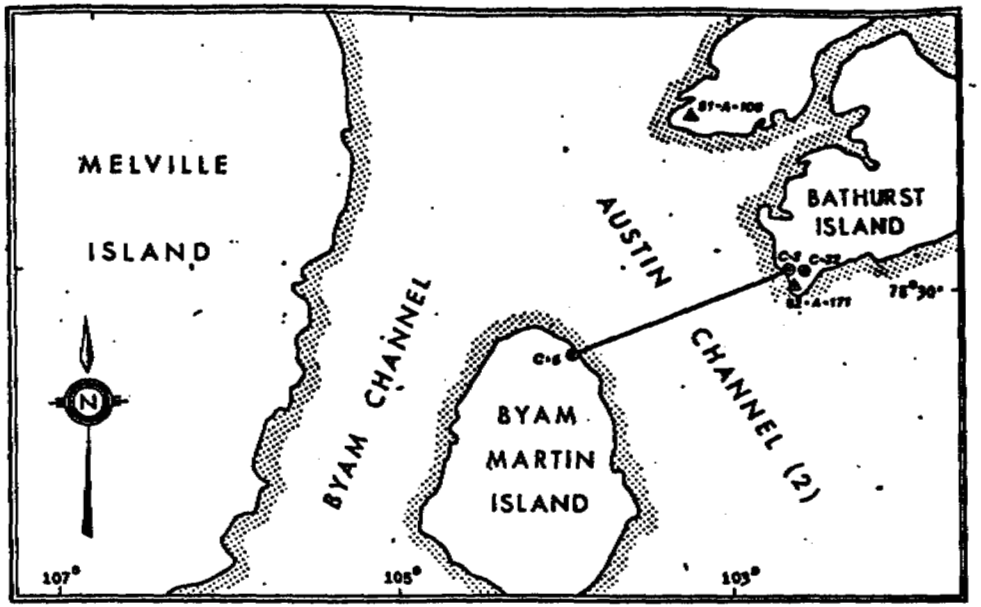
NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF CO-ORDINATES

STA.	U.T.M. ZONE 13 (SHORAN JULY '56 1969 ADJUSTMENT)		GEOGRAPHIC	
	N (METRES)	E (METRES)	LAT.	LONG.
61-H-108	8 810 996.0	587 619.4	75°46'41"86	103°18'48"30
NOTE: SEE C.E.S. DWG. No. 7210-1-H-4				
62-A-171	8 382 570.1	565 736.9	75°30'38"68	102°38'41"61
C-22	8 385 149.4	565 278.2	75°32'28"86	102°39'26"54
SURVEYED LINE START C-2	8 384 858.6	564 870.3	75°32'29"81	102°40'20"66
SURVEYED LINE END C-5	8 369 289.8	529 093.9	75°24'30"71	103°58'05"16

NOTES:

1. ALL NAVIGATION WAS DONE FROM 61-H-108, 62-A-171 AND C-22, ON EAST SIDE OF CHANNEL.
2. ALL NAVIGATION WAS BY 2-RANGE R.P.S.
3. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT.
4. THERE ARE NO CURRENT METERS OR CORE HOLE LOCATIONS.
5. REFERENCE - CANADIAN ENGINEERING SURVEYS Co. LTD. DWG. No. 7210-3-H-3



KEY PLAN
SCALE 1:1 000 000

LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- —●—●—●— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —■—■—■— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —▼—▼—▼— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)
- —•—•—•— CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)

PLATE 3

HORIZONTAL CONTROL RECORD

AUSTIN CHANNEL

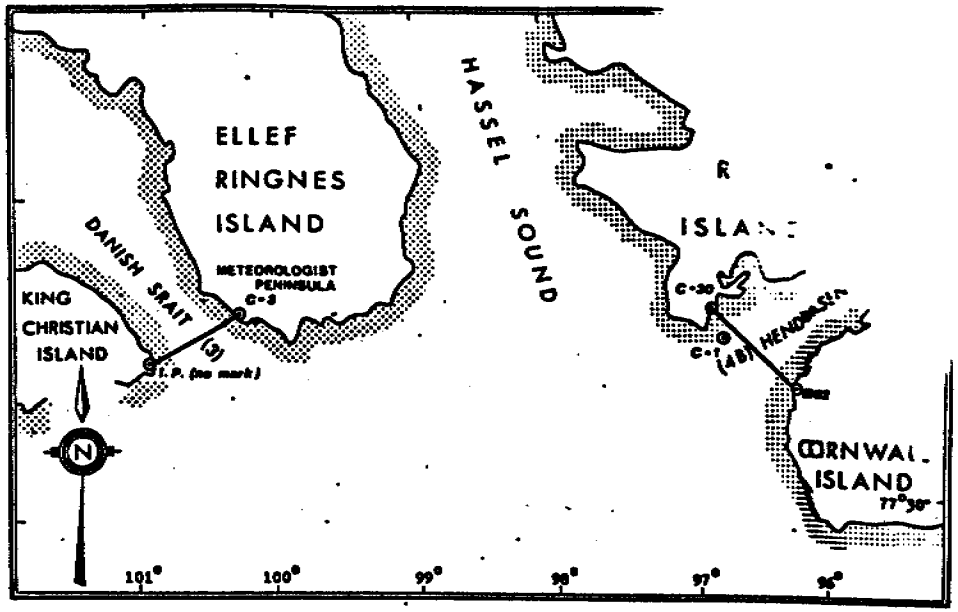
TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5KHz PINGER	
					FROM CROSBIE	
AUG.24	AUG.23	AUG.23	AUG.24	AUG.23	AUG.23	
PG III	1010-1445	CROSBIE	PG III	CROSBIE	0953-1445	
1227-1704	1530-1955	1020-1455	1227-1704	1250-1455	1530-1955	
		1530-1955		1530-1950		
AUG.25	AUG.23/24		AUG.25		AUG.23/24	
PG III	2110-0154	AUG.23/24	PG III	AUG.23/24	2110-0154	
0010-0325		CROSBIE	0010-0320	CROSBIE		
	AUG.24	2110-0154		2110-0154		
	0210-0630					
		AUG.24		AUG.24		
		CROSBIE		CROSBIE		
		0210-0630		0210-0630		
		AUG.24				
		PG III				
		1227-1704				
		AUG.25				
		PG III				
		0020-0325				

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLES OF CO-ORDINATES

STATION	U.T.M. ZONE 14, CM 99° W. LONG		GEOGRAPHIC	
	N (metres)	E (metres)	LAT.	LONG.
HENDRIKSEN STRAIT (SEE C.E.S. DWG. No. 7210-1-H-9 FOR SHORE SURVEYS)				
SURVEYED LINE END (N.W.) C-30	8 638 940.8	552 448.3	77°49'05:67	96°46'23:00
SURVEYED LINE END (S.E.) C-22	8 625 623.4	565 477.6	77°41'38:65	96°18'49:64
T.P.C-1 (ISLAND)	8 635 236.9	559 377.7	77°47'05:18	96°28'22:90
(DATUM: SHORAN JULY 1956, DEC. 1969 ADJUSTMENT).				
DANISH STRAIT (SEE C.E.S. DWG. No. 7210-1-H-10 FOR SHORE SURVEYS)				
LINE END (ELLEF) C-9	8 639 250.3	469 203.9	77°49'36:71	100°18'29:92
LINE END (K.C. Isl.). I.P. (NO MARK)	8 631 606.2	454 927.7	77°45'17:58	100°58'18:02
(CO-ORDINATES BASED ON C.L.S.R. PLAN 57974)				



