PROGRESS REPORT:

2004-06 EXPLORATION ON THE COREY PROPERTY

Eskay Creek Camp, Northwestern British Columbia

Latitude 56° 15' N Longitude 130° 27' W NTS 104B 9 and 10

FOR

KENRICH-ESKAY MINING CORP.

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> > Volume 1 of 2

August 4, 2007

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EXECUTIVE SUMMARY

Location: The mineral properties of Kenrich-Eskay Mining Corp. (Kenrich) are located in northwestern British Columbia, 70 km northwest of Stewart, B.C. Reference maps are NTS sheets 104B 9 and 10. The property is accessed from Highway 37 by the nearby Eskay Creek Mine road, thence by helicopter. The Corey Property is located along the Unuk River, approximately 12 kilometres south of the Eskay Creek property and producing gold-silver mine of Barrick Gold Corp.

Mineral Tenures: Kenrich holds interests in mineral tenures comprising 39 claims and 13,482 hectares (33,314 acres), called the **Corey Property**. Kenrich holds these claims with a 100% interest. Most are in good standing to at least December 2008.

Work Program: Results are reported herein for a work program of three exploration field seasons. Preparatory geological mapping and stream geochemical surveys were conducted during the 2004 season, followed by diamond drilling programs during the 2005 and 2006 exploration season. Each season spanned late spring (May to June) to early autumn (October) field operations.

Work was performed from a helicopter-supported camp located at the confluence of the Unuk River and Sulphurets Creek. The field crew was supervised by three geoscientists (Sean McKinley M.Sc., P.Geo. (Project Manager), Chris Sebert, M.A.Sc., P.Geo. and Dr. Stephen Tennant, Ph.D) and comprised multiple geological teams, three to four sampling teams, diamond drillers, prospectors, linecutters, drill pad builders and camp personnel. A Hughes 500D helicopter supported the camp and was employed to position the crews daily. Helicopter usage has averaged 3-5 hours per day for the duration of the program, including periods of mobilization and demobilization.

The Company's ongoing work was designed to trace, and to test at close intervals, the volcanic and sedimentary horizons of the favourable Eskay-rift sequence. Tracing and testing the Eskay-rift sequence is multi-disciplinary, employing detailed geological mapping at 1:2,000 scale or finer for 10,000 ha; high-energy stream sediment sampling at 690 sites; rock sampling for ICP-MS analysis, 7395 analyses, lithogechemical samples, 1992 analyses; fire-assay samples, 294 assays; and an airborne EM and gradient magnetometer survey, 1191 line km. A total of 108 diamond drill holes were completed, comprised of 19,346 m of NQ and BTW core.

Eskay Rift Belt Traced Southward: The Corey Property covers a complete stratigraphic section of the Hazelton Group rocks, which includes the Betty Creek and Salmon River formations. Host rocks, mineralization and alteration on the Corey closely resemble those at Eskay Creek. The Corey Property is highly prospective for the discovery of a second Eskay Creek-style deposit.

Eskay Mine: The Eskay mine property contains several deposits of gold- and silverrich polymetallic sulphide and sulfosalt mineralization as volcanogenic and replacement massive sulphide, debris flow breccias, and discordant veins and stockworks. The Eskay mine is the fifth largest silver producer in the world and the second-richest producing gold mine in Canada. Total cash production cost per ounce of gold equivalent was below \$50 for most of the mine life. Costs in 2005 were approximately \$49 US per ounce.

Eskay Deposit Geology: The Eskay Creek deposits are examples of shallow subaqueous hot spring deposits, an important new class of submarine mineral deposits that has only recently been recognized in modern geological environments. They are relatively under explored and poorly recognized within the geological record. The deposit type is transitional between subaerial hot spring Au-Ag deposits and deeper water, volcanogenic massive sulphide exhalites (Kuroko or Besshi types) and shares the mineralogical, geochemical, and other characteristics, of both.

Eskay Rift Recognized: Important to the Kenrich exploration planning are the conclusions reached by academic researchers, and Provincial and Federal geological surveys, during the last decade. Barrett and Sherlock (1996) argue on the basis of lithogeochemistry that the Eskay rhyolite most closely resembles rhyolites erupted at rifted continental margin and are significantly different from the arc related volcanic rocks that compose the rest of the Hazelton Group. The hanging wall basalt unit yields a mainly N-MORB composition. These arguments, together with observed or inferred facies variations in the immediate Eskay Creek area, led Barrett and Sherlock (1996) and Roth (2002) to suggest that the Eskay Creek deposit formed **within a roughly north-south trending zone of localized rifting,** either in a back-arc or an inter-arc paleotectonic setting, that represents the terminal stage of magmatism within the Hazelton Group.

Kenrich Applies the Research: Geological research work by Kenrich in 2003 and field work in 2004-06 further defined the paleotectonic setting of the Eskay Camp, and the important Eskay rift. In the Technical Report for Kenrich-Eskay by McGuigan et al (2004), that includes contributions by Barrett, the paleotectonic setting of the Eskay rift is interpreted on a camp scale, using data in the public domain (scientific papers, assessment reports and MDRU compilations) and data in the private files of Kenrich. Distinctive volcanics and sediments define the signature of an **Eskay-Corey rift belt** that contains all the best Eskay-type deposits and significant discoveries in the Eskay region. **The Corey Property spans the southern portion of this trend and contains mineralization directly analogous to the Eskay deposits.**

Mineralized Eskay Rift Volcanics and Sediments Found on Corey: Detailed work on the Corey property in 2003-2006 has established the presence of a sequence of favourable Salmon River Formation rhyolite, felsic breccia, mudstone and basalt correlative with and similar to that at the Eskay Creek mine. This sequence of lithologies is found within the **Battlement, Cumberland, South Unuk (Smitty), C10** and **HSOV-Spearhead** areas on the Corey property. In addition to these areas of Eskay Creek-type potential, several additional mineralized discoveries occur on the Corey property, including the **Tet** and **GFJ** Showings.

Very Significant New Massive Sulphides Discovered in 2004: Preliminary conclusions made by the Kenrich team yielded early success in the search for a second Eskay creek type deposit. Geological focus on the prospective Salmon River formation lithologies, using chemostratigraphy, lithogeochemistry and stream sediment sampling has detected a very prospective sub-aqueous succession of Eskay signature rift-related basalt, rhyolite and mudstones. Within that succession, the

Smitty and Angela Creek massive sulphide showings were newly discovered, and the importance of the Cumberland, HSOV and C10 are better understood.

Target Areas are Better Defined: To further confirm the potential of the Corey massive sulphide and stockwork zones, extensive sampling was done for lead isotope signatures, age determinations and for whole rock lithogeochemical analyses. A total of 1994 lithogeochemical samples have been taken (1379 from outcrop and 615 from drill core) to characterize the volcanics, intrusions, sediments and sulphide mineralization. The central axis of the Corey property is shown to contain volcanic and sedimentary rocks that have a distinctive Eskay-type whole rock lithogeochemical signature. These distinctive rocks are rare in the Eskay camp, yet are well-mineralized, and occur in a well-defined zone that passes from the Eskay property, southward onto the Corey.

Eskay Mudstones are Extensive at the Corey: The recently discovered Smitty, Angela Creek and Spearhead occurrences join the Cumberland and HSOV Showings as true volcanic-hosted massive sulphide occurrences that have been discovered in outcrop on the Corey property. Massive sulphides and their enclosing mudstone host rocks are recessive weathering and are rarely found in outcrop. The main Eskay Creek massive sulphide deposits are "blind" and were discovered during diamond drilling activities. Within the distinctive Eskay-Corey volcanic-sedimentary rift belt, massive sulphides have been found in outcrop only on the Corey property.

Mineral Deposit Research Unit (MDRU): Sulphide samples were collected in September 2004 by Dr. Jim Mortenson, Professor at the University of British Columbia and a researcher with the Mineral Deposit Research Unit (MDRU), in an effort to establish the age of the principal mineralized zones at Corey. These samples were analysed for lead isotopes at the Pacific Centre for Isotopic and Geochemical Research (PCIGR) in Vancouver. **Pb isotope analyses have clearly demonstrated that the massive sulphide mineralization at both the Smitty and Cumberland showings are of Jurassic age on a plot of 206Pb/204Pb vs. 207Pb/204Pb and the Smitty mineralization lies well within the age range of the Eskay Creek deposit.** High-grade Cu-Ag sulphide-sulphosalt vein mineralization from the Tet Showing has been shown to have a younger Tertiary age. Kenrich is very encouraged by these highly significant results which conclusively show that the best massive sulphide occurrences at Corey are of the same age as the Eskay Creek Deposit.

Corey Geochemical Survey Indicates Additional VMS Targets: The Cumberland and the Smitty are the only known VMS showings outside of the Eskay Creek property to have the characteristics of Eskay VMS deposits and that occur in surface rock exposures. Drilling promises to test their hosting mudstones along strike, where 5 km of strong multi-element geochemical anomalies (Ag-Au-Cu-Zn-Pb-As-Sb) extend south-eastward along the strike of a sequence of mudstones, basalts and felsic volcanic rocks of the Eskay signature. Drilling to date has demonstrated that the Salmon River Formation mudstones that host the Smitty and that extend several kilometres south to the South Unuk–Mount Madge area contain discrete horizons of anomalous geochemistry enriched in "Eskay pathfinder elements" including Zn, Ag, As and Sb. These numerous geochemical anomalies suggest additional buried polymetallic VMS targets. **Conclusions from 2004-06 Field Work:** The **Battlement, Cumberland-South Unuk, C-10** and **HSOV** areas contain, in aggregate, **all of the signatures of a first-priority exploration target for Eskay-type high grade Au-Ag massive sulphides**. Present are felsic and mafic Salmon River volcanic rocks, massive sulphides with precious metals, bedded barite, mineralized mudstones and chloritic alteration (Cumberland-South Unuk and HSOV). Areas in the vicinity of the C-10 Zone are extensively quartz-sericite-pyrite altered. These zones are interpreted as footwall type stockworks and shears, proximal to potential volcanogenic massive sulphides. Furthermore, extensive mudstone units are present in these areas. These units provide a potential host unit for Eskay-style mineralization, lie stratigraphically above some of the known occurrences of strong hydrothermal alteration and have been demonstrated to be geochemically anomalous. The key to future exploration is tracing these geochemically anomalous mudstone horizons to their intersection with the hydrothermal feeder zones; these locations provide the best opportunity to intersect higher grade massive sulphide mineralization.

A continuation of the successful systematic, aggressive approach to exploration at Corey is warranted and recommended herein. In general, the following strategy should be followed in 2007:

- Drilling should involve 1 to 3 drills phased in over the late spring and early summer as snow cover permits.
- Primary focus should be on tracking the anomalous Salmon River Formation mudstone, potential hosts to massive sulphide mineralization, from the South Unuk area through the Mount Madge syncline to an area stratigraically above the C10 "feeder zone".
- Secondary targets should include the northward trend of the prospective South Unuk mudstones towards the Smitty and Cumberland high grade showings. Away from these high grade showings, stratigraphy indicative of more stable depositional environments, with a high potential for massive sulphide preservation, should also be tracked.
- Further north, the "Eskay-like" geology of the Battlement area should be tested for gold-rich volcanogenic massive sulphide mineralization.
- Focused geological mapping and prospecting, particularly in the Mount Madge and Battlement areas, should support this drilling. Detailed geological mapping should also be carried out at the Lower Cumberland, the north Cumberland, western Bench, HSOV-Spearhead Zone and high grade GFJ and TM showings to the south in order to better define their characteristics, with additional drilling contingent upon positive results from this work.

A total budget of **\$6,500,000** is recommended for the field portion of the 2007 program (not including susequent geological interpretation and reporting). This budget will allow for approximately **15,000 metres of diamond drilling**, as well as all the support costs.

CHAPTER 1:

BACKGROUND ON COREY PROPERTY EXPLORATION

INTRODUCTION

The mineral properties of Kenrich-Eskay Mining Corp. (Kenrich) are located in northwestern British Columbia, 70 km northwest of Stewart, B.C. Reference maps are NTS sheets 104B 9 and 10. The property is accessed from Highway 37 by the nearby Eskay Creek Mine road, thence by helicopter (Figure 1).

Kenrich holds interests in mineral tenures comprising 39 contiguous claims and 13,482 hectares (33,314 acres) called the **Corey Property**. Kenrich holds these claims 100% and most are in good standing to at least December 2008.

The Corey Property is located approximately 12 kilometres south of the Eskay Creek property and producing gold-silver mine of Barrick Gold Corp, along the Unuk River. The Corey Property covers a complete stratigraphic section of the Hazelton Group, which includes the Betty Creek and Salmon River formations (Figure 2; Maps 1 and 2). Host rocks, mineralization and alteration on the Corey closely resemble those at Eskay Creek. The Corey Property is highly prospective for the discovery of a second Eskay Creek-style deposit.

A team of geologists from Cambria Geosciences ("Cambria") was retained by Kenrich-Eskay Mining Corp. ("Kenrich") on Oct. 15, 2003 to compile all previous exploration data, integrate that data with publicly available data on the Eskay deposit and the mining camp, and conduct a 2004 exploration program. The data synthesis and results of the 2003 orientation work (including 2003 field work) are presented in a full technical report prepared for Kenrich-Eskay Mining Corp. by Paul McGuigan, Michael Caron and Sean McKinley, Professional Geoscientists in the Province of B.C., dated January 14, 2004.

Significant progress has been made in the period Oct. 15, 2003 to Dec. 31, 2006. This report presents background information on the Corey property and the results and interpretations of the 2004-06 field exploration programs.





Figure 2. Looking north to Eskay Creek Mine from the centre of the Corey property.

PROPERTY DESCRIPTION AND LOCATION

The subject properties are located in northwestern British Columbia, 70 km northwest of Stewart and 900 kilometres northwest of Vancouver (Figure 1). Reference maps are NTS Sheets 104B 9W and 10E. The subject properties are centered at approximately 56 degrees 35 minutes north and 130 degrees 29 minutes west.

The properties lie 10 km south of the Eskay Creek gold mine, owned and operated by Barrick Gold Corporation. The main property of Kenrich is the Corey. The simplified mineral tenure map is shown in Figure 3.

ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY

The mining properties of Kenrich are accessed by helicopter from the Eskay Mine access road that extends from Highway 37 to the Eskay Mine. Staging areas for helicopter operations are located at a fuel cache located along the Eskay Creek Mine road, about five kilometres west from the mine. Additionally, well serviced helicopter pads and a fueling station are located at the nearby Bell II Lodge located on Highway 37 east of the Kenrich properties.

Valley bottoms are densely forested with mature stands of fir, Sitka spruce, cedar, hemlock, aspen, alder, and maple. Thick undergrowth of ferns, salmonberry, huckleberry and devil's club is usually present.

The Corey property area is located within the Unuk River watershed. Major tributaries include the South Unuk River and Sulphurets Creek. All rivers and creeks originate from glacial meltwaters, and reach peak flow conditions in the summer months. The region is mountainous with elevations ranging from 250 metres on the Unuk River to approximately 2,150 metres at John Peaks. Mountain slopes are moderate to very steep. The tree line occurs at about 1,200 metres and at higher elevations, valleys are generally filled with glaciers. Semi-permanent ice and snow may be encountered on north facing slopes. Snow conditions are extreme in alpine areas while river bottom areas receive snow seasonally. However, precipitation in the form of rain occurs all year round.



Figure 3. Corey property: Map of the mineral tenures.

MINERAL TENURES

The Corey Property consists of 39 contiguous claims all 100% owned by Kenrich. Table 1 is a schedule of the mineral tenures included in the current Corey property.

Tenure Number	Claim Name	Map Number	Area (hectares)	Good Standing	Mining Division	Recorded Owner	Recorded Percent
			(Until		Number	Ownership
251446	COREY 1	104B049	500	2008/Dec/22	Skeena	113925	100%
251447	COREY 2	104B049	500	2008/Dec/22	Skeena	113925	100%
251448	COREY 3	104B049	500	2008/Dec/22	Skeena	113925	100%
251449	COREY 4	104B049	500	2008/Dec/22	Skeena	113925	100%
251450	COREY 5	104B049	500	2008/Dec/22	Skeena	113925	100%
251451	COREY 6	104B049	500	2008/Dec/22	Skeena	113925	100%
251452	COREY 7	104B049	500	2008/Dec/22	Skeena	113925	100%
251453	COREY 8	104B049	500	2008/Dec/22	Skeena	113925	100%
251723	COREY 21	104B058	100	2008/Dec/22	Skeena	113925	100%
251726	COREY 24	104B058	400	2008/Dec/22	Skeena	113925	100%
251727	COREY 25	104B058	100	2008/Dec/22	Skeena	113925	100%
251728	COREY 26	104B058	100	2008/Dec/22	Skeena	113925	100%
251729	COREY 27	104B058	400	2008/Dec/22	Skeena	113925	100%
251730	COREY 28	104B048	400	2008/Dec/22	Skeena	113925	100%
251731	COREY 29	104B048	200	2008/Dec/22	Skeena	113925	100%
251732	COREY 30	104B048	200	2008/Dec/22	Skeena	113925	100%
251733	COREY 31	104B048	400	2008/Dec/22	Skeena	113925	100%
251734	COREY 32	104B048	500	2008/Dec/22	Skeena	113925	100%
251735	COREY 33	104B048	500	2008/Dec/22	Skeena	113925	100%
251736	COREY 34	104B048	500	2008/Dec/22	Skeena	113925	100%
251737	COREY 35	104B048	500	2008/Dec/22	Skeena	113925	100%
251738	COREY 36	104B048	350	2008/Dec/22	Skeena	113925	100%
251739	COREY 37	104B048	350	2008/Dec/22	Skeena	113925	100%
252107	JOJO M	104B048	450	2008/Dec/22	Skeena	113925	100%
252108	CARL J	104B058	500	2008/Dec/22	Skeena	113925	100%
252111	DWAYNE 1	104B058	400	2008/Dec/22	Skeena	113925	100%
301766	GINGER 1	104B058	500	2008/Dec/22	Skeena	113925	100%
301767	GINGER 2	104B058	500	2008/Dec/22	Skeena	113925	100%
308909	DEL-1	104B048	200	2008/Dec/22	Skeena	113925	100%
508074		104B	430	2008/Dec/22	Skeena	113925	100%
508080		104B	358	2008/Dec/22	Skeena	113925	100%
517031	WINA	104B	321	2008/Dec/22	Skeena	113925	100%
517100	WINA2	104B	125	2008/Dec/22	Skeena	113925	100%
517148	DAR	104B	54	2008/Dec/22	Skeena	113925	100%
517241	SWAMP	104B	18	2008/Dec/22	Skeena	113925	100%
529757	UNUK SE FRACTION	104B	72	2008/Dec/22	Skeena	113925	100%
529758		104B	178	2008/Dec/22	Skeena	113925	100%
538241		104B	251	2007/Jul/29	Skeena	113925	100%
538242		104B	125	2007/Jul/29	Skeena	113925	100%

Table 1: Schedule of mineral tenures included in the Corey Property.

The name, record number, description, and status of all tenures with the Mining Recorder are given in the schedule, as recorded. The map of the tenures is found in Figure 3. The tenures are subject to varying Net Smelter Return Royalties, not totaling more than 2% on any individual tenure.

There are no disputes filed, or known to the authors or to Kenrich, on any of the subject properties with respect to the ground held by the claims under the Mineral Tenure Act.

An existing Reclamation Bond, sufficient to pay for the reclamation of the existing campsite on Sulphurets creek covers the Corey property.

HISTORY

UNUK RIVER AREA PROSPECTING

The Corey property of Kenrich project lies within a historically active mining and exploration area, termed the Stikine Arch that extends from Stewart in the south to near Telegraph Creek in the north. Active mining dates from the late 1890s. Due to the size of the region, it has historically been referred to by more specific area names (i.e. the Alice Arm, Kitsault, Anyox, Stewart, Sulphurets, Eskay Creek, Iskut River and Galore Creek camps). The entire area can be considered as one large mineralized province with attendant sub-areas.

In 1898, F.E. Gingras, H.W. Ketchum and C.W. Mitchell established alluvial gold workings on the mouth of Mitchell Creek at Sulphurets Creek. In 1898, the first mineral claims, the Cumberland (now part of the Corey Property) and Globe (now the Doc Property) groups were staked by H.W. Ketchum and L. Brant. These claims were subsequently purchased by the Unuk River Mining and Dredging Company in 1901.

In 1905, F.E. Wright of the U.S. Geological Survey visited the Unuk River as an extension of his work on the Alaskan side of the nearby International border and submitted his findings to the Canadian Government. This was the first of a series of government-sponsored surveys in the area. Between 1903 and 1929 activity essentially ceased until reconnaissance prospecting by T.J. McQuillan and T. Terwilligen resumed in the area at large.

To the north of the area of the Corey property, a prospecting expedition representing a Premier-backed syndicate in 1932 led by T.S. Mackay, A.H. Melville and W.A. Prout conducted exploration efforts in the Ketchum Creek area and Eskay Creek areas. From 1935 to 1938, Premier Gold Mining Corporation optioned the Eskay property and defined 30 mineralized showings, one of which was the 21 zone. Exploration continued under numerous options but ownership the ground always reverted back to Mackay or his associates. At Eskay Creek, in the 1980's, Kerrisdale Resources drilled four holes near the 21 zone, one of which intersected the stratiform mineralization of the 21A zone. In 1988, drilling by Stikine Resources and Calpine Resource Inc. confirmed the presence of a major Au-Ag rich massive sulfide body in the 21A zone. Subsequent geophysical surveys outlined a chargeability anomaly that was drill tested by **hole 109**, that intersected **61m of 99 g/t Au, and 29 g/t Ag** (109 Zone). The 21B zone was drill defined in 1990 and production commenced in the fall of 1994.

In the adjoining Sulphurets areas, according to personal communication with T.S. Mackay (1980), MacKay, T.J. McQuillan and their associates prospected the lower mountain slopes and river valleys but had few opportunities to examine the ridges and higher plateaus, as they were heavily snow-covered almost year-round. Prospecting did not extend to higher elevations until the snowfields and glaciers began to recede during the late 1950's. In some locations, in excess of 100 meters of snow and ice thickness have been lost during the period 1960 to 2000. As a result, Sulphurets had little exploration activity until the 1960's when interest in copper deposits led Newmont to extend work beyond the Granduc discovery into the higher, more remote snow-bound ridges as part of a broad regional evaluation. This work led to the identification of the Kerr, Sulphurets, Snowfield and West Zones. Discovery rates remain high, as progressively more land is exposed below retreating ice and snow.

COREY PROPERTY HISTORY

Battlement Zone

The first description of the Battlement zone was by Van Damme and Mosher (1994), based on work carried out for Kenrich in 1993. Exploration work on the Battlement zone in 1993 included establishment of a rough-flagged grid with lines spaced 200m apart, mapping, soil geochemistry and excavation of two small hand-dug trenches. Additional soil sampling was carried out in 1995 (Bridge et al., 1996). A total of 368 samples have been collected on the Battlement grid.

In 1997, **Homestake** added 16 km of grid lines at 500m spacing to the west of the 1993 and 1995 grid (Moors et al., 1998). No soil sampling was carried out on this grid but 139 whole rock samples were collected over the entire grid.

Bench Zone

The first recorded work on the Bench zone was a stream sediment sampling program carried out by **Placer Dome** in 1991 (Brownlee, 1992). Bulk stream sediment samples in the area returned Au analyses up to 215 ppb Au and 2.4 ppm Ag. Pegg (1993) noted that previous work by Placer and Kenrich showed scattered anomalous Au, Ag, As, Mo, Pb, Zn and Cd in stream sediments from creeks draining the Bench zone.

Follow up work was carried out by Kenrich and Ambergate in 1993 when 10,575m of rough-flagged grid was established in the general area (Pegg, 1993). The grid was mapped at 1:5,000 and soil samples were collected at 25m intervals, with some infill at 12.5m intervals where anomalies were encountered. Five hand-dug and blasted trenches were excavated and a limited VLF-EM and ground magnetic survey was carried out. In 1994, Kenrich established an additional 1,200m of grid for an IP, VLF-EM and ground magnetic survey (Chapman, 1995). Work on the Bench zone in 1995 consisted of collecting 376 soil samples at 25m intervals on chain and compass lines spaced 100m apart, in addition to reconnaissance geologic mapping (Bridge et al., 1996). In 1996, Kenrich carried out detailed mapping, collected 105 rock

samples, and drilled nine diamond drill holes totaling 1,383.64m (Kowalchuk et al., 1997).

During 1997, **Homestake** carried out check mapping of surface exposures and relogging of drill core for the Bench zone (Moors and Taylor, 1998). Analytical work was carried out on 54 rock samples from the Bench zone as well as 20 samples from existing drill core. Homestake also drilled one diamond drill hole to a depth of 780.18m. No further work has been done on the Bench zone since 1997.

Cumberland

The Cumberland area was first staked in 1898 and limited work was carried out by the **Unuk River Mining and Dredging Company** between 1900 and 1903 (Horne, 1988). During that time, minor underground development was carried out on the Cumberland (Star) and Daly prospects (Pegg, 1993). Little subsequent work was carried out on the prospect until 1987 when **Bighorn Development Corp.** included the Cumberland prospect within a large claim block. Work in 1987 by Bighorn included mapping, 49m of trenching and six diamond drill holes totaling 590m in the area of the original Cumberland prospect (drill holes BH-1 through BH-6).

By 1990, **Kenrich Mining Corporation** and **Ambergate Explorations Ltd.** acquired the current claim block. During 1991 and 1992, **Placer Dome** carried out some detailed mapping, soil sampling and ground geophysics over the Cumberland prospect as part of a broader evaluation of the Kenrich/Ambergate holdings (Bridge et al., 1996; Bridge, 1996b; Kowalchuk, 2003). Kenrich and Ambergate carried out limited soil sampling and mapping in 1993 (Van Damme and Mosher, 1994). In 1994, Canamera Geological Ltd. carried out a brief field examination and sampling program on behalf of Kenrich (Bridge, 1996b).

In 1996, Kenrich expanded on the Placer Dome work by establishing 5,915m of cut grid and carrying out detailed mapping. Additionally, three trenches totaling 23m were excavated. Five diamond drill holes totaling 634m were completed, and drill holes CBL96-1, -2 and -3 tested trench anomalies near the Daly prospect, located about 0.5 km south of the Cumberland prospect. Drill holes CBL96-4 and -5 tested continuity of the mineralization at the Cumberland prospect (Kowalchuk et al., 1997).

During the 1997 field season, **Homestake Canada** on behalf of Prime Exploration cut 15.6 km of grid at the Cumberland prospect (Moors and Taylor, 1998). Mapping, rock and soil sampling and whole rock geochemistry were carried out over the grid. In 1998, **Homestake Canada** tested soil sample anomalies in the southern portion of the Cumberland grid with four diamond drill holes (PRU-98-1 through PRU-98-4) totaling 1,262m.

C-10 Zone

The first recorded work done on the C-10 showing was carried out by **Bighorn Development Corp**. in 1987 (Kruchkowski, 1987), when six rock samples and one silt sample were collected from the area. The best values recorded in this work were 0.278 ounces per ton Au and 3.38 ounces per ton Ag. Further work by Bighorn in 1988 consisted of construction of a grid and collection of 40 additional rock samples

(Kruchkowski and Sinden, 1988). Limited silt sampling was also carried out at this time and further served to highlight the anomalous character of the C-10 area. Later in the 1988 field season, Bighorn drilled six short diamond drill holes at the C-10 prospect (Konkin, 1989b). Minor additional rock sampling was carried out by Kenrich in 1994 (Van Damme and Mosher, 1994). No recorded work has been carried out since that time.

