# Volume 1

# ASSESSMENT REPORT ON THE HOMESTAKE RIDGE PROJECT

#### SKEENA MINING DIVISION

**BRITISH COLUMBIA** 

LONGITUDE 129° 35' WEST LATITUDE 34° 45' NORTH NTS Map Sheets: 103P/12 and 103P/13 TRIM Map Sheets: 103P072 and 103P073 REPORT

Prepared For

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GEOLOGICAL

BRAVO VENTURES GROUP INC.

1100-1199 West Hastings St. Vancouver, BC V6E 3T5

OCT 29 2007

Alexia I Bryson, BSc Coast Mountain Geological Ltd. Gold Commissioner's Office 620-650 West Georgia Street Vancouver, BC V6B 4N9

October 29th, 2007

Attention: Allan Wilcox,

The attached assessment report describes the work done during the 2006 exploration season at the Homestake Property. Due to restrictions on the Mineral Titles Online (MTO) service, the actual start date could not be filed with the Statement of Work (SOW).

The 2006 Homestake Exploration program commence on July 3<sup>rd</sup>, 2006, however 3 of the property claims, 537435, 537436 and 537437 were aquired July 20<sup>th</sup>, 2006 and thus the MTO online system would not accept the July 3<sup>rd</sup>, 2006 start date.

On the advice of a service representative at the Vancouver Mineral Titles Branch, the author filed a SOW with the July  $20^{th}$ , 2006 start date with the understanding that the correct start date, July  $3^{rd}$ , would be acknowledge with the filing of this assessment report.

Thank-you Alexia Bryson

# **TITLE PAGE**

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By

Alexia I Bryson, BSc Coast Mountain Geological Ltd. 620-650 West Georgia Street Vancouver, BC V6B 4N9

October 29th, 2007

#### Summary

A 28-hole diamond drilling campaign (6588 m) and a four-day mapping program was completed during the 2006 exploration season on the Homestake Ridge property. Bravo Venture Group controls the Homestake Ridge property through various agreements, primarily with Teck-Cominco Ltd (Teck). The property is located in the southern Stewart Complex of British Columbia and consists of 2725 Ha of mineral claims and Crown Grants. The Homestake Ridge Property was first explored for mineral potential in the early 1900's. Over the years it has increased in size to encompass five known mineral occurrences, the Vangaurd Cu-Au Zone, the Serecite Zone, the Dilly Zone, North Homestake and the Homestake Ridge. The 2006 exploration program focused on the area near the centre of the property known as the Homestake Ridge or the Homestake Zone.

The property overlies basin sequences including the Jurassic Hazelton Formation, which also hosts the Snip, Premier and Eskay Creek deposits.

Mapping and surface sampling was conducted over an area of 400 m by 700 m to determine the source of a gold in soil anomaly. The area is underlain by roughly east-west trending contact between sedimentary rocks, intermediate flows, volcaniclastics and breccias in the north and fine-grained, feldspar-phyric granodiorite to the south. The sequence does not appear to match the stratigraphic sequence encountered in drill core to the east. Bedding attitudes in the map area and drill area suggest either an anticlinal axis or a major fault located towards the east of the map area. Mineralization in the form of chalcopyrite, pyrite, sphalerite and galena, occurs in northwest-southeast trending calcite (+/- quartz +/- barite) veins and breccia zones. Of the 21 samples, 11 returned significant gold (equal or greater than 0.5 grams per ton), with assays up to 10.26 g/t Au (sample #427516), 3.37 % Cu (sample 427517) and 3.05% Pb, 9.40% Zn in sample # 427511.

Drilling consisted of 28 diamond drill holes arranged to expand and fill in the Homestake Zone, a known NW-SE striking zone. The area is underlain by a stratigraphic sequence consisting of sedimentary, volcanic and associated volcaniclastic rocks. Gold occurs in silicified stratabound zones in volcanic and epiclastic rocks often with chalcopyrite and to a lesser extent sphalerite and galena. Following the 2006 exploration season Bravo contracted P. Folk and D. Makepeace to write a 43-101 compliant report. The inferred mineral resources based on a specific gravity of 2.7 and a search radius of 100 m. Using a 0.5 g/t Au cut-off grade, the report concluded an inferred mineral resource of 11,914 187 tonnes grading 2.3 g/t Au, 15.0 g/t Ag and 0.11% Cu. Using a 5.0 g/t Au cut-off grade yields 1,265,258 tonnes grading 10.61 g/t Au, 38.3 g/t Ag and 0.37% Cu.

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#### Introduction

This assessment report is being filed upon the request of Bravo Venture Group Inc (Bravo), which owns the Homestake Ridge Property though various signed agreements with Teck Cominco Ltd (Teck). The technical work done during the 2006 campaign satisfies the financial requirements to maintain all claims within the Homestake Ridge property in good standing for ten years (the maximum years allowed). The statement of work for this report was filed on behalf of the claim owners, Bravo and Teck, by the author on July 19<sup>th</sup>, 2007. Coast Mountain Geological Ltd. was contracted to carry out the 2006 Exploration program on the property and B. Kasper B. Sc. managed the fieldwork. During the 2006 season, the author spent a total of 84 days on the property primarily as core logger under the supervision of B. Kasper.

#### **Reliance on Other Experts**

The author has referenced the most recent 43-101 compliant report, Folk and Makepeace, 2007, extensively. The description of the mapping and surface sampling is an excerpt from an internal report written by Marcus Vanwermenskerken P. Geo. Interpretations and conclusions were determined through discussions primarily with B. Kasper.

### Location and Status of Property

#### Location of Property

The Homestake Ridge Property is within the Skeena Mining District of northwest British Columbia. It is located approximately 32 km southeast of the seaport of Stewart and 32 km north-northwest of the communities of Kitsault and Alice Arm. The property is centered on Latitude 54°45`12.6" N. Longitude 129°34`39.8" W (Figure 1).

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Figure 1: Location Map

### **Property Status**

The Homestake Ridge Property consists of 17 claims, a total of 132 units and 6 Crown Grants. The tenure is summarized in Table 1 and Figure 2.



Tenure No.	Name	Units	Owner	Expiry
377241	WK1	10	Teck Cominco	23-May-2012
377242	WK2	20	Teck Cominco	23-May-2012
377243	WK3	16	Teck Cominco	23-May-2012
380949	WK4	18	Teck Cominco	20-Sep-2011
380950	WK5	18	Teck Cominco	20-Sep-2011
383037	WK6	6	Teck Cominco	28-Nov-2011
383038	WK7	16	Teck Cominco	28-Nov-2011
380951	KW1	1	Teck Cominco	20-Sep-2011
380952	KW2	1	Teck Cominco	20-Sep-2011
380953	KW3	1	Teck Cominco	20-Sep-2011
383017	KW4	1	Teck Cominco	28-Nov-2011
383016	KW5	1	Teck Cominco	28-Nov-2011
251427	Cambria 1	4	Teck Cominco	6-May-2012
251428	Cambria 2	3	Teck Cominco	6-May-2012
537435	HR	7	Bravo Venture Group	20-Jul-2007
			Inc.	
537436	HRMARGINI	6	Bravo Venture Group	20-Jul-2007
			Inc.	
537437	HRMARGIN2	3	Bravo Venture Group	20-Jul-2007
			Inc.	
L3975	Homestake	1	Sullivan & Kelleher	<u>N/a</u>
L3976	Homestake No.1	1	Sullivan & Kelleher	N/a
L3977	Homestake No. 2	1	Sullivan & Kelleher	N/a
L3978	Homestake No. 3	1	Sullivan & Kelleher	N/a
L3979	Homestake Fraction	1	Sullivan & Kelleher	N/a
L3980	Homestake No. 1 Fr.	1	Sullivan & Kelleher	N/a

Table 1: Mineral Tenures.	Expiry Dates stated are those prior to submission of assessment work detailed in
	this report.

