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GEOLOGICAL AND DRILLING REPORTS

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SUMMARY REPORT ON THE WORK BY LOWLANDS EXPLORATION LIMITED and GAMACHE EXPLORATION and MINING CO. LTD. RELATING TO MINERAL EXPLORATION LICENSE NO. 185 ANTICOSTI ISLAND - PROVINCE OF QUEBEC

W. A. ROLIFF - DECEMBER 19th, 1963

INTRODUCTION

By virtue of the terms and conditions of an agreement entered into between Lowlands Exploration Limited and Gamache Exploration and Mining Co. Ltd., and New Associated Developments Limited, dated November 9th, 1962, and the order-in-council approving that agreement, Lowlands and Gamache jointly undertook to spend, prior to the 9th day of October, 1965, on exploration relating to Blocks 1 and 3 on Anticosti Island, (See Figure 1), the sum of $200,000., and in addition, agreed to drill a slim exploratory diamond drill hole on Block 2, limiting the expenditure thereon to $50,000.

Prior to entering into the agreement with New Associated Developments Limited, a reconnaissance study was carried out for the purpose of obtaining a knowledge of the general physical and geological aspects of the island, and the problems that might be involved in a program for the assessment of the oil and gas prospects. A copy of the report covering this study is included herewith as Appendix I.

The work described in this report covers that performed during the period from November 1st, 1961 to October 1st, 1963, and consists essentially of the compilation of the available geological data and the drilling of two slim exploratory diamond drill holes, one of which was the hole perviously referred to in respect to Block 2. In view of the terms of the agreement made with New Associated Developments Limited, the $50,000 expenditure on this hole has been deducted in arriving at the total shown on the statement of exploration expenditures.

GEOLOGICAL SURVEYS AND STUDIES

A base map on the scale of two miles to one inch was prepared from the National Topographic 1:50,000 Sheets produced by the Surveys and Mapping Branch, Department of Mines and Technical Surveys from air photos taken in 1952. The available geological information from published and unpublished sources and from air photos was compiled on this map. A number of possible faults, suggested by the study of the air photos have also been indicated on this map (see Figure 2). On the basis of this data, it was decided that a knowledge of the sub-surface character of the stratigraphic section was, at this time, of greater importance than the delineation of structural features and hence the evaluation of the prospects of Anticosti Island could best be furthered by the drilling of 3 or 4 holes for stratigraphic information. It was also decided, having regard

to the special factors involved in respect to operating on the Island and the type of information most desirable at this stage, that this could be best and most economically achieved by a large diamond drill outfit, modified to cope with the drilling problems that might be expected in the anticipated section. It was realized that it would not be possible to obtain conventional drill-stem test information in regard to any fluids present but, on the other hand, any zones containing oil or gas, and the porosity and permeability of these, are determinable from the cores which, together with the additional stratigraphic detail and palaeontological data that would be available from the cores, more than compensated for the inability to obtain drill-stem tests.

EXPLORATION DRILLING

Drilling was carried out with a diamond-drill outfit comprised of the following:

1. Derrick - Steel. Height 82', width at base 18'.
2. Drill Unit - Type - Boyles Bros. - B. B. S4.

   Hoisting capacity - 56 tons on drum.

   Power - Hercules Diesel, 110 H.P., 2100 RPM with a corresponding drill head speed in high gear.
   The unit has a swivel head with a screw feed capable of taking rods from H to A size, 3-7/16" and 1-5/8" respectively.
   Feeds on feed gears are 800, 575, 400 and 250 R.P.I.
   Rated depth - 8,000' "B" hole (2.32").

3. Supply Pump - Type - Model 420 - Bean (Heath and Sherwood)
Cylinders - One (3/4")
Stroke - 2½"
Capacity - 20 G.P.M.
Pressure - 350 P.S.I.
Powered by Lister Diesel - LD2 - 2 Cylinders developing 7 H.P. at 1,800 R.P.M.

4. Pressure Pump - Type - Model 435 - Bean
Cylinders - 3 x 2-3/4" bore
Capacity - 35.5 G.P.M.
Pressure - 1,200 P.S.I.
Powered by Perkins P.3, Three Cylinder Diesel Engine developing 28 H.P. at 1,800 R.P.M., driving through a Ford truck transmission.

5. Water Heater - Oil fired water heater, heating capacity 5 G.P.M. - flows with a temperature rise of 50° F.

6. Well Control Equipment - Blowout Preventer - Type O.T.C. (Manually operated)
2 High Pressure Valves

This outfit was operated by two crews each consisting of 3 men working one 12-hour shift per day on a 6-day per week basis.

The first hole drilled on the island, the New Associated Con-Paper Anticosti No. 1 hole, the requirement previously mentioned in respect to Block 2, was located near Camp 24 on the Jupiter River. Drilling was commenced on November 25th, 1962, and was completed in May, 1963 at a depth of 5,770 feet. A report relating to this hole has been made to New Associated Developments Limited.

On June 13th, 1963, a second test, the Lowlands Gamache Princeton Lake No. 1 hole was commenced near Princeton Lake, in the western end of the Island, about 40 miles distant from the New Associated Con Paper Anticosti No. 1 hole. The Princeton Lake hole was completed on October 1st, 1963 at a depth of 5,721 feet, having encountered the Precambrian at 5,706 feet.

So far as can be determined from the studies carried out to date there does not appear to be any marked variation in the character of the sediments of corresponding age in the two holes drilled, although some lithological differences were noted. In the Princeton Lake hole the Trenton and Chazy groups were less shaly and contained less silt; the sand near the base of the Chazy was cleaner and oil-stained in parts; and the Beekmantown was less porous and yielded only two small oil shows. In the New Associated Con Paper No. 1 hole the best visible porosity occurred around 5,600 - 5,700 feet and the equivalent of this horizon in the Princeton Lake hole was anhydritic and consequently non-porous. Only three small oil shows were present in the Princeton Lake hole.

The graphic log, Figure 3, shows the character of the rocks penetrated, the showings of oil, and other pertinent information.

An account of the drilling progress and a description of the rocks penetrated is included as Appendix II.

GENERAL

Early in October the rig from the Princeton Lake hole was moved to a location near the mouth of the Potato River in the vicinity of Carleton Point on the north shore in Block 3. This test is situated 55 miles slightly south east from the Princeton Lake hole and 25 miles approximately north east from the New Associated Con Paper Anticosti No. 1 hole.

On September 24th, 1963 a seismic party commenced work on the Island. The main purpose of this work is experimental, to determine if the seismograph would be a useful tool in the exploration of the Island.

W. A. Roliff

Toronto, December 19th, 1963
WAR/KSS

APPENDIX I

REPORT OF GEOLOGICAL FIELD WORK ON ANTICOSTI ISLAND DURING SUMMER OF 1960

IMPERIAL OIL LIMITED

By S. B. MacEachern

REPORT OF GEOLOGICAL FIELD WORK ON ANTICOSTI ISLAND DURING SUMMER OF 1960

S. B. MacEachern

INTRODUCTION

On July 26th, 1960 a two-man party consisting of the writer and Donald Harris arrived on Anticosti to do work on a reconnaissance scale. Our main objective was to acquaint ourselves with the general geology of the area, see as many sections as time permitted and sample these sections, and to become acquainted with working conditions, accessibility and all other operational factors.

A period of six weeks was spent on the Island and areas covered included the following: all roads on the island, coastline from Ellis Bay northwestward to West Point and Girard Cove, Oil River, MacDonald River, Salmon River, north east coastline extending from Cape Harvey (immediately west of Salmon River), to East Cape, Jupiter River in part and St. Marie River and vicinity on the south coast. The outcrops examined and the locations of the samples collected are shown on the map of Anticosti on a scale of 1" to 4 miles (Figure 12) accompanying this report.

From the exposures observed, a series of columnar sections were made up on a scale of 1" to 20 feet. These sections (Figures 1 to 10 inclusive), included in the report, will be referred to under a separate heading.

ACCESSIBILITY

Anticosti Island, forming the most easterly part of the St. Lawrence Lowlands, and situated in the northern half of the Gulf of St. Lawrence, is accessible from the mainland by plane and boat. Two boats owned by Consolidated Paper operate a schedule during the summer months. Scheduled runs are made from Quebec City, Rimouski and Gaspe to Anticosti. Bimonthly trips are made around the island by the smaller of these boats.

Plane service from Gaspe on a tri-weekly schedule during the summer and a bi-weekly schedule during the winter is operated by Gaspesian Airways Ltd.

On the island, a road extends from Port Menier eastward for a distance of approximately 55 miles and westward 8 miles to Baie Ste. Claire. Several branch roads lead to points on the north coast, to Mile 24 on the Jupiter River, and to the mouth of Ste. Marie River on the south coast.

All other points on the island are accessible only by boat, and for exploration work a trap boat of approximately 30' in length, seems to be the most practical.

Living quarters are available at the Company Staff House at Port Menier, the only village on the island. During the summer months there is also the possibility of arrangements being made to use the facilities of fishing and hunting camps which are present around the island.

TOPOGRAPHY

Anticosti Island, that portion of the St. Lawrence Lowlands lying to the north of "Logans Line", generally has low relief, in sharp contrast to the nearby Appalachian Regions lying to the south of this line. It shows little or no effect of mountain building forces which were active to the south. Maximum elevation is in the vicinity of 1000 feet and these higher lands are present in the central portions of the island. In both the eastern and western areas of the island, relief is very low and is characterized by an abundance of lakes.

River valleys on Anticosti are of two types. Nearly all the smaller streams flow in rock-floored, narrow,valleys and reach the sea over rapids and falls. These streams are probably in large part Post Glacial. Other rivers such as Salmon and Jupiter have wide valleys and flow over floors of gravel and sand.

The major rivers in order of size are the Jupiter, Vaureal, Salmon, MacDonald and Fox, none of which is navigable. The Jupiter river can be travelled by canoe in late spring and early summer. These rivers are the main localities of rock exposures inland on Anticosti.

Lakes on the island are numerous and occur at almost every elevation. Some of these lakes, namely, Lake St. George, Lake Plantin (western part of the island) and Lake Wickenden at the headwaters of the Jupiter River, are suitable for small aircraft landing.

The general coastal outline has broad configuration with the exception of the north east coast which has sharper features as the result of a prominent system of joints at approximately right angles to each other. The coastline, particularly on the north side of the island, has many cliff exposures and with the exception of portions of the north east coast all are accessible by boat.

Anticosti Island is surrounded by a marine-cut terrace, or reef, as it is usually named. This so-called reef has proved to be an extreme hazard to shipping in the area. It is most prominent on the north west coast and on the south coast (see Photograph #1). At some points it is up to 3 miles in width. In many places large glacial erratics are scattered over this reef tending to make navigation even more hazardous..

Numerous terraces or so-called raised beaches of variable magnitude are present on the island, and at least 22 are determinable. The elevation of the highest of these is in excess of 400 feet. On the north side the terraces are narrow, whereas on the south side some are several miles wide (1). At many localities, associated with these terraces, are enormous quantities of sand and gravel. The presence of this gravel has in most cases made road building a relatively easy task.

GENERAL GEOLOGY

Anticosti Island, as previously mentioned, comprises the eastern extension of the St. Lawrence Lowlands, and represents an extensive development of Ordovician and Silurian rocks. The section is extremely

(1) Twenhofel, W. H. - Geology of Anticosti Island
Geol. Sur. Can. Mem. 154, 1928.

interesting in that the Ellis Bay formation r epresents the youngest Ordovician beds in North America. As such it bridges a gap that in many places exists between the Ordovician and Silurian. As stated by Twenhofel, "In almost unbroken sequence are recorded the changes of life from the Ordovician to the Silurian, the stratigraphic break between the two having been apparently of brief duration"(1).

Early work by Richardson, Schuchert and Twenhofel led to the division of Anticosti into the following formations.

PERIOD	SERIES	FORMATION	DESCRIPTION	THICKNESS FEET
SILURIAN	Niagarian	Chicotte	Crinoidal & reef limestone	73'
		Jupiter	Limestone & shale	653'
ORDOVICIAN	Anticostian	Gun River	Alternating limestone & shale	308'
		Becscie	Limestone with shale partings	199'
	Gamachian	Ellis Bay	On south shore, shale and limestone, on north shore, sandstone followed by limestone	200'
	Richmondian	Vaureal	Limestone and shale inter bedded	730'
		English Head	Limestone and shale	
	Utica ?	Macasty	Black bituminous shale	?

The above formations were broken down by detailed paleontological studies (1) and recent field work seems to substantiate the fact that any breakdown on a lithologic basis in the field is extremely difficult if at all possible.

From limited field work the following observations have been made in reference to each respective formation.

(1) Twenhofel, W. H. - Geology of Anticosti Island
Geol. Sur. Can. Mem. 154, 1928.

Macasty

These beds have never been observed in place but their presence is indicated by large blocks thrown up presumably by wave action on the north coast of the island. In the vicinity of Macasty Bay these rock fragments make up a high percentage of the total beach material. The shale is very bituminous, having a strong petroliferous odor when freshly broken.