HSOV Showing

The first recorded work on the HSOV showing was grid establishment, mapping, rock chip and whole rock sampling, and soil sampling carried out by Kenrich between 1996 and 1998 (Kowalchuk and Sigurgeirson, 1999). A VLF-EM and ground magnetic survey was also carried out on the HSOV grid in 1998. The HSOV showing is located on the Corey 8 claim, which is valid until 6-25-2004. The northern portion of the HSOV grid extends to the north onto ground not controlled by Kenrich.

GFJ Showing

The first recorded work on the GFJ showing was in 1993 when Van Damme and Mosher (1994) described the results of a reconnaissance sampling program. More extensive work was carried out in 1993 when a grid was established and the showing was mapped and sampled (Bridge et al., 1996). Bridge et al. noted that Placer Dome previously discovered that high-grade float in the area, presumably in 1992. No work has been carried out on the GFJ showing since 1996.

WORK ACCOMPLISHED TO DATE

Subsequent to the preparatory work and report, Cambria Geosciences Inc. ("Cambria") and its related company, Tecucomp Geological Inc. were retained to supervise and conduct a field exploration program, commencing in early July 2004. Paul McGuigan, P. Geo., the principal of Cambria directed the program. Sean McKinley, M.Sc., P. Geo supervised field operations. Major contributors to the field work and interpretation were Chris Sebert, M.Sc., P. Eng., Dr. Stephen Tennant, Ph.D. and Helgi Sigurgeirson, P. Geo. Discovery Consultants, of Vernon, B.C., supervised quality control under the supervision of Wm. Gilmour, P. Geo. Contributing to the interpretation of the lithogeochemistry is Dr. Tim Barrett, PhD, of Markdale, Ontario.

Work was performed from a helicopter-supported camp located at the confluence of the Unuk River and Sulphurets Creek. The field crew was supervised by three geoscientists (Sean McKinley M.Sc., P.Geo. (Project Manager), Chris Sebert, M.A.Sc., P.Geo. and Helgi Sigurgeirson, P.Geo.) and comprised multiple geological teams, three to four sampling teams, diamond drillers, prospectors, linecutters, drill pad builders and camp personnel. A Hughes 500D helicopter supported the camp and was employed to position the crews daily. The camp was rehabilitated and expanded in preparation for drilling operations in 2005. Additional upgrades to the camp in 2006 included a new office, expanded core logging facilities and improved sleeping accommodations. Helicopter usage has averaged 3-5 hours per day for the duration of the program, including periods of mobilization and demobilization.

The Company's ongoing work was designed to trace, and to test at close intervals, the volcanic and sedimentary horizons of the favourable Eskay-rift sequence. Tracing and testing the Eskay-rift sequence is multi-disciplinary, employing the following techniques:

- **1. Geological Mapping and Prospecting** were conducted at the effective mapping scale of 1:2,000 over approximately 10,000 hectares, during 2004 to 2006. A total of 832 rock samples were taken for analysis using ICP-MS geochemical analysis and 81 were taken for fire-assay.
- 2. Chemostratigraphy, Lithogeochemistry, Lead Isotope Determinations and Age Dating surveys were conducted to support the geological mapping. A total of 1992 new lithogeochemical samples were taken (615 drilling, 1377 field), analysed and interpreted. This lithogeochemical dataset partly replaces and augments the 1500 historical lithogeochemical analyses compiled by Cambria in 2003 from publicly available sources in the Eskay region. The entire survey was conducted under quality control procedures.
- 3. **High-Energy Stream Sediment Geochemical Sampling** surveys were employed to characterize all drainages on the Corey property, at close intervals. This allows confident detection of massive, disseminated and vein precious metal and base metal mineralization, beneath a blanket of glacial till and colluvium. A total of 690 sample sites were studied, some with heavy mineral samples. The entire survey was conducted under quality control procedures.
- 4. **Airborne Geophysical (AeroTEM II) Surveying** was conducted by Aeroquest Limited of Markam, Ontario to help interpret geological trends and buried structures, thus enhancing the geological mapping, and to directly target conductive, potentially metalliferous, zones. A total of 1191 line kilometers were flown, covering most of the Corey property at 100m line spacing.
- 5. **Diamond Drilling** was employed to test anomalies and major showings at depth. A total of 108 diamond drill holes were completed, comprising 19,346 metres of core at NQ and BTW core diameters. All core drilling was conducted by Driftwood Diamond Drilling Ltd. of Smithers, BC. Drill programs occurred during the 2005 and 2006 seasons, employing the Driftwood 1000 and 2000 diamond drill rigs. Kenrich conducted a lesser number of short diamond drill holes using its company-owned Gopher ultraportable diamond drill rig. A total of 6563 one-half split core samples were taken for rock geochemilcal analysis by ICP-MS, and an additional 213 fire-assay determinations were made.

The above figures to not include sampling and analyses conducted for quality control.

CHAPTER 2:

GEOLOGICAL SETTING OF THE ESKAY CREEK CAMP

REGIONAL GEOLOGY

The volcano-sedimentary rocks on the Corey property form part of the Lower to Middle Jurassic Hazelton Group, part of the Stikine terrane (see Maps 1 and 2). These rocks are described in detail below.

TRIASSIC STUHINI GROUP (TRS)

The oldest Mesozoic strata in the region are sedimentary and volcaniclastic rocks of the Triassic Stuhini Group. The Stuhini Group consists of a dominantly sedimentary lower division and a dominantly volcanic and volcaniclastic upper division.

Stuhini Group rocks are not widespread at Corey and are only exposed in small areas in the easternmost and westernmost portions of the property. These rocks were not examined during the 2004-06 programs.

LOWER AND MIDDLE JURASSIC HAZELTON GROUP (JRH)

The Hazelton Group in northwestern British Columbia records long-lived arc volcanism and volcanogenic sedimentation in a Lower and Middle Jurassic arc of the Stikine Terrane (Alldrick and Britton, 1991; Anderson, 1993; Marsden and Thorkelson, 1992; Tipper and Richards, 1976). Due to past difficulties correlating these volcanic units and apparent contradictions in age assignments, the simpler three-fold division of the Hazelton Group devised by Lewis (1996), and followed by McGuigan (2002), is used herein. This stratigraphic scheme has proven to be practical over the course of the 2004-06 mapping.

Jack Formation: Lower Hazelton Group sedimentary strata (JrH1)

Basal Hazelton Group strata typically consist of locally fossiliferous conglomerate, sandstone, and siltstone of the Jack Formation. These rocks are well exposed in the upper Unuk River/Sulphurets area along both limbs of the McTagg anticlinorium and have been traced at least as far south as the Frank Mackie icefield. The most complete and best exposed sections are located in alpine areas north and south of John Peaks and along the west side of the Jack Glacier, where the unit overlies Stuhini Group strata along an angular unconformity. This unit has only very limited exposure on the Corey Property, namely in the northeastern portion of the claim block on the south flank of John Peaks. A conglomerate from the Jack Formation containing decimeter-scale well-rounded granitoid clasts was observed during a geological reconnaissance traverse in that area at the beginning of the 2004 program but was not mapped in detail.

Betty Creek Formation: Intermediate composition volcanic and volcaniclastic strata (JrH2, JrH3, JrH4)

Lower Jurassic volcanic and volcaniclastic strata have been problematic for workers in the Iskut River area, and stratigraphic nomenclature has been unevenly applied. We assign the entire volcanic and volcaniclastic package from the Jack Formation, to a distinct shift to bimodal volcanism in the lower Middle Jurassic, to the Betty Creek Formation intermediate composition volcanic/volcaniclastic sequence. This unit encompasses most of the rocks previously assigned to the Betty Creek and Unuk River Formations, as well as some rocks previously assigned to the Mount Dilworth Formation. Within the Betty Creek Formation, three members are defined:

- 1. the Unuk River member (JrH2) comprises and esitic composition volcanic and volcaniclastic strata;
- the Brucejack Lake member (JrH3) consists of intermediate (mostly dacitic) to felsic flows, breccias and volcaniclastic rocks which stratigraphically succeed and may be in part laterally equivalent to parts of the Unuk River member; and
- 3. the Treaty Ridge member (JrH4) consists of marine sedimentary rocks overlying the Unuk River and Brucejack Lake members.

Previous work on the Corey Property, including that of the MDRU in to 1990s, had identified a relatively thick section of Betty Creek Formation rocks on the eastern and western flanks of Mount Madge. Geological mapping in 2004-06, which was corroborated by lithogeochemical data, confirmed the presence of andesitic rocks of the Betty Creek Formation in these areas, but demonstrated that they were much more limited in extent than previously interpreted. On the western flank of Mt. Madge, the andesitic rocks, likely part of the Unuk River Member (JrH2), are limited on their western side by an inferred east-dipping thrust fault which places them in contact with a repeated section of younger Salmon River Formation rocks. On the eastern flank of Mt. Madge, in the vicinity of the C10 Zone, rocks that had previously been identified as Betty Creek Formation have been reinterpreted after recent mapping and lithogeochemical interpretation as part of the Salmon River Formation. No Betty Creek Formation rocks were <u>confirmed</u> on the eastern flank of Mt. Madge during the 2004-06 programs.

In general, results of geological mapping suggest that the dominant lithologies of the Betty Creek Formation present on the Corey Property are massive to feldspar-phyric andesite flows, breccias and volcaniclastic rocks of the Unuk River Member (JrH2). Current geological observations suggest that felsic volcanics of the Brucejack Lake Member (JrH3) may be largely absent on the Corey Property, at least as a clearly distinguishable stratigraphic unit. Rhyolitic units mapped in the South Unuk area on the lower western slopes of Mount Madge may fall into this

Salmon River Formation (JrH5): Bimodal volcanic unit

The upper part of the Hazelton Group in the Eskay Creek area comprises dacitic to rhyolitic flows and tuffs, localized interlayered basaltic flows, and intercalated volcaniclastic intervals. This part of the Hazelton Group has attracted the attention of explorationists due to its association with mineralization at Eskay Creek, but at the same time its distribution, internal stratigraphy, and age has often been misunderstood. Previous workers have mapped felsic volcanic components as the Mount Dilworth Formation, and mafic volcanic components as a distinct facies of the Salmon River Formation. However, recent work demonstrates that more than one felsic interval exists in the unit, and that mafic volcanic rocks occur both above and below these felsic intervals. As such, the term Mount Dilworth Formation is not used herein. Most recently, the Salmon River Formation has been divided into three members: the felsic volcanic-dominated Bruce Glacier Member (JrH5F), the

sedimentary Troy Ridge Member (JrH5S) and the mafic volcanics of the John Peaks Member (JrH5M). An additional felsic member, the Eskay Rhyolite (JrH5S), has also been identified, but it is generally directly spatially associated with the Eskay Deposit itself and is likely a sub-member of the Bruce Glacier Member.

Bruce Glacier Member (JrH5F): Felsic volcanic rocks are ubiquitous in the Salmon River Formation in the Eskay Creek area. Two felsic members are recognized. Most widespread in its distribution is the Bruce Glacier member, which ranges from a few tens of metres to a few hundred metres in thickness. Lithofacies within the Bruce Glacier member are highly variable both regionally and vertically in a given section. Rocks located proximal to extrusive centres include banded flows, massive domes with carapace breccias, autoclastic megabreccias, and block tuffs. Variably welded lapilli to ash tuffs characterize more distal equivalents. Reworked tuffs locally form thick epiclastic accumulations and may infill paleobasins adjacent to extrusive centres.

Felsic volcanic rocks attributed to the Bruce Glacier Member have been identified by past exploration programs throughout the Corey Property. The presence of these units was confirmed during the 2004 program and additional, new occurrences of felsic rocks were identified. On the Cumberland grid, geological mapping and lithogeochemical sampling identified numerous discrete occurrences of rhyolitic rocks along a roughly north-south trending belt that can be traced for a strike length of about one kilometre. The rhyolites occur as massive flows and flow breccias that often display distinctive flow banding, as well as volcaniclastic units (tuffs and lapilli tuffs). They are generally pale grey to bleached white in colour and have been moderately to strongly silicified. The felsic rocks are often spatially closely associated or interlayered with carbonaceous, fine grained sedimentary strata (JrH5S; see below).

On the south flank of Mount Madge some previously unidentified bodies of banded rhyolite were discovered in 2004. As in the Cumberland grid area, these felsic rocks are spatially associated with mudstones. However, these occurrences are within the main mass of mostly stratigraphically higher mafic volcanics (JrH5M; see below). This does not preclude the felsic rocks as being part of the Bruce Glacier Member; it simply implies that each of the JrH5 units do not occupy discrete, separate stratigraphic positions, but are instead at least partially interlayered. The discovery of these felsic volcanic rocks is important as it demonstrates that the JrH5F (and JrH5S) rocks 'wrap around' the south side of Mt. Madge suggesting the presence of a possibly overturned synclinal structure there.

Eskay Rhyolite (JrH5R) Within and adjacent to the Eskay Creek deposit, a rhyolite with anomalously low titanium content has been separated as a distinct member of the Salmon River Formation, termed the **Eskay Rhyolite**. Early work concluded the member was distinct from the Bruce Glacier member, however, the whole rock lithogeochemistry is similar to those parts of Bruce Glacier member that are proximal to the deposit. While some of the felsic rocks examined in 2004-06 have similar characteristics to the Eskay Rhyolite (e.g. some of the Battlement area rhyolites), more work will have to be conducted to determine if they form a distinct, mappable unit at Corey separate from the JrH5F rocks.

Troy Ridge Member (JrH5S): Lithotypes present in this member include thinlybedded carbonaceous mudstone, and interbedded turbiditic siltstone/argillite and tuff forming distinctive black and white striped strata ("pajama beds"). These units appear to be relatively abundant on the western flanks of Mount Madge. They commonly form metre to decimeter-scale interbedded with mafic volcanics and, to a lesser extent, felsic volcanics. However, past mapping by Homestake, and confirmed by mapping by Kenrich, has revealed a thick sequence of these sedimentary units, often including the distinctive 'pajama beds' in the Cumberland-South Unuk area. Here, the sedimentary strata often reach thicknesses in excess of 100 metres. It is this sequence that appears to be the source of numerous polymetallic stream sediment anomalies discussed in more detail below. This is a key unit in the sequence as it likely marks a hiatus, at least locally, in volcanic activity, thus providing an excellent potential environment for Eskay-style massive sulphide formation.

John Peaks member (JrH5M): Mafic components of the Salmon River Formation are assigned to the John Peaks member. They generally occur above the felsic volcanic rocks, but at Treaty Creek northeast of Corey thick sections of mafic flows and breccias lie below felsic welded tuffs. These tuffs are correlated with the Bruce Glacier member; as discussed above this also appears to be the case at Corey, particularly in the Cumberland-South Unuk areas. The John Peaks Member on the Corey Property comprises one of the thickest such sections in the region. Textures present include massive flows, pillowed flows, broken pillow breccias, and volcanic breccias. At the Corey property, similar to Treaty Creek, Bruce Glacier member felsic units and John Peaks member basalts occur at a several horizons.

Since the John Peaks Member is generally considered to lie immediately stratigraphically above 'Eskay time', only the lower contact and underlying strata were targeted for geological mapping in 2004. Hence, a detailed internal stratigraphy for the mafic sequence has not yet been delineated.

MIDDLE JURASSIC BOWSER LAKE GROUP (JRB)

The cessation of Hazelton Group volcanism in the early Middle Jurassic marks an abrupt shift to siliciclastic sedimentation of the Bowser Lake Group. Bowser Lake Group rocks are widely exposed over a broad region of the northern Cordillera, and concordantly overlap Hazelton Group strata along the northeastern edge of the Eskay Creek project area. They consist primarily of monotonous interstratified thin- to thick-bedded shale, siltstone, wacke, and conglomerate, with the notable absence of a volcanic component. Lowest parts of the sequence contain fossils indicating a Bajocian age, implying little or no gap in deposition from the uppermost Hazelton Group.

Bowser Group rocks are not widespread on the Corey Property. Past mapping by the MDRU has shown several thrust fault-bounded, north-south trending 'slivers' of Bowser sedimentary rocks extending onto the northeastern part of the property. Another larger area of sedimentary rocks exists south of Mt. Madge on the flanks of Unuk Finger.

INTRUSIONS

Mesozoic intrusive activity in the Stewart-Iskut region occurred in two major interval: a Late Triassic pulse and an extended period of Early to Middle Jurassic plutonism. MacDonald et al. (1996) propose three major temporal suites of plutonism:

- 1. Late Triassic (228-221 Ma) Stikine Plutonic Suite related to the building of a Late Triassic volcanic arc.
- 2. Early Jurassic (195-190 Ma) Texas Creek Plutonic Suite related to an Early Jurassic volcanic arc that was coeval to the Betty Creek Formation volcanic rocks.
- 3. Early to Middle Jurassic (180-170 Ma) intrusions that are related to the upper division of the Hazelton Group, the Salmon River Formation. Further west and north, intrusions of the Three Sisters plutonic suite are possibly correlative.

In the area of the Eskay mine, and on parts of the Kenrich claims, mafic dikes and felsic intrusions that are controlled by syn-mineralization faulting are classified with the latest pulse of magmatism. Other intrusions, such as alkali feldspar-plagioclase-hornblende porphyry (JrP) that are hosted by Betty Creek Formation rocks, are likely related to either the latest pulses of Betty Creek volcanism or to Salmon River volcanism, on the basis of intrusive relationships and composition.

The Eskay Porphyry, which is located proximal to the footwall of the 21 Zone at the Eskay mine, is a grey-green plagioclase±K-feldspar±hornblendebiotite porphyry. It is a hypabyssal stock of dacitic to granitic composition and is correlative with Early Jurassic magmatism (186.2 Ma, U-Pb (zircon) age, MacDonald, 1992).

STRUCTURAL GEOLOGY

The present distribution of rocks in the Eskay Creek area has been influenced by at least two Mesozoic to Cenozoic deformation events.

Early to Middle Jurassic Deformation

There are several lines of evidence that suggest there was a deformation event that was synchronous with deposition of the Hazelton Group. Certain faults that have been mapped in the region appear to separate blocks of differing volcanic successions. Furthermore, some of these faults have clearly juxtapose successions of Hazelton Group rocks of differing thicknesses, but do not appear to significantly offset the overlying Bowser Lake Group sedimentary succession. These types of structures are interpreted to be synvolcanic (growth) faults and likely were not active past the last deposition of Hazelton rocks.

The Harrymel Fault is a major brittle structure exposed along the western edge of the project area and is interpreted to grade southward into a broad ductile shear zone referred to as the South Unuk Shear Zone. Kinematic indicators are well exposed in both the brittle and ductile portions of this structure, and consistently show dominantly strike-slip movement with a sinistral sense. U-Pb dating of syntectonic intrusions in the ductile portion of the shear zone indicates that the structure was active in the Middle Jurassic (Lewis, 1996), roughly coincident with or just following cessation of Hazelton Group volcanism.

Cretaceous Contractional Deformation

The Eskay Creek area lies between two regional contractional orogens that were active during Cretaceous time: an extensive westerly-directed system of thrust faulting as along the western side of the Coast Belt, and the east-northeasterly directed Skeena Fold and Thrust Belt (SFTB) of the Bowser Basin (Evenchick, 1991). The dominant structures in the project area that relate to these events are major folds and thrust faults.

Contractional structures show a transition from broad open folds in the northern part of the project area to tight folds and thrust faults in the south. In the north, in the vicinity of the Eskay deposit, thrust faults are rare to non-existent. The distribution of stratigraphic units outlines four major folds; from east to west these are the McTagg anticlinorium, the Unuk River syncline, the Eskay anticline, and the Prout Plateau syncline. Fold scale and geometry varies with stratigraphic level, reflecting the different scale of stratification within the Mesozoic sequence. The well-stratified rocks of the Bowser Lake Group contain abundant open to tight upright folds that are parasitic to major folds while the thicker Hazelton Group rock packages, perhaps with the exception of the interlayered sedimentary members, mainly lack these second order folds.

In the area that lies north of the Corey property and includes parts of the property itself, the Mesozoic section has accommodated significantly greater amounts of shortening than the rocks further to the north. A series of imbricate thrusts are exposed in the Unuk Valley and the John Peaks-Mount Madge areas. Thrust slices contain locally inverted stratigraphic sections of Hazelton Group rocks.

The widespread development and intensity of the Cretaceous contractional deformation event overprints and obscures earlier-formed structures, and likely reactivated any favourably-oriented pre-existing faults. Both the orientations and relative positions of faults that were active synchronous with Hazelton Group volcanism were strongly modified.

DEPOSIT TYPES & ADJACENT PROPERTIES

Exploration of the Corey property must be designed to accommodate a wide range of deposit types, in several contrasting combinations of geological settings. Most mineral camps in the Canadian cordillera have poor representation of the range of mineralization types related to arc assemblages. Characteristically, porphyry Cu and Au deposits form in the root zones and high- and low-sulfidation epithermal Au (-Ag) deposits form near the flanks and tops of andesitic stratovolcanoes. Typically, higher levels of the stratovolcanoes are lost during later erosion.

In the Stewart-Iskut region, formation of Early to Middle Jurassic mineral deposits was closely followed by downwarping and the deposition of Bowser Lake Group, which preserved the mineralized arc and rift sequences. Cretaceous thrust faulting stacked older strata upon the favourable sequences preserving the strata during Tertiary uplift and erosion.

The three-fold stratigraphic division of the Hazelton Group utilized in the MDRU work (Lewis, 1996), and in this report, reflects major shifts in arc-related magmatism and sedimentation. As discussed in the previous section on Geological Setting, the divisions are, from lowest to highest:

- 1. Jack Formation, Lower Jurassic: basal, coarse to fine grained, locally fossiliferous siliciclastic rocks,
- 2. **Betty Creek Formation, Lower Jurassic:** porphyritic andesitic composition flows, breccias, and related epiclastic rocks; dacitic to rhyolitic flows and tuffs; and locally fossiliferous marine sandstone, mudstone, and conglomerate,
- 3. **Salmon River Formation, Lower to Middle Jurassic:** bimodal subaerial to submarine volcanic rocks and intercalated mudstone.

Betty Creek Formation and its contemporaneous Early Jurassic (195–180 Ma) Texas Creek plutonic suite are part of a widespread volcanic arc. Mineral deposits were formed related to large stratovolcanoes and within their intrusive roots. Mineralization and alteration are widespread. Deposit types found in the region include porphyry (Cu, Cu-Au), intrusion-related Au (Cu) veins and both high-sulfidation and low-sulfidation epithermal Au-Ag.

Onset of the deposition of Salmon River Formation strata marks a shift in the character of Hazelton volcanism. The strata were emplaced in a structural environment marked by extension and rifting. Mineral deposits were likely formed related to submarine bimodal felsic and mafic volcanism formed in intra-arc to back-arc settings during the dismemberment of the older Early Jurassic arc. Extensional fault structures became the site of high-level intrusion, brecciation, mineralization and alteration. Salmon River Formation strata and contemporaneous intrusions host a wide range of deposit types, including intrusion-related Au veins; high- and low-sulfidation epithermal Au-Ag; Besshi- and Cyprus-type volcanogenic massive sulfide deposits; and Eskay Creek-type massive sulfide and stratabound deposits.

Recently modified classification schemes for mineral deposits now accommodate exceptionally gold-rich volcanogenic massive sulfide deposits. Under a scheme described by Sillitoe et al. (1996) and Hannington (2001), massive sulfide deposits are subdivided into two broad classes of low sulfidation and high sulfidation. Most VMS deposits are classed as low sulfidation. Some gold-rich VMS deposits contain an overprinting of epithermal-style high sulfidation alteration and mineralization, termed high sulfidation massive sulfides.

PORPHYRY CU AND CU-AU AND TRANSITIONAL DEPOSITS

The Kerr, Sulphurets and Bruceside properties are located adjacent to the eastern boundary of the Corey Property. Tonnage and grade figures are compiled from sources believed to be reliable, but have not been reported under the currently required national standards. The reserves and resources cited are for general geological reference only and cannot be relied upon.

The deposits demonstrate a special relationship between porphyry copper-gold and peripheral epithermal gold styles of mineralization. Characteristics of individual occurrences in the Kerr-Sulphurets Camp are not clearly of a single deposit type and are commonly transitional between magmatic-hydrothermal and epithermal in genesis. The following deposits are described in the camp by Margolis (1996):

- 1. **Kerr** deposit is a poly-deformed, Early Jurassic, copper (-gold) porphyry deposit (BC Geological Survey Branch: Deposit Type L04) hosted in probable Late Triassic Stuhini Group and Early Jurassic Jack Formation. The Kerr contains a drill inferred resource of 140.8 million tons (MT) grading 0.75 per cent copper and 0.36 grams of gold (1.6 million ounces of gold) per ton at a 0.40 per cent copper grade cut-off.
- 2. **Mitchell** Cu-Au (inferred resource of ±200 MT, 0.2% Cu, 0.86 g/t Au), Cu-Au-bearing quartz stockworks, and
- 3. **Snowfield** Au (7.0 MT, 2.57 g/t Au), a transitional magmatic-epithermal deposit formed in porous hydroclastic basalt flows at the outer fringes of the Kerr porphyry system, and
- 4. **Bruceside** (or West Zone or Brucejack) Au-Ag (0.75 MT, 15.4 g/t Au, 648 g/t Ag), a quartz-barite stockwork and vein system, interpreted by the BC Geological Survey as a high sulfidation epithermal deposit.

INTRUSION-RELATED AU (CU) VEINS AND STOCKWORKS.

Intrusion-related gold-bearing pyrrhotite/pyrite veins (BCGS Deposit Profile I02) occur as a series of parallel, tabular to cymoid veins of massive iron and copper sulfides. In the Stewart-Iskut region, they are generally emplaced around the margins of syn-volcanic Texas Creek plutons, commonly in en echelon fracture sets. Examples include Snip, Johnny Mountain and Scottie Gold deposits, all past producers of the last decade. Poorly mineralized veins of the same association occur peripheral to the Texas Creek stock near the Silbak-Premier mine. Previously, these vein systems have been interpreted as mesothermal veins.

The **Snip-Johnny Mountain Camp** is located in the Iskut River approximately 50 km west of Eskay Creek and contains gold mineralization in dilatent veins and shear

zones. Geological relationships indicate that mineralization and shear zone movement was broadly synchronous with intrusion of nearby Early Jurassic porphyry bodies (Rhys, 1993), including the Red Bluff porphyry [U-Pb zircon = 195 +/- 1 Ma, (Macdonald, 1992b)]. The **Scottie Gold deposit** is located in the Stewart camp about 50 km south west of Eskay Creek. The deposit is peripheral to the Early Jurassic Summit Lake stock. Tonnage and grade figures are compiled from sources believed to be reliable, but have not been reported under the currently required national standards. The reserves and resources cited are for general geological reference only. Reserves and production were as follows:

- 1. **Snip Mine** opened in 1991 with reserves of 960 000 tons of 28.5 g/t Au from a shear-hosted gold vein. The Snip mine is an intrusion-related, shear-hosted vein deposit. Between 1991 and 1998, it produced 31,700 kg (1.02 million oz) of gold from 1 243 600 tons of ore milled. The deposit was mined out and closed in the spring of 1999, and
- 2. **Johnny Mountain Mine (Stonehouse)** (1988 to 1991) produced 207 000 tons grading 14.1 g/t from a stockwork deposit, and
- 3. **Scottie Gold Mine** (1981-1984) produced 160 264 tons at 18.6 g/ t Au and 10.1 g/ t Ag from a shear-hosted gold vein.