Bravo has earned a 100% interest in the Homestake Ridge mineral claims, optioned from Teck Cominco Limited (Teck Cominco) in June 2003, by issuing 200,000 shares to Teck Cominco and spending in excess of \$3.0 million on exploration and development work on the claims. Upon Bravo providing notice that they have spent a minimum of \$5.0 million (to a maximum of \$8.0 million) Teck Cominco may back-in. To back in Teck Cominco must make an election by December 31, 2007 or the date that is ninety days after receiving notice from Bravo, whichever event is later. Teck Cominco can earn a 60% interest by expending an amount equal to 200% of Bravo's expenditures in scheduled yearly minimum annual expenditures of 20%. Teck Cominco can also earn up to an additional 10% by sole funding a feasibility study and arranging production financing and construction guarantees.

The crown grants are held under option by Bravo with staged payments totaling \$210,000 combined with the issuance of 400,000 shares and property expenditures totaling \$1,250,000 to Dec 31, 2007 (Folk and Makepeace, 2007).

The Tip Top Grant shown on Figure 2 is no longer a valid crown grant. The location has been restaked and is now owned by a third party. Folk and Makepeace (2007) explain that the Tip Top Grant is not considered to be in a critical location because there is some

ambiguity on the ground regarding the locations of the Crown Grants and the 'Tip Top gap' as none of the posts erected over 90 years ago are still in existence. This fact is of little importance to the project in general; however, ultimately the boundaries of the old lots may have to be determined to clarify various NRS royalties due to the original owners.

The Crown Grants contain surface rights, but the other claims do not. There are, however, no permanent habitations anywhere on the property and all land belongs to the Crown. Therefore, surface rights are not likely to present an issue (Folk and Makepeace, 2007).

The hand trenches, small adits and drilling pads present a small environmental liability, however, Folk and Makepeace (2007) point out that it is unlikely to be problematic.

# Physiography, Climate, Vegetation, Access, Local Resources, and Infrastructure

The Homestake Ridge Property is situated at the southern extent of the Cambria Ice Field. The property covers a south-southeast trending ridge at the headwaters of the Kitsault River, which discharges from the Kitsault and Little Kitsault Glaciers. The topography in the area is steep except for a sub-alpine plateau in the south part of the property. Elevations in the area range from 430 m at the Kitsault River to 1780 m on the ice-covered ridgeline. The area of exploration varies from 860 m to 1300 m (Kasper and Metcalfe, 2005).

Climate is typical for the Northwest of British Columbia with high precipitation occurring as rain and snow in all seasons except summer. Winter precipitation generates heavy snowfalls of 5-12 metres (Evans and Macdonald 2003). As a result, snow covers the property from late September to late June. Precipitation and heavy fog strongly affect airborne access to the property.

The 1000 m elevation marks the approximate division between alpine style vegetation and forest vegetation (Evans and Lehtinen, 2001). The alpine vegetation includes slide alder, grass and lichen and on the upper slopes alpine grass, moss, lichen with the odd patch of alpine spruce (Kasper and Metcalfe, 2004). The forest vegetation consists of fir, hemlock, spruce and cedar with areas of thick brush comprised of alder, willow and devils club in wet seeps and avalanche areas (Evans and Lehtinen, 2001).

An old cat trail runs up the Kisault River from Alice Arm to the south end of the property, a distance of roughly 28 km (Kasper and Metcalfe, 2005). While the trail is currently being improved, the only access to the property is via helicopter with the closest base being the town of Stewart, 32 km to the northwest.

There are no permanent habitations within or near the property.

# **History of Exploration**

Historically, work was undertaken in two areas, the Homestake area and the Vanguard area of what is now a combined Homestake Ridge property of much greater dimensions. This report focuses on the Homestake area or "Homestake Zone" as this is where the majority of the work submitted for assessment was conducted.

Mineral exploration started in the Kitsault Valley in the early 1900's as a result of discoveries at Anyox and in the Stewart region. A. Davison of Alice Arm located the first known claims on the Homestake property, Homestake, Homestake No.1, Homestake No. 2, Homestake No.3, during the years of 1914 to 1917 (Coombes, 1986).

In 1918 the claims were bonded to the Mineral Claims Development Company, which was reorganized into the Consolidated Homestake Mining and Development Company in 1921. The company carried out a small amount of surface and underground work. The Homestake claims were given crown grant status in 1925 (Coombes, 1986).

In 1926 Homestake, with three other groups, was bonded to the C. Spencer interests of Vancouver. No work was done and the option was abandoned in 1927 (Coombes, 1986).

In 1934 the property was optioned by a Vancouver syndicate, which later became British Lion Mines Ltd. British Lion Mines Ltd drove the Smith and Myberg adits and carried out extensive trenching in the area of the Myberg adit during the period of 1937 to 1939. The only recorded mineral production on the property occurred in 1939 when British Lion Mines Ltd shipped 8 tonnes of selected ore yielding 1120 g Au, 1617 g Ag, 63.5 kg Pb, 303 kg Zn and 599 kg Cu (Nelles, 1989).

World War II intervened and little exploration work was done in the area until 1952.

Work on the Homestake claims recommenced when prospector Dwight Collison of Alice Arm staked the area in 1964 and put in extensive time working a number of the showings. Collison carried out surface trenching, minor underground work and a very limited diamond drill programme on the Lucky Strike and Cascade claims (present Dilly Zone) (Nelles, 1989). Collison held the claims until his death in 1979.

In 1979, Newmont Exploration of Canada Ltd. optioned the property from Ruby Collison, widow of Dwight Collison. Newmont conducted an extensive exploration program with a focus on the area's potential for a large, near surface, massive sulphide deposit. The program included line cutting, EM surveys, magnetometer surveys, soil and lithogeochemistry, blast trenching and geological mapping (Coombes, 1986). Although the results suggested that potential existed for the development of hydrothermal mineralization, Newmont dropped their option at the end of 1980 when the work failed to define a near surface massive sulphide deposit (Coombes, 1986).

Homeridge Resources Ltd. optioned the property from Ruby Collison in 1984, however no work, except for a property visit was conducted (Coombes, 1986).

In 1986, the Collison claims lapsed and were then re-staked as the Cambria 1, 2 and 3 claims. At that time 'Cambria 2' surrounded the Homestake Crown Grants and what is now 'KW 1'. 'Cambria 1' was situated to the west of 'Cambria 2' and 'Cambria 3' to the south (Coombes, 1986). The owners entered into an option agreement with Cambria Resources Ltd who conducted a program, which included geological mapping, lithogeochemical sampling, an I.P. geophysical survey and blast trenching (Coombes, 1986).

From 1989 until 1991, the Cambria and Homestake claims with the group of Vangaurd claims were optioned to Noranda Exploration Company Ltd (VanDerEygen and Baerg, 1990). Noranda carried out a program, which consisted of gridded silt, soil and rock sampling, magnetic, I.P. and resistivity geophysical surveys and geological mapping followed by twelve diamond drill holes for a total of 1450.05 m (Evans and Lehtinen, 2001).

