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GEOLOGY AND SOIL GEOCHEMISTRY OF THE QUESNEL RIVER GOLD DEPOSIT BRITISH COLUMBIA

by

P. E. Fox

Fox Geological Consultants Ltd.

1409 - 409 Granville Street

Vancouver, B.C. V6C 1T8

R. S. Cameron

Fox Geological Consultants Ltd.

1409 - 409 Granville Street

Vancouver, B.C. V6C 1T8

S. J. Hoffman

B.P. Canada Inc., Selco Division

700 - 890 West Pender Street

Vancouver, B.C. V6C 1K5

ABSTRACT

The Quesnel River (QR) gold deposit is situated near the eastern edge of the Intermontane Belt of British Columbia in a northwesterly-trending volcanic-plutonic assemblage of Upper Triassic-Lower Jurassic rocks. The QR deposit comprises two separate zones within a series of Triassic-Jurassic basaltic lavas, breccias and tuffs close to a small diorite stock. Host rocks are pyritic and intensely propylitized.

Routine sampling of glacial tills led directly to the discovery of both zones. Two clearly defined dispersion trains were obtained in which down-ice dispersion of gold and pathfinder elements (As, Co, Fe, Sb, Cu, Cd, Pb) are well defined for about one kilometre from bedrock sources.

INTRODUCTION

The QR gold deposit lies in the interior plateau country of central British Columbia some 60 kilometres southeast of Quesnel. The deposit, owned by Dome Exploration (Canada) Limited, was discovered during a regional reconnaissance program in 1977. Considerable exploration and development has been done since that time. A mineral inventory of approximately 6,500 kilograms of gold reserves have been outlined to date. Routine geochemical prospecting of glacial tills led directly to the discovery of two mineralized zones within the property limits.

REGIONAL GEOLOGY

The QR gold deposit is situated near the eastern edge of the Intermontane Belt in a northwesterly-trending assemblage of Upper Triassic-Lower Jurassic volcanic rocks often referred to as the Quesnel Trough or Quesnel Belt. The Quesnel Trough forms part of a volcanic belt that stretches from the 49th parallel to 57°N comprising rocks of the Nicola, Takla and Stuhini Groups (Preto, 1979). Detailed petrologic and stratigraphic studies were undertaken in the 1970's by Lefebure (1976) and Preto (1979) in the Nicola group and by Morton (1976) and Bailey (1976, 1978) in the Horsefly and Morehead Lake areas.

In the vicinity of the QR gold deposit, a narrow belt of mafic and felsic volcanic rocks, comagmatic dioritic stocks, and a variety of sedimentary rocks form the Quesnel Trough. The belt is crudely symmetrical about a central axis of felsic volcanic rocks flanked to the east and west by mafic volcanics and flyschoid sediments respectively. The eastern margin is complexly deformed and represents a zone of thrusting where the Intermontane Belt has been thrust over the Omineca Crystalline Belt to the east (Rees, 1981). The western margin is in fault contact with the Cache Creek Group, possibly along extensions of the Pinchi fault.

The oldest rocks are basaltic sandstone and conglomerate, minor volcanic breccia, limestone and argillite (Bailey, 1976). These rocks make up much of the eastern flank. Overlying these sediments and comprising much of the volcanic belt are some 5,000 metres of mafic volcanic rocks of shoshonitic composition. These rocks are green and maroon autobreccias, pillow breccias, pillow lavas and massive flows all overlain by a thin succession, as much as 300 metres thick, of shelf-like limestone, calcareous argillite, siltstone and calcite-cemented basaltic tuff and breccia.

The sedimentary member is covered by a thick sequence of felsic breccia up to 2,500 metres thick in which massive flows and compact monolithologic tuff breccias predominate. These proximal rocks merge outward from eruptive centres to heterolithic epiclastic breccias and sediments.

A linear belt of alkalic stocks composed of diorite, monzonite and syenite lies within the volcanic strata and marks the eruptive centres of the felsic rocks. These stocks intrude their felsic extrusives and commonly alter the surrounding rocks. The stocks are the hosts for several alkalic suite porphyry style mineral deposits, namely Copper Mountain, Afton, and the Cariboo-Bell deposit ten kilometres south of the QR property.

Rock geochemistry of the volcanic and intrusive rocks of the Quesnel Trough is unique (Bailey, 1976; Morton, 1976). In general the geochemistry can be summarized as being alkalic, total alkalies >5%, TiO_2 < 1.0%, and moderately undersaturated with respect to silica. Most rock types have up to 5% normative nepheline. Rocks of this chemical composition in orogenic environments are comparatively rare. The closest analogy to the Quesnel Trough is a narrow chain of recent islands east of New Ireland, Papua, New Guinea (Johnson et al, 1976). In this case the tectonic setting of the islands is unclear. No evidence exists for an active subduction zone beneath the islands. Johnson et al (1976) postulates a model whereby the island chain overlies a unique zone of deep faults related to a zone of isostatic readjustment.

LOCAL GEOLOGY

Local stratigraphy within the vicinity of the QR deposit consists of four main units that strike easterly and dip moderately south. Geological plans are given in Figures 1 and 2. The lowermost unit (Unit 1) consists of at least 850 metres of monolithologic alkali basalt in which chaotic autobreccias are common. Pillow breccias, pillow basalts, massive flows, and thin interbeds of basaltic wacke are less common. The most common rock is an intergranular porphyritic alkali basalt consisting of 20% euhedral augite phenocrysts and 10% tabular plagioclase phenocrysts enclosed by a fine grained matrix. Olivine and analcite phenocrysts are present in thick mafic-rich flows immediately to the northwest. Flows of hornblende-bearing basalt occur near the top of the basalt formation.

Unit 1 grades upwards into poorly sorted blocky basaltic conglomerate and breccia (Unit 5). Textures are dominantly epiclastic with large framework-supported clasts of basalt in a matrix of fine grained fragments and basaltic debris. The matrix contains grey, sparry calcite and fine grained framboidal and colloform pyrite. This unit varies from less than five metres to over 250 metres thick and locally grades upwards and laterally into calcite-cemented hydroclastic coarse tuffs and lapillistones (Unit 4). Volcanic textures within the fragments are commonly obscured by intense carbonate alteration (Melling, 1982). Pyrite content varies from 5% to over 20%. Delicate framboidal, colloform and banded textures are common. Ripup clasts of banded pyrite suggest that pyrite deposition was contemporaneous with deposition of the volcanic sediments. This unit varies from four metres to 50 metres thick.

A thinly bedded, fissile black argillite and siltstone unit at least 200 metres thick (Unit 6) overlies rocks of Unit 4. The unit is locally calcareous and contains up to 10% fine grained disseminated pyrite and trace amounts of graphite.

The QR stock and related hornblende porphyry dykes and sills intrude and alter the above rocks. The QR stock is a body of medium grained, equigranular diorite 1000 metres by 1500 metres. The stock consists of a diorite margin 100 metres thick enclosing a core of monzodiorite and rare syenite. The intrusive rocks typically consist of 15% augite, 20% biotite, 50% tabular subhedral plagioclase, 10% or less pink K-feldspar and variable amounts of magnetite.

Surrounding the stock is a halo of altered rock that extends up to 300 metres into the surrounding basalts and sediments. Basaltic rocks are variably propylitized and the siltstone is hornfelsed to a sericitic, bleached, massive, fine grained rock. Gold mineralization is located within the alteration zone in altered equivalents of Units 4 and 5 and in the hornfelsed sediments. These rocks are described in more detail in the following section.

The volcanic rocks and sediments are in most areas undeformed. Penetrative fabrics are absent and fold structures are rare. The main structural element of the deposit is a series of subparallel northwesterly, west-dipping normal faults. These faults lower the main basalt-siltstone contact progressively to the west.

The youngest structural features are two low angle faults, Wally's fault and the West zone fault. Wally's fault strikes northwesterly and dips 20°southwest. It is a reverse fault that truncates the main gold zone. The western hanging wall has been displaced about 240 metres to the southeast. The West zone fault is located 1100 metres west of Wally's fault and also strikes northwesterly but is steeper with a 35°dip to the southwest. Absolute displacement has not been determined but movement of the hanging wall is estimated to be at least 500 metres to the northeast, making it dominantly a thrust fault. Both the West zone fault and Wally's fault are composed of anastamosing, foliated, chlorite-rich gouge zones and fracture zones up to a combined thickness of 30 metres. At surface they are the loci of narrow swamps, bogs and shallow depressions.

