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GEOLOGICAL REPORT

for the

**EXTRA HIGH PROPERTY**

**KAMLOOPS MINING DIVISION**

**BRITISH COLUMBIA**

**NTS 82M/4W**

**Lat: 51° 08'N Long: 119° 50'W**

for

**P. WATT**

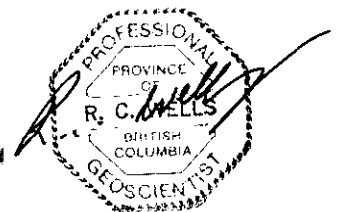
**B104-1371 Summit Drive**

**Kamloops BC. V2C 5S1**

**GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT**

**June 10, 2003**

**27,171**



**R. C. Wells, P.Geo., FGAC. Kamloops Geological Services Ltd.**

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## SUMMARY

The Extra High Property held by Paul Watt is located 60 kilometres northeast of Kamloops, BC. This 500 hectare property consisting of 25 two-post mineral claims covers the northern parts (Kamad 7 area) of the previous Kamad property and has good road access from Barrier, 22 kilometres to the west.

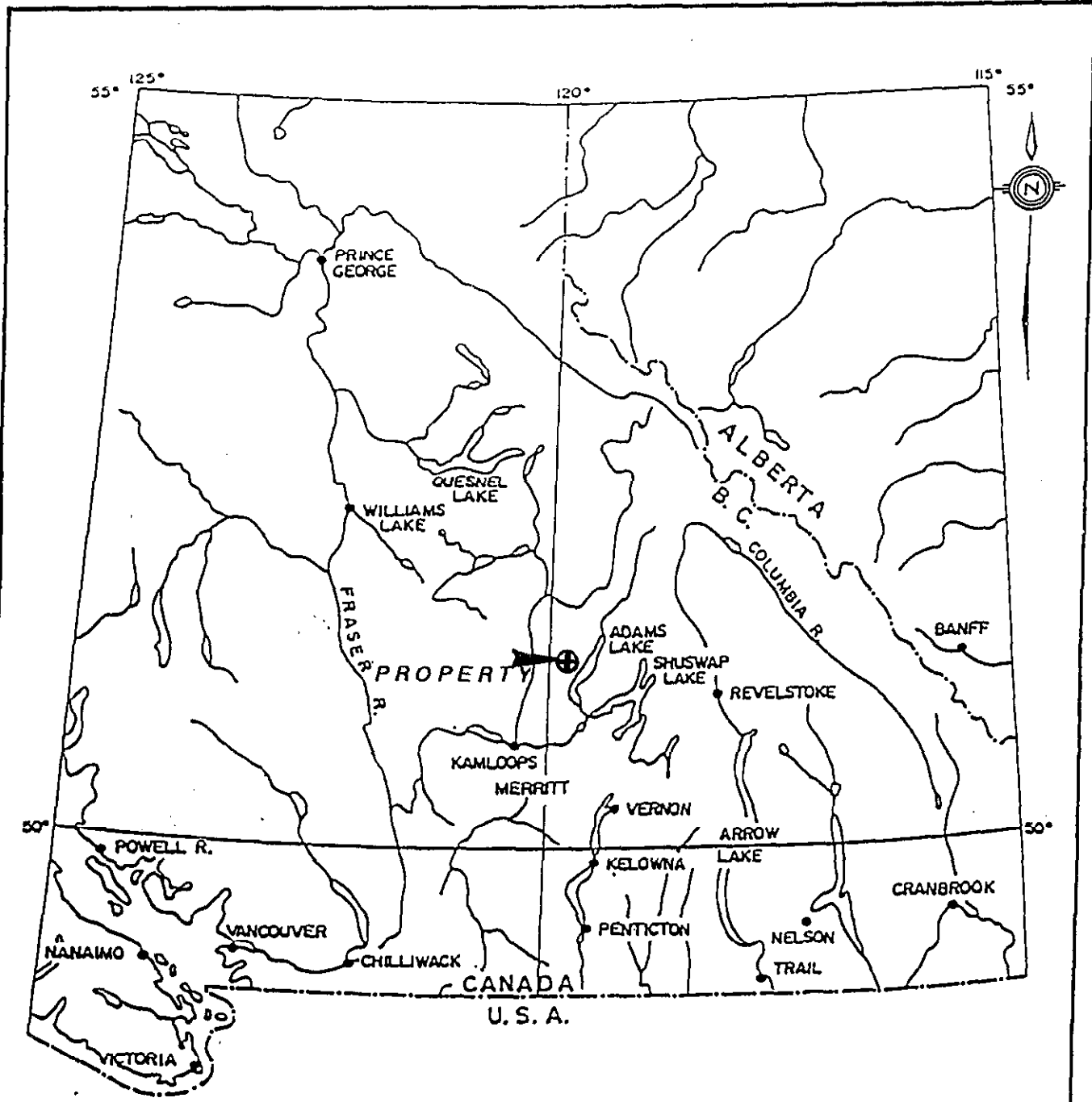
The property lies on the Adams Plateau and covers folded Eagle Bay Assemblage (Paleozoic) of felsic to intermediate metavolcanic rocks and sediments including sulfide rich exhalative cherts. Three northwest trending horizons/zones: the Twin Mountain, Silver and Rea cross the property and have high potential for polymetallic, volcanogenic massive sulfide (Au, Ag, Cu, Pb and Zn) and vein deposits. The Samatosum Mine's open pit lies 500 metres to the north of the property on the Silver Zone. This was a high grade silver mine with Ag, Au, Cu, Pb, Zn and Sb production during the 1989-1993 period. The Rea deposit (Au, Ag, Pb, Zn and Cu) lies on the Rea horizon within 200 metres of the northwest property boundary.

