86-86-14707

GEOLOGICAL, GEOCHEMICAL & GEOPHYSICAL

REPORT

- on the -

NB - 6 PROPERTY

Kamloops Mining Division, Bretish Columbia GEOLOGICAL BRANCI ASSESSMENT REPORT

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- for -

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MORGAIN MINERALS INC.

711 - 850 WEST HASTINGS STREET

VANCOUVER, B. C. V6C 1E1

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Covering:	NB - 6 Claim (9 units)
Work Performed:	May 1, 1985 - July 16, 1985
Location:	(1) 23 km. NE of Barriere, B. C.
	(2) NTS Map No. 82 M/5W
	(3) 51° 20' N. 119° 53' W

prepared by –
DAWSON GEOLOGICAL CONSULTANTS LTD.
206 – 310 NICOLA STREET
KAMLOOPS, B. C. V2C 2P5

James M. Dawson, P. Eng. July 16, 1985

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INTRODUCTION

The report summarizes the results of an exploration programme carried out on the NB-6 claim during May - June, 1985. The property was prospected and geologically mapped. Geochemical and geophysical surveys were carried out and the results are compiled on a series of maps appended to this report.

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SUMMARY AND CONCLUSIONS

- (1) The NB-6 property consists of one 9-unit metric claim located in moderate to steep terrain in the Barriere Lakes - Adams Plateau area of southern British Columbia and is road accessible.
- (2) Mineralization was probably discovered in this district in the early 1900's. Two showings, the Broken Ridge and May were worked on by Ducanex and Kennco during the 1970's. Geological and geochemical surveys were completed as well as road construction and trenching. At least three diamond drill holes of a 7-hole programme were completed on the currently held ground. The discovery of the Rea (Hilton) Deposit in late 1983 initiated a re-staking and reevaluation of many old prospects and the subject ground was staked as part of that activity. Morgain Minerals Inc. optioned the property in April, 1985 and initiated a programme of geological mapping, geochemical soil surveys, magnetometer and VLF-EM surveys which is the subject of this report.
- (3) The claim is underlain by low grade felsic to intermediate metavolcanics and associated volcaniclastic sediments of the Eagle Bay Formation, intruded by a Cretaceous granitic batholith. Mapping has outlined a number of conformable, massive to disseminated sulphide occurrences which consist primarily of pyrite and pyrrhotite with lesser chalcopyrite and sphalerite. A large float boulder discovered in the southeast corner of the claim suggests the presence of further unexplored conformable sulphides in this area. This probably represents the extension of a known sulphide occurrence further to the southeast on adjacent claims held by others.

- (4) Geochemical surveys have outlined areas of anomalous copper, zinc, and arsenic, most of which can be explained by the currently known mineralization. Results of gold geochemistry were generally low and indicate that the significant gold anomaly on the adjacent property to the southeast does not extend on to the NB-6 property.
- (5) Geophysical surveys outline areas of suspected sulphide mineralization, most of which are known, however, a significant EM conductor was delineated in the southeast corner of the property near the discovered massive sulphide boulder.
- (6) There does not appear to be significant gold values associated with the volcanogenic sulphide occurrences known on the NB-6 claim, however the coincident geochemical and geophysical anomaly found in the southeast corner of the property has not been tested. Significant copper-zinc mineralization might be present in this largely overburden-covered area.

PROPERTY

The property consists of one nine-unt metric claim as follows:

Claim Name	Record No.	Tag No.	Expiry Date
NB-6	5608	83223	April 16, 1986

This claim is owned by Mr. L. Loranger, however it is currently under option by Morgain Minerals Inc.

LOCATION AND ACCESS

The property is located in south central British Columbia about 80 kilometres north-northeast of Kamloops and approximately 23 kilometres northeast of the town of Barriere on the North Thompson Highway. The approximate geographic centre of the proerty is at 51° 20' north, 119° 53' west.

PHYSIOGRAPHY AND VEGETATION

The property straddles the valley of Harper Creek which flows southerly into the Barriere River at the west end of North Barriere Lake. Harper Creek flows from the northeast to the south central boundary of the claim and lies at an elevation of about 2,300 feet a.s.l. Within the property boundary the valley of Harper Creek rises moderately to steeply to the east and west to elevations of 2,900 and 3,500 feet a.s.l. respectively.