KEY PLAN
SCALE 1:1 000 000

NOTES:

1. HENDRIKSEN STRAIT: "NAVIGATION" WAS PROVIDED ONLY BY KEEPING HYDROGRAPHIC BOAT ON LINE (BY TRANSIT AND RADIO COMMUNICATION) BETWEEN C-30 (AMUND RINGNES ISLAND) AND C-22 (CORNWALL ISLAND).
2. DANISH STRAIT: TRANSIT AND RADIO COMMUNICATION USED, LINE ENDS C-9 (ELLEF RINGNES ISLAND) TO I.P. (NO MARK) ON KING CHRISTIAN ISLAND.
3. THERE WERE NO CORE SAMPLES OR CURRENT METERS SET.
4. ALL WORK DONE FROM AIR TRANSPORTABLE BOATS.
5. REFERENCE – CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-9-H-17,18

TABLE OF DATA OBTAINED

HENDRIKSEN STRAIT

1032 PROFILER	350 MINI SPARKER	SIDE SCAN
SEPT. 2 *2004-2218* SEPT. 6 *1505-1948*	SEPT. 2 *2105-2210*	SEPT. 2 *2140-2208*

DANISH STRAIT

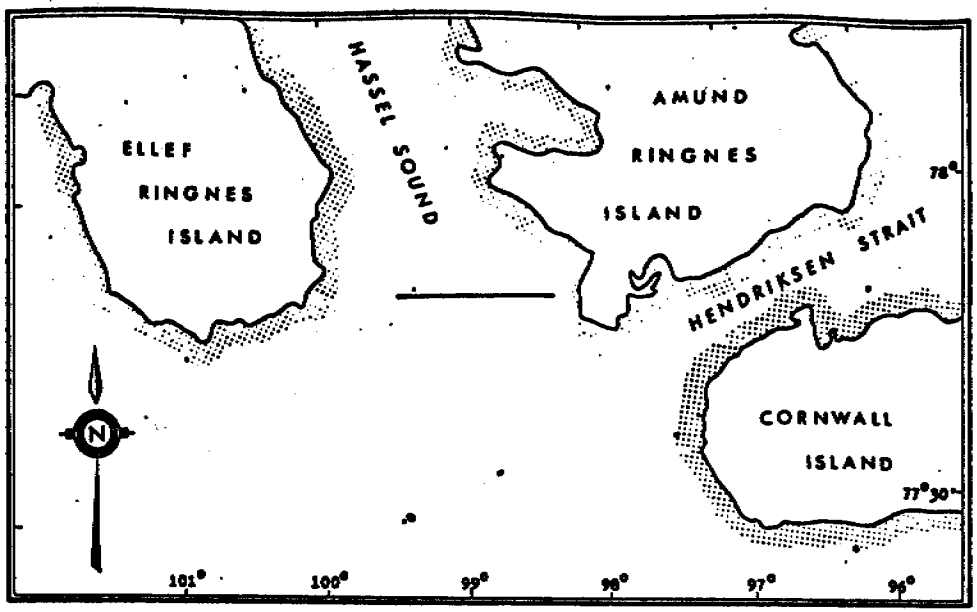
1032 PROFILER	350 MINI SPARKER	SIDE SCAN
SEPT. 7 *1836-2138*		

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

PLATE 4

HORIZONTAL CONTROL RECORD

HENDRIKSEN STRAIT & DANISH STRAIT



KEY PLAN
SCALE 1:1 000 000

TABLE OF DATA OBTAINED

1032 PROFILER	350 MINI SPARKER	SIDE SCAN
SEPT.12 *1230-1341* *1403-1605*		

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

NOTE: 1. WORK DONE FROM AIR TRANSPORTABLE BOATS.
2. TIMES USED FOR RECORDING ARE CENTRAL DAYLIGHT TIME.

PLATE 5

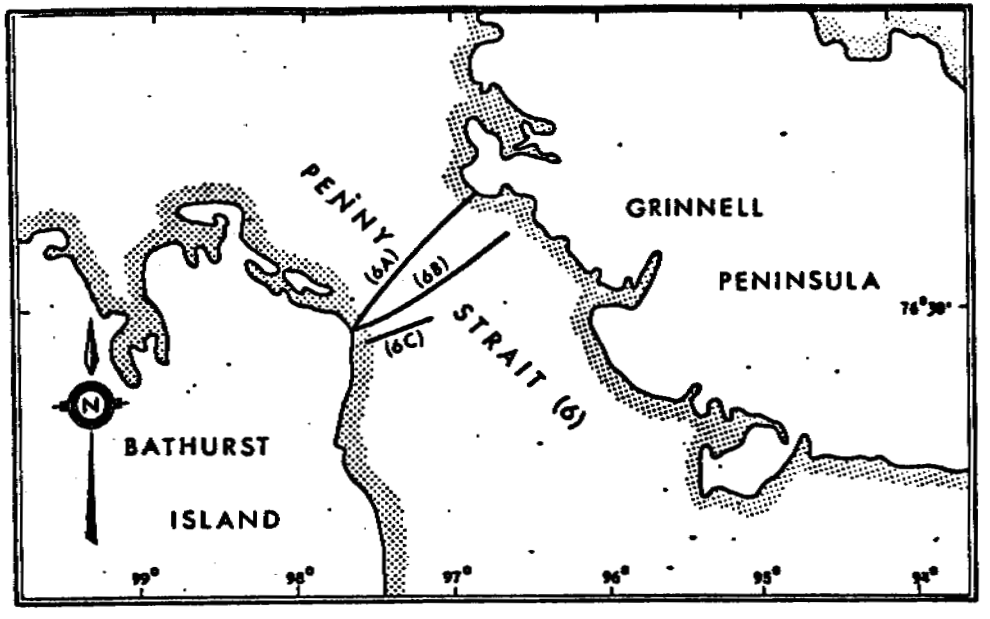
HORIZONTAL CONTROL RECORD

HASSEL SOUND

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5KHz PINGER	
					FROM CROSBIE	
CROSBIE	CROSBIE		CROSBIE			
SEPT.12/13	SEPT.12/13		SEPT.12/13			
2315 0120	*2315-0317*		*2320 0311*			
SEPT.13	SEPT.13					
0243-0317	*0350-0950.*					
0455 0710						
0730-0950						

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.



KEY PLAN
SCALE 1:1 000 000

NOTES:

1. ALL NAVIGATION DONE BY SHIP'S RADAR.
2. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT.
3. NO CORE SAMPLES TAKEN.
4. NO CURRENT METERS SET.
5. THERE IS NO CORRESPONDING SHORE SURVEY PLAN FOR THIS AREA.
6. REFERENCE - CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-3-M-16.