Graptolites and trilobites present in rock fragments of this formation, indicate it to be of Utica age.

Twenhofel(1) considers it probable that this formation is disconformable to the English Head formation.

English Head Formation

The oldest exposed rocks of Anticosti are represented by those of the English Head formation which has its western upper limit at Baie Ste. Claire and eastern limit at Observation Cliff. Generally it consists of alternating and repetitious beds of calcareous blue, grey and green shales, medium grey dense somewhat silty argillaceous limestones, argillaceous fragmental limestones and intraformational conglomerates.

The better exposures of this formation were observed at English Head (type section), Cap Blanc (north coast), Girard Cove, Oil River, MacDonald River and Carleton Point. A few other low coastline and reef exposures were also observed on the north coast.

Some of the above sections are illustrated and described in columnar form under the following figures:

Cap Blanc section	-	Figure 1 (In back folder)
English Head section	-	Figure 2 (In back folder)
Oil River section	-	Figure 3 (In back folder)

Samples taken from these sections are also indicated on these columnar sections. Other samples collected are located on the accompanying map on scale of 1" to 2 miles.

Toward the top of this formation are beds of medium grey, very finely crystalline, slightly silty limestone, covered with cylindrical paired impressions, supposed by Billings to be tracks and designated as Saerichnites abruptus (see Photograph No. 2 - Page 16). Twenhofel (1) confines these so-called tracks to one bed 6" in thickness and places it as the topmost bed of the formation.

Our work revealed the presence of these tracks at several intervals in the section, thereby eliminating its value as a convenient horizon marker and making it increasingly difficult to separate the English Head from the succeeding formation.

Bedding throughout the section is in many instances very lensy and generally indicative of shallow water depositional conditions, not too unlike the present depositional trends noted on the somewhat undulating wave cut terrace on reef.

Vaureal Formation

This formation begins on the west end of Anticosti at Baie Ste. Claire extending around West Point southeastward to Junction Cliff, and on the east it forms the coast from Observation Cliff to Joseph Point (1).

It differs little from the preceding formation and lithologically it is very hard to distinguish the two except for the fact that the Vaureal has a higher percentage of shale and limestone conglomerates. Coral heads also seem more abundant in this formation.

Sections were observed at West Point, Oil River, along the main highway and on the north east coast from Cape Harvey (West of Salmon River) to the west side of Mill Bay. The latter section and that on Oil River are illustrated in Figures 3 & 5 respectively in the back folder.

The section exposed at West Point consists of 30 feet of interbedded light grey dense to finely crystalline argillaceous limestone, reddish grey to grey buff limestone, and lenses of limestone conglomerate and fragmental limestone with thin interbeds of blue and blue grey calcareous shale. The occasional coral head occurs throughout the section.

On the north east coast at Mill Bay as illustrated in Figure 5, the section at the top consists of calcareous shaly sandstone, sandy limestone and sandy shale which grades into the overlying sandstones of the Ellis Bay formation. No contact between the two was observed on the western end of the island.

More complete sections of the Vaureal formation are known to be present on the Vaureal River, but time did not permit their examination.

Ellis Bay Formation

On the west end of the island this formation begins with the lowest beds exposed at the base of Junction Cliff with the highest beds forming the lower part of Cape Henry on the west side of Ellis Bay. On the north east coast the formation begins with the sandstone of Mill Bay, with the upper limits forming the lowermost beds exposed at Fox point.

The Ellis Bay formation stands out as being in part one of the most distinct formations particularly on the north east coast where it is represented in large part by sandstone and a minor amount of quartz pebble conglomerate. Elsewhere the formation consists generally of grey and grey green calcareous shale, nodular limestone, grey brown sublithographic and lithographic limestone, fragmental and coral, limestone and limestone conglomerate.

The main sections observed occur on coastline exposures within Ellis Bay northwestward from Cape Henry to Junction Cliff, and on the north east coast from Mill Bay to Fox Point and Salmon River.

These sections are illustrated in columnar form in Figures 4, 5 and 7 respectively.

As mentioned above this formation on the north east coast consists mainly of sandstone. This sandstone varies from very fine grained and silty to coarse grained and conglomeratic in small part. Generally it is very highly cross-bedded.

The sandstone has a total thickness of approximately 165 feet but has no apparent extent laterally. Even on Salmon River a relatively short distance to the west, no sandstone is present.

On the east side of Mill Bay the section consists of coarse fragmental, argillaceous limestone overlain by very fine grained sandstone and siltstone. Within the limestone are several large coral heads saturated with lime green oil. Only at this location were coral heads found to contain any oil.

The section at Junction Cliff on the western end of the island, consists of calcareous shale with lenses of fragmental limestone, overlain by grey dense argillaceous nodular type limestone (see Figure 4 and Photograph No. 3 - Page 16).

A rather distinct zone of nodular green shale was observed on the west side of Ellis Bay (Figure 4). This zone of approximately 12 feet characterized by an abundance of Hormotoma gigantea was also seen at Lousy Cove on the north east coast (Figure 5). Overlying this zone is a 10 foot section of fine grained limestone which in turn is overlain by a 10 foot section of coral limestone (see Figure 4 and Photograph 4 - Page 17). This coral limestone is exposed on the west side of Ellis Bay and north west of Cape Henry. The small reefs developed produce an undulated effect in the beds of the overlying section.

In thickness the Ellis Bay formation varies considerably, there being approximately 210 feet in the Ellis Bay vicinity and approximately 350 feet on the north east coast.

Between the Ellis Bay and the overlying Becscie formation there is no apparent break in deposition although Twenhofel (1) expresses the belief that a short time gap did occur. He supports this belief by the fact that there are present in the Ellis Bay formation, faunas which do not pass through to the overlying Becscie, and by the presence of conglomerates at the base of the latter formation.

Several thin beds of conglomerate were noted at Fox Point at the base of the Becscie formation, but were found to have no lateral extent, occurring only as lenses.

Becscie Formation

The Becscie formation of approximately 200 feet in thickness has its westernmost exposures from Cape Henry to the mouth of La Loutre River and easternmost exposures on the north east coast from Fox Point to the east end of Wreck Beach, in Innommee Bay.

The formation represents the lowermost formation of Silurian age. Exposures were examined at Cape Henry, Jupiter River, and on the north east coast from Fox Point to Waterfall Creek. These sections are represented by accompanying Figures 4, 8, 9 and 5 (See Photograph No. 5 - Page 17).

Generally the formation consists of brown and grey brown fragmental limestone, brown somewhat brecciated conchoidally fracturing sublithographic to lithographic limestone, brown fine granular limestone, calcareous grey shale and limestone conglomerate.

Comparing the section exposed on the north coast with that

on Jupiter River, there is a noteworthy decrease in the amount of shale present in the latter section, and sediments as a whole are much cleaner.

Gun River Formation

This formation, overlying the Becscie, has a thickness of approximately 300 feet. The western extremity of this formation, although not observed by the writer, is said to extend on the south coast from Ste. Anne Cliff to 6 miles west of Jupiter River (1). The eastern limits are exposed from Wreck Beachon Innommee Bay to Cape Sandtop.

Sections of the formation were seen on the north east coast from Waterfall Creek to the east side of Cape Sandtop and on the Jupiter River. These sections are represented by Figures 6 and 10 respectively as well as Photograph No. 6 - Page 17 . On the north coast west of Waterfall Creek the formation begins as alternating beds of blue grey and grey medium crystalline argillaceous limestone and blue grey calcareous shale. Further up section at Cape Sandtop Bay the lithology is mainly dense argillaceous grey limestone, nodular shale, fragmental limestone and conglomerate.

On Jupiter River the section consists of grey to grey brown fine granular limestone, fragmental and sublithographic limestone with the occasional bed of intraformational limestone conglomerate and a minor amount of calcareous grey shale. Beds rarely are in excess of 8 inches, and generally 2 to 4 inches.

At Jupiter River it becomes extremely difficult to distinguish this formation from the underlying Becscie.

According to Twenhofel (1) one of the most noteworthy features of the Gun River formation is the abundance of coral heads. Unfortunately this condition does not exist on the north coast and only a few were observed on the Jupiter River.

Jupiter Formation

This formation which is said to comprise approximately 650 feet of the total section exposed on Anticosti (1) was seen only in small part, on the north east coast section exposed from the east side of Cape Sandtop to the west side of East Cape as illustrated in Figure 6. Due to inaccessibility, part of this section was observed only from a distance.

Generally speaking the lower part of the Jupiter formation on the north coast is lithologically indistinguishable from the underlying Gun River formation. It is mainly thinly bedded calcareous shale and dense to sublithographic grey limestone with lenses of fragmental limestone. This in turn is overlain by a distinct 10 foot zone of coralline and crinoidal limestone.

The lower section observed is characterized by a great abundance of large brachiopods of the Stricklandinia type. Some beds contain up to 50 percent perfectly preserved species of this family. The type section for the formation is said to be exposed in the high headlands at the mouth of the Jupiter River.

Chicotte Formation

The Chicotte formation was not observed but is known to consist of approximately 73 feet of crinoidal and reefal limestone. Its best exposures are said to be on the south coastline from 1 mile west of South West Point, 35 miles eastward to Riviere du Pavillon (1).

STRUCTURE

Anticosti Island, as previously mentioned, occupies a relatively undisturbed position in the St. Lawrence Lowlands, with a noteworthy apparent lack of structure. Unlike the Appalachian Region to the south it was not subjected to mountain building forces, being separated from this region by "Logan's Line", a fault or fault zone that marks the northwestern border of the folded belt of the Appalachian Highlands.

The strata dip southward at angles of up to a maximum of 10 degrees but with an average dip of less than 2 degrees. Only one reversal in dip was noted and this at the mouth of the MacDonald River. Strike varies generally from north 70 degrees west to south 75 west but in most places it is in the vicinity of due east-west. These strikes and dips are plotted on an accompanying map on a scale of 1 inch equals 2 miles.

Gentle undulations are present at several locations with associated beds dipping rarely in excess of 5 degrees. These undulations are most prominent on reef exposures, visible at low tide, and associated with coral limestones in the vicinity of Ellis Bay and west of East Cape.

Two prominent systems of jointing are present in most sections observed. Generally these joints are at right angles to each other. They have a vertical plane with one system striking North 70 degrees West to due East-West and the other system North 5 to 10 degrees East. On the north east coast these joint systems are most prominent and appear to have a definite control on the present coastline configuration.

The only faulting observed occurs on a very minor scale on the east side of East Cape. Displacement is in the vicinity of 3 feet and associated highly fractured beds are filled with calcite.

CONCLUSIONS

1) The rocks of Ordovician and Silurian age as exposed on Anticosti Island are very similar lithologically, being represented by a repetitious sequence of approximately 50% limestone, 40% shale, 5% conglomerate and 5% sandstone.
2) In dividing the Anticosti rocks into separate formations it would seem that only broad lithologic differences are evident. No distinct horizon markers are present over any distance.
3) With the exception of the possibility of reefal development at depth, no structures of any great magnitude are indicated from surface work.

Wave cut terrace or so-called reef as exposed at low tide on east side of Ellis Bay.

Photograph No. 1

Track bed (Saerichnites Abruptus) as observed on reef exposure at Baie Martin - English Head Formation.

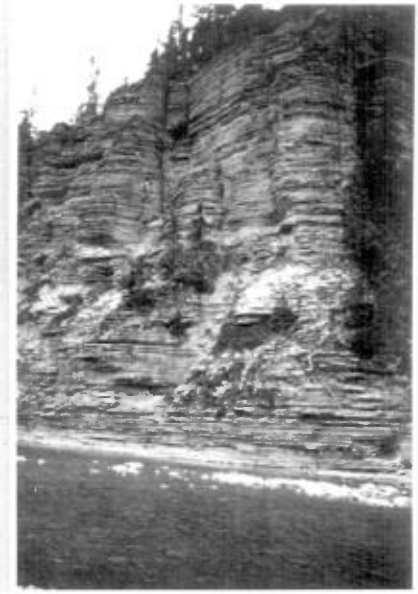
Photograph No. 2

Ellis Bay Formation exposed on coastline Cliff Face at Junction Cliff (western end of Anticosti Island)

Photograph No. 3

Section exposed north west of Cape Henry (west of Ellis Bay). Basal part of section is a coral limestone in the Ellis Bay Formation.

Photograph No. 4



Section of Becscie Formation exposed at Mile 30 on Jupiter River.

Photograph No. 5

Gun River Formation as exposed on Jupiter River at approximately Mile 35.

Photograph No. 6

APPENDIX II

PROGRESS REPORT NO. 1

DRILLING Well spudded in on June 13 at 9:00 A.M.

Well Name Lowlands-Gamache Princeton Lake No.1 **Location** Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 16, 1963. 7:00 A.M.

Depth 255' **Footage** 255' (48 Hrs.)

Hole Size 4-¾" **Deviation** .....

