# HARLEY RESOURCES INC.

# **GEOLOGICAL EVALUATION REPORT**

on the

# JUNE PROPERTY

**Alberni Mining Division** 

NTS 092E.070

Vancouver, B.C. October 15, 2005 Sookochoff Consultants Inc. Laurence Sookochoff, P.Eng

Laurence Sookochoff, PEng. Sookochoff Consultants Inc. Page 1 of 17

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### INTRODUCTION

At the request of officials of Harley Resources Inc. the writer prepared this evaluation report on the June Property, the results of the exploration, and to recommend an exploration program to continue the exploration and development of the ground with a view to establish sufficient copper-gold-silver bearing reserves on which to base a productive economic operation.

Information for this report was obtained from sources as cited under Selected References. A personal property examination was not completed.

#### SUMMARY

The four unit June Property is comprised of an effective area of 245 acres located 15 miles south of Gold River on Vancouver Island and within 44 miles of the formerly gold productive Zeballos Gold Camp where, during the period of 1934-1938, a considerable amount of gold was produced.

The June Property area occurs has been explored since 1939 resulting in the discovery and the delineation gold bearing quartz-sulphide veins extending over 1,500 feet along strike with the veins up to six feet (two metres) wide. Assays of up to 16.68 oz Au/ton and 22.90 oz Ag/ton are reported (Stevenson, 1946) from samples of the vein material.

The property is underlain by Middle Triassic, Vancouver Group, Karmutsen basaltic volcanic rocks which are intruded by a Jurassic batholith. Structures include minor northeasterly and easterly trending faults that crosscut major northwesterly trending structures. The primary mineralization is contained in up to four quartz veins, which may be up to six feet wide, hosted and controlled by the shear zones. The predominant minerals are chalcopyrite and magnetite associated with galena and matildite. Sampling of the mineralized quartz vein material completed for Harley Resources Inc. in 2005, returned assay values of up to 0.23 oz Au/ton, 6.8 oz Ag/ton and 8.92% Cu.

A continuing program of vein sampling, VLF-EM surveys and prospecting is recommended to delineate potentially economic mineral zones at depth hosted by the indicated epithermal quartz veins.

## **PROPERTY DESCRIPTION**, LOCATION (FIGURE 1) & ACCESS

The June Property is comprised of four contiguous unit claims. The effective area of the Property is approximately 245 acres. Particulars are as follows:

<u>Claim Name</u>	Units	Tenure No.	Expiry Date
June 1-4	4	402860-402863	June 7, 2006

The property is located on the west coast of Vancouver Island, at the west side of Matchlee Bay at the head of Matchlee Inlet 15 miles south of the town of Gold River, British Columbia, Canada. The co-ordinates of the property are 126° 03' W Longitude and 49° 37' N Latitude or UTM 5500000N and 712000E in the Alberni Mining Division, within Map Sheet NTS 092E/9E.

Access to the property from Campbell River, on the east coast of Vancouver, is via the hard surface all-weather road for 54 miles to Gold River thence by boat to the Property. Logging roads provide access to the showings on the Property.

The claims are owned as to 100% by Harley Resources Inc. that entitles the company to the subsurface mineral rights. The company does not have any interest in the surface rights. To maintain the ownership of the claims, the company is obligated to either complete exploration work of one hundred dollars per claim per year for the initial three prior to staking, thence two hundred dollars per claim thereafter or the payment of the equivalent of cash in lieu prior to the Expiry Date.

#### CLIMATE

The general climate is typically of the west coast temperate zone with mild to cool temperatures and periodic heavy rainfall from November to March with approximately 100 inches of rainfall annually. Mild, wet weather occurs during the winter months with snowfall not common at the lower elevations. Summer temperatures average 60 degrees F.

#### PHYSIOGRAPHY (FIGURE 5) AND VEGETATION

The Property is situated on the eastern flanks of the Pierce Range of the Vancouver Island Mountains within the Insular Mountain System of Vancouver Island. On the Property, moderately rugged, relatively steep slopes prevail with elevations ranging from sea-level 1,300 feet above sea-level.