Except for local logging slashes the entire property is heavily wooded with mature spruce and fir. Local patches of alder and birch are common.

Outcrops are relatively scarce in this area and glacial overburden may be locally as much as 5 to 10 metres thick.



HISTORY

This area was first prospected in the early 1900's as old showings on adjacent properties are referred to in B. C. Minister of Mines Annual Reports during the 1920's. Two old showings known as the May and Broken Ridge are located within the property boundaries, however there is no record of exploration work until 1971.

Local prospectors optioned a large claim block which included the Broken Ridge and May prospects to Ducanex Resources in 1971. This company carried out geological mapping and geochemical soil sampling as well as road construction and trenching. A total of 2,334 feet of diamond drilling was completed in 7 holes. At least three of these drill holes appear to be located on the present property.

In 1976, Kennco Exploration acquired the property and performed geochemical soil sampling as well as mapping and sampling of the old trenches.

With the discovery of the Hilton deposit in 1983, extensive staking took place along strike in the Eagle Bay rocks. The current property was staked in early 1984 as part of that activity.

Morgain Minerals Inc. optioned the property in April 1985 and carried out the exploration programme described in this report.

GEOLOGY AND MINERALIZATION

Geological mapping of the NB-6 claim was completed in conjunction with geophysical and geochemical soil surveys. Outcrops and sub-outcrops were examined along the extensive network of roads and trenches located on the west side of Harper Creek, along the north-south grid lines and along a traverse located at about the 2,400 foot contour line on the west side of Harper Creek.

On the east side of Harper Creek, two areas of outcrop were examined within the grid area. In general this area appears to be covered by an extensive thickness of glacial overburden of unknown depth. Mapping of the property has outlined three distinct rock units: (1) acid intrusive rocks of the Baldy Batholith, (2) a contact metamorphic aureole surrounding this intrusive, and (3) various units of the Eagle Bay Formation.

Outcrop and large numbers of intrusive boulders are located near the north boundary of the property. These consist of massive, coarsely crystalline pink-grey granite with 50-60% pinkish feldspars, 30% grey quartz and 10% mafics (biotite and hornblende).

A zone of contact metamorphism is interpreted to lie immediately south of the interpreted outcrop area of the Baldy Batholith. In this area the rocks are characterized by being massive and siliceous with banding in an east-west direction and a steep southerly dip. Rock types vary from pink granitic gneisses to light and dark grey banded quartzfeldspar biotite gneisses. Some areas on the west side of Harper Creek consist of augen gneiss -- seemingly at a greater distance from the intrusive proper.

The bulk of the property is underlain by rocks of the Eagle Bay Formation. These vary from medium grained quartz-feldspar-sericite schists through volcanic derived chloritic greenschists to fine grained buff colored phyllites. Interlayered with these rock types are minor amounts of shale and slate. A prominent, pale beige colored, calc-silicate unit was identified in several places. It is usually fairly massive, may be siliceous and often contains disseminated pyrite. Poor exposure and rapid lateral changes make it difficult to trace any particular marker horizon.

One particular greenschist unit contains up to 10% sulphides in places (pyrite, pyrrhotite and chalcopyrite), is quite chloritic and locally contains several percent blue-grey quartz eyes. Both the Broken Ridge and May prospects are located within interlayered quartz-feldsparsericite schists and chloritic greenschists.

The Broken Ridge showing consists of bands of massive to semimassive pyrite (30-40%) within a host unit of quartz-feldspar-sericite schist. This rock is slightly carbonaceous and has thin bands of phyllite interstratified with the sulphide horizons. Traces of chalcopyrite are visible within the pyrite. The zone has a width of approximately 2 metres, strikes east-west and dips shallowly south, conforming to local stratigraphy. In the immediate footwall and hangingwall of this zone, rocks consist of sulphide rich chloritic schists, phyllites and sericitic phyllites.

The host unit of the May prospect is a dark green-grey metavolcanic with up to 10% pyrite and locally 1% chalcopyrite. Sulphides occur as disseminations, blebs and pods along bedding planes and fracture surfaces. Green copper carbonate is commonly seen.