Following the discovery of the Rea deposit in 1983 the Kamad property area received a significant amount of systematic exploration, most recently by Esso Minerals (late 1980's) and Homestake Canada (early 1990's). These later programs included grid drilling. The K7 deposit which lies on the Rea Zone within the northwestern Extra High claims was discovered in the late 1980's and has a geological resource of 375,000 tonnes averaging 4.0 g/t Au, 55 g/t Ag, 0.5% Cu, 4.8% Pb and 6.1% Zn. Several other polymetallic zones were encountered by the drilling to the Rea to the south and other horizons.

Paul Watt staked the Extra High property in 2000 after Homestake Canada allowed the Kamad 7 to come open. An orientation soil sampling program with limited prospecting/rock sampling took place mainly in June 2000, incurring expenditures of \$5822.00. A soil traverse across the favorable stratigraphy clearly picked out the (known) favorable horizons/zones.

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2002 and 2003 exploration by the property owner involved a fairly detailed examination of the K7 massive sulfide lens area and a compilation of previous exploration data. There was also petrographic examination and geochemistry on representative massive sulfide samples. Further exploration and metallurgical work are recommended.



SCALE  80km

<p><b>EXTRA HIGH PROPERTY</b>          KAMLOOPS MINING DIVISION          NTS: 82M/4W</p>		
<p><b>PROPERTY LOCATION MAP</b></p>		
<p>Date: 23/6/2001.</p>	<p>Prepared By: RCW/PW.</p>	<p>FIGURE <b>1</b></p>

## 1.0 INTRODUCTION

This report presents the results from a geological evaluation conducted on the Extra High Property in the Kamloops Mining Division of British Columbia. The program took place mainly in September 2003 and May 2003, it was conducted by R.C.Wells, P.Geol. consulting geologist assisted by property owner Paul Watt.

The exploration target on the property is volcanogenic, polymetallic massive sulfides and Samatosum type veins with Au, Ag, Cu, Pb and Zn. Exploration expenditures on the property in the May 2002 year was \$1,050.00 and May 2003 year \$2,244.98 . In total \$3000.00 is being filed to cover assessment work requirements for the two years.

