

# GM 59138

PRELIMINARY REPORT ON THE ABLOVIAK FIORD DIAMOND PROSPECT

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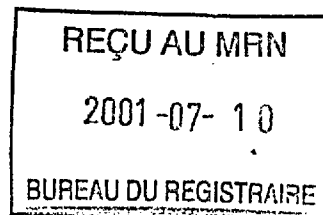
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Québec 

# GM 59138

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**PRELIMINARY REPORT**  
**ON THE**  
**AYREX RESOURCES LTD.**  
**ABLOVIK FIORD DIAMOND PROSPECT**  
**LABRADOR PENINSULA, QUEBEC, CANADA**  
**N.T.S. REFERENCE 24-P-10 & 11**



Toronto, Ontario, Canada  
November 19th, 1999

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01191-026

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## INTRODUCTION

Ayrex Resources Ltd. (AYR) has acquired, by staking, a block of ground adjacent to a property on which Twin Gold Corporation (TWG) recently announced a significant diamond discovery. The area of interest is located in the vicinity of Abloviak Fiord, approximately 150 miles (240k) northeast of Kuujjuaq (Fort Chimo) and 70 miles (110k) south of the northernmost tip of the Ungava-Labrador Peninsula.

On October 8, 1999, S.G. Hawkins, President and CEO, Ayrex Resources Ltd., Suite 402, 111 Richmond Street West, Toronto, Ontario M5H 2G4 commissioned the author to prepare a report on the above property. The scope of the report is to document historical information on the prospect. The purpose of the report is to recommend a preliminary programme of exploration, to assess the economic potential of the property, along with guidelines for effecting programme recommendations.

This report is based on published geotechnical data and personal experience acquired from past activities in the Ungava region.

Conclusions and recommendations presented in this report are based on personal experience in the region, published data and the meagre amount of information available on the TWG discovery.

## SOURCES OF INFORMATION

### Geological Survey of Canada

Douglas, R.J.W.      Scientific Editor

1970      Economic Geology, Report No. 1; Geology And Economic Minerals Of Canada

Van Kranendonk, M.J.

1994      Geology, Mont Jacques-Rousseau,  
Quebec-Newfoundland (Labrador):  
Open File 2738, Scale 1:50,000

1994      Geology, Rivière Lepers,  
Quebec - Northwest Territories;  
Open File 2829, Scale 1:50,000

1994      Geology, Lac de Lorière  
Newfoundland (Labrador) - Quebec:  
Open File 2925, Scale 1:50,000

Van Kranendonk, M.J. and Wardle, R.J.

1995      Geology of the Archean Nain Province and Paleoproterozoic  
Torngat Orogen,  
Newfoundland (Labrador), Quebec, and Northwest Territories  
Open File 2927, Scale 1:50,000

## PROPERTY DESCRIPTION, LOCATION AND ACCESSIBILITY

The Ayrex Ungava property is located in the Abloviak Fiord area of Quebec on the Labrador peninsula. It consists of one minerals exploration permit - P.E.M. 0001463 - which covers 92.5 square kilometres (22,8860 acres), more or less. It adjoins the TWG discovery property to the southwest, and is bounded on the northeast by the Quebec-Newfoundland provincial boundary. The property is roughly eight kilometres wide, along the length of its northeast-trending, long (11.5 kilometres) axis. It is roughly centred around 59° 34' 30" North Latitude and 64° 54' 00" Longitude (Fig. A).

The AYR property lies approximately 150 air miles (240 kilometres) northeast of the community of Kuujjuaq, Quebec which is the nearest source of basic supplies. Distance in air miles (kilometres in brackets) and the approximate directions from other well know locations are as follows: Val d'Or, Quebec NE 915 (1,482); Montreal, Quebec, NNE 995 (1,612); Moosonee, Ontario, NE 835 (1,353); Goosebay, Newfoundland (Labrador), NNW 440 (713).

The most direct means of accessing the property is by charter, float-or-ski equipped aircraft operating out of Kuujjuaq. Kuujjuaq is serviced three times weekly by First Air with regularly scheduled flights originating in Montreal.

