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REPORT OF ACTIVITIES ON DIAMOND DISCOVERIES INTERNATIONAL PROPERTY, DDI 6 IN THE TORNGAT MOUNTAINS (PEM 1472)

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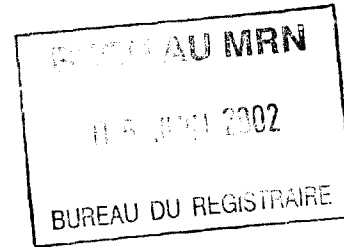


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Year 2001

REPORT OF ACTIVITIES
ON
DIAMOND DISCOVERIES INTERNATIONAL
PROPERTY
DDI 6

CLAIM LICENCE NO.
P.E.M. 0001472

NTS Sheet 24P/11
IN
THE TORNGAT MOUNTAINS
OF
NORTH-EASTERN QUEBEC

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88 Brookland Street, Antigonish, N.S.
26 May 2002

I

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SUMMARY

Geochemical and stream sediment surveys were completed over the Diamond Discoveries International mineral exploration licence number 0001472 during July, August and September 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 Bob 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. These results are pending for the silt samples taken on the DDI-6 mineral licence. In total sixty- (60) sample were taken from the DDI - 6 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. 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. No rock of kimberlitic composition was found on the DDI-6 ground.

All assay lab work is yet pending.

Geologists have traversed the property at about 2-3km intervals and have been unable to find kimberlite type rocks

Examination of some magnetic high anomalies was conducted but only one anomaly in the extreme Northwest corner of the property warranted additional silt sampling in its' vicinity. It is a magnetic gabbro in a large circular depression.

PREVIOUS WORK

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

The map by: VanKranendonk, M.J. 1994,

Geology Riviere Lepers, Quebec - Northwest Territories,
GSC Open File 2829 Scale 1:50,000.

The Quebec Department of Mines has just released map sheet 24P11 in October 2001. It is a compilation by Chantel Belodeau and Serge Perreault and numbered SI-24P11-C3G-011 the coloured map is called Riviere Lepers and its' scale is 1:50 000

1.0 INTRODUCTION

This paper reports on the fieldwork completed on the Diamond Discoveries International mineral licence PEM 0001472 in the TORNGAT Mountains of Northeastern 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 these 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 still pending.

In 2001 areas not previously examined by a geologist were traversed at about 2-3 km line spacing. No kimberlite rock or suspect areas were identified in this phase of the project.

Magnetic anomalies from the airborne Magnetometer survey conducted in the year 2000 were examined by a geologist and our best prospectors. This work was conducted North and West of the camp at Pangia Lake (Latitude 59°02'00"N and 065°40'00"W). The most northerly magnetic response on the property; at Pointe Le Droit, deserved some additional attention. It occurs in a large circular depression, 300-500 meters in diameter. This is the only large boggy area seen on any of the DDI properties. The magnetic response can be explained by a forty-metre diameter outcrop of magnetic gabbro. The gabbro is located in the southwest quadrant of this circle of boggy ground. A 2-4 meter wall of rock surrounds the low ground. Additional stream samples were taken for indicator mineral analysis. If any of these results are positive this feature deserves a more detailed examination.

2.0 LOCATION AND ACCESS

The Diamond Discoveries International Torngat Mountain property (licence 0001472) is approximately centred on Latitude $59^{\circ}37'30''\text{N}$ and $065^{\circ}17'00''\text{W}$. The property is 18,366 Ha in area. It has a maximum east to west extent of 26 Kms and 23 Kms max north to south distance . (Fig 1)

The nearest community, George River - KANGIQSUALUJJUAQ, Quebec is about 60 kms to the Southwest The only practical access is by helicopter or float equipped fixed wing aircraft. There are numerous lakes large enough for a fixed wing aircraft to land or depart but most have numerous rocks in them causing a hazard.

The field crew was serviced out of a camp at the West End of Pangia Lake at a Latitude $59^{\circ}36'\text{N}$ and Longitude $065^{\circ}15'\text{W}$. The camp was about 30 to 45 minuets flying time from George River.

The claims have no elevation greater than 1300 feet. Locally, usually in the valleys or cracks in the rocks, vegetation such as grasses can be found. Small shrubs do occur locally at elevations up to about 300 feet.

In relation to significant geology, the licence is about 12 kms Northwest of the diamondiferous dykes discovered by Twin Mining Corporation in the Abloviak Fiord. This diamond-bearing dyke is now known to extend northeast onto the Riviere Lepers map sheet 24P11. The nearest Twin Mining Corp. dyke is called the "West Dyke". It is about 1.75 kms southeast of the most southern tip of the DDI-6 ground. At the eastern end of the licence is a second southern extending point of the claims. South east of this point and on the International Tower Hill claims at a distance of about 2.3 kms ITH has located a "kimberlite" dyke (called K2 or ITH01). This is probably the extension of Twin Mining's' "SD" dyke about 400m to the southwest of K2. These dykes all strike northeast to southwest therefore they will not enter the DDI-6 mineral license. The proximity of these known kimberlitic dykes is of interest and will be more so if stream sediment samples in the area indicate the presence of kimberlite indicator minerals in their drainage.