Average Footage Per Bit 125' (Tricone)

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION 0' - 255'

Tri-cone bit cuttings (very fine)
Limestone-grey to grey brown, dense to microcrystalline with interbeds of grey calcareous shale.

Note: No drift material was present at this location.

H casing (4-½" O.D.) set and cemented at a depth of 250'.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 2

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 20, 1963. 7:00 A.M.

Depth 584' Footage 329' (48 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 5 Min./Ft.

Water, Oil or Gas Shows .....

2" bed of medium crystalline limestone at 438.5' with good vugular porosity and associated bleeding of very light oil or naptha.

CORE DESCRIPTION

255' - 584'

Limestone-65%, light grey to brownish grey, dense to microcrystalline in small part, thinly and irregularly bedded with 25% grey very calcareous shale and 10% grey fragmental limestone. Some fossil material throughout.

MARKERS

After allowing cement to set for a period of 48 hours casing was pressured-up on using 1500 P.S.I. No leaks were found to be present and pressure did not drop.

GENERAL REMARKS

Compiled By J. B. K. Parkin

PROGRESS REPORT NO. 3

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 23,1963. 7:00 A.M.

Depth 1119' Footage 535'(72 Hrs.)

Hole Size NX(2.98") Deviation 1 Deg. at 1,000'

Average Footage Per Bit .....

Average Drilling Speed 5 Min./Ft.

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION

584'- 1025'

Limestone-60%,grey brown to brownish grey,dense, thinly & irregularily bedded with 25% interbeds of grey very calcareous shale and 15% grey fine grained fragmental limestone.
Bedding generally dips in the order of 5 degrees.
Some brachiopods and crinoids noted throughout.

1025'- 1119'

Limestone-65%,grey,dense to cryptocrystalline, fragmental in very small part,thinly and irregularily bedded with grey calcareous shale to impure shaly limestone(35%).
Graptolites noted from 1050'- 1071'.
Brachiopods present throughout.

MARKERS

GENERAL REMARKS

Compiled By J. B. A. Lockwood

PROGRESS REPORT NO. 4

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 25, 1963. 7:00 A.M.

Depth 1269' Footage 150' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 360'

Average Drilling Speed 5½ Min./FT.

Water, Oil or Gas Shows None

.....

Water loss to formation- Nil

CORE DESCRIPTION

1119'-1146'
Shale-80%, grey green, very calcareous becoming an impure argillaceous limestone in part with 20% interbeds of dense grey limestone. Traces of salt residue along some bedding planes.

1146'-1233'
Limestone-30%, medium grey, cryptocrystalline to micro-crystalline, skeletal in small part, very compact in beds up to 6" in thickness, irregularily bedded with 30% grey calcareous shale. Bedding dips from 2 to 5 degrees.

1233'-1250'
Shale-60% medium grey, calcareous becoming an argillaceous limestone with 40% interbeds of dense grey limestone.

MARKERS

1250'- 1269'
Limestone-70% as above with 30% grey calcareous shale.

GENERAL REMARKS

Compiled By J. B. M. Lowe

PROGRESS REPORT NO. 5

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 26, 1963 7:00 A.M.

Depth 1374' Footage 105'

Hole Size Nx(2.98") Deviation .....

Average Footage Per Bit 360'

Average Drilling Speed 6 Min./Ft.

Water, Oil or Gas Shows None

.....

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CORE DESCRIPTION

1269' - 1374'

Interbedded medium grey to brownish grey calcareous shale to impure argillaceous limestone and grey dense to micrograined limestone.
Bedding dips from 2 to 5 degrees.
Several brachiopods noted throughout.

MARKERS

GENERAL REMARKS

Rig shut down 8 hours for repairs.

Compiled By J. B. A. Fowler

PROGRESS REPORT NO. 6

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 27,1963. 7:00 A.M.

Depth 1533' Footage 159' (24 Hrs.)

Hole Size NX(2.98") Deviation 1 Deg. at 1500'

Average Footage Per Bit 360'

Average Drilling Speed 5½ min./Ft.

Water, Oil or Gas Shows None.

CORE DESCRIPTION

1374' - 1533'

Interbedded grey to grey brown dense argillaceous limestone to calcareous shale and medium grey dense to very finely crystalline limestone.
Some fossil material throughout-poorly preserved graptolites, brachiopods(Lingula Type) and trilobite remains.
Several steeply dipping fractures from 1455' - 1500'.
Bedding varies from flat lying to 2 degrees.

MARKERS

GENERAL REMARKS

Compiled By [signature]

PROGRESS REPORT NO. 7

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 28,1963. 7:00 A.M.

Depth 1684' Footage 151'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 360'

Average Drilling Speed 5 Min./Ft.

Water, Oil or Gas Shows None

.....

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CORE DESCRIPTION

1533'- 1575'

Limestone-60% grey to grey brown,dense,thinly and regularly bedded with 40% medium grey calcareous shale to impure dense argillaceous limestone.
Some graptolites and several Lingula Type brachiopods noted throughout.
Section has a petroliferous odour in part when freshly broken.
Bedding generally dips in the order of 2 degrees.

1575'- 1684'

Interbedded light grey dense thin bedded limestone and medium grey to brownish grey, dense argillaceous limestone to calcareous shale.
Some poorly preserved graptolites throughout.
Bedding is essentially flat lying.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 8

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 29, 1963. 7:00 A.M.

Depth 1811' Footage 127(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 360'

Average Drilling Speed 5½ Min./Ft.

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION

1684'-1785'

Limestone-60%, grey to brownish grey, dense, thinly bedded with 40% medium grey calcareous shale to impure argillaceous limestone.
Traces of graptolite and trilobite remains.
Bedding generally flat lying.

1785'- 1811'

Interbedded grey to brownish grey dense limestone as above(50%) and medium grey calcareous shale to impure argillaceous limestone, thin bedded and flat lying throughout.
Traces of poorly preserved graptolites.

MARKERS

GENERAL REMARKS

Compiled By J. B. McFarlane

PROGRESS REPORT NO. 9

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time June 30, 1963. 7:00 A.M.

Depth 1913' Footage 102' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 360'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation.

CORE DESCRIPTION

1811' - 1913'

Interbedded grey dense to sublithographic thinly bedded limestone(55%) and medium grey calcareous shale to impure argillaceous limestone.
Beds are flat lying throughout.
Several lingula type brachiopods noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. McFarlane

PROGRESS REPORT NO. 10

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 2,1963. 7:00 A.M.

Depth 2018' Footage 105'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION

1913' - 2018'

Limestone-60%,light grey, dense to sublithographic, thin bedded with 40% interbeds of medium grey calcareous shale to impure argillaceous limestone, flat lying throughout.
Several brachiopods noted(Similar to "TREMATIS MONTREALENSIS" - Billings - Trenton Formation).
Also several lingula type brachiopods and a few poorly preserved graptolites noted.
Section has a slight petroliferous odour in part.

MARKERS

GENERAL REMARKS

Compiled By A. B. A. Jackson

PROGRESS REPORT NO. 11

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 3, 1963 7:00 A.M.

Depth 2131' Footage 113' (24 Hrs.)

Hole Size NX(2.98") Deviation 1/2 Deg. at 2,000'

Average Footage Per Bit 530'

Average Drilling Speed 6-3/4 Min./Ft.

Water, Oil or Gas Shows None

CORE DESCRIPTION

2018' - 2131'

Interbedded grey dense limestone(55%) and medium grey calcareous shale to impure argillaceous limestone, thin bedded and flat lying throughout.
Section has a slight petroliferous odour in part.
Several lingula type brachiopods noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowell

PROGRESS REPORT NO. 12

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 4, 1963. 7:00 A.M.

Depth 2233' Footage 102' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 6-1/2 Min./Ft.

Water, Oil or Gas Shows None

CORE DESCRIPTION

2131' - 2233'

Limestone-60%, grey, dense to sublithographic, argillaceous in part, thin bedded with 40% calcareous medium grey shale, flat lying throughout.
Several lingula type brachiopods and a few graptolites noted.
Section has a slight petroliferous odour in part.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Lucas

PROGRESS REPORT NO. 13

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 5, 1963. 7:00 A.M.

Depth 2353' Footage 120' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 6 Min./Ft.

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION

2233' - 2288'

Limestone-65%, grey to grey brown, dense to sub-lithographic, thin bedded with 35% medium grey calcareous shale to impure argillaceous limestone. Bedding varies from flat lying to a dip of 2 degrees. Section has a slight petroliferous odour in part.

2288' - 2353'

Limestone-70% grey to medium grey, dense to sub-lithographic as above, argillaceous in part with 30% interbeds of medium grey calcareous shale to impure argillaceous limestone.

MARKERS

Several lingula and a few poorly preserved graptolites noted.

Bedding varies from flat lying to 3 degrees.

GENERAL REMARKS

Compiled By J. B. K. Foster

PROGRESS REPORT NO. 14

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 6, 1963 7:00 A.M.

Depth 2461' Footage 108' (24 Hrs.)

Hole Size NX Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 6 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation - Nil

CORE DESCRIPTION

2353' - 2461'

Limestone-60%, grey to grey brown, dense to sub-lithographic, with 40% interbeds of medium grey calcareous shale to impure argillaceous limestone, thinly bedded throughout, irregular in part.
Bedding where regular varies from flat lying to a dip of 2 degrees.
Traces of graptolite remains.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Foster

PROGRESS REPORT NO. 15

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island

Rig Floor Elevation .....

Date and Time July 7, 1963. 7:00 A.M.

Depth 2564' Footage 103' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation--Nil

CORE DESCRIPTION

2461' - 2564'

Limestone-60%, grey to grey brown, dense to sub-lithographic in beds up to 4" in thickness inter-bedded with 40% medium grey calcareous shale to impure argillaceous limestone.
Bedding generally flat lying but some dips of 2 degrees noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowe

PROGRESS REPORT NO. 16

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 9, 1963 7:00 A.M.

Depth 2607' Footage 43' (24 Hrs.)

Hole Size NX Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation- Nil

CORE DESCRIPTION

2564' - 2607'

Limestone-65%, grey to grey brown & medium grey, dense to sublithographic, argillaceous in part with 35% interbeds of medium grey calcareous shale to impure argillaceous limestone, flat lying throughout.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lockwood

PROGRESS REPORT NO. 17

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 10, 1963. 7:00 A.M.

Depth 2696' Footage 89' (24 Hrs.)

Hole Size NX (2.98") Deviation 1/2 Deg. at 2500'

Average Footage Per Bit 530'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation- Nil

CORE DESCRIPTION

2607' - 2696'

Varies from a medium slightly brownish grey dense argillaceous limestone to a medium grey very calcareous shale, flat lying throughout. Traces of graptolite remains and one lingula type brachiopod noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. A. Lachance

PROGRESS REPORT NO.18

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 11, 1963. 7:00 A.M.

Depth 2788' Footage 92'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 7 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation- Nil

CORE DESCRIPTION

2696' - 2788'

Limestone-65%, grey to grey brown, dense, argillaceous in part, thin bedded with 35% medium grey calcareous shale to impure argillaceous limestone.
Several lingula and a few poorly preserved graptolites noted.
Bedding is flat lying throughout.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lockwood

PROGRESS REPORT NO.19

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 12, 1963. 7:00 A.M.

Depth 2869' Footage 81' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 8 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

2788' - 2869'

Interbedded grey to grey brown dense limestone argillaceous in part and medium grey calcareous shale, flat lying throughout.
Several poorly preserved graptolites.

MARKERS

GENERAL REMARKS

Compiled By J. R. K. Lowes

PROGRESS REPORT NO.20

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 13, 1963. 7:00 A.M.

Depth 2930' Footage 61' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 8 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

2869' - 2930'

Shale-90%, medium grey, calcareous to limy becoming an impure argillaceous limestone in part with 10% interbeds of grey dense limestone, flat lying throughout.

MARKERS

GENERAL REMARKS

Compiled By J. B. M. Lockwood

PROGRESS REPORT NO. 21

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.I Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 14, 1963. 7:00 A.M.

Depth 2972' Footage 42' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 530'

Average Drilling Speed 5½ Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

2930' - 2972'

Shale-medium grey, calcareous, becoming an argillaceous limestone in part with minor dense grey limestone interbeds, flat lying throughout.
Some poorly preserved graptolites noted.
Section has a slight petroliferous odour in part.

Rig shut down 14 hours for repairs.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowther

PROGRESS REPORT NO. 22

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.I Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 16, 1963. 7:00 A.M.

Depth 2977' Footage 5'

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed .....

Water, Oil or Gas Shows None

.....

.....

CORE DESCRIPTION

2972'-2977'

Limestone-65%, grey brown, dense, thin bedded & laminated in part with 35% interbeds of medium grey calcareous shale.
Irregularily bedded throughout with dip varying from 2 to 10 degrees.
Minor disseminated pyrite.

Rig shut down 19 hours for repairs.