Teck Cominco Ltd (Teck) acquired the present Homestake Property in 2000 via option agreements and staking. Similar to Newmont, Teck focused on the VMS potential on the property (Evans and MacDonald, 2003). From 2000 to 2002 Teck conducted geological, geochemical, trenching and drilling programs. Drilling consisted of 21 holes totalling 4374.6 m of NQ size core (Evans and MacDonald, 2003).

Bravo Venture Group (Bravo) optioned the property in 2003 and since contracted Coast Mountain Geological Ltd of Vancouver to carryout the exploration work. Bravo has performed geochemical and geophysical surveys, completed geological mapping, compiled pre-existing data and drilled 9 114 m in 50 holes at and near the Homestake zone (Folk and Makepeace, 2007).

In 2006, Bravo commissioned Peter Folk and David Makepeace to write a technical report (Folk and Makepeace, 2007) to meet the standards of National Instrument 43-101. The report included an inferred mineral resource using a variable cut-off grade, a specific gravity of 2.7, and a search radius of 100 m. Utilizing a 0.5 g/t Au cut-off grade the deposit yields 11,914,187 tonnes grading 2.36 g/t Au, 15.0 g/t Ag, and 0.11% Cu. Using a 5.0 g/t cut-off grade yields 1,265,258 tonnes grading 10.61 g/t Au, 38.3 g/t Ag and 0.37% Cu. Folk and Makepeace (2007) was used expensively in the preparation of this report, which will discuss mapping, surface sampling and a drill program consisting of 28 BQ TW drill holes conducted during the 2006 season.

# **Geological Setting**

#### **Regional Geology**

The Homestake Property is located at the Southern end of a Northwest trending area defined by Grove (1986) as the "Stewart Complex". The Stewart Complex is one of the largest volcanic arc terranes in the Canadian Cordilleran collage and one of the best-studied areas of northwestern Stikinia (Kasper and Metcalfe, 2005). It is bounded by Alice Arm to the south, the Coast Plutonic Complex to the southwest, the Iskut River to the north and the Skeena fold belt to the east. Within its boundaries is the "Golden Triangle", an area that is host to more than 200 mineral occurrences (Kasper and Metcalfe, 2005) including the gold mines Eskay Creek, Premier and SNIP as well as the Granduc, Dolly Varden-Torbit and Anyox mines. The dominant mineral occurrences are precious metal vein type, with related skarn, porphyry, and massive sulphide occurrences (Kasper and Metcalfe, 2005).

The Stewart Complex is situated within the Intermontane Belt. Stikinia, which contains the Homestake Property, is the dominant terrane of the complex. Stikinia is an island arc terrane which formed in the Pacific Ocean during Carboniferous to Early Jurassic (320-190 Ma) and collided with North America during the middle Jurassic (Folk and Makepeace, 2007).



Figure 3: Terranes of the Cordillera. The Homestake Property is located within the Stikine Terrane. From Folk and Makepeace, 2007.

Skikinia is comprised of at least four Palaezoic to Cenozoic tectonostraticgraphic packages (Kasper and Metcalfe, 2005):

- 1. Paleozoic Stikine Assemblage quartz-rich rocks, carbonate slope deposits, and minor mafic to felsic volcanic rocks;
- 2. Early Mesozioc volcanic and inter-arc and back-arc basin sedimentary rocks;
- 3. Middle to Upper Jurassic Bowser Basin turbiditic sedimentary rocks and;
- 4. Tertiary post-kinematic granitoid intrusions of the Coast Plutonic Complex.

The majority of the metalliferous deposits discovered to date within Stikinia are associated with Mesozoic arc assemblages (Kasper and Metcalfe, 2005). Northwestern Stikinia Mesozoic assemblages have undergone at least five magmatic episodes, the formation of three sedimentary basins, at least two periods of deformation, and at least two metallogical episodes bracketed by important unconformities (Kasper and Metcalfe, 2005).

The five magmatic episodes mentioned above were defined by concordant biochronology and U-Pb geochronometry as being (Kasper and Metcalfe, 2005):

- 1. Late Triassic (ca. 230-226 Ma);
- 2. Late Triassic to early Jurrasic (ca. 219-205 Ma);
- 3. Early Jurassic (ca. 196-187 Ma Texas). Intrusions of this period are related to mineral deposits such as Premier, SNIP, Sulphurets, Kerr and Red Mountain (Folk and Makepeace, 2007);
- 4. Late Early Jurassic (ca. 185 Ma). This is the age of the Eskay Creek mineralization (Folk and Makepeace, 2007);
- 5. Middle Jurassic (ca. 179-172 Ma).

Magmatic episodes of the Stikinia alternated with the development of three sedimentary basins. These basins formed during the Late Triassic to Early Jurassic, the Toarcian to Bajocian, and the Bathonian to Oxfordian (Kasper and Metacalfe, 2005). The basin formed during the Toarcian-Bajocian is of considerable importance because this west-facing, north-trending back arc basin contains the Eskay Creek "contact zone" rocks (Hazelton Group), which are overlain by Middle and Upper Jurassic marine basin sediments (Bowser Lake Group) (Kasper and Metcalfe, 2005).

At least two periods of deformation occurred in the region, a contractional deformation during the Triassic-Jurassic (post-Norian, pre-Hettangian) and an Early Jurassic hiatus. These periods of deformation are represented by unconformities one of which also separates two metalliferous events that took place in the Early Jurasic (e.g. Premier, SNIP, Stonehouse, Inel, Sulphurates and Kerr) and Middle Jurrasic (e.g. Eskay Creek) (Kasper and Metcalfe, 2005).



Figure 4: Local Geology. Geological map of the 103P NTS area between longitudes 130°W and 128°W and between latitudes 55°N and 56°N (Kasper and Metclafe, 2005)

# Local Geology

Figure 4 shows the regional geology of the property area, compiled by Kasper and Metcalfe (2005).

The Stuhini Group rocks are found in the cores of anticlines and represent the oldest known rocks in the area (Folk and Makepeace, 2007). These rocks are composed of a thick sequence of volcanic and sedimentary rocks of Upper Triassic (Norian) age, interpreted as the products of a volcanic arc. The volcanic Stuhini Group rocks are generally pyroxene-bearing, a contrast to the to the well defined early crystallized hornblende phenocrysts commonly found in the Lower Jurassic Hazelton volcanics (Kasper and Metcalfe, 2005). Kasper and Metcalfe (2005) note that recent (2002) re-evaluation of bedrock mapping in the Homestake area resulted in the assignation of lithologies of the Stuhini Group on the Homestake Ridge.

The Hazelton Groups overlies the Stuhini Group. The Lower Jurassic Hazelton Group is represented by a lower unit comprising massive, hornblende+plagioclase-phyric dacitic ignimbrites and associated volcanic sedimentary rocks (Unuk River and Betty Creek formations) (Kasper and Metcalfe, 2005). Overlying these intermediate volcanics is the Lower-Middle Jurassic Eskay Creek stratigraphy composed of marine felsic volcanic rocks and associated epiclastic sedimentary rocks. Kasper and Metcalfe (2005) note that rocks of similar lithology and stratigraphic relationship have been identified in the Homestake Ridge area.

