

**Ministry of Energy, Mines & Petroleum Resources**  
Mining & Minerals Division  
BC Geological Survey

**Assessment Report**  
**Title Page and Summary**

**TYPE OF REPORT [type of survey(s)]:** Geological And Prospecting Assessment Report

**TOTAL COST:** \$1,640.00

**AUTHOR(S):** Dan Cardinal

**SIGNATURE(S):** Dan Cardinal

**NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):** \_\_\_\_\_

**YEAR OF WORK:** \_\_\_\_\_

**STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S):** 4334390/2009 Sep/02

**PROPERTY NAME:** DOT

**CLAIM NAME(S) (on which the work was done):** DOT

**COMMODITIES SOUGHT:** Gold

**MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:** \_\_\_\_\_

**MINING DIVISION:** New Westminster Mining Division

**NTS/BCGS:** 921/04

**LATITUDE:** 50 ° 01 ' 44 " **LONGITUDE:** 121 ° 36 ' 49 " (at centre of work)

**OWNER(S):**

1) Dan Cardinal

2) \_\_\_\_\_

**MAILING ADDRESS:**

1883 Agassiz Avenue

Agassiz, BC V0M 1A3

**OPERATOR(S) [who paid for the work]:**

1) Dan Cardinal

2) \_\_\_\_\_

**MAILING ADDRESS:**

same

**PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):**

The property is underlain by a northwest trending accretionary belt of volcanic, sedimentary and oceanic ultramafic rocks marked by a major structural-suture zone referred to as the Kwoiek Creek Fault. The rocks are of Paleozoic-Mesozoic age intruded by younger granitic stocks or cupolas. The host <sup>ROCKS</sup> metamorphosed to lower greenschist facies. Orogenic, auriferous-bearing zones are hosted in second and lower order faults in the metasediments. Au is associated with arsenopyrite, pyrite, and minor chalcopy.

**REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:** 4985, 13634, 23691

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping	2km x 0.5km		\$ 970.00
Photo interpretation			
<b>GEOPHYSICAL (line-kilometres)</b>			
<b>Ground</b>			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
<b>Airborne</b>			
<b>GEOCHEMICAL</b>			
(number of samples analysed for...)			
Soil			
Silt			
Rock			
Other			
<b>DRILLING</b>			
(total metres; number of holes, size)			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>	2km x 0.5km		\$650.00
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
<b>TOTAL COST:</b>			\$1,640.00

**Event Number 4334390**

**BC Geological Survey  
Assessment Report  
31199**

**GEOLOGICAL AND PROSPECTING RECONNAISSANCE  
ASSESSMENT REPORT**

**DOT MINERAL CLAIM**

Mineral Tenure 623903

Located  
(claim centre)

**NTS: 50° 01' 44" N, 121° 36' 49" E**  
**Zone 10: 599160E 5543040N**

**Map Sheet**  
**NTS: 92I/04**  
**BCGS: 92I.002**

Report Prepared by:

