GM 59663

REPORT OF ACTIVITIES ON AYREX RESOURCES LIMITED PROPERTY IN THE TORNGAT MOUNTAINS (PEM 1463)

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Licence

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REPORT OF ACTIVITIES ON AYREX RESOURCES LIMITED PROPERTY

CLAIM LICENCE NO. P.E.M. 0001463

NTS Sheet 24P/10 IN THE TORNGAT MOUNTAINS OF NORTH-EASTERN QUEBEC

MRN-GÉOINFORMATION 2002

GM 59663

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SUMMARY

Geological and geochemical stream sediment surveys were conducted over the Ayrex Resources exploration licence number 0001463 during August of the year 2001. Twenty five to thirty five kilogram samples of stream sediments were collected on key drainage sites on the property. These samples were further processed in camp to obtain a fine and a coarse concentrate of the heavy minerals found in that sample. The concentrate vials were then shipped to Robert Dillman of Arjadee Prospecting, of Mount Brydges, Ontario for microscope examination of the grains in order to identify Diamond Indicator Minerals (or diamonds) contained in the samples. The mineral grains selected by Bob Dillman were then sent for microprobe analysis. This microprobe work was done by R. L. Barnett Geological Consultant Inc., 9684 Longwood Road, RR32 London, Ontario, N6P 1P2. The results for this work are pending for the samples taken on the Ayrex mineral exploration licence. In total six - (6) sample were taken from streams located on the Ayrex claims. A separate report covering this phase of the work will be compiled and submitted by Mr. Robert Dillman.

Using this process of silt sampling, the kimberlite indicator minerals found in the samples will indicate the presence of kimberlite dykes or pipes in the watershed drained by that portion of a stream.

In the process of collecting these stream sediments it is possible that an experienced crew might visually locate a kimberlite dyke or pipe. This happened on numerous occasions on other properties. The crew were well instructed that sampling was not the only goal of the project. The true goal was to locate kimberlite pipes or dykes. All crewmembers were very active in searching for kimberlite rock, or dykes or pipes. By this method three kimberlitic dykes were found just northwest of the Ayrex boundary on ground now owned by Tandem Resources Ltd. The "T2" dyke there is close to the east boundary with the Diamond Discoveries ground PEM 1483.

The Ayrex Property is largely at an elevation greater than about 1600 feet. There is a tributary of the Riviere Degesne, on the northeast central side of the claim group that is as low as 1100 feet above sea level. A NW-SE foot traverse was completed by the Geologist on the western side of the property centred on UTM 388800E 6604300N. Outcrop is extensive and no kimberlite dykes cut this 3km ling traverse. The object of this traverse and a more westerly one done by Graeme Scott was to meet and investigate a magnetic anomaly that is located at about 388800E 6602500N. There was not enough time to meet and investigate this area. In the light of the reported

location of the Twin Mining diamond bearing dyke on strike only 1.5 kms to the southwest this area needs to be examined more thoroughly. This is the area of Twin Mining's North Grid that is said to have returned their best results.

Restriction in work should be expected in this high country because of the frequency of low cloud cover or foggy days.

PREVIOUS WORK

Previous geological work done in the area consists of regional scale geological mapping by the Geological Survey of Canada.

1 The map by: VanKranendonk, M.J. 1994,
Geology Lac De Loriere, Newfoundland (Lab) - Quebec,
GSC Open File 2925, Scale 1:50,000.

2 The Quebec Department of Mines has just released map sheet 24P10 in October 2001. It is a compilation by Chantel Belodeau and Serge Perreault and numbered SI-24P10-C3G-01H. This uncoloured map is called Lac Loriere and its' scale is 1:50 000 (the underlined code is different for the coloured version of the map.

3 There is also map 1429A at 1:250,000 scale called Point Le Droit compiled by F. C. Taylor in 1975. It is published by the Geological Survey of Canada and has the map legend printed separately as "map 1462A".

1.0 INTRODUCTION

This paper, reports on the fieldwork completed on the Ayrex Resources mineral licence PEM 0001463 in the TORNGAT Mountains of North-eastern Quebec during the 2001 field season.