3.0 REGIONAL GEOLOGICAL SETTING

The rocks underlying the Diamond Discoveries International Licence - 1472 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 southern unit is The Tasuyiak gneiss 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. Rusty zones in the gneiss are more intense in areas of faulting or shearing and when in contact with dyke intrusions. The mapped limit of the Tasuyiak gneiss crosses the licence in a southeast direction from the eastern edge of the claim block at Point Le Droit. James Moorhead et al in the Quebec Government publication "Kimberlites and Diamonds In Northern Quebec" place the northern limits of the SE trending Abloviak Shear Zone (ABZ) (his Fig 8) at this contact. The ABZ then contains the Tasuyaik gneiss in this region of Quebec. The Kimberlite dykes in the ABZ discussed in his document are all in the Tasuyaik gneiss in this Abloviak Shear Zone.

The second rock unit, north of the Tasuyaik gneisses are reworked Archean metasedimentary gneisses of the Nain Province. Some reworking took place at 1.89 to 1.84 billion years and metamorphosed the rock to charnokites or they were intruded from depth at this time. These rocks are found only in the most eastern two to three kilometres of this licence.

A belt of this rock (about 7Kms wide) is an inlier in the Tasuyaik gneiss and it cuts across the licence 6Kms east of the Pangia Lake camp. The geologist spent three days traversing and mapping this area. The rocks are probably Tasuyiak gneisses but were labelled "undifferentiated" in Taylors GSC 1:250 000 Geology map of 1975. No kimberlite rock was encountered on these traverses.

It is suggested by Moorhead et.al. that there was a 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 al P.4 in "Kimberlites And Diamonds In Northern Quebec"

says: "At least three crustal 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. Furthermore Moorhead et.al (page 4) states that "some of which are kimberlites, have been identified in the northernmost portion of Labrador, approximately 75 km NE of the Abloviak." We conclude therefore that exploration efforts 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 have the same trend as the foliation. The distance between axial planes is about 1.5 to 2 km. Usually the dip on western limb of a fold (on a syncline) is nearly vertical while the eastern limb dips at a shallow angle (about 35°) to the west. This is similar to the pattern of folds on the continent side of a mountain belt. This is consistent with the position of the rocks on the property in relation to the main axis of the Torngat Mountains located about twenty to 30 Kms further east.

Three days were spent by the author mapping the rocks in a 7-Km strip (north to south) starting about 6 kms east of the camp at Pangia Lake. Two additional days were used to map sections of the property north and west of the camp at Pangia Lake. The second day was used to map the rocks between the Renac River and west as far as Ungava Bay.

The Tasuyiak has its' greatest rusty character (on the property) in a belt one to two kilometres wide centred in the east end of Pangia Lake and extending to the northwest and southeast off the property. Flanking this belt are beds of gneiss that may be less rusty along with metasedimentary gneisses and lesser beds of amphibole rich gneisses. The least common rocks in the Tasuyiak suite are paragneisses. The magnetic belt of rock outcropping on the peninsula west of the mouth on the Renac River in Ungava Bay is the

area having the most common frequency of paragneisses on the property.

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 metasedimentary gneisses underlying the property. These mafic rocks may also be paragneisses but garnet content is low indicating a sedimentary origin because of the lack of manganese.

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 on the DDI-6 licence are gabbro or diabase in composition. They are found intruding Tasuyiak gneisses in the Point Le Droit region in the northwest corner of the claim group. There are two roughly circular airborne magnetic high anomalies that are explained by the presence of fine to medium grained unfoliated gabbroic rock. The rock of the eastern magnetic feature consists of a series of about five east trending "dykes", some of which are up to 60 meters thick. They dip vertically to slightly northward. The thinnest of these gabbro dykes has a thickness of about two meters. Grain size is larger in the thicker dykes so that the feldspars have grown large enough to be detectable. There is a blocky fracture pattern to the outcrops. One of the fracture directions is parallel to the sides of the dykes.

A 2-3 metre vertical wall of rock bounds the western magnetic anomaly. It occurs in a circular boggy depression. In the southwest quadrant of this depression near the edge of the wall is a 20 - 30 metre diameter outcrop of more massive gabbro. It is medium grained strongly magnetic and less blocky fracturing than the gabbroic rock to the east. It also contains trace amounts of pyrite.

