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# REHABILITATE EXPLORATION ADIT, LABEL DRILL CORE RACKS, CONDUCT MAGNETOMETER SURVEY

# **CLAIMS: FLUOR 1 TO FLUOR 8 DIVISION:** CARIBOO - QUESNEL LAKE AREA (125 KILOMETRES EAST OF WILLIAMS LAKE, B.C.)

N. T. S. MAP AREA 93 - A - 10 - W

Latitude: 52 degrees, 33' north Longitude: 121 degrees, 00' west

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**Owner-Operator:** 

Mr. W.G. Clark 6180 Livingstone Place Richmond, B.C. V7C 5J4 Tel. 604-275-7335, Fax. 604-275-4664

> **Consultant and Author:** John Clive Ball, B.Sc.



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#### Introduction:

Mr. W. G. Clark, owns 100% interest in 8 contiguous mineral claims covering the Eaglet fluorite deposit, which was tested by diamond drilling and explored with 2 adits from 1973 to '84, outlining 8 flat-lying lenticular zones mineralized with fluorite and accessory molybdenum, silver, and lead.

This report is based on a review of 1966 to '84 property reports, and a September, 1994 three-day property visit and examination by the author.

## Location :

The property is situated on the east side of the North Arm of Quesnel Lake, 100 kilometres east of Williams Lake, in the Wasko Creek drainage area at Latitude 52 degrees, 33 ' north, and Longitude 121 degrees, 00 ' west. Elevations range from lake level at 725 metres to 900 metres above sea level. Terrain is moderately steep, with widespread soil and glacial drift cover.

#### Access:

Access is by all-season gravel road 125 kilometres from Williams Lake to the south shore of Quesnel lake at Haggens Point. Private boats and barges cross the lake 8 kilometres to a landing at the mouth of Wasko Creek, on Eaglet property mineral claims. (Figure 1)

#### History:

1947: The fluorite showings in Barrett Creek canyon were staked by H. Forster.

- **1966**: Canex Aerial Exploration Ltd., or Placer Development Ltd., optioned the property and conducted trenching, geochemical soil sampling, and percussion drilling. Metallurgical testing was conducted on several large fluorite samples, and although they were encouraging, the option was relinquished in 1967.
- 1973 1984: Eaglet Mines Ltd. conducted a diamond drill and underground exploration program on a zone located 600 metres west of Barrett Canyon, however assay values in No. 1 adit were lower than anticipated.

In 1982 surface drill holes to the east cut higher grade fluorite mineralization, and No. 2 adit was located 300 metres east of No. 1 adit. At 374 metres depth a raise was driven 40 metres, and sub-level drifts completed



from the raise top. Surface drilling, in conjunction with bulk sampling of No. 2 adit confirmed the fluorite mineralization reserves and grade.

Further work, including deep drilling and adit drifting was recommended, but was not started.

**1994 - April to July:** Eight 2-post mineral claims were staked and recorded to cover the previously explored mineralization.

2-post Claim			Registered
Record Number	Claim Name	<b>Date Recorded</b>	Owner
325142	Fluor 1	May 5, 1994	W. G. Clark
325143	Fluor 2	May 5, 1994	W. G. Clark
325144	Fluor 3	May 5, 1994	W. G. Clark
325145	Fluor 4	May 5, 1994	W. G. Clark
328647	Fluor 5	July 23, 1994	W. G. Clark
328648	Fluor 6	July 23, 1994	W. G. Clark
328649	Fluor 7	July 23, 1994	W. G. Clark
328,450	Fluor 8	July 23, 1994	W. G. Clark
· Z			

1994 - September 15 to 17: Three day property visit by author. Five man work crew rehabilitated number 2 adit, camp, and drill core racks. Author inspectted number 2 adit and compared it with 1983 geology maps. Drill core inspected, and magnetometer survey conducted.

#### Geology - regional:

The property is located on N.T.S. Sheet No. 93A/10 West, and the geology covered by Geological Survey of Canada Open File Map 574 by R. B. Campbell (1978), and Map 962 by L.C. Struick (1983).

Granitic gneiss is the predominant rock type of the Wasko Lakes area and belongs to the Snowshoe Formation consisting of altered sedimentary rocks such as gneiss, phyllite, schist, quartzite, marble, amphibolite, and pegmatite. The Snowshoe formation is considered to be Hadrynian age (Late Proterozoic) according to R. Campbell.

Granite and granodiorite intrusions, regarded as Late Cretaceous or Tertiary, cut the Snowshoe Formation, and are mostly foliated. The structural trend of the gneiss is northwesterly and the rocks have been overfolded to the southwest.





