

830500

**GEOLOGICAL REPORT**

**ON THE**

**NORTH 40 PROPERTY**

**Blazed Creek Area  
Nelson Mining Division  
British Columbia**

**NTS: 82F/2W  
Latitude: 49°10' North  
Longitude: 116°56' West**

**FOR**

**BLUEBIRD RESOURCES LTD.**

**BY**

**N.C. CARTER, PH.D. P.ENG.  
January 25, 1996**

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**SUMMARY**

Bluebird Resources Ltd. owns the North 40 property which consists of nine contiguous mineral claims located in the Nelson Mining Division just north of Provincial highway 3 about midway between Salmo and Creston in southeastern British Columbia.

The North 40 property includes several known gold-bearing quartz veins hosted by granodiorite of the mid-Jurassic Mine Stock. Nearby gold deposits include the Bayonne mine which produced 81678 tonnes with an average recovered gold grade of 16.10 g/t (0.466 oz/ton), mainly between 1936 and 1942.

Significant gold values have been obtained from narrow quartz vein structures on the North 40 property and geophysical and geochemical surveys suggest good potential for extensions to known structures and for the discovery of additional veins. Further exploratory work is warranted and a first phase program, at an estimated cost of \$210,910.00, is recommended to include expanded geophysical surveys and soil geochemistry, geological mapping, prospecting and bedrock sampling and some diamond drilling. A second phase, consisting additional diamond drilling at an estimated cost of \$300,000.00, would be predicated on results obtained from first phase work.

**INTRODUCTION**

Bluebird Resources Ltd. holds title to nine mineral claims, referred to collectively as the North 40 property, which are situated south of Nelson in southeastern British Columbia. The mineral claims include several gold-bearing quartz veins which are similar to nearby structures that have yielded production in the past.

This report, prepared at the request of Bluebird Resources Ltd., is based principally on information provided by the company which includes various reports and maps detailing the results of exploratory programs conducted on the North 40 property over the past two years. Other sources of information used in the preparation of this report include a number of published and unpublished reports pertaining to the geological setting and mineral deposits of the immediate area.

The writer has not personally examined the North 40 property but has a reasonably good knowledge of the area gained by way of a numerous mineral property examinations throughout southeastern British Columbia over the past 25 years. This work has involved examination of, and reporting on, several gold prospects in the south Slocan area which are considered to have a geological setting similar to that of the North 40 property and environs.

### LOCATION AND ACCESS

The North 40 property is situated 40 km southeast of Nelson and 30 km west of Creston in southeastern British Columbia (Figure 1). The geographic centre of the property is at latitude  $49^{\circ}10'$  North and longitude  $116^{\circ}56'$  West in NTS map-area 82F/2W.

Mineral claims comprising the property have been located at the headwaters of Blazed Creek and access is afforded by a 12 km secondary road extending up Blazed Creek from highway 3 some 23 km west Creston (Figure 2). Parts of the northern, western and eastern claims areas are accessible by way of a number of branch roads.

### MINERAL PROPERTY

The mineral property held by Bluebird Resources Ltd. consists of four 4-post and five 2-post mineral claims (80 mineral claim units) located in the Nelson Mining Division. These are shown on Figure 3 and details are as follows:

<u>Claim Name</u>	<u>Record Number</u>	<u>Units</u>	<u>Expiry Date</u>
NORTH 40	324215	20	March 26, 1999
NORTH 42	325570	20	May 25, 1999
SOUTH 40	333099	20	December 19, 1998
BLAZE	340604	15	September 24, 1998
ARK 1	340605	1	September 26, 1999
ARK 2	340606	1	" "
ARK 3	340607	1	" "
ARK 4	340608	1	" "
ARK 5	340609	1	" "

### PHYSICAL SETTING

The North 40 property is situated in relatively rugged terrain typical of the southern Selkirk Mountains. Elevations range from about 1500 metres above sea level along the lower reaches of Bluebird Creek in the southeastern property area (Figure 3) to between 1800 and 2100 metres in the western claims.

Forest cover, with locally thick underbrush, extends over much of the claims area with the exception of some logged areas along Bluebird Creek and the topographically higher areas which feature typical alpine terrain.