Although no kimberlite rock or even peridotite rock was found on the property in 2001 one piece of peridotite float found at 6609000N and 369300E down river from the Pangia Lake camp is of interest. Although it is a peridotite the presence of about 5% phlogopite mica in partly digested booklets along with the partial serpentinization of the rock gives it some kimberlite affinity. Silts in this area should be examined closely.

5.0 LICENCE INFORMATION

The Diamond Discoveries International Inc. claims reviewed here are Quebec Exploration Licence Number 0001472. They cover about 183 square kilometres. The claims are all located on NTS 1:50000 map sheet 24P/11. The work in 2001 is for the second year of renewal for this licence. The licence has a maximum east to west extent of 26 Kms and a maximum 23 Kms north to south extent. (Fig 1)

6.0 2001 EXPLORATION PROGRAM

The program was designed to collect 60 stream sediment samples then concentrate the heavy minerals from the samples by panning and mechanical jiggling. 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. Sixty sample sites were visited and samples taken from them. The samples were panned jugged in the field. The concentrates after mechanical jiggling 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 result of this work is pending.

6.1 COMMENTS ON RECONNAISSANCE OF AERO MAGNETIC ANOMALIES

A day was spent examining magnetic high anomalies in the north west arm of the claim block. All the magnetic anomalies north of the mouth of the Renac River were examined and the high magnetism explained. The two gabbroic anomalies are discussed elsewhere in this report. The other four anomalies occur in garnetiferous rusty gneisses containing visible magnetite grains along with pyrite and some minor pyrrhotite. The amount of mineralization in the rock, and the total amount of outcrop or sub-outcrop in the vicinity of the magnetic anomalies, does not give the hope that economic concentrations of metals are associated with these magnetic features.

The most southerly anomaly examined at UTM co-ordinate 6617800N and 357600E is located between islands in Ungava Bay and was examined at low tide. The usual garnetiferous siliceous gneisses are present but minor beds of mafic rock are interbedded with them. In two places pyrite rich pods

were found with associated copper bearing chalcopyrite. This magnetic anomaly appears to be the north-western extension of a formational magnetic anomaly found on the mainland underlying the peninsula west of the mouth of the Renac River. The southern end of this belt was traversed and although some very minor mafic beds were seen they are very narrow. It is very unlikely that there are economic metallic deposits associated with them.

Given the fact that all of the field crew proved that they were able to identify the surface traces of kimberlite dykes, and that they travelled extensively on foot between sixty silt sample sites, they should have seen some traces of kimberlite dykes if such existed on the property. The geologist saw 20% of the DDI6 property by foot and saw no intrusions of interest. Rock exposure is in excess of 60%. It is felt that the DDI-6 ground has little potential of containing kimberlite dykes or pipes. If the stream sediments reveal the presence of indicator minerals the magnetic anomalies in this central section of the property should be re-assessed.

The area east of UTM 378000E has kimberlite indicator minerals present from the work done in 2000. The magnetic anomalies in this region need to be examined. If kimberlite indicator grains are found in silt samples from the portion of the licence below UTM 6610000N (the southern triangle) magnetic anomalies in this area could be re-evaluated. There was not sufficient time to do more on the DDI-6 property in 2001 because of the number of dykes found on other DDI properties.

In assessing the most intense rifting and frequency of dykes the concentration appears to be centred between the DDI-1 and west side of DDI-4 ground and extending to the north and south. The east end of the DDI6 property probably represents the western limits of any kimberlite corridor.

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 maps DDI-6 A and DDI-6 B (Fig 2 and Fig 3) and are listed in the Appendix.

7.0 CONCLUSIONS

Unless there are significantly good results from the Stream Silt Samples it is recommended to drop the portion of the licence west of UTM 378000E. Special caution is enjoined regarding the circular structure at Point Le Droit. The silt samples in this area must be thoroughly scrutinized before dropping the claims in this area.

Indicator minerals were found in the east of DDI6 property in the year 2000. The presence of these kimberlite indicator minerals deserve more verification samples than the four taken in 2001. These most eastern 30 square kilometres of the property needs follow up on the ground by a crew as experienced as that working in 2001. They are past the steep part of the learning curve and should be able to locate kimberlite rocks or dykes if charged with that task and given the proper tools and a reasonable amount of time. Ten to fifteen (10 - 15) crew days would thoroughly examine this ground. A magnetometer would be needed to cover areas overlain by boulder fields or felsenmuir.

Since one of the key signs of the presence of the kimberlite dykes is the grassy cleft in the rocks, exploration at the elevations at this end of the property needs to be done on the ground. 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 known or suspected 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

Drop the ground covering the western two thirds of the licence and do some work to the eastern portion if the results of the silt mineral grain work indicates that this ground might have some value.

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 an 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.

The magnetometer can also be used to locate narrow steep gradient magnetic features that are diabase or kimberlite 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 following day.