**D. G. Cardinal, P.Geo., F.G.A.C.**  
1883 Agassiz Avenue  
Agassiz, BC  
V0M 1A2

December 1, 2009

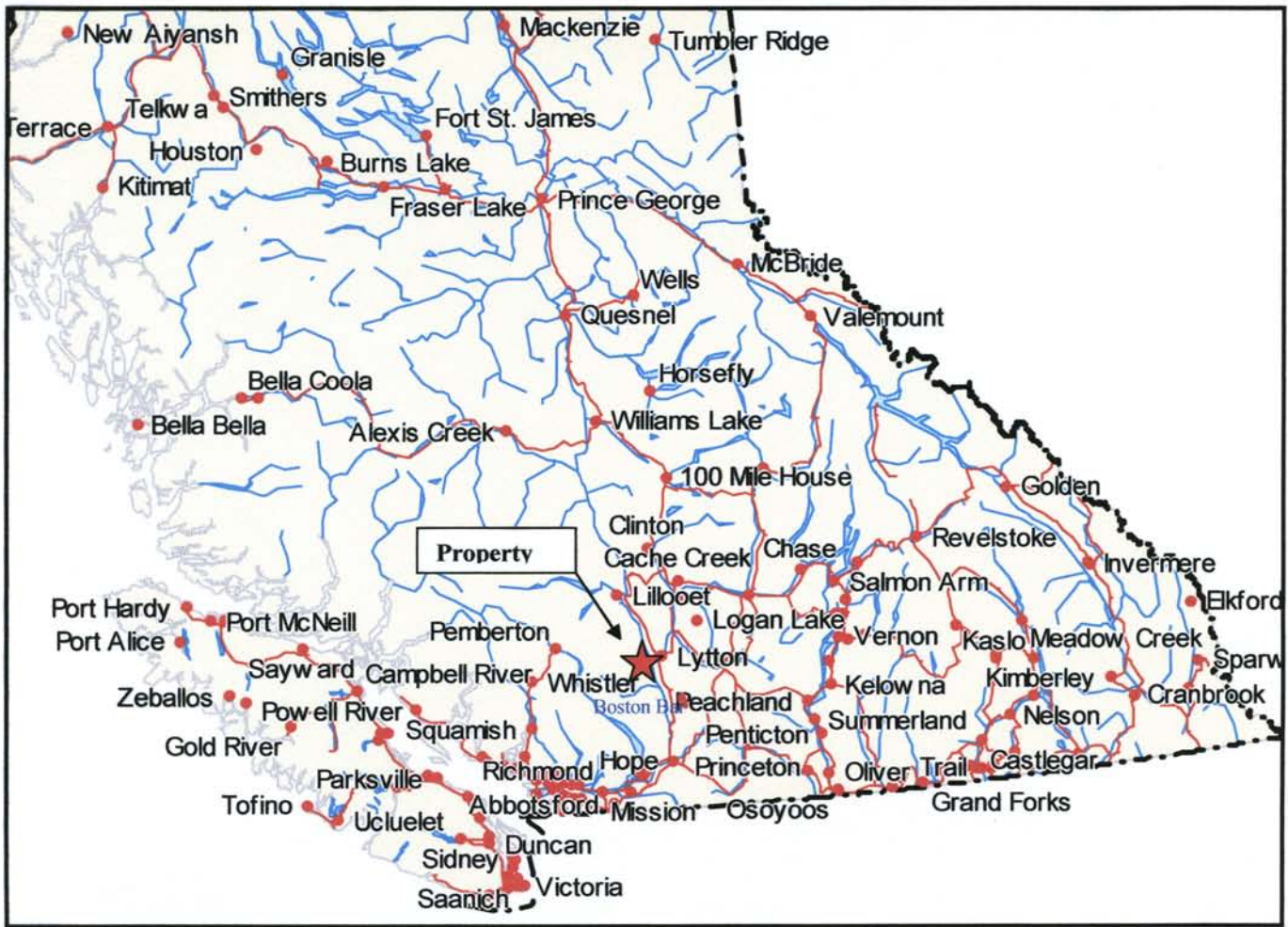


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**PROPERTY LOCATION**

**DOT MINERAL CLAIMS**  
**NTS 0921/092104E**  
**50deg 02min N, 121deg 37min W**  
**Southwestern British Columbia**

Figure 1.  
 D. G. Cardinal, P.Geo.

## A. INTRODUCTION

The Dot Mineral Claim encompasses an area of 373.62 hectares and overlooks the Nahatlatch River valley with a summit of 1530 metres. The claim is located approximately 22 kilometres due north-northwest of the community of Boston Bar, BC. Boston Bar lies along the Trans Canada Highway, from here the claim is accessible via a series of connecting permanent and seasonal roads for a total distance of approximately 30 kilometres.

Historically, the watersheds adjacent to the property were prospected at the turn of the century. An arsenopyrite gold-bearing quartz shear structure located near the southeast area of the Dot claim was worked by prospectors from Boston Bar in the 1920s. This work was briefly documented by Horwood (GSC, 1939) during his visit. Duffel and McTaggart initially carried out regional geological mapping over the area (GSC, 1952). This work was later updated by Monger (GSC, 1989) with tectonic terranes incorporated into the regional mapping and structural interpretation. Over the years sporadic regional exploration has taken place with some of the more recent work conducted by Hudson Bay Exploration & Development (Taylor, 1985) consisting of regional geology and geochemical surveys. This included limited exploratory drilling to test the gold-bearing quartz shear structures.

Regional geological setting is structurally controlled by a prominent northwest trending belt of serpentinite referred to as the Kwoiek Fault (Monger, 1989). The fault separates 2 distinct lithological units. To the northeast are Mesozoic age, weakly metamorphosed sediments and to the northwest are older, lower greenschist metasediments of Paleozoic age. The Dot claim is predominately underlain by thick sequence of faulted phyllite and graphitic argillite. Immediately to northeast of the claim this sedimentary unit is intruded by a granodiorite stock.

Limited reconnaissance mapping and prospecting was carried out along the upper reaches of creek which cuts through the property. The area is accessible by ATV on overgrown old roads. For mapping control, hand-held GPS garmin model was used to position UTM survey points and an orthophoto map downloaded from MTO Map Place at approximately 1:15000 scale was used in the field for interpreting and plotting GPS points. Field data such as UTM co-ordinates, bedrock outcrop and pan sample sites were entered into field lap top using Microsoft excel spread sheet. This reconnaissance work was submitted for assessment work credits under event number: 4334390.