### PREVIOUS WORK

Initial prospecting in the headwaters areas of Blazed and Next Creeks was undertaken in the early part of this century. Mineral claims covering the Bayonne gold property were located in 1901 (Sargent, 1938). Gold-bearing quartz veins on the Spokane, Virginia, Echo, Montana and Summit Bell properties were discovered at about the same time and work over the subsequent 20 years included underground development on the Bayonne, Spokane and Summit Bell properties. Some ore was shipped from the Spokane property by way of a 40 km trail to a Canadian Pacific Railway siding on the west shore of Kootenay Lake.

Renewed activity in the area in the 1930's and early 1940's was in response to higher gold prices. A truck road along the route of the original trail was extended into the Bayonne property, a 60 tpd cyanide mill was constructed and most of the production from this property took place between 1936 and 1942. Ore shipments were also made from the Spokane and Virginia properties during the same time period.

Post World War II activity included limited ore shipments from the Bayonne and Spokane properties between 1946 and 1956. Additional investigation of the Bayonne deposits included some diamond drilling in 1963 and 1964 when completion of the Salmo - Creston highway afforded more convenient access into the area.

More recent investigation of the Bayonne property, undertaken by several junior companies between 1980 and 1990, included some diamond drilling and various geological, geochemical and geophysical surveys and some ore shipments to the Cominco Trail smelter (Hitchins, 1987; Sykes and Allen, 1989).

Production from the area between 1915 and 1984 is summarized in the following table. Noteworthy is the fact that more than 90% of this production was recorded between 1936 and 1942.

<u>Property</u>	<u>Tonnes Mined</u>	<u>Gold(g)</u>	<u>Silver(g)</u>	<u>Lead(kg)</u>	<u>Zinc(kg)</u>
Bayonne	81678	311295	3743671	42754	23349
Spokane	1733	29639	570988	304046	12943
Virginia	19	373	591	-	-
Totals	83430	341307	4315250	346800	36292

(Imperial units - 91,966 tons mined, yielding 43,131 oz.gold, 138732 oz.silver, 764,563 lb.lead, and 80,010 lb.zinc)

Previous work within the area now included in the North 40 property dates back to the early 1900's when some investigation of the Virginia vein was undertaken. (This prospect is believed to be located near the southwestern corner of the present North 42 claim - Figures 3 and 4). Subsequent work on this prospect reportedly included about 60 metres of drift adit and some limited production in the late 1930's.

Cima Resources Ltd. held 4 mineral claim units in the northeast quarter of the current North 42 claim in 1983 (Corvalen, 1983). A stream sediment survey lead to the discovery of what was referred to as the Yukon vein structure which was further explored by several hand trenches, bedrock sampling, geological mapping and the collection of 278 soil samples.

Principals of Bluebird Resources Ltd. undertook prospecting of the area immediately north of the Bayonne property in 1992. This work resulted in the discovery of two



gold-bearing vein structures and mineral claims were located in 1994. Bedrock sampling was undertaken and a small grid was established around one of the vein structures to facilitate the collection of 63 soil samples (Cukavac,1995). Two short diamond drill holes were completed with the aid of a Winkie portable drill. Some geological investigation and sampling was also carried out in the area of an old adit believed at that time to be near the south boundary of the North 40 claim. Subsequent investigation demonstrated that the underground workings were in fact situated on the adjoining Summit Bell Crown granted claims.

A comprehensive program on the North 40 property in the fall of 1995 included prospecting, limited bedrock sampling, soil geochemistry and a geophysical survey. Two grid areas were established, the larger being the West Grid which consists of a 1 km picketed baseline and 33 km of flagged, north-south cross lines at 50 metres spacings. 1,297 soil samples, collected at 25 metre intervals along the cross lines, were subsequently analyzed for geochemical concentrations of gold, lead and a number of other elements. A combined magnetometer- very low frequency electromagnetic (VLF-EM) survey was also conducted over 22 km of the West grid.

The East Grid consists of 13.7 km of flagged north-south

lines spaced 100 metres apart. Work here in 1995 included the collection and subsequent analyses of 308 soil samples.

#### **REGIONAL GEOLOGICAL SETTING**

The region southwest of Kootenay Lake, including the Blazed Creek - Next Creek areas, is within Kootenay Terrane a short distance east of the Kootenay Arc. Layered rocks underlying this area include a thick succession of clastic and lesser carbonate sediments and some volcanics, all part of the Windermere Supergroup of late Proterozoic age (Brown et al,1995). These are intruded by middle to late Jurassic granitic plutons and by the mid-Cretaceous Bayonne granitic batholith which extends west and east of the southern part of Kootenay Lake.