## PHYSIOGRAPHY

Physiographically the Ayrex property is located within the Davis Region, on the George Plateau, along the eastern side of the Labrador Highlands and Torngat Mountains which reach elevations of between 5,000 and 6,000 feet (1,523 to 1,830 metres) above the sea. Elevations on the property vary from 1,500 to 2,677 feet (457 to 816 metres) above sea level.

Numerous lakes are located within the property boundaries. Most occur along three northwesterly trending "troughs" and are joined by meandering streams or small rivers. Several of the lakes are large enough to accommodate landings and take-offs with Dehavilland Beaver or Otter-type aircraft operating on floats - if there is enough water in them and they are sufficiently free of rocks and reefs.

The mean annual temperature in the area is 23° F (-5° C) and as a result, although not continuous, permafrost is widespread throughout the area. However, during the summer months of July and August temperatures rise up to 80° F (27° C).



## HISTORY

The first mapping of the region was carried out by A.P. Low of the Geological Survey of Canada in the 1890's. This work resulted in the discovery of the iron ore deposits in the Knob Lake district to the south.

During the intervening years some prospecting has been carried out in the search for iron ore, base and precious metals. Also, Monopre is rumoured to have carried out some reconnaissance work related to a search for diamonds near the north end of the Ungava Peninsula.

By the mid-1990's, detailed mapping of the region was completed and the results published by the Geological Survey of Canada. Other work includes partial gravimetric survey and airborne magnetic survey coverage of the area.

Based on a graduate-level petrological thesis, published in French in 1997, in which a 1.5-mm diamond found in a 30-kilogram sample was incidentally described as an "accessory mineral", Twin Gold Corporation mounted a programme designed to evaluate the source of the sample for diamonds. The programme commenced in early June, 1999 and resulted in confirming the presence of significant concentrations of diamonds in kimberlite dikes at widely separated locations.

During early October, Ayrex Resources Ltd. acquired, by staking, the 92.5 square kilometres of ground which form the property described in this report.

By the end of October the importance of the district as a potentially "new kimberlite province" was significantly enhanced. By this time Twin Gold had reported that sampling of four separate kimberlite occurrences from three widely separated locations has resulted in the extraction and recovery of 161 diamonds,

including 22 macro diamonds, from a total of 277.47 kilograms (644 pounds) of material.

## GEOLOGY

### (i) General

The geology (Fig. 1) of the area is best described in OFR 2925 by Van Kranendonk (1994) and liberal use is made of his work in this part of this report.

The property upon which this report focuses is situated within the Rae Structural Province near its east boundary with the Nain Province. It lies within a zone of transition from a region of amphibolite-facies gneisses of the Archean Nain Province and an intrusive suite of early or Paleoproterozoic meta-plutonic rocks, in the east, to the predominantly Paleoproterozoic rocks (meta-sedimentary and meta-plutonic), at granulite-facies, in the west.

Intruded rocks include sills, dikes, stocks and bosses of ultrabasic composition, gabbro, granite, granodiorite, diorite and quartz porphyry. In addition, petrographic studies and chemical analyses have identified dikes which are a variety of kimberlite and sometimes diamondiferous. Previously mapped as "ultramafic lamprophyres", these dikes contain coarse crystals of phlogopite mica and olivine within a fine ground mass which includes diamond indicator minerals such as pyrope garnets with a high chrome content, pyrope or almandine garnet with kelyphitic alteration, chrome diopside and tetra ferriphlogopite which is commonly found in dikes from both the Torngat Mountains area, in Ungava, and southwestern Greenland.

### (ii) Mineralization

Within the region, nickel-, zinc-, and copper-bearing sulphides are reported to occur in graphitic horizons with the Tasiuyak gneiss, to the south and west of the Ayrex property, around Abloviak Fiord (Fig. 3). Nickel, copper, gold and platinum

group metal values are reported to occur in sulphide-rich material within or adjacent to metasedimentary rocks, in charnockite, on the south shore of Killinek Island (Fig. 2).