Stream Sediment Samples were collected from the first and second order river drainages in an attempt to find Diamond Indicator Minerals in the Heavy Mineral Concentrates (HMC) of those samples.

The concentrates were sent to Robert Dillman of Arjadee Prospecting for microscope examination of the individual grains. Selected suspect grains, from the sample, are then sent for detailed microprobe identification.

The analytical results for this work are pending.

The property was extensively prospected and mapped geologically in 2000 and only two man-days were spent examining the rocks on the property in 2001. Now that the results of Twin Mining's efforts are available in the Quebec assessment files there is almost a certainty that their dykes, one of which is diamond bearing, will extend onto the Ayrex claims. Twin Mining

returned in September of 2001 to recover an additional sample from the North Grid. This grid is about 1.5 kms SW of the Ayrex boundary.

2.0 LOCATION AND ACCESS

The Ayrex Resources Torngat Mountain property (licence 0001463) is approximately centred on Latitude 59° 35'00"N and 064° 52' 00"W. The property is 9,250Ha in area. It has a maximum east to west extent of 13.5 Kms and 15.5 Kms max north to south distance. (Fig 1)

The nearest community, George River - KANGIQSUALUJJUAQ, Quebec is about 115 kilometres to the southwest of the centre of the claim group. There are two lakes in the area suitable for a camp. They should be suitable for the use of a floatplane for supply purposes. One at "Torn Lake" near the given centre of the property was used as a camp in 2000. The other is about 2-3 kilometres north. These lakes at elevations of 1700 and 1800 feet respectively will have the number of flying days restricted by weather. Their central location however makes foot access to the property possible on foggy days. The use of a motor boat or zodiac would greatly aid access the width of the property across Torn and Gat Lakes.

The 2001 field crew was serviced out of a camp at the West End of Pangia Lake at a Latitude 59°36'N and Longitude 065°15'W. The camp was about 30 to 45 minuets flying time from George River. The camp was about 23 kms west of the centre of the Ayrex Resources claim group.

The eastern side if the group follows the Quebec - Labrador boundary. The licence is rock covered, barren and bleak with a number of glaciers on sheltered hill faces. Rock outcrops usually are large and numerous but outcrops are small and scattered in the rock debris fields.

In relation to significant geology, the Twin Mining diamond bearing dyke almost certainly enters the license near UTM 388800E 6602500N. A second Twin Mining dyke, the Dallas dyke, two kilometres west of this main "Torngat 1" dyke may also cross into the Ayrex claims. There could be other undiscovered dykes on this property.

3.0 REGIONAL GEOLOGICAL

The rocks underlying the Ayrex Resources Licence - 1463 are part of the Nain Geological Province of the Canadian Shield. The Nain Province makes up most of Labrador and Northern Quebec above the Abloviak Fiord. The Nain geological province is part of the Torngat Orogen that took place (2 to 1.9 billion years ago). Two rock units traverse the property striking NW-SE. The Tasuyiak gneiss blankets the entire property. It is mainly a garnet - silliminite bearing paragneiss. It is often rusty with some graphite and locally traces of pyrite, pyrrhotite (that is sometimes nickel bearing), and occasionally chalcopyrite. James Moorhead et el in in the Quebec Government publication "Kimberlites and Diamonds In Northern Quebec" place the northern limits of the Abloviak Shear Zone (ABZ) (his Fig 8) just south of the licence. The ABZ then contains mostly Tasuyaik gneiss in this region of Quebec. The Kimberlite dykes in the ABZ discussed in his document are all in the Tasuyaik gneiss in the Abloviak Shear Zone.

The second rock unit is an inlier of folded older Archean age rock covering about a two kilometre radius of UTM 395000E 6609000N. These gneisses are reworked Archean gneisses and Lake Harbour Group Paragneisses of the Nain Province. They underlie about 10% of the licence. This reworking took place at 1.89 to 1.84 billion years and metamorphosed some of the rock to charnokites or they were intruded from depth at this time. There are also Tasuyiak rocks of mafic composition in this complex zone near the centre of the group. There are also pods and beds of peridotite here as well.

It is suggested by Moorhead et. el. that there were tensional events that opened the crust in the area of the ABZ. This would allow for the emplacement of the Kimberlite dykes from great depths.