The Blazed Creek - Next Creek area is principally underlain by two granitic stocks, one of which, the Mine Stock, is in intrusive contact with the Bayonne batholith. Both the Mine Stock and the nearby Wall Stock (Rice,1941) are elongate bodies, approximately 12 by 8 km in plan, and are of mid- to late Jurassic age or similar to the nearby Nelson batholith. Both stocks consist of fine- to medium-grained, equigranular, light grey granodiorite. Amphibole is reportedly (Rice,1941) more abundant in the Mine Stock which also features numerous, narrow aplite and pegmatite dykes,

particularly along its margins. Such dykes are apparently rare in the Wall Stock.

Structural trends within the Windermere Supergroup sediments, between the two stocks and immediately south of the Mine Stock, conform to the intrusive boundaries and are evidence of forceful emplacement (Rice,1941).

Mining and mineral exploration in this region has been mainly directed to gold mineralization associated with fissure-filling quartz veins developed in both the Mine and Wall Stocks. Examples include the Bayonne, Spokane and Summit Bell properties (Figure 4).

The Bayonne mine, in the central part of the Mine Stock, includes several gold-bearing quartz veins which occupy 1 to 5 metres wide, east-northeast striking, near vertical, shear zones in granodiorite. Quartz veining within the shear zones ranges in width from 5 cm to 3 metres and averages 0.5 metre. Granitic wallrocks within within an interval of 0.6 and 1 metre marginal to the veins feature abundant talc-carbonate alteration (Rice,1941).

The veins are oxidized from surface to depths of about 140 metres and consist mainly of vuggy quartz with abundant limonite. Below this level, the quartz contains varying amounts of pyrite, galena, sphalerite and chalcopyrite (Hitchins,1987).

Past mining included seven drift adits which developed several veins over strike lengths of between 300 and 750 metres and over a vertical range of 180 metres (Sargent,1938). Most mining was within the oxidized zone and average recovered grades from 81678 tonnes mined were 16.1 g/t gold, 45.8 g/t silver, 0.05% lead and 0.03% zinc. (Imperial units - 0.466 oz/ton gold and 1.33 oz/ton silver).

Remaining proven and inferred reserves in 3 veins are reported (Sykes and Allen,1989) as 125,000 tonnes grading 14 g/t gold.

The Spokane property, northwest of the Bayonne mine and near the southern margin of the Wall Stock (Figure 4), has similar characteristics. Quartz veining is developed in a 0.15 to 1 metre wide, steeply south-dipping shear zone which trends easterly, paralleling the southern stock contact. Lenses of pyrite, galena, sphalerite and chalcopyrite occur within the quartz vein but, like the Bayonne, are intensely oxidized to depths exceeding 100 metres. Secondary lead, zinc and copper minerals are present in the oxidized zone. Narrow, north-trending lamprophyre dykes were noted cutting the quartz vein in the underground workings (Sargent,1938).

The vein structure was developed by five adit levels over a strike length of 200 metres and a vertical range of 100 metres. Average recovered grades from 1733 tonnes shipped

since the early 1900's include 17.1 g/t gold, 329.5 g/t silver, 17.5% lead and 0.7% zinc. The average gold grade is higher than the Bayonne, probably reflecting selective mining while the higher silver, lead and zinc grades are indicative of smelter recoveries of these elements in contrast to the Bayonne where most material mined was processed by a cyanide mill on site.

The Summit Bell prospect, 3.5 km east of the Bayonne and also within the Mine Stock (Figure 4), includes two parallel quartz veins exposed in several surface cuts and one drift adit over a strike length of 100 metres. Vein widths range from 0.20 to 0.60 metres and the two veins exposed in the drift adit (Sargent, 1938) may simply represent a 7 metre fault offset of one structure.

Vein mineralogy differs from the Bayonne and Spokane deposits in that pyrite is the dominant sulphide mineral with only minor galena and sphalerite. Oxidation of the vein(s) is not nearly as intense as noted at the other prospects, possibly due in part to the elevation of the Summit Bell workings (1750 metres) as opposed to those at the Bayonne and Spokane properties which are at elevations of between 1830 and 2000 metres above sea level. Hitchins (1987) noted that the Summit Bell vein resembled those exposed in the lower, less oxidized portions of the Bayonne vein systems.