MARKERS

GENERAL REMARKS

Compiled By A. P. K. Lowe

PROGRESS REPORT NO.23

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 17, 1963 7:00 A.M.

Depth 3029' Footage 52' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

2977' - 2984'

Interbedded grey brown dense limestone with a greenish cast in part, and medium to dark grey calcareous shale becoming sub-bituminous in part.
Some disseminated pyrite throughout.
Several lingula type brachiopods and a few ostracods noted.

2984' - 2992'

Shale-dark grey, calcareous, sub-bituminous, with minor interbeds of dense grey limestone.

2992' - 3029'

MARKERS

Shale-black, bituminous, calcareous, very firm, probably an impure argillaceous limestone in part. Numerous graptolites & some brachiopods throughout. Section has a petroliferous odour when freshly broken.

GENERAL REMARKS

Compiled By A. B. K. Lockwood

PROGRESS REPORT NO. 24

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 18, 1963 ... 7:00 A.M.

Depth 3111' Footage 82' (24 Hrs.)

Hole Size NX (2.98") Deviation 1 Deg. at 3,000'

Average Footage Per Bit .....

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation - Nil

CORE DESCRIPTION

3029' - 3111'

Shale- black, bituminous, slightly calcareous to calcareous, micromicaceous, with a strong petroliferous odour when freshly broken.
Gaseous emanations apparent for several hours after core removed from barrel.
Numerous graptolites and small lingula type brachiopods throughout.
A few thin bands of pyrite.
Bedding is flat lying throughout.

MARKERS

Present lithology and fossil assemblages indicates that the Lower Trenton or Black River Formation is being penetrated.

GENERAL REMARKS

Compiled By J. B. K. Lowther

PROGRESS REPORT NO. 25

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 19, 1963. 7:00 A.M.

Depth 3173' Footage 62' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 11 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3111' - 3173'

Shale-black, bituminous, slightly calcareous, with a strong petroliferous odour when freshly broken.
Several interbeds of dark grey to black dense argillaceous and bituminous limestone.
Gaseous emanations noted for several hours after removal of core from barrel.
A few thin bands of pyrite.
Numerous graptolites and lingula type brachiopods throughout.
Bedding remains flat lying.

MARKERS

GENERAL REMARKS

Compiled By J. B. M. Lowland

PROGRESS REPORT NO. 26

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 20,1963. 7:00 A.M.

Depth 3254' Footage 81'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3173'- 3254'

Shale-70%,black, bituminous, slightly calcareous, with 30% interbeds of dark grey brown, dense, argillaceous limestone, bituminous in part.
Section throughout has a strong petroliferous odour when freshly broken and gaseous emanations were noted for several hours after core was removed from barrel.
Numerous brachiopods and graptolites throughout.
Several thin bands of pyrite.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Lockhead

PROGRESS REPORT NO. 27

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 21, 1963. 7:00 A.M.

Depth 3331' Footage 77' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3254'-3275'
Shale-70%, black, bituminous, graptolitic as previously with 30% interbeds of dark grey argillaceous dense limestone.
Several thin bands of brown micaceous shale and pyrite.

3275'-3276.5'
Limestone-grey buff, pelletoid and skeletal consisting of pellets of limestone and skeletal material(gastropods and brachs recognizable), tightly cemented with calcite.

3276.5'-3317'
Interbedded grey to grey green and brown impure dense argillaceous limestone and dolomitic shale to impure dense argillaceous dolomite, brecciated and fractured vertically in small part.
Traces of disseminated pyrite.

MARKERS

GENERAL REMARKS

Compiled By .....

(Over)

PROGRESS REPORT NO. 27 (cont,d)

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 21, 1963, 7:00 A.M.

Depth 3331' Footage .....

Hole Size ..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed .....

Water, Oil or Gas Shows .....

.....

.....

CORE DESCRIPTION

3317'-3324'

Limestone-light grey, dense, with minor associated skeletal material and argillaceous partings.

3324'-3331'

Limestone-grey brown, fragmental, consisting of pellets of limestone and skeletal material in a dense matrix, tightly cemented with calcite.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 28

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 23, 1963 7:00 A.M.

Depth 3412' Footage 81' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 8 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3331'- 3377'
Limestone-grey brown, pelletoid, consisting essentially of grains & pellets of dense limestone & skeletal material cemented tightly with calcite.
Several bituminous styolitic partings noted.

3377'-3403'
Limestone-grey brown, dense, skeletal in part, nodularily bedded in part with much associated medium grey shale, irregularily bedded throughout.
A few poorly preserved brachiopods.

3403'-3412'
Limestone-85%, brown, dense to sublithographic, skeletal in part with 15% associated argillaceous material, irregularily bedded throughout.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Lowland

PROGRESS REPORT NO.29

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8,Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 24,1963. 7:00 A.M.

Depth 3493' Footage 81'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3412'-3456'
Limestone-85%,grey brown,dense to sublithographic with minor skeletal material and 15% associated argillaceous material.Irregularily bedded,nodular in part and becoming conglomeratic at base.

3456'-3477'
Limestone-65%,grey brown,dense,nodularily bedded in part with 35% medium grey calcareous shale.

3477'-3493'
Limestone-60%,light grey brown,dense,nodularily bedded throughout with 40% medium grey calcareous shale.
Several poorly preserved brachiopods noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. McLeod

PROGRESS REPORT NO.30

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 25, 1963. 7:00 A.M.

Depth 3566' Footage 73' (24 Hrs.)

Hole Size NX(2.98") Deviation 1-1/2 Deg. at 3500'

Average Footage Per Bit 660'

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3493'-3532'
Limestone-85%, brown, dense, nodularily bedded with 15% medium grey calcareous argillaceous partings. Minor skeletal material throughout.

3532'-3547'
Limestone-55%, light grey brown, dense, nodularily bedded in part(25%) with 45% medium grey calcareous shale.
Several graptolites and a few poorly preserved brachiopods noted.

3547'-3566'
Shale-55%, medium grey calcareous, becoming an impure argillaceous limestone in part with 45% associated light grey brown dense nodular limestone.

MARKERS

GENERAL REMARKS

Compiled By A. B. [illegible]

PROGRESS REPORT NO. 31

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 26, 1963. 7:00 A.M.

Depth 3635' Footage 69' (24 Hrs.)

Hole Size Nx(2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3566'-3581'
Limestone-75%, brown & grey brown, dense with some skeletal material, thinly & irregularily bedded, nodular in part with 25% associated medium grey calcareous shale.

3581'-3596'
Limestone-grey brown, dense to cryptocrystalline, argillaceous, with some associated skeletal material.

3596'-3635'
Limestone-brown, dense to cryptocrystalline, skeletal throughout with associated argillaceous material, irregularily bedded throughout.

MARKERS

GENERAL REMARKS

Compiled By R. B. K. Lowland

PROGRESS REPORT NO. 32

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...July 27, 1963. ...7:00 A.M.

Depth .....3716'..... Footage ....81' (24 Hrs.).....

Hole Size ...NX(2.98").... Deviation .....

Average Footage Per Bit ...660'.....

Average Drilling Speed ....8 Min./Ft.....

Water, Oil or Gas Shows ...None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION

3635'-3656'
Limestone-brown, dense to fine crystalline, skeletal with associated argillaceous material throughout.
Trace of pyrite.
Several nodules of chert noted.

3656'-3716'
Limestone-brown, dense to fine and medium crystalline as above, skeletal with associated argillaceous material.
Traces of pyrite.

MARKERS

GENERAL REMARKS

Compiled By J. B. A. Fortin

PROGRESS REPORT NO. 33

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 28, 1963 7:00 A.M.

Depth 3779' Footage 63' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3716'-3779'

Limestone-brown, medium grained, skeletal with a matrix varying from dense to fine crystalline. Argillaceous partings throughout and a few styolites noted.

MARKERS

GENERAL REMARKS

Compiled By A. R. A. Lowland

PROGRESS REPORT NO. 34

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 30, 1963 7:00 A.M.

Depth 3842' Footage 63' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3779'-3805'

Limestone-brown, fine to medium grained, composed essentially of grains of dense limestone with associated skeletal material enclosed in a calcite cement. Argillaceous partings throughout.

3805'-3842'

Limestone-brown, dense, fine grained in part with skeletal and argillaceous material throughout. Several styolites noted.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Foster

PROGRESS REPORT NO. 35

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time July 31, 1963. 7:00 A.M.

Depth 3904' Footage 62' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3842'-3865'

Limestone-brown, dense to microcrystalline & fine grained, skeletal with argillaceous partings throughout.
Several chert bands from 3862.5' to 3865'

3865'-3904'

Limestone-brown, dense to sublithographic with minor associated skeletal material and argillaceous partings throughout.
Several chert nodules noted.
Traces of pyrite.

MARKERS

GENERAL REMARKS

Compiled By A. B. M. Forbes

PROGRESS REPORT NO. 36

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 **Location** Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 1, 1963. 7:00 A.M.

Depth 3963' **Footage** 59' (24 Hrs.)

Hole Size NX **Deviation** .....

Average Footage Per Bit 660'

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None (See Description)

.....

Water loss to formation-Nil

CORE DESCRIPTION

3904'-3925'
Limestone-brown, consisting of grains & pellets of dense limestone and skeletal material with a dense to micro-crystalline limestone matrix and calcite cement. (Texture apparent only after etching with HCL)
Argillaceous & bituminous irregular partings throughout with some associated gaseous emanations. Section in part has a petroliferous odour when freshly broken.

3925'-3963'
Limestone-buff to light brown, dense, with skeletal material & grains of dense limestone and argillaceous partings throughout.
Vertically fractured from 3945'-3947.5' with associated oil staining and traces of heavy green oil.

MARKERS

GENERAL REMARKS

Compiled By A. B. M. Lowland

PROGRESS REPORT NO. 37

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 2, 1963, 7:00 A.M.

Depth 4024' Footage 61' (24 Hrs.)

Hole Size NX Deviation .....

Average Footage Per Bit 6601

Average Drilling Speed 8 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

3963'-3985'

Limestone-buff to brown, dense with pellets of limestone and minor skeletal material. Argillaceous partings throughout and several styolites noted.

3985'-4024'

Limestone-buff to brown, pelletoid, consisting of pellets & grains of limestone in a dense matrix with minor associated skeletal material, cemented with calcite. Argillaceous partings and styolites throughout.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Foster

PROGRESS REPORT NO. 38

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 3,1963. 7:00 A.M.

Depth 4106' Footage 82'(24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit 660'

Average Drilling Speed 9 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4024'-4090'
Limestone-buff to brown,pelletoid,consisting of grains & pellets of dense limestone in a dense matrix with minor associated skeletal material,cemented with calcite. Argillaceous partings and a few styolites throughout. Several bands of chert.

4090'-4106'
Limestone-brown,pelletoid & skeletal with a very dense matrix and cemented with calcite.

MARKERS

GENERAL REMARKS

Compiled By A.B. Hawkins

PROGRESS REPORT NO. 39

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 4, 1963 7:00 A.M.

Depth 4137' Footage 31' (24 Hrs.)

Hole Size NX (2.98") Deviation 1-1/2 Deg. at 4,000'

Average Footage Per Bit 660'

Average Drilling Speed 11 Min./Ft.

Water, Oil or Gas Shows None

Water loss to formation-Nil

CORE DESCRIPTION

4106'-4137'

Limestone-buff to brown, pelletoid & skeletal with a dense matrix and calcite cement. Irregular argillaceous partings throughout.

MARKERS

GENERAL REMARKS

Minor amount of cavings in hole (2')

Compiled By [signature]

PROGRESS REPORT NO. 40

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 6, 1963 7:00 A.M.

Depth 4208' Footage 71' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 10 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4137'-4159'
Limestone-70%, brown to grey brown, skeletal & pelletoid, argillaceous in part, dense matrix, irregularily & nodularly bedded with 30% medium grey calcareous shale.

4159'-4172'
Limestone-brown & grey brown, pelletoid, skeletal in part, becoming sandy at base.
Section has a petroliferous odour in part.

4172'-4187'
Sandstone-grey, medium to coarse grained & gritty, angular to subrounded quartz grains tightly cemented with calcite.

MARKERS

4187'-4194'
Sandstone-brown, fine to medium grained, angular & subrounded quartz grains, calcareous to somewhat dolomitic. Poor intergranular porosity with associated oil staining. Bedding dips from 5 to 7 degrees. Minor bituminous material.

GENERAL REMARKS

Compiled By [signature]

(Over)

PROGRESS REPORT NO. 40(contd)

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 6, 1963 7:00 A.M.

Depth 4208' Footage .....

Hole Size ..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed .....

Water, Oil or Gas Shows .....

.....

.....

CORE DESCRIPTION 4194'-4208'

Sandstone-80%, grey, fine grained, angular & subrounded quartz grains, tightly cemented, very calcareous becoming a sandy limestone in part. 20% associated medium grey calcareous shale, irregularly bedded throughout.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 41

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...August 7, 1963.....7:00 A.M.