## B. TENURE INFORMATION

The Dot claim covers 373.62 hectares. It is 100% owned by the author of this report. The centre of the claim falls within NTS co-ordinates: Lat. 50°01'37"N; Long. 121°37'02"W with corresponding UTM co-ordinates: Zone 10, 5542500N; 599000E. NTS Mapsheet: 092I04.

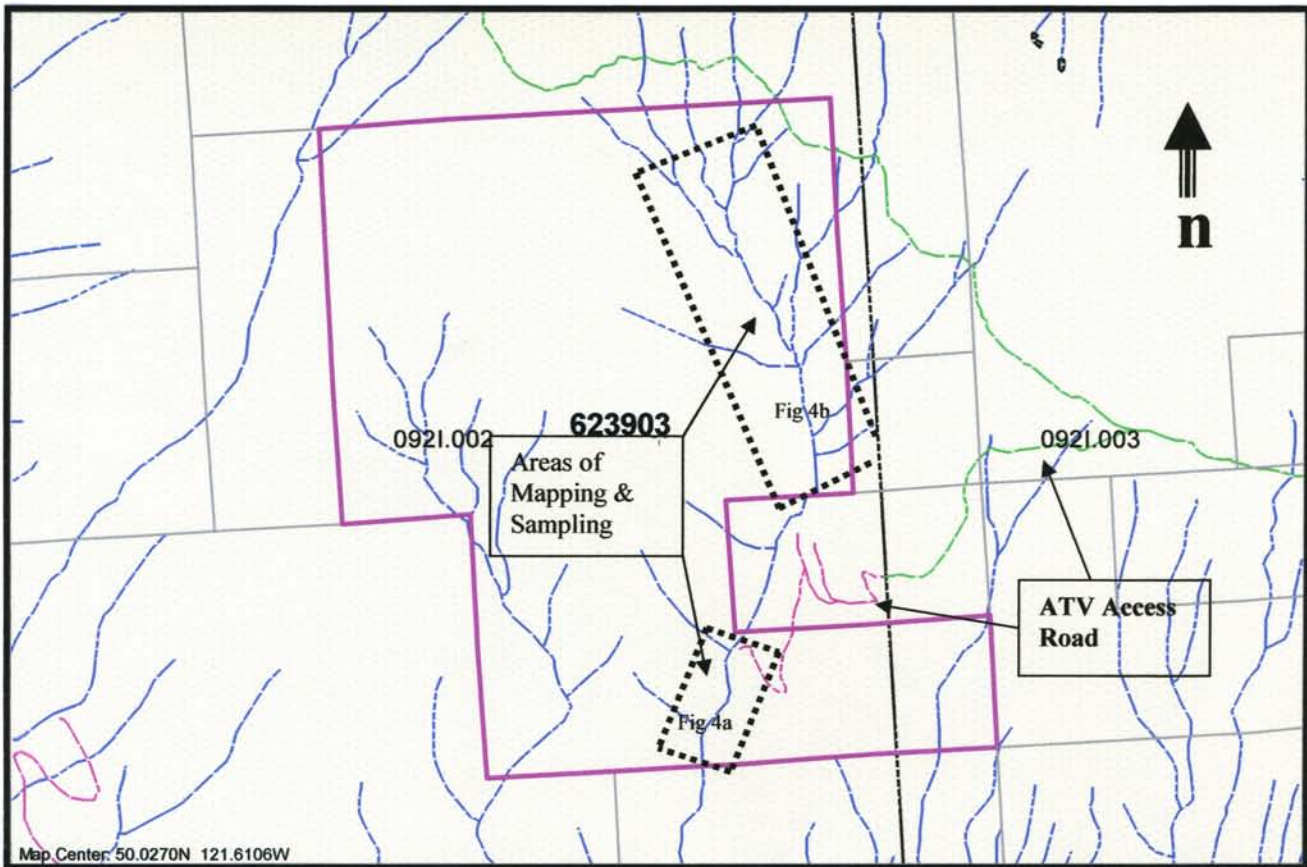
Pertinent claim information is as follows:

<u>Claim Name</u>	<u>Tenure Number</u>	<u>Current Expiry Date</u>	<u>Area</u>
Dot	62390 <del>3</del>	2009/Sept/06	373.62 Ha

## C. LOCATION AND ACCESS

The Dot claim is located some 22 kilometres due north-northwest of Boston Bar, BC. NTS co-ordinates which are plotted near the centre portion of the claim are: 50 01'37" N; 121 39' 06" W. Geographically, the property lies along the rugged region of the Pacific Range mountains with property summit at 1530 metres. It overlooks the east-west trending Nahatlatch River valley which empties into the Fraser River.