ALTERATION AND MINERALIZATION

The QR gold deposit comprises two separate zones: the Main zone, which was the initial discovery in 1977; and the West zone deposit discovered in 1983. Both zones are hosted by propylitically altered equivalents of pyritic, carbonate-altered basaltic rocks lying beneath the siltstone unit.

The Main zone (Figures 2, 3) is a discordant, north-dipping body approximately 300 metres long. Two ore types are present; pyritic stockworks in propylitized basalts of Unit 2, and disseminated pyrite in massive, propylitized basaltic tuffs of Unit 3. Propylitic basalts of Unit 2 are mottled green, epidote-rich hornblende-augite porphyries that comprise the western part of the mineralized zone. In addition to the basalt mineralogy, these propylitized rocks consist of variable amounts of pyrite, chlorite, fine grained disseminated epidote, epidote-rich selvages on pyrite-carbonate veinlets, and thin pyrite-epidote coatings on fractures. Pyrite is abundant, commonly 2% to 5%, and forms disseminated grains, coarse aggregates and pyrite-rich stringers up to 3mm thick.

Unit 3, which comprises the eastern portion of the mineralized zone, is a massive, epidote-pyrite-carbonate-chlorite rock (propylite) commonly interlayered with altered basalts of Unit 2 to the west. This unit is also interbedded with siltstones and greywackes of Unit 6. Rocks of the propylite unit are typically green, medium grained, massive lapillistone and coarse tuff consisting of equigranular aggregates of epidote, pyrite, carbonate, altered rock particles and lesser amounts of chlorite and andradite. Pyrite content varies from 2% to massive sulphide lenses containing up to 80% pyrite. Granular or clastic textures in which aggregates of epidote and pyrite enclose soft, sericite-rich lithic fragments 2mm to 5mm in size, are typical. Large clasts of propylitized basalt are equally common. Pyrite forms irregular aggregates up to 5mm and occasionally rounded framboids. Chalcopyrite is present in amounts up to 5% but generally occurs as irregularly shaped masses comprising much less than 1% of the rock.

Gold occurs as finely disseminated micron-sized particles along pyrite and chalcopyrite grain boundaries. The gold:silver ratio is 1:1. The best and most consistent gold assays are obtained within 50 metres of the alteration front. Isolated auriferous rocks occur well back of the alteration front and in the overlying sediments where the gold is fracture-related. Such zones, however, are discontinuous and gold tenor is erratic.

The West zone, a tabular body some 400 metres long, lies 800 metres west of the Main zone deposit (Figure 4). An open syncline brings the deposit to surface at its northern terminus and a normal fault brings a section of it to surface at its southern end. Elsewhere, it lies approximately 50 metres below surface.

The West zone deposit, like the Main zone farther east, lies at the contact between well bedded siltstone and underlying variably altered basalt. Rocks of Unit 4 are three to five metres thick and are composed of pyritic, calcareous basaltic tuff, basaltic wacke, and breccia. The West zone deposit is composed of propylitized basaltic tuff, breccia, interbedded lenses of pyritic siltstone and discontinuous seams of massive sulphide all lying within a zone of propylitic rock surrounding a faulted remnant of the QR stock northeast of the deposit. Sulphides are mostly pyrite with lesser amounts of pyrrhotite, chalcopyrite and traces of arsenopyrite and galena. Coarse gold up to 1mm in diameter has been observed in drill core. The best gold tenor is located close to the outer edge of the propylitic zone.

Whole rock analyses were done on drill core from two bore holes that straddle the southwestern edge of the zone of propylitic alteration (Table I). Hole 118 is barren and lies approximately 10 metres outside the alteration front. Hole 117 has four metres of propylitic basalt and massive propylite rock that grades 6.65 grams per tonne gold. Table I compares average whole rock compositions of core from these two holes. The propylite horizon in hole 117 is compared to its unaltered equivalent in hole 118, a calcareous lapillistone. The underlying barren basalts intersected in both holes are also compared. The ore horizon is enriched in total iron, MgO and MnO and strongly depleted in total alkalies compared to the unaltered calcareous lapillistone. Of particular note is the inital low silica and high calcium contents. Rocks from both the West zone and the Main zone are undersaturated in silica and hence quartz is not present.

DEPOSIT SUMMARY

Approximately 8,500kg of gold are contained within two zones on the QR property. Both the Main zone and the West zone are stratabound, occurring within a horizon composed of epiclastic, pyritic, calcareous, basaltic rocks. Gold deposition took place within a propylitic alteration halo developed around a zoned alkalic stock with the best gold tenor obtained at the sharp reaction front. Genesis of the deposit is directly related to ongoing evolution of the volcanic pile, the principal features of which are shown in Figure 5 and summarized below.

(I) Mafic submarine volcanics of shoshonitic composition are deposited from fissure style eruptions. No textural zoning within the basaltic pile is present to indicate any central volcanic centres. During the waning stages of the mafic phase, a brief volcanic hiatus allows the development of shelf-like limestones and calcareous sediments. Remnant heat flow from the mafic volcanics or perhaps the initial development of the central volcanic centres present during the subsequent felsic volcanic phase results in local fumarolic activity. This activity results in pyrite-carbonate alteration of basaltic units near the top of the pile. Pyrite precipitates forming fine grained framboidal, colloform masses and bedded textures accompanied by sparry calcite cement. Traces of chalcopyrite in this horizon and local beds of massive pyrite suggest that massive sulphide deposits may have formed at this time. Gold is not present at this stage.

(II) Rapidly rising, differentiating, silica-poor diorite stocks begin to intrude the volcanic pile. Felsic breccias and flows are erupted from central volcanoes. Fragments of the stock and the surrounding basaltic rocks are often taken up in eruptive breccia flows. Felsic rocks quickly grade outward from volcanic centres into distal volcaniclastic and epiclastic equivalents. Possible auriferous exhalative horizons may form at this time within proximal felsic strata.

(III) Eventually the alkalic stock, now strongly differentiated, intrudes its own volcanic extrusives. Possible caldera collapse provides a plumbing system for a convection system of heated, acidic, oxidizing meteoric and/or magmatic fluids. Gold is taken into solution from the surrounding rock mass or contributed directly from magmatic fluids. When gold-laden solutions encounter the pyrite-carbonate horizon, formed in Stage I, the strong pH, Eh barrier precipitates gold from solution at the reaction front forming a QR-type gold deposit. High in the convective system no favourable host rock is present and the system diffuses into a large, low grade porphyry copper deposit.

GEOCHEMISTRY

Sampling of glacial tills led directly to the discovery of both mineralized zones within the QR property. Early sampling work, which led to the Main zone discovery, was done on a 80m x 100m sampling grid. Later sampling, which led to the West zone discovery, utilized a 40m x 100m grid over the critical basalt-siltstone contact. All samples are of surface till material taken 10cm to 20cm below a thin layer of organic debris and forest litter. Glacial materials comprise a hard, compact, single stage lodgement till three to five metres thick. The till is extensive, essentially flat, and mantles virtually all of the underlying bedrock except for areas of hilly outcrop east and west of the deposit and on steep, talus-covered slopes on the north side of the Quesnel River. Ice movement based on grooves, bedrock striations and boulder trains is northwest. The Quesnel River valley was ice-dammed producing thick lacustrine deposits. Much of this material has been eroded and has now slumped to the valley floor. A thin layer of talus and other colluvial material remains on steep hillsides north of the Quesnel River.

The sampling program comprised 2,700 till samples from which 10-gram subsamples were analyzed for aqua regia leachable metals by ICP, gold being determined separately by atomic absorption following aqua regia digestion. Figures 6 and 7 are contour maps for gold and arsenic content respectively. Summary maps for Mo, Fe, Co, Sb, Zn, Mg and V are provided in Figures 8 and 9. Ice direction and the till-talus boundary are noted for each map.