# EAGLET FLUORITE PROJECT

VIEW OF FLUORSPAR PROPERTY LOOKING NORTHEAST FROM QUESNEL LAKE.

# FIGURE 3

Most of the main faults in the area, as mapped by the Geological Survey of Canada, are steeply dipping. The earliest faults follow the grain of the country, trend northwesterly, and are mostly normal block faults, although some exhibit thrust or reverse displacements. Next in age is a system of normal faults striking north-south. A third system, striking northeast, is the youngest and dips to the southeast at moderate to steep angles. The pattern of the steeply dipping faults is reflected in the physiographic features such as stream patterns and lakeshore alignments.

#### **Geology - property:**

The country rock of the Eaglet property is a light grey, fine to medium grained (0.5 to 2 mm.), sugary textured biotite gneiss that strikes northwesterly. Predominant altered rock types are salmon-pink or light grey gneiss. Whether the rock was of sedimentary or volcanic origin is uncertain owing to the widespread pervasive alteration.

A petrographic study by S. W. Campbell (1981) of drill-core samples, representing the gneissic rock type in the favorable horizon, indicates an average composition as follows: quartz = 40%, microcline = 20%, perthitic feldspar = 25%, and plagioclase = 5%. Accessory minerals (10%) include biotite, chlorite, epidote, magnetite, zircon, apatite, hematite, calcite, and kaolinite. The rock is highly altered and recrystallized, and carries interstitial calcite and fluorite.

Fluorite occurs as veins, disseminations, and replacement lenses in the gneiss, and is generally attended by a decrease in or loss of gneissic character, and an increase in a sugary textured mixture of potash feldspar, quartz, and fluorite. Moreover, the host rock tends to develop a distinct salmon-pink colour in the fluorspar zones from finely dispersed hematite. Fluorite is usually medium to fine grained, and varies from white to cream, with dark purple common.

Fine grained galena, commonly with high silver values, is present in association with late pyrite in quartz veins up to 5 centimetres thick. Tetrahedrite, black sphalerite, molybdenite, wolframite, white scheelite and allanite have been observed in small amounts.

In 1983 areas that contained visible molybdenite were mapped and sampled over a distance of 70 metres in No. 2 adit and in the raise. The presence of molybdenum indicates that a molybdenum porphyry deposit may exist beneath the fluorite.



Calcite occurs up to 5 % in the fluorite zones and is usually interstitial. Minor epidote, and chlorite are present, and up to 1 % fine disseminated pyrite is erratically distributed in the host-rock.

#### **Geology - Alteration:**

The mineralization is accompanied by silicification, pink feldspar, sericite, and kaolin. The original feldspars have been altered to secondary calcite, sericite and kaolinite. Likewise biotite has been altered to chlorite and epidote, which suggests intense hydrothermal activity has occurred, which further suggests a buried porphyry deposit may exist.

Zones of crushing, brecciation, and shattering have played an important part in concentration of fluorite. Faults mapped in the underground workings follow the same general pattern as the northeast and northwest steeply dipping faults identified in regional mapping by the G. S. C. Fractures, faults, and shears in No. 1 adit strike north-east and dip at 30 to 50 degrees southeast.

Dykes, which indicate buried porphyry deposits, are not common, but a few, thin lamprophyre and feldspar porphyry dykes have been observed.

One zone of high-grade fluorite has a strike of 015 degrees, and dips 45 degrees west, and the foliation is therefore at a different attitude from the main fluorite zone.

#### Geology - Mineralized zones:

The thickness of the flat-lying fluorite zones varies from 5 to 30 metres with an average of 8 metres. There are eight stacked zones of which four are designated 'main zones'. It is remarkable that the separation between them all range between 10 and 15 metres. The grades vary but overall increase from 3 % in higher elevations to 14 % with the lowest horizon intersected in the adit.

Silver commonly up to 1 ounce per ton, with a maximum value of 15 ounces per ton, occur with lead in visible galena, in zones up to 30 centimetres wide in No. 2 adit. Zones up to 3 metres wide have assayed 0.5 ounces silver per ton, and 1% lead.







AVERAGE 3 HOLES 12.2% CoF2 OVER 26.5 METERS



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## Diamond drilling: (Figures 4, 5, 6, 7)

From 1973 to '84, a total of 126 surface holes were completed for a total of 19,687 metres, within an area measuring 1,500 metres east-west, and 900 metres north-south. Potential for additional fluorite zones exists at depth beneath the presently known mineralization, and laterally beyond the explored area.

Core recovery was over 95 %. Core boxes of almost all of the holes are stored on the Fluor mineral claims 200 metres east of the beach.