The dominant local intrusive rocks are of Cretaceous to Eocene age associated with the Coast Plutonic Complex. However, intrusive rocks identified in the Homestake Ridge area are hornblende+feldspar phyric and resemble Early Jurassic Texas Creek Suite. These rocks are related to important mineralization elsewhere in the Stewart Complex (Folk and Makepeace, 2007).

Important local deposits include the Dolly Varden-Torbit Silver camp located 4 km south of the Homestake property, which produced 19.9 million oz Ag and 11 million lbs of Pb, and various properties in the Stewart area such as Red Mountain, Granduc, and Silbak-Premier (Folk and Makepeace, 2007). Some of the mineralization on the Homestake Ridge property is thought to be similar in age and genesis to the VMS deposit at Eskay Creek (2.65 Mt grading 48.4 g/t Au, 2152 g/t Ag, 4.2% Zn, 2.5% Pb, 0.5% Cu), located about 115 km to the NNW (Folk and Makepeace, 2007).

### **Property Geology**

The Homestake Property overlies the Hazelton Group, a complex sequence of lower to middle Jurassic sedimentary, volcanic and intrusive rocks. The Hazelton Group contains the transition from Lower Jurassic volcanism to the hiatus and sedimentation belonging to the Salmon River and Bowser group (Evans and Lehtinen, 2001). This sequence hosts many sulphide occurrences and extensive areas of alteration on the property, primarily

associated with the Lower Jurassic sequence. The lowest statigraphic sequence is equated to the Betty Creek Formation (Evans and Macdonald, 2003) and consists of maroon to green andesite and dacite pyroclastic-epiclastic rocks with discrete flows and tuffaceous beds. Sub-basin development resulted in a rapid change in facies and rock types overlying the 'Betty Creek Formation' across the Homestake Property (Evans and Lehtinen, 2001). This basal sequence is intruded and overlain by flow-banded rhyolite dome material and dacite pyroclastics likened to the Mt. Dilworth Formation (Evans and Lehtinen, 2001). Dome material has intruded into and underlies the Salmon River Formation. The Salmon River Formation is composed of calcareous mudstones, grits, and conglomerates coeval with the intruding dome material (Evans and Lehtien, 2001). The Salmon River Formation shows a general fining upwards into the Bowser basin, which Evans and Lehtinen (2001) describes as a reflection of the large scale basin development at the end of Hazelton volcanism.

As mentioned within the Local Geology description, hornblende+feldspar porphyries (FHP) occur on the Homestake property, specifically in the western area (Folk and Makepeace, 2007). These rocks resemble lithologies included in the Early Jurassic intrusions associated with mineral deposits elsewhere in the Stewart Complex, notably the Goldslide Intrusions at Red Mountain (Kasper and Metcalfe, 2005). These calcalkaline intrustions are multi-phase events that cross-cut rhyolites, sediments and andesites, form crypto-domes and are associated with extensive alteration and mineralization (Folk and Makepeace, 2007).

Structure on the property is dominated largely by NE-SW compression that has continued from the Jurassic to present day (Folk and Makepeace, 2001). This compression developed the "Kitsault synform". an open NW-SE trending syncline, and the adjacent asymmetric overturned antiform, as well as several east directed thrust faults (Evans and Lehtinen, 2001). Large NE trending ankerite bearing faults have been mapped and related to Tertiary E-W extension (Evans and Lehtinen, 2001).

Figure 5, taken from Folk and Makepeace (2007), shows the property geology within the Homestake Ridge claim boundaries. Note that area 'A-Homestake' was the focus of the 2006 exploration program.



Figure 5: Property Geology (Folk and Makepeace, 2007)

#### Homestake Zone Mineralization

The Homestake Zone was the focus of the 2006 Exploration Program. Other mineral occurrences on the property, ie the Vanguard Cu-Au Zone, the Sericite Zone, the Dilly Zone and the North Homestake, are summarized in Folk and Makepeace, 2007.

The gold-bearing zone at the Homestake Zone strikes NW and dips northeasterly at a slightly steeper angle than the topographic dip slope. Mineralization occurs within latites and associated volaniclastics. The host rocks show sericite and pyrite alteration, silicification and occasionally chloritization within mineralized zone. The gold-silver mineralization is associated with pyrite and chalcopyrite and less often sphalerite and galena all occurring within or proximal to siliceous veins. Visible gold has been reported in drill core.

The zone is currently known to run NW-SE for 400m and has been traced down-dip for a distance of about 500m (Folk and Makepeace, 2007). The northern extent of the zone is under glacier and has not been explored. The southern extent has been traced with surface geochemisty for at least another 700m, however, this area is base-metal and silver rich, rather than being gold bearing (Folk and Makepeace, 2007). The zone is considered open in all directions (Folk and Makepeace, 2007). In cross-section the zone has a lenticular form. In a key to defining the deposit type, Folk and Makepeace (2007) note that the mineralization is not within sharp boundaries, as expected with well-defined vein structures, but is identified through assay grades. The zone is continuous, however within it values and thickness show variations indicating inhomogeneous gold distribution and underlying structural disparities (Folk and Makepeace, 2007).

# **Regional Metallogeny and Target Deposit Types**

The Homestake Ridge Project has been described as a subaqueous hotspring deposit comparable to the Eskay Creek deposit and the mesothermal or transitional porphyry-related vein deposits associated with the Texas Creek plutonic suite in the western Iskuk River area. These deposits represent metallogical events spaced out by 20 million years, thus the probability that both events are represented at the Homestake Zone is unlikely, but not impossible (Kasper and Metcalfe, 2005).

The following list of deposit models were considered for Homestake Ridge by Evans and Macdonald (2003). The reader should note that this list is not definitive and related deposit models should not be overlooked. The related descriptions are an excerpt from Kasper and Metcalfe, 2005.

**Subaqueous hot spring Au-Ag** (BC Geological Survey Branch Mineral Deposit Profile G07).

The Eskay Creek deposit (MINFILE 104B 008), identified as Subaqueous hot spring, had produced 68,500 kg of gold and 3,100,000 kg of silver as of 2002; a further 56,000 kg of gold and 2,500,000 kg of silver remained to be mined (Barrick company report, 2002).

**Intrusion-related Au-Fe sulphide veins** (BC Geological Survey Branch Mineral Deposit Profile I02).

From 1991 to 1999, the SNIP mine (MINFILE 104B 250) produced 32,093 kgaof gold, 12,183 kg of silver and 249,276 kg of copper from approximately 1.2 million tonnes of ore. The SNIP deposit is an Au-Ag-Cu-(Pb-Zn-As-Sb-Bi) bearing, mesothermal quartz-sulphide vein system localized along a steeply dipping, northwest trending shear zone. The Twin Zone has a pronounced internal lavering of several vein types. Veins of calcite-chlorite-biotite which typically contain 15-40 g/t Au, comprise 60% of the zone. Dilatant pyrite-pyrrhotite and quartz veins, typically grading  $\geq 60$  g/t Au, form discreet foliation-parallel veins, and occur independently of or within a matrix of other ore types. Biotite-rich veins and sulphide veins, common in the lowermost eastern parts of the zone, have elevated copper grades (0.2-0.5 %Cu). Chloritic veins are most abundant in the western and uppermost portions of the orebody and are associated with the highest molybdenum grades (0.01-0.05% Mo). Coarse visible gold occurs with molybdenite in chlorite-rich veins. The close spatial association of the SNIP gold deposit with the Red Bluff copper-gold porphyry, as well as the metal and alteration zoning consistent with porphyry systems, suggests the mineralization for both deposits were synchronous Early Jurassic deposits.