Geochemical patterns in soils surrounding the QR deposit form four major anomalous zones. Two lie within the glacial environment of the plateau area north of the Quesnel River valley and have a northwesterly trend. Two zones lie within a steeply sloping region of talus fans and colluvium immediately north of the Quesnel River. The four main zones are summarized below:

(1) **Main Zone:** Down-ice dispersion of 500 metres to 1,000 metres is seen for gold, copper (weak), iron, cobalt, and antimony. Accompanying arsenic and vanadium are displaced to the east of the deposit whereas molybdenum lies peripheral on both the east and west margins of the subcropping ore zone. A magnesium feature lies to the north of the

deposit whereas a series of calcium anomalies complement the arsenic signature, lying to the east of the ore zone. The anomaly peak of 300ppb gold coincides with its source area, a tabular body 200 metres long lying at right angles to the regional ice direction.

(2) **West Zone:** Down-ice dispersion in the order of at least 1,000 metres is seen for gold, arsenic, zinc (weak), lead (weak), vanadium, molybdenum and cadmium (weak). The presence of lead, zinc and cadmium and absence of cobalt, antimony, iron and nearby magnesium patterns differentiate the soil expression of the West zone deposit from the Main zone. Bedrock sources additional to the West zone are anticipated to explain the 3km long gold-arsenic anomaly. In contrast to the Main zone, the gold anomaly peaks are notably displaced down-ice from their bedrock sources.

(3) A large geochemical anomaly southeast of the Main zone deposit is found in a steeply sloping, talus fan-colluvial environment. Anomaly dimensions are approximately in the order of iron = copper = vanadium>cobalt>gold>molybdenum>antimony>bismuth. Metal zonation, whereby the centre of each anomaly shifts eastward, is seen for gold, molybdenum, antimony and bismuth. Arsenic contents are high around the eastern and northeastern margins of the gold zone whereas lead is elevated along the northern and southern boundaries of the metal-rich area. Source rocks are erratically mineralized siltstones east of the

QR stock. Preferential erosion of fracture-related gold results in an enhancement of gold in talus fines at the eastern end of the metal-rich area.

(4) A smaller zone similar to (3) above in the same landscape environment lies about 500 metres to the west of the copper-iron outline of (3). The anomaly is described by elevated levels of copper, gold, molybdenum, cobalt, vanadium, iron and lead. Maximum anomaly dimensions are in the order of 200 metres to 400 metres across, and accumulation of one element relative to another is slightly displaced, for example, copper lying upslope of gold. Most outstanding is a very large zone of arsenic enhancement some 1,200 metres across which encloses the anomalous signatures and extends 500 metres further westward. Bedrock sources for this anomaly are unknown.

All four zones are characterized by a gold, arsenic, vanadium and molybdenum association. Arsenic displays several unusual characteristics whereby the element defines a broad halo around gold associated with the West zone deposit, and can ably fulfill a role as a pathfinder for gold. A similar geochemical relationship between gold and arsenic characterizes the talus fan anomaly to the south. By contrast arsenic is markedly displaced eastward relative to gold associated with the Main zone and the large soil anomaly to the south.

Glaciation on the plateau region is assumed to have been relatively uniform, and disposition of anomalies relative to each other, such as that described for gold and arsenic in the Main and West zones, is believed to reflect similarly-related locations of sources of metal in bedrock. Similarly, anomalies found in the talus fan-colluvial slope environment which are displaced from each other for the various elements, reflect similar displacements in their bedrock sources. Metal zonation in bedrock around the two gold deposits can be proposed based on soil metal distributions. These might suggest lithogeochemical halos which could assist exploration at the diamond drilling stage.

CONCLUSIONS

(1) The QR gold deposit is an epigenetic replacement of calcareous interbeds between massive basalts and a younger series of thin bedded argillites all within a halo of altered and propylitized rocks surrounding a small differentiated stock.

(2) Geochemical sampling of tills proved an effective prospecting tool that lead directly to the discovery of the two deposits. Gold and arsenic are the best pathfinder elements followed by cobalt, iron, antimony, copper (weak), cadmium and lead. Anomaly patterns may reflect primary zoning in bedrock materials in and near the deposits.

(3) Anomaly peaks may be displaced as much as 200 metres from bedrock source areas: resulting down-ice dispersion trains can be as much as three kilometres long.

ACKNOWLEDGEMENTS

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TABLE I

COMPARISON OF EQUIVALENT ROCK TYPES ON EITHER SIDE OF THE ALTERATION FRONT, WEST ZONE, QR PROPERTY

	BASALT Unit 1 n=6	BASALT Unit 1 n=5	PROPYLITE Unit 2 & 3 n=7	TUFF Unit 5 n=5
	DDH 117	118	117	118
SiO_2	45.60	44.89	41.98	41.01
Al_2O_3	15.16	15.78	12.92	14.51
Fe_2O_3	11.60	10.81	15.63	7.22
MgO	6.36	5.72	4.98	2.28
CaO	13.42	11.75	16.77	17.75
Na_2O	1.64	2.90	1.43	3.60
K_2O	1.49	1.59	.82	2.47
TiO	.76	.83	.64	.45
P_2O_5	.53	.58	.36	.30
MnO	.32	.26	.43	.25
Cr_2O_3	.01	.01	.04	.01
LOI	3.10	4.04	3.77	9.62

Hole 118 - Outside the alteration front
Hole 117 - Mineralized

CAPTIONS

Figure 1. Surface plan of the Quesnel River gold deposit. Subcropping positions of the ore zones are shown in black. Hach marks at the West zone represent the projected position of the deposit.

Figure 2. Geological map of the Main zone deposit. Mineralized zone shown by ruled area. See Figure 3 for cross sections A-B, C-D, E-F.

Figure 3. Cross sections for the Main zone deposit (see Figure 2 for location).Intercepts in metres and gold content in grams per tonne (gpt).

Figure 4. Geological plan and cross section for the West zone deposit. Projected position of the deposit ruled, subcrop positions in black. Gold content in grams per tonne (gpt), intercept in metres.

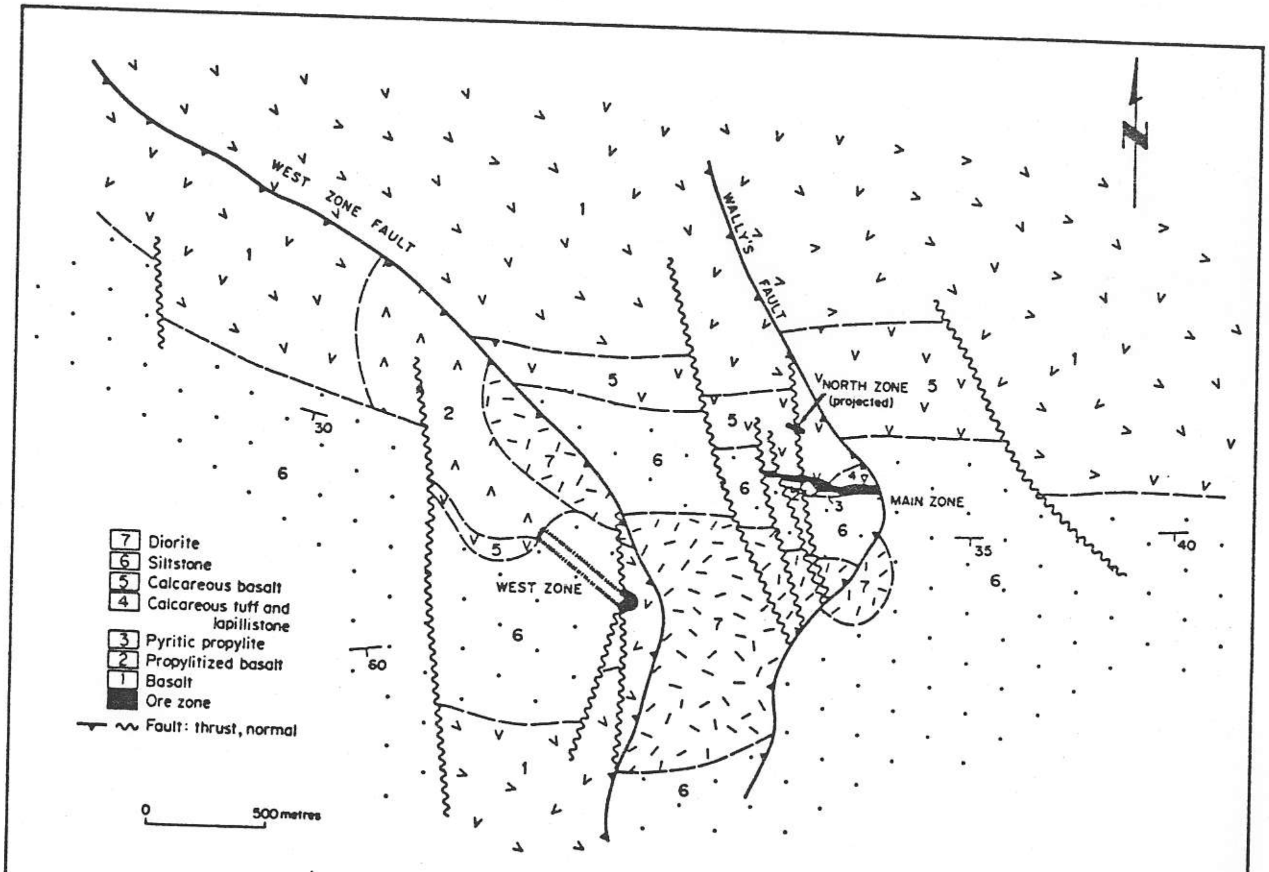
Figure 5. Geological model depicting the evolution of the QR gold deposit. See text for explanation.