Nickel, zinc and platinum group metals values are found in small rusty zones, never more than a few metres in extent, associated with Archean metasediments south and east of Saglarsuk Bay (Fig. 2) and rusty-weathering sulphide gossans within the Hutton anorthosite suite (Fig. 4) are reported to contain low values in nickel and chrome.

Diamond occurs within kimberlite dikes. At least four separate occurrences have been confirmed at three widely separated locations near Abloviak Fiord (Fig. 4).

### (iii) Ayrex Property

The Ayrex property is underlain by a northwesterly trending series of supracrustal rocks, of Archean and Paleoproterozoic age, which dip steeply to the northeast and plunge northwestwards. They include the following (see Fig. B): grey-weathering gneisses (Argn): Archean gneiss in the Tasiuyak Gneiss and Noodleook Complexes (AP g l): Tasiuyak gneiss (Pstg): and a rusty weathering paragneiss (Pspg). These rocks include facies of Paleoproterozoic-age amphibolite (Pab) and pyroxenite and all of the above members may have been invaded by Phanerozoic-age diabase/microgabbro dikes (CD) and lamprophyre dikes (UD) of unknown age. At the present time no kimberlite dikes or pipes are known to occur on the property.

## DISCUSSION

Recent geophysical mapping in the North Atlantic region is reported to have identified an Archon of major proportions. It occupies the southern quarter of Greenland and extends west across Davis Strait into Labrador (Fig. 1). More than 40 kimberlite bodies have been identified in Greenland, at least three of which host diamonds. Some of these intrusions were mapped as potassic lamprophyres.

It is reported that, in the Torngat Mountains of the Labrador Peninsula, some 20 dikes were mapped as "ultramafic lamprophyres" and more recently identified as a type of kimberlite. Three of these dikes located in Quebec have now been sampled and yielded diamonds. All of the dikes are reported to be narrow - from one to three metres wide - but they may occur in conjunctive linears ten or more kilometres long. No kimberlite pipes or diatremes have been reported.

Available data indicate that the diamondiferous dikes in the vicinity of Abloviak Fiord have a predominantly northeasterly strike. However, it should be noted that because these dikes are post-tectonic intrusions, they may be as randomly oriented as any other dikes in the region and completely independent of other lithological or structural controls. Also, the dikes are recessive and because of their narrow width would generate little or no magnetic signature from minimum fixed-wing airborne survey altitudes.

The discoveries, to date, have been in fault scarps along the Abloviak Shear Zone which is the most prominent structural feature in the district. Whether or not an apparent increase in the number of kimberlite dikes in the area is related to the shear zone or is attributable simply to better exposure, is moot.

## CONCLUSIONS

The Ayrex property is situated in a region with no past mineral production and virtually no mineral exploration history. However, relative to the recent Twin Gold Corporation discovery, the property is strategically located along the perceived strike of a fracture zone that is reported to contain several diamondiferous kimberlite dikes and may continue across to the Twin Gold property onto Ayrex's ground.

Although geological maps of the region have been published (Van Kranendonk 1994; Van Kranendonk & Wardle, 1995) much of the detail has been projected from data collected during widely spaced ground traverses, observations from the air and photogeological studies and interpretation. Possibly due to their narrow widths and the fact that they can resemble simple, debris-filled fractures, the confirmed diamond-bearing dikes on the Twin Gold property are not portrayed on these maps. Thus, the search for new diamond-bearing dikes in the Abloviak Fiord area will depend largely on prospecting, supported by extremely low altitude, airborne magnetic survey data collected from a rotary-winged platform, and detailed photogeological studies, to locate and define dikes, or lineaments which may represent recessed dikes, with diamond-bearing potential.

## RECOMMENDATIONS

Air photo coverage of the property should be obtained as soon as possible and a detailed photogeological study of the area carried out. Computer-enhancement techniques to more clearly define the surface expression of dikes, and lineaments which may be the surface expression of recessed dikes, should be employed in such a study.

Maps and relevant geotechnical reports on the area should be acquired and studied.

All unit costs relative to mounting and pursuing an exploration programme in the area, should be acquired and applied in the planning stage of any proposed programme.

All of which is respectfully submitted for your information and consideration.

Toronto, Ontario, Canada  
November 19th, 1999

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