**Subvolcanic Au sheeted veins** (BC Geological Survey Branch Mineral Deposit Profile L01)

Several gold showings were discovered in 1989 at Red Mountain, all of which are spatially related to the contact of the hypabyssal, hornblende-plagioclase porphyritic granodiorite to diorite Goldslide Intrusion with the pyroclastic and interbedded sedimentary rocks of the Lower Hazelton Group. The mineralization is structurally controlled and occurs in both intrusion and country rocks. The most significant gold occurrence (Marc zone) is a transitional-type gold deposit with some skarn-type affinities. Hydrothermal alteration consists of strong to pervasive sericitization, moderate to strong pyritization, moderate chloritization, moderate silicification and moderate to strong local potassic as well as albitic alteration. Mineralization typically consists of densely disseminated to semimassive pyrite replacement (up to 30 per cent) within a dark grey to black matrix and/or pyrite stringers and veinlets. Varying amounts of pyrrhotite and minor chalcopyrite, arsenopyrite, galena and tetrahedrite are associated with the pyrite. High gold values are usually associated with the semimassive, coarse-grained pyrite aggregates but also occur within a stockwork of pyrite stringers and veinlets.

# 2006 Exploration Program

#### Purpose

The objective of the 2006 drill program was to expand the known area of gold mineralization identified from the 2005 drill program. Drill holes were designed to test the down dip and on strike potential of the Homestake Zone as well as fill in gaps left from previous drill programs. At least two drill holes were placed further to the southeast to test an area of anomalous gold results in rock samples collected by Noranda in 1989 and identified by a gold in soil anomaly from the 2004 exploration program. Field mapping was undertaken to explore for the source of the gold in soil anomalies discovered during the 2004 and 2005 exploration programs.

#### Logistics, Personnel, Duration and Cost

Work completed on the Homestake Project in 2006 included construction of drill pads for and the drilling, logging and partial sampling of 28 diamond drill holes (HR06-23 to HR06-50). A small 4 day mapping and surface program was also conducted to locate the source of Au in soil anomalies.

The base camp for the Homestake Project was located approximately 40 km away from the Homestake claims at the Timber Baron (aka VanDyke) Logging camp. The camp no longer functions as logging camp; however, the facilities to run a medium sized camp are still operational. The Timber Baron Camp is situated on Highway 37 at km 110. In fine weather conditions helicopter flight time to site was approximately 15 minutes. A staging area situated between the Timber Baron Camp and site was reached by logging roads. All drill equipment, fuel and timber used for the project was transported from this area to minimize helicopter flight time and associated costs. Crew mobilized into camp on July 3rd. Drilling commenced on July 13<sup>th</sup> and continued until October 23<sup>rd</sup>, 2006. Demobilization of camp was completed November 5th and a small crew of geologists and geo-techs continued to log and sample core in the town of Stewart until December 23<sup>rd</sup>, 2006.

Logistical support came from the town of Smithers. Minor supplies could and were obtained from Stewart.

The exploration and support crew varied in number from one to twenty-three at various stages of the project.

The 2006 exploration cost for the project was \$2,289,588.35.

#### Mapping and Sampling

Localized mapping and sampling was carried out by Marcus Venwermenskerken, P. Geo. The work was performed on claims 377241 and 251427 (Figure 6). The following descriptions of the regional project is an excerpt from a Coast Mountain Geological internal report written by Mr. VanWermenskerken following the 2006 field season.

An area of 400 m by 700 m in extent, located SW of the 2006 drill project was mapped at 1:1,000 scale during the 2006 drill program. A total of 4 days were spent mapping the area. Outcrop exposure in the area was less than 40%, due to heavy snow cover, and lesser colluvium/vegetation. A Garmin 12 XL GPS unit (NAD83 datum) was used for survey control, as most of the previously placed survey pickets had disappeared.

#### Diamond Drill Program

The objective of the 2006 diamond drilling program was to expand the Homestake Zone along strike and down dip as well as infill gaps left from previous drill programs. Twenty-eight diamond drill holes, totaling 6488.04 m in were completed two phases. Figure 7 shows the drill hole traces in relation to claim boundaries.

Drilling was contracted to Aggressive Diamond Drilling Ltd of Kelowna who drilled the first phase of holes (HR06-23 to HR06-38). Drilling for the second phase commenced in mid-September 2006 and was subcontracted out to Top Rank Diamond Drilling Ltd. and Prospector Drilling, both of Ste Rose du Lac Manitoba. Thin-wall B tools were used, resulting in core with a diameter of 48mm.





DDH	Tenure	Easting	Northing	Collar	Collar	Collar	Depth
	Number			Elevation	Azimuth	Dip	(m)
HR06-23	377241	462940.88	6179477.45	947.7	217	-50,0	164.10
HR06-24	377241	462942.43	6179477.97	947.9	190	-67.0	232.60
HR06-25	377241	462941.48	6179478.42	947.8	235	-66.0	202.40
HR06-26	377142	463022.84	6179393.29	996.5	220	-57.0	160.40
HR06-27	377142	463022.86	6179394.92	996.1	265	-77.0	242.90
HR06-28	377142	463024.74	6179393.29	996.3	179	-73.0	194.16
HR06-29	377241	462899.78	6179340.20	1053.8	299	-61.0	144.78
HR06-30 <sup>+</sup>	377241	462940.54	6179478.02	947.9	247	-44.0	238.70
HR06-31	377241	462900.57	6179337.98	1055.4	260	-58.0	84.43
HR06-32	377241	462902.80	6179337.31	1056.1	197	-80.0	182.20
HR06-33	377142	462986.40	6179542.64	929.0	217	-57.0	178.92
HR06-34	L3975	463181.68	6179324.29	964.8	252	-51.0	249.02
HR06-35	377142	462987.65	6179542.45	929.2	190	-53.0	279.50
HR06-36	377241	462903.11	6179337.17	1056.0	197	-78.0	108.80
HR06-37	377142	463132.59	6179501.60	924.3	229	-52.0	276.45
HR06-38	377142	463133.30	6179500.69	924.4	202	-51.0	276.45
HR06-39	377142	463133.30	6179500.69	924.4	180	-55.0	313.03
HR06-40	377142	463133.30	6179500.69	924.4	188	-70.0	447.15
HR06-41	377142	463133.30	6179500.69	924.4	219	-69.5	410.57
HR06-42	377142	462986.55	6179304.74	1060.3	219	-45.0	96.62
HR06-43	377142	462986.00	6179542.00	929.0	240	-54.0	316.08
HR06-44	377142	462986.62	6179304.98	1060.3	227	-69.0	191.11
HR06-45	537435	463281.92	6179223.45	943.0	224	-45.0	206.40
HR06-46	537435	463281.92	6179223.45	943.0	224	-62.0	394.40
HR06-47	377142	462986.40	6179542.64	929.0	209	-61.0	280.21
HR06-48	377142	463133.30	6179500.69	924.4	198	-44.0	294.80
HR06-49	377142	463022.84	6179393.29	996.5	237	-66.0	239.88
HR06-50	377241	462877.99	6179424.55	974.4	269	-54.0	181.97

Table 2 is a summary of the 2006 drill hole locations and orientations.

Table 2 Summary of 2006 drill hole locations and orientations.

Core produced during the 2006 campaign is currently being stored at a storage facility in Stewart BC.