### 1.1 Location and Access

The Extra High Property (the property) is located in the Kamloops Mining Division of South Central British Columbia. It lies on the southwest slopes of Samatosum Mountain west of Adams Lakes, approximately 60 kilometres northeast of Kamloops and 22 kilometres east of the town of Barrier (Figure 1).

From Barriere there is road access to the property via the Agate Bay road, then up the Johnson Creek road to Johnson Lake. From here various areas on the property are accessible by a network of old logging roads.

### 1.2 Physiography

The property on the southwestern slopes of Samatosum Mountain covers a gently rolling upland areas with elevations generally in the 1250 to 1500 metre range. Southwest flowing

Homestake Creek bisects the property with numerous southeast and northwest flowing tributaries some with narrow, deeply incised valleys.

Mixed strands of spruce, pine and fir have been selectively logged using an extensive network of roads and trails. The northern parts of the Extra High property in particular the Kamad 7 massive sulfide lens have recently been cleared of timber and are easy to access and explore.

The climate is semi-arid, typical of the South Central Interior. Summers are hot, average temperatures in the 20's, winters are cold with snow accumulations commonly exceeding one metre.

### **1.3 Property**

The property consists of 25 two post mineral claims in the Kamloops Mining Division of British Columbia. Ten of the claims are being maintained for future exploration the rest will come open. Details regarding these claims are outlined in Table 1 and their locations are shown on Figure 2. The Samatosum Mine property lies immediately to the north of the Extra High.

The total area covered is approximately 250 hectares. All of the claims are held by Kamloops resident Paul Watt and have been grouped under a common anniversary date of May 06. Two years of assessment work are being applied to the Extra High Property by the owner.



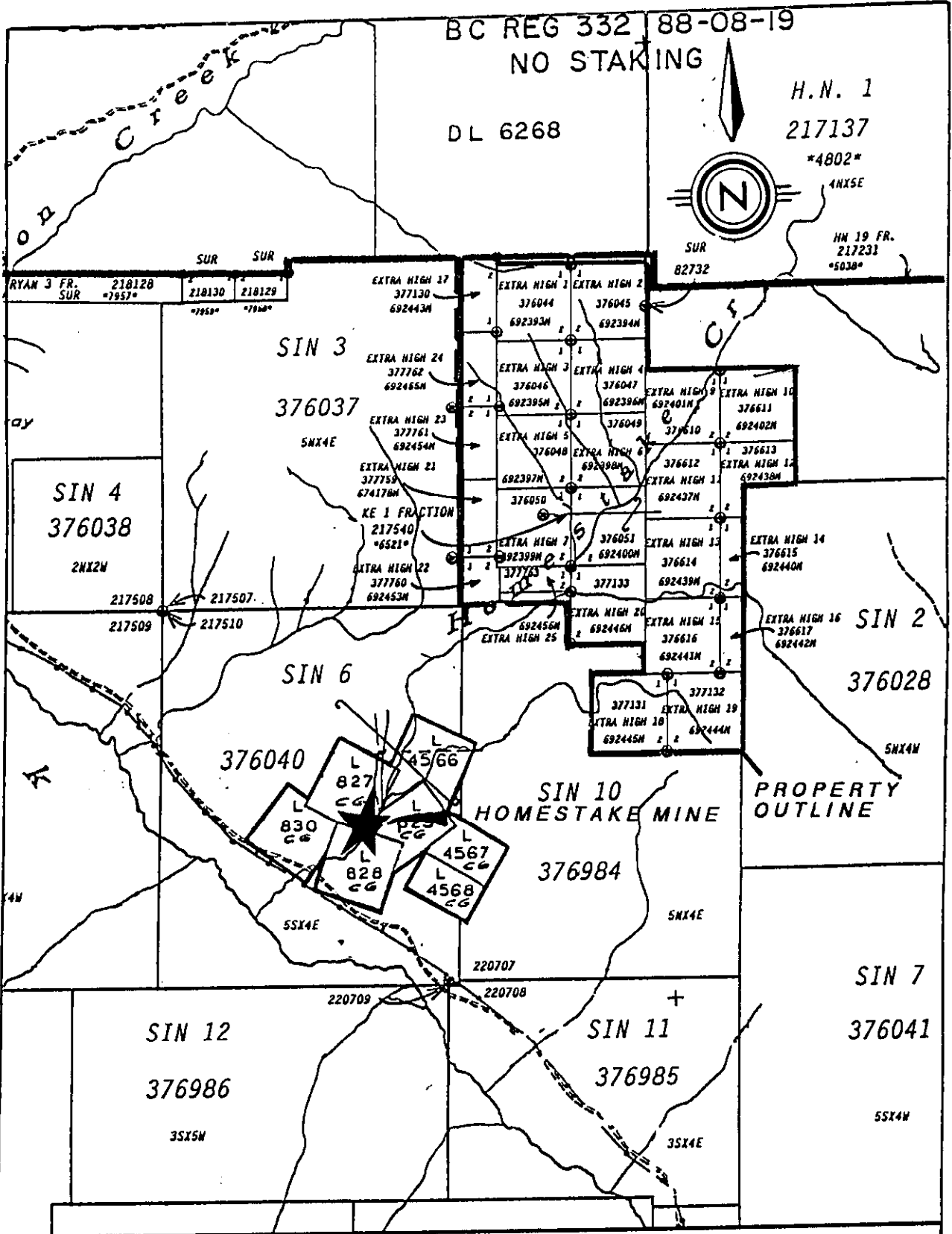
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SCALE 1Km