The claim can be reached from Boston Bar via North Bend by a series of connecting secondary and seasonal access roads. Firstly, by heading north from North Bend and paralleling the Fraser River along an all weather road to Nahatlatch River for 16 km. From this point a seasonal 4wheel drivable road branches northerly which can be taken for additional 14 km to reach the northern portion of the claim. To reach the south portion of the claim, the main Nathatlatch River valley road is followed westerly for a further 5 km, a seasonal road is then taken branching right for an additional 3 km. All terrain vehicle were used to access the last several kilometres to the Dot claim since the seasonal roads have been deactivated and partly grown over by brush.



**DOT MINERAL TENURE MAP**

Tenure Number 623903  
 (Total Area: 373.62 Ha.)

NTS: 0921/092104E

(Claim Centre)  
 50 01'44"N 121 36'49"W  
 Zone 10 599160E 5543040N

Figure 2



#### **D. BRIEF HISTORY**

The claim covers part of geological favourable belt which, historically, has attracted sporadic exploration both for precious and base metals. Some of the earliest work along the belt dates back to the early 1900s, prospectors reported finding mineralized quartz veins hosting gold values both along the southeastern portion to the Dot claim and 4-5 km to the northwest along structural trend. This work was first documented by H.C. Horwood in 1936 (GSC Paper 36-7). In recent years, several exploration companies have carried out regional scale type reconnaissance exploration projects and exploratory drilling programs in search of both base and precious metals along trend of the belt.

During 1973-74, a section of the northwest regional trending ultramafic body, which is well exposed 1-2 km northwest of the Dot claim, was tested for potential nickel. Majority of the samples collected contained marginal nickel values ranging between .15 to .2% (J.A. Chamberlain, 1973). In 1983-85, Hudson Bay Exploration & Development Ltd. (HUDBAY) acquired a large tract of ground and conducted reconnaissance geological, geophysical (VLF-EM) and geochemical surveys orientated towards gold exploration. In 1984 and 1985, HUDBAY conducted limited exploratory drilling along the southeast end of the belt, which is located near the southeastern portion of the claim boundary now covered by Dot claim, to a test series of auriferous-bearing quartz shear structures (Taylor, 1985).

Some 10 kilometres to the northwest of the Dot claim and along the same geological structure, in 2003-04, an exploratory drilling program was carried out by a joint-venture partnership on claims known as the Randi located near Pyramid Mountain. Drilling was conducted along a structurally controlled gold-bearing quartz system and altered sulphide-bearing shales. Several quartz veins were encountered during drilling with values up to 3.32 gm/t over 4.5 m. Trench samples also assayed up to 6.0 gm/t across 9.7 m (P. Kollack, 2003).

The Dot claim was acquired by the author and, in September 2005. This season (August, 2009) some limited reconnaissance mapping and prospecting was carried out along an incised stream which cuts roughly north-south through the property. Pan concentrates were collected and examined gold and other related minerals and limited mapping of the bedrock was carried out. A Statement of Work was filed August 2, 2009 registered as event number: 4233008. The reconnaissance surveys carried out from this work are documented in this report.