#### **Collar Locations and Drill Hole Numbering**

2006 drill collar sites were located using a Garmin global positioning system (GPS), a compass and chain (slope compensated) from the nearest 1989, 2002, 2003 or 2005 drill collars and later surveyed in by a sub-contractor.

Drill hole labels consist of the Homestake Ridge initials, a two-digit year allocation and a two-digit number continuous with the last hole drilled (HR05-22) on the Homestake property in 2005.

#### **Collar and Downhole Surveys**

The collar azimuth and dip of diamond drill holes were spotted with a Brunton compass, using a magnetic declination of 21.5°E. Both azimuth and dip were checked after collaring.

Downhole directional surveys were taken at the first 100 foot mark and approximately every 150 feet after that, using a RANGER single-shot survey tool. This survey tool provides point measurements of azimuth and dip in a hole with estimated precisions of  $\pm 0.5^{\circ}$  and  $\pm 0.2^{\circ}$ , respectively.

#### **Core Handling**

Core was flown to Timber Baron Camp and logged in a designated core shack. Core was measured for recovery and RQD before being logged. Geologists determined sample intervals based on mineralogical zonation and stratigraphy, with a maximum of 3.0 m sample length. All core was photographed after sample intervals were marked out. Each sample was given an unique identifier from a three part tag system. One part of the waterproof tag was placed in the sample sent to the lab while another was placed with the remaining core at the start of the interval. Sample intervals were cut by rock saw. Unmarked standards and blanks were included with the samples submitted, roughly once in every 20 samples with a ratio of 2:1 standard to blank. The samples were placed in zip-tied plastic bags and shipped to Acme Analytical Laboratories in Vancouver by local freight. Unsampled core, including the half of the split core that was not sent for analysis, was transported by road to a storage facility in the nearby town of Stewart.

# **Analytical Procedures**

Surface rock and drill core samples were analyzed at Acme Analytical Laboratories located at 852 E. Hastings St, Vancouver BC, V6A 1R6. Acme Labs is ISO 9001:2001 certified. All the certificates of analysis can be found in Appendix III.

Samples were bagged and zip-tied and shipped by local freight to Acme. In the lab samples were dried, crushed, split and a portion pulverized. Gold and silver analyses were performed by fire assay and ICP-ES on a "one assay tonne" portion of the pulp. Geochemical analyses of the same pulps were also performed by acid digestion and ICP-MS. Base metal assays were commonly run on geochemically "over-limit" samples. A few samples were also re-analyzed by the "metallic screen" method using a 150-mesh cut-off. Comparing the metallic screen and fire assay Au results, the metallic screen results are not higher than ordinary assaying. This suggests that coarse native gold nuggets do not represent a significant portion of the mineralization (Folk and Makepeace, 2007).

Quality control measures instituted by Acme Labs include inserting standards and blanks and re-assaying one in every 20 to 30 samples a second and third time. Higher-grade samples are re-assayed with greater frequency than the others. The insertion of standards and blanks into the assay stream as well as sending check samples to a different assay lab were quality control measures performed by Coast Mountain Geological Ltd and Bravo. Blank material was collected from outcrop in the vicinity of camp. Twenty-six of the 32 blanks inserted into the assay stream returned gold assays at the detection limit or lower. The other six averaged 0.06 g/t Au. Four gold standards were purchased from WCN Minerals of Burnaby BC and were randomly introduced to the assay stream. Table 3 summarizes standard assay results.

Number of Standards	WCN Standard	Acme Results
17	16.20 g/t Au	16.43  g/t Au or  +1%
17	2.96 g/t Au	2.83 g/t Au or -4.3%
17	1.68 g/t Au	1.77 g/t Au or +5.2%
16	0.26 g/t Au	0.26 g/t Au or 3.3%

Table 3: Summary of Standards. Data taken from Folk and Makepeace, 2007.

Check samples were sent directly as pulps from Acme Labs to Global Discovery Laboratories (Global) of Vancouver BC. Global Labs are accredited by the PTP-MAL process administered by a branch of National Research Council of Canada. A total of 274 check samples were assayed at Global Labs out of the 2069 samples analyzed by Acme (Folk and Makepeace, 2007). Figure 8, compiled by Folk and Makepeace, compares assay results of from Global and Acme Labs. Samples below detection limit were not included. On average Acme results were slightly higher grades than Global.





# 2006 Exploration Results

#### Geology of Mapping Area

A 1:1000 map was produced during the 2006 regional program (Figure 9).

#### Stratigraphy

The rocks of the mapped area comprise a roughly east-west contact zone between sedimentary rocks, intermediate volcanic flows, volcaniclastics and breccias towards the north, and a fine grained feldspar-phyric granodiorite towards the south. The intermediate volcanics/ volcaniclastics include fine grained phases, feldspar-phyric flow and tuffaceous phases, a polymictic conglomerate, and a breccia unit very similar to the MSB unit encountered in the Homestake Ridge Zone drill core. Although the volcanic and volcaniclastic sequences include units similar to those drilled at the Homestake zone, they do not appear to make up the same stratigraphic sequence. The units strike generally northwest-southeast, with a moderate to steep (60 to 85 degree) southwesterly dip. Keeping in mind the northeasterly dipping stratigraphy in the area of the Homestake

Ridge zone, the above mentioned bedding attitude suggests the presence of either an anticlinal axis, or a major fault located towards the east of the mapped area discussed in this summary.

The volcanic-volcaniclastic rocks are overlain towards the west by a sequence of sedimentary rocks. These rocks are steep westerly dipping black shales and fine to coarse greywackes.

#### **Alteration/ Mineralization**

The volcanic-volcano-sedimentary rocks in the central part of the mapped area are variably flooded with stockwork zones of calcite (+/- quartz +/- barite) veins, as well as breccia zones. These zones are up to 10 metres in width, and have a generally steep northwesterly to westerly strike direction, although several zones have been mapped at different attitudes.

The veins and breccias are variably mineralized with up to 20% chalcopyrite (massive clots and stringers < 1 cm), 20% pyrite (disseminated, and massive clots and veins < 1 cm) 10% sphalerite (clots < 3 mm) and 3% galena (small blebs < 2 mm).

A generally northwest-southeast regional fabric, dipping from steep westerly to vertical, controls the above mentioned veins and breccias. This fabric manifests as zones of weak to moderate cleavage (and related sheeted vein zones), and crackle zones, with locally dense vein stockworks.

A weaker fabric, roughly perpendicular to the abovementioned, trends from 050 to 090, with a vertical to steep northerly dip. Numerous mineralized calcite-quartz-barite veins are hosted in this set of fractures.

Several, generally northwest and northeast trending quartz-sericite-pyrite zones have been mapped in the area, with up to 20% disseminated pyrite. Within these QSP alteration zones, zones with clots and stringers < 3 cm of massive pyrite are common.

Other alteration types in the area include chloritic zones (mostly wihin the intrusive rocks and just outside the intrusive contacts), and carbonate alteration zones, occurring as limited, generally northwest trending zones, up to 25 metres wide, within the volcanic rocks.

#### **Geochemical Results of Surface Sampling**

A total of 21 rock chip and float samples were collected during the mapping program. Although assay returns are encouraging, no structures with significant extent were sampled. Of the 21 samples, 3 returned significant gold (equal or greater than 0.5 grams per ton) and 12 returned highly anomalous values (>1000 ppm) for copper, lead and zinc. Asssay results of up to 1.18 g/t Au (sample # 427516), >10,000 ppm Cu (samples 427512 and 427514), 4884 ppm Pb (sample # 427512) and >10,000 Zn (samples # 427512 and 427516). While no direct comparison can be deducted between gold and base metal results, the results do correlate well with the sulphide mineralization observed within the quartz or calcite veins. The most significant assay results are listed in the table 4 below.