Depth ....4251'..... Footage ...43' (24 Hrs.).....

Hole Size .NX(2.98").....Deviation .....

Average Footage Per Bit .....

Average Drilling Speed ...15 Min./Ft.

Water, Oil or Gas Shows .None.....

.....

Water loss to formation-Nil

CORE DESCRIPTION

4208'-4226'
Limestone-55%, grey brown, skeletal with a dense matrix, argillaceous in part with 45% interbeds of medium grey calcareous shale, irregularily bedded throughout.

4226'-4242'
Sandstone-light grey, fine to medium grained, coarse grained in part, angular to subrounded quartz grains, tightly cemented with calcareous material.

4242'-4251'
Sandstone-light grey, coarse grained, medium in part, poorly sorted quartz grains, angular & subrounded, poorly cemented and somewhat calcareous. Some poor intergranular porosity from 4242' to 4250.5' with traces of associated oil staining.
Petroliferous odour throughout and some pyrobitumen noted.

MARKERS

GENERAL REMARKS

Compiled By .J. B. M. Fraser....

PROGRESS REPORT NO. 42

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 8, 1963 7:00 A.M.

Depth 4296' Footage 45' (24 Hrs.)

Hole Size NX(2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 12 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4251'-4290'
Sandstone-light grey, medium & coarse grained, quartzose, tightly cemented, siliceous and slightly calcareous, cross-bedded in part, with some argillaceous laminae.

4290'-4296'
Interbedded medium grey non-calcareous shale and light grey medium to coarse grained sandstone as above.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Foster

PROGRESS REPORT NO. 43

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 9, 1963. 7:00 A.M.

Depth 4323' Footage 27' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 13 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4296'-4312'

Limestone-brown, dense to sublithographic with minor associated skeletal and argillaceous material.

4312'-4323'

Limestone-brown, skeletal with a dense matrix. Some associated argillaceous and bituminous material.

Rig shut down for 12 hours because of crew shortage.

MARKERS

GENERAL REMARKS

Compiled By L. B. K. Fuller

PROGRESS REPORT NO. 44

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...August 10, 1963.....7:00 A.M.....

Depth ....4348'..... Footage ...25'.....

Hole Size ....NX(2.98")..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed ....14 Min./Ft.....

Water, Oil or Gas Shows ...None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION

4323'-4348'

Limestone-75%, brown & grey brown, dense with skeletal material throughout and 25% medium grey shale and argillaceous partings. Several brachiopods noted (Dinorthis Type)

2' of cave present in hole after each run.

MARKERS

Rig shut down 12 hours because of crew shortage.

GENERAL REMARKS

Compiled By J. B. K. Parker

PROGRESS REPORT NO. 45

DRILLING

Well Name Lowlands-Camache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 11, 1963. 7:00 A.M.

Depth 4385' Footage 37' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 20 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4348'-4360'

Limestone-90%, brown, dense, skeletal with 10% argillaceous partings.

4360'-4385'

Limestone-70%, grey & grey brown, skeletal with a dense matrix & calcite cement, irregularily and thinly bedded with 30% medium to dark grey calcareous shale, bituminous in very small part.

---

2 to 4 feet of cave in hole.

MARKERS

GENERAL REMARKS

Compiled By R. B. K. Lockwood

PROGRESS REPORT NO. 46

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 13, 1963 7:00 A.M.

Depth 4414' Footage 24' (24 Hrs.)

Hole Size NX (2.98") Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 20 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4385'-4414'

Limestone-70%, grey to grey brown, skeletal with a dense matrix & calcite cement, interbedded with 20% grey dense limestone and 10% medium grey calcareous shale, thinly and irregularily bedded throughout. Bedding although irregular dips in the order of 5 degrees.

MARKERS

GENERAL REMARKS

Compiled By A. B. K. Lowe

PROGRESS REPORT NO. 47

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...August 14, 1963.....7:00 A.M.....

Depth ...4443'..... Footage .....29' (24 Hrs.).....

Hole Size .NX(2.98")..... Deviation .....

Average Footage Per Bit ...450'.....

Average Drilling Speed ....16 Min./Ft.....

Water, Oil or Gas Shows ...None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION

4414'-4417.5'

Limestone-brown, dense, with associated argillaceous partings.

4417.5'-4421.5'

No Recovery.

4421.5'-4443'

Limestone-85%, brown, dense, with irregular argillaceous partings throughout(15%).

MARKERS

GENERAL REMARKS

2' of cave in hole after each run.

Compiled By R. B. McLaren

PROGRESS REPORT NO. 48

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 15, 1963 7:00 A.M.

Depth 4483' Footage 40' (24 Hrs.)

Hole Size NX Deviation .....

Average Footage Per Bit 450'

Average Drilling Speed 14 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4443'-4465'

Limestone-90%, brown, dense with associated skeletal material and argillaceous partings (10%), some of which are bituminous.
Poorly preserved brachiopods and several ostracods noted.

4465'-4483'

Limestone-90%, brown, dense as above becoming skeletal and pelletoid with 10% associated argillaceous and bituminous partings.
Brachiopods and some ostracods noted throughout.

MARKERS

GENERAL REMARKS

2' of cave in hole.

Compiled By .....

PROGRESS REPORT NO. 49

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 16, 1963 7:00 A.M.

Depth 4514' Footage 30' (24 Hrs.)

Hole Size NX and BX Deviation .....

Average Footage Per Bit 450'

Average Drilling Speed 14 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION 4483'-4514'

Limestone-70%, grey brown, skeletal & pelletoid with a dense matrix & calcite cement, argillaceous in part with 30% associated medium grey argillaceous partings.
Traces of pyrite.

Hole reduced to BX size at a depth of 4501'

MARKERS

GENERAL REMARKS 2' of cave present in hole after each run.

Compiled By J. B. A. Lowe

PROGRESS REPORT NO. 50

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8 Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 17, 1963 7:00 A.M.

Depth 4553' Footage 39' (24 Hrs.)

Hole Size BX Deviation 1-1/2 Deg. at 4500'

Average Footage Per Bit .....

Average Drilling Speed 14 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4514'-4530'

Interbedded grey, dense to microcrystalline dolomite (70%), and brown dense limestone.

4530'-4553'

Dolomite-greenish grey & light grey, dense, argillaceous in part with minor associated shale interbeds.
Bedding is irregular in part but generally varies in dip from flat lying to 3 degrees.

MARKERS

GENERAL REMARKS

Compiled By R. B. K. Lochead

PROGRESS REPORT NO.51

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 18, 1963 7:00 A.M.

Depth 4594' Footage 41' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 15 Min./Ft.

Water, Oil or Gas Shows None (see description)

.....

Water loss to formation-Nil

CORE DESCRIPTION

4553'-4579'

Dolomite-light grey & brown, dense to cryptocrystalline with argillaceous and partly bituminous laminae throughout. Bedding dips from 2 to 5 degrees.
Trace of green oil along bituminous parting at 4576.3'

4579'-4594'

Dolomite-light grey & brown, dense to microcrystalline, with associated argillaceous laminae.
Traces of green oil weeping along minute fractures and pin-point porosity at 4581.5'; 4582' and from 4583.5' to 4584.8'

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowe

PROGRESS REPORT NO. 52

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 20, 1963 7:00 A.M.

Depth 4624' Footage 30' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 15 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4594'-4606'
Dolomite-light grey, brown in very small part, dense with associated argillaceous laminae throughout.
Trace of oil weeping at 4591.5' and oil staining associated with fracturing from 4596' to 4597'.

4606'-4614'
No Recovery

4614'-4624'
Dolomite with argillaceous laminae as previously.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 53

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 21, 1963. 7:00 A.M.

Depth 4683' Footage 59' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 12 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4624'-4683'

Dolomite-grey to greenish grey & brown, dense to microcrystalline, with argillaceous laminae throughout and several dark grey shale interbeds. Several bands and blebs of grey anhydrite noted. Bedding varies irregularly from flat lying to a dip of 7 degrees.

MARKERS

GENERAL REMARKS

Compiled By A. B. McFarlane

PROGRESS REPORT NO. 54

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 22, 1963 7:00 A.M.

Depth 4728' Footage 45' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 13 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4683'-4728'

Dolomite-light grey to greenish grey in part, dense to microcrystalline with minor argillaceous laminae and shale partings(less than 5%).
A few blebs of anhydrite noted.
Bedding varies from flat lying to 2 degrees.

MARKERS

GENERAL REMARKS

Compiled By R. B. K. Lowe

PROGRESS REPORT NO. 55

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 23, 1963, 7:00 A.M.

Depth 4790' Footage 62' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 11 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4728'-4790'

Dolomite-grey & brown, dense to finely crystalline, with argillaceous laminae and minor bituminous material.
Minor calcite infilling.
Bedding dips irregularly up to 25 degrees.

MARKERS

GENERAL REMARKS

Compiled By R. B. Thurlow

PROGRESS REPORT NO. 56

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 24, 1963 7:00 A.M.

Depth 4829' Footage 39' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 11 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION 4790'-4829'

Dolomite-grey & brown, dense to microcrystalline, finely crystalline in small part, with argillaceous laminae throughout. Traces of pin-point porosity from 4824' to 4826' with minor associated bituminous material.

Rig shut down 6 hours for repairs.

MARKERS

GENERAL REMARKS

Compiled By .....

PROGRESS REPORT NO. 57

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 25, 1963 7:00 A.M.

Depth 4872' Footage 43' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 15 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4829'-4848'

Dolomite-light grey, dense to microcrystalline, laminated in part with minor dark grey shale interbeds.
Bedding dips irregularily from 2 to 10 degrees.

4848'-4872'

Dolomite-brown, fine to medium crystalline with associated irregular argillaceous partings (less than 5%).
Traces of pin-point porosity from 4860' to 4864'.

MARKERS

GENERAL REMARKS

Compiled By R. B. K. Lowland

PROGRESS REPORT NO. 58

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 27, 1963 7:00 A.M.

Depth 4914' Footage 42' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 14 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4872'-4914'

Dolomite-brown & grey brown, finely crystalline with associated irregular argillaceous partings.

MARKERS

GENERAL REMARKS

Compiled By A. B. [illegible]

PROGRESS REPORT NO. 59

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time August 28, 1963. 7:00 A.M.

Depth 4954' Footage 37' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 16 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

4914'-4944'
Dolomite-grey brown, finely crystalline with minor argillaceous laminae.
Several blebs of calcite noted.
Vertically fractured with associated calcite infilling.

4944'-4947'
No Recovery

4947'-4954'
Dolomite-grey brown, finely crystalline as above with argillaceous laminae.

MARKERS

GENERAL REMARKS

Compiled By [signature]

PROGRESS REPORT NO. 60

DRILLING

Well Name..Lowlands-Gamache Princeton Lake No.1...Location..Mile 8, Main Highway, Anticosti Island.

Date and Time...August 29, 1963, 7:00 A.M.

Depth.....4994'.....Footage..40' (24 Hrs.).....

Hole Size...BX.....Deviation.....

Average Footage Per Bit.....

Average Drilling Speed...15 Min./Ft.....

Water, Oil or Gas Shows...None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION

4954'-4986.5'

Varies from a dolomitic limestone to a limy dolomite, grey brown, finely crystalline with associated argillaceous material throughout. A few blebs of calcite noted.

4986.5'-4994'

Dolomite-grey, finely crystalline with trace to poor intercrystalline and vugular porosity.

MARKERS

GENERAL REMARKS

Compiled By. A. B. K. Lowland.

PROGRESS REPORT NO. 61

DRILLING

Well Name. Lowlands-Gamache Princeton Lake No.1 Location. Mile 8 Main Highway Anticosti Island.

Date and Time. August 30, 1963 7:00 A.M.

Depth. 5016' Footage. 22' (24 Hrs.)

Hole Size. BX (2.34") Deviation.

Average Footage Per Bit.

Average Drilling Speed. 15 Min./Ft.

Water, Oil or Gas Shows. None

Water loss to formation-Nil

CORE DESCRIPTION

4994'-5010'

Dolomite-light grey to brown, finely crystalline with trace to poor pin-point & vuggy porosity from 4994'-4998' and 5001'-5010'. Infilled with calcite from 4998'-5001'.
Section has a sulphurous odour throughout.

MARKERS

5010'-5014'

Dolomite-grey, finely crystalline as previously.
Several styolites noted.

GENERAL REMARKS

5014'-5016'

Core not recovered.

Shut down 10 hrs. for repairs

Compiled By J. B. McFarlane

PROGRESS REPORT NO. 62

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...August 31, 1963.....7:00 A.M.....

Depth ....5038'..... Footage .....22' (24 Hrs.).....

Hole Size ...BX(2.34")..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed ...16 Min./Ft.....

Water, Oil or Gas Shows ..None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION 5014'-5038'

Dolomite-brown, microcrystalline to finely crystalline, calcareous, laminated in part. Minor calcite infilling. Several styolites noted.