Vegetation is dominated by stands of forest growth comprised of pine, hemloek and fir with moderate undergrowth of salal and brush.

### INFRASTRUCTURE

Vancouver is the centre for experienced exploration and mining contractors and a supply for most all mining related equipment. Campbell River, in addition to many smaller centres on Vancouver Island, could be a source of experienced and reliable exploration and mining personnel. Groceries, fuel, lumber and general supplies are available to a limited extent in Gold River.

## WATER AND POWER

Sufficient water for all phases of the exploration program could be available from numerous watercourses within the confines of the property.

Diesel-electrical power would be required in the development and production stages.

#### **HISTORY OF THE REGION**

The mining history of the general area stems from the 1931 discovery of, and gold production, from the New Privateer Mine at Zabellos Lode production of 287,811 troy ounces was produced from a number of small mines in the Zabellos Gold Mining Camp for the period 1934 to 1948. The Zabellos Camp Gold Camp discoveries sparked a renewed interest in precious metal exploration along the west coast of Vancouver Island

#### **HISTORY OF THE JUNE PROPERTY**

The June claim ground was originally staked as the Adola claims in 1978 and has undergone exploration work periodically since. Exploration work included trenching, geological, geophysical and geochemical surveys.

Croft (1986) reports on the results of an exploration program of geochemical, magnetometer, and VLF-EM surveys completed over the June claim ground in 1986 as follows:

-the magnetometer survey indicates that the area is characterized by a northwest-southeast magnetic trend with an elongate magnetic high passing through the old workings sub-parallel to the copper gold geochemical features;

-the geochemical survey results suggest a relationship between copper and gold mineralization and have defineated an elongate copper-gold anomaly in the central part of the claim area. A cluster of coinciding silver-lead-zinc anomalies were also delineated;

-the VLF-EM survey identified a number of weak conductors, one of which coincides well with the copper-gold geochemical anomaly.

#### **HISTORY OF THE JUNE PROPERTY** (cont'd)

Read (1977) reports on the results of a reconnaissance program on the June claim ground in 1977 as follows:

-mineralization and anomalous total heavy metals geochemical readings southwest of the tunnel area were discovered;

#### **REGIONAL GEOLOGY** (FIGURE 3)

The June Property area is within the Insular Belt, which is the westernmost major tectonic subdivision of the Canadian Cordillera. According to Muller (1979), the Insular Belt (Island Mountains) contains a middle Paleozoic and a Jurassic volcanic-plutonic complex, both apparently underlain by gneiss-migmatite terranes and overlain respectively by Permo-Pennsylvanian and Cretaceous clastic sediments. A thick shield of Upper Triassic basalt ((Karmutsen Formation) overlain by carbonate-clastic sediments separates these two in space and time.

The area is dominated by the Karmutsen Formation of the Vancouver Group (muTrVK) that is intruded by the Island Intrusions (EMJIgd). The Karmutsen, as described by Muller (1977) is:

...composed of theolitic volcanic rocks, up to 6,000 metres thick and underlying a large part of the Island. In Carlisle's (1974) standard section the formation is composed of a lower member, about 2,600 metres thick, of pillow lava; a middle member about 800 metres thick, of pillow breccia and aquagene tuff; and an upper member about 2,900 metres thick, of massive flows with minor interbedded pillow lava, breccia, and sedimentary layers. Except in contact zones with granitic intrusions the volcanics exhibit low-grade metamorphism up to prehnite-pumpellyite grade..."

The Island Intrusions as batholiths and stocks of granitoid rocks ranging from quartz diorite (potash feldspar less than 10% of total feldspar; quartz 5-20%) to granite (potash feldspar more than 1/3 of total feldspar; quartz more than 20%). The Intrusions underlie about one-quarter of the Island's surface and intrude Sicker, Vancouver, and Bonanza Group rocks (Muller, 1977).

The structure of the Island is almost entirely dominated by steep faults. Only the flysch-type Pennsylvanian and Jura-Cretaceous sediments and associated thin-bedded tuffs show isoclinal shear folding. Faulting and rifting probably occurred during the outflow of Karmutsen lavas in Late Triassic time, establishing the northerly and westerly-directed fault systems affecting Sicker and Vancouver Group rocks (Muller, 1977).