## E. REGIONAL GEOLOGICAL FRAMEWORK

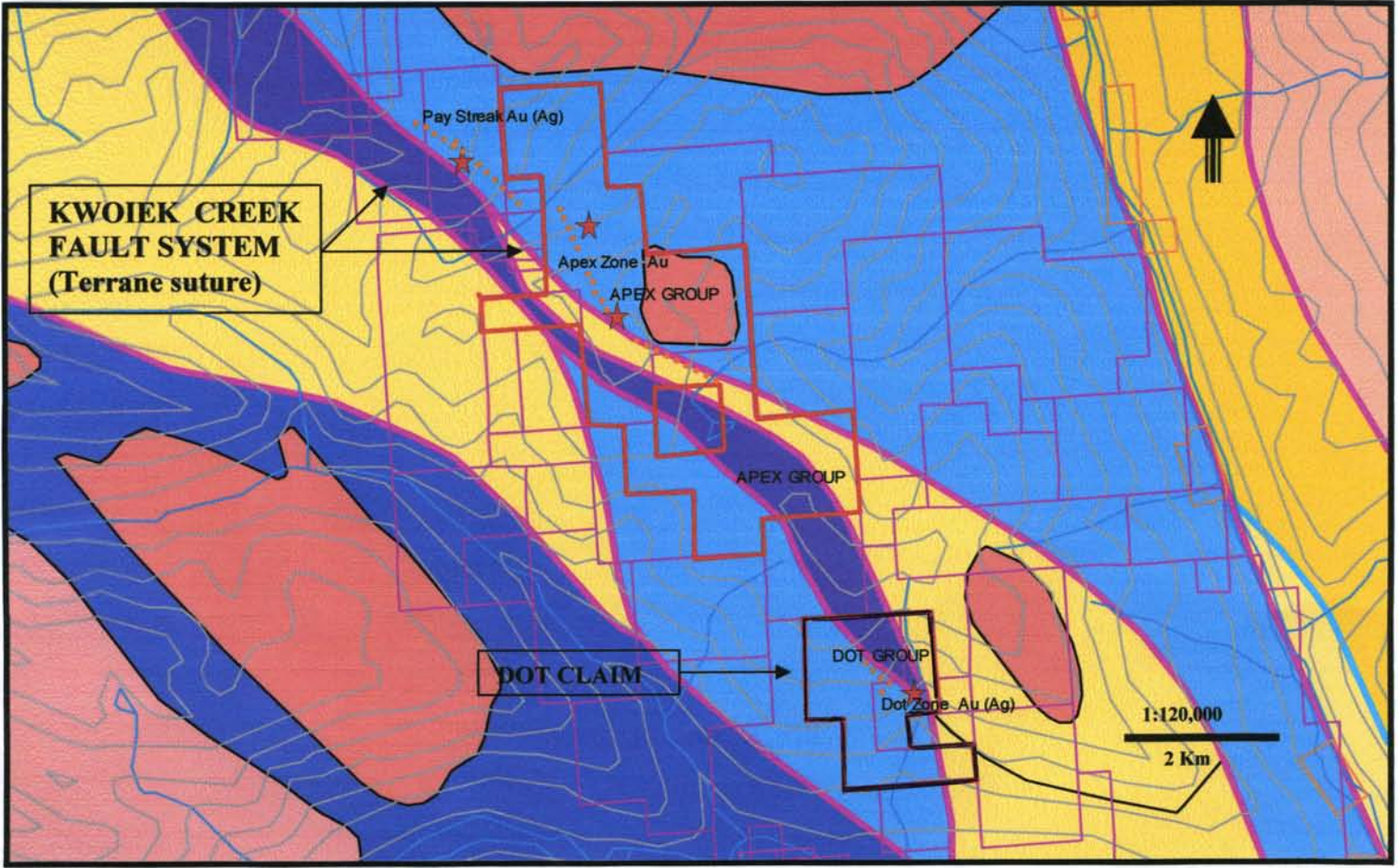
Regional geological framework (Figure 4.) is comprised of a northwest-southeast trending accretionary belt of volcanic, sedimentary and oceanic ultramafic rocks marked by a major structural break referred to as the Kwoiek Creek Fault (J.W.H. Monger & W.J. McMillan, GSC 1989). The fault is represented by a series of sub-parallel, strike-slip and imbricated structures associated with a semi-continuous band of serpentinized ultramafic, which separates the regional rocks into different age units. Regional ductile deformation has produced an overall northwesterly trending, easterly dipping, penetrative fabric characterized mainly by schistosity and foliated structures.

The Kwoiek Creek Fault-ultramafic complex can be traced for some 30 kilometres along strike and is bounded by 2 lithological units (Figure 4.). To the northeast is a package of intercalated Paleozoic sediments and volcanics believed to be latterly equivalent to Permian age Bridge River complex (Monger & McMillan). These rocks are predominately comprised of greenstone volcanic and phyllitic rocks metamorphosed to lower greenschist facies. To the southwest is the Jurassic to late Cretaceous age Relay Mountain Group consisting mainly of argillite, shale-limy shale interbedded with lesser sandstone and phyllite. The Relay Mountain Group is believed to be latterly equivalent to the Cadwallader Terrane.

The highly altered and sheared lenses of talcose serpentine and lenticular bodies of massive serpentinite that define the fault system and correlated with Bridge River Assemblage by Monger, also mark the zone of accretion between the Mesozoic and Paleozoic lithological tectonic plates.

The Cretaceous age Scuzzy Pluton which forms part of the Coast Range granitic intrusives, partly surrounds the above-noted accretionary complex to form a regional roof pendant-like belt of rocks some 30 km long and 10 km wide. Local, possibly younger (Tertiary?) stocks, intrude parts of the belt and have developed localized skarn alteration overprinting regional metamorphism.

Structurally controlled gold mineralization is known to occur along parts of the belt and in places is spatially related to the stocks. These local intrusions probably played a role in introducing and remobilizing mineral-bearing fluids into tensional and dilatent structures. The anomalous gold-arsenic quartz structures along the southeastern portion of the Dot claim are probably genetically related to these types of controls.



**REGIONAL GEOLOGICAL FRAMEWORK**  
 NTS MAPSHEET 0921

**DOT CLAIM**

..... Au (Ag) bearing structure

Figure 3.  
 D. G. Cardinal, P.Geo.

## **F. RECONNAISSANCE MAPPING AND PAN SAMPLING**

Much of the property appears to be underlain by essentially one main rock type consisting of foliated, lower greenschist facies metamorphosed sedimentary rocks (Figures xx). A shear-fault structure was noted associated with intense talcose material trending northwesterly. This structure is probably of the Kwoiek Fault system documented by Monger. The sedimentary unit consists of steeply dipping, northwest trending phyllites, graphitic argillites and minor bands of siltstone. Occasionally, lenticular chloritic schist was noted associated with minor barren quartz veinlets.