Sample #	Description	Width (m)	Au	Cu ppm	Pb	Zn ppm
			g/t		ppm	
427507	Vein-fracture zone + py-sp	1.0	0.92	2760	7	>10,000
427508			1.08	1088	28.1	74
427510	Bleached-sil. zone + dis.	5 x 5 panel	0.47	181.7	3686	7306
	Sx.		r			
427511	High grade grab of 427512	Hi grade	0.11	1419	523	6104
427512	Calcite stockwk + cp, gn,	3.6	0.37	>10,000	4884	>10,000
	sp					
427513	Calcite breccia + cp, sp, gn	0.7	0.02	127	370	7680
427514	Calcite-cp veins (high	Grab	0.06	>10,000	212	1844
	grade)					
427515	Calcite-cp vein zone	1.0	0.03	4321	491	2956
427516	Quartz-barite + py, cp	Float grab	1.18	5196	360	>10,000
427518	Cct-qtz-ba brx + py, cp, sp	1.0	0.07	1245	277	2287
427519	Cct-qtz-ba brx + cp, sp, gn	2.0	0.08	751	772	4892
427520			0.04	15	59	2221

Table 4: Significant Surface Sample Results

# Geology of diamond drill holes

#### Stratigraphy

A lithological framework for logging core was developed during the season. The units, listed roughly in stratigraphic order are summarized in Table 5. Note that the gold-silver mineralization occurs within the Latite Flow (LF) unit. Detailed logs are in Appendix IV.

Stratigraphy	Unit	Description
Pc	Pc	Polymictic Conglomerate. Volc. clasts in a fine to med. grained wacke matrix
	Cs	Wacke to grit or lithic wacke. Similar to the matrix in the above unit. Rare clasts
	Mf	Magnetic flow. Fine-grained and homogeneous flow with variable thickness. Magnetic where unaltered. Edges may be fragmental and/or vesicular. Epidote- calcite-quartz or carbonate veins are common.
	Mc	Monomictic conglomerate.
DF	Df	Debris Flow. Volcanic, siltstone, or ash clasts occur in a fine grained matrix. Grades into overlying PC but contains siltstone or ash clasts—chlorite altered. Black, chloritic matrix.
	Sts	Siltstone/wacke or ash tuff/tuff layers. Light green to dark grey thin to thick cross bedded. Forms rip-up clasts in Df. Contacts are generally sharp.

MSB	Msb	Monomictic sedimentary breccia. Contains distinguishing Pebble to cobble latite clasts in a fine to medium grained wacke matrix. Gradational with DF unit.
	Wg	Wacke with grit. Similar to Pc except that it may contain feldspar shards or crystals.
	Lf(a,b,c, d,e)	Latite Flow. Homogeneous with xenoliths of mafic rock. Diffuse feldspar phenocrysts, may be calcite altered, in a fine-grained matrix. Generally strongly silicified, may be Kspar altered. Most anomalous gold occurs within this unit. May have a fragmental texture (Lf a), have crowded feldspars (Lf b), be a hornblende-feldspar equigranular flow (Lf c). or a fragmental feldspar- hornblende equigranular flow (Lf d). Lfe is a crowded feldspar fragmental unit.
	XF	Crystal-rich Fragmental at the contact between MSB and GW. Appears strongly deformed, hematite stained or py-sericite altered. Often altered with bright green sericite to sericite-talc laminae and quartz flooding. Often contains chalcopyrite.
GW	Lf	Footwall. Light grey units occurring below the mineralized zone. Generally strong sericite-pyrite alteration with little silicification.

Table 5: Drill core stratigraphy.

#### Alteration/ mineralization

Common alteration types within the core include chlorite, carbonate, and serecite-pyrite alteration as well as hematite staining.

Chlorite alteration is most prevalent in the volcanic units and the volcanic clasts where amphiboles are often altered to chlorite. The chlorite is associated with carbonate and pyrite alteration. Chlorite bands were present in carbonate veins within the PC stratigraphy and less often in the LF unit.

Carbonate alteration occurs throughout the core at varying degrees. White carbonate veins and breccia zones were common. The PC stratigraphy was crosscut by a combination of pink rhodocrosite and white calcite veins. Carbonate filled vesicles were characteristic of the MF unit. Within the epiclastic units, carbonate was commonly present in the sedimentary matrix. Feldspars of the LF unit were regularly altered to carbonate.

Serecite-pyrite alteration occurs variably throughout the core. It is especially prevalent in the LF units, sometimes appearing to completely replace primary minerals. Serecite was frequently pale green and soft where not overprinted by silica flooding.

Silica veins were present in all of the units at some degree. They were most noted in the LF unit associated with mineralization. Silica flooding was also associated with mineralization within the LF unit and rarely in the DF.

Hematite staining is characteristic of the PC unit, which can quickly vary between purple hematite stained clasts in a greenish wacke matrix or greenish clasts in a purple hematite stained matrix. Hematite staining was recorded in all of the units except the GW.

Other alteration noted in core was epidote veining in the MF unit, leucoxene in the LF unit and bleaching throughout.

Mineralization occurs in silicified zones usually with serecite-pyrite alteration. Chalcopyrite, pyrite and to a lesser extent galena and sphalerite often occur at the gold mineralization, however, high sulphide and silica content is not always an indicator of high gold values. The gold-silver mineralized zone was defined through assay results. Less frequent sulphides visible in core are tetrahedrite within the LF unit, pyrrhotite in volcanic clasts of the PC unit and rarely malchite in the LF unit. Visible gold was reported in core.

#### **Geochemical Results of Diamond Drilling**

Table 6 shows significant intercepts from 2006 drill core. This table is a portion of a table taken from Folk and Makepeace (2007). Intercepts were calculated based on a 0.5g/t cut-off grade over a core width of a least one metre. Detailed results with sample intervals can be found in Appendix IV. Two basic cross sections (HR9925 and HR10075) are also included in Appendix II to show the relation between stratigraphy and the main gold-bearing intervals (Figures II-2 and II-3, respectively).