Shut-down 9 Hrs. for rig repairs.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lucas

PROGRESS REPORT NO. 63

DRILLING

Name Lowlands-Gamache Princeton Lake No.1 ... Location Mile 8, Main Highway, Anticosti Island.

Date and Time ... September 1, 1963 ... 7:00 A.M. .....

Depth ... 5064' ..... Footage ... 26' (24 Hrs.) .....

Hole Size .. BX (2.34") ..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed .. 16 Min./Ft. .....

Water, Oil or Gas Shows ... None .....

.....

Water loss to formation-Nil .....

CORE DESCRIPTION 5038'-5064'

Dolomite-brown, dense to microcrystalline, calcareous, becoming a dolomitic limestone in part, laminated in part.
Some calcite infilling.

GENERAL REMARKS

Compiled By J. B. A. Lachance

PROGRESS REPORT NO. 64

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Date and Time September 3, 1963 7:00 A.M.

Depth 5080' Footage 16' (24 Hrs.)

Hole Size BX Deviation

Average Footage Per Bit

Average Drilling Speed 18 Min./Ft.

Water, Oil or Gas Shows None

Water loss to formation-Nil

CORE DESCRIPTION 5064'-5080'

Dolomite-light grey to grey brown, dense, laminated in part.
Several blebs of anhydrite and calcite noted.

GENERAL REMARKS Rig shut down 12 hours for repairs.

Compiled By. J.R.A. Lockwood

PROGRESS REPORT NO.65

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 4, 1963 7:00 A.M.

Depth 5130' Footage 50' (24 Hrs.)

Hole Size BX Deviation .....

Average Footage Per Bit .....

Average Drilling Speed 15 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5080'-5113'

Dolomite-light grey to grey brown in small part, laminated in small part.
Minor calcite filled fractures.

5113'-5130'

Dolomite-grey to grey brown, microcrystalline, argillaceous and laminated in small part.
Some calcite infilling and several nodules of chert noted.
Bedding dips from 2 to 5 degrees.

MARKERS

GENERAL REMARKS

Compiled By A. B. M. Lockwood

PROGRESS REPORT NO. 66

DRILLING

Name Lowlands-Gamache Princeton Lake No. Location Mile 8 Main Highway, Anticosti Island.

Date and Time September 5, 1963 7:00 A.M.

Depth 5176' Footage 46' (24 Hrs.)

Hole Size BX(2.34") Deviation

Average Footage Per Bit

Average Drilling Speed 15 Min./Ft.

Water, Oil or Gas Shows None

Water loss to formation-Nil

Core Description

5130'-5176'

Dolomite-grey & brown, dense to microcrystalline, associated argillaceous partings and minor calcite infilling.
Bedding although irregular dips from 2 to 5 degrees.
Traces of bituminous material.

General Remarks

Compiled By J. R. M. Lowe

PROGRESS REPORT NO. 67

DRILLING

Name..Lowlands-Gamache Princeton Lake No.1..Location..Mile 8,Main Highway, Anticosti Island.

Date and Time..September 6,1963....7:00 A.M.

Depth....5215'.....Footage..39'(24 Hrs.)

Hole Size..BX (2.34")

Average Footage Per Bit

Average Drilling Speed.....18 Min./Ft.

Water,Oil or Gas Shows.....None

Water loss to formation-Nil

CORE DESCRIPTION

5176'-5190'

Dolomite-grey & brown,microcrystalline and finely crystalline with associated argillaceous partings and minor calcite infilling.
Traces of bituminous material.

5190'-5193.5'

No Recovery

5193.5'-5215'

Dolomite-grey & brown,fine to medium crystalline with minor argillaceous partings.

GENERAL REMARKS

Compiled By A.B.K. Lowland

PROGRESS REPORT NO.68

DRILLING

Well Name..Lowlands-Gamache Princeton Lake No.1...Location..Mile 8,Main Highway, Anticosti Island.

Date and Time...September 7,1963.....

Depth...5253'.....Footage..38'(24 Hrs.).....

Hole Size...BX(2.34").....

Average Footage Per Bit.....

Average Drilling Speed....17 Min./Ft.....

Water,Oil or Gas Shows....None.....

.....

Water loss to formation - Nil.....

CORE DESCRIPTION

5215'-5253'

Dolomite-brown & grey brown,finely crystalline with minor dolomite infilling and several styolitic partings.
Traces of vuggy porosity from 5228.5' to 5229'.
Minor steeply dipping fractures noted.

GENERAL REMARKS

Compiled By. A. B. K. Lahud

PROGRESS REPORT NO. 69

DRILLING

Well Name. Lowlands-Gamache Princeton Lake No. 1 Location. Mile 8, Main Highway, Anticosti Island.

Date and Time... September 8, 1963 ..... 7:00 A.M. .....

Depth.. 5295' ..... Footage.. 42' (24 hrs.) .....

Hole Size.... BX (2.34") .....

Average Footage Per Bit.... 400' .....

Average Drilling Speed..... 14 Min./Ft. .....

Water, Oil or Gas Shows.... None .....

.....

Water loss to formation-Nil .....

CORE DESCRIPTION

5253'-5295'

Dolomite-grey brown, microcrystalline to finely crystalline.
Minor white crystalline dolomite infilling.
Several styolites noted.

GENERAL REMARKS

Compiled By J. B. McFarland

PROGRESS REPORT NO. 70

DRILLING

Well Name..Lowlands-Gamache Princeton Lake No.1...Location..Mile 8,Main Highway, Anticosti Island.

Date and Time..September 10,1963. 7:00 A.M.

Depth...5335'.....Footage..40'(24 Hrs.)

Hole Size..BX(2.34")..Deviation..1-½ deg.at 5,000...

Average Footage Per Bit.....400'

Average Drilling Speed

Water, Oil or Gas Shows....None

Water loss to formation-Nil

CORE DESCRIPTION

5295'-5307.5'

Dolomite-grey brown,dense to microcrystalline with minute irregular calcite filled fractures and minor argillaceous partings.
Several vertical calcite filled fractures.

5307.5'-5325'

Dolomite-75%,grey brown as above with 25% interbeds of brown skeletal limestone with a dense matrix and calcite cement.Argillaceous partings throughout.

5325'-5335'

Limestone-80%,brown,dense,skeletal in part with irregular argillaceous partings and 20% interbeds of grey brown dense to microcrystalline dolomite as above.
Bedding although very irregular generally dips in the order of 5 degrees.

Compiled By J. B. K. Lockwood

PROGRESS REPORT NO. 71

Drilling

Well Name..Lowlands-Gamache Princeton Lake No.1..Location..Mile 8, Main Highway, Anticosti Island.

Date and Time...September 11, 1963....7:00 A.M.....

Depth...5378'.....Footage..43'(24 Hrs.).....

Hole Size....Bx.(2.34").....Deviation.....

Average Footage Per Bit....400'.....

Average Drilling Speed.....16 Min./Ft.....

Water, Oil or Gas Shows....None.....

.....

Water loss to formation-Nil.....

Core Description

5335'-5342'

Limestone-80%, brown, dense, skeletal in part with irregular argillaceous partings and 20% interbeds of grey brown dense to microcrystalline dolomite.

5342'-5378'

Limestone-brown, dense to skeletal & pelletoid in small part, somewhat nodularily bedded with associated argillaceous material throughout. Traces of pyrite and calcite infilling.

Compiled By R. B. K. Foland

PROGRESS REPORT NO. 72

DRILLING

Well Name. Lowlands-Gamache Princeton Lake No. 1. Location. Mile 8, Main Hwy, Anticosti Island.

Date and Time. September 12, 1963. 7:00 A.M.

Depth. 5403'. Footage. 25' (24 Hrs.)

Hole Size. BX (2.34"). Deviation.

Average Footage Per Bit. 400'.

Average Drilling Speed. 19 Min./Ft.

Water, Oil or Gas Shows. None.

.

Water loss to formation-Nil.

CORE DESCRIPTION

5378'-5403'

Limestone-brown, dense to microcrystalline, dolomitic in part, minor associated skeletal material, irregularly bedded as previously with argillaceous material throughout.
Trace of pyrite.

GENERAL REMARKS

No evidence of faulting.

Compiled by. A. B. K. Foster.

PROGRESS REPORT NO. 73

DRILLING

Well Name..Lowlands-Gamache Princeton Lake No.1....Location..Mile 8,Main Highway, Anticosti Island.

Date and Time...September 13,1963....7:00 A.M.

Depth...5427'.....Footage..24'(24 Hrs.)

Hole Size...Bx(2.34")....Deviation.....

Average Footage Per Bit...400'.....

Average Drilling Speed.....22 Min./Ft.....

Water,Oil or Gas Shows.....None.....

.....

Water loss to formation-Nil.....

CORE DESCRIPTION

5403'-5427'

Limestone-grey brown,dense,dolomitic in small part,nodularily bedded becoming conglomeratic in part,with associated argillaceous material throughout.
No recovery from 5412' to 5415' and 5423' to 5427'.

GENERAL REMARKS — Reduced footage due to blocky nature of formation being drilled.

Compiled By A. B. K. Lockhead.

PROGRESS REPORT NO. 74

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 15, 1963. 7:00 A.M.

Depth 5464' Footage 37' (48 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 400'

Average Drilling Speed 25 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5427'-5464'

Limestone-grey brown, dense to micrograined, dolomitic in small part with argillaceous material throughout, thinly bedded and generally flat lying.
Trace of pyrite.
No recovery from 5440' to 5451' and 5462' to 5464'.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowe

PROGRESS REPORT NO. 75

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 17, 1963. 7:00 A.M.

Depth 5488' Footage 24' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 400'

Average Drilling Speed 25 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5464'-5468'

Limestone-grey brown, dense, skeletal, dolomitic in part with minor associated argillaceous material. Trace of pyrite.

5468'-5475'

No recovery.

5475'-5477'

Limestone-grey brown, dense, skeletal as above.

5477'-5479'

MARKERS

No recovery.

5479'-5488'

GENERAL REMARKS

Limestone-grey brown, dense with minor skeletal material. No recovery from 5480' to 5486.5'.

Compiled By .....

PROGRESS REPORT NO. 76

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 18, 1963. 7:00 A.M.

Depth 5513' Footage 25' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 400'

Average Drilling Speed 25 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5488'-5490'

No recovery.

5490'-5503'

Limestone-grey brown, dense with traces of associated skeletal material and minor argillaceous partings. No recovery from 5497' to 5499'.

5503'-5506'

Dolomite-grey brown, finely crystalline with traces of associated calcite infilling.

5506'-5513'

MARKERS

Limestone-grey brown, dense with minor associated skeletal material and argillaceous partings. Trace of pyrite.

GENERAL REMARKS

Compiled By J. B. McLaughlan

PROGRESS REPORT NO. 77

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 19, 1963. 7:00 A.M.

Depth 5537' Footage 24' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 400'

Average Drilling Speed 22 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5513'-5517'

No recovery.

5517'-5527'

Limestone-grey brown, dense, skeletal in part with some associated argillaceous material.
Trace of pyrite.

5527'-5530'

No recovery.

5530'-5537'

Core not yet recovered.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowland

PROGRESS REPORT NO. 78

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Main Highway, Mile 8, Anticosti Island.

Rig Floor Elevation .....

Date and Time ...September 20,1963.....7:00 A.M.....

Depth ....5574'..... Footage ....37'(24 Hrs.).....

Hole Size .....BX(2.34")..... Deviation .....

Average Footage Per Bit .....405'.....

Average Drilling Speed .....19 Min./Ft.....

Water, Oil or Gas Shows .....None.....

.....

.Water loss to formation-Nil.....

CORE DESCRIPTION

5537'-5548'

Limestone-grey brown,dense to finely crystalline, skeletal & dolomitic in part with associated argillaceous material throughout.
Traces of pyrite.

5548'-5553'

No recovery.

5553'-5564'

MARKERS

Limestone-grey to grey brown,dense to finely crystalline, dolomitic ,becoming a calcareous medium crystalline dolomite at base of section.

GENERAL REMARKS

5564'-5574' -Core not yet recovered.

Compiled By ..A. B. H. Lowe..

PROGRESS REPORT NO. 79

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 21, 1963. 7:00 A.M.

Depth 5597' Footage 23' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 31 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5574'-5576.5'
Limestone-grey, finely crystalline, dolomitic with associated argillaceous material.

5576.5'-5579'
No recovery.

5579'-5582'
Limestone-grey, finely crystalline & dolomitic as above.

5582'-5588.5'
No recovery.

MARKERS

5588.5'-5593'
Limestone-grey, finely crystalline & dolomitic as above.

GENERAL REMARKS

5593'-5597'
No recovery.

Compiled By R. B. M. Lowe

PROGRESS REPORT NO. 80

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 22,1963. 7:00 A.M.

Depth 5621' Footage 24'(24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 27 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5597'-5601'

Dolomite-grey brown,finely crystalline with associated argillaceous material.

5601'-5606'

No recovery.