LEGEND:

2245 2255
8770'

CROSSING LOCATION BY RADAR (STATION NUMBER RECORDED AS TIME)
(INTERVALS SHOWN IN FEET BETWEEN STATIONS)

PLATE 6

HORIZONTAL CONTROL RECORD

PENNY STRAIT

TABLE OF CO-ORDINATES

STA.	U.T.M. ZONE 14 (SHORAN JULY 1956 MAY 1969 ADJMT.)		GEOGRAPHIC	
	N	E	LAT.	LONG.
NOTE: SEE C.E.S. DWG. No. 7210-1-M-3				
62-A-72	6 381 120.0	549 021.1	75°30'37:18	97°18'40:79
62-A-73	6 382 956.0	550 096.1	75°31'36:62	97°17'15:20
I.P., C-1	6 382 352.3	548 101.0	75°31'17:71	97°16'34:70
Surveyed Line Start I.P. not marked	6 389 242.5	544 729.2	75°31'89:48	97°23'46:34
Surveyed Line End I.P. C-22	6 379 146.2	555 627.0	75°29'26:71	97°00'38:41

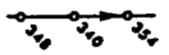
NOTES:

1. LOCATION ON MAINLINE CROSSING 1050 TO 1218 WAS DONE BY SINGLE-RANGE R.P.S. (FROM 62-A-73), AND TRANSIT TO KEEP ON LINE. DUE TO ICE PANS AND BOAT RESPONSE, BOAT WENT BACK AND FORTH ACROSS MAIN LINE, AND ESTIMATED ACCURACY OF THESE STATIONS IS ± 200 METRES.
2. ROUTES FOLLOWED ON ALL LINES WERE DEPENDANT ON FINDING A SAFE PATH PAST ICE FLOES. WORK STOPPED AT 10:00 a.m. AUG 26/73 DUE TO ICE STARTING TO MOVE IN.
3. "TIME" USED FOR RECORDING WAS CENTRAL DAYLIGHT TIME.
4. ALL WORK DONE FROM AIR TRANSPORTABLE BOATS.
5. REFERENCE - CANADIAN ENGINEERING SURVEYS Co. LTD. DWG. No. 7210-3-M-1

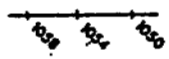
LEGEND:

▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS

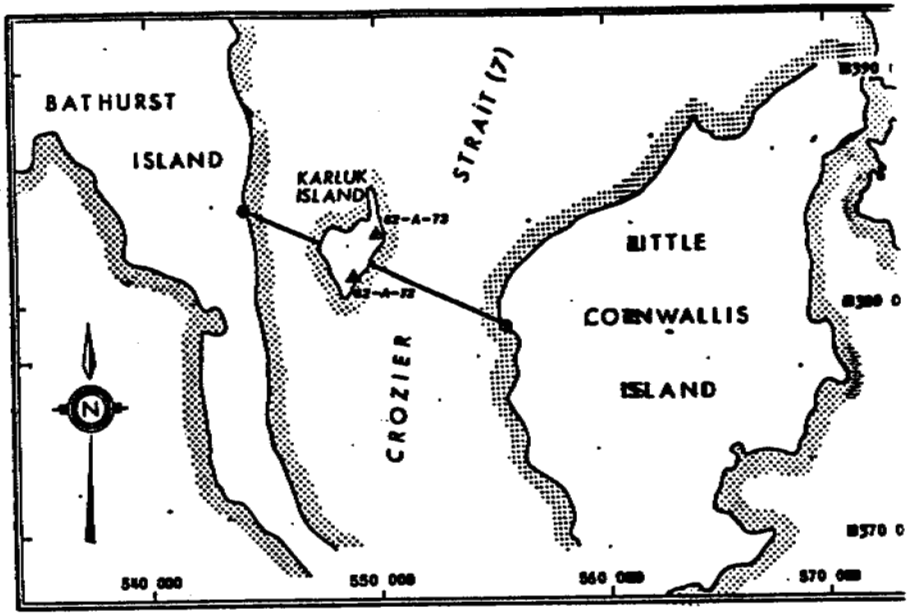
● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS



CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)



CROSSING LOCATION BY SINGLE-RANGE R.P.S. FOR DISTANCE, AND TRANSIT FOR LINE



KEY PLAN

SCALE 1:250 000

TABLE OF DATA OBTAINED

1032 PROFILER	350 MINI SPARKER	SIDE SCAN
AUG.25/26	AUG.25/26	AUG.25/26
2229-0044	*2229-0044*	*2234-0026*
AUG.26	AUG.26	AUG.26
0133-0457	0133-0457	0128-0956
0710-1001	0710-1001	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING.
NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

PLATE 7

HORIZONTAL CONTROL RECORD

CROZIER STRAIT

TABLE OF CO-ORDINATES

STA.	U.T.M. ZONE 15 (Metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
NOTE: SEE C.E.S. DWG. No. 7210-1-H-3				
62-A-180	8 393 027.5	416 932.6	75°56'16:08	95°59'39:56
62-A-181	8 377 802.7	412 005.8	75°27'58:15	96°08'32:87
I.P. C-14	8 385 036.9	416 871.2	75°31'59:31	95°58'58:29
SURVEYED LINE START I.P. C-25	8 384 950.7	416 896.8	75°31'56:69	95°58'61:18
SURVEYED LINE END I.P. NOT MARKED	8 382 708.7	422 576.6	75°30'53:26	95°56'25:57
NOTE: DATUM SHORAN JULY 1966, MAY 1969 ADJUSTMENT				

NOTES:

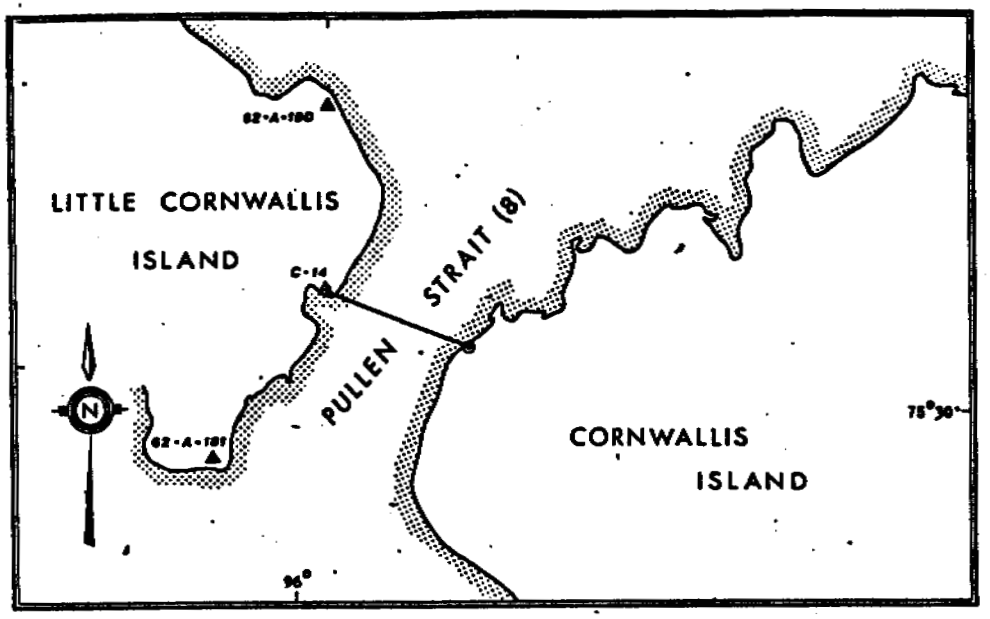
1. ROUTES FOLLOWED ON ALL LINES WERE DEPENDANT ON FINDING A SAFE PATH PAST ICE FLOES.
2. "TIME" USED WAS CENTRAL DAYLIGHT.
3. ALL WORK DONE FROM AIR TRANSPORTABLE BOATS.
4. REFERENCE - CANADIAN ENGINEERING SURVEYS Co. LTD. DWG. No. 7210-5-H-2.