Assay % - calcium fluorite Hole No. **Intercept (metres)** S. 1 21.2 19.5 S. 45 12.2 15.0 S. 47 30.4 10.7 17.5 S. 48 24.4 11.0 S. 71 22.5 S. 77 9.0 12.5 14.2 S. 93 21.0 S. 95 6.5 11.0

Typical 1979 to '83 drill-hole intersections and assays:

1983 drill hole number S - 93, adjacent No. 2 adit, and also drill holes S-45, S-58, S-67, and S-102 appear to have intersected a lower fluorite mineralized horizon, and this should be tested by drilling from surface, or re-entering and deepening previously drilled holes.

## Undergound development: (Figure 8,9,10)

#### No. 1 adit:

In 1980 No. 1 adit was driven 292 metres. Nine underground flat drill holes, totalling 1525 metres, were completed. Regular muck and wall samples were taken. The rock is salmon-pink gneiss with visible fluorite as disseminations, lenses, and massive fracture fillings.

# No. 2 adit:

In 1983 No. 2 adit was driven north for 373 metres, and a raise extended 40 metres on a higher grade zone, with sub-level drifts from the raise top. The country rock in No. 2 adit is very competent and free-standing, except in one area of post-ore faulting where timbering was required.







HIGH - GRADE FLUORSPAR, Nº. 2 ADIT FREEPORT RESOURCES INC.

THE VARIOUS TONES REPRESENT VARI-COLOURED FLUORSPAR.



# HIGH - GRADE FLUORSPAR, Nº. 2 ADIT FREEPORT RESOURCES INC.

THE VARIOUS TONES REPRESENT VARI-COLOURED FLUORSPAR.



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### Summary - Reserves:

In 1984 drill indicated fluorite reserves were calculated to be 24 million tons averaging 11.5 % calcium fluorite, with silver, molybdenum, and lead by-products, which includes at least 2 million tons of 15 % calcium fluorite in a flat-lying 6 metre thick zone intersected in adit number 2.

#### Economic assessment:

The known fluorite horizons have been tested by diamond drilling (126 holes - 19,680 metres), and 2 exploration adits (565 metres), proving there are at least 6 mineralized horizons from 3 to 30 metres thick, grading from 4 % to 20% fluorite.

Veins from 10 to 100 centimetres thick with visible molybdenum and silverbearing galena that occur in feldspathic altered gneiss in number 2 adit indicate that indicate that a molybdenum porphyry deposit, or a base metal deposit containing silver, lead, zinc, and other metals could occur at depth directly beneath the fluorite deposit. This possibilibity was not tested for during the 1973 to '83 drilling.

Further mineralized horizons at depth beneath number 2 adit were intersected in at least 2 holes, but not properly tested during previous drilling.

A magnetometer survey was conducted over the number 2 adit area which was flat, and did not come up with any anomolies.

#### **Summary - Recommendations:**

A 3-phase diamond drill program is recommended to test for deeper mineralized fluorite horizons and a possible buried porphyry molybdenum or silver deposit :

- **Phase 1:** Test for deep fluorite horizons or a molybdenum/silver porphyry deposits 1,000 metres X 2 drill holes = 2,000 metres @ \$50/metre = \$ 100,000
- Phase 2: Conduct definition drilling of intersected mineralization: 1,200 metres X 5 drill holes = 6,000 metres @ \$50/metre = \$300,000

Phase 3: Conduct infill and definition drilling of mineralization:

20,000 metres X \$50/metre = \$1,000,000

Total of 3 phase program = \$1,400,000

Signed: John Clive Ball, Ba. Sc. Date:

# **Appendix:**

# **Uses of Fluorite:**

Fluorite, or fluorspar, is calcium fluorite, an industrial mineral with a broad spectrum of uses. The most important are:

manufacture of hydrofluoric acid and other fluorine chemicals; as a fluxing agent in various metallurgical processes, the most important being steel manufacture; manufacture of artificial cryolite used in the production of aluminum; the refining of uranium ores; the glass and ceramic industries.

Fluorite is marketed in 3 grades according to the end-use:

- 1. Acid grade containing a minimum 97 % calcium fluorite
- 2. Metallurgical grade containing 60 to 80 % calcium fluorite
- 3. Ceramic grade containing 88 to 97 % calcium fluorite

# 1. Acid grade:

Roughly half the world's production of fluroite is used in the manufacture of hydrofluoric acid, which has a variety of uses, the most important of which are in the aluminum and chemical industries. Fluorite is a key ingredient in uranium mining. The manufacture of fluoro-carbons such as solvents, resins, plastics, refrigerants, and aerosal propellants all require large quantities of hydrofluoric acid.