Previous surface and underground sampling of the Summit Bell structure has yielded gold grades of between 4.8 and 24.7 g/t over sample intervals of 0.27 to 0.56 metres (Sargent,1938) and 0.77 to 20.69 g/t over intervals of between 0.30 and 3 metres (Cukavac,1995). Grab and/or selected samples have returned higher gold values, including 32.9 g/t (Sargent,1938); 33.9 g/t (average of several samples - Hitchins,1987) and 100.1 g/t (Cukavac,1995).

#### **PROPERTY GEOLOGY, MINERALIZATION AND GEOPHYSICAL AND GEOCHEMICAL SIGNATURES**

##### **Geology**

No detailed geological mapping has been completed for the North 40 property area but it can be assumed that the setting is similar to the nearby Bayonne mine. As indicated on Figure 4, the property is mainly underlain by granitic rocks of the Mine Stock which has been described as consisting of fine- to medium-grained, light grey, equigranular granodiorite of uniform texture and composition.

The Mine Stock is in contact with Late Proterozoic, Windermere Supergroup sedimentary rocks in the northwestern property area (Figure 4); these underlie the area between the Mine and Wall Stocks.

### Mineralization

Several gold-bearing quartz vein structures have been identified on the North 42 claim in the western property area. These include the Yukon vein, veins exposed in Pits 1, 2 and 3 and the Virginia (Figure 4). The Yukon vein and the Pit 1 - 3 occurrences occupy northeast trending fissures in granodiorite, dip steeply south, and consist of vuggy and locally ribbon-textured quartz containing variable amounts of pyrite, galena, sphalerite and chalcopyrite. Wallrocks exhibit intense clay-sericite alteration over intervals of nearly a metre outward from the vein contacts; these zones usually feature abundant iron oxide and hematite (Cukavac, 1995).

The Yukon vein (Corvalen, 1983) is a northeast-striking, subvertical quartz-pyrite-galena fissure vein intermittently exposed in outcrop and 10 hand trenches over a strike length of 300 metres (Figure 5). Exposed vein widths range from 5 cm to 0.40 metre. The weighted average grade of 17 bedrock samples collected by Corvalen (1983) at intervals along the exposed strike length is 12.37 g/t gold (0.359 oz/ton) over an average sample width of 0.20 metre. Silver values are generally less than 15 g/t and better lead grades (up to 0.67%) are coincident with higher gold values. Wallrocks apparently do not contain significant gold contents.

Narrow, northeast trending quartz-pyrite-galena fissures are exposed in two hand trenches which are on trend with, and 200 metres southwest of the Yukon vein (Corvalen,1983). The weighted average of 5 samples collected over a restricted area is 5.08 g/t gold (0.148 oz/ton) over an average sample width of 0.17 metre.

The Pit 3 occurrence appears to be very close to the aforementioned locality (Figure 5). Sampling of a narrow quartz vein exposed in a small trench (Cukavac,1995) returned values of 1.37 g/t gold (0.04 oz/ton), 10.3 g/t silver and 0.31% lead over a 0.13 metre width. Prospecting along the northeast trend of this structure located a vein exposure some 200 metres northeast of Pit 3 (Ken Murray, personal communication) from which a grab sample yielded 13.33 g/t gold (0.387 oz/ton) and 22.8 g/t silver.

Pits 1 and 2 are situated 750 metres south of Pit 3 (Figures 4 and 5). Pit 1 exposes a fissure-filling, vuggy quartz vein, up to 0.70 metre wide, and striking east-northeast with a steep southerly dip. A chip sample across a width of 0.60 metre (Cukavac,1995) returned 9.43 g/t gold (0.25 oz/ton), 75.6 g/t silver, 1.09% copper, 2.25% lead and 0.44% zinc. Gold values in altered wallrock marginal to the ranged between 33 and 62 ppb. A short (14 metres) Winkie diamond drill hole, drilled below Pit 1, did not intersect



the structure.

Pit 2, 30 metres southwest of Pit 1, exposes a 0.13 metre wide quart-sulphide vein from which one sample returned 3.09 g/t gold (0.09 oz/ton), 6.9 g/t silver and 1.17% lead (Cukavac,1995). Again, gold values in wallrock were very low.