A boulder of massive pyrite was located east of Harper Creek at approximately 2+65N, 0+80W (sample 8-1). It appears to be transported or at least slumped outcrop, however a coincident EM conductor with an east-west strike indicates a possible nearby source. Anomalous values of copper, zinc and silver are present in the boulder, however, gold is negligible. The unit hosting the sulphides is a quartz-feldspar-chlorite schist, which is slightly graphitic in places. It contains approximately 50% pyrite and traces of chalcopyrite. The character of the mineralization is similar to that found at the Broken Ridge prospect.

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GEOCHEMISTRY

A total of 480 soil samples were collected on the NB-6 property. Samples were collected at 50 metre stations on north-south grid lines spaced 100 metres apart. Some areas e.g. near Harper Creek canyon or swamply ground, did not permit sample collection.

Samples were collected from the "B" horizon where possible (approximately 15 to 40 cm. deep). Grid stations were marked by flagging with the appropriate grid coordinates. After collection, samples were stored and shipped in waterproof kraft envelopes.

All samples were analysed for copper, zinc, gold and arsenic in the Vancouver laboratories of Acme Analytical Ltd. For gold, extraction was attained by firing and hot aqua regia extraction with analysis by inductively coupled plasma photometry. For copper, zinc and arsenic, extraction is attained by dilute aqua regia with analysis by I.C.P.

Statistical analyses of all four metals were performed similarly by calculating the mean and standard deviation and classifying the data into the following categories:

Background	0 - Mean	
Possibly Anomalous	Mean - (Mean + 1 Std. Dev.)	
Probably Anomalous	(Mean + 1 Std. Dev.) - (Mean + 2 Std. I	ev.)
Definitely Anaomalous	> (Mean + 2 Std. Dev.)	

The values were plotted on 1:2,500 scale base maps of the property and the appropriate anomalous categories were outlined.

Copper and zinc values correlate well with the known mineralized , zones at and surrounding the May and Broken Ridge prospects. A significant coincident copper-zinc anomaly is located in the southeast corner of the claim where the occurrence of massive sulphide float(?) was discovered. Anomalous arsenic values seem to correlate well with anomalous copperzinc though with a tighter distribution. Gold values on the whole are rather low and anomalous values are confined to a few 1 or 2 point highs within areas delineated by anomalous arsenic.

GEOPHYSICS

A. MAGNETIC SURVEY

A magnetometer survey was performed using an Exploranium Geometrics Proton Magnetometer - Model G-836. A master base station was established just outside the property boundary and readings taken twice daily. A base station survey tied in all readings along the main base line. Loop traverses were run on all cross lines with readings taken at 25 metre intervals. Loop corrections were made for diurnal variation and also corrected to each base line reading.

This particular instrument measures the total magnetic field as expressed in gammas. Average background for this part of Canada is 58,000 gammas. Corrected readings were contoured using 500 gamma intervals.

The contoured data show that most areas of magnetic relief lie in a northwesterly trending zone which passes through the centre of the claim. There are a few local highs located outside of this zone however they are quite limited in extent. Within the northwest trending zone of higher magnetic readings, there are several very local "highs" and "lows". These probably represent local areas of pyrrhotite mineralization. The Broken Ridge and new prospect located in the southeast corner of the property are included in the zone of higher magnetic relief, however, the May prospect is not.

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B. ELECTROMAGNETIC SURVEY

All lines were surveyed with a Sabre Electronics VLF-EM unit -Model 27 with readings taken at 25 metre intervals on all cross lines where possible. Since the direction of grid lines is north-south Annapolis transmitting station (21.4 K hz) was used as the source of the primary field.

The Sabre Electronics VLF-EM unit and method of reading is similar to other VLF-EM equipment. The method of reading is to locate the orientation of the transmitting station (Annapolis) from the null of field strength. From orientation at right angles to the transmitting station the maximum field strength (100%) is adjusted by a gain control knob. The unit is then held vertical, with the coil at right angles to the transmitting station and rotated to locate the field strength null point. The angle of rotation is therefore recorded either to the right (+) or left (-).