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 1.5 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 to narrow the target areas in places where kimberlite indicator minerals were found in 2001.

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

60 samples collected	40 man-days
60 samples panned & jigged	30 man days
Concentrates Examined R. Dillman in process.....	
Microprobe work.....	
General prospecting	6 man days
Checking magnetic targets	2 man-days
Share of mobilization and demobilization...	4 man-days
reports	2 man days
TOTAL	more than 94 <u>man days</u>

APPENDIX II

9.1 SAMPLE LOCATIONS

Stream Sediment Heavy Mineral Concentrates

Sample ID	No of fine vials	No. of coarse vials	UTM Coordinates
DDI6- 01			380530E 6614063N
DDI6- 02			380541E 6614080N
DDI6- 03			380334E 6614295N
DDI6- 04	2	1	361209E 6611028N
DDI6- 05	2	2	361680E 6612759N
DDI6- 06	2	2	361446E 6615259N
DDI6- 07			367943E 6614131N
DDI6- 08			368275E 6614854N
DDI6- 09	2	1	367389E 6615258N
DDI6- 10			382880E 6612384N
DDI6- 11			378946E 6612644N
DDI6- 12	2	2	365592E 6613861N
DDI6- 13	1	1	365159E 6612987N
DDI6- 14	1	1	363907E 6612588N
DDI6- 15		1	362300E 6614850N
DDI6- 16	1	1	362135E 6616063N
DDI6- 17	2	1	360583E 6618262N
DDI6- 18	2	1	359988E 6620563N
DDI6- 19	3	1	360204E 6620345N
DDI6- 20	1	1	360669E 6620043N
DDI6- 21	1	1	359056E 6625002N
DDI6- 22	2	2	359342E 6625118N
DDI6- 23	2	1	359041E 6622270N
DDI6- 24	1	1	370505E 6614953N
DDI6- 25	1	1	371534E 6615156N
DDI6- 26	2	1	372428E 6615975N
DDI6- 27	1	1	373905E 6614461N
DDI6- 28	1	1	374912E 6614776N
DDI6- 29	1	1	375782E 6614887N
DDI6-30	1	1	376467E 6614412N

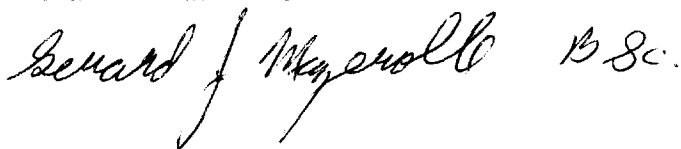
Sample ID	No of fine vials	No. of coarse vials	UTM Coordinates
DDI6- 31	1	1	375078E 6613778N
DDI6- 32	1	1	375991E 6613291N
DDI6- 33	1	1	376688E 6612575N
DDI6- 34	1	2	377784E 6612367N
DDI6- 35	1	1	363403E 6618988N
DDI6- 36	1	1	359700E 6615750N
DDI6- 37	1	1	364448E 6616917N
DDI6- 38	1	1	365721E 6615255N
DDI6- 39	1	1	367417E 6615989N
DDI6- 40	1	1	367793E 6616237N
DDI6- 41	1	1	367611E 6613859N
DDI6- 42	1	1	369371E 6613817N
DDI6- 43	1	1	372188E 6613613N
DDI6- 44	1	1	372267E 6613644N
DDI6- 45	1	1	374251E 6613552N
DDI6- 46	1	1	374222E 6612261N
DDI6- 47	1	1	374977E 6611606N
DDI6- 48	1	1	372508E 6611517N
DDI6- 49	1	1	369856E 6611007N
DDI6- 50	1	1	365269E 6611911N
DDI6- 51	2	1	366858E 6611078N
DDI6- 52	1	1	367113E 6610281N
DDI6- 53	1		364577E 6612745N
DDI6- 54	1		358945E 6617255N
DDI6- 55	2		356979E 6620663N
DDI6- 56	1		360066E 6618245N
DDI6- 57	1		360997E 6618848N
DDI6- 58	1		362486E 6619020N
DDI6- 59	1		367087E 6613762N
DDI6- 60	1	1	358251E 6624538N

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 Tandem 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 Tandem Resources Ltd

Gerard J Mazerolle

A handwritten signature in black ink that reads "Gerard J Mazerolle B.Sc." The signature is written in a cursive style.

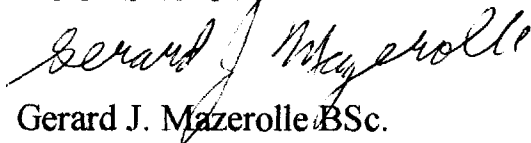
11.0 QUALIFICATIONS

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

A handwritten signature in black ink that reads "Gerard J Mazerolle B.Sc." The signature is written in a cursive style.

Gerard J. Mazerolle B.Sc.