Figure 6. Contour data for gold content of samples taken from lodgement till over a 40m x 100m grid. Subcrop position of mineralized zones in black. Dashed line delimits till-talus boundary. Ice movement to the northwest.

Figure 7. Contour data for arsenic content of samples taken from lodgement till over a 40m x 100m grid. Subcrop position of mineralized zones in black. Dashed line delimits till-talus boundary. Ice movement to the northwest.

Figure 8. Summary geochemical map for molybdenum,iron, cobalt, and antimony. Dashed line delimits the till-talus boundary. Subcrop positions of mineralized zones shown in black. See text for description.

Figure 9. Summary geochemical map for zinc, magnesium, and vanadium. Dashed line delimits the till-talus boundary. Subcrop positions of mineralized zones shown in black. See text for description.



QUESNEL RIVER PROPERTY - GEOLOGY

Fig.1

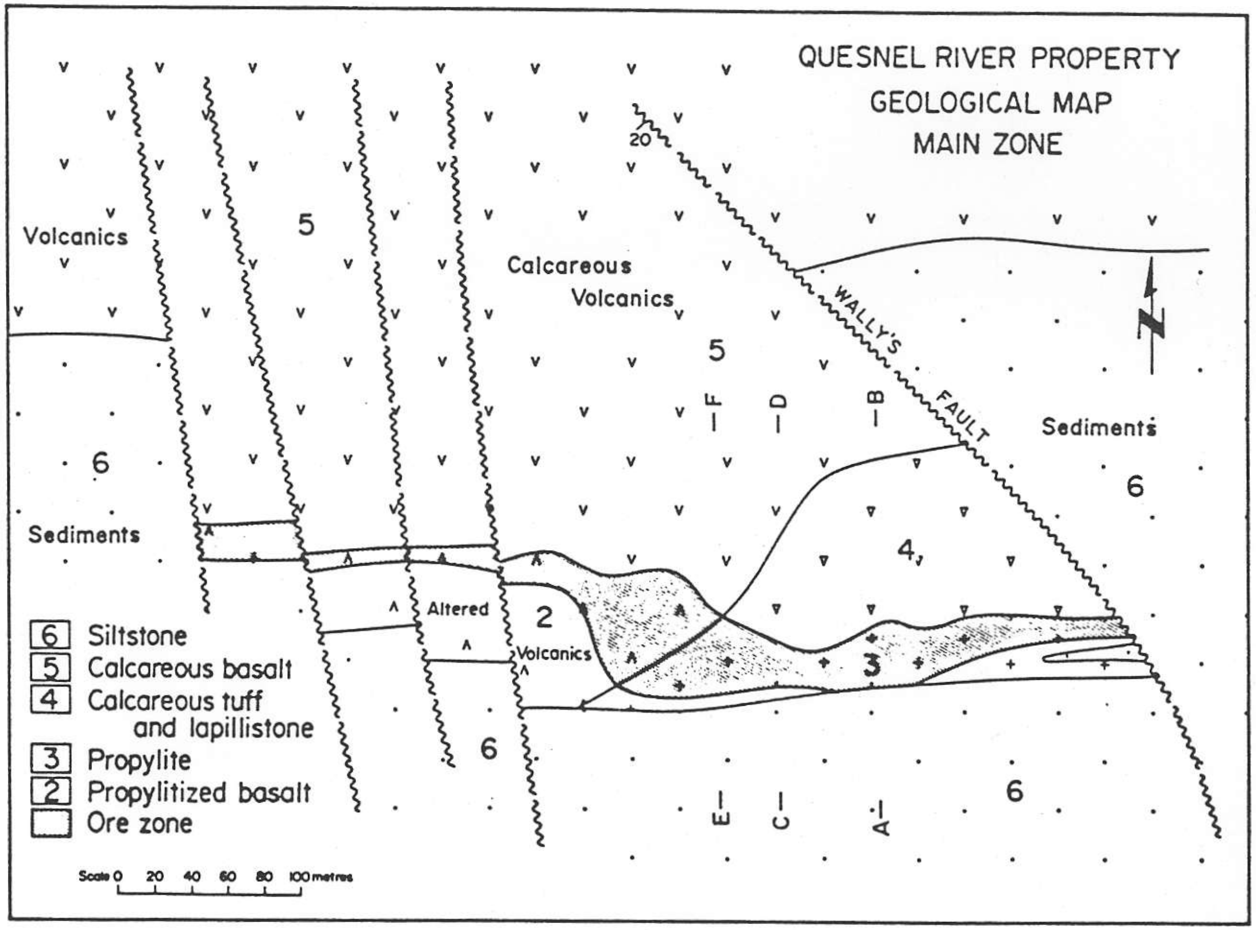
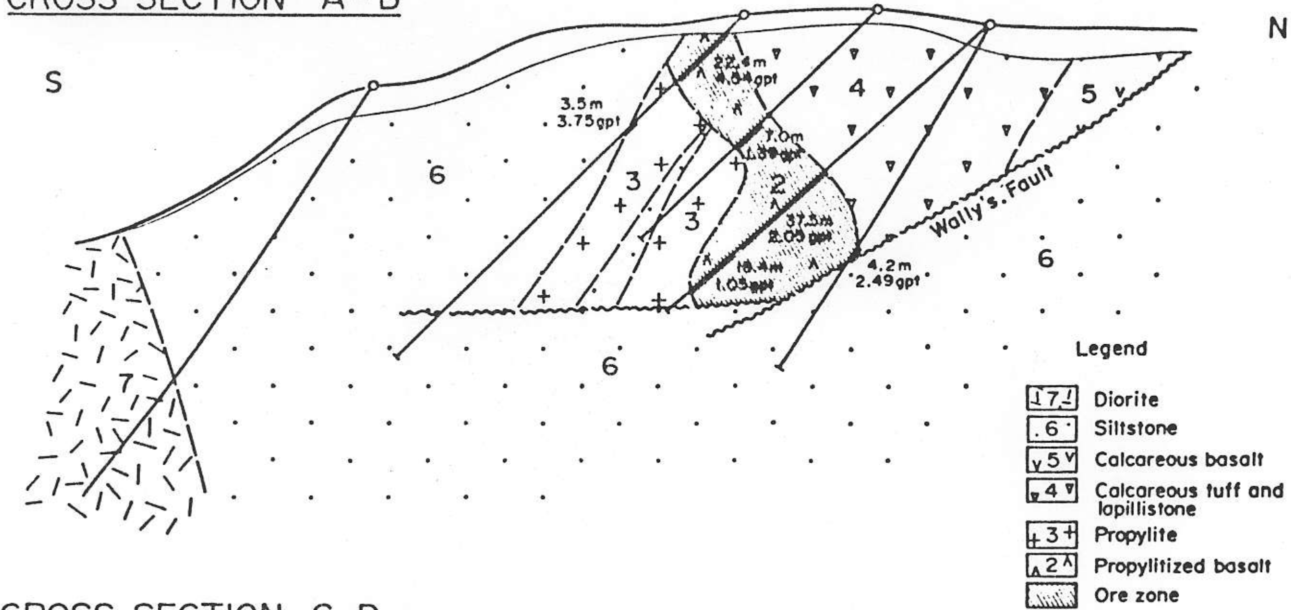
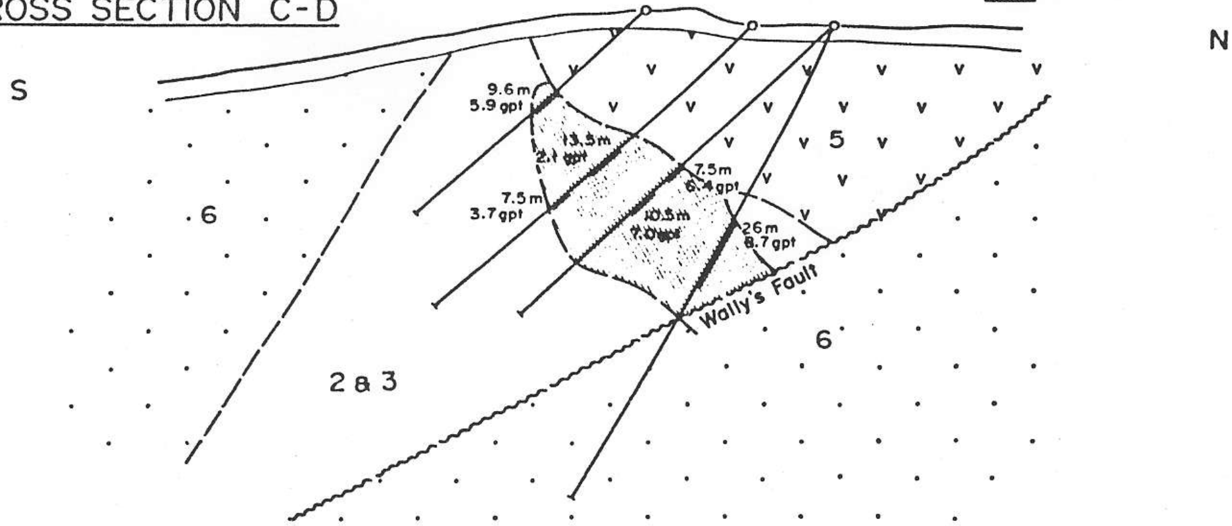