EXTRA HIGH PROPERTY KAMLOOPS MINING DIVISION NTS: 82M/4W		
CLAIM MAP		
Date: 23/6/2001.	Prepared By: RCW/PW.	FIGURE <b>2</b>

TABLE 1

CLAIM NAME	UNITS	TENURE NO.	CURRENT EXPIRY DATE
EXTRA HIGH 1	1	376044	May 6, 2005
EXTRA HIGH 2	1	376045	May 6, 2005
EXTRA HIGH 3	1	376046	May 6, 2005
EXTRA HIGH 4	1	376047	May 6, 2005
EXTRA HIGH 5	1	376048	May 6, 2003
EXTRA HIGH 6	1	376049	May 6, 2005
EXTRA HIGH 7	1	376050	May 6, 2003
EXTRA HIGH 8	1	376051	May 6, 2005
EXTRA HIGH 9	1	376610	May 6, 2005
EXTRA HIGH 10	1	376611	May 6, 2003
EXTRA HIGH 11	1	376612	May 6, 2005
EXTRA HIGH 12	1	376613	May 6, 2003
EXTRA HIGH 13	1	376614	May 6, 2005
EXTRA HIGH 14	1	376615	May 6, 2003
EXTRA HIGH 15	1	376616	May 6, 2005
EXTRA HIGH 16	1	376617	May 6, 2003
EXTRA HIGH 17	1	377130	May 6, 2003
EXTRA HIGH 18	1	377131	May 6, 2003
EXTRA HIGH 19	1	377132	May 6, 2003
EXTRA HIGH 20	1	377133	May 6, 2003
EXTRA HIGH 21	1	377759	May 6, 2003
EXTRA HIGH 22	1	377760	May 6, 2003
EXTRA HIGH 23	1	377761	May 6, 2003
EXTRA HIGH 24	1	377762	May 6, 2003
EXTRA HIGH 25	1	377763	May 6, 2003

Total: 25 Units. Expiry dates for above claims are subject to acceptance of this report.

## 2.0 PROPERTY HISTORY

The property area has a long exploration history dating back to the 1890's. Extra High partially covers three southeast trending highly prospective horizons for volcanogenic massive sulphide deposits with copper, lead, zinc, gold and silver (barite) as the main commodities. The horizons are called from east to west the Twin, Silver Zone and Rea Zone, these are briefly described later in this report. Mineral exploration to date has focused on these three horizons.