These are moderately attractive exploration targets because of their high grades, ease of mining, relative ease of exploration and close associations with other important mineral deposit types. Veins are typically composed of massive pyrrhotite and/or pyrite and chalcopyrite, variable but generally minor quartz, chlorite, calcite and biotite and minor to accessory disseminations, knots and crystal aggregates of sulfides. Gold and copper are the primary commodities, but concentrations of Pb, Zn, Ag, Mo and Bi also occur.

LOW- SULFIDATION EPITHERMAL AU (AG) DEPOSITS

The BC Geological Survey Branch classifies the **Silbak Premier** deposit, located 30 km northwest of Stewart, as a low sulfidation epithermal type or transitional type Au-Ag deposit. Combined production from the deposits on the site, from 1918 to 1996, totaled 5.88 MT at 10.6 g/t Au and 227 g/t Ag.

The deposit is hosted by Jack Formation sediments and Betty Creek Formation andesite flows, tuffs and breccias. The main Texas Creek stock (205 Ma) crops out 2 km west of the mine. Mineralization is closely associated with altered Premier Porphyry dykes and sills (195 Ma). Shear-hosted, en echelon sets of quartzcarbonate-chlorite-k-feldspar veins are best developed at the faulted margins of brittle Premier porphyry dykes. Ore minerals include pyrite, sphalerite and galena with minor tetrahedrite, chalcopyrite, arsenopyrite and local pyrrhotite. Bonanza ore contains native gold, electrum, pyrargyrite, polybasite, argentite and native silver.

The genesis of the Premier deposit is closely linked to structures and intrusions related to the Texas Creek and peripheral Premier porphyry dykes. Early, extensive hydrothermal breccias with intense chlorite-pyrite-(quartz-carbonate) alteration and veining are cut by Premier porphyry dykes, which in turn have been faulted, brecciated and altered. Bonanza grade deposits are later than the intrusion of Premier porphyry.
VOLCANOGENIC MASSIVE SULFIDES, (BESSHI- / CYPRUS-TYPE)

Economic Besshi and Cyprus type volcanogenic massive sulfides are not represented in the Lower to Middle Jurassic Hazelton Group of the Stewart – Iskut area. However, the nearby **Anyox Camp**, located southeast of Stewart near Observatory Inlet, contains the **Hidden Creek**, **Bonanza** and other deposits, hosted by submarine basalts correlative with Salmon River Formation. Cyprus-type VMS copper deposits and altered footwall volcanics occur at the upper contact of basalts with marine sediments that are mapped as Bowser Lake Group.

The Anyox mines were collectively a major copper producer between 1914 and 1936. Production totaled 19.1 MT at 1.68% Cu, 0.20 g/t Au and 10.8 g/t Ag.

The Anyox deposit consists of eight distinct massive sulfide bodies, numbered 1 to 8, and a quartz vein stockwork containing disseminated sulfides. The underlying volcanics consist of tholeiitic pillow basalts and basaltic tuffs, with the frequency of tuff lenses and layers increasing upwards through the sequence. Chloritization, quartz veining and sulfide impregnation also increase upwards. A chert horizon overlies the volcanics and massive sulfides, followed by a turbidite sequence of quartzofeldspathic silt and argillite.

ESKAY CREEK-TYPE STRATABOUND MASSIVE SULFIDE – AU– AG.

The **Eskay Creek Mine** lies 80 km north of Stewart, and 10 km from the northern border of the Corey property. The mine property includes several deposits of polymetallic sulfide and sulfosalt mineralization as volcanogenic and replacement massive sulfide and debris flow breccias plus discordant veins and stockworks. By the end of 2002, the mine had produced 70.9 tonnes of gold and 3,275.8 tonnes of silver from 1,208,017 tonnes of ore (2,279,743 million ounces gold and 105,318,415 ounces silver from 1,414,987 tons of ore). Proven and probable reserves at the end of 2002 were estimated at 1.30 million tonnes grading 34.4 g/t gold (1.43 million tons grading 1.00 ounces per ton gold). The deposit also contains approximately 3.2 percent Pb, 5.2 percent Zn, and 0.7 percent Cu. It is the fifth largest silver producer in the world.

The Eskay Creek deposits are examples of shallow subaqueous hot spring deposits (Barrett and Sherlock, 1996; Lefebure et al., 1995; MacDonald et al., 1996), an important new class of submarine mineral deposits that has only recently been recognized in modern geological environments (Hannington, 1998; Poulsen and Hannington, 1996). They are relatively under explored and poorly recognized within the geological record. The deposit type is transitional between subaerial hot spring Au-Ag deposits and deeper water, volcanogenic massive sulfide exhalites (Kuroko or Besshi types) and shares mineralogical, geochemical and other characteristics of both.

DEPOSIT TARGETS ON THE COREY PROPERTY

The exceptional gold and silver grades of the Eskay Creek deposit support a strong emphasis on Eskay style massive sulphide, replacement and footwall stockwork orebodies, All data from the Corey has been reviewed and new work recommended on the basis of the setting and deposit characteristics of the Eskay deposits. Special emphasis is warranted on the following target types:

- 1. Eskay volcanogenic massive sulphides in mudstones and felsic Salmon River formation.
- 2. Footwall style quartz-sericite-pyrite-base metal sulphide stockwork zones with gold and silver, as a target in itself, and as a pathfinder to Eskay-style stratabound mineralization.
- 3. High sulphidation VMS, as they are transitional to Eskay style deposits.
- 4. Intrusion-related (Snip) style mineralization is not targeted, lacking the geological environment.
- 5. Low suphidation veins and stockworks are not targeted, lacking evidence on the property.

BACKGROUND – ESKAY CREEK CAMP

ESKAY CREEK MINE – BARRICK GOLD CORP.

The **Eskay Creek Mine** operated by Barrick Gold is located in northwestern British Columbia, 75 km northwest of Stewart, B.C. The property is accessed from Highway 37 and the nearby Eskay Creek Mine road (Figure 1). The Eskay property is 10 km from the northern border of the Corey property of Kenrich.

The mine property contains several deposits of gold- and silver-rich polymetallic sulphide and sulfosalt mineralization as volcanogenic and replacement massive sulphide, debris flow breccias, and discordant veins and stockworks.

The exceptional grade of the deposit is demonstrated by the following:

- 1. **Production:** By the end of 2003, the mine had produced 2,631,813 ounces gold and 122,318,415 ounces silver from 1.66 million tons of ore. In that year, the mine produced 352,070 ounces of gold and 17.0 million ounces of silver. In 2006, Eskay Creek produced 113,000 ounces of gold as lower availability of high-grade direct-to-smelter ore resulted in the mining of lower-grade ore tons. This, in turn, has lead to lower gold production in 2007 as the mine nears the end of its life in 2008.
- 2. **Reserves:** Proven and probable reserves at the end of 2005 were estimated at 286,000 tons grading 0.81 ounces/ton gold (Barrick Gold Corp. Annual Report 2005). An additional mineral resource contains 676,000 tons grading 0.315 ounces/ton gold. The deposit also contains approximately 3.2 percent lead, 5.2 percent zinc, and 0.7 percent copper.
- 3. **Ranking:** It is the fifth largest silver producer in the world and the second-richest producing gold mine in Canada.
- 4. **Low Cost Production:** Total cash cost per ounce of gold equivalent was below \$50 for most of the mine life. Costs in 2005 were approximately \$49 US per ounce.

The Eskay Creek deposits are examples of shallow subaqueous hot spring deposits, an important new class of submarine mineral deposits that has only recently been recognized in modern geological environments. They are relatively under explored and poorly recognized within the geological record. The deposit type is transitional between subaerial hot spring Au-Ag deposits and deeper water, volcanogenic massive sulphide exhalites (Kuroko or Besshi types) and shares the mineralogical, geochemical, and other characteristics, of both.

High-grade mineralization in the Eskay Creek was first recognized in the 1930s, but it was not until 1971 that a 1.5-tonne sample of high-grade ore was extracted from the 22 zone, about 2 km southwest of the now prolific 21 zone. In 1979, these trenches were mined to produce 8.7 tonnes of hand-cobbed ore.

Exceptionally gold-rich mineralization was discovered in 1989, when a company promoted by Murray Pezim, Calpine Resources, intersected **208 metres grading 27.2 g/t gold and 30.2 g/t silver** in diamond drill hole 109. The Eskay Creek mine commenced production in 1994. The ore was initially shipped directly to smelters with no milling or concentrating. A mill was established only in 1998.

Most of the initial reserves at Eskay were defined in the 21B zone, which is hosted in Lower to Middle Jurassic volcanic and sedimentary rocks of the Salmon River formation. The zone forms a lens-shaped body measuring 900m by 300m by 20m thick. The mineralization occurs as a stratabound sheet in carbonaceous mudstones of the Contact Mudstone unit and in feeder veins in the underlying Eskay Rhyolite. Based on mineral associations and continuity of grade, the 21 zone has been divided into two deposits: the 21A and the 21B. These deposits are separated by 140 metres of weak mineralization. Diamond drilling has traced the entire zone for 1.4 km along strike and 250 metres downdip over widths of 5-45 metres.

The exploration success continued. In 1995, drilling intersected the NEX and Hangingwall zones. The NEX lies north of the 21B lens, along the same stratigraphic horizon, and consists of mainly massive sphalerite, tetrahedrite, galena and lesser lead-sulphosalts, with late chalcopyrite stringers crosscutting the lens. The Hangingwall zone is stratigraphically above the NEX zone, generally above the first basaltic sill, and dominated by pyrite, sphalerite, galena and chalcopyrite.

In 2002, one of two holes drilled into the historic **22 zone**, 2 kilometres south of the mine, yielded **6.2 grams gold over 80.1 metres, including a higher-grade section running 64.1 grams gold over 4.7 metres.** Mineralization encountered in the 22 zone includes both discordant stockworks and stratiform VMS mineralization similar to 21B zone.

ESKAY RIFT SETTING: THE ESKAY-COREY BELT

Eskay Creek-type mineralization is a stratabound assemblage of volcanogenic massive sulphide mineralization and stockwork vein systems with local high-grade gold-silver replacement mineralization that was deposited in a shallow, sub-aqueous epithermal hot spring environment. This mineralization is closely related to an assemblage of rift-related volcanic and sedimentary rocks and to controlling fault structures that bound and cross-cut the local rift basins. Metallogenic studies by the Mineral Deposit Research Unit (MDRU), and federal and provincial government geological survey branches have determined the Eskay Creek mine sequence is a Lower to Middle Jurassic succession of bi-modal volcanism and clastic sedimentation, termed the Salmon River Formation, a sub-division of the regional Hazelton Group (Figure 5).

Barrett and Sherlock (1996) argue on the basis of lithogeochemistry that the Eskay rhyolite most closely resembles rhyolites erupted at rifted continental margin and are significantly different from the arc related volcanic rocks that compose the rest of the Hazelton Group. The hanging wall basalt unit yields a mainly N-MORB composition. These arguments, together with observed or inferred facies variations in the immediate Eskay Creek area, led Barrett and Sherlock (1996) and Roth (2002) to suggest that the Eskay Creek deposit formed within a roughly north-south trending

zone of localized rifting, either in a back-arc or an inter-arc paleotectonic setting, that represents the terminal stage of magmatism within the Hazelton Group.

Work by Kenrich from 2003-06 has further defined the paleotectonic setting of the Eskay Camp, and the important Eskay rift. In the Technical Report for Kenrich-Eskay by McGuigan et al (2004), that includes contributions by Dr. Tim Barrett, the paleotectonic setting of the Eskay rift is interpreted on a camp scale, using data in the public domain (scientific papers, assessment reports and MDRU compilations) and data in the private files of Kenrich-Eskay. Distinctive volcanics and sediments define an **Eskay-Corey belt** that contains all the best Eskay-type deposits and significant discoveries in the Eskay region. **The Corey Property spans the southern portion of this trend and contains mineralization directly analogous to the Eskay deposits.**

Interpretations presented in the Technical Report (McGuigan, et al 2004), regional geological mapping by the MDRU, B.C. Geological Survey and the Geological Survey of Canada led to the following conclusions on the geological setting of the Eskay Creek and other deposits of the belt:

- 1. **Hazelton Group**: The Lower to Middle Jurassic volcanic and sedimentary succession is most effectively sub-divided into the Jack, Betty Creek and Salmon River Formations.
- 2. **Salmon River Formation**: marks a change in volcanism to a bi-modal extrusive suite, with volcanic signatures ranging from arc to oceanic / backarc settings. At Eskay Creek, the suite contains sub-aqueous rhyolite and basalt volcanism and intercalated sediments. Salmon River Formation marks a transition from predominantly calc-alkaline arc volcanism of Betty Creek Formation to a transitional to tholeiitic rift and/or back-arc tectonic setting.
- 3. **Sub-volcanic felsic intrusions** (180-170 Ma): are contemporaneous with Salmon River Formation and, in part, occupy syn-mineralization faults, such as the Harrymel-South Unuk fault. Those same faults are mineralized and could represent hydrothermal feeders for syngenetic mineralization and later stratabound replacement mineralization.
- 4. **Complex Mineralogy:** Contrasting styles of alteration and mineralization in the Eskay Creek deposits indicate that early syngenetic mineralization has been overprinted by a stage of mineralization that was high in gold and characterized by hydrothermal brecciation and replacement.
- 5. **Host Rocks:** Tholeiitic and transitional rhyolites, tholeiitic basalt and carbonaceous mudstones. Most of the ore grade deposits formed with the "contact mudstone" that lies on the rhyolite and within small basinal depressions. The hanging wall is comprised of basalt flows, mudstones and basalt sills.
- 6. **Eskay stratabound deposits** are localized over footwall alteration zones and syn-mineralization faults of northwesterly and northerly trends. Footwall stockworks are of mineable grade in several locations proximal to the stratabound deposits. A rake of the 21B orebody is crudely defined by the intersection of the NNE trending syn-mineralization faults and the contact mudstone/rhyolite stratigraphy. That rake follows the trend of the Eskay rift sequence.

- 7. Eskay-Corey belt: The Technical Report by McGuigan et al (2004) for Kenrich concluded that Eskay-type tholeiitic basalts, and a mixed population of rhyolites (ranging from closely analogous to Eskay Rhyolite to some that are calc-alkaline) occur in a linear, north-south trending belt on the Eskay, SIB and Corey properties. Together they form a distinct Eskay rift sequence and with the accompanying faulting and gold, silver and base metal mineralization form the "Eskay-Corey belt".
- 8. Flanking this belt are intermediate rocks that are more calc-alkaline. All significant gold and silver occurrences in the Eskay Camp are located in this belt.

RECENT EXPLORATION SUCCESSES IN THE ESKAY AREA

A focus on integrated exploration is lacking in the Eskay mining camp except over areas within a few kilometers of the Eskay mine itself. Continuing exploration has resulted in the following discoveries in the last five years:

- 1. Extensive drilling in the **22 Zone** area has yielded promising results on the Eskay property. As of 2004, Barrick had planned to extend a ramp into the hanging wall of this zone to stage diamond drilling programs.
- 2. Further south on Prout Plateau, Heritage Exploration has drilled the SIB property, based on a comprehensive synthesis of all historical data, new geological mapping and new stream sediment sampling. In 2002, Heritage intersected the extension of the Lulu Zone on the SIB property. An intersection in diamond drill Hole 2-113 encountered 11.7m of 19.5 g/t Au and 1,602.9 g/t Ag. Extensions to the zone were not found due to a large displacement, east dipping thrust fault that passes close to the surface under the Lulu zone.
- 3. Also on the SIB property, the new **Hexagon zone** was discovered in 2003. Work there was prompted by following anomalies encountered in a highenergy stream sediment program. As follow up, Heritage drilled 8 holes over a strike length of nearly 4 km. The best holes encountered "mineralization hosted in moderate to highly altered and sheared pyritic-sericite rocks, accompanied by variable silicification." The altered sections have estimates up to 10%-15% pyrite content. Gold values of up to 1.51 g/t and silver values of 15.18 g/t were also encountered. The Hexagon zone is interpreted as a mineralized structure related to syn-volcanic faulting bounding the prospective Eskay – Corey Belt. It is in direct line with the bounding faults to the Eskay orebodies, but is cutting rocks deep in the footwall to the Eskay-rift sequence.

CHAPTER 3:

EXPLORATION SURVEYS 2004 TO 2006

GEOLOGICAL MAPPING PROGRAM (2004-06)

INTRODUCTION

Lower to Middle Jurassic Hazelton Group volcanic and sedimentary rocks and Middle Jurassic Bowser Lake Group sediments are the most abundant strata on the Corey property. Mafic to felsic intrusions related spatially and temporally to volcanic rocks of the Betty Creek and Salmon River Formations are loci for alteration and gold mineralization.

Detailed work has established the presence of a sequence of Salmon River Formation rhyolite, felsic breccia, mudstone and basalt correlative with and similar to that at the Eskay Creek mine. This sequence of lithologies is found within the **Virginia Lakes**, **Bench**, **Battlement**, **Cumberland**, **South Unuk**, **Angela Creek**, **C10** and **HSOV** Zones. In addition to these areas of Eskay Creek-type potential, several additional discoveries occur on the Corey property, including the **Tet**, **TM** and **GFJ** Showings.

The conclusion presented herein, and strongly confirmed by the results of the 2004-06 programs is that the **Eskay – Corey belt** bimodal, tholeiitic volcanism represents the center of a north-south trending rift that formed during the deposition of Salmon River Formation rocks. **The trend of the favourable Eskay – Corey volcanic belt encompasses the major areas of felsic and mafic volcanism on the Corey property.**

The section of the favorable volcanics and sediments is **thickest** on the Corey, in comparison to the northern portion of Eskay – Corey belt. Proposed comparisons and correlations between the stratigraphy of the Eskay and Corey properties are presented in Table 2 and Figure 4 and a map of the local geology with significant mineral showings is presented in Figure 5.

Geological mapping in 2004 was focused on the two main areas: the western flank of Mount Madge, namely the Cumberland and South Unuk grids, and the C10 Zone on the eastern flank of Mount Madge. These areas were chosen as they were known to contain some of the best examples of Eskay-equivalent stratigraphy and extensive hydrothermal alteration on the Corey Property. Preliminary geological examinations were carried out in the vicinity of the HSOV Showing east of the C10 Zone and in the Virginia Lake area in the northwest portion of the claim block Mapping was conducted at 1:2000 scale in the field and compiled onto 1:10,000 and 1:20,000 maps. Mapping was complimented by a large program of lithogeochemical sampling (discussed in detail below) which was instrumental in distinguishing between visually similar, but compositionally different volcanic rocks, and thus allowed for an important refining of the Corey stratigraphy. As a result of the 2004 geological mapping, a new stratigraphy has been established for the Corey property and is described below. Mapping in 2005 and 2006 expanded to include the Battlement-Virginia Lake area, the southwestern flanks of John Peaks (now termed the Golfcourse Area) and the eastern portions of the property (including the new Spearhead Showing). More detail was also added to the previous mapping in the Cumberland and South Unuk areas.

In summarizing the rock units, reference is made to the current lithogeochemical assessment, which has been crucial in recognizing chemically separable intrusive and volcanic members in the stratigraphy. A portion of the rocks were defined on the basis of their trace element chemistry, and would have been difficult to define on the basis of field observations alone given the amount of deformation and similarity in mineralogy and major element compositions between many rock units. This work has been detailed in an internal report (Sebert, 2007) and this is summarised in the Lithogeochemistry and Chemostratigraphy section below.

At this point the age and exact stratigraphic location of certain rock units remains unknown or is inexact. The Corey Property is stratigraphically complex. The volcanic stratigraphy is discontinuous and there are abrupt facies changes, with interfingering and repetition of rock types. There are large volumes of volcaniclastic units of somewhat similar texture and bulk composition, but with differing trace element signatures that suggest they originated at different sources. Unconformable contacts between volcanic and sedimentary units are present. Sub-volcanic intrusive rocks, chemically alike to various volcanic rock units occur locally.

In addition to the complex stratigraphy, there is structural complexity. Folding is present in varying styles and there is thrust repetition of the stratigraphy in the eastern section of the property and potentially in the western portion as well.

The section below provides a summary and description of the individual rock units mapped and lists them from older to younger; this also broadly defines the stratigraphy as known to date. The rock units have been labeled according to the regional Hazelton Group Formation alphanumeric codes where possible. A suffix has been added to further subdivide the existing Hazelton Formation codes along chemostratigraphic lines to better delineate between several rock units if they fall under one regional label. A schematic cross section (Figure 6) is provided as a complement to the text summary.

VOLCANIC AND SEDIMENTARY ROCK UNITS

Betty Creek Formation (JrH2-Vm $_{B1}$): Group B1 Calc-Alkaline Mafic Flows, Breccias, and Volcaniclastic Rocks

This rock unit is largely of basaltic andesite composition. Samples of this unit possess lithogeochemical traits that make them distinct from the other B Series calc-alkaline mafic and intermediate rocks mapped at Corey. They display strongly LREE-enriched chemistry similar to that found in high-K calc-alkaline volcanic rocks. Outcrops found to date are nearly all concentrated in a fairly localized section of the Lower Cumberland Area, and the present map interpretation places it in the lower section of the Corey stratigraphy.

Texturally the rocks are typically brecciated to tuffaceous, composed of angular to ragged-looking lava fragments, usually < 3cm across, with minor block-size ones also present. The fragments are amphibole-feldspar porphyritic, partially amygdular, and their matrix appears to have been glassy. Rare lava fragments have tails implying they were bombs. The lava clasts are nearly interlocking in places but generally are supported by a fine-grained feldspar and mafic crystal-bearing ash matrix.

Table 2: Summary table of stratigraphic descriptions of Hazelton Group reference sections in the Eskay Creek area, based on geological mapping completed by MDRU.

		Eskay Creek	Corey Property
<u>Salmon River</u> <u>Formation</u> (includes Troy Ridge, Eskay Rhyolite, John Peaks, and Bruce Glacier members)		John Peaks Member: Interbedded pillowed to massive tholeiitic basalt flows, volcanic breccia, and hyaloclastite; intercalated mudstone and rhyolite layers Eskay Rhyolite Member: Massive, banded, mostly tholeiitic rhyolite flows and flow breccia; some tuffaceous sections Bruce Glacier Member: Vesicular, locally perlitic, dacite flows, welded lapilli to block tuff, lesser argillite. Calc-alkaline affinity	Interbedded pillowed to massive tholeiitic basalt flows, volcanic breccia, and hyaloclastite (JrH5M); intercalated mudstone and rhyolite breccias and lesser volcaniclastic layers (JrH5F); andesitic tuffs and synvolcanic intrusions present at C10 Zone; transitional unit comprising mafic clasts in a argillaceous matrix (JrH5m). Local transitional to tholeiitic composition rhyolites present (JrH5R ?); calc-alkaline rhyolite breccias present may correlate to Bruce Glacier Member (JrH5F). Common thinly-bedded carbonaceous mudstone may correlate with Troy Ridge Member (JrH5S).
	Treaty Ridge Member	Volcaniclastic sandstone, argillite, and conglomerate; local bioclastic sandy limestone intervals	Medium to dark green and locally maroon massive intermediate (andesitic), breccias and volcaniclastic rocks; plag-hbl±px?-phyric volcanic rocks; lesser intercalated mudstone/siltstone; local synvolcanic intrusive rocks present. Rocks are predominantly calc-alkaline in affinity.
<u>Betty</u> <u>Creek</u> <u>Fm.</u>	Brucejack Lake member	Absent	Tuffaceous rocks are moderately foliated, range in grain size from ash to coarse lapilli tuff with local graded beds.
	 Unuk River member	Andesitic tuff, wacke, and debris flow deposits; minor volcaniclastic sandstone and conglomerate.	
Jack Formation		Matrix to clast supported rounded cobble conglomerate w/ inter. comp. volcanic and mudstone clasts grey, thickly-bedded fine grained sandstone/wacke to siltstone with wispy mudstone laminations laminated to medium bedded siliceous mudstone to siltstone coarse-grained, thickly bedded, fossiliferous (bivalves, ammonites) cross-stratified sandstone	(from MDRU descriptions): Thickly-bedded to massive, clast supported, rounded cobble to boulder conglomerate w/ abundant granitoid and lesser mudstone and volcanic (intermediate composition, plagioclase-phyric) clasts; coarse to medium grained sandstone matrix. subangular tuffaceous siltstone fragments similar to subjacent units common at base. thick (20-30 cm) discontinuous coarse grained sandstone layers common



Figure 4. Proposed comparisons and correlation between the stratigraphy of the Eskay and Corey properties.



Figure 5. Simplified regional geology of the Eskay-Corey area



Figure 6. Schematic geology section provides an overview of the Lower to Middle Jurassic-aged Hazelton Group stratigraphy on the Corey Property. The basal conglomerate - Jack Formation – which marks the boundary of the Hazelton Group with the older volcanic and sedimentary rocks of the Triassic-aged Stuhini Group, is not shown. Undifferentiated Hazelton Group rocks are labelled JrH.

Outcrops of flow rocks belonging to this unit display lobate forms, potentially representing poorly formed pillows. Internal lava fingers are present in select outcrops. Volcaniclastic outcrops are composed of massive to weakly bedded, fine to coarse-grained sand-sized lithic and crystal detritus. These clastic rocks are massive or banded and may represent epiclastic tuffs.

Group B1 rocks appear to be limited in spatial occurrence and may have been produced by a different type of magmatism than the other B Series rocks. Presently they are assigned to the Unuk River Member, unit JrH2, of the Betty Creek Formation.

Betty Creek Formation (JrH2-Vi_{B0} and Vi_{B2}): Group B0 and Group B2, B Series Calc-Alkaline Mafic to Andesitic Flows, Breccias, and Volcaniclastic Rocks

This series of calc-alkaline mafic and intermediate rocks is largely clastic, made-up of largely of tuffaceous and epiclastic material. Both basaltic and andesitic constituents are present. Chemically it displays a fair bit of variability, with different intercalated to spatially localized geochemical subtypes being recognized on the basis of differing concentrations of trace elements. Presently recognized chemical subtypes are Group B0 and B2 rocks, which display significant LREE enrichment compared to A Series calc-alkaline rocks. Also there is a higher proportion of intermediate compositions within the B Series; most of the group B2 subtype is of andesitic chemistry.

The minor occurrences of lava rocks observed in this unit are composed of weakly amygdular, weakly pyroxene-amphibole-feldspar porphyritic to fine-grained feldsparrich brecciated flows. Granulated, hyaloclastic breccias were also noted. Examples of massive, sparsely porphyritic flow rocks (or sub-volcanic intrusive rocks) were also described in the Battlement, Virginia Lake, and at lower elevation in the South Unuk Area.

A large portion of this unit is tuffaceous and occurs as an intercalated sequence of lens-like, discontinuous beds. Common lithologies consist of grey to green, massive to banded, weakly bedded crystal tuffs, lithic lapilli tuffs, and local tuff breccia and ash beds. Fragments are fine-grained to porphyritic and vary from rounded to ragged in outline. Most units contain clasts < 5cm across and the volume of fragments is < 10% of the rock. The matrix is invariably fine-grained, but has a cloudy altered, or anhedral texture; most constituent grains are indistinct but scattered feldspar crystals can be recognized.

A portion of this unit is epiclastic occurring as grey, beige, or green, banded to bedded crystal bearing, tuffaceous, volcanic silt and sandstone. The volcanic silt and sandstones form thick, up to 150m thick units in the southern part of the South Unuk Area, and may contain interbedded argillite layers. Individual beds of volcanic sandstone, ranging in thickness from 10 centimeters to about 10 metres thickness, are contained within the sedimentary sequence (JrH4) described. Grading of feldspar crystals, and loading features in certain layers of volcanic sandstone provide indications of stratigraphic tops.