QUESNEL RIVER PROPERTY
GEOLOGICAL MAP
MAIN ZONE
Volcanics
5
Calcareous
Volcanics
5
WALLY'S FAULT
20
Sediments
6
6
Sediments
4
Altered
2
Volcanics
3
6
6
F
D
B
E
C
A
6 Siltstone
5 Calcareous basalt
4 Calcareous tuff and lapillistone
3 Propylite
2 Propylitized basalt
Ore zone
Scale 0 20 40 60 80 100 metres

Fig. 2

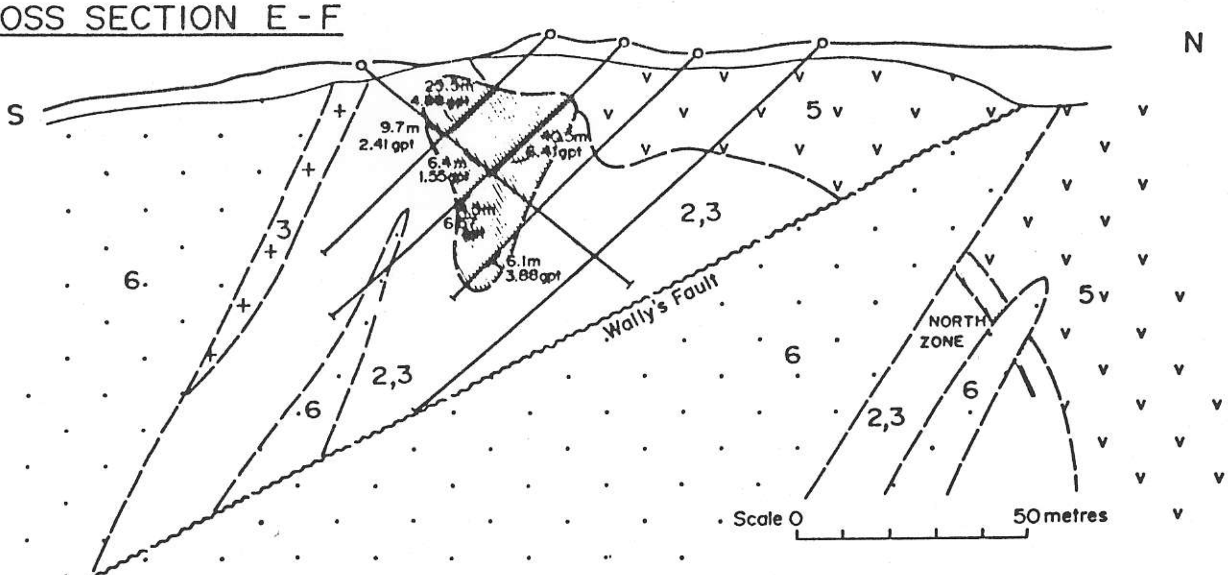
CROSS SECTION A - B



CROSS SECTION C - D



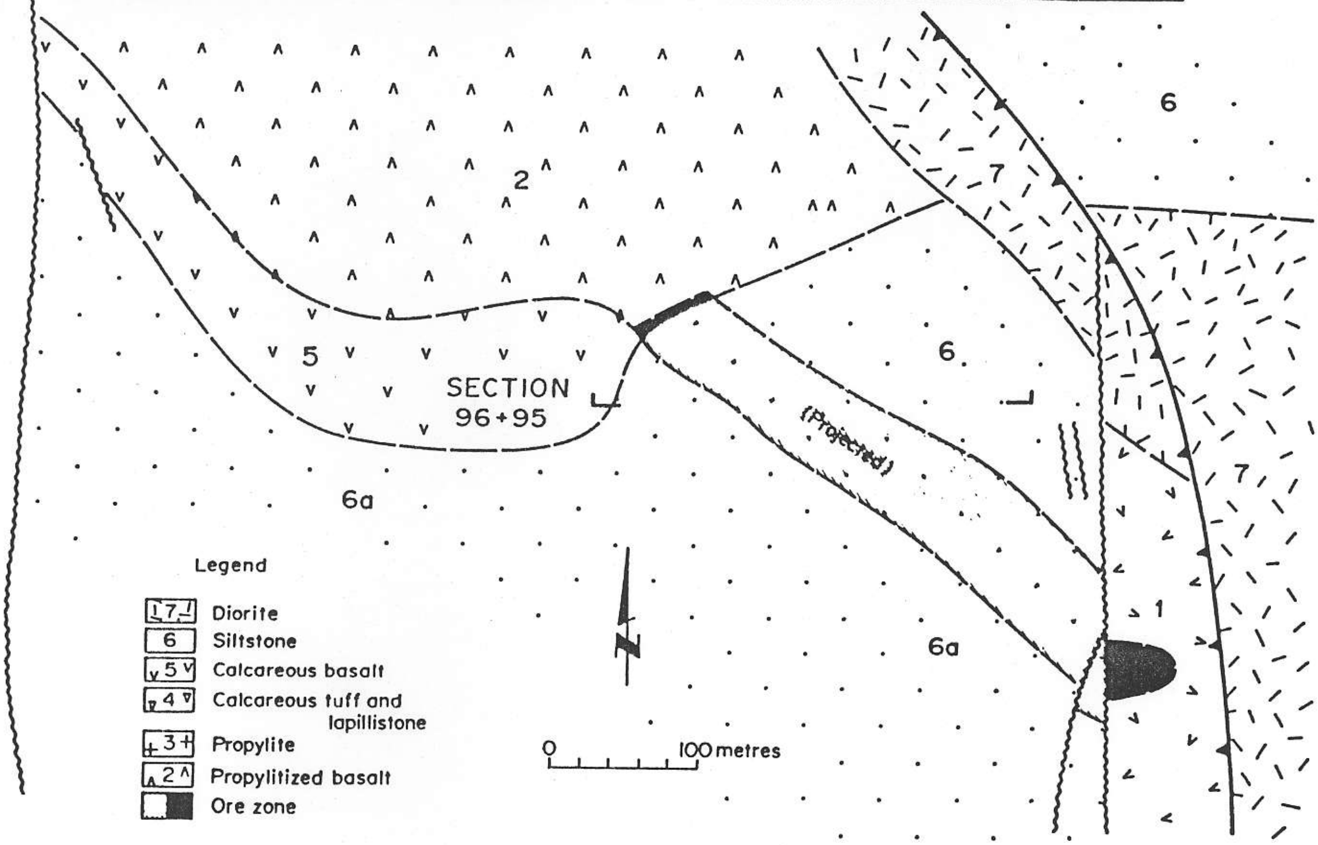
CROSS SECTION E - F



QUESNEL RIVER PROPERTY

Fig. 3

QUESNEL RIVER PROPERTY - WEST ZONE GEOLOGY PLAN



SECTION 96+95

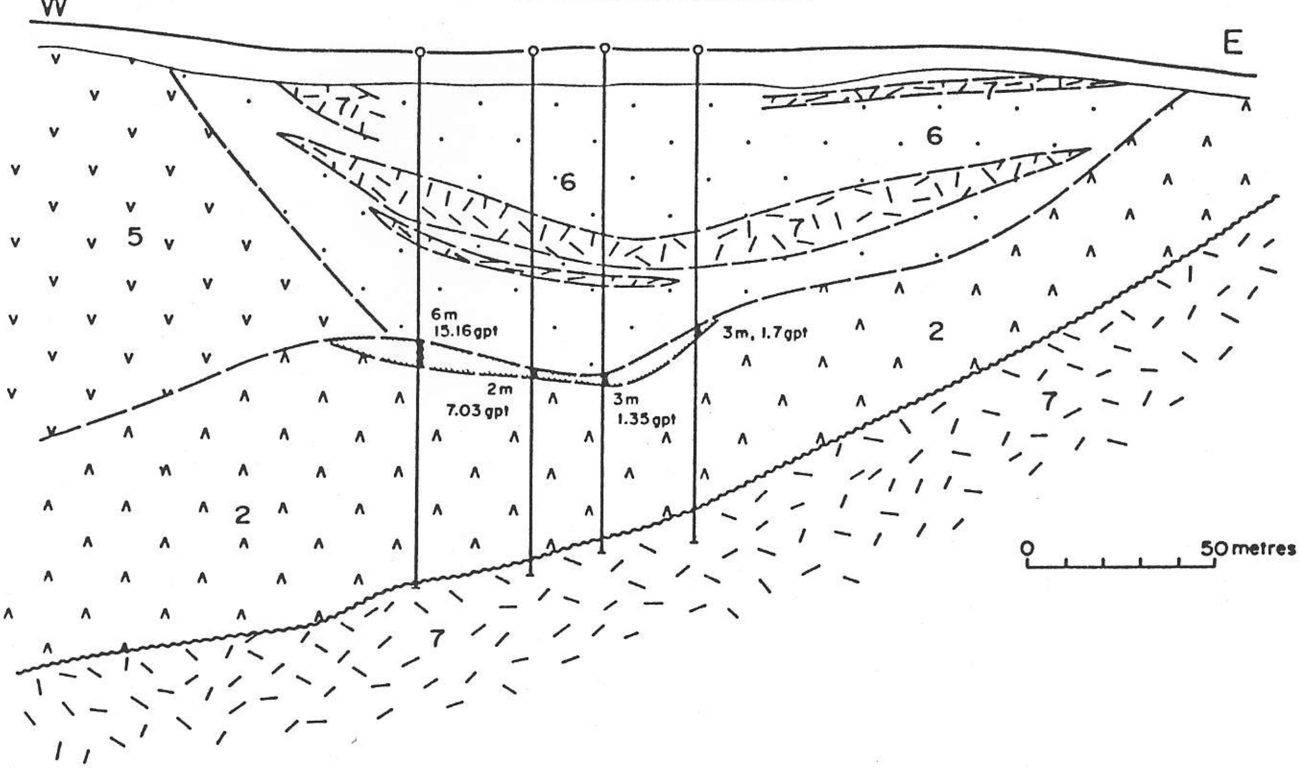