LEGEND:

▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS

● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS.

354 358 358 CROSSING LOCATION BY R.P.S. (STATION NUMBER RECORDED AS TIME)



KEY PLAN
SCALE 1:250 000

TABLE OF DATA OBTAINED

1032 PROFILER	350 MINI SPARKER	SIDE SCAN
AUG. 23	AUG. 23	AUG. 23
0729-0800	0729-0800	0729-0801
0827-0934	0827-0934	0827-0934
0940-1211	0940-1211	0940-1206

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING.
NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

PLATE 8

HORIZONTAL CONTROL RECORD

PULLEN STRAIT

TABLE OF CO-ORDINATES

STATIONS	U.T.M. ZONE 15 (metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
DATUM: SHORAN JULY 1956 C.N.S. ADJUSTED MARCH 1962				
61-N-5	8 284 597.75	457 539.18	74°38'49"789	94°26'12"502
61-N-6	8 284 968.91	481 036.37	74°39'14"928	93°38'30"973
N. END C-1	8 284 180.07	460 420.10	74°38'38"49	94°20'20"83
S. END C-2	8 220 778.62	478 850.27	74°04'41"99	93°47'21"57

NOTES:

1. ALL R.P.S. NAVIGATION DONE FROM 61-N-5 AND 61-N-6.
2. ALL NAVIGATION DONE BY TWO RANGE R.P.S.
3. TIME USED FOR RECORDING WAS EASTERN DAYLIGHT.
4. NOTE LOCATION OF CURRENT METERS AND CORE SAMPLES.
5. SEE C.E.S. DWG. No. 7210-1-N-6 FOR SHORE SURVEYS.
6. REFERENCE - CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-3-N-9

LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- ● UNSURVEYED NAVIGATION BASE STATIONS (POSITION DETERMINED BY SCALING ON 1:250,000 N.T.S. MAPS)
- CORE 9-56 INDICATES CORE LOCATION
- CURRENT METER LOCATION
- CROSSING LOCATION BY R.P.S. (STATION NUMBERS RECORDED AS TIME)
- CROSSING LOCATION BY R.P.S. (STATION NUMBERS RECORDED AS TIME)
- CROSSING LOCATION BY R.P.S. (STATION NUMBERS RECORDED AS TIME)
- CROSSING LOCATION BY R.P.S. (STATION NUMBERS RECORDED AS TIME)
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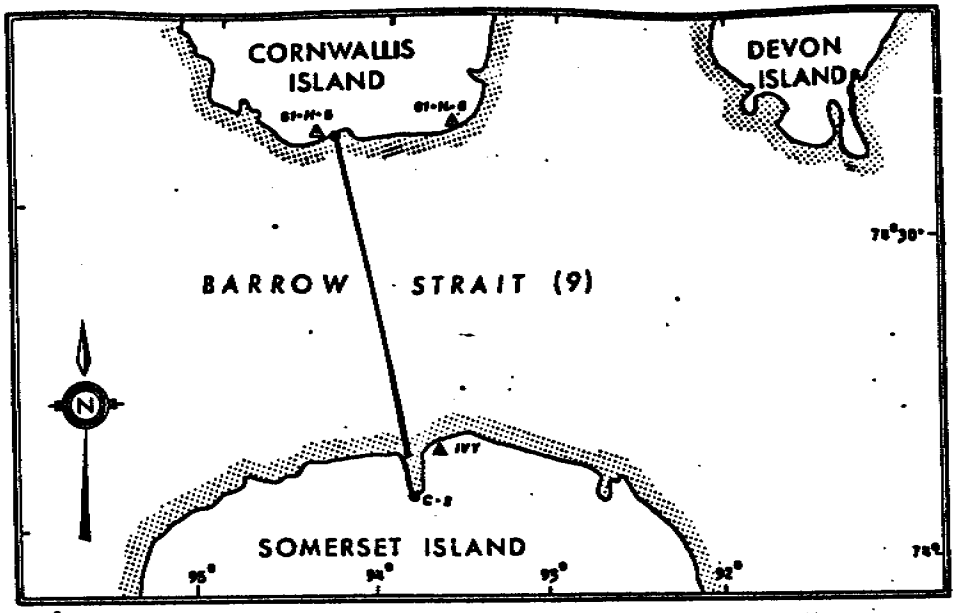
- CROSSING LOCATION BY R.P.S. (STATION NUMBERS RECORDED AS TIME)