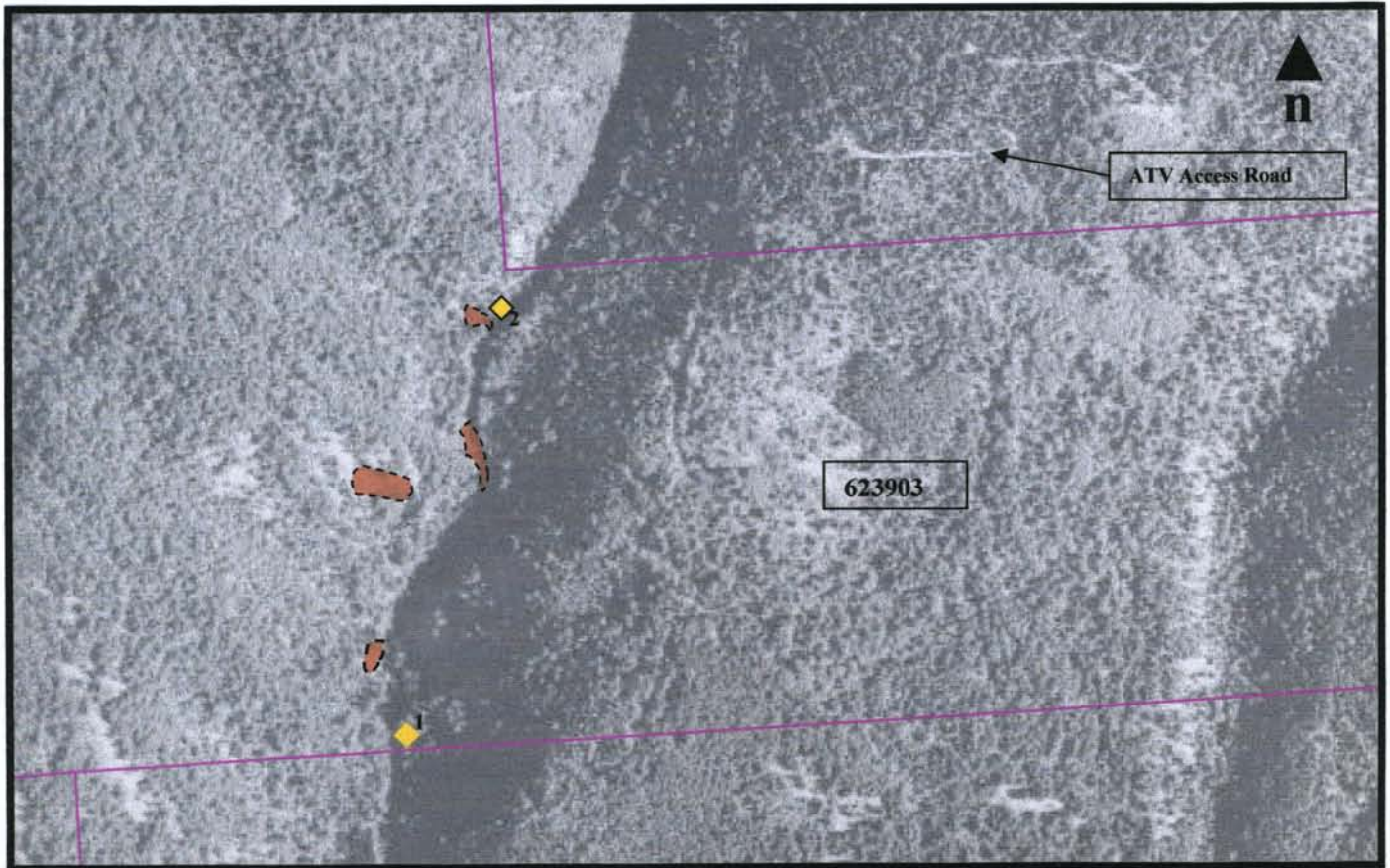
Reconnaissance mapping and prospecting was conducted along a north to south flowing stream which cuts through the claim and empties into the Nahatlatch River. The stream cuts across a series of rocks and affords good mapping combined with panning of the stream for heavy metallics in order to ascertain the potential of gold found within this small watershed. Some bedrock exposure was noted on either side of the stream comprised mainly of sheared phyllitic and black argillitic rocks (Figure xx). Here, sections of phyllitic schists and graphitic argillites host steeply dipping, sub-parallelizing quartz veins some of the veins were noted to carry disseminated pyrite and minor arsenopyrite. Some of the panning sites along the stream produced pan concentrates that contained fine, coursed textured gold and particles of crystalline arsenopyrite. It is quite evident that some of the pan con gold and arsenopyrite originated from a quartz arsenopyrite-bearing structure which cuts across the stream – previously drill tested by Hudbay discussed above. This gold-bearing structure is believed to be part of the Kwoiek Creek fault system.