Fig. 4

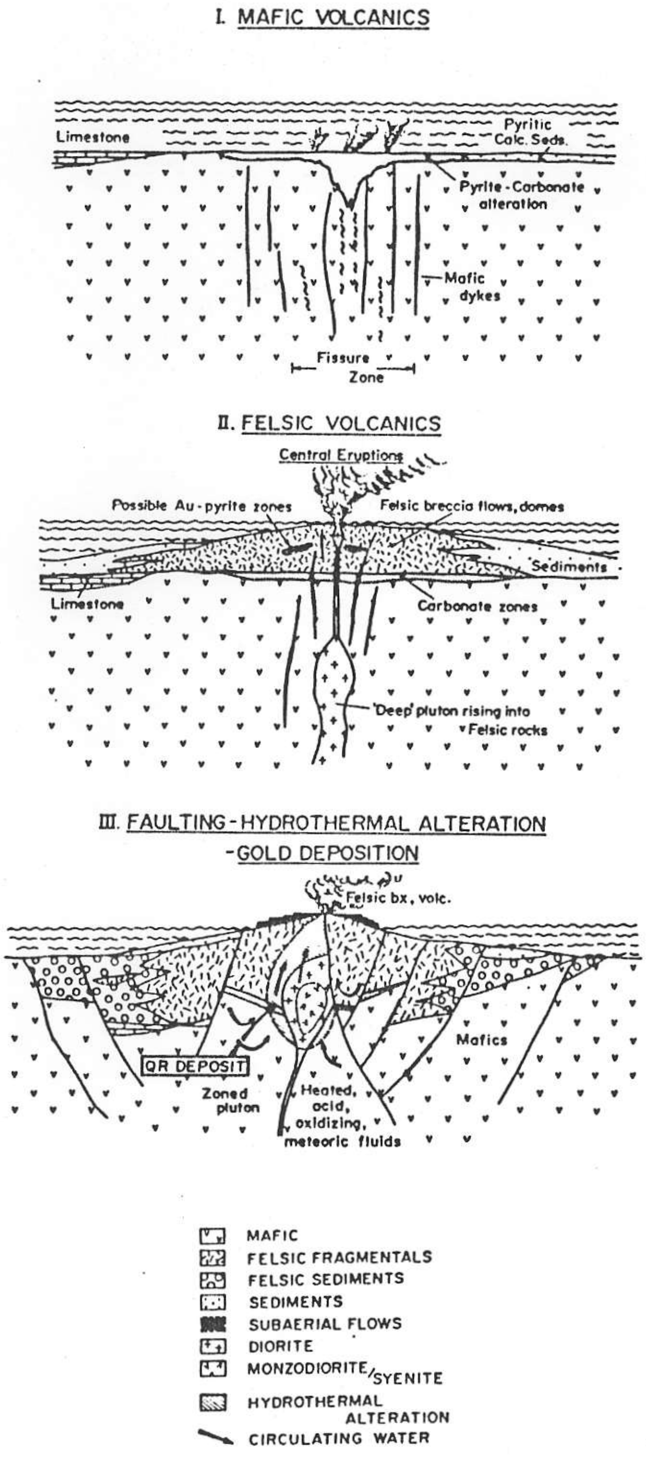

I. MAFIC VOLCANICS
Limestone
Pyritic Calc. Seds.
Pyrite-Carbonate alteration
Mafic dykes
Fissure Zone
II. FELSIC VOLCANICS
Central Eruptions
Possible Au-pyrite zones
Felsic breccia flows, domes
Sediments
Limestone
Carbonate zones
Deep pluton rising into Felsic rocks
III. FAULTING-HYDROTHERMAL ALTERATION -GOLD DEPOSITION
Felsic bx, volc.
Mafics
QR DEPOSIT
Zoned pluton
Heated, acid, oxidizing, meteoric fluids
MAFIC
FELSIC FRAGMENTALS
FELSIC SEDIMENTS
SEDIMENTS
SUBAERIAL FLOWS
DIORITE
MONZODIORITE/SYENITE
HYDROTHERMAL ALTERATION
CIRCULATING WATER