KEY PLAN
SCALE 1:1 000 000

PLATE 9

HORIZONTAL CONTROL RECORD

BARROW STRAIT - EAST

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5KHz PINGER	
AUG.16 PG III 1041-1205 AUG.17 PG III 1315-1425 1439-1825 AUG.19 PG III 1036-1241 1730-1902 SEPT.6 PG III 1015-2128 SEPT.14 PG III 1119-1605	AUG.16 CORES 9-1 to 9-4 AUG.17 0038-0559 2101-2340 CORES 9-5 to 9-57 AUG.18/19 2328-0044 AUG.19 CORES 9-58 to 9-61 SEPT.14 CORES 9-62 to 9-66	AUG.17 PG III 1740-1830 CROSBIE 2101-2150 AUG.18/19 CROSBIE 2328-0044 AUG.19 PG III 1140-1241 1730-1855	AUG.16 PG III 1200-1215 AUG.17 PG III 1325-1439 1510-1830 AUG.19 PG III 1036-1241 1746-1902 SEPT.6 PG III 1015-1628 1735-2040 SEPT.14 PG III 1119-1515	AUG.17 CROSBIE 0038-0110 0440-0559 2101-2210 2256-2340 AUG.18/19 CROSBIE 2328-0044 AUG.19 PG III 1036-1241 1746-1902 SEPT.6 CROSBIE 0125-0445 0505-0545 0555-0735 PG III 1330-1550 1735-2125 SEPT.14 PG III 1119-1146 1400-1500	FROM CROSBIE AUG.16 1230-1335 CORES 9-1 to 9-4 AUG.17 CORES 9-21 to 9-27 2101-2240 AUG.18 CORES 9-32 to 9-38 9-42 to 9-61 AUG.18/19 2338-0044 SEPT.6 0035-0114 0215-0245 0255-0315 0335-0345 0405-0705	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5 KHz PINGER	
					FROM CROSBIE	
SEPT.9	SEPT.8/9		SEPT. 9	SEPT.8/9	SEPT.8/9	SEPT.8/9
PG III	*1900-0545*		PG III	CROSBIE	*1928-0430*	CROSBIE
1230-1740			1240-1310	*1950-0545*		HUNTEC
1935-2115	SEPT.9		1341-1422		SEPT.9	SPARKER
			1430-1545	SEPT.10		
SEPT.10	CORES		1630-1750	PG III	CORES	*2145-0545*
CROSBIE	13-1 to 13-20		1935-2120	*1020-1040*	13-1 to 13-20	
				1125-1205	1255-1740	
1318-1428	SEPT.9/10		SEPT.10	*1205-1225*		
			PG III		SEPT.9/10	
PG III	2127-2217					
	2217-2242		0940-1025		2127-2217	
0930-1025	2242-2317		*1025-1050*		*2217-2242*	
1025-1050	*2317-0000*		1050-1205		2242-2317	
1050-1205	0000-0105		*1205-1225*		*2317-0000*	
1205-1310	*0105-0135*		1310-1405		0000-0105	
1310-1405	0135-0238				*0105-0135*	
					0135-0238	
	SEPT.10					
					SEPT.10	
	CORES					
					0924-1133	
	13-21					
	to				CORES	
	13-29					
					13-21	
	1922-1420				to	
					13-29	
					1225-1428	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF CO-ORDINATES

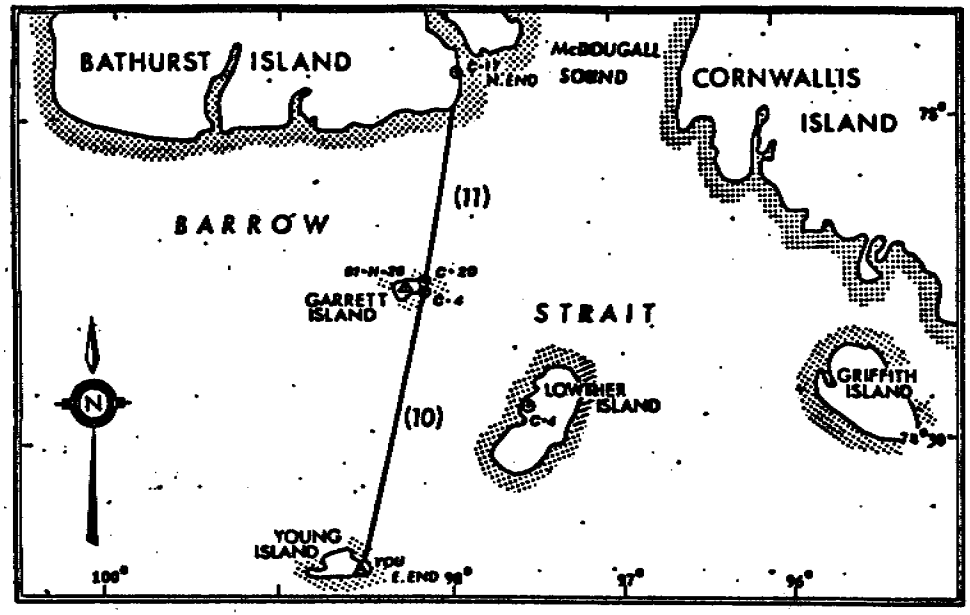
STATION	U.T.M. ZONE 14 (metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
SEE C.E.S. DWG. No. 7210-1-N-8 (SHORE SURVEYS)				
61-N-28	8 296 005.87	521 581.26	74°48'10"13	96°18'53"41
C-4 (LOWTHER ISLAND)	8 276 172.0	543 306.1	74°34'17"26	97°32'20"06
C-17 BEGIN LINE	8 331 668.4	530 740.7	75°04'16"18	97°55'51"59
C-8 END LINE (GARRETT)	8 296 949.2	525 272.5	74°45'06"51	96°08'20"92
C-20 BEGIN LINE	8 296 048.7	525 620.6	74°45'09"62	96°07'30"06
YOU END LINE	8 286 601.89	513 886.20	74°18'58"64	96°32'23"92

NOTES:

1. R.P.S. NAVIGATION DONE FROM C-8 (LOWTHER ISLAND) AND 61-N-28 (GARRETT ISLAND). REFER TO C.E.S. DWG. No. 7210-1-N-8 (SHORE SURVEYS) FOR NOTES RE TWO "DATUMS" USED.
2. CORE SAMPLE NAVIGATION DONE BY R.P.S., ALL OTHER BY SHIP'S RADAR.
3. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT.
4. NOTE LOCATION OF CORE SAMPLES.
5. NO CURRENT METERS SET.
6. REFERENCE - CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-3-N-10.

LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- CORE 10-2 INDICATES CORE LOCATION
- CROSSING LOCATION BY SHIP'S RADAR (STATION NUMBER RECORDED AS TIME) (WITH INTERVALS SHOWN IN FEET BETWEEN STATIONS)
- CROSSING LOCATION BY SHIP'S RADAR (STATION NUMBER RECORDED AS TIME) (WITH INTERVALS SHOWN IN FEET BETWEEN STATIONS)



KEY PLAN
SCALE 1:1 000 000

PLATE 10

HORIZONTAL CONTROL RECORD

BARROW STRAIT - WEST

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5KHz PINGER	
SEPT.12 CROSBIE *0145-0900* *0930-0945* *1000-1145* SEPT.16 CROSBIE *0410-0640*	SEPT.12 *0155-1145* SEPT.16 CORES 10-1 to 10-12		SEPT.16 CROSBIE *0410-0630*		FROM CROSBIE SEPT.12 *0155-0525* SEPT.16 CORES 10-1 to 10-12	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF CO-ORDINATES

STATION	U.T.M. ZONE 14 (metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
DATUM: SHORAN, JULY 1956				
63-A-406	7 906 107.8	587 734.2	71°14'02"76	96°33'21"72
63-A-407	7 861 730.1	599 335.6	70°50'28"14	96°17'14"81
C.E.S. A-4 (SCALED)	7 869 000	590 500	70°54'39"8	96°31'12"8
S.E. END OF LINE 13 (SCALED)	7 867 500	590 500	70°53'46"4	96°31'18"9
N.W. END OF LINE 13 (SCALED)	7 910 100	516 450	71°17'39"1	96°32'25"6

NOTES:

1. ALL NAVIGATION DONE BY 2-RANGE R.P.S. EXCEPT WHERE SHOWN OTHERWISE (SEE LEGEND).
2. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT SAVING TIME.
3. NOTE LOCATION OF CORE SAMPLES.
4. NO CURRENT METERS SET.
5. NO SHORE SURVEY DONE IN THIS AREA.
6. SEE C.E.S. DWG. No. 7210-9-H-11A FOR ADDITIONAL INFORMATION.
7. REFERENCE – CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-9-H-11.