#### JUNE PROPERTY GEOLOGY

The following description of the local lithology is taken from a 2002 report on the June Property authored by James W. McLeod, P.Geo.

The June Property is underlain by three main rock types: the oldest being andesite to basaltic volcanics which may exhibit pillow textures and which "chilled margins" are obscured by subsequent alteration and boundary fillings as quartz, epidote, and prehnite. These volcanic units of the Karmutsen Formation occupy the northern half of the Property and generally host the sulphide and precious metal mineralization.

Intrusive rocks of the Westcoast Intrusive Complex underlie the southeastern portion. These rocks generally occur as coarse-rained, crystalline, equigranular, granodiorites/ quartz-diorites and are in contact with both volcanic and limestone units of the Karmutsen and Quatsino Formations respectively.

According to the British Columbia MINFILE Report the June prospect (092E 018) occurs within the Muchałat Batholith of the Jurassic Island Plutonic Suite intrudes volcanics of the Upper Triassic Vancouver Group Karmutsen Formation. The volcanic rocks have been amphibole and hornfels altered near the contact, overprinting regional zeolite facies metamorphism.

The following is reported in a Report of the Minister of Mines (1946):

One main vein has been developed on the property, and several smaller ones have been exposed by stripping. The main vein is a well-defined shear-zone, from a few inches to 6 feet wide, that has been exposed in open-cuts and in the adit for a distance of 120 feet and is reported to have been found in a small pit about 220 feet farther west. The owner and the writer searched for the pit but, probably because of the sloughing, were unable to find it. Some tight shearing is found in an outcrop of andesite about 200 feet east of the adit and may be the eastward continuation of the main vein-shear.

At the western end of the exposure the shear is strongly silicified over widths ranging from 1 foot to 6 feet and consists of fine-grained, dark grey quartz mineralized with pyrrhotite, chalcopyrite, and small amounts of galena and magnetite. A few narrow stringers of white, later quartz cut the silicified shear. In the eastern end, mainly in the adit, although the silicified vein is less, being from 3 to 14 inches, the silicification is more intense and results in a well-defined lens of quartz that contains a few wisps of unreplaced andesite and, around and extending from them, streaks of massive sulphide.

#### MINERALIZATION

The June occurrence (MINFILE REPORT 092E018) consists of four quartz-sulphide veins in andesite. Three sub-parallel veins strike approximately 270 degrees and dip vertically. The main vein is a well-defined shear zone from two centimetres to two metres wide. It has been exposed in an underground drift for 36 metres and in pits 150 metres to the west. The shear zone is strongly silicified and consists of fine-grained dark quartz mineralized with pyrrhotite, chalcopyrite and small amounts of galena, magnetite, arsenopyrite and matildite. A few stringers of white, later quartz cut the shear zone.

An average assay of 9 samples, taken from the shear zone, is 24.68 grams per tonne gold, 226.24 grams per tonne silver and 2.9 per cent copper over an average width of 0.49 metres (Slocan, 1946, page 3). Higher values from grab samples are also reported

McLeod (2002), reports that the mineralization occurs within a silicified, dark grey, shear zone as predominantly chalcopyrite and magnetite with arsenopyrite, pyrrhotite, pyrite, sphalerite, galena, and matildite. In the main workings the alteration zone enveloping the mineralized shear, occurs as an elongate silicified zone within the volcanics and quartz from one foot to six feet wide. Within the alteration zone the quartz occurs as open-space fillings and as en-echelon tension fractures. Some tension gashes are filled with pyrite and/or a dark sphalerite up to one-half inch wide and several inches long. These tension gashes are up to three inches wide and 12 inches long

At the Creek Showing, tension fracture filling trend N125° to 135° with the quartz/sulphide vein zone exhibiting silicification and mainly pyrite mineralization with minor chalcopyrite.