The banding in many of these volcaniclastic rocks is in part due to variable degrees of flattening, which is probably due in part to compaction after deposition. All these rocks have seen some alteration by combinations of chlorite, carbonate, sericite, and silica that appears to be of the degree expected in partially glassy volcaniclastic rocks deposited in a submarine setting. The matrix of the volcaniclastic members of this unit may be largely composed of silt to sand-sized detritus and granulated material of hyaloclastic origin rather than being classic pyroclastic deposits.

All the B Series calc-alkaline rocks are interpreted to be part of the Betty Creek Formation and have been labeled JrH2.

Betty Creek Formation (?) (JrH2-Vm_A and Vi_{A2}): A Series Calc-Alkaline Mafic to Intermediate Breccias and Volcaniclastic Rocks

These rocks are also largely clastic, but contain a lower proportion of epiclastic beds. Chemically, they are of calc-alkaline affinity and most samples are classed as basaltic andesite and basalt. Their trace element concentrations are somewhat different than those found in the B Series volcanic rocks; their chondrite-normalized REE profiles are different, and on average they tend to be more mafic in composition.

At least two chemical subtypes of A Series calc-alkaline rocks are present. Group A0 is mafic in composition and the most voluminous. Group A2 is more andesitic in chemistry and its occurrence more localized.

Most mapped occurrences of A Series calc-alkaline rocks in the South Unuk Area are of tuffaceous composition including crystal tuff, lapilli tuff and tuff breccia. Some layers are epiclastic and display sorting and bedding, evidence of reworking. A lesser proportion of this unit is made-up of flows and breccias. Flow rocks and lava breccias interpreted as A Series rocks occur at the middle elevations on the westfacing slope of Mount Madge in the South Unuk Area, and on the northeastwardfacing slopes above the Battlement Ridge, east of Virginia Lake. Brecciated outcrops contain sub angular to angular amphibole-pyroxene-feldspar-porphyritic lava clasts mostly < 10 cm across. Rare examples are clast supported breccias, most breccias, however, are more like tuff breccias with lava clasts supported by coarse to finegrained, variably feldspar crystal-bearing matrix. The matrix material in some specimens is more coarsely granular and appears to be hyaloclastic in origin. Localized outcrops of massive intrusive rocks bearing A Series chemistry were mapped at middle elevation on the South Unuk grid.

Geological mapping reveals that A Series calc-alkaline rocks are in part intercalated with Series B volcanic rocks. One set of late calc-alkaline flows mapped in the Battlement Area with A Series chemistry overlies calc-alkaline andesitic B Series rocks and calc-alkaline dacitic rocks, and appear to lie at a similar level in the stratigraphy as the transitional mafic and intermediate volcanic rocks mapped in the Battlement Area. These field relations imply that volcanic rocks with A Series chemistry were erupted over a significant time period and partially overlapped that of B Series calc-alkaline volcanic rocks.

Presently, the majority of A Series calc-alkaline mafic and intermediate rocks are labeled as JrH2 under the Hazelton Group designation.

Betty Creek Formation (JrH3-Vf): Calc-Alkaline Dacitic Flows, Breccias, and Volcaniclastic Rocks

Grey to green, flows, autoclastic breccias, and granular volcaniclastic layers of dacitic chemistry occur within or close proximity to calc-alkaline mafic and andesitic volcanic rocks in the Battlement, Cumberland, South Unuk, and Bench Areas. The flow rocks may be brecciated to varying degrees, to lapilli rich granular or coarser blocky autoclastic-type breccias. Some examples are not brecciated, more massive, and may represent sub-volcanic intrusions. Banded fine-grained and feldspar-porphyritic textures, with local vesicular texture are reported in the lavas. Beds of granulartextured dacitic tuff to lapillistone occur in proximity to the dacitic lavas, or form separate layers. This type of dacitic volcaniclastic forms massive outcrops at the Battlement Ridge. These clastic rocks may represent re-deposited hyaloclastic spall material.

Lithogeochemical results suggest that there are several chemically definable subtypes of calc-alkaline dacite occurring on the Corey property. The calc-alkaline rocks interpreted to be of SV and WDS Type, have trace element characteristics that are partially similar to B Series calc-alkaline mafic and andesitic rocks. The chemical similarities, spatial proximity of these dacite subtypes with B Series mafic and intermediate rocks, and their location in the stratigraphy suggest that while not exactly coeval, both groups of rocks are part of the same older calc-alkalic magmatic event.

BR Type dacitic volcanic rocks constitute a third calc-alkaline subtype. These rocks display lower degrees of LREE enrichment, which are more like those found in A Series calc-alkaline mafic and intermediate rocks. They appear to reside at higher

levels of the calk-alkaline stratigraphy and have been found near the basal contact of tholeiitic basaltic rocks belonging to the Salmon River Formation.

Betty Creek Formation (JrH4?): Intercalated Mudstone, Sandstone, and Conglomerate

Thick, 300 metre or thicker, bedded sequences of carbonaceous mudstone, argillaceous siltstone and fine to course-grained sandstone occur within the lower portion of the Corey Property's stratigraphy. At Lower Cumberland these rocks overlie or abut the LREE-enriched basaltic-andesite rocks of Group B1 described above. Other similar sediments are intercalated with A and B Series calc-alkaline mafic and intermediate rocks at higher elevations and higher stratigraphically in the South Unuk Area. The sedimentary beds are discontinuous and mark several phases of deposition occurring between cycles of volcanic effusion. They have been tentatively labeled as JrH4 to signify that they are sediments occurring in the lower portion of the Corey property dominated by calc-alkaline volcanic rocks.

The sandy sediments are typically dark grey to brown, of heterogeneous composition, and include lenses of pebble sandstones, and coarser clast- or matrix-supported conglomerates locally. In the conglomerates, several clast types are recognized including mudstone and sandstone rip-up fragments, grey to green, or brown to reddish, oxidized, fine-grained to porphyritic lithic volcanic fragments, and tuffaceous, formerly vesicular, glassy lapilli. Largely intact but altered feldspar and mafic crystals are recognizable in places. The rip-up clasts and volcanic detritus in the coarser conglomeritic rocks indicate that these sediments were partially the product of volcanic activity, and were lain down in a high-energy depositional environment, which may have included faulting and slumping of older sediments. Tops-up indicators are provided by local occurrences of load casts, flame structures, and scouring in bedded outcrops containing coarser and more fine-grained sediments.

Betty Creek Formation (?) (JrH3 -Vf_{ABW}): Calc-Alkaline Rhyolite Flow, Intrusive, Tuffaceous, and Volcaniclastic Rocks

This group of rhyolitic rocks was mapped at the lower elevations on the South Unuk grid, near the Angela Creek massive sulphide showing and further south as part of the WDS rhyolite zone. These rocks are contained within sedimentary rocks and A and B Series calc-alkaline volcanic rocks that are interpreted to form the lower part of the stratigraphy on the property.

Calc-alkaline rhyolitic rocks also occur further up the slope from the WDS Zone near the basal contact of tholeiitic mafic volcanic rocks, and in the area of the Beefcake showing in the Cumberland Area. In large proportion these rhyolitic rocks are chemically similar to those found at Angela Creek, and therefore are presently interpreted to belong to the same unit. This group of rhyolite rocks has been labeled as the Angela-Beefcake-WDS (ABW) group.

Outcrops of the calc-alkaline rhyolitic rocks are typically found as pale green to cream-coloured dikes, or small plug and lens-shaped bodies generally less than 50 m across. Most outcrops of the calc-alkaline rhyolite rocks reside in clastic, mudstone-rich sequences contained in dominantly calc-alkaline mafic to intermediate volcanic

rocks in the lower stratigraphy on the property. Texturally they are weakly porphyritic to fine-grained aphanitic, the latter likely reflecting an original glass-rich matrix. Most appear to be flow or sub-volcanic intrusive rocks. Banding may be locally present and varying degrees of brecciation occur, ranging from interlocking crackle brecciation to black matrix-type, featuring angular to cuspate rhyolite fragments in a mudstone-rich host.

Most outcrops of the calc-alkaline rhyolitic rocks are affected to some degree by alteration in the form of sericitization, silicification, and locally by significant disseminated and fracture-controlled pyrite.

Certain rhyolite outcrops, such as those at the Angela Creek sulphide showing and the Beefcake showing, occur in proximity to mapped faults, and recessive lineaments where abrupt changes in lithology occur. The rhyolite outcrop that contains the Angela Creek massive sulphide showing is wedge-shaped and resides within a thick sequence of graphitic argillite. On one side, the rhyolite wedge abuts an older fault zone striking east-northeast in the gully of the creek. Bedding attitudes in the argillite are discordant in the immediate area around the rhyolite. These features suggest that the rhyolite body was emplaced along the fault and that it may have intruded and deformed the argillite.

Given their locations within sedimentary-rich layers and along structural breaks, this set of rhyolite rocks may have been erupted during a hiatus in the more mafic calcalkaline volcanism. Or, the rhyolitic rocks were emplaced in more peripheral areas relative to the mafic calc-alkaline volcanic centres. Also, it appears that pre-existing faults lithologic contacts provided sites for the eruption of calc-alkaline rhyolitic lavas.

These rocks are presently labeled as part of the Betty Creek Formation given their calc-alkaline chemistry. However, it is still unclear whether these rhyolitic rocks are part of the felsic Brucejack Lake Member as defined regionally. For now they have been labeled JrH3.

Salmon River Formation (JrH5S): Mudstone, Sandstone, and Conglomerate

Significant thicknesses, locally in excess of 300 m, of graphitic argillite accompanied by lesser volumes of sandstone, siltstone, tuffaceous sandstone, and localized conglomerate units occur in the stratigraphy between the calc-alkaline mafic and intermediate volcanic and the tholeiitic mafic rocks of the Johns Peaks Member (described below). These upper sedimentary rocks have been included in the Salmon River Formation.

The upper sedimentary rocks are not continuous, but are localized. This may be partially due to their accumulation in local basins and their being partially scoured out by later emplacement of the tholeiitic basaltic rocks of the Johns Peaks Member described below.

Argillite after mudstone and siltstone is the dominant lithology. Conglomerate occurs locally, notably in the Cumberland Area around and to the north of the Smitty massive sulphide showing. The conglomerates are heterogeneous and may have a

sand or mud matrix and are rich in basaltic cobbles, which are dominantly tholeiitic and represent reworked lava clasts from the basaltic lavas of the Johns Peaks Member. Isolated, discontinuous argillite and chert beds are contained in the overlying tholeiitic basaltic volcanic rocks. These rocks are also considered to be part of this package.

Salmon River Formation (?) (JrH5m): Transitional Mafic and Intermediate Tuffaceous, Volcaniclastic, and Intrusive Rocks

This volcanic and intrusive unit was largely defined using lithogeochemical sampling. The transitional mafic unit is generally made-up of tuffaceous rocks, and locally by moderately large intrusive bodies. Most outcrops are of basaltic andesite composition, with a minority of andesitic examples. The degree of LREE-enrichment found, and the incompatible element geochemistry of these rocks overlaps that found in the tholeiitic mafic and calc-alkaline mafic rocks sampled and has led to them being classified as being of transitional affinity. The trace element concentrations in these rocks, examined using NMORB-normalized spider plots, is not entirely dissimilar from that of the LREE-enriched tholeiitic mafic rocks or of the mafic calc-alkaline rocks of the A Series.

Some geochemical variation is present within the transitional mafic rocks. For example a portion of the samples in the C10 area display REE patterns that are more rounded or concave than the ones observed in rocks sampled in the Golf Course Area. The examples from the Golf Course possess angular, kinked REE patterns with relatively flat profiles from the HREE through the MREE and a straight upward sloping profile through the LREE. The concave profile is more like those observed in calcalkaline rocks, were deeper mantle melting in the presence of garnet is thought to have fractionated the HREE.

Stratigraphically, most occurrences of transitional mafic volcanic rocks occur immediately below tholeiitic basaltic rocks of the Johns Peaks Member. The transitional mafic volcanic unit is not continuous over the property but occurs in significant (>300 m) thickness in the C10, Mandy Creek, and GFJ Areas. Other extensive outcrops are in the western portion of the Golf Course, in the HSOV Area, and at lower elevations in the Virginia Lake to Battlement Areas. In contrast, they are all but absent in the middle to higher elevations in the South Unuk Area.

The transitional mafic unit is largely composed of massive to banded tuffaceous rocks including, crystal tuff, lapilli tuff, and epiclastic equivalents of these. Ash tuff and volcanic siltstone layers are minor but may form narrow layers in sequences dominated by coarser grained lapilli tuff. Fragments, observed in good exposures of lapilli tuff, consist of porphyritic lithic and flattened vitric lapilli supported in a variably crystal-rich ash matrix. Some outcrops display a noticeable flattening foliation that is probably primary rather than tectonic. Feldspar is the most common phenocryst, but mafic (pyroxene or amphibole) crystals may be dominant locally. Quartz or chlorite-filled amygdules occur in the lapilli in select outcrops. The presence of the flattened vitric lapilli suggests that a portion of these tuffs have a true pyroclastic component.

Flow rocks belonging to this unit are rare pillow lavas and massive flow rocks occur in restricted sections of the Golf Course, and Battlement Areas in close spatial association with transitional mafic intrusive rocks. The transitional intrusive rocks in these areas appear to be partially structurally controlled along northerly to northeast striking fault lines. The intrusive examples include massive fine-grained, weakly hornblende or pyroxene-feldspar porphyritic varieties that may display local brecciation and minor mixing with sedimentary rock. Some are notable for displaying columnar jointing. These features suggest that these rocks may be shallow subvolcanic intrusions.

Given their stratigraphic location and the overlapping chemistry between the transitional mafic volcanic rocks with that of tholeiitic and calc-alkaline rocks, it is likely that the transitional rocks were erupted in the very early stages of rifting. They represent magmas that erupted at various locations, some potentially at the sites of earlier calc-alkaline volcanism. The magmas were likely generated by more limited-volume melting and were fractionated to greater degrees than later tholeiitic magmas.

It is unclear at present if the transitional mafic rocks are part of the Betty Creek or the Salmon River Formation. Since it appears to be transitional to the rift-related tholeiitic volcanic rocks it has been tentatively assigned to the latter and labeled JrH5m.

Salmon River Formation (JrH5f): Transitional Dacitic Flow, Volcaniclastic, and Intrusive Rocks

Extensive outcrops of dacitic rocks of transitional affinity were mapped in the eastern portion of the Corey property, east of the Mandy Creek Thrust. These rocks are found stratigraphically beneath the HSOV showing, and occur in the eastern part of the Golf Course Area. They occur in close spatial association with transitional rhyolitic volcanic rocks in these two areas. Volcaniclastic rocks with the major and trace element chemistry of andesite are also found together with the dacitic and rhyolitic rocks. At present only a restricted number of samples is available from andesite outcrops in these areas, and it has been assumed that the andesitic volcanic rocks were erupted together with the dacitic volcanic rocks.

Volumetrically minor outcrops of chemically similar transitional dacitic flow and volcaniclastic rocks also occur just below the basal contact of the tholeiitic basaltic rocks in other sections of the property. Examples in the Cumberland Area are located above the Beefcake Showing and in the stratigraphy below the Smitty Showing. Examples of transitional dacitic volcaniclastic beds were sampled in argillite and transitional mafic volcanic rock outcrops in the Battlement Area.

In the HSOV and Golf Course Area the transitional dacite unit includes volcaniclastic and flow rocks. Like the transitional rhyolitic rocks found near the HSOV massive sulphide showing, many of the dacitic outcrops examined are altered to a varying degree by sericite, silica, and locally by pyrite. The dacitic flow rocks vary from massive to banded, and are sparsely feldspar porphyritic locally. Feldspar-porphyritic transitional dacitic intrusive rocks were mapped in the eastern section of the Golf Course Area. Outcrops of these rocks are generally strongly altered by sericite, quartz, and pyrite. They intrude sandy to lapilli-bearing volcaniclastic rocks of intermediate composition at the same level in the stratigraphy as outcrops of transitional rhyolite volcanic rocks (described below). Brecciated flow rocks are composed of variably sized, sub-angular to angular lava clasts that may be interlocking in places and matrix supported in others. Dacitic volcaniclastic rocks are represented by lapilli tuffs, which contain lava clasts suspended in a fine-grained to aphanitic ash matrix. Other dacitic volcaniclastic rocks include epiclastic units, best described as volcanic lapilli to block stones, which are more heterogeneous and appear to have been at least partially deposited as debris flows. These epiclastic rocks are very similar to equivalent units found associated with the transitional rhyolitic flow rocks described below.

Given the intimate spatial association with transitional rhyolitic rocks, the transitional dacitic rocks were probably in part coeval with the rhyolitic volcanic rocks. Their chronological relationship to the transitional mafic rocks is less certain. In the Golf Course Area, mapping to date suggests that the transitional dacitic volcanic rocks are below most outcrops of transitional mafic rocks. The dacitic volcanic rocks have been labeled as JrH5f and are presently considered to be part of the "transitional stratigraphy" situated below the tholeiitic rift-related volcanic rocks.

Salmon River Formation (JrH5F): Transitional Rhyolitic Flow, Breccia, Intrusive, and Volcaniclastic Rocks

Transitional rhyolitic volcanic rocks occur in significant volumes in the stratigraphy exposed east of the Mandy Creek Thrust, at and around the HSOV massive sulphide showing, and in the eastern part of the Golf Course Area. In the latter location, these rocks occur as intercalated and intermingled flows, breccias, sub-volcanic intrusions, and epiclastic debris in the form of rhyolitic lapillistone, block stone, to rhyolite-rich conglomerate. These transitional rhyolitic rocks are located at the base of a sediment-rich sequence containing carbonaceous argillite, lithic and tuffaceous sandstone, conglomerate, and lesser volumes of mafic and intermediate tuffs.

Flow rocks are generally aphanitic and may be sparsely feldspar porphyritic, with only rare quartz phenocrysts. Banding occurs locally and massive examples are not uncommon. The flows are variably brecciated, with clast-supported jigsaw-fitted breccias grading into more heterogeneous mud matrix supported, or granular lapillirich hyaloclastic varieties.

The clastic rocks display variable heterogeneity in clast type and in the proportion of mudstone and other detritus in the matrix. The less heterogeneous type can be described as rhyolitic lapilli or block stone, composed of tightly to loosely packed, pebble to cobble-sized rhyolitic clasts, which display a range of textures from aphanitic banded, to porphyritic lithic, to wispy flattened formerly vitric varieties. More heterogeneous units contain more mud in the matrix and may include intact rip up clasts of mudstone and other volcanic lithologies.

The epiclastic rhyolitic rock units and volcanic-rich conglomeritic rocks are intercalated but are usually very poorly sorted internally. Some grading is locally present with trails of lapilli-size or block sized clasts visible in rare outcrops. Given the observed textures, these units are probably debris flows, and were progressively built up by successive cycles of rhyolite intrusion and extrusion, and slumping of brecciated flow material into a pre-existing sedimentary-rich sequence. Other transitional rhyolitic rocks of broadly similar chemistry to those found in the HSOV and Golf Course Area occur in the South Unuk, Battlement, and Virginia Lake Areas. These rocks are more restricted in extent and generally constitute outcrops of narrow, metre-scale dikes or larger lozenges (on the scale of tens of metres) of variably brecciated flow rocks. One tuffaceous outcrop of transitional rhyolite was encountered just below the basal contact of younger, late-stage UVL Type calcalkaline rhyolitic rocks between Virginia and Charlotte Lakes. Notably, a body of transitional rhyolitic rocks sampled in the South Unuk Area, north of Eva Creek, is contained within tholeiitic basaltic pillow lavas of the Johns Peaks Member. This suggests that the magmatic event that produced the transitional rhyolitic rocks overlapped that which produced the transitional mafic and partially overlapped the tholeiitic mafic volcanism as well.

A U-Pb date of a transitional rhyolite outcrop near the HSOV sulphide showing is equivalent to that of rhyolitic rocks dated at the Eskay Creek Mine. The age date and field mapping relationships have led to the transitional rhyolitic rocks being considered as part of the Salmon River Formation and they are labeled JrH5F.

Salmon River Formation (JrH5R): Tholeiitic Rhyolitic Flow, Breccia, Volcaniclastic, and Intrusive Rocks

Only a small group (13 samples) of rhyolite collected during the 2004 and 2005 exploration season was chemically classified as being of tholeiitic magmatic affinity. Of these samples, four were taken from outcrops located in the Lower Cumberland Area in 2004, seven were collected in the Battlement Area in 2005, and one is from float found in 2005 on the north facing slope of Mount Madge southeast of the Cumberland mine adits. The last was taken from a dike located south of Eva Creek.

In the Battlement Area the extent of the tholeiitic rhyolite outcrops was better defined by mapping during the 2006 season. Outcrops of these rocks are mainly composed of tightly packed felsic lapilli and grains. Some pumiceous lapilli and mudstone clasts were also noted. Lenses of argillite and sandstone are intercalated within the rhyolite volcaniclastic rocks. The textures, and intimate spatial association with other sedimentary rocks suggest that the tholeiitic rhyolitic rocks at Battlement mostly represent spalled epiclastic material.

Outcrops of tholeiitic rhyolite flows in the Lower Cumberland Area tend to be of restricted size; they occur in a roughly 50 m wide and 250 m long corridor, in a mudstone-rich section of the stratigraphy. The rocks typically are aphanitic, glassy, and have a crackle-brecciated texture in places. Local examples consist of interlocking, jigsaw-style breccias with a variably carbonaceous matrix. They may at least be partially intrusive given the absence of well-developed flow banding and autoclastic textures.

The tholeiitic rhyolite rocks at Lower Cumberland and at Battlement occur within, or are in contact with mudstone-rich sequences, and lie immediately below tholeiitic basaltic volcanic rocks in the stratigraphy. The stratigraphic location of tholeiitic rhyolite volcanic rocks at Corey is similar to that found at the Eskay Creek Mine, where this rock type occurs just beneath basaltic volcanic rocks of tholeiitic affinity belonging to the Johns Peak Member of the Salmon River Formation.

Tholeiitic Mafic Pillow Lavas, Breccias, Flows, and Intrusive Rocks, Johns Peak Member, Salmon River Formation (JrH5M)

Tholeiitic mafic volcanic rocks underlie large areas of the Corey property. Notable occurrences of these rocks are on the upper elevations of Mount Madge, on the high terrain to the southwest and west of Johns Peaks - in the western part of the Golf Course Area, and downward to the Bench Area. These rocks are largely made-up of basaltic pillow lavas, pillow breccias, hyaloclastic breccias, and less often of massive flows. Minor mafic ash tuff layers have also been recorded within the tholeiitic mafic unit.

Chemically, this tholeiitic unit is mafic, largely basaltic in composition, with a minority of samples being of basaltic-andesite composition. The unit contains both LREE-depleted and LREE-enriched lavas, and local bodies of high-Ti lavas. So far it has not been possible to consistently spatially separate these chemical subtypes.

Textures generally vary from fine-grained to medium grained with sparsely feldsparpyroxene porphyritic lavas being common. Coarsely feldspar-porphyritic flows and intrusive rocks, displaying euhedral plagioclase laths up to 1.5 cm long, were encountered locally in the areas lying east of the Bench Area and up slope in the Golf Course Area.

Pillow lavas are the most common and are made-up of intercalated layers of pillowed basalt, pillow breccia, and blocky autoclastic breccia. In least-altered outcrops of pillow lava, chilled, glassy pillow rinds and interstitial hyaloclastic spall detritus can still be identified. Bread crust textures and internal lava tubes (or tongues) are also visible in select outcrops. Pillow rim breccias or blocky autoclastic breccias comprising broken pillows and hyaloclastic debris are found amidst outcrops of well-formed pillows.

Massive, generally fine-grained, pyroxene-feldspar-porphyritic, flows occur locally within the pillow lavas. These may display poorly formed columnar jointing. Intrusive mafic rocks, chemically alike to the pillow lavas, were more commonly encountered than massive flow rocks. These constitute the feeders for the pillow basalts and cut the lower stratigraphy of dominantly calc-alkaline volcanic rocks. The intrusive rocks display various textures including fine-grained anhedral ones in dike rocks, and more coarsely crystalline diabase textures or feldspar-pyroxene-glomeroporphyritic texture in larger bodies.

Overall, there is a low degree of alteration in the tholeiitic mafic volcanic rocks. Alteration typically includes the presence of secondary minerals such as chlorite, epidote, albite, carbonate, quartz and minor sericite. These secondary phases occur in the matrix of the rock, replace original glass-rich hyaloclastic material, and replace phenocrysts. The degree of alteration is commensurate with older sea floor and later regional metamorphism.

The tholeiitic mafic rocks are equivalent to the Johns Peaks Member, Salmon River Formation, and are labeled JrH5M. The tholeiitic mafic volcanic rocks on the Corey property are equivalent to those mafic volcanic rocks found in the stratigraphic hanging wall of the Eskay Creek mine.

Salmon River Formation (?) (JrH5F-Vf_{UVL}): Late Hazelton-Age Calc-Alkaline Rhyolitic Flows, Breccias, and Volcaniclastic Rocks

Strongly LREE-enriched calc-alkaline rhyolitic rocks were mapped at the upper elevations in the Virginia Lake Area. A U-Pb age date of this unit is significantly younger than that of the tholeiitic rhyolite at the Eskay Creek Mine or of the transitional rhyolite near the HSOV massive sulphide showing. The age is mid-Jurassic and approaches that of estimated fossil ages for the sediment-dominated Bowser Lake Group, which overlies Hazelton Group volcanic rocks to the north of the Corey Property in the Eskay Creek Area. These rocks have been labeled as the (Upper Virginia Lake) UVL Type rhyolite. For now, they have been tenuously included in the Salmon River Formation.

The UVL Type calc-alkaline rhyolitic rocks are composed of variably banded flows, autoclastic breccias, and lapilli tuffs representing epiclastic lithic and quartz-feldsparcrystal-rich granular debris derived from the flow rocks. The rocks are locally moderately altered by silicification and potentially some sericitization as well. As with most of the other rhyolite outcropping on the Corey Property these rocks are closely associated with and occur within graphitic argillite and brecciated rhyolite mudstone mixtures are common.

Chemically similar rhyolitic volcanic rocks outcrop in the Lower Cumberland Area below the Beefcake Showing parallel to the same sediment-rich structural corridor where the tholeiitic rhyolite rocks occur. Calc-alkaline volcanic rocks of equivalent chemistry also occur in the Bench Area in intimate association with tholeiitic basaltic lavas belonging to the John Peaks Member. Despite the similarity in chemistry between these rhyolitic outcrops, and those found around Virginia Lake, it is not proven that all these rocks belong to the same volcanic event.

INTRUSIVE ROCKS

Post Johns-Peaks-Member-Age Calc-Alkaline Intermediate Intrusive Rocks (JrH or TC ?)

Several samples of grey, weakly hornblende-plagioclase porphyritic to fine grained, magnetic, intermediate dikes were collected over a wide area of the property. Rare calc-alkaline mafic dikes with somewhat similar mineralogy and chemistry were also sampled. These rocks appear to be relatively weakly foliated and fresh looking compared to most other Hazelton Group rocks mapped, and they have been observed cutting tholeiitic basaltic rocks belonging to the Johns Peak Member.

The chondrite-normalized REE profiles of these calc-alkaline intrusive rocks are quite similar to those of a portion of the older calc-alkaline volcanic rocks mapped - the B Series, possessing concave, upward right to left-sloping, LREE-enriched patterns. However, several geochemically different groups appear to be present within the present sample set.