Fig. 5

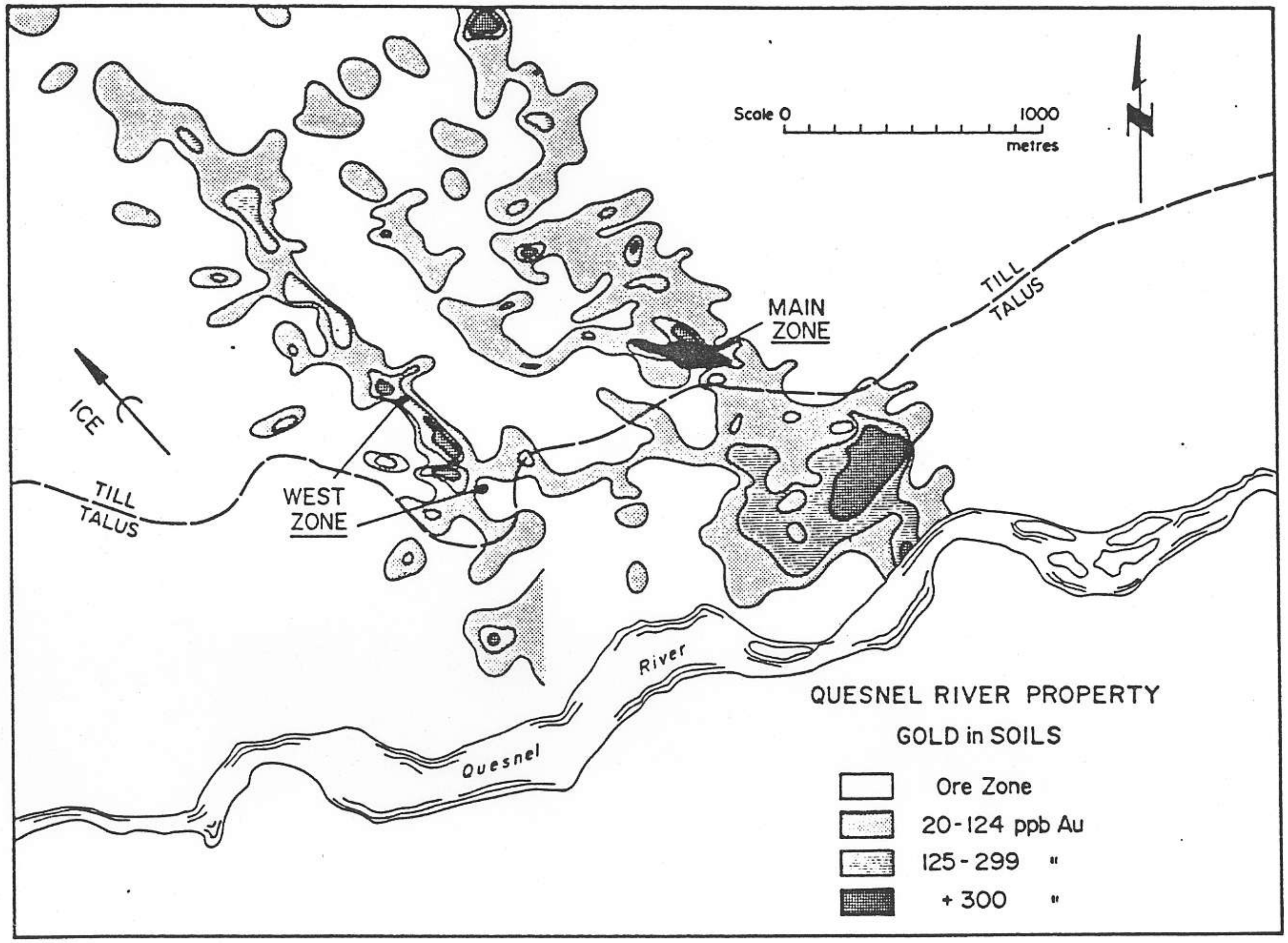

Scale 0
1000
metres
TILL
TALUS
MAIN
ZONE
ICE
TILL
TALUS
WEST
ZONE
River
Quesnel
QUESNEL RIVER PROPERTY
GOLD in SOILS
Ore Zone
20-124 ppb Au
125-299 "
+ 300 "

Fig 6

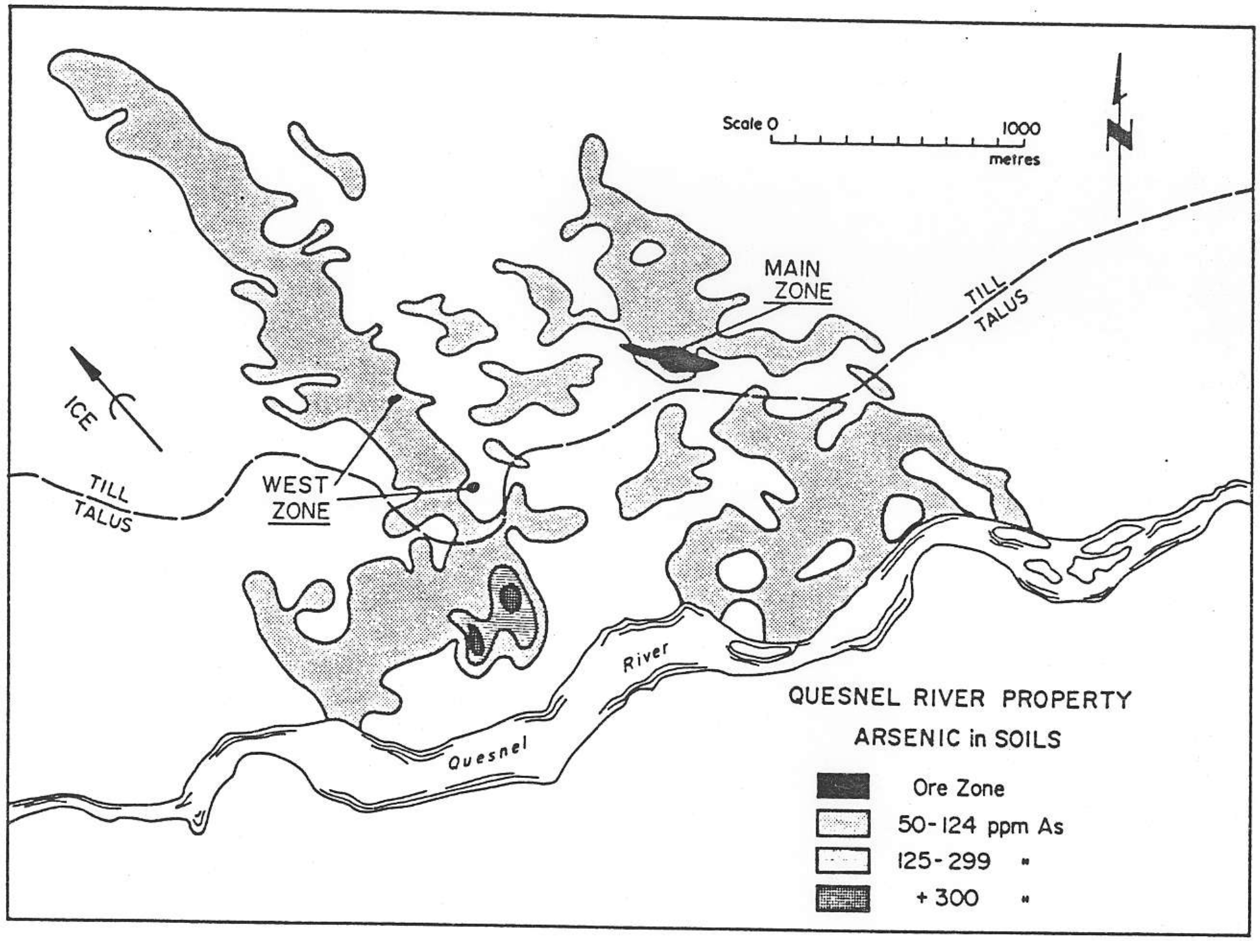

Scale 0
1000
metres
MAIN
ZONE
TILL
TALUS
ICE
WEST
ZONE
TILL
TALUS
River
Quesnel
QUESNEL RIVER PROPERTY
ARSENIC in SOILS
Ore Zone
50-124 ppm As
125-299 "
+300 "