The Homestake Mine on the north side of the Sinmax Creek (Figure 2) lies 1.8 kilometres southwest of the property on another favourable horizon for VMS deposits. This property has been explored since 1893 for Cu, Pb, Zn, Au and Ag plus barite with limited production over the periods; 1926-27, 1935-36 and 1983-84. Recent exploration was by Esso Minerals Canada 1985-89 followed by Homestake Canada Ltd 1989-1992. Reserve estimates vary between 250,000 and 1,000,000 tonnes however grades appear to be close to 200 gt. Ag, 0.5 gt. Au, 0.3% Cu, 1.2-3% Pb, 2-4% Zn and up to 28% barite.

The Twin Mountain Zone is partially covered by the eastern claims with the main historic showings on the present SIN 2 claim to the east (Figure 2). This zone has been explored intermittently since 1936 for massive Cu, Pb, Zn, sulfides with barite. Extensive trenching with two exploration tunnels (1950's) followed by soil sampling indicated a strike length of over 4.5 kilometres. Integrated programs by Apex Energy Corp/ Austin Resources Corp in the early 1980's was followed by an option by Falconbridge Copper (later Minnova Inc). This work indicated many massive sulfide lenses with Cu, Pb, Zn, barite values, generally low Au, Ag.

The central Silver Zone (Samatosum horizon) and eastern Rea Zone were prime targets for VMS (Cu, Pb, Zn, Au and Ag) exploration following the discovery of the Rea Gold lenses in 1983 and Samatosum massive sulfide veins/lenses in 1986. In the 1980's the Kamad claims

(Kamad Silver Company Ltd) covered the area between Sinmax Creek north to the current Samatosum Mine property which lies close to the northern boundary of Extra High. Much of the Extra High property covers the Rea and Silver Zones in the eastern parts of the (previous) Kamad 7 mineral claim. The Extra High 6,9 and 11 cover these zones further to the south on the old Twin 3 mineral claim.

The Kamad property was explored by Kamad Silver up to 1985, then Esso Minerals (optioned) to 1989 followed by Homestake Canada Ltd (acquired interest) into the 1990's (mainly 1989-1992).

The following is taken from a report for Homestake Canada Ltd by R.G. Carmichael (1991) and summarizes exploration since 1980.

*"The discovery of the Rea Gold volcanogenic massive sulphide lenses in 1983, and the Samatosum massive sulfide vein deposit in 1986 shifted the focus of exploration from the Homestake Bluffs to the Plateau area. Geophysical and diamond drill programs carried out on the Kamad 7 claim in 1983 and 1984 identified massive sulfide mineralization on the Rea Horizon. In 1985, 259146 B.C. Limited drilled five holes totalling 369.7 m into this zone.*

*The property was optioned from Kamad Silver Company Ltd. by Esso Minerals Canada in December of 1985. In 1986 Esso Minerals conducted an extensive geological, geochemical, and geophysical evaluation of the Rea Horizon on the Kamad 7 and 8 claims. This was followed by trenching and 1814 m of diamond drilling later that year. An additional 1125 m of diamond drilling was completed in the same area in 1987.*

*Work on the Homestake Bluff area in 1987 consisted of a 1:2500 scale geological mapping and soil sampling program along strike from the Homestake Mine, and 1899 m of diamond drilling.*

*An extensive program in 1988 was intended to evaluate all the mineral occurrences on the property. Diamond drilling was carried out on the Kamad 7 claim (2,094 m) and culminated in the discovery of a small massive sulphide body (the "K7" lens). Work was also carried out on the Homestake Bluffs, Kamad 8 and the Acacia showing.*

*Homestake Canada Ltd. acquired Esso's interest in the property in the fall of 1989, and completed 4,972 m of drilling (25 holes), 785 m of backhoe trenching (14 trenches) and 11 km of GENIE EM geophysics on the Kamad 7 and Kamad 8 claims. An ESCAN geophysical survey*