It has been learned in 2001 that there are Kimberlite dykes north of the Tasuyaik gneisses and therefore out of the proposed Abloviak Shear Zone (ABZ). It is clear that it is possible to have Kimberlite intruding rocks of **any** of the three ages associated with brittle-ductile deformation events in the region. James Moorhead et. el. P.4 in "Kimberlites And Diamonds In Northern Quebec" says: "At least three crustal extension events are known in the area occurring in Middle Proterozoic in Lower Proterozoic and in Mesozoic" (time). It should therefore be possible to find Kimberlitic rocks outside the boundaries of the ABZ and in rocks both older and younger than the Tasuyiak gneiss.

Twin Mining reports that kimberlite dykes have been found in the oldest member of the Lake Harbour Group on the Beaufremont River in rocks of the Far North Craton itself. These dykes trend east-southeast. Kimberlite dykes in the ABZ trend NNW through NNE. Other kimberlite dykes on Diamond Discoveries International ground DDI-3 are also in metasediments that are older than the Tasuyiak unit and are located north of the Abloviak Shear Zone as are the "S", T2", and "M" dykes on the Tandem Resources ground. Furthermore Moorhead et. el (page 4) states that "Post-tectonic ultramafic lamprophyres, some of which are kimberlites, have been identified in the northernmost portion of Labrador, approximately 75 km NE of the Abloviak Fiord dykes (Wardel et el., 1994)." We conclude therefore that exploration efforts for kimberlite rock need not be restricted to the area of the Abloviak Fiord or the ABZ.

4.0 LOCAL GEOLOGY

The rock foliation on the property strikes NW-SE. The rocks have been folded and their axial planes trend about NNW. The distance between axial planes is about 1.5 to 2 km. Usually the dip on the western limb of a synclinal fold is nearly vertical while the eastern limb dips is at a shallow angle (about 35°) to the west. This is similar to the pattern of folds on the continent side of a mountain thrust belt. This therefore is consistent with the position of the rocks on the property in relation to the main axis of the Torngat Mountains, which are located approximately on the eastern margin of the claim licence.

Two rock units traverse the property striking NW-SE. The Tasuyiak gneiss blankets the entire property. It is mainly a garnet -silliminite bearing paragneiss. It is often rusty with some graphite and locally traces of pyrite, pyrrhotite (that is sometimes nickel bearing), and occasionally chalcopyrite.

The second rock unit is an inlier of folded older Archean age rock covering about a two kilometre radius of UTM 395000E 6609000N. These gneisses are reworked Archean gneisses and Lake Harbour Group paragneisses of the Nain Province. They underlie about 10% of the licence. This reworking took place at 1.89 to 1.84 billion years and metamorphosed some of the rock to charnokites or they were intruded from depth at this time. There are also Tasuyiak rocks of mafic composition in this complex zone near the centre of the group.

There are numerous outcrops of peridotite. It occurs as pods and lenses strung out along selected horizons. These probably represent the base of the crust that been thrust or sub-ducted (tipped on edge) prior to the Torngat Mountain building event.

The metasedimentary gneisses composing the property are made up of about 80% quartz and feldspar with less than 10% garnets and 10% or more of black (mafic) minerals. Locally some units have 40-50% mafics usually amphiboles (occasionally biotite and rarely pyroxene). These beds are contorted and drag folded on the scale of 10 - 30 meters. This is because the mafic rich rock more easily undergoes plastic deformation; at lower temperatures and pressures; than the more silica rich rocks that make up the bulk of the gneisses underlying the property. These mafic rocks may also be paragneisses but garnet content is low indicating a sedimentary origin because of the low manganese content.

Granite pegmatite rock also occurs on the property as dykes and stringers. In some locations their presence is common. No economic minerals are seen to be associated with them.

The youngest rocks mapped in the area are gabbro or diabase in composition. These were mapped by VanKranendonk, M.J. of the GSC in his 1995 work. Kimberlite rock, also young in age is thought to occur on the claims. Kimberlites are often found by recognizing grassy clefts in solid rock. These grasses are often found at low elevations however at the elevations found on the Ayrex ground grasses are rare. They will still occur if the cleft is not boulder covered. If the dyke is boulder covered mineral grain investigation of the till is required to locate the soft kimberlite rock. A ground magnetometer can also be used to locate magnetic features with steep magnetic gradients that would likely be kimberlite.