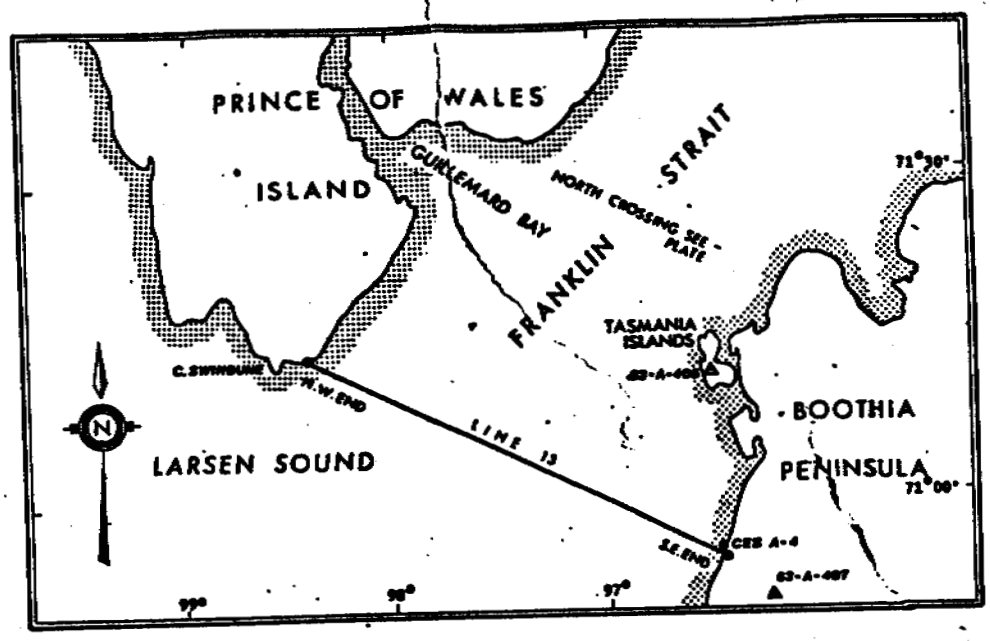
LEGEND:

- ▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS
- ● OTHER SURVEYED SHORE STATIONS USED AS NAVIGATION BASE STATIONS
- ● UNSURVEYED NAVIGATION BASE STATION
- ✦ CORE SAMPLE LOCATION
- —▽—▽— CROSSING LOCATION BY 2-RANGE R.P.S.
- —□—□— CROSSING LOCATION BY 2 RADAR RANGES
- —□— CROSSING LOCATION 1 RADAR RANGE & 1 RADAR BEARING
- —○—○— CROSSING LOCATION BY 2-RANGE R.P.S.
- —○—○—○— CROSSING LOCATION BY 2 RANGE R.P.S.

STATION No. RECORDED AS TIME:

PERCY H. CROSBIE

POLAR GAS III



KEY PLAN
SCALE 1:1 000 000

PLATE 11

HORIZONTAL CONTROL RECORD

FRANKLIN STRAIT – SOUTH CROSSING

TABLE OF DATA OBTAINED

DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 4034	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5 KHz PINGER	
					FROM CROSBIE	
SEPT.9	SEPT.8/9		SEPT. 9	SEPT.8/9	SEPT.8/9	SEPT.8/9
PG III	*1900-0545*		PG III	CROSBIE	*1928-0430*	CROSBIE
1230-1740			1240-1310	*1950-0545*		HUNTEC
1935-2115	SEPT.9		1341-1422		SEPT.9	SPARKER
	CORES		1430-1545	SEPT.10	CORES	*2145-0545*
SEPT.10	13-1 to 13-20		1630-1750	PG III	13-1 to 13-20	
CROSBIE			1935-2120	*1020-1040*	1255-1740	
1318-1428	SEPT.9/10			1125-1205		
			SEPT.10	*1205-1225*	SEPT.9/10	
PG III	2127-2217		PG III			
	2217-2242				2127-2217	
0930-1025	2242-2317		0940-1025		*2217-2242*	
1025-1050	*2317-0000*		*1025-1050*		2242-2317	
1050-1205	0000-0105		1050-1205		*2317-0000*	
1205-1310	*0105-0135*		*1205-1225*		0000-0105	
1310-1405	0135-0238		1310-1405		*0105-0135*	
					0135-0238	
	SEPT.10					
					SEPT.10	
	CORES					
					0928-1135	
	13-21					
	to				CORES	
	13-29					
					13-21	
	1322-1420				to	
					13-29	
					1225-1428	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

TABLE OF CO-ORDINATES

STATION	U.T.M. ZONE 14 (metres)		GEOGRAPHIC	
	N	E	LAT.	LONG.
DATUM: SHORAN 1956				
69-A-405	7 905 107.8	587 734.2	71°18'02"76	96°33'21"72

NOTES:

1. ALL NAVIGATION DONE BY ONE RANGE R.P.S. AND SHIP'S RADAR.
2. "TIME" USED FOR RECORDING WAS EASTERN DAYLIGHT.
3. NO CORE SAMPLES TAKEN.
4. NO CURRENT METERS SET.
5. THERE IS NO CORRESPONDING SHORE SURVEY PLAN FOR THIS AREA.
6. REFERENCE - CANADIAN ENGINEERING SURVEYS CO. LTD. DWG. No. 7210-3-M-11A

TABLE OF DATA OBTAINED

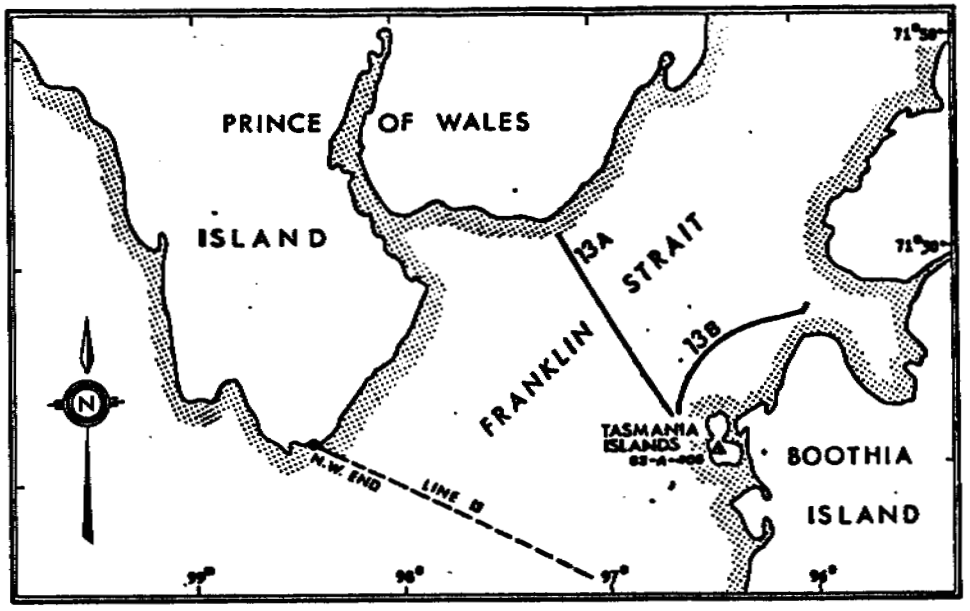
DEPTH SOUNDINGS		SIDE SCAN	SEISMICS			OTHER
HUNTEC EDO 403A	CROSBIE'S SOUNDER		BOOMER	AIR GUN	3.5 KHz PINGER	
SEPT.10 CROSBIE *1918-2005 2035-2220*	SEPT.10 *1821-2005 2035-2220*				FROM CROSBIE SEPT.10 *1820-2120*	

NOTE: DATA SHOWN IN ITALICS INDICATES NAVIGATION WAS BY RADAR OR DEAD RECKONING. NAVIGATION FOR ALL OTHER DATA WAS BY R.P.S.