# 2. Metallurgical grade:

About 40 % of all fluorspar produced is consumed as a flux in the production of steel. Fluorspar is also used as a flux in foundries and in the production of magnesium.

# 3. Ceramic grade:

Ceramic grade fluorspar is used as an opacifier in enamels and opalescent glass.

Preliminary metallurgical tests in 1983 and '84 of Eaglet fluorite samples indicated that excellent recoveries could be achieved in producing concentrates which meet specifications for acid grade and metallurgical grade fluorspar.

# **References:** (published = 1\*)

- 1. Ball, Clive W. Geological Report on the Eaglet and Eagle claim groups, Quesnel Lake, B.C. (Unpublished) May 25, 1979.
- 2. Ball, Clive W. Extension of Geological Report, Eaglet and Eagle claims, Fluorite property. (Unpublished) September, 8, 1980.
- 3. Ball, Clive W. Geological Report. Summary of Work Completed in 1982. (Unpublished) April 5, 1983.
- 4. Ball, Clive W. Geological Report. Summary of Work Completed iin 1983. (Unpublished) February 10, 1984.
- Ball, Clive W., Geologist, and Boggaram, Gupta. Geology and Development of the Fluorspar Deposits of Eaglet Mines Limited, Quesnel Lake. (Unpublished) April, 1985.
- 6.\* Ball, Clive W., and Boggaram, Gupta. Geological Investigation of the Eaglet Fluorspar Deposits. In <u>Mining Magazine</u>, June, 1985, pages 506 - 509.
- 7.\* Campbell, R. B. Geology Quesnel Lake, B. C., Scale 1:125,000, Geological Survey of Canada Open File Map No. 574, Ottawa, 1978.
- 8. Campbell, S. W. Eaglet Microscope Thin Section Project. Placer Deveopment Limited, (Unpublished) March 16th, 1981.
- 9.\* Eaglet Mines Ltd. Annual Report, 1978 to 1985.
- 10.\* Norecol Environmental Consultants Ltd. Vancouver, B.C.
   <u>Prospectus Eaglet Mines Ltd., Quesnel Lake. Fluorspar, March, 1984</u>. (Submitted to the B.C. Government in 1984)
- 11.\* Struik, L. C. Geology Quesnel Lake and Part of Mitchell Lake, B. C. In <u>Geological Survey of Canada Open File Map No. 962</u>, Scale 1:50,000, Ottawa, 1983.

# ASSESSMENT WORK EAGLET FLUORITE PROJECT QUESNEL LAKE SEPTEMBER 16, 17, AND 18.

Worker :	Days worked :	Expenses :			
A Work : rehabilitating No. 2 adit and camp, labelling drill core racks :					
1. Janet L. Clark	September 16, 17, 18	\$150 /day x 3 days = \$450			
2. C. Hamilton	"	"			
3. Tracy L. Clark	"	11			
4. W. G. Clark	"	"			
5. Dave Barrett	"	"			
B Work : examining number 2 adit, drill core, confirming 1973 - '84 geology reports, conducting magnetometer survey :					
6. John Ball, Geolog John Ball (writing	gist " g report) Oct. 24, 25	\$250 / day x 3 days = \$750 \$250 / day x 2 days = <u>\$500</u>			
	Total wages	\$3,500			
C. Accommodation:					
15 man days X \$70 per day = <b>\$1050\$1,050</b>					
D. Rental of ground magnetometer:					
$1 \text{ days } x \$100 / \text{ day} = \$100 \dots \$100$					
<ul> <li>E. Travel:</li> <li>Vancouver to Quesnel Lake by car</li> <li>Prince George to Quesnel Lake by car</li> <li>Travel by boat 8 kilometres across Quesnel Lake to property</li></ul>					
E. Total expenses claimed - September 16, 17, and 18\$5,600					

#### **Statement of Qualifications:**

- I, John Clive Ball, do hereby certify:
- 1. That I am a consulting geologist with a business office at 160 7231 120th Street, Delta, B.C. V4C 6P5, Tel. and Fax.: 604 597 3775.
- 2. I am president of Ball Resource Services Ltd. of the same address.
- 3. I am a graduate of the University of British Columbia, (Ba.Sc. 1981).
- 4. That I have practiced my profession as a geologist for the past 13 years.
- 5. That the information, opinions, and recommendations in the attached report are based on studies of the available literature on the area occuppied by the Eaglet Fluorite property, and on a site visit during September, 1994.
- 6. This report may be used for any prospectus or statement of material facts.

Dated at Vancouver, B.C., October 24th, 1994 -

John Clive Ball, Ba. Sc