Magnetic Feature

A traverse was made in the west of the group, in an effort to locate in interesting magnetic feature. The traverse never reached this destination. It is now thought that this magnetic feature may be the Torngat1 diamond bearing dyke of Twin Mining. Outcrop was continuous so there is little possibility that kimberlitic dykes cut across the line of this NW-SE traverse that ended about .5kms NW of the magnetic anomaly. This western boundary needs detailed examination to locate the extension of the Twin Mining kimberlitic dykes.

Unusual Topography

The author noticed an unusual topographic feature just inside Labrador and which may come onto the Ayrex ground. This feature is a lake at the very top of a 2600-foot mountain. This has no marked drainage and a series of sharp "V" shaped contours leading out of it trending just west of north. There are three other similar contours with the same trend 3-3.5 kms south. These are similar to features used by the author to locate kimberlite dykes in the Abloviak Fiord area. If this trend is a dyke and it continues north, it trends into a rounded cove of Gat Lake at UTM 396750E 6605500N. This feature deserves to be examined more closely.

5.0 LICENCE INFORMATION

The Ayrex Resources claims reviewed here are Quebec Exploration Licence Number 0001463. The acquisition date was 12 October 1999. The claims cover an area of 9,250 HA. The claims are all located on NTS 1:50000 map sheet 24P/10. The work in 2001 is the second year of renewal for this licence. The licence has a maximum east to west extent of 13.5 Kms and a maximum 15.5 Kms distance north to south. (Fig 1)

6.0 2001 EXPLORATION PROGRAM

The program was designed to collect 06 stream sediment samples then concentrate the heavy minerals from the samples by panning and mechanical jigging. Concentrates were then examined for the presence of any diamond indicator minerals in them. The presence of kimberlite indicator mineral grains would reveal the presence of kimberlite rock in that part of the drainage basin. Six sample sites were visited and six samples were taken. The samples were panned and jugged in facilities installed at the camp on Pangia Lake. The concentrates, after mechanical jigging, were sent to Robert Dillman for microscope selection of suspected indicator minerals. These selected grains were then sent to a R. L. Barnet for microprobe identification of these mineral grains. The results of this work are pending and will be reported separately.

Stream sediment samples were taken immediately down stream from high energy sites were stream energy was seen to drop rapidly. The site should have at least 5cm-diameter gravel. This size material moves only in the flood stage and permits the winnowing of light material out of the spaces around the larger stones as the flood stage dissipates thereby concentrating heavy minerals. This process should concentrate the garnets, magnetite,

chrome diopside and other kimberlite indicator minerals. The initial screen had openings of 6mm. More than 20 kilograms of the material that passed through this screen was collected and de-slimed. This involved stirring with lots of water so that the clay and organic portions became suspended followed quickly by carefully decanting the dirty liquid. This process was repeated until the residue was largely sand size or larger. The site was marked with a sample ribbon (ex AY-03 03). The GPS location of the site was taken and written in the field notes of the sample team. This information was later transferred to a master logbook kept at camp. If the next sample was close (100's of metres) the first bucket was carried to the next site this saves costly chopper time. This is a difficult task in rough country.

At camp on rain days or foggy early mornings the 40 - 60 pound stream sediment samples were screened and panned in the lake. Each screen was jigged by hand and the eye of heavy minerals that resulted was examined for diamonds or indicator minerals. The eye of the material that remained on the Milner diamond screen was collected into an appropriately labelled vial. This constituted the "coarse" sample for that location site. The material that passed through the Miller Diamond screen was panned to remove some of the lightest fraction and further de-slimed. The remaining material was collected in a clean properly labelled polyethylene sample bag. This panning continued until all the material from that sample site was processed. It required from three to six "pans" to completely process the sample at this stage. The "coarse" fraction was filed for future reference if indicator minerals are found in the fine fraction. The final step was to have the fine material from the polly bags jigged mechanically. A trained operator using a motorized jig, which was designed for that purpose, performed this jigging. The eye from this final stage was collected and placed in a properly labelled vial. These vials were shipped to Robert Dillman for examination of their kimberlite indicator mineral content.