LEGEND:

▲ EXISTING GEODETIC SURVEY STATIONS USED AS NAVIGATION BASE STATIONS.

2220 2230 3100' CROSSING LOCATION BY ONE RANGE R.P.S. AND SHIP'S RADAR (STATION NUMBER RECORDED AS TIME), WITH INTERVALS BETWEEN STATIONS SHOWN IN FEET



KEY PLAN
SCALE 1:1 000 000

PLATE 12

HORIZONTAL CONTROL RECORD

FRANKLIN STRAIT-NORTH CROSSING

TABLE OF BASE COORDINATES

STATION	CODE	U.T.M.		GEOGRAPHIC		ELEVATION
		N.(meters)	E.(meters)	LAT.	LONG.	
BAKER	1	8,325,658.4	538,467.8	75°00'57.22"	97°40'01.46"	61.6m.
STANLEY	2	8,342,432.0	578,656.4	75°09'13.45"	96°14'56.75"	206.0m.
EVANS	3	8,339,992.1	539,516.9	75°08'38.78"	97°37'09.01"	74.7m.
TRURO	4	8,357,324.8	552,204.1	75°17'46.65"	97°09'26.18"	127.7m.

Scale 1: 25,000

500 0 500 1000 1500 2000 2500 3000

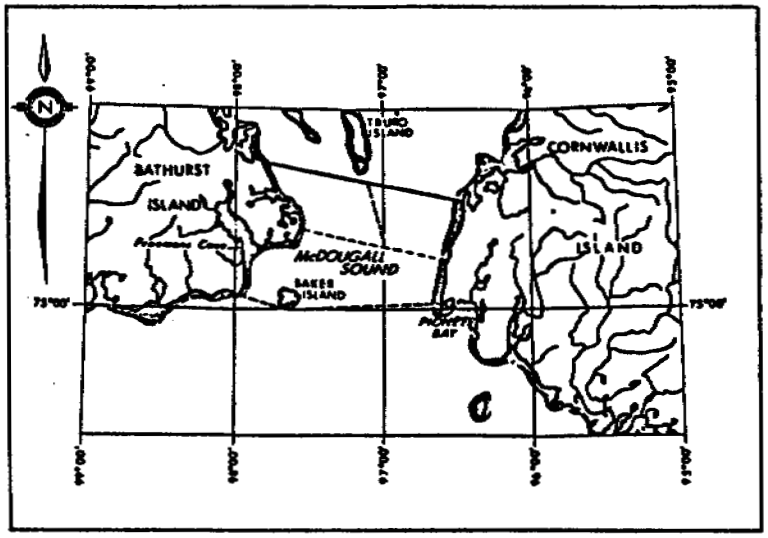
METERS

LEGEND:

1019 1000 SERIES ARE SIDESCAN AND BATHYMETRY.

49 10 SERIES ARE SEISMIC AND BATHYMETRY.

POSITIONS RECORDED AS FUNCTION OF TIME.
POSITIONS PLOTTED AT 20 SECOND FIXES.
BATHYMETRY RECORDED EVERY 5 SECONDS.



LOCATION MAP
SCALE 1:1,000,000

MONTREAL ENGINEERING COMPANY LIMITED

McDOUGALL SOUND
LINE LOCATION MAP
NORTH LINE
MARINE SURVEY 1977

TO ACCOMPANY REPORT BY: J. FELLOWS et. al.

EXPLORATION SERVICES LIMITED	CALGARY ALBERTA	SCALE: 1:25,000	DATE: DEC. 1977
		JOB NO: 2082	FIGURE NO 11
		C.L.:	DRAWN BY H.M.

TABLE OF BASE COORDINATES

STATION	CODE	U.T.M.		GEOGRAPHIC		ELEVATION
		N.(meters)	E.(meters)	LAT.	LONG.	
BAKER	1	8,325,658.4	538,467.8	75°00'57.22"	97°40'01.46"	61.6m.
STANLEY	2	8,342,432.0	578,656.4	75°09'13.45"	96°14'56.75"	206.0m.
EVANS	3	8,339,992.1	539,516.9	75°08'38.78"	97°37'09.01"	74.7m.
TRURO	4	8,357,324.8	552,204.1	75°17'46.65"	97°09'26.18"	127.7m.

Scale 1:25,000

500 0 500 1000 1500 2000 2500 3000

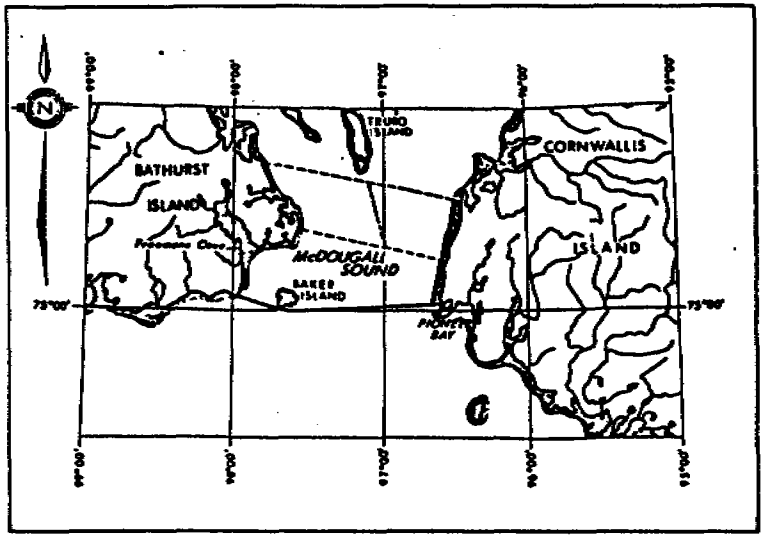
METERS

LEGEND:

1019 1000 SERIES ARE SIDESCAN AND BATHYMETRY.

49 10 SERIES ARE SEISMIC AND BATHYMETRY.

POSITIONS RECORDED AS FUNCTION OF TIME.
POSITIONS PLOTTED AT 20 SECOND FIXES.
BATHYMETRY RECORDED EVERY 5 SECONDS.