There has been some confusion in the past regarding the precise location of the Virginia prospect. A review of published and unpublished descriptions indicates it to be situated near the southwestern limits of the North 42 claim (Figure 4).

An unpublished report by Sargent(1937) refers to two short adits driven along an east-southeast striking, steeply north-dipping, 0.30 to 1 metre wide fissure containing variable amounts of honey-combed, rusty quartz. Sheared granodiorite marginal to the structure exhibits abundant iron oxide. While Sargent reports only traces of gold within the structure, the Minister of Mines Annual Report for 1938 refers to 60 metres of drifting and production in that year of 18 tonnes. Total recorded production from the Virginia was 19 tonnes yielding recovered grades of 19.63 g/t gold (0.57 oz/ton) and 31.1 g/t silver.

### **Geophysics**

A surface magnetometer and VLF-EM survey was conducted on behalf of the Company by Lloyd Geophysics Inc. over 22

line-km of the West Grid (Figure 4) in October of 1995. The instrument used for the survey was an Omni Plus combined proton magnetometer/VLF-EM system (Cornock and Lloyd,1995).

The magnetometer survey identified a subtle magnetic high in the central part of the grid which appears to be slightly offset by an east-northeast trending fault (Figure 5).

Of more immediate interest are the great number of VLF-EM conductors defined throughout the survey area. As indicated on Figure 5, the majority of these trend in a northeasterly direction, conforming to the strike of known quartz veins, and may be indicative of both parallel structures and extensions to known veins.

Cornock and Lloyd(1995) provided a ranking of these conductors. "Good VLF Conductors" are mainly north of the interpreted fault (Figure 5) and several of these extend to the limits of the survey coverage.

### **Geochemistry**

Soil geochemical surveys were conducted over the West and East (Blaze) Grids (Figure 4) in late 1995.

West Grid coverage included the collection of samples at 25 metre intervals along north-south lines spaced 50 metres apart. Half the samples were subsequently analyzed for gold and a number of other elements by ICP methods with the

remainder analyzed for gold and lead only. ICP analyses indicated a fairly good correlation between higher gold and lead (+ zinc) values. Mainly low values were obtained for other elements including copper, arsenic and antimony. Consequently, lead values may be used as possible indicators of gold mineralization in this area.

A statistical analysis of the soil sample results (Ken Murray, personal communication) showed anomalous lead values to be +200 ppm while gold values in excess of 10 ppb were considered to be significant.

Principal results for the West Grid are shown on Figure 5. Of particular interest is an elongate (350 x 150 metres) area of +200 ppm lead (up to +600 ppm) in soils which includes a number of spot high gold values and which is coincident with, and downslope from the Yukon vein and the parallel structure exposed in Pit 3.

Other anomalous gold values (including one of 440 ppb - Figure 5) occur in a cluster along the same structural trend to the southwest and are downslope from northeast trending VLF-EM conductors.

More restricted, partially defined areas with +200 ppm lead in soils occur along the eastern grid boundary (Figure 5). Anomalous gold values are locally coincident with these but appear to be more widespread northeast and southeast of

Pit 1.

The southwestern portion of the West Grid is characterized by three areas with +70 ppm lead in soils and one 25 ppb gold value. This area was not covered by the geophysical survey and the significance of these is remains unknown.

Soil samples from the East Grid (Figure 4) were collected at 50 metre intervals along 100 metre spaced lines (Figure 6). Overall lead values in soils were found to be lower than in the West Grid area; consequently, anomalous values are considered to be +40 ppm.

Several anomalous areas were indicated including two on the adjacent Crown granted claims (Figure 6) which appear to be on trend to the northeast of the Summit Bell vein structure. A spot gold high (770 and 995 ppb), 500 metres east, may be an indication of the continuation of the vein structure in this direction.

## CONCLUSIONS

The North 40 property includes several known quartz vein structures from which appreciable gold values have been obtained from limited sampling to date. While of relatively narrow widths, at least one of the vein structures has some degree of continuity along strike. Geophysical and

geochemical surveys indicate good potential for the discovery of parallel structures plus extensions to known veins.

In assessing the potential of narrow gold-bearing veins, it is useful to consider the Sheep Creek gold camp which is situated 15 km west of the North 40 property. Production through 1981 from six deposits totalled 1.5 million tonnes with average recovered gold grades of 15.46 g/t (0.451 oz/ton). Productive quartz veins had an average width of 0.60 metre, and like the veins in the Mine Stock, are subvertical and strike northeasterly. While Sheep Creek vein hostrocks are Cambrian sediments, they are marginal to a granitic stock which is equivalent in age (Middle Jurassic) to the Mine Stock.