Lines were recorded in field notes as if all lines were surveyed in a south to north direction. This was done to utilize and simplify the Fraser Filter Method of displaying anomalies. The following calculation illustrates this method:

> South $\frac{F}{a}$ $\frac{F}{c}$ $\frac{F}{d}$ North a, b, c, d - Station readings F - Filtered value F - (a + b) - (c + d)

The Fraser Filter Method serves three useful purposes in the display, and interpretation of results:

 Crossovers (normal anomaly interpretation) are displayed as high positive numbers, which may be contoured to correlate the varying strength of the conductor along its axis, and to enhance interpretation and display of the better conductors.

- (2) Topography has a major effect in the reading of ground EM equipment. Steep hills will influence either the positive or negative orientation while rotating the EM unit depending upon the orientation of the hill. Consequently ridges will be displayed as apparent crossovers. The Fraser Filter Method smoothes out some of this topographic effect, consequently resulting apparent anomalies are not as significantly displayed as if they had been shown as profiles of the raw data.
- (3) For the same topographic reasons, strong anomalies may in fact not produce an actual crossover in steep terrain. The Fraser Filter Method enhances these anomalies to their proper perspective.

All readings were plotted on a 1:2,500 scale base map with the raw data on the left and filtered readings on the right. Contours of anomalous values were drawn at $\pm 10^{\circ}$ intervals to illustrate interpreted anomalies.

The data is displayed on Figure 357-9 and outlines a number of small, weak conductive zones as well as two stronger ones which trend in a westerly to west-northwesterly direction, more or less conforming to bedding trends.

While there are several small, weak responses in the vicinity of the May and Broken Ridge prospects, the two strongest conductors are located in the southeast corner of the property (where massive sulphide boulder was found) and in a west-northwesterly trending zone about 400 to 600 metres north of the Broken Ridge prospect (see Figure 357-9). This latter anomaly can be intermittently traced for approximately 800 metres. The conductor located in the southwest corner of the property is almost certainly due to the presence of massive sulphides. The larger conductor located north of Broken Ridge prospect may be due to discontinuous lenses of massive sulphide as well as some graphitic zones.

EXPLORATION POTENTIAL

The present programme has demonstrated the presence of a number of occurrences of stratabound, volcanogenic sulphide occurrences. Apart from scattered, marginally anomalous gold values in soils, there does not appear to be significant gold values associated with the sulphide occurrences. However, there are two significant VLF conductors outlined by the current work which are located at some distance from the bulk of the previous work. Significant copper-zinc geochemical values are associated with one of these conductors (southeast corner of the claim) where a boulder of massive sulphide was located. It is possible that a significant occurrence of copper-zinc bearing massive sulphides could be present at this locality.



respectfully submitted,

DAWSON GEOLOGICAL CONSULTANTS LTD.,

anes M. Dawson

James M. Dawson, P. Eng.

Kamloops, B. C. July 16, 1985. APPENDIX A

DESCRIPTION OF ROCK GEOCHEMICAL SAMPLES

ROCK GEOCHEMICAL SAMPLES

Sample No.	Description
DAL - 01	Semi-massive to massive sulphide - 30% or more pyrite, fine to medium grained in a quartz-feldspar-sericite schist; minor chalcopyrite visible. Au 20 ppb, Ag 4.2 ppm, Cu 1510 ppm, Zn 114 ppm.
DAL - 02	Similar semi-massive pyrite in footwall of zone described in DAL-01. Au 20 ppb, Ag 3.1 ppm, Cu 1180 ppm, Zn 97 ppm.
DAL - 03	Chip sample over 2 metre width in grey-green chloritic schist with some phyllitic horizons and one 20 cm. band of pyrite. Au < 5 ppb, Ag 1.6 ppm, Cu 675 ppm, Zn 166 ppm.
DAL - 04	Fine grained, grey-green phyllite with minor bands and pods of sulphides; chip sample over 3.5 metres. Au 30 ppb, Ag 3.4 ppm, Cu 1230 ppm, Zn 133 ppm.
DAL - 07	Dark green-grey metavolcanics with up to 10% disseminated pyrite and minor chalcopyrite on bedding planes and fracture surfaces. Au < 5 ppb, Ag 5.0 ppm, Cu 74,000 ppm, Zn 256 ppm.
DAL - 08	Quartz veins within fine grained, grey-green phyllite; trace pyrite. Au <5 ppb, Ag 0.4 ppm.
DAL - 10	Chlorite and sericite schist with approximately 10% pyrite, heavily oxidized; chip sample over 5 metres. Au <5 ppb, Ag 1.1 ppm.
DAL - 11	Chlorite and graphitic schist with pyrite and quartz veining with malachite staining. Au <5 ppb, Ag 13.7 ppm, Cu 3380 ppm, Zn 74,000 ppm.
DAL - 12	Quartz-feldspar-chlorite schist with 1 - 3 % disseminated pyrite, trace chalcopyrite. Au <5 ppb, Ag 0.7 ppm.