Possible Improvements

It would be an improvement in productivity to use screen sizes in the field that will allow the direct collection of 1-1.5 litres of de-slimed sand sized material. If the same were done for the next larger coarse fraction, travel from one site to another would be much more rapid. The field crew would be carrying at most 4Kgs per sample site. It should be possible in this way for a two-man crew to collect from 6-8 samples per day. This could only be done with direct helicopter support last year. This process will also reduce panning at camp. It will also standardize the sample size taken from one site to the next. The amount of time on the ground will increase and allow for the

increased chance of locating dykes or pipes when the crew moves to the next location. The helicopter is vital but in some terrain, eyes on the ground are more effective in locating dykes. Eyes on the ground will be needed in high elevations where grass is much less noticeable.

6.1 COMMENTS ON RECONNAISSANCE OF AERO MAGNETIC ANOMALIES

A day was spent examining the approaches to magnetic high anomalies on the west central boundary of the claim group. The anomalous high magnetic readings are centred on about 388800E 6602500N. Time did not permit the completion of that task. This target has moved to a high priority status as a result of research on the available assessment work submitted by Twin Mining Corporation. They have traced their diamond bearing Torngat1 Dyke to a point about 1.5 to 1.75 kilometres from the Ayrex west boundary. The magnetic anomaly in question is on strike with the trend of this dyke. The Twin Mining's Dallas dyke is also about 1 to 2 Kms SW of the Ayrex ground but about 2 kilometres north of the Torngat1. The Dallas dyke should also strike onto the Ayrex group.

No kimberlite dykes were found in the area prospected in 2001 but the prime area of interest was not visited. A major effort should be made to locate the Torngat1 dyke on the Ayrex property. This would be followed by a complete tracing of its presence on the Ayrex ground. Sampling and assay of the rock in a systematic way would permit the evaluation of the potential of this dyke on the Ayrex license.

Prospecting

It is more difficult to locate kimberlite dykes on this property because of the extensive boulder-fields at these higher elevations. Additionally there is also no vegetation at these elevations. The presence of more numerous peridotite float and outcrop warrants a closer look. Access is restricted by the difficult in getting continuous stretches of good weather. The fog at high elevations or rain restricts access and makes it difficult to complete work all at once. The plan was always to return to the high country when weather permitted.

If there are indicator minerals in the silt samples collected on the Ayrex ground this property it should receive a week's worth of prospecting and ground magnetometer work to locate the extensions of the Twin Mining Dykes that should enter the property. Others kimberlitic dykes may also be found in the process.

If the stream sediments reveal the presence of indicator minerals the magnetic anomalies in this western section of the property should be placed on a still higher priority status.

There was not sufficient time to do more on the Ayrex property in 2001 because of the number of dykes found on DDI properties being examined at the same time. The weather restriction of working at high elevations is considerable. A project on Ayrex ground should be planned in conjunction with work on a property at lower elevations to avoid excessive lost time. Camping on the property would assist the speed of the work.

6.2 RESULTS

The results of the stream sediment sample work - are pending. Robert Dillman will submit the mineral grain data under a separate report. The silt sample locations are plotted and printed on the AYREX sample location map (Fig 2). The locations are tabulated in Appendix I.

7.0 CONCLUSIONS

The geology of this property is considerably more diverse than that of Properties examined further west. The presence of belts of peridotite in pods and lenses as well as massive rock unit leads one to expect that there will be some eclogite indicator minerals associated with them. It is fortunate that the Quebec department of mines has published their geology map of the area this past October. The information contained on it will be valuable in interpreting the distribution of indicator minerals in the drainage systems on the property.

The presence of sub ducted oceanic slabs ((indicated by the pieces of mantle peridotite on their undersides) supplies the first part of the environment for diamond formation. The proximity of kimberlitic dykes with diamonds attests to the fact that the crust underwent tension sufficient to tap the depths required for diamond formation. This property will require a separate program of exploration to identify the presence of kimberlite dykes or pipes on it.