Post Salmon-River-Formation Mafic, Intermediate, and Felsic Dikes (Coast Plutonic Suite: TC)

Relatively fresh-looking, un-foliated, younger (post Salmon-River-Formation-age), felsic, intermediate, and minor mafic dikes occur locally. The intermediate and mafic intrusive rocks verge on alkalic affinity given their total alkali metal (Na_2O+K_2O) content. All possess strongly LREE-enriched chondrite-normalized rare-earth profiles, which are distinctively different from the other calc-alkaline volcanic rocks sampled on the Corey Property.

The following types of borderline alkalic dikes were mapped.

- 1. Intermediate, green-grey, fine-grained to feldspar-amphibole-porphyritic intermediate dikes.
- 2. Aplitic-textured intermediate dikes, with visible K-feldspar in the groundmass. These are loosely referred to as monzonite dikes.

Felsic, variably quartz-phyric, fine-grained to granitic-textured dikes of high-K calcalkaline affinity are also present. The REE profiles of the felsic dikes are similar to those exhibited by blank samples taken from a local per-aluminous granitic pluton that is interpreted to be of Tertiary-age. Therefore, the felsic dike rocks are likely part of the Coast Plutonic magmatic event.

LITHOGEOCHEMISTRY SURVEYS (2004-06)

A comprehensive, systematic program of lithogeochemical sampling and chemostratigraphy was initiated in the 2004 exploration season in conjunction with 1:2000 scale outcrop mapping (for data tables see Appendix C, which can be found on the digital media included with this report). This sampling and mapping was continued during the 2005 and 2006 seasons and has proven to be an invaluable aid in the differentiation of the major volcanic and intrusive rocks underlying the property. Lithogeochemistry has effectively guided the geological mapping and confirmed that the Corey property straddles the local Eskay-Corey rift belt. Interpretation of this data has shown that a continuous belt of tholeiitic basalts and highly prospective transitional to tholeiitic composition rhyolites can be traced across most of the property. This belt extends from the Virginia Lake area in the northwest to the south-central and eastern parts of the claim block at the South Unuk, HSOV and Spearhead areas. Relatively dense sampling in the Cumberland-South Unuk areas has better constrained the contact between the more prospective transitional to tholeiitic affinity volcanic rocks and the less prospective calc-alkaline rocks. The lithogeochemical interpretation has also shown that these more prospective compositions of rocks are more common than indicated by earlier exploration programs, particularly in the South Unuk and C10 areas, effectively expanding the size of the most favourable ground for future exploration.

This section provides a general summary of the lithogeochemical results of field samples taken in the 2004, 2005, and 2006 exploration programs on the Corey property and a general description of the volcanic stratigraphy based on field mapping and the lithogeochemical results.

The summary and description that follows is taken from the detailed data treatment and report of C. Sebert, P.Eng. (Cambria internal report: Sebert, 2007). This report is based on a total of 1392 lithogeochemical field samples that were analysed for major and trace elements, including rare earth elements (REEs). Locations for these surface samples are shown in Figure 7; a detailed depiction of the interpreted and classified samples is included in Maps 1 and 2 (in pocket) while the locations of individual samples are illustrated in Maps 3 and 4. This data includes samples of sediments and heavily altered or mineralized outcrops, but excludes a sizeable number of lithogeochemical drill core samples for which interpretation is ongoing with the assistance of Dr. Tim Barrett. Of the field sample dataset, 1116 were of intrusive and volcanic outcrops made-up of coherent lava rocks plus a variety of volcaniclastic rocks, including re-worked tuffaceous material (volcanic silt and sandstone), which were considered to be sufficiently representative of primary volcanic effusive products.

METHODOLOGY

Analytical Procedure, Quality Control, and Sampling

All the lithogeochemical samples collected were analysed by Acme Analytical Laboratories, Vancouver, British Columbia. Up to one kilogram of each rock sample was crushed to 70% passing 10 mesh. A 250-gram split was then pulverized to 95% passing 150 mesh. The pulverizer was of mild steel and was cleaned between

samples with glass. Major element determinations were performed using ICP-ES on a 0.2-gram sample of pulverized rock fused with LiBO2 and digested in dilute HNO3. Total carbon and sulphur were analysed using Leco. A similar 0.2-gram sample was analysed by ICP-MS to determine refractory trace element and rare-earth element content. A separate aqua regia digestion was also performed on a 0.5-gram split of pulverized rock and analysed by ICP-MS for precious and base metals.

Quality control, consisting of submission of field duplicates (1 in 25 samples) and a "blank" sample (1 in 50 samples) composed of barren intrusive rock, was instituted for the 2005 field season and carried through the 2006 season. The objective of the quality control program was to check the reproducibility of the results and test for any contamination of select elements from sample to sample.

Lithogeochemical rock samples used for the purposes of rock classification were taken from selected outcrops, which were deemed representative of that rock type. A minority of samples used in this assessment were strongly altered. The data set also includes a variety of volcaniclastic samples ranging from brecciated lavas to reworked epiclastic rocks and volcanic sandstones. A magmatic affinity and composition was also assigned to altered and clastic samples. The extended geological mapping coverage over the 2004-06 period has led to better definition of the boundaries of volcanic units on the ground and aided the in sorting of volcanic outcrops into a magmatic classification irrespective of minor variations in their geochemical compositions. This procedure was applied judiciously using the most important classification parameters (described below) combined with the compositional features noted in field maps.

Classification Technique and Parameters for the Intrusive and Volcanic Rocks

In general, assessments of rock classification and magmatic affinity were performed with emphasis on the use of immobile element ratios of Ti, Zr, Hf, Th, and Y, and rare-earth element (REE) concentrations. This approach seeks to minimize the effects of alteration and metamorphism, which to varying degrees have modified the composition of most of the volcanic and intrusive rock units on the Corey property. However, despite this approach there remains some uncertainty as to the rock classification and magmatic affinity in a minority of cases due to primary variability in immobile trace element concentrations. Such variability can be brought about by several processes including fractionation of magmas, mechanical sorting of mineral constituents in clastic volcanic rocks, and selective element mobility due to severe alteration. Certain rock units on the Corey property display greater variability in their immobile element concentrations (e.g. Ti and Zr) than others. For example, samples from volcaniclastic outcrops display greater variability than coherent vocanic rock samples. This scatter of compositions may be due to mechanical sorting processes affecting mineral phases, or the inclusion of sediment in brecciated volcanic rocks. There is also variability in the trace element composition of samples from certain flow and intrusive outcrops, likely due to variation in primary fractionation processes, including a loss of element incompatibility in more felsic lavas. Thus, there is potential for volcanic units of one broad rock type to be erupted at several locales with slightly differing magma chemistry. The detailed outline of classification parameters is included in the report by Sebert (2007).

Rock type Classification

With consideration for such possible variations in lithogeochemistry, plus possible effects of silica mass changes via alteration, a rock-type designation (e.g. basalt, andesite or rhyolite) was assigned to each intrusive or volcanic sample. This entailed using a combination of:

- 1) immobile element ratio diagrams, specifically the Nb-Y versus Zr-TiO2 discriminant plot of Winchester and Floyd (1977);
- 2) SiO2 content for less altered samples.

The Zr-TiO2 ratio was used as a discriminating factor by plotting sample points on a binary diagram and noting linear clusters of samples of relatively constant ratio.

Determination of Magmatic Affinity

Due to the presence of hydrothermal alteration, determination of magmatic affinity for the Corey intrusive and volcanic rocks was made on the basis of immobile element ratios such as Zr/Y, plus REE concentrations, rather than the classic methods of separating tholeiitic from calc-alkaline rocks using mobile major element oxides.

The REE concentration of a sample, especially the degree of light rare-earth element (LREE) enrichment (as expressed by the La/Yb ratio) remained the most significant factor in the magmatic affinity assigned to individual samples. The immobile element ratio methodology employed in assigning magmatic affinity has been fully outlined in the literature, e.g. Barrett and MacLean (1999).

In addition to immobile trace element ratios and binary plots, the determination of magmatic affinity for different volcanic units is also based on the following criteria:

- 1) The shape of the chondrite-normalized REE profile for individual samples (in order to better differentiate between tholeiitic, transitional, and calc-alkaline rock types).
- 2) The spatial location of the samples with respect to field-mapped boundaries of rock units and the proximity of samples bearing obvious chemical signatures.

The magmatic affinity classifications used on the Corey property include the following major igneous families: tholeiitic, calc-alkaline, and high-K calc-alkaline. An additional "transitional" class is also used to classify volcanic and intrusive rocks that possess a combination of chemical characteristics that suggest that they are compositionally gradational between the tholeiitic and calc-alkaline families of rocks. The term 'borderline alkalic' is employed to describe rocks that are chemically gradational between the calc-alkaline families. Many of the rocks falling in this latter category are relatively undeformed dikes and sills of possible Tertiary-age.



LITHOGEOCHEMICAL RESULTS

Discussion of Results

Winchester and Floyd (1977) immobile element ratio discrimination plots serve to broadly classify the volcanic and intrusive rock units present on the Corey Property (Figure 8). The sample data is presented using symbols that reflect the interpreted geochemical classification of the rocks based on the Winchester and Floyd discrimination diagram, plus other factors such as the La/Yb ratio. Summarizing, the Winchester and Floyd (1977) plots appear not to be wholly reliable in separating the subalkalic from alkalic rocks found on the Corey property. The bounds based on the Nb/Y ratio in these plots appear to be set too low and portions of the calc-alkaline rocks are misclassified as alkalic. However, the Zr/TiO2 ratio seems more reliable, and serves to separate basalts from more intermediate, andesitic volcanic rocks, or dacitic rocks from rhyolitic rocks.

The mafic volcanic and intrusive rock samples display a range of Zr/TiO2 ratios (Figure 9a); most samples possess ratios of between 40 and 125. La/Yb ratios effectively separate tholeiitic from calc-alkaline volcanic rocks (Figure 9b). The Corey property also contains sizeable volumes of transitional mafic volcanic rocks, which tend to display La/Yb ratios between 3 and 6.

The average Zr/TiO2 ratio varies between the different magmatic suites of mafic rocks. Tholeiitic rocks, which tend to be more basaltic in composition, possess a lower average Zr/TiO2 ratio than the calc-alkaline rocks. This must be considered when assigning a rock-type classification based on incompatible trace element concentrations. Calc-alkaline volcanic rocks tend to contain a higher proportion of basaltic andesite volcanic rocks, a result of the greater degrees of fractionation found in calc-alkaline magmatic suites. Fractionation processes would tend to produce higher Zr/TiO2 ratios and this appears to be reflected in the diagram.

Felsic rock samples possess significantly greater Zr/TiO2 ratios, generally > 200 (Figure 9c) for dacitic rocks and > 1000 for select samples of rhyolite. While dacitic and rhyolitic samples display significantly different Zr/TiO2 ratios, tholeiitic, transitional and calc-alkaline samples of dacitic and rhyolitic rocks are not effectively separated on Zr-TiO2 plots. Instead there is a fair degree of overlap between dacitic and rhyolitic samples of different magmatic affinity.

La/Yb ratios also serve well in separating felsic rocks of differing magmatic affinity (Figure 9d). Some overlap of sample points of tholeiitic, transitional, and calcalkaline rocks occurs on La-Yb plots as well. The overlapping, scattered felsic sample points on many binary trace element diagrams is probably partially due to the modification of primary trace element concentrations in clastic samples (open symbols) by mechanical sorting or from sediment contamination. Another factor is that felsic rocks are generally hybrid products of smaller batch melting. Their parent lavas are the result of greater degrees of fractionation and are therefore prone to more contamination. Also, elements such as Zr may also no longer be wholly incompatible in more calc-alkaline felsic magmas and thus may be fractionated by the crystallization of zircon.



Figure 8. a) Winchester and Floyd (1977) immobile element ratio discrimination plot for rhyolitic volcanic and intrusive rocks collected on the Corey property. The majority of sample points fall in the rhyolite and rhyodacite fields. There is overlap into the trachyte field by a cluster of samples. These latter are strongly LREEenriched rhyolite volcanic rocks found mainly in the Virginia Lake Area. b) Winchester and Floyd (1977) immobile element ratio discrimination diagram for dacitic intrusive and volcanic rocks. These rocks tend to possess lower Zr/TiO2 ratios compared to the rhyolitic rocks with some examples falling in the upper portion of the andesite field. Most possess Nb/Y ratios commensurate with subalkalic volcanic rocks, with a proportion falling in the trachyandesite field. Six sample points display relatively high and low Nb/Y ratios compared to the rest. This variance is likely due to analytical error in the analysis of the Nb content. c) Discrimination diagram containing samples interpreted to be of andesitic composition. The majority of the sample points possess Zr/TiO₂ and Nb/Y ratios commensurate with other andesitic volcanic rocks as set out by Floyd and Winchester (1977). d) Mafic rock samples analyzed are of basaltic and basaltic-andesite chemistry. A minor portion of this sample group has Nb/Y ratios equivalent to alkaline mafic rocks. Although these samples are typically strongly enriched in LREE they generally possess major and trace element chemistry more like that found in calc-alkaline rocks.



Figure 9. *a*) TiO₂ versus Zr binary plot of mafic intrusive and volcanic samples from the Corey property. The rocks range in composition from basalt to basaltic-andesite. The average Zr-TiO₂ ratio for tholeiitic rocks, transitional, and calc-alkaline mafic rocks differs, with the calcalkaline rocks displaying Zr-TiO₂ ratios higher than the transitional and tholeiitic mafic rocks. *b*) A La versus Yb diagram serves as one method of discriminating between volcanic rocks of tholeiitic and calc-alkaline magmatic affinity. All the rocks on this plot are of mafic: basaltic or basalticandesite, composition. See text for discussion. Diagram fields are after Barrett and MacLean (1999).



Figure 9. c) TiO₂ versus Zr binary plot of felsic intrusive and volcanic samples from the Corey property. The felsic rocks are composed of dacitic (X's) and rhyolitic (crosses) samples, which possess Zr-TiO₂ ratios ranging from about 100 to >1000. See text for discussion. d) A La versus Yb diagram containing the felsic volcanic and intrusive rock samples. Both the dacitic and rhyolitic rocks are made up of geochemically differing subtypes of calc-alkaline, transitional, and tholeiitic affinity. Diagram fields are after Barrett and MacLean (1999).

LITHOGEOCHEMISTRY OF INDIVIDUAL ROCK UNITS

The different intrusive and volcanic rock units mapped and geochemically analyzed at Corey are summarized below with emphasis on their lithogeochemical characteristics and chemostratigraphy. These rock units, with some exceptions, are listed from younger to older. This chemostratigraphy has been integrated into the description of the Corey property geology presented above.

Late high-K Calc-Alkaline and Borderline Alkalic Intrusive Rocks

Relatively fresh-looking, younger, undeformed (post Salmon-River-Formation-age), felsic, intermediate, and minor mafic intrusive rocks occur locally. These commonly form dikes several metres wide and contain elevated concentrations of alkali metals. All possess strongly light rare-earth element (LREE)-enriched chondrite-normalized rare-earth element (REE) profiles, which are distinctively different from the older Hazelton calc-alkaline volcanic rocks sampled and are more closely like those found in high-K calc-alkalic or alkalic intrusive and volcanic rocks.

Later Calc-Alkaline Intermediate Intrusive Rocks

Several samples of grey, weakly hornblende-plagioclase porphyritic to fine grained, magnetic, mafic to intermediate dikes were collected over a wide area of the property. These rocks appear to be relatively weakly foliated and fresh looking compared to most other Hazelton Group rocks mapped. The chondrite-normalized REE profiles of these intrusive rocks are quite similar to those of a portion of the older Hazelton Group calc-alkaline volcanic rocks mapped: the B Series, possessing concave, upward right to left-sloping, LREE-enriched patterns. These older calc-alkaline volcanic rocks are described further below in this summary.

Tholeiitic Mafic Volcanic Rocks and Intrusive Equivalents

Tholeiitic mafic volcanic rocks underlie large areas of the Corey property. The most notable occurrences of these rocks are on the upper elevations of Mount Madge, on the high terrain to the southwest and west of John Peak - in the western part of the Golf Course Area and downward to the Bench Area. These volcanic rocks are largely made-up of pillow lavas, hyaloclastic breccias, and less often by massive flows. Minor tuffaceous basaltic layers of tholeiitic chemistry occur intercalated with the lava rocks. Textures vary from fine-grained to medium grained with sparsely feldsparpyroxene porphyritic lavas being common. Overall, but with local exceptions, alteration intensity is low in these rocks. Alteration typically includes the presence of secondary minerals such as chlorite, epidote, albite, carbonate, quartz and minor sericite. These secondary phases occur in the matrix or replace phenocrysts and occur in amounts commensurate with older sea floor and later regional metamorphism.

Tholeiitic mafic intrusive rocks have been mapped and sampled, notably in the Cumberland, South Unuk, and C10 map areas. These mafic intrusive rocks likely constitute the feeders for the basaltic flow rocks, which are usually found above, at higher elevations on Mount Madge.

Barrett and Sherlock (1996) examined the chemistry of tholeiitic basaltic rocks in the hanging wall of the Eskay Creek Mine. **These rocks are similar in chemistry to**

the tholeiitic mafic volcanic rocks at Corey. Barrett and Sherlock (1996) proposed that the Eskay tholeiitic basalts were erupted in a rifted continental margin setting – possibly a back arc. The tholeiitic mafic rocks mapped on the Corey property are interpreted to be equivalent to the John Peaks Member of the Salmon River Formation.

Transitional Mafic Volcanic Rocks and Intrusive Equivalents

A second mafic to borderline-intermediate volcanic unit was geochemically identified. It is generally made-up of banded to massive tuffs including epiclastic tuff, volcanic sandstone, and lapillistone. There are lesser volumes of lava flows and breccias. Massive intrusive bodies and dikes of similar chemistry were also mapped. The degree of LREE-enrichment found, and the incompatible element geochemistry of these rocks has led to them being classified as being of transitional affinity.

The field identification of this unit is somewhat difficult as its mineralogy and texture resembles that of the dominantly clastic mafic to intermediate volcanic rocks of calcalkaline affinity that occur lower in the stratigraphy (described below). Its spatial delineation has partially rested on lithogeochemical sampling and analysis.

Most identified occurrences of the transitional mafic volcanic rocks occur immediately below the tholeiitic basaltic rocks of the John Peaks Member. Significant areas of outcrop are located on the west-facing slopes of Mount Madge, north of Angela and Smitty Creeks, at both high and the lower elevations. Significant thicknesses of transitional mafic volcanic rocks are encountered underlying C10, the east to northeast flank of Mount Madge, and along the valley of Mandy Creek. Other occurrences are in the western portion of the Golf Course, in the HSOV Area, and at lower elevations in the Virginia Lake to Battlement Areas. Minor beds of chemically similar volcaniclastic material are located lower in the stratigraphy, intercalated with calk-alkaline mafic and intermediate rocks. Chemically equivalent intrusive bodies including dikes were found in the Lower Cumberland, C-10, and Golf Course Areas.

In a regional, historical context, the transitional mafic volcanic rock unit may have been generated at the initial stages of rift development by relatively smaller degrees of partial melting than that of magmas equivalent to the tholeiitic mafic volcanic rocks of the John Peaks Member. A portion of these rocks appear to still have some minor calc-alkaline characteristics but as a group don't share the greater degree of enrichment in LREE and other incompatible elements seen in calc-alkaline lavas. Instead, the transitional mafic volcanic rocks appear to form a "transition unit" that may have been generated during rift initiation and that signaled the change from calc-alkaline to tholeiitic volcanism.

The place of the transitional mafic volcanic rock unit in the existing geologic subdivision of the Hazelton Group is unclear. It could constitute an additional lower member of the Salmon River Formation; present geochemical results allow it to be chemically gradational in composition to the upper tholeiitic basalts; the same can be said with respect to the mildly calc-alkaline rocks on the Corey property. Presently it has been given an interim Hazelton Group classification – JrH5m.

Rhyolitic Volcanic Rocks

Felsic volcanic and intrusive rocks were mapped and sampled in several areas of the Corey property. The felsic rocks encountered range in composition from dacitic to rhyolitic. The geochemical separation of the rhyolitic rocks – especially those of tholeiitic affinity - are considered key in the exploration for Eskay-type precious metal-rich massive sulphide mineralization on the Corey property.

The rhyolitic volcanic rocks are composed of several geochemically distinct groups that may occur in proximity to one another. All encountered so far are interpreted as belonging to the Hazelton Group, but it is apparent that their emplacement took place over a significant time period. For example, a portion of the calc-alkaline rhyolitic rocks, specifically those mapped and age dated at the upper elevations in the Virginia Lake Area, are probably equivalent to or even younger than the mafic volcanic rocks of the John Peaks Member, Salmon River Formation. Other calcalkaline rhyolitic volcanic rocks are obviously older and occur in sections of the stratigraphy dominated by calc-alkaline, intermediate and mafic volcanic rocks.

Local bodies of rhyolite flows, breccias, and intrusive were mapped on the Cumberland - South Unuk grid areas, on the northeastern flank of Mount Madge, HSOV, the Spearhead, Golf Course area, Battlement-Virginia Lake grid, and Bench Area. The rhyolitic rocks sampled were usually at least partially altered, affected by bleaching from variable intensities of silicification and sericitization. Texturally most of these rocks are aphanitic due to a former glass-rich matrix. Sparse feldsparporphyritic examples have been described, and quartz phenocrysts are rarely reported. Banded flow rocks, and partially brecciated flows, usually adjacent to or within mudstone beds, form a significant proportion of the occurrences mapped. Portions of the rhyolitic rocks occur as dikes, sills, or localized plug-like bodies. Many appear to be sub-volcanic intrusions contained in sedimentary or older volcanic rocks with or without brecciated margins. In the Virginia Lake Area coarsely feldspar porphyritic felsic intrusive rocks were encountered and these rocks may be intrusive equivalents of the rhyolitic and dacitic volcanic rocks also occurring there. Fairly extensive layers of rhyolitic volcaniclastic including lapilli tuff, lapillistone, or coarser felsic volcanic breccia to conglomerate were mapped in the Virginia Lake Area, in the eastern part of the Golf Course Area, and around the HSOV massive sulphide showing. Tuffaceous rhyolitic volcanic rocks also occur in more localized fashion in the South Unuk and Cumberland Areas, usually in proximity to felsic flow or subvolcanic intrusive rocks. Rhyolitic ash tuff was mapped in various places in the stratigraphy, in mudstone beds and in proximity to bodies of rhyolitic lava rocks.

Tholeiitic Rhyolite Rocks

Only a small group (13 samples) of rhyolite collected to date is classified as being of tholeiitic magmatic affinity. Of these, four were taken from outcrops located in the Lower Cumberland Area. Another seven samples were collected from the Battlement Area. One instance of float was found in 2005 on the north facing slope of Mount Madge, and one additional sample was collected in 2006 south of Eva Creek, from a dike several metres wide.

Both the tholeiitic rhyolite rocks at Lower Cumberland and at Battlement occur within, or are in contact with mudstone-rich sequences, and lie stratigraphically

below tholeiitic basaltic volcanic rocks. The rhyolite rocks at Battlement crop out within a short distance (<70m) of outcrops of tholeiitic basaltic rocks. The tholeiitic rhyolite rocks at Lower Cumberland reside in an eroded northwest striking structural corridor, and tholeiitic basaltic rocks occur at a similar elevation just 100m to the southwest. The stratigraphic location of tholeiitic rhyolite volcanic rocks at Corey is similar to that found at the Eskay Creek Mine, where they occur just beneath the basaltic volcanic rocks of tholeiitic affinity that form the hangingwall to the mineralisation. The Corey tholeiitic rhyolites are thus part of the Salmon River Formation.

Transitional Rhyolitic Rocks

Rhyolite volcanic and intrusive rocks of transitional affinity (La/Yb ratios of between 3 and 6 and Zr/Y ratios < 7) are encountered with far greater frequency than those of tholeiitic affinity. Transitional rhyolitic rocks were mapped on the slopes above the upper South Unuk grid baseline on the southwest-facing flank of Mount Madge, on the Cumberland Grid above the adits where they are contained in tholeiitic basalt of the John Peaks Member. Transitional rhyolite flows and breccias are also present in the Battlement Area in proximity to tholeiitic rhyolitic rocks, and in the Virginia Lake Area near the edges of a body of strongly LREE-enriched calc-alkaline rhyolitic rocks described in the section below. However, the most voluminous occurrences of transitional rhyolite are in the eastern part of the Corey property, in a belt of rocks lying just to the east of the Mandy Creek Thrust. This includes the area around the HSOV massive sulphide showing, the Spearhead Showing, and on the eastern margin of the Golf Course Area. At these locales the rhyolitic rocks approach or exceed 100 m in thickness; they occur as massive to banded flows, breccias and epiclastic breccias. In the Golf Course Area there are good examples of rhyolite breccias grading to volcanic conglomerates with heterogeneity increasing away from the lava rocks.

Unlike the tholeiitic rhyolite rocks found to date, zones of strong alteration, which include silicification and pyritization, occur in portions of the transitional rhyolitic rocks and in overlying volcaniclastic and sedimentary units. Notable for this are sections of the stratigraphy at the HSOV massive sulphide showing, and in the eastern margin of the Golf Course Area. Also, the rhyolitic rocks hosting the Spearhead massive sulphide showing are intensely silicified and pyritized.

Given the general uniformity in the composition of the transitional rhyolite rocks it is possible that all these rocks were the product of one magmatic event. The transitional rhyolitic rocks occur stratigraphically immediately below or within the tholeiitic basaltic rocks of the John Peaks Member, Salmon River Formation. A U-Pb age-date obtained on transitional rhyolitic rocks found in proximity to the HSOV showing is equivalent to the age estimated for the rhyolitic rocks at the Eskay Creek mine. Given the geochemical, geo-chronological, and spatial relationships the transitional rhyolitic rocks and intrusive equivalents at Corey belong to the Salmon River Formation.

Calc-Alkaline Rhyolite Volcanic Rocks

Rhyolite volcanic rocks of calc-alkaline affinity were defined as those possessing La/Yb ratios greater than 6.
Calc-alkaline rhyolite volcanic and intrusive rocks are the prevalent felsic volcanic rock type at the middle to lower elevations on the South Unuk grid. They are also prevalent at the Angela Creek massive sulphide showing, further south as part of the WDS rhyolite zone, and further up-slope from the WDS Zone, below the contact of calk-alkaline mafic volcanic rocks with tholeiitic mafic volcanic rocks. Calc-alkaline rhyolite volcanic, intrusive, and volcaniclastic rocks also occur at and below the Beefcake showing in the Cumberland Area. Calc-alkaline rhyolitic volcanic rocks also crop out exensively at upper elevations in the Virginia Lake Area.

The calc-alkaline rhyolitic rocks typically crop out as small plug or lens-shaped bodies of less than 50m across, which may be locally weakly porphyritic but are more commonly more likely fine-grained to aphanitic. More extensive flow and breccia bodies are present at the upper elevations in the Virginia Lake Area and in the area of the Beefcake showing. Banding may be locally present as are varying degrees of brecciation at the margins. With the exception of the rhyolitic rocks near Virginia Lake, most of the calc-alkaline rhyolite outcrops reside in clastic, mudstone-rich sequences, within dominantly calc-alkaline mafic to intermediate volcanic rocks located beneath the tholeiitic mafic rocks. Certain rhyolite outcrops, such as those at the Angela Creek sulphide showing have features that suggest the lavas burrowed along local ancient fault scarps. Most outcrops of the calc-alkaline rhyolitic rocks are affected to varying degrees by sericitization, silicification and, locally, by significant disseminated and fracture-controlled pyrite.