The Elk gold property, of Fairfield Minerals Ltd., situated about midway between Merritt and Kelowna in south-central British Columbia, also provides an interesting comparison with veins in the Mine Stock. Gold values on the Elk property are contained mainly in narrow (0.30 metre) quartz veins hosted by late Jurassic granitic rocks, roughly similar in age to the Mine Stock. Limited test mining from surface and underground over the past few years has yielded 1579 kg gold (50,750 oz.) and the high grade nature of the narrow quartz veins is attested to by reported average head grades of 68.57 g/t gold (2.0 oz/ton - Northern Miner, Jan.

geophysical surveys of the East Grid.

Both property-wide and detailed geological mapping should be integral components of first phase work. Reconnaissance prospecting is recommended for both the eastern part of the North 40 claim and the South 40 claim.

Several targets warranting drilling have been identified by work to date and it is probable that these and additional ones will be better defined by the foregoing surface programs. A limited drilling program is therefore recommended as part of first phase exploratory work.

A second phase program, consisting of additional diamond drilling, would be contingent on results obtained from first phase work.

8,1996).

The North 40 property is situated between two past gold producers and includes several known vein structures which have yielded interesting gold values. Limited work to date, which includes only a small part of the property, suggests good potential for extensions to known structures and for the discovery of additional veins. Additional exploratory work is warranted.

#### **RECOMMENDED PROGRAM**

A two-phase exploratory program is recommended for the North 40 property. Preparation of a 1:5000 scale topographic is considered necessary prior to the commencement of first phase field work which should be initially directed to more detailed soil and bedrock sampling of the anomalous areas indicated by work to date on both the West and East Grids.

Expansion of the existing West Grid is recommended to include the area of the Virginia prospect to the west while extensions to the east will allow for better definition of VLF conductors and soil geochemical anomalies. 100 metres spaced lines should suffice initially, more detailed coverage would be dependent on results obtained from ensuing geophysical and geochemical surveys. Fill-in lines are required for more detailed geochemical sampling and possible

**COST ESTIMATE**Phase I

Topographic map	\$7,500.00
Grid construction - 60 km @ \$150/km	\$9,000.00
Soil geochemistry - collection and analyses - 1,500 samples @ \$17/sample	\$25,500.00
Magnetometer, VLF-EM Survey - 60 line km @ \$400/km	\$24,000.00
Geological mapping, sampling	\$12,500.00
Prospecting, sampling	\$10,000.00
Helicopter (East Grid) - 3 hrs @ \$880/hr	\$2,400.00
Miscellaneous travel, accomodation	\$10,000.00
Diamond Drilling - 750 metres @ \$100/m (all-inclusive)	\$75,000.00
Supervision, reporting	\$7,500.00
Contingencies	<u>\$27,510.00</u>
Total, Phase I	\$210,910.00

Phase II (Contingent on results of Phase I)

Diamond Drilling - 2500 metres @ \$100/m (all-inclusive)	\$250,000.00
Miscellaneous travel	\$10,000.00
Supervision, reporting	\$10,000.00
Contingencies	<u>\$30,000.00</u>
Total, Phase II	\$300,000.00

N.C. Carter, Ph.D. P.Eng.



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- Sykes, E. and Allen, Donald G. (1989): Geophysical Report on the Bayonne, John and Lynn Claims, Nelson Mining Division, B.C., BCMEMPR Assessment Report 19670

**CERTIFICATE**

I, NICHOLAS C. CARTER, with residence and business address at 1410 Wende Road, Victoria, British Columbia, do hereby certify that:

1. I am a Consulting Geologist and have been registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966.
2. I am a graduate of the University of New Brunswick with B.Sc.(1960), Michigan Technological University with M.S.(1962) and the University of British Columbia with Ph.D.(1974).
3. I have practised my profession in eastern and western Canada and in parts of the United States for more than 30 years.
4. The foregoing Geological Report on the North 40 Property, Nelson Mining Division, British Columbia, is based on information provided by Bluebird Resources Ltd. and on published and unpublished reports and maps pertaining to the geological setting and mineral deposits of the subject area. I have not personally examined the North 40 property but have examined and reported on a number of similar type deposits elsewhere in southeastern British Columbia.
5. I hold no interest, directly or indirectly, in the mineral claims comprising the North 40 property or in the securities of Bluebird Resources Ltd. nor do I expect to receive any such interest.
6. Permission is hereby granted to Bluebird Resources Ltd. to use the foregoing report in support of any filings with the Alberta Stock Exchange and the Alberta Securities Commission.