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*was also carried out over part of the Kamad 7 claim. This work program tested the area down-dip of the K7 lens, and successfully located the Rea zone on the Kamad 8 claim. Some thin (<1 m) massive sulphide intersections were obtained in the vicinity of the K7 lens. Homestake completed 2961 m of drilling between June and October 1990, including two holes into the Inferno Zone.*

*The reader is referred to reports by Oliver and Marr (1987), Oliver (1987), Marr (1987), Heberlein (1988), Heberlein et.al. (1989), Carmichael and Bozek (1990), and Carmichael (1991) for pervious results."*

The most recent exploration by Homestake Canada Ltd consisted of data compilations, geological mapping, fill-in geochemistry, geophysics and approximately 10,000 metres of diamond drilling with some down hole pulse E.M. surveys. The Rea horizon was traced and tested by drilling to depths of over 300 metres. This horizon was strongly anomalous geochemically though no new sulfide zones like K7 were found on Kamad 7 or 8. The Silver Zone was more difficult to trace due to thrust faulting and did not return any significant base-precious metal values in four holes. The Twin Mountain Zone did not receive any exploration by Homestake mainly because the previous work by Esso indicated complex structure. Discussions with Homestake geologists in 1992 indicated that the exploration target for that company was a VMS deposit (Cu, Pb, Zn, Au and Ag) of greater than 5 million tonnes (pers. com.).

The portions of the Rea and Silver Zones previously covered by the Twin 3 claim (Apex Energy Corp.) were explored for VMS targets by Lincoln Resources Inc. (option) 1983 and 1985, Falconbridge Copper (option) 1984. Between 1986 and 1992 the Twin property was explored with the Kamad by Esso Minerals followed by Homestake Canada. In 1987, Apex Energy Corp. (property owners) reported a 1.83m drill interval on the Twin 3 claim (Rea Horizon) assaying 30.86gt Au, 250.29gt Ag, 0.77% Zn, 2.1% Pb and 0.24% Cu. The values relate to a small massive sulfide lens called the Twin 3 within the Rea Zone stratigraphy. During the 1990 drilling program by Homestake four long holes on the Twin property intersected both the Silver and Rea Zones at depth. The Rea Zone was weak with no stratiform sulfide mineralization. The Silver Zone was intersected over 40 to 70 metre lengths and returned highly anomalous Au,Ag,Cu,Pb

and Zn values. Hole T91036 drilled in the Twin 3 lens area intersected 20cm of massive sulfide at the Silver Zone interval assaying 9.46gt Au, 89.8gt Ag, 0.34% Cu, 3.63% Pb and 5.66% Zn. This intersection was at 300m depth and is open to the north and south.

Prospector Paul Watt staked the Extra High claims in 2000. An orientation soil sampling program with limited prospecting and rock sampling took place in June 2001 largely funded by a BC. prospectors grant. A north east soil traverse in the vicinity of the Twin 3 Lens indicated that all three mineralized horizons feature soils with anomalous zinc and arsenic. Gold, silver and lead values were spotty. Rock samples taken from reclaimed trenches on the three zones returned elevated gold and arsenic values. Significantly higher values were returned from Rea Horizon float samples taken from the K7 and Twin 3 mineralized areas. One massive sulfide sample from the southern most trench on K7 returned 4.48gt Au, 65.8gt Ag, 1.05% Cu, 7.82% Pb, 3.12% Zn and 3.91% As. The report by Wells (2001) strongly recommended a thorough compilation of previous exploration data.