Dacitic Volcanic Rocks

A more detailed geochemical assessment of the dacitic rocks is possible after the 2006 exploration season due to sampling of the John Peaks and Battlement Area.

Tholeiitic Dacitic Volcanic Rocks

Two examples of the dacitic volcanic rocks sampled are of tholeiitic affinity. One was from an outcrop in the Eva Creek Area and the second was from the northeast flank of Mount Madge above Sulphurets Creek. They possess distinctive flat chondritenormalized REE patterns that are significantly different from the patterns displayed by the transitional dacitic rocks described below.

Transitional Dacitic Intrusive and Volcanic Rocks

The most extensive outcrops of dacitic rocks mapped lie in the eastern portion of the Corey property, east of the Mandy Creek Thrust. These rocks are found around the HSOV showing, and in the eastern part of the Golf Course Area. They include volcaniclastic and flow rocks as well as feldspar-porphyritic intrusions. Many of the outcrops examined are altered to a varying degree by quartz, sericite, and pyrite. Most of these dacitic rocks are of transitional magmatic affinity. They crop out in proximity to large volumes of transitional rhyolitic and minor transitional andesitic rocks east of the Mandy Creek thrust.

Less voluminous, scattered, beds of transitional dacitic volcaniclastic rocks, and rare dacitic intrusive rocks were sampled west of the Mandy Creek Thrust, in the South Unuk, Cumberland, Battlement, and Jo Jo Areas. Some of the outcrops were

tuffaceous and the greater proportion of these western transitional dacitic rocks likely represents more distal deposits.

All the transitional dacitic intrusive and volcanic rocks classed as HSOV Type (from the Golfcourse and HSOV areas) appear to lie at the same level within the stratigraphy - immediately below the tholeiitic mafic volcanic rocks of the John Peaks Member. The "LC Type" dacites of the Lower Cumberland-South Unuk-Battlement areas mostly occur as thin, tuffaceous beds and may have been erupted from a different volcanic center, at a geologically slightly later time than the HSOV Type dacitic rocks.

The transitional dacitic intrusive volcanic rocks may be coeval to or overlap the emplacement of the transitional rhyolitic rocks found in the Golf Course Area. Both the transitional dacitic and rhyolitic volcanic rocks appear to be situated at about equivalent levels in the stratigraphy beneath the tholeiitic basaltic volcanic rocks of the John Peaks Member, but lying above calc-alkaline volcanic rocks. Therefore the transitional dacitic rocks have been labeled JrH5f and are considered to constitute another "transition unit" together with the mafic transitional volcanic rocks described previously. These rocks form transitional stratigraphy located between the older calcalkaline-dominated part of the Hazelton Group, the Betty Creek Formation, and the younger, tholeiitic and rift-related rocks of the Salmon River Formation.

Calc-Alkaline Mafic to Intermediate Volcanic Rocks and Intrusive Equivalents

Thick intercalated sequences composed dominantly of mafic and lesser intermediate tuffaceous to sandy volcaniclastic rocks with lesser volumes of lava flows and breccias have been mapped in the Lower Cumberland, South Unuk, Battlement, and Virginia Lake Area.

The majority of these rocks are interpreted to be of calc-alkaline magmatic affinity based on their La/Yb and Th/Yb ratios, plus higher levels of LREE-enrichment compared to the transitional mafic rocks at Corey. Field mapping indicates that the calc-alkaline mafic and intermediate rocks reside stratigraphically below the tholeiitic and transitional mafic volcanic rocks. Therefore these calc-alkaline rocks are interpreted to belong to the lower sections of the Hazelton Group stratigraphy and likely represent the Betty Creek Formation on the Corey property.

Several geochemically different varieties of calc-alkaline mafic and intermediate volcanic rocks appear to be present. Two broad geochemical series have been established - A Series and B Series. These serve as initial categorizations based on the degree of LREE enrichment present and the shape of chondrite-normalized REE plots.

The presence of geochemical subgroups within the A and B Series calc-alkaline rocks suggests that there were several cycles of calc-alkaline magmatism, with eruption potentially taking place at different volcanic centres over significant time periods. In a regional context, the calc-alkaline mafic and intermediate volcanic rocks mapped at Corey may be part of the Betty Creek Formation. Regionally, the Betty Creek Formation is composed of older calc-alkaline volcanic and intrusive rocks. These rocks were rifted and partially overlain by coarser-grained volcanic-rich detritus and

fine-grained argillaceous sediments and then by tholeiitic volcanic rock erupted in response to extension (Barrett and Sherlock, 1996). Given this regional interpretation, most of the calc-alkaline mafic to intermediate rocks on the Corey have been labeled as JrH2, which is the designation established by government geologists for the calc-alkaline andesitic volcanic rocks of the Unuk River Member of the Betty Creek Formation.

Calc-Alkaline Dacitic Volcanic Rocks of the Lower Stratigraphy

Examples of calc-alkaline dacitic volcanic rocks were mapped within and adjacent to the greater package of calc-alkaline mafic and intermediate rocks. Generally there are not large amounts of these rocks present in the South Unuk or Cumberland Areas, but significantly extensive outcrops were mapped in the Battlement and Virginia Lake Area. Calc-alkaline dacitic volcanic rocks were also encountered to the east of the Golf Course Area on the south flank of Johns Peak.

Three different chemical subtypes of calc-alkaline dacitic volcanic rocks are present - SV type, WDS type and BR type – based on their respective REE patterns and immobile trace element contents and named based on their broad geographic locations.

Field occurrences suggest that the SV and WDS Type dacitic rocks are located somewhat lower in the volcanic stratigraphy at Corey than the BR Type dacitic rocks. All three chemical subtypes of calc-alkaline dacite are likely part of the Betty Creek Formation and constitute older volcanic rocks that underlie the rift related, tholeiitic-dominated volcanic rocks of the Salmon River Formation. The calc-alkaline dacitic rocks have been labeled JrH3, a category that has been applied to other felsic volcanic rocks assigned to the lower part of the Hazelton stratigraphy.

DISCUSSION OF LITHOGEOCHEMICAL RESULTS

Cambria proposed the use of extensive lithogeochemical sampling as part of the renewed exploration program on the Corey property in 2003. In preparation for exploration, lithogeochemical interpretation of available whole rock geochemical databases, collected by previous industry and government workers, was done to outline the extent of rift related tholeiitic volcanic rocks in area south of the Eskay Creek Mine (McGuigan et al., 2004). The basal portion of rift-related tholeiitic rocks, specifically that section containing low TiO2, tholeiitic, rhyolitic volcanic and intrusive rocks is the host of the Au-Ag-rich Eskay Creek volcanogenic massive sulphide deposit. The initial geochemical interpretation work done in 2003 and early 2004 confirmed that rift-related rock types were a major bedrock constituent on the Corey property.

The employment of lithogeochemical sampling as an aid to field mapping was essential in better delineating the stratigraphy of the Corey property. It has been especially worthwhile in the determination of the following.

1. In the identification of rhyolite rocks of similar, tholeiitic affinity as those at the Eskay Creek Mine, and in determining the presence of significantly different rhyolite packages that are not presently known to be associated with massive sulphide mineralization.

2. In separating the different transitional and calc-alkaline mafic and intermediate volcanic rock units underlying the John Peaks Member of the Salmon River Formation. Such work in conjunction with detailed surface mapping is essential in locating the facies and structural changes, which might lead to the discovery of mineralization controlled by the older paleo topography that underlies the younger rift-related mafic volcanic rocks.

PB ISOTOPE AND U-PB GEOCHRONOLOGICAL AGE DATING

Dr. Jim Mortenson, Professor at the University of British Columbia and a researcher with the Mineral Deposit Research Unit (MDRU), collected several sulphide samples in September 2004 in an effort to establish the age of the principal mineralized zones at Corey. These samples were analysed for lead isotopes at the Pacific Centre for



Figure 10. Lead isotope plots for Corey Property samples showing their relationship to the Jurassic, Tertiary and "Eskay" clusters. (Data from research by J. Mortenson, Mineral Deposit Research Unit).

Isotopic and Geochemical Research (PCIGR) in Vancouver. Pb isotope analyses have clearly demonstrated that the massive sulphide mineralization at both the Smitty and Cumberland showings are of Jurassic age on a plot of 206Pb/204Pb vs. 207Pb/204Pb and the Smitty mineralization lies well within the age range of the Eskay Creekdeposit (Figure 10). High-grade Cu-Ag sulphide-sulphosalt vein mineralization from the Tet Showing has been shown to have a younger Tertiary age. Additional Pb-isotope analyses for sulphides from the C10 and HSOV zones are ongoing with results expected in the next month. Kenrich is very encouraged by these highly significant results which conclusively show that the best massive sulphide occurrences at Corey are of the same age as the Eskay Creek Deposit.

In addition to the Pb isotope samples, two samples of Corey rhyolite were submitted to the PCIGR for U-Pb geochronological dating. Rhyolite from the sequence of felsic volcanics and mudstones that hosts the HSOV massive sulphide occurrence has returned an age of 174.9 ± 1.4 million years and thus lies well within the highly prospective Salmon River Formation. A similar U-Pb date by Childe (1996) from rhyolite immediately underlying the Eskay Creek Deposit returned an age of 174 ± 2 million years. This new data has gone a long way to clarifying the geological interpretation of this entire area while confirming the presence of another bona fide Eskay-age massive sulphide target.

A second rhyolite sample was collected in 2004 from Virginia Lake in the northwest part of the property and submitted for U-Pb age dating at the MDRU. This sample returned a slightly younger age of 169.2 ± 1.6 million years which places it in the uppermost part of the Middle Jurassic Salmon River Formation.

ROCK GEOCHEMISTRY (2004-06)

SAMPLING METHOD AND APPROACH

During the 2004-06 field seasons, field crews from Discovery Consultants, of Vernon, B.C., for Cambria Geosciences Inc., on behalf of Kenrich, collected a total of 471 rock samples from outcrop for geochemical analysis and/or assay as part of a propertywide prospecting program. Cambria geologists augmented this data with 404 further samples taken during geological mapping. Rock samples were taken as individual grab samples and a locking plastic tie was placed on all plastic bags to ensure that samples were not contaminated in any way. The samples were sent to Acme Analytical Laboratories Ltd. ("1DX" and "7AR" ICP-MS analytical packages) and Pioneer Laboratories Inc. (ICP-MS analysis), in Vancouver, B.C., for sample preparation and analysis. Data for rock samples collected are listed in Appendix C (the digital media attached to this report) along with locations in UTM NAD 83 coordinates. Locations of all rock samples (ICP geochemistry and assay) are shown on Maps 3 and 4 (in pocket). Results of the ICP geochemical analyses are shown in several maps in Appendix E. Results of the assay sampling are shown in maps in Appendix F.

The labs have a registered ISO 9001:2000 accreditation. Data quality control procedures identical to those described above for the lithogeochemical sampling program were carried out by Cambria during 2005-06.

RESULTS

Rock sampling has identified bedrock with anomalous geochemistry in numerous locations, especially in the South Unuk, Cumberland and Virginia Lake areas, providing a useful adjunct to the selection of drill targets. For example, in 2005 prospecting in Konkin Creek in the South Unuk area identified a new zone of alteration and vein mineralization, expanding the area of gold-silver rich veining of the Double Mac zone by some 100 metres. A selected sample of a thin massive sulphide-sulphosalt vein from this location returned assays grading 38.6 g/t Au, 2484 g/t Ag and 3.0% Cu.

In 2006, geochemical sampling around a series of strong gossan zones in the eastern part of the property returned results with very high gold, silver and copper grades. Numerous grab samples were taken from a roughly 500 metre by 500 metre area in the vicinity of the GFJ Showing. In this area, quartz-carbonate-sulphide veins with high precious metal grades cut altered mafic volcanic rocks. For example, Sample 429791 returned grades of 94.5 g/t Au, 175 g/t Ag and 2.48% Cu. Sampling was also carried out further east still, south of the Spearhead Zone. Sample 12805 from this area graded 36.8 g/t Au, 110 g/t Ag and 1.59% Cu. These high grade zones will be examined in more detail in the 2007 field program to determine the exact nature of the mineralization and to put it in a proper geological context with a view to Phase Two drilling (see below). Cu, Pb, Zn, Ag, Au, As and Sb analyses for the Discovery samples are shown on Figures 11a-g.

STREAM SEDIMENT GEOCHEMICAL PROGRAM (2004-05)

SAMPLING METHOD AND APPROACH

During the 2004-05 field seasons, Discovery Consultants, of Vernon, B.C., conducted a stream sediment survey on the Corey property. Information provided here about the methods and results of the stream sediment survey are summarized from material supplied to the authors by W. Gilmour, P.Geo. of Discovery Consultants who designed, supervised and conducted the interpretation of this geochemical survey.

On the Corey property, local stream drainages are developed in bedrock and in areas of incised colluvium, glacial till and glaciofluvial outwash deposits. Sampling was conducted at sites characterized by active stream channels containing a range of coarse, immature sediments, dominated by gravels, cobbles and boulders. The highenergy environment in the streambed provides the best setting for obtaining the needed consistent quantities of physically transported sulphides (fresh and partly weathered), iron oxides, gold and other heavy minerals, especially in glaciated terrains. The same high-energy sediments can also contain precipitates of hydromorphically-dispersed base metals, iron and gold.

Sampling of high energy sites contrasts with the standard stream sediment sampling procedure where silt and/or clay are collected from accumulation sites associated with more quiet-water sedimentation. Specifically, gravel bars within active stream channels were sampled at the bar head, following the work of Fletcher (1990). Fletcher and Wolcott, (1991) demonstrated that gold is mainly transported during freshets when bar sediments are eroded and later re-deposited. Further to this, sampling of freshet deposits requires a vertical profile be sampled. Erratic winnowing of, and re-deposition of light sediments at the surface of the bars also necessitates sampling at depth.Based on a previous orientation survey in a similar setting on an adjacent property (McGuigan and Gilmour, 2001), a sieved silt method was used. Large amounts of high-energy streambed sediment were wet sieved to obtain about 2.5 kg of coarse sand and silt (minus 20 mesh or 840 microns). The samples were collected by carefully shoveling the sediments into a minus 20 mesh stainless steel sieve (diameter 36 cm, depth 17 cm) resting in a large aluminum pan containing water. Some liquid detergent was added to the wash water to prevent flotation of small metallic mineral grains. Using handles on the sieve, a rotary-type motion like a washing machine was used to sieve the sediments. At some sites there was no water for wet sieving and in these instances a larger sample of minus 6 mesh (3.36 mm) sediment was collected. Sieves and pans were thoroughly cleaned after each sample.

The priority of this survey was to collect a sufficient weight of sample to obtain at least 30 g of minus 80 mesh, so in a few instances moss-mats were used to augment streambed sediments. Moss-mats were stripped from rocks within the streambed as they contain high-energy sediments (Lett, 2000). The stream sediments were collected from all the creeks shown on the 1:20,000 TRIM maps, and occasionally from smaller creeks. Samples were collected at approximately 200-metre intervals along the creeks. GPS readings and thread chains were used to locate the sites. Some areas were inaccessible due to hazardous cliffs and canyons.

In total, 612 unique sites were sampled over an area of approximately 100 km2. Field-sieved samples were sent to Acme Analytical Laboratories Ltd., in Vancouver, B.C., for sample preparation and analysis. Sample locations are shown on Maps 3 and 4 (in pocket).

The field samples were sieved to minus 80 mesh (177 microns). The moss-mat samples were dried, broken apart and also sieved to minus 80 mesh. Where a sample comprised both sieved silt and moss-mat material, the minus 80 mesh sediment was combined. To produce representative sub-samples, the minus 80 mesh material was split with a riffle splitter.

Following aqua regia digestion, gold and multi-element determinations to assist in interpretations were made by ICP-MS techniques (the sub-sample for digestion and analysis was 30 g). The use of aqua regia digestion preceding gold analysis is suitable for geochemical stream sediment surveys with gold in native form and within sulphide and secondary oxide minerals being determined.

RESULTS

The results from the 2004-05 work have demonstrated the effectiveness of the chosen high-energy stream sediment geochemical technique in detecting Eskay-type mineralization on the Corey property. Numerous multi-sample, polymetallic anomalies were detedted; the major anomalous zones are summarized in Figure 12. Stream sediment sampling on the mountain slopes of the Cumberland - South Unuk zone and surrounding areas has yielded exceptionally strong multi-element geochemical anomalies (Ag-Au-Cu-Zn-Pb-As-Sb). The anomalies are each defined by a dispersion train of responses running downslope from a source within or near Eskay-type mudstones. The following descriptions pertain to several samples within the drainages, and span multiple drainages. Data for Cu, Pb, Zn, Au, Ag, As and Sb are presented in Figures 12a-g (in Appendix G).

Known showings respond: Stream geochemistry responded strongly to the known Cumberland, HSOV, Tet and C10 zones, each yielding precious and base metal responses that included gold, silver, zinc, arsenic, antimony and lead. Copper responses are widespread and likely reflect the high copper background of the Salmon River basalts. At the HSOV, the strength and distribution of the geochemical responses is too extensive to be solely explained by the HSOV volcanogenic massive sulphides at surface.

Smitty Area, Cumberland-South Unuk: As well as the strong response from the Cumberland showing, another prominent anomaly is located downslope of the Smitty VMS discovery outcrop. It also extends onto the slope above the new showing, indicating an additional source of precious and base metals lying to the east of the Smitty discovery. Guided by the stream sediment geochemical data, drilling at the Smitty in 2006 intersected numerous examples of "VMS style" laminated and/or clastic fine grained sulphides in mudstone with notable but sub-economic enrichments of zinc over drilling distances of up to 9 metres (see section on drilling, below, for details).

South Unuk Zone: Another second prominent anomalous zone, in Konkin creek and adjacent creeks on the South Unuk grid, occurs downslope from a sequence of

Eskay-type tholeiitic basalt, a thick mudstone sequence and veined and altered volcanic rocks. Anomalies extend upslope into the mudstone sequence above the altered volcanic rocks. Anomalies cross the trend of the geology suggesting some control by structures cutting the stratigraphy at low angles to the strike. Other strong multi-element geochemical anomalies (Ag-Au-Cu-Zn-Pb-As-Sb) extend south-eastward along the strike of a sequence of mudstones, basalts and felsic volcanic rocks for 5 km towards Mount Madge and the C10 VMS "feeder zone". Initial drilling of these anomalies in 2005 revealed veining, alteration and subtle metal enrichments within mudstone (again, see section on drilling below). This and the numerous geochemical anomalies suggest that buried polymetallic VMS occurrences might be discovered in the mudstones of the South Unuk area.

Virginia Lake-Battlement: During the second round of geochemical sampling, in 2005, very promising anomalies were detected northwest of the Cumberland Zone on the east side of the Virginia Lake-Battlement zones, in areas underlain by felsic volcanics, mudstone and basalt. Responses there included mercury. They are promising due to the proximity of Eskay-type rhyolites and basalts (as described in the Lithogeochemistry section, above). The 2006 drilling targeted portions of this "Eskay like" sequence, in part guided by the stream sediment geochemistry. This drilling intersected zinc-dominated polymetallic mineralization over a 3 metre wide interval within mudstone proximal to an Eskay-type rhyolite, within the core of the Battlement Zone. The stream geochemistry also guided drilling at the northern limit of the Battlement zone, bordering the South Virginia Lake stratigraphy. Here, subtle zinc and antimony enrichments occurred within weakly stringer-veined mudstone and in calc-alkaline felsic breccia carrying fine grained sulphide clasts.

Gold Anomalies: The southern extension of the South Unuk zone is characterized by numerous gold geochemical anomalies, ranging up to 100 times background values, in stream sediments that lack the Eskay-type multi-element character, but drain a succession of Salmon River formationvolcanics and sediments and footwall stratigraphy. Stuhini (?) sediments underlie the zone and are proximal to the Harrymel – South Unuk fault zone that was active during the formation of the Eskay-Corey rift belt. More prospecting is required in this area to locate the source of the anomalies, and a possible link between synvolcanic mineralized footwall structures and the gold anomlaies should be considered.

2006 AIRBORNE (AEROTEM) GEOPHYSICAL SURVEY

During April 2006, Aeroquest Limited carried out a helicopter-borne geophysical survey on behalf of Kenrich on the Corey Property. The principal geophysical sensor was Aeroquest's exclusive AeroTEM© II time domain helicopter electromagnetic system, employed in conjunction with a high-sensitivity cesium vapour magnetometer. A total of 1191 km of survey line was flown within the project area. The following section summarizes the report on this work provided by Aeroquest (Pozza, 2006).

SURVEY AREA

The survey terrain is mountainous with a number of icefields. The terrain elevation ranges from approx 1000 – 6000 ft (300-2000 m). The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 100 m. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1 km. The nominal EM bird terrain clearance is 30m, but can be higher in more rugged terrain due to safety considerations and the capabilities of the aircraft. The EM data is acquired as a data stream at a sampling rate of 38,400 samples per second and is processed to generate final data at 10 samples per second, which translates to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

NAVIGATION AND SYSTEM DRIFT

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The system has a published accuracy of less than 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of less than 0.6 metres and for z less than 1.5 metres over a two-hour period.

Unlike frequency domain electromagnetic systems, the AeroTEM© II system has negligible drift due to thermal expansion. The operator is responsible for ensuring the instrument is properly warmed up prior to departure and that the instruments are operated properly throughout the flight. The operator maintains a detailed flight log during the survey noting the times of the flight and any unusual geophysical or topographic features. Each flight included at least two high elevation 'background' checks.

FIELD QA/QC PROCEDURES

Data verification and quality control includes a comparison of the acquired GPS data with the flight plan; verification and conversion of the RMS data to an ASCII format XYZ data file; verification of the base station magnetometer data and conversion to ASCII format XYZ data; and loading, processing and conversion of the steaming EM data from the removable hard drive. All data is then merged to an ASCII XYZ format file which is then imported to an Oasis database for further QA/QC and for the production of preliminary EM, magnetic contour, and flight path maps. Survey lines that show excessive deviation from the intended flight path are re-flown. Any line or

portion of a line on which the data quality did not meet the contract specification was noted and re-flown.

MAGNETIC DATA

Prior to any leveling, the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a random grid technique with a grid cell size of 25 metres. The final leveled grid provided the basis for threading the presented contours, which have a minimum contour interval of 10 nT. Figures 13 and 14 present time domain EM and total maganetic intensity (TMI) data for the survey area.

In order to enhance subtle magnetic trends a 'tilt' derivative grid was calculated from the TMI grid. The Tilt Derivative (TDR) of the TMI enhances low amplitude and small wavelength magnetic features which define shallow basement structures as well as potential mineral exploration targets. The tilt derivative can be thought of as a combination of the first vertical derivative and the total horizontal derivative of the total magnetic intensity. TDR data guided some of the 2006 drilling in the South Unuk area (see Table 3, below).

RESULTS AND INTERPRETATION

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. Below is a brief interpretation of the results.

The EM anomalies on the maps are classified by conductance and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response. For a vertically orientated thick source (say, greater than 10m), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response. Because of these differing responses, the AeroTEM system provides discrimination of thin and thick sources and this distinction is indicated on the EM anomaly symbols (N = thin and K = thick).

Where multiple, closely spaced conductive sources occur, or where the source has a shallow dip, it can be difficult to uniquely determine the type of the source (i.e. thick vs. thin). For shallow dipping conductors the 'thin' pick will be located over the edge of the source, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly. EM responses of exploration interest are described below in Table 3, along with the follow-up work carried out on the ground in 2006. Flight line number followed by the anomaly alphanumeric label(s) identifies EM anomalies. In many cases, there may be more than one anomaly label for a single conductor since both the top edge and down-dip 'heart' of the conductor may be indicated. Unless noted, the UTM coordinates listed (NAD83 UTM 9N) indicate the position at which the conductor is closest to surface.



Figure 13. AeroTEM© II EM data for the Corey Property survey area, split into contiguous north and south sheets (red line indicates property boundary).



Figure 14. AeroTEM© II TMI data for the Corey Property survey area, split into contiguous north and south sheets (red line indicates property boundary).

TARGET	EASTING	NORTHING	AREA	PAD BUILT?	TARGET DRILLED? *
L10480A,B	407891	6262532	West Bench	NO	NO
see also					Shallow anomaly located
L10500A					under the Sulphurets river
L10452A,B	410773	6262803	Golf Course	YES	YES
			South		
L10340D,E,F, G,H	410410	626394	Golf Course	YES	YES
L10550C,D,E	411489	6261835	Golf Course	YES	YES
			Cliffs above		
			Sulphurets		
L10960A,B	414018	6257730	GFJ	NO	NO
					Possible follow-up in 2007
L11070C	411022	6256531	Eva Creek	YES	YES
L11080D,E	to				
L11090C	410922				
L11100E					
EM-SU1	409840	6258116	South Unuk	YES	YES
Cambria TDR			Kenrich Creek		
Target					
EM-SU2	409815	6258116	South Unuk	YES	YES
Cambria TDR			Kenrich Creek		
Target					
L10930D	409859	6258025	South Unuk	NO	NO
EM-SU3			Kenrich Creek		Possible follow up in 2007
					Fault-related veining?

Table 3: Summary table, EM responses of exploration interest and follow-up work.

*see next section for description and results of follow-up drilling

CHAPTER 4:

MINERALIZED ZONES & DIAMOND DRILLING TESTING

INTRODUCTION

2004-06 SIGNIFICANT MINERALIZED DISCOVERIES

Geological mapping and prospecting at Corey, starting in 2004, initially targeted the contact area between the basalts of upper Salmon River Formation and the underlying and partially interlayered sequence of mudstones, muddy epiclastic rocks and rhyolites in the **Cumberland-South Unuk** area. This area was considered to have one of the best sections of Eskay-equivalent stratigraphy on the property and was thus highly prospective. This focused work yielded immediate positive results with the discovery of the **Smitty Showing** early in the 2004 program, shortly followed by the discovery of the **Angela Creek** massive sulphide and **Double Mac** and **1500 high-grade carbonate-sulphide-sulphosalt vein showings**, later in the 2004 season.

Subsequent, more wide-ranging work in 2005-06, in part guided by an AeroTEM geophysical survey, discovered the **Spearhead massive sulphide showing** and an area of altered mafic volcanic rocks cut by quartz-carbonate-sulphide veins with high precious metal grades near to the **GFJ showing**, also in the eastern part the property.

EXPLORATION SIGNIFICANCE OF THE NEW DISCOVERIES

The Smitty, Angela Creek and the Spearhead Zone occurrences join the Cumberland and HSOV Showings as true volcanic-hosted massive sulphide occurrences that have been discovered in outcrop on the Corey property. Massive sulphides and their enclosing mudstone host rocks are recessive weathering and are rarely found in outcrop in the Eskay Creek district. The main Eskay Creek massive sulphide deposits are "blind" and were discovered during diamond drilling activities. **Within the distinctive Eskay-Corey volcanic-sedimentary rift belt, massive sulphides have been found in outcrop only on the Corey property.**

The Cumberland and the Smitty are the only known VMS showings outside of the Eskay Creek property to have the characteristics of Eskay VMS deposits and that are exposed on surfac. Drilling promises to extend these showings and to test their hosting mudstones along strike, where 5 km of strong multi-element geochemical anomalies (Ag-Au-Cu-Zn-Pb-As-Sb) extend south-eastward along the strike of a sequence of mudstones, basalts and felsic volcanic rocks of the Eskay signature towards the C10 "VMS feeder zone" at Mount Madge. These numerous geochemical anomalies suggest additional buried polymetallic VMS targets.