5606'-5616'

Dolomite-grey,finely crystalline,becoming silty, with associated argillaceous material as previously.
Minor calcite infilling.
Bedding generally dips at an angle of 5 degrees.

MARKERS

5616'-5621'

No recovery.

GENERAL REMARKS

Compiled By J. R. K. Lachance

PROGRESS REPORT NO. 81

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 24, 1963. 7:00 A.M.

Depth 5646' Footage 25' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 28 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5621'-5627.5'
Dolomite-grey, finely crystalline, silty with associated argillaceous material.

5627.5'-5629'
No recovery.

5629'-5637.5'
Dolomite-grey, fine to medium grained, silty to sandy, grading in small part to a dolomitic sandstone.
Pyrite noted throughout section.

MARKERS

5637.5'-5646'
No recovery.

GENERAL REMARKS

Compiled By A. B. A. Lowe

PROGRESS REPORT NO. 82

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 25, 1963. 7:00 A.M.

Depth 5667' Footage 21' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 23 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5646'-5653'
No recovery

5653'-5654'
Dolomite-grey brown, finely crystalline, argillaceous in part.

5654'-5667'
No recovery.

MARKERS

The formation at this point is badly broken up and very little core can be recovered from same.

GENERAL REMARKS

Compiled By J. B. K. Lockwood

PROGRESS REPORT NO. 83

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 26, 1963, 7:00 A.M.

Depth 5690' Footage 23' (24 Hrs.)

Hole Size BX(2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 28Min/Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5667'-5668'
No recovery.

5668'-5669'
Dolomite-grey brown, finely crystalline.

5669'-5685'
No recovery.

5685'-5690'
Dolomite-grey, finely crystalline as above becoming sandy at the base.

MARKERS

GENERAL REMARKS

Compiled By J. B. K. Lowland

PROGRESS REPORT NO. 84

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation .....

Date and Time September 27, 1963. 7:00 A.M.

Depth 5721' (F.T.D.) Footage 31' (24 Hrs.)

Hole Size BX (2.34") Deviation .....

Average Footage Per Bit 405'

Average Drilling Speed 23 Min./Ft.

Water, Oil or Gas Shows None

.....

Water loss to formation-Nil

CORE DESCRIPTION

5690'-5701'
No recovery.

5701'-5706'
Dolomite-grey, dense to microcrystalline, becoming silty to sandy.

5706'-5708'
Granitic Material-consisting of quartz, orthoclase feldspar, hornblende and biotite with a granitoid texture and schistose in part.

5708'-5716'
No recovery

MARKERS

5716'-5721'

GENERAL REMARKS

Granite-as above.

PRECAMBRIAN ENCOUNTERED AT 5706'

Compiled By J. B. K. Fowler

PROGRESS REPORT NO. 85 (Final Report)

DRILLING

Well Name Lowlands-Gamache Princeton Lake No.1 Location Mile 8, Main Highway, Anticosti Island.

Rig Floor Elevation 305' (Approx.)

Date and Time October 1, 1963. 7:00 A.M.

Depth 5721' (F.T.D.) Footage .....

Hole Size ..... Deviation .....

Average Footage Per Bit .....

Average Drilling Speed .....

Water, Oil or Gas Shows .....

.....

.....

CORE DESCRIPTION

Hole cemented back from 5721' to 225' using 210 sacks of Portland Cement.

In order that the hole may be used for seismic purposes, it will be left open from 0' to 225'. At a later date a cement plug will be run at the top of the casing.

It is to be noted that 250' of NX casing was recovered from the hole prior to abandonment.

MARKERS

GENERAL REMARKS

At present the rig is being torn down and it is anticipated that trucking to the next location at Potato River will commence on Thursday, October 3rd.

Compiled By .....

IN THE MATTER of work done in respect to the Agreement dated November 9th 1962 between New Associated Developments Ltd., and Lowlands Exploration Limited and Gamache Exploration and Mining Co. Ltd., relating to Mineral Exploration License No. 185 issued to New Associated Developments Ltd., of the City of Montreal, Province of Quebec

TO WIT:

I, WILLIAM A. ROLIFF, of the City of Toronto, Province of Ontario,

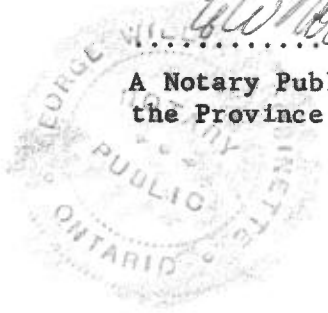
DO SOLEMNLY DECLARE:

1. That I am President of Lowlands Exploration Limited, and as such have full knowledge of the work performed in respect to the Agreement dated November 9th 1962 between New Associated Developments Ltd., and Lowlands Exploration Limited and Gamache Exploration and Mining Co. Ltd.

2. That the report dated December 19th 1963, entitled "Summary Report on the Work by Lowlands Exploration Limited and Gamache Exploration and Mining Co. Ltd. relating to Mineral Exploration License No. 185, Anticosti Island, Province of Quebec" and signed by W. A. Roliff, is, to the best of my knowledge and belief, a true and accurate statement of the work performed during the period from November 1st 1961 to October 1st 1963.

AND I MAKE SOLEMN DECLARATION conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "CANADA EVIDENCE ACT".

DECLARED BEFORE ME)
)
At the City of Toronto,)
) W. A. Roliff
Province of Ontario)
)
This 6th day of January, 1964)
)
)
)
.....)
)
A Notary Public in and for)
the Province of Ontario)



Ministère de l'Énergie et des Ressources
Gouvernement du Québec
Date: 4 Oct - 1965
No. G.M.: 16739
GM 16739

IN THE MATTER of expenditures made in connection with the work required by the Agreement dated November 9th 1962 between New Associated Developments Ltd., and Lowlands Exploration Limited and Gamache Exploration and Mining Co. Ltd., relating to Mineral Exploration License No. 185 issued to New Associated Developments Ltd. of the City of Montreal, Province of Quebec

TO WIT:

I, WILLIAM A. ROLIFF, of the City of Toronto, Province of Ontario,

DO SOLEMNLY DECLARE:

1. That I am President of Lowlands Exploration Limited and that I have full knowledge or information of the matters herein set forth:

2. That the expenditures incurred between November 1st 1961 and October 1st 1963, for exploratory activities in respect to the said work requirements have been as follows:

Exploration Offices		
Salaries and Welfare	1,583.09	
Travelling and field living	80.46	
Drafting and reproduction	927.52	
Miscellaneous	28.93	
		$ 2,620.00
Geological Surveys and Studies		
Salaries and Welfare	2,831.90	
Travelling and field living	581.73	
Laboratory analyses	430.50	
Base map reproduction	511.90	
Air photo mosaics	1,946.50	
Studies by Consultants re petroleum and gas possibilities	1,000.00	
		7,302.53

Exploration Drilling		
Lowlands and Gamache share of cost of New Associated Con Paper Anticosti No. 1 hole	50,000.00	
Cost of Lowlands-Gamache Princeton Lake No. 1 hole	109,350.91	
		159,350.91
TOTAL EXPLORATION EXPENDITURES		$169,273.44
Less Amount applicable to Block 2		50,000.00
TOTAL EXPLORATION EXPENDITURES -Blocks 1 & 3		$119,273.44

AND I MAKE SOLEMN DECLARATION conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "CANADA EVIDENCE ACT".

DECLARED BEFORE ME)
)
At the City of Toronto)
)
Province of Ontario) ...W.A. Roloff.....
)
This ..6.... day of January, 1964)
)
)
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.....)
)
A Notary Public in and for)
the Province of Ontario)

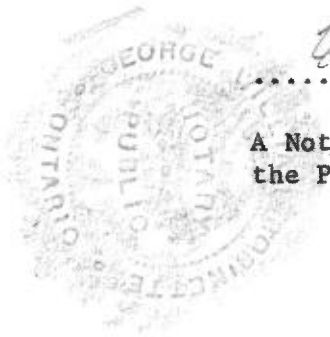


FIG - 1

ANTICOSTI ISLAND

SECTION EXPOSED AT CAP BLANC N. W. COAST of ANTICOSTI ISLAND.

ORDOVICIAN

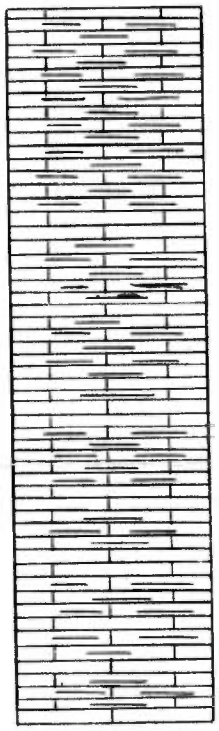
ENGLISH HEAD FMN.

EH 16

REP. SAMPLES

EH 15

EH 14



75' MAINLY INTERBEDDED DENSE TO VERY FINELY CRYSTALLINE MED. GREY ARG LS, GREY GREEN CAL. SHALE, FRAG. LS & THE OCCASIONAL BED of LS. CONGLOMERATE. BEDDING THROUGHOUT IS VERY LENSITIC. NUMEROUS BRYOZOA ASSOCIATED WITH SHALE BEDS, OTHERWISE NOT HIGHLY FOSSILIFEROUS, EXCEPT FOR FRAG. BEDS. APPROX. 35% of THE SECTION IS SHALE.

VERTICAL SCALE:-

1" = 20 FT.

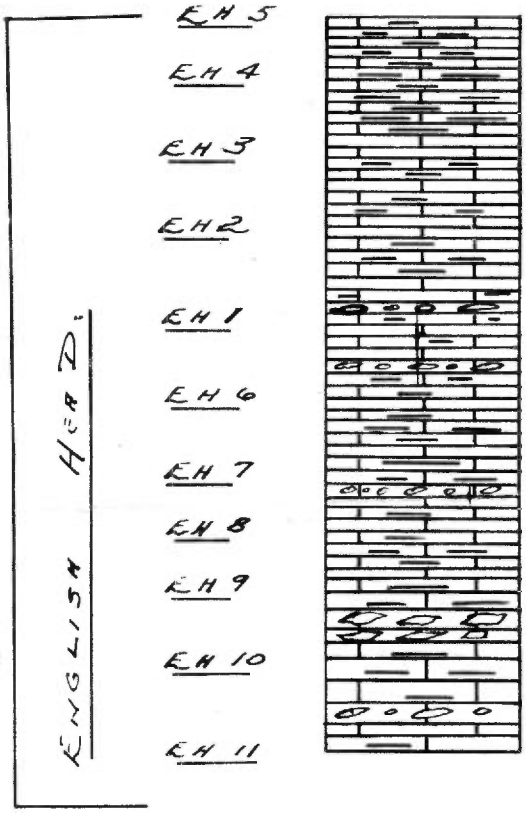
S. B. Mrs EACHERN

DEC. 1960

FIG. 2

ANTICOSTI ISLAND

Type Section of ENGLISH HEAD FORMATION EXPOSED AT ENGLISH HEAD, N.E. of BAIE STE CLAIRE.



15.0' DENSE TO VERY FINELY CRYSTALLINE BROWNISH GREY ARGILLACEOUS LIMESTONE, WITH VERY THIN BLUE GREY SHALE PARTINGS. A HIGH CONCENTRATION OF BRANCHING & CYLINDRICAL TYPE BRYOZOA OCCUR IN THE SHALE PARTINGS.

46' - MAINLY GREY BROWN DENSE ARGILLACEOUS LIMESTONE, FRAG. LS. WITH A DENSE LS MATRIX, BRYOZOA FILLED SHALE PARTINGS & LENSITIC BEDS OF LIMESTONE CONGLOMERATE. BEDS ARE VERY LENSITIC THROUGHOUT SECTION.

4' - VERY IRREGULARLY BEDDED FINELY CRYSTALLINE ARG. LS. (PILLOW LIKE STRUCTURES POSSIBLY ALGAL GROWTH)

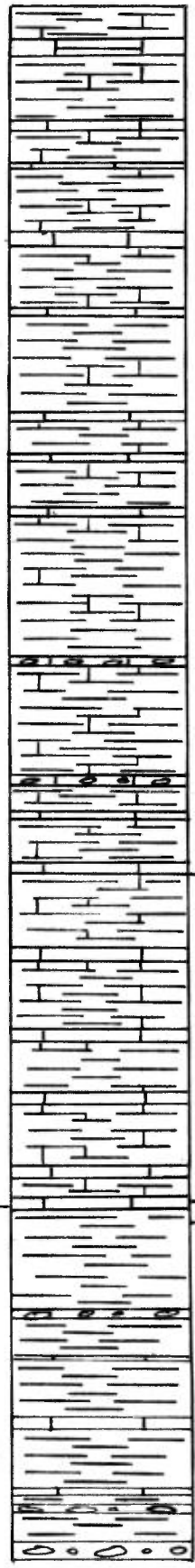
11' - GREY BROWN, MICROGRAINED ARG. LS WITH NARROW INTERBEDS OF BLUE TO GREENISH GREY SHALE FILLED WITH BRYOZOA. LENSITIC BEDS OF LIMESTONE CONGLOMERATE.