A detailed systematic sampling of till is probably the best way in finding the source of concentrations of kimberlite indicator minerals and the probable location of buried pipes or dykes.

Since one of the key signs of the presence of the kimberlite dykes is the grassy cleft in the rocks, prospecting on this property needs to be done on the ground, by till sampling or using a ground magnetometer

The magnetometer used in walking mode is a very good tool in following invisible kimberlitic dykes once they disappear under the extensive boulder fields at these higher elevations. It should be used to follow extensions of the known kimberlite dykes. It can also be used to locate narrow steep gradient magnetic features that are magnetic dykes but may be diabase dykes. An experienced operator should be able to find the more resistant diabase as float on the surface. A computer with appropriate software and an operator familiar with the system will be needed to give daily feedback on likely targets for the crew to focus on the next day.

8.0 RECOMMENDATIONS

Work should be completed to extending the location of the known Twin Mining Dykes onto the company license. This can best be done with a magnetometer. Systematic till samples could help narrow down areas with high indicator mineral counts.

It is possible to rent a magnetometer that has a built in GPS. If this machine is used along with its base station magnetometer, collected data can be correction for its position and diurnal magnetic variation at the same time. The precision of data and location are top quality and are completed in minutes rather than days. Such a dedicated base station magnetometer also has a base station GPS capability. This corrects the GPS field points to accuracy in the meter range. This would eliminate the need to construct extensive grids in the field.

Grid construction in this region takes three times longer than below the tree line. The savings in detailed grid construction costs will easily justify the rental and use of such equipment. Grids can be reduced to witness markers done in paint or with ribbons. In areas of snow, pickets could still be used.

Research by the author indicates that it is possible and preferable to take smaller silt samples in the field. By first screening the material to the required mesh sizes in the field and return to camp with 1 to 2 litres of material to be jigged. If a coarse fraction is wanted the field hand could jig the sample in the field on the required screen and return the vial to camp. This would speed up movement from one sample site to another. It would not be necessary to carry 20 to 30 Kg samples to the next location OR have an expensive helicopter land at three or more sites to recover the buckets.

It may be warranted to collect additional silt samples on the property to narrow the target areas in places where kimberlite indicator minerals were found in 2001. It would also be profitable to collect till samples in a box

pattern around anomalies detected in the 2001 silt-sampling program.

After narrowing the suspect drainage with silt samples a grid of till sampling for HMC's should be used to locate buried or hidden dykes or pipes especially in the large areas of the property that are talus covered. Foot prospecting would not be effective in these types of areas.

APPENDIX I

9.0 MAN DAYS OF WORK

06 samples collected		4 man-days
06 samples panned & jigged		2 man days
Concentrates Examined R. Dillman in process.....		
Microprobe work.....		
General prospecting		2 man-days
Share of mobilization and demobilization...		3 man-days
Report & maps		2 man-days
TOTAL	**more than**	**13 man-days**

APPENDIX II

9.1 SAMPLE LOCATIONS

Stream Sediment Heavy Mineral Concentrates

Sample ID	No of fine vials	No. of coarse vials	UTM Coordinates
AY- 01	1	1	390265E 6603132N
AY- 02	1	1	390395E 6603075N
AY- 03	1	1	387283E 6604764N
AY- 04	1	1	387650E 6604110N
AY- 05	1	1	397217E 6611582N
AY- 06	1	1	397817E 6610288N

10.0 DISCLAIMER

I, Gerard J Mazerolle of 88 Brookland Street, Antigonish, Nova Scotia; have been a professional Geologist for more than 32 years. I declare that I have never, nor do I hold any interest, monetary or otherwise, in any of the Ayrex Resources Properties or in the company itself.

I declare that I performed and supervised the performance of all the fieldwork declared in this report on behalf of Ayrex Resources Ltd

Gerard J Mazerolle

11.0 QUALIFICATIONS

I, Gerard J. Mazerolle, declare I am a graduate geologist. I received my B.Sc. degree in Geology from St. Francis Xavier University in 1969.

I have practiced my profession in Canada and the United States over the last 32 years. I am a member of the Prospectors and Developers Association of Canada.

I have performed or supervised all the work declared in this report.

YOURS TRULY

Gerard J. Mazerolle BSc.