LOCATION MAP
SCALE 1:1,000,000

MONTREAL ENGINEERING COMPANY LIMITED

McDOUGALL SOUND
LINE LOCATION MAP
SOUTH LINE
MARINE SURVEY 1977

TO ACCOMPANY REPORT BY: J. FELLOWS et. al.

KEITING EXPLORATION SERVICES LIMITED — CALGARY ALBERTA

SCALE: 1:25,000	DATE: DEC. 1977
JOB NO: 2082	FIGURE NO: 18
C.L.:	DRAWN BY: H.M.

TABLE OF BASE COORDINATES

STATION	CODE	U.T.M.		GEOGRAPHIC		ELEVATION
		N (meters)	E (meters)	LAT.	LONG.	
GRIFFITH	1	8,270,993.2	432,986.2	74°31'06.48"	95°14'58.36"	203.3m.
LIMESTONE	2	8,216,272.2	430,838.4	74°01'39.57"	95°15'07.58"	164.3m.
IVY	3	8,229,442.6	478,614.6	74°09'22.85"	93°42'06.27"	210.6m.
DUNGENESS	4	8,284,936.3	481,042.3	74°39'13.98"	93°38'30.22"	196.9m.
GREEN E/C	2	8,282,494.9	454,961.3	74°37'39.89"	94°31'19.83"	30.5m.

Scale 1 25 000

500 0 500 1000 1500 2000 2500 3000

METERS

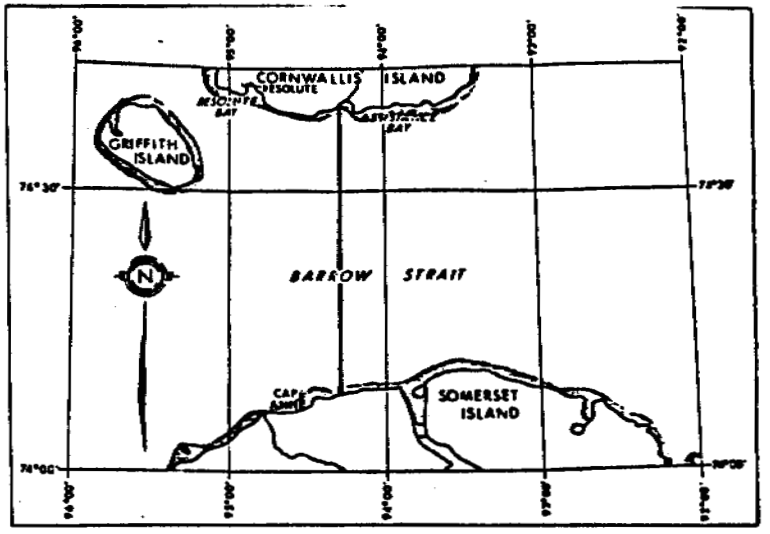
LEGEND:

1019 — 1000 SERIES ARE SIDESCAN AND BATHYMETRY.

49 — 10 SERIES ARE SEISMIC AND BATHYMETRY.

POSITIONS RECORDED AS FUNCTION OF TIME.
POSITIONS PLOTTED AT 20 SECOND FIXES.
BATHYMETRY RECORDED EVERY 5 SECONDS.

CORE 3 — CORE LOCATION



LOCATION MAP
SCALE 1:1,000,000

MONTREAL ENGINEERING COMPANY LIMITED

EAST BARROW STRAIT
SEISMIC LINE POSITIONS
ARCTIC ISLANDS
MARINE SURVEY 1977

TO ACCOMPANY REPORT BY: J. FELLOWS et. al.

KENTING EARTH SCIENCES LIMITED — CALGARY ALBERTA

SCALE 1:25,000	DATE DEC 1977
JOB NO. 2082	FIGURE NO. 29
C.I.	DRAWN BY H.M.

TABLE OF BASE COORDINATES

STATION	CODE	U.T.M.		GEOGRAPHIC		ELEVATION
		N.(meters)	E.(meters)	LAT.	LONG.	
BAKER	1	8,325,658.4	538,467.8	75°00'57.22"	97°40'01.46"	61.6m.
STANLEY	2	8,342,432.0	578,656.4	75°09'13.45"	96°14'56.75"	206.0m.
EVANS	3	8,339,992.1	539,516.9	75°08'38.78"	97°37'09.01"	74.7m.
TRURO	4	8,357,324.8	552,204.1	75°17'46.65"	97°09'26.18"	127.7m.

Scale 1:25,000

500 0 500 1000 1500 2000 2500 3000

METERS

LEGEND:

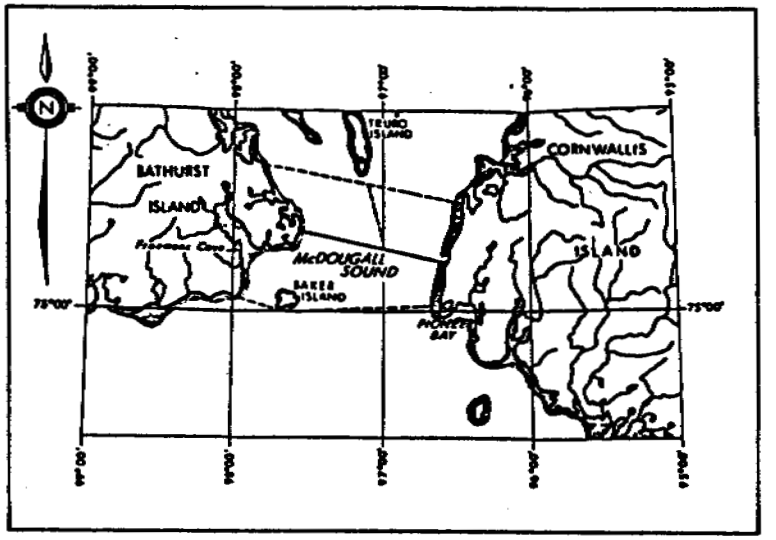
1019 — 1000 SERIES ARE SIDESCAN AND BATHYMETRY.

49 — 10 SERIES ARE SEISMIC AND BATHYMETRY.

POSITIONS RECORDED AS FUNCTION OF TIME.
POSITIONS PLOTTED AT 20 SECOND FIXES.
BATHYMETRY RECORDED EVERY 5 SECONDS.

A — A' STACKED PROFILE (FIGURE NO. 14)

B — B' CENTRE LINE DETAIL (FIGURE NO. 17)



LOCATION MAP
SCALE 1:1,000,000

MONTREAL ENGINEERING COMPANY LIMITED

McDOUGALL SOUND
LINE LOCATION MAP
CENTRAL LINE
MARINE SURVEY 1977

TO ACCOMPANY REPORT BY: J. FELLOWS et. al.

KENTRONICS EXPLORATION SERVICES LIMITED	CALGARY ALBERTA	SCALE: 1:25,000	DATE: DEC. 1977
		JOB NO.: 2082	FIGURE NO 13
		C.I.:	DRAWN BY: H.M.