The discovery of the Spearhead Zone has effectively upgraded the eastern portion of the property and provided an exciting new target for work in the 2007. The extensive alteration, rusty gossan zones and stockwork to massive, laminated sulphide mineralization all indicate that a VMS-style hydrothermal system was active in this area.

OBJECTIVES OF DIAMOND DRILLING PROGRAM 2005 & 2006

The 2005 and 2006 diamond drilling programs on the Corey property total 19,346 metres of drilling over 108 drill holes. The programs were conducted to:

- 1. Test a total of ten previously known or newly discovered volcanogenic massive sulphide (VMS) zones prospective for Eskay-type precious metal rich massive sulphides on the property. Their associated hydrothermal alteration was also tested, along with the source rocks for numerous polymetallic (Au-Ag-Zn) stream sediment geochemical anomalies and electromagnetic conductors prospective for VMS mineralization. 2005 saw initial drilling on five of these target areas: The C10 Zone, Cumberland Zone, Smitty Zone, South Unuk Area and the HSOV Zone. 2006 saw follow-up drilling on the C10 Zone and South Unuk, plus initial drilling at Eva Creek, Angela Creek, the Spearhead, the Golfcourse and the Battlement.
- 2. Further probe the shape and distribution of the Eskay-rift basin on the Corey property.

The 2005 and 2006 exploration programs completed the first series of diamond drilling since commencing with advanced exploration methods on the Corey in 2004. 44 diamond drill holes were completed at Corey in 2005 for a total of 6901 metres (CR05-01 to -028 and CBL 05-06 to -16; in addition, 8 short prospecting holes, KC05-01 –05 and CR05-10, -11 and 13, were completed, but are not described here).

The 2006 exploration program completed a further series of diamond drill holes that followed up on the targets identified and partially drill-tested in 2005. It also probed numerous new targets identified by AeroTEM II airborne geophysical survey and continued geological mapping and sampling during the 2006 field season. 54 diamond drill holes were completed at Corey in 2006 for a total of 12,445 metres of drilling (CR06-29 to -74, AC-1 to -3, GC-1 to -3 and SH-1 and -2).

Along with the usual sampling of drill core for assay, lithogeochemical samples were systematically taken to help better define stratigraphy within the altered volcanic rocks and associated sediment (see the section on Chemostratigraphy and Lithogeochemistry, above, for these results and a description of sampling techniques; Appendix C in the accompanying disk contains all of the data tables). The following text outlines these drill programs, summarises their results and presents conclusions drawn from this work (note, angles of the mineralized zones to core axis reported below are variable, so true widths are in most cases different to the reported widths). A more detailed description of the drill programs can be found in Appendix A and complete summary text logs for each drill hole in Appendix B. The locations of the drill holes and mineralized zones described here are shown in Figures 15 (see Map 5 in pocket). More detailed plans of the drilling and surface geology by specific area are shown in Figures 16 to 27. Figure 15a (below) contains a lithological legend to accompany these figures.





Figure 15a. Legend of major lithostratigraphic units at the Corey Property (to accompany Figures 15 to 27).

C10 ZONE

Drill hole	Elevation	Azimuth	Dip	Depth
	(m)	(degrees)	(degrees)	(m)
CR05-12	1523	235	45	233.3
CR05-14	1523	255	45	343.3
CR05-15	1523	255	70	283.2
CR05-16	1222	225	45	84.7
CR05-17	1222	225	70	216.4
CR05-18	1222	290	60	218.2
CR06-29	1254	225	45	263.0
CR06-30	1254	225	60	326.7
CR06-31	1244	255	45	385.9
CR06-32	1244	255	60	357.7
CR06-33	1244	280	60	299.3
CR06-34	1244	280	45	164.2
CR06-35	1244	280	68	203.0
CR06-36	1254	045	45	137.8
CR06-37	1350	235	45	306.6
CR06-38	1350	235	60	306.0
CR06-39	1350	210	45	317.0
CR06-40	1350	210	60	336.8
CR06-58	1222	225	45	292.6
CR06-59	1222	257	52	182.9
CR06-60	1222	257	45	319.4
CR06-61	1149	280	45	297.2
CR06-62	1020	225	50	623.9
CR06-63	1149	280	65	330.1
CR06-64	1532	045	60	407.5

Table 4: Depth and orientation of all C10 drill holes.

This extensive zone (see Figures 2 and 5) comprises massive to tuffaceous sericite schist containing up to 30% quartz veinlets and lenses. This zone is reported to contain up to 10% pyrite with minor fine-grained sphalerite, as part of a northwest-trending pyrite-sericite schist alteration zone extending as much as 6.5 km and 0.8 to 1.6 km in width. Silicification in this zone increases with depth, as well as towards the east. Significantly, the zone is reported to contain monzonite dykes within the altered volcanic sequence, a feature similar to the Eskay Creek and SIB properties. Soils and rocks are anomalous in Au and Ag. In addition, despite a "Betty Creek Formation" classification, the Technical Report of McGuigan, et al, 2004 concluded that Eskay-type tholeiitic mafic volcanics occur in the C-10.

The C10 Zone crops out as an extensive, highly foliated zone of quartz-sericite-pyrite alteration and stockwork veining that has consistently returned a strong geochemical response. The 2005 and 2006 drilling (see Table 4 and Figures 16) targeted this

alteration and results have confirmed that strong metal zoned enrichment in precious and base metals is present throughout the altered zone, indicating that this is a large scale mineralizing system. These enrichments include **a 1.5 metre intersection with visible gold grading 99.4 g/t gold** in drill hole CR05-17 (assay data):

Drill hole	From (m)	То (m)	Width (m)	Au (g/t)	Cu (ppm)	Zn (ppm)
CR05-12	182.4	189.9	7.5	0.09	72.2	2032.0
CR05-14	182.5	185.3	2.8	0.45	202.3	2051.0
CR05-15	231.2	238.7	7.5	0.10	145.8	3498.0
CR05-17	145.5	147.0	1.5	99.40*	381.2	221.0
CR05-18	124.7	142.5	17.8	0.20	2824.0	110.8

*Value confirmed by a "full screen metallics" assay designed for samples containing coarse free gold

A plan and seven cross sections for the C10 drilling are included in Appendix H. The cross sections depict bar graphs of gold and copper geochemical values that clearly illustrate the enrichments in those metals throughout the zone. In particular, sections 1, 3, 4 and 6 shows a well defined zone of copper enrichments in excess of 1500 ppm Cu over widths of over 20 metres that dips steeply to the northeast.

This base and precious metal enrichment, alteration and the stringer vein style observed in drill core strongly confirm **the C10 is consistent with a feeder zone below a Volcanogenic Massive Sulphide (VMS) deposit**. Further to this, the discovery of shallow level pyrite infill textures and fine gained massive pyrite lamination in mudstone adds the **first direct evidence that the C10 Zone represents the targeted Middle Jurassic, Eskay-rift hydrothermal system.**

Now that the nature and orientation of the zone are well established, drill testing can be more confidently carried out in the higher levels of the volcanic-sedimentary stratigraphy that have the best potential for discovery of a high-grade massive sulphide deposit.



Figure 16. Location of 2005 drill holes at the C10 Zone (see also Appendix I)

CUMBERLAND ZONE

Drill hole	Elevation	Azimuth	Dip	Depth
	(m)	(degrees)	(degrees)	(m)
CBL05-06	370	026	45	45.7
CBL05-07	370	026	50	68.6
CBL05-08	370	026	55	68.6
CBL05-09	370	026	65	76.2
CBL05-10	370	038	45	86.9
CBL05-11	370	038	50	88.1
CBL05-12	370	038	55	86.9
CBL05-13	370	038	60	91.4
CBL05-14	370	050	45	87.8
CBL05-15	370	050	60	76.8
CBL05-16	370	010	45	64.6

Table 5: Depth and orientation of all Cumberland drill holes.

This area contains multiple occurrences of massive sulphides, barite, and base and precious metal mineralization. Within the Cumberland/Daly and South Unuk areas, silver-bearing veins sporadically cut both the mudstones and volcanic rocks. The Cumberland prospect (see Figure 5 for location), discovered in 1898 and explored by two short adits, is a true polymetallic, volcanogenic massive sulphide within a mafic host. Hand specimens from the adits have grades of **9.80% Zn, 2.70% Pb, 0.45% Cu, 9.33 g/t Au and 91.5 g/t Ag**. In 1996, Kenrich covered the area with detailed geological mapping, soil geochemistry, airborne geophysics and limited diamond drilling.

Located on the on the central axis of the Eskay-Corey rift basin, mineralization comprises a small exposure of zinc-rich volcanogenic massive sulphides within basaltic volcanic rocks and Eskay-equivalent mudstones that exhibit "classic" VMS textures and relationships (see Figure 15 and 17). The sulphides also have a Middle Jurassic lead isotope signature similar to the Eskay Creek deposit itself (discussed above).

The 2005 drilling targeted this mineralization (see Table 5). Assay results from the Cumberland Zone drill holes clearly illustrate the high grade polymetallic (Au-Ag-Cu-Pb-Zn) nature of the volcanogenic massive sulphide mineralization:

Drill hole	From (m)	To (m)	Width* (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
CBL05-06	28.1	45.7	17.3	1.5	46.8	0.1	0.6	1.9
Including	35.7	37.9	2.2	5.4	177.5	0.4	2.7	8.2
CBL05-07	33.5	68.6	35.1	1.2	45.3	0.1	0.2	1.2
Including	53.0	58.7	5.7	4.2	272.6	0.3	1.4	7.2
CBL05-08	45.1	46.4	1.3	14.1	166.1	0.2	0.1	0.7

Drill hole	From (m)	To (m)	Width* (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Including	65.9	67.1	1.2	1.2	109.0	1.4	2.0	17.1
CBL05-12	20.7	22.2	1.5	12.6	899.7	0.4	7.6	15.8

 \ast angles of the mineralized zone to core axis are quite variable; true widths are likely up to 50% less than the reported widths

The drill holes, including early drill holes in the 1980s and 1990s, encompass an area 300m by 300m. A plan and cross sections of the 2005 drilling are included in Appendix I. These plots show histograms of total Cu+Pb+Zn assays. The drillholes intersected the massive sulphides at varying core angles. The mineralized zone has very complex textures and contact relationaships with the host volcanic rocks. The zone is steeply dipping, or concave in shape, to the north. Some of the apparent discontinuity in the minerlaization may be at least in part due to the intrusion and disruption by mafic flows and this has this increased the difficulty of following the mineralized trend over substantial distances away from the exposed sulphides. Notwithstanding, surface mapping and the 2005 drilling have now more fully delineated the mineralized trend and future drill programs should include significant step-out testing of newly discovered prospective rhyolites and mudstones located along strike to the east of the zone, away from the mafic flows' disruptive influence. The 2005 drilling did clearly demonstrate that the Cumberland is a bona fide volcanogenic massive sulphide deposit, as opposed to a late vein-style zone. The interrelationships between the host rocks, the mineralization and the alteration necessitate this being a syngenetic deposit.



Figure 17. Location of 2005 drill holes at the Cumberland (see also Appendix I)

SMITTY ZONE

The Smitty zone discovery that was first announced September 4, 2004 contains volcanogenic massive sulphides (VMS) within Eskay-type mudstones and occurs near the contact with Eskay-type tholeiitic basalts (see Figure 5 for location). The VMS mineralization comprises bedded massive pyrite, chalcopyrite, sphalerite, galena and tetrahedrite with anomalous Ag-As-Sb-Cu-Zn-Pb geochemical values in a Salmon River formation mudstone. The sulphides occur at the same level in the Eskay sequence as the Cumberland, and lie about 1.75 km southeast of the Cumberland Zone.

The massive sulphide portion of the discovery is up to 0.9 metres thick in outcrop and the stratigraphic position and metal signature are exceptionally promising. These data are from 1 metre spaced chip samples across the width of the massive sulphide:

SAMPLE	Width	Copper	Lead	Zinc	Silver
	(m)	(%)	(%)	(%)	(g/t)
139511	0.6	0.71	0.15	7.18	132
139512	0.9	0.62	0.14	4.32	159
139513	0.6	0.68	0.17	8.71	356
139514	0.5	1.10	0.28	13.75	188

The massive sulphides and mudstone are within a wider band of rhyolite, intermediate volcanics and volcaniclastic sediments close to the contact with overlying basalt correlative with the Eskay rift volcanic-sedimentary succession. Silver- and zinc-rich massive sulphides indicate a very strong potential for the zone to host a gold-silver-zinc massive sulphide body.

Table 6: Depth and orientation of all Smitty drill holes.

Drill hole	Azimuth	Dip	Depth
	(degrees)	(degrees)	(m)
CR05-01	311	48	143.2
CR05-02	311	75	138.4
CR05-03	265	46	124.1
CR05-04	265	75	156.7
CR05-05	288	88	354.8
CR05-06	210	46	44.2
CR05-07	210	49	54.8
CR05-08	222	46	57.9
CR05-09	222	66	57.9
CR05-24	288	73	335.3
CR05-25	288	82	335.3

This drilling showed that the intervals of Eskay-equivalent mudstones that host the surface showing are intruded and disrupted by mafic sills of a closely similar age to the mudstones (see Figure 18). This contemporaneous sill formation is a defining feature of the Eskay-rift but at the Smitty, as at the Cumberland, it has increased the difficulty of following the mineralized interval over substantial distances away from the showing.

Notwithstanding, this drilling intersected numerous examples of "VMS style" laminated and/or clastic fine grained sulphides in mudstone. These sulphidic mudstone intervals contain notable but sub-economic enrichments of zinc over drilling distances of up to 9 metres. For example, drill hole CR05-24 returned **1843 ppm Zn over 9.0 metres**, from 292.7 to 301.7 metres depth. It is also important to note that these same intervals also contain anomalous concentrations of As, Sb and Hg, which are regarded as "pathfinder" elements for Eskay-type massive sulphide targets. This anomalous interval is clearly illustrated in Figure 18a, a cross section through drillhole 24 showing downhole histograms of Zn and Sb. A very strongly enriched zone within the mudstone strata is clearly present between 275 and 310 metres depth. Some of these intervals appear to be continuous between drill holes. These results indicate that the drilling has intersected a distal portion of the seafloor minrealzing hydrothermal system within the Eskay rift sequence. Future drilling in this area will target more vent-proximal areas where sulphide accumulations of appreciable grades are more likely to be found.



Figure 18. Location of 2005 drill holes at Smitty.

SOUTH UNUK AREA

Drill hole	Azimuth	Dip	Depth
	(degrees)	(degrees)	(m)
CR05-19	230	50	308.5
CR05-20	225	50	390.1
CR05-21	225	60	359.1
CR05-22	244	60	339.2
CR05-23	288	50	355.1
CR06-44	247	53	170.7
CR06-45	247	65	232.6
CR06-46	247	87	254.8
CR06-47	292	53	256.9
CR06-48	292	68	236.2

Table 7: Depth and orientation of all South Unuk drill holes.

The 2005 drill program tested prospective Eskay-rift mudstone identified as the source of polymetallic (Au-Aq-Zn) stream sediment anomalies. Of most significance were the anomalous concentrations of metals in drill hole CR05-20, whichintersected 22 metres grading 1158 ppm zinc, with anomalous arsenic, antimony and mercury, within stringer veined and silicified mudstone. This highly anomalous interval is very similar in nature to the intersections from the Smitty area discussed above. Figure 19a shows the anomalous interval in a cross section through hole 20 that displays histograms of Zn and Sb. While the 2005 drilling did not intersect mineralization that would explain the surface geochemical anomalies, the wide spacing of the drilling should be taken into account. The presence of apparently distal syngenetic sulphides in drill holes CR05-20 and -21, plus elevated base metals was also very encouraging. In 2006, an "AeroTEM II" airborne geophysical survey revealed a three hundred and fifty metre scale electromagnetically conductive body within the prospective mudstone in the Kenrich Creek area, and further analysis of the raw data refined target selection to two smaller anomalous zones within this larger conductive body. The 2006 drilling targeted these anomalies (Figure 19, CR06- prefix drill holes). "1DX" ICP-MS analysis of mudstone in these drill holes revealed notable zones of zinc enrichment with anomalous silver, arsenic, antimony and mercury, "Eskay pathfinder" elements:

Drill hole	From (m)	To (m)	Width (m)	Zn (%)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
CR06-47	54.6	80.6	26.0	0.12	2.6	54.3	5.3	0.06
CR06-47	90.6	110.6	20.0	0.18	4.2	58.2	7.8	0.07
CR06-48 CR06-48	45.3 91.3	55.3 111.3	10.0 20.0	0.14 0.16	2.5 3.8	136.0 54.9	3.9 7.1	0.05 0.05
	Back	ground	values:	0.01	0.5	31.9	1.6	0.01
Average al	i sample	es, not in	cluding an	omalous				
	val	ues, N=1	136					



Figure 19. Location of 2005-2006 drill holes in the South Unuk area.

The enrichment is associated with horizons of slumped mudstone with siltstone laminations carrying very rare pyritic debris and blebby to disseminated pyrite-pyrrhotite that preferentially "replaces" silt grains (see Appendix A). These iron sulphide-rich horizons within magnetically conductive sediment are the likely cause of the electromagnetic anomaly.

The 2005 and 2006 drilling results indicate that the South Unuk area represents a **distal portion of the seafloor mineralizing hydrothermal system within the Eskay rift sequence**. This area thus remains a large, promising target that requires more drilling to test the anomalous mudstone for an Eskay Creek-type deposit.

EVA CREEK AREA

Table	8: Dept	h and	orientation	of all Eva	Creek	drill holes.
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Drill hole	Elevation (m)	Azimuth (degrees)	Dip (degrees)	Depth (m)
CR06-41	1115	270	45	185.9
CR06-42	1115	270	53	149.0
CR06-43	1115	270	60	163.1

The 2006 drilling in the Eva Creek area (see Figure 20) targeted a steeply westdipping, north to south trending, isolated zone of high conductivity revealed by an AeroTEM II airborne geophysical. The drilling intersected a faulted quartz-pyrrhotitepyrite stringer veined tholeiitic basalt flow with subordinate mudstone. A notable twenty metre wide zone of intermittent and thin **quartz-pyrrhotite-pyritechalcopyrite veining carrying 2-3 g/t gold** over 1-2 m intervals occurred in the upper part of the drill holes (assay data):

Drill hole	From (m)	To (m)	Length (m)	Cu (%)	Zn (g/t)	Au (g/t)
CR06-41	77.4	79.4	2.0	0.08	0.10	2.48
CR06-42	102.3	102.8	0.5	0.03	0.15	2.10

Mudstone in the lower part of the holes contained up to ten percent disseminated and stringer pyrite and pyrrhotite, accompanied by one metre wide anomalous intervals of over 1000 ppm zinc. This stringer mineralization combined with the black mudstone were the likely cause of the anomalous geophysical response. No further drilling of this target is recommended unless the focus of exploration shifts from Eskay-type mineralization to vein-hosted gold.



Figure 20. Location of 2006 drill holes at Eva Creek.



Figure 21. Location of 2006 drill holes at Angela Creek.

ANGELA CREEK AREA

The Angela Creek semi-massive sulphide occurrence was discovered in 2004 during geological mapping. It comprises a five metre-by-two metre sized outcrop of five to twenty percent pyrite that cements a quartz-sericite altered and flow-associated rhyolite breccia. The breccia sits within black mudstone. This association of sulphide mineralization with rhyolite and black mudstone is most favorable, as it is very similar to the geological relationships of the Eskay Creek mineralization.

Table 5. Otheritation and depth of Angela creek drift holes.						
Drill hole	Elevation	Azimuth	Dip	Depth		
	(<i>m</i>)	(degrees)	(degrees)	(<i>m</i>)		
AC-1	442	260	65	71.0		
AC-2	442	260	85	73.2		
AC-3	442	310	48	112.8		

Table 9: Orientation and depth of Angela Creek drill holes.

This zone was tested in 2006 by three drillholes that intersected a strongly hydrothermally altered rhyolite breccia that contained up to 20% massive pyrite in its matrix. These sulphide textures suggest that the mineralization is VMS-style. The wide pyritic zones showed anomalous enrichments in zinc and gold (see section on drilling, below, for details).

The 2006 drilling at Angela Creek (Figure 21) targeted a massive sulphide occurrence comprising pyrite infill of an altered rhyolite breccia of transitional magmatic affinity within black mudstone. Assay and "1DX" data from this drilling revealed subtle, sub 0.1 percent scale, **polymetallic (Zn-Cu-Pb-Au) metal enrichment associated with the pyrite-cemented rhyolite breccia** and the enclosing silicifed and pyritised black mudstone. The polymetallic nature of this metal-enrichment indicates that fine grained pyrite infill minerlaization should be given due consideration as a proxy to more obviously polymetallic sulphide deposition occurring elsewhere at the same stratigraphic horizon. This drilling has also confirmed the prospective nature of the contacts between transitional rhyolite and mudstone in this area.

HSOV ZONE

This was discovered in September 1996 (see Figure 5). The showing consists of massive pyrite and marcasite mineralization containing textures and gangue minerals that indicate it was deposited on the ocean floor as sulphide chimneys in a "Black Smoker". The showing lies at the contact between rhyolite breccia and black shale, again similar to Eskay Creek. The horizon has been traced by mapping for one kilometre along strike and 500 metres down dip. Although the main showing does not contain economic grades, stream sediment and moss mat geochemical sampling of the horizon indicate areas that are significantly anomalous in Au, Ag, As, Zn and Cu. Soil geochemical surveys in 1997 outlined an area anomalous in Ag, As, Zn, Cu and Au. The geochemical anomaly, which has been traced for 600 metres along strike and is open at both ends, lies within the black shale, 100 metres above the shale/rhyolite contact.

Table 10: Orientation and depth of HSOV drill holes

Drill hole	Elevation (m)	Azimuth (degrees)	Dip (degrees)	Depth (m)
CR05-26	1544	288	65	317.3
CR05-27	1544	288	54	256.3
CR05-28	1544	074	54	210.3

In 2005, drilling targeted an extensive surface occurrence of massive pyrite hosted by black mudstones and Eskay-age rhyolites (Figure 22 above). **This successfully intersected several metres of stringer to massive pyrite within mudstones and brecciated rhyolites** down-dip and along strike of the showing. While these intersections did not yield significant metal values, they demonstrated that **the HSOV mineralization has VMS characteristics**. Given that the host package of mudstones and rhyolites can be traced on surface along a strike length of about 1 kilometre, this zone should be tested with a much more aggressive drill program in the future.

GFJ AND "EASTERN" SHOWINGS

The GFJ Showing consists of flat-lying, zoned quartz-siderite-sulphide veins hosted by foliated andesitic volcanic rocks, possibly belonging to the Betty Creek Formation. Sampling by previous workers returned grades of up to 121 g/t gold and 145 g/t silver.

In 2006, following up a strong AeroTEM conductor, prospecting around a series of strong gossan zones in the eastern part of the property returned some samples of very high gold, silver and copper grades from a roughly 500 metre by 500 metre area in the vicinity of the GFJ Showing. This is an area of altered mafic volcanic rocks cut by quartz-carbonate-sulphide veins with high precious metal grades. For example, Sample 429791 returned grades of **94.5 g/t Au, 175 g/t Ag and 2.48% Cu**. Sampling was also carried out further east still, in the area immediately west of the Ted Morris Glacier in an area called the "Eastern Showings" due to the large number of rusty gossans along the eastern flanks of the property, south of the Spearhead Zone. Grab sample 12805 from this area graded **36.8 g/t Au, 110 g/t Ag and 1.59% Cu**.


Figure 22. Location of 2005 drill holes at the HSOV.



Figure 23. Location of 2006 drill holes at the Spearhead.

SPEARHEAD AREA

In 2006, prospectors investigating an AeroTEM electromagnetic conductor in the eastern part of the property discovered the Spearhead showing within a northwest trending, two hundred by one hundred metre outcrop of silicified rhyolite (see Figure 5 for location). The blanket of ice and snow that has covered the Spearhead showing in previous years melted away in the late summer of 2006. Geological mapping and sampling in 2006 demonstrated that the host rhyolite-mudstone sequence at Spearhead belongs to the Eskay-equivalent Salmon River Formation, with a style of mineralization and geological relationships very similar to those at the HSOV Zone located 2 km to the west. However, mineralization and alteration at Spearhead are much more extensive than at HSOV. Limited drilling at the end of the 2006 season intersected mudstone containing a 1.2 metre-wide interval of fine grained massive pyrite laminations as well as pyrite-sphalerite-quartz veinlets. Zinc enrichments of up to 0.2% are present in this interval (again, see section on drilling, below, for details).

Drill hole	Elevation (m)	Azimuth (degrees)	Dip (degrees)	Depth (m)
SH-1	1369	220	45	151.7
SH-2	1369	220	74	99.6

Table 11: Orientation and depth of Spearhead drill holes.

Drilling in 2006 targeted the Spearhead sulphide showing (Figure 23), an intense pyrite stockwork within a strong gossan zone centred on a large body of transitional rhyolite. This has **VMS style pyrite infill mineralization of an associated breccia similar to that at the HSOV** and is enclosed by a faulted sequence of mudstone, siltstone and conglomerate. It is also coincident with an electromagnetic anomaly. "1DX" ICP-MS analysis of the 2006 drilling (Table 12) revealed minor zinc enrichment associated with intermittent quartz-carbonate-trace sphalerite veins cutting the "upper" part of the rhyolite body. **Zinc is more notably enriched in a disseminated to laminated massive pyrite bearing horizon within mudstones proximal to the rhyolite**, though much less so in the massive pyrite laminations themselves. Enrichments also occur in the thin pyrite-quartz veined horizons in the sediments below this. **The pyrite stockwork and breccia infill in the rhyolite** carries subtle zinc enrichment, along with antimony, an "Eskay pathfinder".

The 2006 drilling has revealed that this area was part of a **large-scale metalbearing hydrothermal system**. Within such a system, potential exists for more significant concentrations of metals in veins and as massive sulphides in the sediments associated with the rhyolite. This area is worthy of more extensive exploration.

Drill hole	From	То	Length	Zn	Fe	Au
	(m)	(m)	(m)	(ppm)	(%)	(ppb)
SH-1	44.5	56.4	11.9	236	4.63	4.0
SH-1	78.6	90.2	11.6	45	10.95	0.3
SH-1	105.6	106.8	1.4	178	9.34	<5.0
SH-1	107.6	108.1	0.5	2048	4.10	<5.0
SH-1	<i>108.1 Faulted</i>	110.1 interval	2.0	1335	4.46	1.3

Table 12: "1DX" ICP-MS data for representative mineralised intervals in holes SH-1.



Figure 24. Location of 2006 drill holes in the north of the Golfcourse area.



Figure 25. Location of 2006 drill holes in the south of the Golfcourse area.

GOLFCOURSE AREA

Drill hole	Elevation (m)	Azimuth (degrees)	Dip (degrees)	Depth (m)
CR06-49	1211	271	48	268.5
CR06-50	1211	271	70	253.9
CR06-51	1192	71	45	239.3
CR06-52	1192	71	65	228.0
CR06-53	1190	260	45	269.7
CR06-54	1190	260	60	259.7
CR06-55	830	219	45	255.7
CR06-56	830	219	60	255.5
CR06-57	830	199	52	255.4
GC-1	1144	210	47	98.5
GC-2	1144	210	65	104.5
GC-3	1144	240	47	101.5

Table 13: Orientation and depth of Golfcourse drill holes.