### 3.0 GEOLOGY

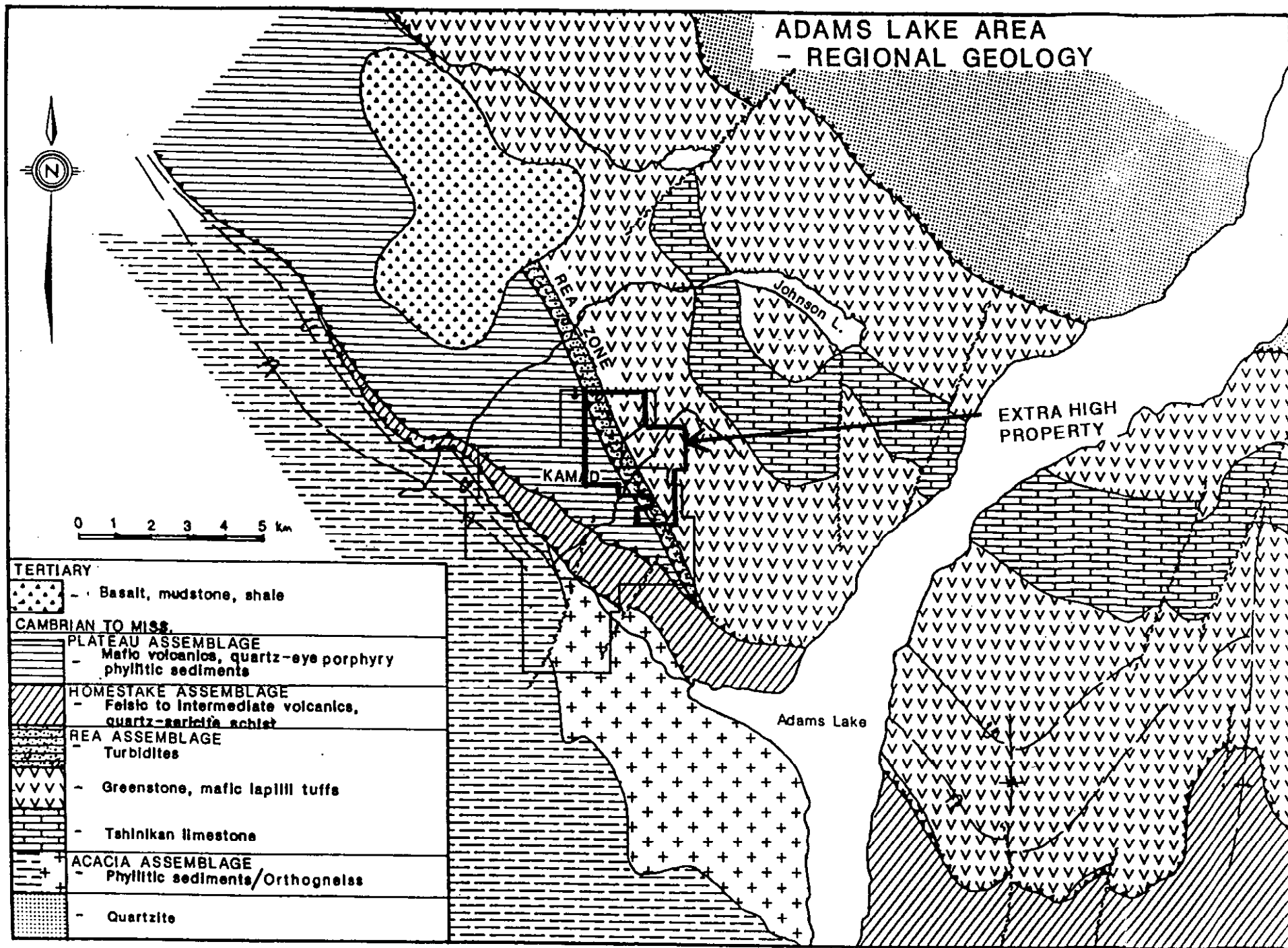
#### 3.1 Regional Geology and Mineralization

The Adams Plateau area lies at the western edge of the Omineca Belt and covers complexly deformed low grade metamorphic rocks belonging to the Eagle Bay Assemblage and Fennell Formation. The Eagle Bay Assemblage comprises four north dipping thrust sheets with a Lower Paleozoic succession of clastic metasediments, carbonate and mafic metavolcanic rocks, and an overlying Devonian-Mississippian succession of felsic to intermediate metavolcanic rocks and clastic metasediments. The Fennell Formation comprises Devonian to Permian age assemblage of bedded chert, gabbro, diabase, pillowed basalt, clastic metasediments (minor limestone), quartz-feldspar porphyry rhyolite and intraformational conglomerate. This is a fault imbricated assemblage that has been subjected to structural stacking. The Fennell and Eagle Bay succession are cut by Mid-Cretaceous age granitic rocks belonging to the Raft and Baldy Batholiths. A geological map for the area surrounding the property is shown in Figure 3 taken from a report by R.G. Carmichael (1991).