Hole#	From	To	Int.	Est. True	Au	Comments
	(m)	(m)	(m)	Width (m)	(g/t)	
HR06-23	89.55	102.6	13.05	12.5	0.81	
	130.2	143.6	13.4	12.9	0.60	
HR06-24	121.2	136.0	14.8	10.2	20.25	123 g/t Ag, 0.21% Cu
HR06-25	125.3	151.45	26.15	21.9	1.75	
HR06-26	77.45	80.75	3.3	3.0	1.2	845 g/t Ag
	120.55	123.75	3.2	2.9	6.4	
HR06-27	193.4	201.9	8.5	4.8	25.3	40.4 g/t Ag, 2.1% Cu
HR06-28	151.1	166.45	15.35	8.4	5.52	0.76%Cu
HR06-29	57.4	59.8	2.4	0.6	1.15	
	82.0	85.0	3.0	0.8	0.69	
	106.6	109.2	2.6	0.7	1.64	
HR06-30	99.75	174.4	74.65	68.7	2.38	
HR06-31	41.0	56.0	15.0	11.3	1.99	
HR06-32	48.4	50.0	1.6	1.0	0.79	>1% Zn
	54.5	59.0	4.5	2.8	0.74	
	70.5	77.2	6.7	4.2	1.85	
	90.53	96.5	5.97	3.7	2.06	
HR06-33	168.0	173.0	5.0	4.6	0.58	
HR06-34	192.0	211.6	19.6	16.9	1.41	
HR06-35	172.4	191.0	18.6	14.0	6.04	0.18%Zn
HR06-36	33.6	35.1	1.5	1.0	1.36	
	48.7	53.2	4.5	2.9	0.79	
	65.5	88.5	23.0	15.0	0.98	
	94.5	101.0	6.5	4.2	0.71	
HR06-37	228.9	231.2	2.3	2.2	0.76	
HR06-38	226.95	240.45	13.5	11.9	0.79	0.65%Cu
	253.1	253.8	0.7	0.6	6.07	
HR06-39	246.1	248.85	2.75	1.8	0.99	15.38 g/t Ag, 1.59%Cu
	259.75	267.80	8.05	5.3	0.88	

Hole#	From	То	Int.	Est. True	Au	Comments
	(m)	(m)	(m)	_Width (m)	(g/t)	·
	283.2	286.35	3.15	2.1	1.06	0.23%Cu
HR06-40	373.75	375.75	2.0	1.3	0.85	0.32%Cu
	379.5	381.45	1.95	1.3	0.61	
	403.8	507.5	3.70	2.4	0.64	
	419.8	420.25	0.45	0.3	1.23	0.34%Cu, 0.4%Pb, 4.0%Zn
HR06-41	289.95	297.00	7.05	5.8	9.92	0.18%Pb, 0.25%Zn
	316.3	319.15	2.85	2.3	3.58	
HR06-43	163.25	177.75	14.5	13.2	2.27	
	198.0	203.05	5.05	4.6	6.10	
HR06-44	20.2	29.0	8.80	7.3	1.58	41.7 g/t Ag, 0.24%Cu, 0.31%Zn
	51.5	56.1	4.60	3.8	0.91	
	65.15	83.0	17.85	14.8	0.66	
	111.2	116.3	5.10	4.2	1.57	0.51%Zn
HR06-47	141.2	153.25	12.05	10.4	1.36	
HR06-48	210.65	218.54	7.89	6.9	4.93	0.77%Cu
	231.4	236.5	5.10	4.4	0.82	0.61%Cu
HR06-49	97.85	121.7	23.85	20.0	0.79	154.7 g/t Ag
	133.75	137.0	3.25	2.73	1.28	0.6%Cu
HR06-50	22.1	88.7	66.6	45.3	2.62	

Table 6: Significant 2006 intervals taken from Folk and Makepeace, 2007.

Comparing the metallic screen and fire assay Au results, the metallic screen results are not higher than ordinary assaying. This suggests that coarse native gold nuggets do not represent a significant portion of the mineralization (Folk and Makepeace, 2007).

# Conclusions

The Homestake property is underlain by a series of felsic volcanics consisting of feldspar-homblende phyric latitic to trachytic volcanics and volcaniclastics (the LF units) that form distinct volcanic or "flow" assemblages. Feldspar crystal rich debris and/or pyroclastic flows (the XF and/or MSB units) of similar composition mark probable disconformities or discontinuities between the felsic volcanic flows. A period of basin development is marked by the deposition of the monomictic sedimentary breccia (MSB unit) and massive wacke beds (WG units) which were then overlain by calcareous debris flows (DF unit) and laminated volcaniclastics (STS units) and reflect a relatively quiescent period in volcanic activity. Intermediate and mafic volcanics (MF units) and volcaniclastics (PC and MC units) overlie all other units and signify a new period of volcanic activity that in filled the basin relief.

All lithologies in this basin development have undergone to some degree extensive propylitic (chlorite-calcite-hematite) to argillic (quartz-sericite-pyrite-carbonate) alteration. Regions of intense silicification overprinting sericite-pyrite alteration form distinct lenses within the upper felsic volcanic package and along related discontinuities. The presence of these lenses suggest some structural control in channeling hot, mineralizing fluids but not one distinct structure has yet to be identified. In most cases, gold mineralization is confined within zones of intense silicification and brecciation and reflected in some areas by the presence of polymetallic quartz and quartz-carbonate veins.

The 2006 drill program continued to extend the gold-bearing Homestake Zone down dip and laterally. As a result of this drill program, the Homestake Zone has been tested along 200 m of strike length and 500 m down dip. Of the twenty-eight drill holes drilled this year, twenty-five contained gold intercepts averaging 0.5 g/t or better over at least a one metre width. Of these, drill holes drilled in the northwestern portion of area returned the largest concentration of highest or most significant intercepts (20.25 g/t Au over 14.8 m in HR06-24, 2.38 g/t Au 74.65 m in HR06-30 and 2.62 g/t Au over 66.6 m in HR07-50). While results for drill holes testing the southeastern extent of the deposit were generally lower (most intercepts averaged < 1 g/t Au), drill hole HR06-34 did return an intercept of 1.41 g/t over 19.6 m. In all cases, the Homestake Zone still remains open down dip and laterally for testing.

The brief program of mapping at 1:1,000 scale in the gold copper soil anomaly west of the Homestake Ridge zone was successful in defining the probable source of the soil anomaly.

Although no structurally significant zones have been identified or sampled, more than half of the surface samples from the area returned anomalous gold (up to 1.18 g/t) and/or base metal values (>10000 ppm Cu, 4844 Pb and >10000 ppm Zn). These results reflect the base metal mineralization observed in the many mineralized veins, stockwork zones and breccia zones in the area. With much of the area covered under snow and/or talus a covered mineralized zone has not been ruled out. Furthermore, it is possible that a larger, parallel-mineralized zone could be related to these smaller veins and breccias. This would have to be drill tested. This suggested parallel zone could be either buried under overburden, or located deeper into the bedrock. The highest grade sample (#427516; 1.18 g/t Au, 5196 ppm Cu and >10000 ppm Zn) was a float sample collected from a talus slope covering a possible zone of weakness in the underlying rock.

### Recommendations

Over the period of the past two drill programs, an understanding of the Homestake Zone geology began to form that helped in determining the targets position. Field work over the last few years have noted a number of gold-bearing occurrences outside the extent of the Homestake Zone that have yet to be drill tested. In order to expand on the success of this program, the following is proposed:

- 1. A petrographic analysis should be conducted to determine the relationship between the rock units within the Homestake Zone. This should help in the timing of alteration and mineralizing events.
- 2. A re-evaluation of previous year's drill core to correlate the lithogies and alteration with the 2006 drill holes. This will help in determining a time

relationship between mineralizing events at the Homestake Ridge drill target and deformation events.

- 3. Detailed mapping of the Homestake Ridge area to help in determining if there is a structural control on some units. A detailed section should be also mapped across the entire eastern slopes of Homestake Ridge, from the ridge top, down to the creek below the drill pads, in order to understand the nature of deformation, as well as an attempt to compare the spatial/ temporal relationship between the rocks on the property.
- 4. Continued expansion of the Homestake Zone by drilling to follow up on 2006 results.
- 5. Re-evaluating and testing of other known occurrences based on the knowledge gained from the Homestake Zone. This can include a "wild cat" hole to test the auriferous and base metal mineralization mapped along the upper slopes of the Homestake Ridge property this summer.

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