The 2006 drill program in the large area around the lower slopes of John Peaks and in nearby alpine meadows targeted quartz-sericite-pyrite alteration in volcanic rocks proximal to mudstone and discrete electromagnetic anomalies at or near the contacts between volcanic rocks and mudstone (see Figures 24 and 25):

1. In the far north of the area, a thick mudstone sequence proximal to a weakly altered volcaniclastic breccia was subtly zinc enriched throughout, though gold and the "Eskay pathfinders" were present only in trace amounts. Close by, an electromagnetic anomaly located near the contact between mafic rock and mudstone occured. A thin stibnite vein and a pyrrhotite-pyrite vein cutting the volcanic rock carried low levels of base metals and around 2 g/t Au over half metre widths (see Table 14). 1DX" ICP-MS data revealed subtly enriched zinc values within mudstone carrying disseminated pyrrhotite-pyrite over wide horizons in silt and fine sand laminations. It is likely that the electromagnetic anomaly resulted from the iron-rich sulphide veining, plus the disseminated pyrrhotite-pyrite in conductive mudstone.

Table 14:	Assay	data fo	or vein	style	mineralization	in hole	CR06-49.
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Drill hole	From	To	Length	Cu	Pb	Zn	Ag	Au
	(m)	(m)	(m)	(%)	(%)	(%)	(g/t)	(g/t)
CR06-49	103.2	103.7	0.5	0.01	0.02	0.09	0.01	2.00
CR06-49	108.4	108.8	0.4	0.02	0.01	0.15	0.05	2.30

2. In the centre of the area, an isolated tract of quartz-sericite-pyrite altered volcanic rock was targeted. "1DX" ICP-MS data revealed subtle enrichments in zinc, copper and to a lesser extent gold in a volcanic conglomerate proximal to the alteration (Table 15). The altered volcanic rock itself showed comparatively low level enrichment. For the most part, gold and "Eskay pathfinders" were present only in trace amounts.

Drill hole	From (m)	То (m)	Length (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Fe (%)
GC-1	18.7 pyritised	19.7 <i>volcanic</i>	1.0 <i>clasts</i>	11.5	17.5	192	4.4	7.20
GC-1	67.5 trace	68.0 <i>pyrite</i>	0.5 <i>veins</i>	111.1	17.1	278	30	4.80
GC-1	77.6 po	79.6 <i>streaks</i>	2.0 in	89.7 cong.	28.8	336	<0.5	6.83
GC-1	90.0 <i>pyritised</i>	98.5 <i>Clasts</i>	8.5 in	45.8 muddy	11.0 <i>cong.</i>	186	<0.5	4.86

Table 15: Representative "1DX" ICP-MS data for hole GC-1.

3. In the south of the area, a west-dipping electromagnetic anomaly near the contact between mudstone and mafic rock was targeted. "1DX" ICP-MS data once again revealed subtly enriched zinc values within mudstone that carried disseminated pyrrhotite-pyrite in silt and sand laminations, cut by common iron sulphide stringers. The electromagnetic anomaly likley resulted from the pyrrhotite-pyrite stringer veining in conductive mudstone. In the far south of the area, another electromagnetic anomaly located near a contact between mafic rock and mudstone was drilled. A notable horizon of pyritised volcanic conglomerate and mudstone occurred that carried common streaks of very fine grained pyrite. "1DX" ICP-MS analysis and assay results revealed subtle gold enrichment (see Table 16). Enrichments of zinc and to a lesser extent gold and antimony occurred throughout the iron sulphide stringer-veined mudstone with disseminated pyrite-pyrrhotite that occurred above the conglomerate. It is again likely that the electromagnetic anomaly resulted from the pyrrhotite-pyrite stringer veining and disseminated to streaky pyrrhotite-pyrite in conductive mudstone.

Taken as a whole, the drilling results indicate that the Golfcourse was part of a part of a large-scale metal-bearing hydrothermal system, but it appears that the drilling intersected peripheral areas of this system. Given the size of the Golfcourse area, **potential exists for more metal-enriched sites of hydrothermal discharge** to be discovered within the volcanic-sedimentary sequence.

Drill hole	From (m)	To (m)	Length (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Sb (ppm)
CR06-55	46.8 <i>ро-ру</i>	143.4 stringers	96.6 and dissem.	64.5	13.5	415	0.7	5.6
CR06-55	198.8 <i>po</i>	209.8 <i>streaks</i>	11.0 <i>plus</i>	64.3 <i>vfg</i>	11.2 py in	213 clasts	0.6	3.0
CR06-56	8.1 <i>po-py</i>	141.3 stringers	143.2 and dissem.	53.7	17.9	431	0.5	5.4
CR06-56	212.1 <i>thick</i>	216.1 <i>vfg</i>	4.0 pyrite	8.5 <i>streaks</i>	10.3 <i>in mud</i>	108 and felsic	28.9 sand	10.1
CR06-56	226.1 <i>po-py</i>	243.6 stringers	17.5 <i>and</i>	50.0 dissem.	11.9	233	<0.5	4.4
CR06-57	235.2 vfg py	237.2 stringers	1.4 and	46.0 <i>matrix</i>	13.7 to	823 clasts	<0.5	5.4
CRO6-57	240.2 vfg po	248.2 <i>Streaks</i>	8.0 in	46.7 mud	10.9 <i>and</i>	321 stringers	<0.5	3.6

Table 16: "1DX" ICP-MS data for representative metal-enriched intervals in holesCR06-55 to -57.



Figure 26. Location of 2006 drill holes in the north of the Battlement area.



Figure 27. Location of 2006 drill holes in the south of the Battlement area.

BATTLEMENT ZONE

Drill hole	Elevation (m)	Azimuth (degrees)	Dip (degrees)	Depth (m)
CR06-65	374	105	48	349.6
CR06-66	374	85	62	206.3
CR06-67	314	238	85	226.2
CR06-68	314	238	48	93.6
CR06-69	314	58	50	254.2
CR06-70	378	115	50	73.3
CR06-71	312	85	45	232.6
CR06-72	365	95	60	65.8
CR06-73	378	95	55	273.4
CR06-74	365	95	80	39.6

Table 17: Orientation and depth of Battlement drill holes.

Geological mapping and sampling in 2005 and 2006 of the rugged and overburdencovered Battlement zone, the location of numerous polymetallic geochemical anomalies identified during the 2004-05 stream sediment sampling program, has established the presence of mudstone and sub-aqueous rhyolite and basalt that are part of the Eskay rift sequence. The 2006 drilling program targeted portions of this sequence. Importantly, this drilling and "1DX" ICP-MS data revealed the presence of **zinc-dominated polymetallic mineralization over a 3 metre wide interval within mudstone proximal to an Eskay-type tholeiitic rhyolite within the core of the Battlement Zone** (see Table 18 and Figures 26 and 27). Antimony, an "Eskay pathfinder" element, was also enriched, though gold was present in only trace amounts. The silicified mudstone directly down hole of this minreralization was also notably copper and more subtly zinc and lead enriched over a 6 metre width with trace amounts of gold.

Drill hole	From (m)	To (m)	Length (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Sb (ppm)
CR06-65	3.0	11.5	8.5 Sheared	221.6 mud and i	84.0 mafic	243 <i>debris</i>	<0.5	16.6
CR06-65	11.5	13.8	2.3 Fault in	142.3 mud with	145.3 <i>quartz</i>	520 veining	<0.5	12.5
CR06-65	25.5	39.5	14.0 Least	<u>92.3</u> altered	<u>37.8</u> mud	<u>141</u>	<u>0.8</u>	<u>4.5</u>
CR06-65 <i>Tho.</i>	142.0 <i>rhy.</i>	143.7 <i>assctd.</i>	1.7 silicifd.	218.3 mud with	227.0 <1%	3632 dissem.	7.2 fine grn.	10.2 <u>sphal</u> .

Table 18: "1DX" ICP-MS data for representative intervals in holes CR06 -65 and -66.

CR06-65 Tho.	143.7 <i>rhy.</i>	145.0 <i>assctd.</i>	1.3 <i>silicifd.</i>	1345.9 mud with	1251.6 1%	>10000 dissem.	<.5 fine grn.	576.2 <u>spha</u> l.
CR06-65	145.0	151.0	6.0 <i>Silcifd.</i>	210.8 mud	62.1	210	2.7	7.7
CR06-65	151.0	154.0	3.0 <i>Volcanic</i>	195.8 <i>sandst.</i>	62.2	204	6.4	2.4
CR06-65	156.0	160.0	4.0 <i>Silcifid.</i>	55.8 mud with	55.8 <1%	204 dissem.	2.0 <i>pyrite</i>	4.2
CR06-66 <i>Mud</i>	150.3 <i>with</i>	164.3 <i>1-2%</i>	14.0 <i>dissem.</i>	260.9 pyrite and	58.7 stringers	226 down dip	1.7 of tho.	3.3 rhy.
CR06-66	168.3	306.3	38.0 <i>Volcanic</i>	187.5 sand and	54.8 mud	198	4.6	2.0

 Table 19: "1DX" ICP-MS data for representative mudstone intervals in hole CR06 –

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/1.									
Drill hole	From (m)	To (m)	Length (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Fe (%)	Sb (ppm)
CR06-71	20.1	28.1	8.0	39.4	12.7	246	<0.5	3.01	2.2
	mud	with	fine grn.	pyrite	in silt	(trace	sulphide)		
CR06-71	183.0	232.6	49.6	63.3	16.1	242	<0.5	4.50	1.8
	mud	with	infrequent	pyritsed	silt	turbdts	(trace	sulphide)	

"1DX" ICP-MS data also revealed subtle zinc enrichment in mudstone associated with both transitional and calc-alkaline volcanic rocks (see Table 19) and within the volcanic rocks themselves.

At the northern limit of the Battlement zone, subtle zinc and antimony enrichments occurred within weakly stringer-veined mudstone and in calc-alkaline felsic breccia carrying fine grained sulphide clasts (see Table 20).

As well as the polymetallic potential of the tholeiitic rhyolite-associated stratigraphy within the core of the Battlement zone, the calc-alkaline dominated felsic volcanic rocks and associated sediments in the north of the zone thus also appear to be prospective for zinc-rich mineralization. The key to future work in this area will be attempting to determine the source of these sulphide clasts. **The Battlement remains a highly prospective area**.

Drill hole	From (m)	To (m)	Length (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppb)	Sb (ppm)
CR06-67	7.0	9.0	2.0 Fine grn.	26.2 " <i>pyrite"</i>	66.9 <i>clasts</i>	769 in felsic	1.5 breccia	0.8	10.0
CR06-67	25.5	40.5	15.0 weakly	46.0 silicified	11.0 <i>mud</i>	566 with	1.3 <i>trace</i>	<0.5 " <i>pyrite"</i>	6.4 stringers
CR06-67	40.5	49.5	9.0 1% vfg.	<u>19.4</u> "pyrite"	<u>13.6</u> clasts in	<u>73</u> conglom	<u>0.3</u>	<u><0.5</u>	<u>2.6</u>
CR06-67	49.5	51.5	2.0 0.2 m	13.5 <i>qtz-carb</i>	217.2 -"pyrite"	1264 "vein in	0.4 conglom.	0.6 <i>interval</i>	2.7
CR06-68	5.6	9.6	4.0 <i>Trace</i>	7.4 "pyrite"	18.5 in felsic	175 breccia	0.25	<0.5	3.4
CR06-69	3.0	35.5	32.5 Sheared	53.8 and qtz-	22.1 <i>carb</i>	311 veined	0.6 <i>mud</i>	<0.5	6.2

Table 20: "1DX" ICP-MS data for selected intervals in holes CR06 -67 to -69 (seeFigure 25 and 26 below for photographs of some of these intervals).

CHAPTER 5:

CONCLUSIONS & RECOMMENDATIONS

DISCUSSION

In 2003, compilation and reinterpretation of all available data on the Corey Property and publicly available data for the surrounding region showed that the Eskay Rift not only extended south from the Eskay Creek area and onto the Corey Property, but that it in fact thickened and widened into a very extensive, prospective package of rocks at Corey. This conclusion was the basis for the subsequent large field-based exploration program in 2004 that continued in 2005 and 2006.

In 2004, focused geological mapping was aimed at defining the extents of the Eskay Rift at Corey and outlining the distribution of the most prospective mudstone strata within the Salmon River Formation. This targeted work yielded immediate results with the early discovery of the Smitty Showing, an Eskay-age polymetallic massive sulphide occurrence within the Salmon River mudstones. Within the distinctive Eskay-Corey volcanic-sedimentary rift belt, massive sulphides have been found in outcrop only on the Corey property. This focused geological mapping was continued in 2005 and 2006.

In 2004 and 2005, a comprehensive program of stream sediment geochemical sampling outlined numerous polymetallic anomalies. Perhaps of greatest significance were several anomalies in the South Unuk and Battlement areas that appeared to be sourced from the Salmon River mudstones that are very thick and laterally extensive there. This high-energy stream sediment sampling technique confirmed the presence of the Smitty Showing, the Cumberland, the Daly Zone, the Tet Showing, the GFJ Showing and the C10 Zone adding encouragement that it is an effective technique for detecting massive sulphide mineralization in this terrane.

The 2006 AeroTEM II survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area and provided multiple targets for follow-up drilling, including the new Spearhead zone and the "eastern showings".

Guided by the stream sediment sampling and airborne geophysics, drilling in 2005 and 2006 intersected massive sulphide mineralization at the Cumberland, stockwork "feeder vein" style mineralization at the C10 and metal-enriched mudstones at the Smitty and in the South Unuk area.

To further confirm the potential of the Corey massive sulphide and stockwork zones, sampling was done for lead isotope signatures and age determinations. The lead isotope results conclusively show that the most significant massive sulphide occurrences at Corey are of the same age as the Eskay Creek Deposit.

Whole rock lithogeochemical sampling was carried out during 2004-06 to characterize the volcanic, intrusive and sedimentary rocks. Careful interpretation of the new and extensive lithogeochemical dataset confirmed the presence, and better defined the distribution, of the Eskay Rift transitional and tholeiitic volcanic rocks. The central axis of the Corey property is shown to contain volcanic and sedimentary rocks that have a distinctive Eskay-type whole rock lithogeochemical signature. These distinctive rocks are rare in the Eskay camp and in the region as a whole, yet are well-mineralized, and occur in a well-defined zone that passes from the Eskay property, southward onto the Corey. This work was critical in subdividing these

complex and challenging volcanic rocks and separating the prospective rift rocks from the less prospective arc or non-rift rocks and provided the basic geological framework for the establishment of drill targets and will continue to do so in 2007.

The Company has now completed most of the early stage surveys of the property and has now moved into a phase of exploration dominated by drill testing of the best targets. The detailed geological mapping, supported by the carefully interpreted and extensive lithogeochemical dataset, provided the basic stratigraphic framework for further work at Corey. This labour-intensive program was essential for two main reasons: 1) it clearly demonstrated that Eskay rift rocks are present at the Corey Property, and 2) it allowed for a detailed determination of the thickness and distribution of these key volcano-sedimentary units. Massive sulphide deposits are relatively small, albeit very rich, targets that rarely crop out at surface. However, they are stratabound in nature and therefore the careful interpretation of the complex volcanic strata is of paramount importance in the exploration process.

The AeroTEM geophysical survey served to support and refine this surface geological work allowing the geological team to interpret the geological "fabric" and the underlying structures with greater confidence, particularly in areas where surface rock exposures were poor. The surface geology, lithogeochemistry and airborne geophysics established the location of the most favourable rocks of the Eskay-Corey rift (Figure 5).

The stream geochemical survey was instrumental in further focusing exploration efforts by outlining **which areas of the rift were anomalous in key economic metals** (Au, Ag, Cu Pb, Zn) as well as the important "pathfinder" elements (e.g. As, Sb, Hg). Follow-up surface sampling and mapping then defined actual drill targets; these targets were initially drill-tested in 2005, but were not tested in earnest until the 2006 program.

Drilling has now confirmed many of the ideas proposed as a result of the surface exploration and it has added a third dimension to the geological interpretation. Drillholes in the South Unuk and Smitty areas have intersected siginificant widths of Salmon River Formation mudstones that are highly anomalous in a number of "Eskay pathfinder" elements (Zn, Ag, Sb, As). These anomalies and the accompanying laminated sulphides are consistent with deposits distal to a hydrothermal system. Nearby, at the C10 Zone, drilling has outlined a strongly altered, gold and copperentiched hydrothermal feeder zone within rocks that are interpreted to lie stratigraphically below the Salmon River mudstones. Results to date from the Battlement area drilling, while preliminary in nature, suggest that similar anomalous mudstones are present in that area. The Cumberland Zone, while complex in nature, has been demonstrated to be a bona fide polymetallic and precious metal-rich massive sulphide deposit. This zone remains untested along strike and downdip. The newly discovered Spearhead Zone in the east is almost completely unexplored.

CONCLUSIONS

The exceptional gold and silver grades of the Eskay Creek deposit support a strong exploration emphasis on "Eskay-style" targets including massive sulphide, replacement and footwall stockwork deposits on the Corey property. The 2004-06 exploration programs have confirmed every major conclusion from the 2004 Cambria Technical Report (McGuigan et al, 2004). For 2007, new work is recommended on the basis of the setting and deposit characteristics of the Eskay deposits (see Massey et al, 1999).

Special emphasis is placed on the following target types:

- 1. Eskay-style VMS deposits in mudstones and felsic volcanic rocks of the Salmon River Formation.
- 2. Footwall-style quartz-sericite-pyrite-base metal sulphide stockwork zones with gold and silver, as a target in themselves, and as a pathfinder to Eskay-style stratabound mineralization.
- 3. High sulphidation VMS, gold-rich and thought to form from magmatic hydrothermal systems that were active in submarine settings, as they are transitional to Eskay style deposits.

The Corey property has been very lightly explored. Work has closely clustered around showings identified as early as 1898. Rugged terrane and poor exposure of the target volcanic and sedimentary rocks has hampered the extension of the work into new areas. **The exploration challenge in the Eskay area is to locate a new Eskay-style deposit that is likely to be hosted in recessive weathering sediments and/or altered volcanics.** Commonly, these very same units are the locus for high angle faults (both syn- and post-mineralization) and thrust faults that further contribute to the recessive weathering pattern. Significantly, all the Eskay deposits (the 21 zones, Pathfinder and Pumphouse zones) and the main SIB showings (Lulu and the new Hexagon zones) are blind and/or covered by an overburden of talus or bog. The initial interest in drilling the discoveries was generated by precious metal bearing footwall mineralization and alteration.

The stratigraphy, structure and exploration results at Corey to date indicate the following:

- 1. The central axis of the property is occupied by bi-modal volcanic rocks and sediments of the Salmon River formation, in a sequence of favourable felsic and mafic volcanic lithologies that is the **thickest** in the region. Work conducted by Kenrich in 2004-06 has delineated a distinct belt of volcanism, mineralization and alteration.
- 2. The Corey Property is part of the Eskay Creek Corey Belt, a north-south trending rift related volcanic sequence distinct from other nearby time-equivalent volcanics. The belt is dominantly bimodal and tholeiitic, in contrast to the more intermediate and calc-alkaline fringes. All the major deposits and occurrences are located in the belt, with associated zones of intense quartz-sericite-pyrite

alteration, and gold-silver. About one-half of the belt lies on the Corey property.

- 3. The entire Corey property is under-explored in relation to the Eskay-Corey belt on Prout Plateau. Systematic exploration is required, conducted in the context of the recent advances in the understanding of the Eskay Deposit from government and academic sources.
- 4. The **Virginia Lake, Battlement** and **Bench** zones contain favourable stratigraphy and some gold-silver anomalies and minor occurrences. General exploration coverage is required, to place these zones in the context of the belt.
- 5. Areas south of the Virginia Lake and Battlement are virtually unexplored, but show the presence of Salmon River formation rocks, not Bowser Lake Group rocks. Primary exploration is required.
- 6. The discovery of the **Spearhead Zone** has effectively upgraded the eastern portion of the property and provided an exciting new target for work in the 2007. The extensive alteration, rusty gossan zones and stockwork to massive, laminated sulphide mineralization all indicate that a VMS-style hydrothermal system was active in this area.
- 7. The **Cumberland-South Unuk (including the Smitty), C-10** and **HSOV-Spearhead** zones contain, in aggregate, **all of the signatures of a firstpriority exploration target for Eskay-type high grade Au-Ag massive sulphides**. Present are felsic and mafic Salmon River volcanic rocks, massive sulphides with precious metals, bedded barite, mineralized mudstones and chloritic alteration (Cumberland-South Unuk and HSOV). This and the numerous stream sediment geochemical anomalies suggest that buried polymetallic VMS occurrences might be discovered in the mudstones of the Cumberland-South Unuk area. Rocks in the C-10 area are extensively quartz-sericite-pyrite altered and invaded locally by monzonite dykes. These zones are interpreted as sheared footwall type stockworks, proximal to potential volcanogenic massive sulphides.

Exploration on the Corey property has been episodic. Several different companies and exploration teams conducted the exploration over the last 17-year period. This is a very typical exploration history for most promising properties. Recent advances in the understanding of the geological setting of the Eskay deposit (e.g. Barrett and Sherlock, 1996 and Roth, 2002) demand that the new concepts be included in exploration programs on nearby properties, especially the Corey property given its analogous geology and proximal position.

Based on these new concepts, the Company's 2004-06 work program was designed to trace, and to test at close intervals, the volcanic and sedimentary horizons of the favourable Eskay-rift sequence. Diamond drilling, surface stream and rock sampling, lithogeochemical, and airborne magnetic and time-domain EM data has delineated a prominent corridor of exploration targets, extending southward from the Battlement zone, though the Smitty and Cumberland massive sulphide zones and thence, to the prominent, highly altered feeder zone at C 10. Within this corridor are zones of Salmon River formation mudstones that are enclosed by felsic volcanics and basalt, delineating areas requiring special attention (see Figure 28). These hard won results demonstrate that mineralized mudstones, massive sulphides and altered and veined footwall rocks analogous to the Eskay deposit occur in several zones on the Corey property, some still in areas that are yet to be assessed in detail.



Figure 28. Approximately west-east cross section through the Corey Property indicating the focus of past and future exploration by Cambria.

RECOMMENDATIONS

RECOMMENDATIONS: 2007 PHASE ONE EXPLORATION

A continuation of the successful systematic, aggressive approach to exploration at Corey based on recent advances in the understanding of the geological setting of the Eskay deposit is warranted and recommended herein. All Eskay-SIB discoveries have been blind therefore **a heavy emphasis on drilling is required for success**. Drilling should involve 1 to 3 drills phased in over the late spring and early summer as snow cover permits. **Phase One should allow for 10,000m of diamond drilling**, with the timing arranged such that the Phase One drilling can enter into Phase Two without pause.

In general, the following strategy should be followed in 2007:

Map Favorable Sequences in Detail to support drilling: In general, mapping during the 2007 exploration season should continue to concentrate on sections of the property stratigraphy containing contacts between the upper tholeiitic basaltic volcanic rock unit and the calc-alkaline mafic and andesitic rocks lying beneath. This Eskay-like section contains transitional mafic and dacitic volcanic rocks, transitional and tholeiitic rhyolite volcanic bodies, and significant volumes of black mudstone.

Due consideration should be given to the lineaments that cut the section, which include fault structures of syngenetic origin. Such features may have influenced the emplacement of the volcanic rocks, especially the rhyolitic rocks, and potentially served to focus hydrothermal fluids and sulphide deposition.

Systematic lithogeochemical sampling and mapping should continue in order to help define the stratigraphic succession, contact relationships, and to provide the

geological framework necessary to guide the design of additional diamond drilling programs.

Specifically, more effort should be made in the following areas:

- 1. The transition between the younger calc-alkaline rocks at Virginia Lake and the older (?) transitional to tholeiitic strata in the Battlement Area should be studied in more detail. The Battlement area itself contains perhaps the best analogue on the Corey Property for Eskay Creek stratigraphy; however, in contrast to Eskay, at Battlement-Virginia Lake there appears to be calcalkaline rocks in the younger strata above the Eskay equivalent stratigraphy. This relationship should be better studied.
- 2. Mapping of the Lower Cumberland Area should be completed and syngenetic fault structures identified. There appears to be an east-southeast striking structural corridor in this area oriented roughly along a gully sloping toward the Smitty sulphide showing. Substantial areas of alteration with intense silicification and pyritization are located immediately to the north of this corridor, extending to the edge of the Upper Cumberland Area. This alteration was previously trenched and sampled by Homestake Canada Ltd, and yielded sporadic Au results (up to 6 g/t) and anomalous Zn, Sb, and As. This new mapping will provide guidance for possible Phase Two drilling to investigate any potential extension of this alteration beneath the tholeiitic basaltic rocks and the possibility of blind sulphide mineralization lying to the east.
- 3. The geology of the western section of the Bench Area, untested by earlier drilling, contains a stratigraphic contact between older calc-alkaline intermediate volcanic rocks and tholeiitic basalts, with transitional rhyolitic rocks also at this contact. Reconnaissance mapping should be carried out to identify any alteration with a view to drill testing this contact area during Phase Two of the drill program.
- 4. Detailed mapping and prospecting of the area from HSOV showing to the Spearhead showing should be completed, including the high grade GFJ and TM showings. Reconnaissance mapping has dentified additional transitional rhyolitic volcanic rocks and alteration extending from the HSOV towards the Spearhead showing. This trend may be an extension of the one located at the Spearhead. The trends in the airborne magnetics will likely aid in this interpretation. It is important to understand the stratigraphic relations in this area to guide any Phase Two drilling of the Spearhead zone, the GFJ showing and/or the alteration trend.
- 5. Reconnaissance mapping and geochemical sampling of the area to the north of the Eskay-age Cumberland showing. This area has a similar magnetic geophysical signature to the Cumberland showing (AeroTEMII data) and is favourably located adjacent to transitional rhyolite. Phase Two drilling to follow contingent upon positive results.

Diamond Drill the Eskay-equivalent geology of the Battlement area: This area should be further tested for gold-rich volcanogenic massive sulphide mineralization.

Diamond Drill the anomalous Eskay-like South Unuk mudstones: These are potential hosts to buried massive sulphide mineralization. Primary focus should be on

tracking these rocks from the South Unuk area closer to the C10 "feeder zone", through the Mount Madge syncline.

RECOMMENDATIONS: 2007 PHASE TWO EXPLORATION

Phase Two is partly contingent on results of Phase One work. It can commence as soon as a second and/or third drill is available and continue concurrently with the later stages of Phase One as targets for additional drilling are confirmed or discovered.

- 1. Add Diamond Drilling of the prospective South Unuk mudstones that trend northwards towards the Smitty and Cumberland high grade showings: Away from these high grade showings, stratigraphy indicative of more stable depositional environments, with a high potential for massive sulphide preservation, should also be tracked. Drilling should total 3,500m.
- 2. Additional drilling should also be carried out at the Lower Cumberland, the north Cumberland, western Bench, HSOV-Spearhead and GFJ areas contingent upon positive results from Phase One. Drilling should total 3,000m.

Follow Up Phase One: Conduct additional prospecting, geochemical sampling and detailed geological mapping in areas identified in Phase One.

BUDGET RECOMMENDATIONS

The recommended budget for the next phases of exploration in 2007 is as follows. Phase Two is partly success contingent on the results of Phase One, as additional targets are successfully identified.

 Table 21: Budget - Phase 1 and 2 Programs.

Phase One Budget Recommendation for camp, technical work and 10,000m of diamond drilling is:	\$4,000,000
Phase Two, partly success contingent, for follow-up technical work and 6,500m of diamond drilling is:	\$2,500,000
Total of Phases One and Two:	\$6,500,000

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