VERTICAL SCALE:
1" = 20 ft.

S.B. Mc EACHERN
DEC. 1960.

FIG-3

OIL RIVER SECTION - ANTICOSTI ISLAND



ORDOVICIAN

VAUREAL FORMATION

V-10

V-11

V-12

V-13

V-9

(LS. BEDS ALL REP. by V-9.)

ENGLISH HEAD FM

EH12 (REP. SAMPLE)

100' MAINLY GREENISH GREY TO BLUE GREY SOMEWHAT NODULAR CAL. SHALE INTERBEDDED WITH HARD BEDS OF MEDIUM GREY DENSE, SILTY ARGILLACEOUS LS & INDIVIDUAL BEDS VARYING FROM 3" TO 24" IN THICKNESS. THE OCCASIONAL BED OF INTRAFORMATIONAL TYPE LIMESTONE CONGLOMERATE. LIMESTONE FORMS APPROXIMATELY 35% OF THE TOTAL SECTION.

40' CALCAREOUS SHALE & LIMESTONE AS IN THE ABOVE SECTION & AN INCREASE IN THE NUMBER OF HARD LIMESTONE BEDS.

TRACK BED (*SACRICHNITES ABRUPTUS*)

40' BLUE TO GREENISH GREY CAL. SHALE SOMEWHAT NODULAR IN TYPE WITH INTERBEDS OF HARD MEDIUM TO DK GREY DENSE ARGILLACEOUS LIMESTONE.
PROMINENT LIMESTONE CONGLOMERATE BEDS IN THE BASAL PART OF THE SECTION, & PEBBLES RANGING FROM VERY SMALL TO 1' IN DIAMETER.

VERTICAL SCALE:
1" = 20 ft.

S. B. Mrs EACHERN
DEC. 1960

FIG. 7

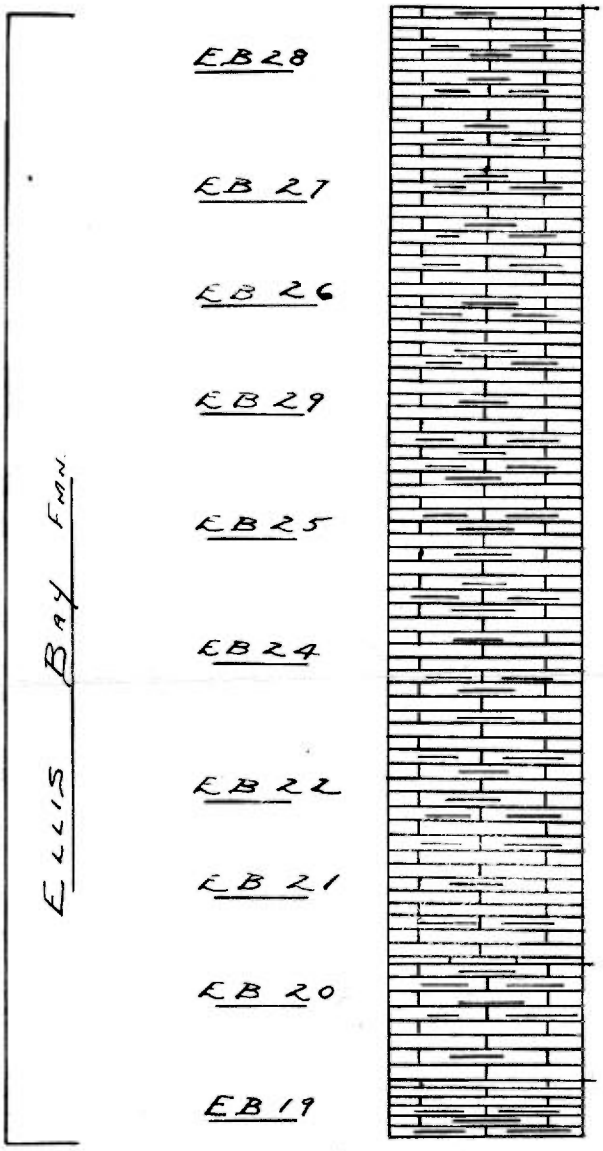
ANTICOSTI ISLAND

SECTION EXPOSED ON SALMON RIVER

BETWEEN MILE 9 & 10, FROM MOUTH OF RIVER.

ORDOVICIAN

ELLIS BAY FM.



100' — INTERBEDDED GREY ARG. DENSE LIMESTONE, GREY SILTY & ARG. MICRO-GRAINED LIMESTONE, MEDIUM TO COARSE FRAG. GREY BROWN ARG. LS. & GREY GREEN CAL. SHALE. THE OCCASIONAL LENSITIC BED OF LIMESTONE SONG. GENERALLY EVENLY BEDDED THROUGHOUT.

12' — LIGHT GREY BROWN, DENSE ARG. LS, SOMEWHAT MASSIVE, INTERBEDDED WITH FRAGMENTAL LIMESTONE.

6' — INTERBEDDED DENSE LIGHT GREY ARG. LS, SUBLITH. LS & GREEN & GREENISH GREY CAL. SHALE.

VERTICAL SCALE:-

1" = 20 FT.

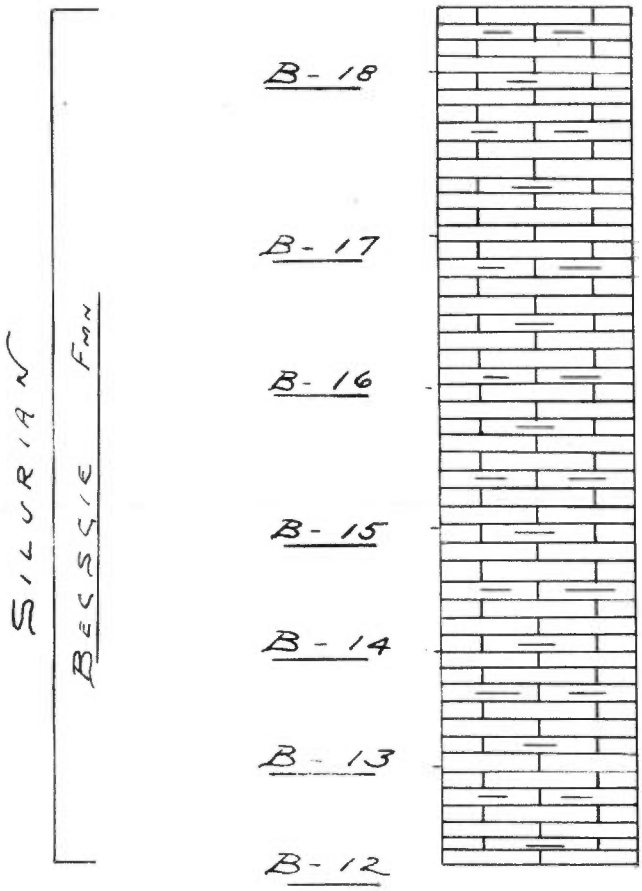
S. B. McLEACHERN

DEC. 1960.

FIG. 8

ANTICOSTI ISLAND

SECTION EXPOSED ON JUPITER RIVER FROM M 24 CAMP TO M 25



90' - MAINLY INTERBEDDED BROWN MEDIUM CRYSTALLIN. ARG. LS. IN BEDS UP TO 6" THICK, BROWN MEDIUM TO COARSE FRAG ARG LS & DENSE TO SUBLITH. BROWN THINLY BEDDED ARG LS. A FEW GREY CAL. SHALE INTERBEDS, & ONE BED of Cg. LS. THE OCCASIONAL CORAL HEAD OCCURS THROUGHOUT THE SECTION.

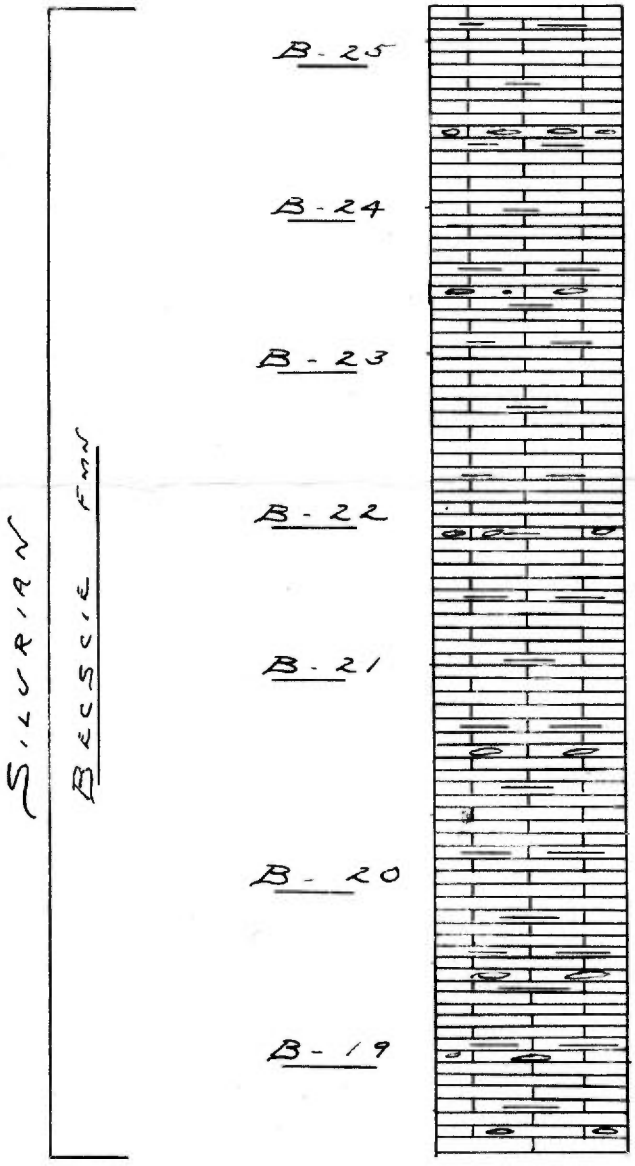
VERTICAL SCALE:-
1" = 20 ft.

S. B. McA. ARCHERN.
JAN. 1961

FIG 9

ANTICOSTI ISLAND

SECTION ON JUPITER RIVER FROM M 29 TO M 30 SAMP



120' REPITITIOUS SEQUENCE of BROWN FINELY CRYSTALLINE ARG. LS, BROWN DENSE TO SUBLITH ARG. LS, BROWN FRAG. LS & LENSITIC INTERBEDS of LS. CONG. A FEW CAL. THIN SHALE PARTINGS. GENERALLY BEDS FROM 1" TO 2" BUT OCCASIONALLY UP TO 5"

VERTICAL SCALE:-

1" = 20 ft

S.B. McL. EAGNERS

JAN. 1961

FIG. 10

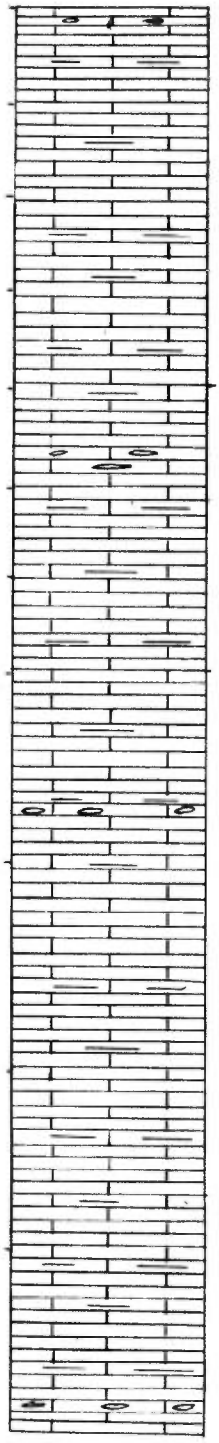
ANTICOSTI ISLAND

SECTION EXPOSED ON JUPITER RIVER FROM M36 TO M37 CAMP

SILURIAN

GUN RIVER FMN

GR 18
GR 17
GR 16
GR 15
GR 11
GR 10
GR 9
GR 8
GR 14
GR 13
GR 12



40'- MAINLY FINELY CRYSTALLINE THINLY & EVENLY BEDDED ARG. LS WITH INTERBEDS of BROWN DENSE TO SUBLITHOGRAPHIC LS.

30'- BROWN ARG. SUBLITH. LS, UNEVENLY & IRREGULARLY BEDDED WITH INTERBEDS of BROWN FRAG. LS, LS. CONG. & FINE GRANULAR BROWNISH ARG. LS.
NUMEROUS HORN CORALS ASSOC WITH FRAG. BEDS.

80'- MAINLY BROWN SUBLITH. LS & FINELY CRYSTALLINE ARG. LS WITH THE OCCASIONAL BED of FRAG. LS.
MANY BRACHS IN BEDS AT BASE of SECTION.

VERTICAL SCALE:
1" = 20 ft.

S. B. McCRACKEN
JAN 1961