## **G. FIELD PROCEDURES**

A 2-person team consisting of a geologist (the author) and seasoned prospector carried out 2 days of reconnaissance geology and prospecting surveys on the Dot claim, between August 28-30, 2009. Two separate areas of the claim were reconnaissance mapped and prospected (see Figures 4a and 4b). The surveys were partly accessed via an ATV to the stream, from here traverses were conducted to the southern end of the property and along the east central portion of the claim following the stream valley.

Any bedrock encountered was mapped by the geologist and the stream pan sampled at certain sites by an experienced prospector. Reconnaissance mapping as conducted a scale of 1:10,000 (approximate) utilizing a UTM grid orthophoto map. A hand-held Garmin GPS, with Map Source software, was used to fix a position on rock outcrops, briefly identified along with any mineralization encountered and plotted on the map.

Pan concentrate samples were collected at each site. The samples were later examined with binocular microscope for heavy metals in particular gold particles and associated minerals such as pyrite and arsenopyrite. Any gold was examined for its morphology including grain size, texture and shape.



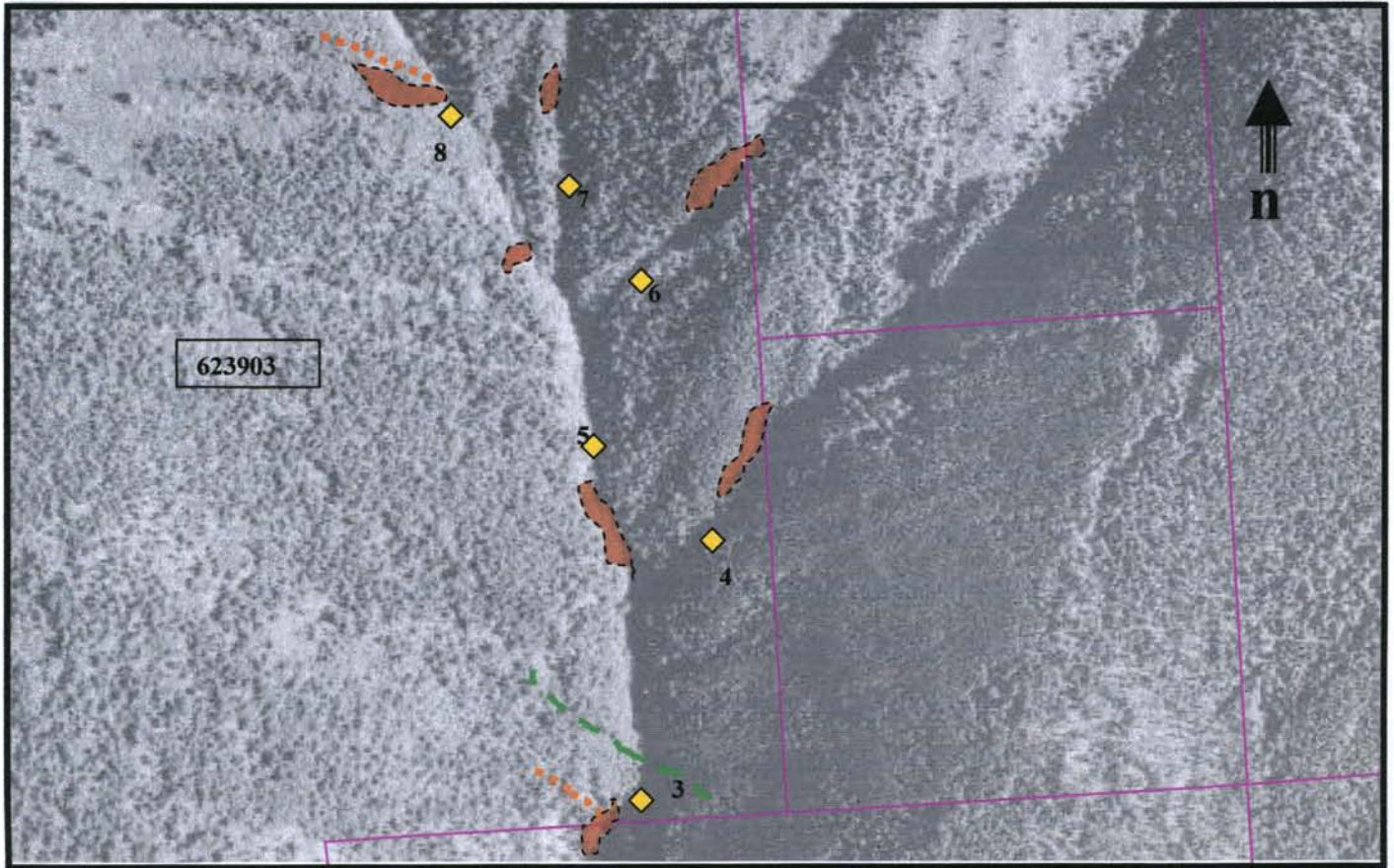
**DOT CLAIM**

Tenure Number: 623903

**Reconnaissance Bedrock Mapping and Pan Sampling Map**

- ◆ Location of Pan Concentrate Sample.
- Location of Bedrock Outcrop.  
Predominately steeply dipping, northwestern trending  
Phyllite and Phyllitic schist.

Figure 4a  
Scale – 1:10,000 (approx.)



**DOT CLAIM**  
Tenure 623903

**Reconnaissance Bedrock Mapping and Pan Sampling Map**

-  Location of Pan Concentrate Sampling
-  Location of Bedrock outcrop.  
Predominately steeply dipping, northwest trending  
Phyllite and Phyllitic schist.
-  Quartz-Arsenopyrite Structure
-  Talcose Schist Fault-Shear Structure.

**Figure 4b**  
Scale – 1:10,000 (approx.)

## H. CONCLUSION

The Dot claim covers a portion of the southern extension of favourable geological structure referred to as the Kwoiek Fault which is known to be spatially associated with a number of auriferous-bearing quartz veins. Reconnaissance mapping and prospecting was conducted along a stream which cuts through the property. The property is mainly underlain by steeply dipping, northwest trending phyllite, phyllitic schist and lesser argillitic rocks.

Limited gold panning was conducted along certain sites of the stream. Several fine coarse crystalline gold particles were noted in number of the pan concentrate samples. The gold is believed to be locally derived possibly originating near the Kwoiek Fault system which is cut by the stream.