Fig. 7

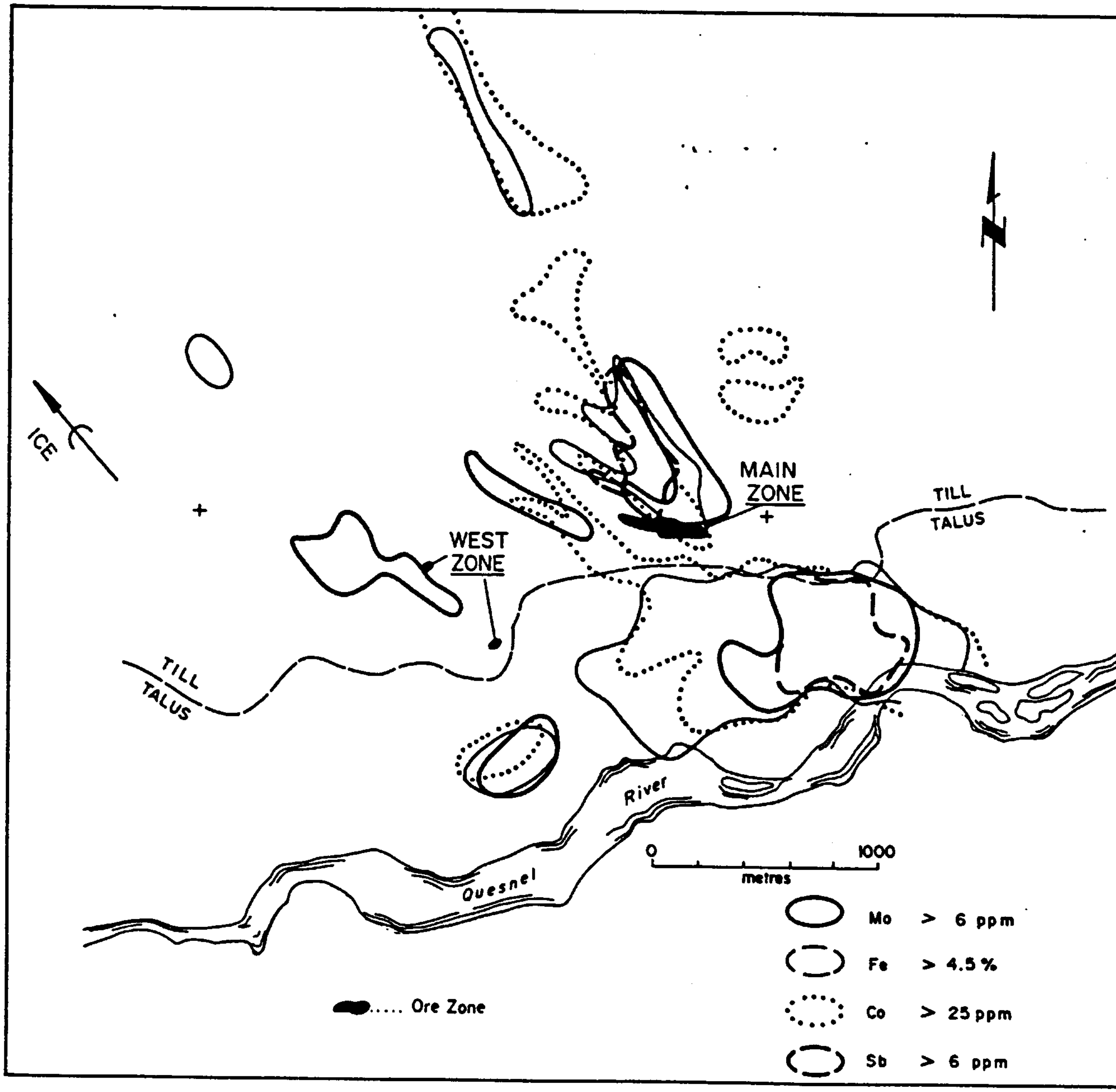
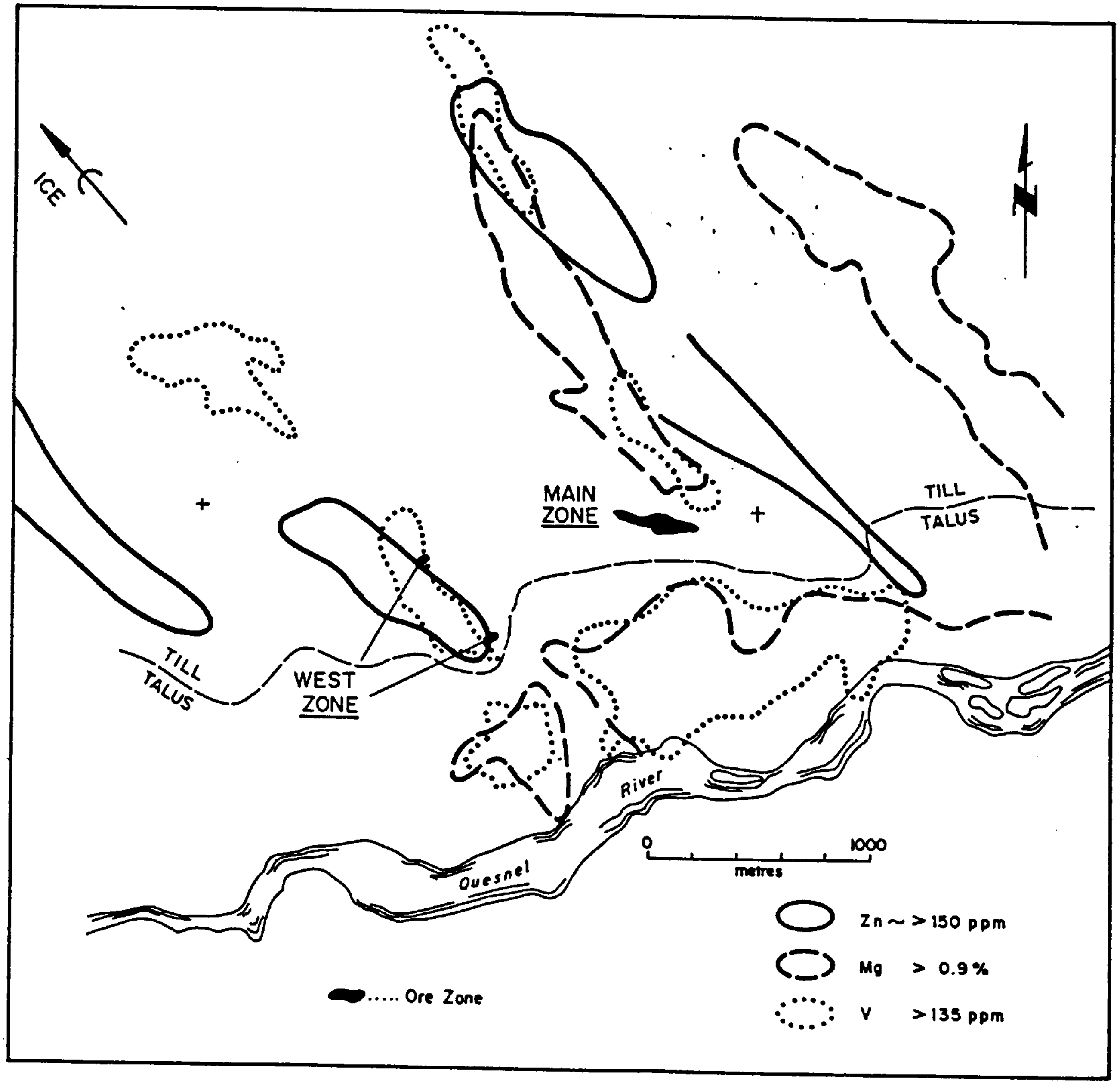

ICE
WEST ZONE
MAIN ZONE
TILL
TALUS
TILL
TALUS
Quesnel River
0
1000
metres
Mo > 6 ppm
Fe > 4.5 %
Co > 25 ppm
Sb > 6 ppm
..... Ore Zone

Fig. 8



ICE
MAIN ZONE
TILL
TALUS
TILL
TALUS
WEST ZONE
River
Quesnel
0
1000
metres
Zn ~ > 150 ppm
Mg > 0.9 %
V > 135 ppm
Ore Zone

Fig. 9