Dated at Victoria, British Columbia, this 25th day of January, 1996:

N.C. Carter, Ph.D. P.Eng.

ADDENDUM TO  
GEOLOGICAL REPORT  
ON THE  
NORTH 40 PROPERTY

Blazed Creek Area  
Nelson Mining Division  
British Columbia

NTS 82F/2W  
Latitude: 49 10' North  
Longitude: 116 56' West

FOR  
BLUEBIRD MINERALS LTD.

BY  
N.C. CARTER, PH.D. P.ENG.  
November 1, 1996

## Introduction

Since the preparation of the January 25, 1996 Geological Report on the North 40 Property, two typographical errors in the original text have been brought to the attention of the writer. Corrections are as follows.

## Previous Work (page 6)

Table of previous mineral production -

<u>Property</u>	<u>Tonnes Mined</u>	<u>Gold(g)</u>	<u>Silver(g)</u>	<u>Lead(kg)</u>	<u>Zinc(kg)</u>
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(Imperial units - 91,966 tons mined, yielding 43,131 oz.gold, 138732 oz.silver, 764,563 lb.lead, and 80,010 lb.zinc)

## Cost Estimate (page 22)

### Phase I

Topographic map	\$7,500.00
Grid construction - 60 km @ \$150/km	\$9,000.00
Soil geochemistry - collection and analyses - 1,500 samples @ \$17/sample	\$25,500.00
Magnetometer, VLF-EM Survey - 60 line km @ \$400/km	\$24,000.00
Geological mapping, sampling	\$12,500.00
Prospecting, sampling	\$10,000.00
Helicopter (East Grid) - 3 hrs @ \$800/hr	\$2,400.00
Miscellaneous travel, accomodation	\$10,000.00
Diamond Drilling - 750 metres @ \$100/m (all-inclusive)	\$75,000.00
Supervision, reporting	\$7,500.00
Contingencies	<u>\$27,510.00</u>

Total, Phase I \$210,910.00



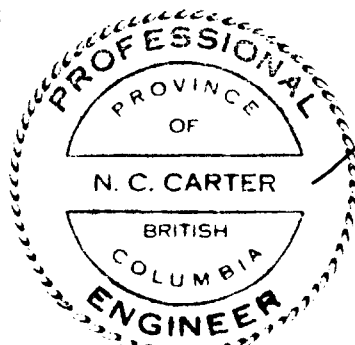
*N.C. Carter Ph.D. P.Eng.*  
N.C. Carter, Ph.D. P.Eng.

**CERTIFICATE**

I, NICHOLAS C. CARTER, with residence and business address at 1410 Wende Road, Victoria, British Columbia, do hereby certify that:

1. I am a Consulting Geologist and have been registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966.
2. I am a graduate of the University of New Brunswick with B.Sc.(1960), Michigan Technological University with M.S.(1962) and the University of British Columbia with Ph.D.(1974).
3. I have practised my profession in eastern and western Canada and in parts of the United States for more than 30 years.
4. The foregoing report on the North 40 Property, Nelson Mining Division, British Columbia, is intended as an addendum to a Geological Report prepared by the writer and dated January 25,1996. This previous report, prepared for Bluebird Resources Ltd. (now Bluebird Minerals Ltd.), was based on published and unpublished reports and maps and on information provided by Bluebird Minerals Ltd.
5. I hold no interest, directly or indirectly, in the mineral claims comprising the North 40 property or in the securities of Bluebird Minerals Ltd. nor do I expect to receive any such interest.
6. Permission is hereby granted to Bluebird Minerals Ltd. to use this addendum report in support of any filings with the Alberta Securities Commission and the Alberta Stock Exchange.

Dated at Victoria, British Columbia, this 1st day of November,1996:



*N.C. Carter Ph.D. P.Eng.*

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N.C. CARTER, Ph.D., P.Eng.  
CONSULTING GEOLOGIST