More detail prospecting and sampling should be conducted along the creek. Quartz veins containing arsenopyrite should be sampled and an attempt should be made to trace the source of the gold found from the panning.

## I. STATEMENT OF EXPLORATION – COST BREAKDOWN

Reconnaissance mapping and prospecting surveys were conducted on the Dot claim for 2 days between August 28<sup>th</sup> and August 30<sup>th</sup>, 2009. Expenses incurred are as follows:

Field Crew:



Geologist, 2 days @ \$400 per day	\$ 800.00
Prospector, 2 days @ \$250 per day	500.00

Transportation:

4-wheel drive truck, \$80 per day	160.00
ATV, \$50 per day	100.00
Gas	80.00

Total Expenses Incurred: **\$ 1,640.00**

Respectfully;

D. G. Cardinal, P. Geo.

## **J. REFERENCES**

Cardinal, D.G., November 1994, Assessment Report on the Talc Project – Pilot Scale Tests and Diamond Drill Programme, Talc Group. Assessment Report No. 23691.

Chamberlain, J.A., 1973, Geological Report, H Claims, Nahatlatch Area, BC, Department of Mines and Petroleum Assessment Report No. 4985.

Duffel, S. and McTaggart, K.C., 1952, Ashcroft Map Area, British Columbia, Geological Survey of Canada, Memoir 262.

Horwood, H.C., 1936, Preliminary Report on the Nahatlatch Region, GSC Paper 36-7.

Journey, J.M. and Monger, J.W.H., 1994, Terranes Of The Southern Coast And Intermontane Belts, British Columbia, GSC, Scale 1:500,000.

Monger, J.W.H., 1989, Geology of Hope and Ashcroft Map Area, British Columbia, GSC, Maps 41-1989 and 42-1989.

Taylor, K.J. (Hudson Bay Exploration & Development Co. Ltd.), March 1985, Diamond Drill Report for the Natch 1-4 Claims, Boston Bar Area, BC, Geological Branch Assessment Report No. 13634.





## K. PROFESSIONAL CERTIFICATE

I, Daniel G. Cardinal, of the District of Kent, British Columbia, do hereby certify that:

- I am a Professional Geoscientist and reside at 1883 Agassiz Ave., Agassiz, BC V0M 1A2.
- I am a graduate of the University of Alberta (1978), BSc.-Geology and received a 2-yr. Diploma certificate from the Northern Alberta Institute of Technology (NAIT) 1972.
- I am member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (P.Geol.), membership 18455; and a member in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (P.Geol.), membership No. M29405.
- I have practiced my profession continuously for the past 30 years.
- I am the registered owner of the Dot claim – Tenure Number 623903.
- and that, I conducted the field surveys described in this report.

Signed in Agassiz, BC this 1<sup>st</sup> of December, 2009

Daniel G. Cardinal, P.GEO