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Sample No.

Description

 7-2 Quartz-feldspar-chlorite-sericite schist with minor quartz veining; disseminated pyrite with traces of chalcopyrite.
Au < 5 ppb, Ag 0.3 ppm.

8-1

Quartz-feldspar-chlorite schist with up to 50% disseminated pyrite and trace chalcopyrite. Au 10 ppb, Ag 2.7 ppm, Cu 1665 ppm, Zn 323 ppm. APPENDIX B

PERSONNEL

PERSONNEL

J. M. Dawson, P. Eng.

D. A. Leishman, B. Sc.

May 24, 25 June 3 (½ day) July 10, 15, 16 [5½ days]

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May 25-31 June 1-8 June 12 (½ day) June 13-15 [18½ days]

M. E. Dawson

May 25-31 June 1-11 June 13 June 19-21 July 2-4 [25 days]

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PROGRAMME COSTS

APPENDIX C

COST STATEMENT

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LABOUR:

J.	Μ.	Dawson, P. Eng. 5½ days @ \$400/day	\$ 2,200.00	
D.	Α.	Leishman, B. Sc. 18½ days @ \$300/day	5,550.00	
м.	Ε.	Dawson 25 days @ \$200/day	5,000.00	

\$ 12,750.00

EXPENSES AND DISBURSEMENTS:

(a)	Truck rental	\$ 1,556.00	
(b)	Room and board	1,374.32	
(c)	Base map preparation	173.75	
(d)	Assays and analyses	4,813.10	
(e)	Drafting	502.45	
(f)	Rental of geophysical instruments	460.00	
(g)	Field equipment and supplies	395.35	
(h)	Telephone, xerox, secretarial, blueprints, etc.	328.05	

9,603.02

\$ 22,353.02

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APPENDIX D

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REFERENCES

REFERENCES

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Preto, B. A.	(1981):	Barriere Lakes - Adams Plateau Area; Geological Fieldwork - 1980; Geological Branch, B. C. Ministry of Energy, Mines and Petroleum Resources, Paper 1980-1.
Woodcock, J. R.	(1971):	Geochemistry at Birk Creek (Fennell- Schilling Option; Private Report to Ducanex Resources Ltd.
Dawson, J. M.	(1984):	Report on the NB Property; Private Report to Westech Resources Ltd.
Dawson, J. M.	(1985):	Report on the NB-6 Property; Private Report to Morgain Minerals Inc.
Loranger, L.	(1985):	Personal Communication.
		Annual Reports of B. C. Ministry of Mines, 1971, 1976.

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APPENDIX E

WRITER'S CERTIFICATE

JAMES M. DAWSON, P. ENG.

Geological Engineer

#206 - 310 NICOLA STREET . KAMLOOPS, B.C. V2C 2P5 . TELEPHONE (604) 374-0544

CERTIFICATE

I, JAMES M. DAWSON, of Kamloops, B. C. do hereby certify that:

- I am geologist employed by Dawson Geological Consultants Ltd. of 206 - 310 Nicola Street, Kamloops, B. C.
- (2) I am a graduate of the Memorial University of Newfoundland, B. Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of British Columbia. I have practised my profession for 22 years.
- (3) I am the author of this report which is based on an exploration programme carried out under my supervision as well as on various published and unpublished data.

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DAWSON GEOLOGICAL CONSULTANTS LTD.

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Kamloops, B. C.

July 16, 1985.

[/] James M. Dawson, P. Eng.







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