The Upper Showing is a silicified zone up to five feet wide with quartz fissure filling and containing pyrite, pyrrhotite, chalcopyrite, arsenopyrite, and sphalerite in decreasing abundance. The zone trends at N280° to 300° with a near vertical dip.

The Report of the Minister of Mines (1946) reports that:

The metallic minerals seen in polished sections under the microscope are, in order of abundance: Chalcopyrite, magnetite, galena, and closely associated with the galena, a silver-bismuth sulphide, tentatively identified by polarization, etch reactions, and composition, as matildite. Further studies of this mineral are being made.

Magnetite is abundant in some sections, and a few grains of sphalerite were seen in the chalcopyrite. The magnetite, arsenopyrite, pyrrhotite, and pyrite are all strongly fractured and replaced by chalcopyrite and galena.

#### MINERALIZATION (CONT'D)

The matildite occurs in small blades in the galena. No free gold was seen in any of the sections studied, but those sections containing abundant magnetite, arsenopyrite, and chalcopyrite, assayed highest in gold.

A quartz vein, striking north 48 degrees west and dip vertical, and referred to as No. 4 vein, is found about 500 feet east of the adit. This vein consists of 5 to 6 inches of quartz that follows a strong shear, 6 inches wide, in andesite. T has been intermittently stripped for 50 feet.

A strong shear, strike north 85 degrees west and dip 75 degrees south has been opened up by an open-cut on the beach, on the north side of the mouth of June Creek. This cut, 12 feet wide at the mouth, has been driven westerly on the shear, horizontally for 8 feet and then upward on a slope of 55 degrees for 12 feet. The shear has an overall width of 4 feet, but the strongest shearing is confined to a 4-inch width close to the hanging wall. Short gashes of solid pyrite up to  $\frac{1}{2}$  inch thick and of sphalerite up to 1 foot long by 3 inches thick are found in the shear. Quartz is restricted to a few hair-like stringers.

#### **AEROMAGNETICS (FIGURE 6.)**

The aeromagnetic map indicates that the property is predominantly underlain by granodiorites of the Island Plutonic Suite (Figure 4) as reflected by the magnetic high; the high reflected by reddish colors on the aeromag map. The lower magnetic zone indicated by a yellowish color, peripheral to the granodioritic rocks, reflects the andesitic agglomerates and grey erystalline limestones of the Sicker Group (muDSi) and the Karmutsen Formation of the Vancouver Group (muTrVK) that is essentially composed of theolitic volcanic rocks. The gradual diffusion from the red to the yellow may indicate that the sedimentary and volcanic rocks occur as pendants overlying or "floating" on the granodiorites. This is quite apparent in the minimal color variance of the Sicker Group between the intrusives. The Maple Leaf mineral zone is indicated to occur within the granodiorites proximal to the granodiorite-Sicker Group contact.

#### PHASE I EXPLORATION PROGRAM

The first phase of the exploration program was completed by Diamond S Holdings Ltd. for Harley Resources Inc. in two separate occasions. The first part of the exploration program was completed in June 2005 and consisted of trenching, sampling, and prospecting was completed on the Main Workings of the June property. A total of three rock trenches were blasted, five grab samples of vein material were selected for assay, and the immediate adit/vein area was prospected. The assays of the samples are as follows:

Sample Type	Location	Sample #	Description	Cu %	Ag gm/mt*	Au Gm/mt*
Selected Grab	Dump	G.R.1	Quartz w/ min'n	7.104	167	4.93
Selected Grab	Main Drift	G.R.2	Quartz w/min'n	0.208	8	0.12
Selected Grab	In adit by raise	G.R.3	Quartz grab	0.879	43	6.80
Selected Grab	Trench I	G.R.4	Quartz grab	0.158	4	0.296
Selected Grab	Trench II	G.R.5	Quartz grab	0.146	7	1.59

The second part of the Phase I exploration program was completed for Harley Resources Ltd. by Diamond S Holdings Ltd. in October 2005. The exploration consisted of trenching and sampling on the Creek Showing of the June property. A total of two rock trenches were blasted, five grab samples of vein material were selected for assay, and the immediate adit/vein area was prospected. The assay results of samples taken from Creek Showing are as follows:

Sample Type	Location	Sample #	Description	Cu %	Ag gm/mt*	Au Gm/mt*
Selected	Main	Harley A	Lst w/ malachite	5.57	199.0	0.04
Grab	Workings					
Selected	Main Drift	Harley B	Fe	1.54	19.6	0.76
Grab						
Selected	Trench I	Harley C	Fe, Py	0.105	2.8	0.44
Grab						
Selected	Trench II	Creek I	Quartz w/	0.336	8.4	0.17
Grab			malachite			
Selected	Shaft Vein	Creek II	Quartz w/ py	0.114	3.6	0.03
Grab						
Selected		Creek III	Quartz w/ py	0.775	22.7	0.34
Grab						
Addit I				8.92	246.0	7.72

\* 29.2 gm/mt = 1.0 oz/t

Prospecting of the vein area resulted in the confirmation of the veins as indicated on the historical maps and that the veins, although of narrow widths, appear to contain localized significant amount of sulphides which may indicate substantial gold values.

Map 1. June Workings Plan Map showing 2005 trench locationss. (Base Map: Stevenson, 1946)

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Map 2. June Main Workings (Base Map: Stevenson, 1946)

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#### CONCLUSIONS

The June property covers a number of quartz veins containing localized significant gold and silver values that may potentially developed to economic mineral zones. The veins appear to be structurally controlled exhibiting vein material as massive quartz and quartz-healed breccias. Although there is no indication as to the controls of increased gold mineralization, the breccias may indicate such control zones related to structural intersections. The reported banding of the veins and the breccia zones are an indication that the quartz veins may be epithermal thus the exploration program should be based on this initial premise.

Systematic sampling of the veins and host rock with analysis of the vein material would be required to determine the nature of the veins and potential mineral controls. Analysis of the mineralogy in ICP analyses may aid in determining the levels of mineralization in the epithermal zoning. Should the veins be determined as epithermal, the lower and local higher surface gold values may be an indication of a "bonanza" gold zone to depth.

## **RECOMMENDED EXPLORATION PROGRAM & ESTIMATED COST**

Phase I (Completed)

Phase II

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Coverage of the June veined area with a VLF-EM survey for a	
structural analysis; local geochem surveys over "anomalous" zones	\$ 8,500.00
Phase III	
Sampling and geological mapping of the veins within anomalous zones	25,000.00
Phase IV	
Diamond drilling of the prime targets	75,000.00
Total Estimated Cost	\$ 98,500.00

Phase II of the recommended exploration program is estimated to take three weeks to complete.

It is the author's opinion that the character of the mineralization on the June property is of sufficient merit to justify the recommended exploration program.

Respectfully submitted Sookochoff Consultants Inc.

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Laurence Sookochoff, P.Eng.

Vancouver, BC October 15, 2005

#### SELECTED REFERENCES

B.C. GOVERNMENT – MapPlace Internet Download Files.

CROFT, S.A.S. – Geochemical, Magnetometer and VLF-EM Survey of the Adola Mineral Claim for Adola Mining Corporation. June 30, 1986.

FAIRBANK, B.D. - A Report on the Adola Mineral Claim, Muchalet Inlet. July, 1982.

MINFILE – June; 092E 018

READ, W.S. – Preliminary Reconnaissance Survey of the Adola Mineral Claim for Adola Mining Corporation. July 22, 1977.

REPORT OF MINISTER OF MINES – 1946 pp 179-181.

#### Certificate

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with offices at 1305-1323 Homer Street, Vancouver, BC V6B 5T1.

I, Laurence Sookochoff, further certify that:

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- 1) I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
- 2) I have been practicing my profession for the past thirty-eight years.
- 3) I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 4) The information for this report is based on information as itemized in the Selected Reference section of this report.
- 5) I do not have any direct or indirect interest in the June Property nor in the securities of Harley Resources Inc.

Laurence Sookochoff, P. Eng.

Vancouver, BC October 15, 2005

Appendix I

# ASSAY CERTIFICATES

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