The Adams plateau contains numerous mineral showings in both Eagle Bay Assemblage and Fennell Formation settings. The mineral deposit types are classified in Table 2 (excluding veins) taken from Schiarizza and Preto's 1987 paper.

The table does not include the Samatosum Mountain silver zone that was discovered in 1986 by Minnova Inc east of the Rea deposit near Johnson Lake. This zone eventually became the Samatosum open pit mine in production between 1989 and 1992. Details regarding this deposit can be found in Appendix B with a BC MINFILE Capsule Geology and Bibliography. The deposit had massive sulfide (Cu, Pb, Zn) - kuroko type and polymetallic vein (Ag-Pb-Zn+/-Au) features. Mineral Deposit data (from Carmichael, 1991) for deposits in the property area occur in Table 3 with minor additions.

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After Carmichael (1991)

Figure 3: REGIONAL GEOLOGY



**TABLE 2. Mineral Deposits (excluding veins) of the Adams Plateau-  
Clearwater-Vavenby Area**

<b>Deposit Type</b>	<b>Potential Commodities</b>	<b>Rock Association</b>	<b>Examples</b>
1. Stratabound massive to semimassive sulfides within metasedimentary rocks.	Ag, Pb, Zn	Early Cambrian graphitic and siliceous phyllite limestone, quartzite, calc-silicate schist and chlorite schist of Units EBGs (Adams Plateau) and EBQ (Mt. McClennan).	Lucky Coon, Elsie, King Tut, Mosquito King, Spar, Pet, Red Top, Snow Sunrise
2. Disseminated sulfides associated with Devonian intrusive rocks.	Cu, Mo	Units EBQ and EBA adjacent to Devonian orthogneiss of Unit Dgn.	Harper Creek, EBL, Lydia, VM, VAV, CW(?)
3. Volcanogenic massive sulfides	Au, Ag, Zn, Pb, Cu, barite	Devonian-Mississippian intermediate to felsic metavolcanic rocks of Units EBA and EBF.	Homestake, Rea, Beca, Joe, Birk Creek showing.
4. Pyrite-fluorite replacement	U, fluorspar	Devonian-Mississippian trachytic volcanic and intrusive rocks of Unit EBFt.	Rexspar, Bullion
5. Volcanogenic massive sulfides	Cu, Zn, Co	Pennsylvanian-Permian oceanic basalt of the Fennell Formation	CC (Chu Chua)

TABLE 3: MINERAL DEPOSIT DATA FOR THE PROPERTY AREA

	Tonnage	Au g/T	Ag g/T	Cu %	Pb %	Zn %
Samatosum <sup>1</sup>	766,000	1.6	833	1.1	1.4	3.0
Rea <sup>2</sup>	268,000	6.5	73	0.6	2.1	2.3
K7 Lens <sup>3</sup>	375,000	4.0	55	0.5	4.8	6.1
Twin Lens <sup>4</sup> Drillholes	4.1 m	12.8	108	0.2	1.5	0.6
	Including ? 1.83m	30.86	250.29	0.24	2.1	0.77
	2.7 m	8.6	259	0.6	2.8	3.2
Homestake <sup>3</sup>	250,000	0.5	202	0.3	1.2	2.2

1 Rea Gold / Minnova

2 Rea Gold

3 Kamad Silver / Homestake Canada Ltd.

4 Apex Energy / Homestake Canada Ltd.

### 3.2 Property Geology

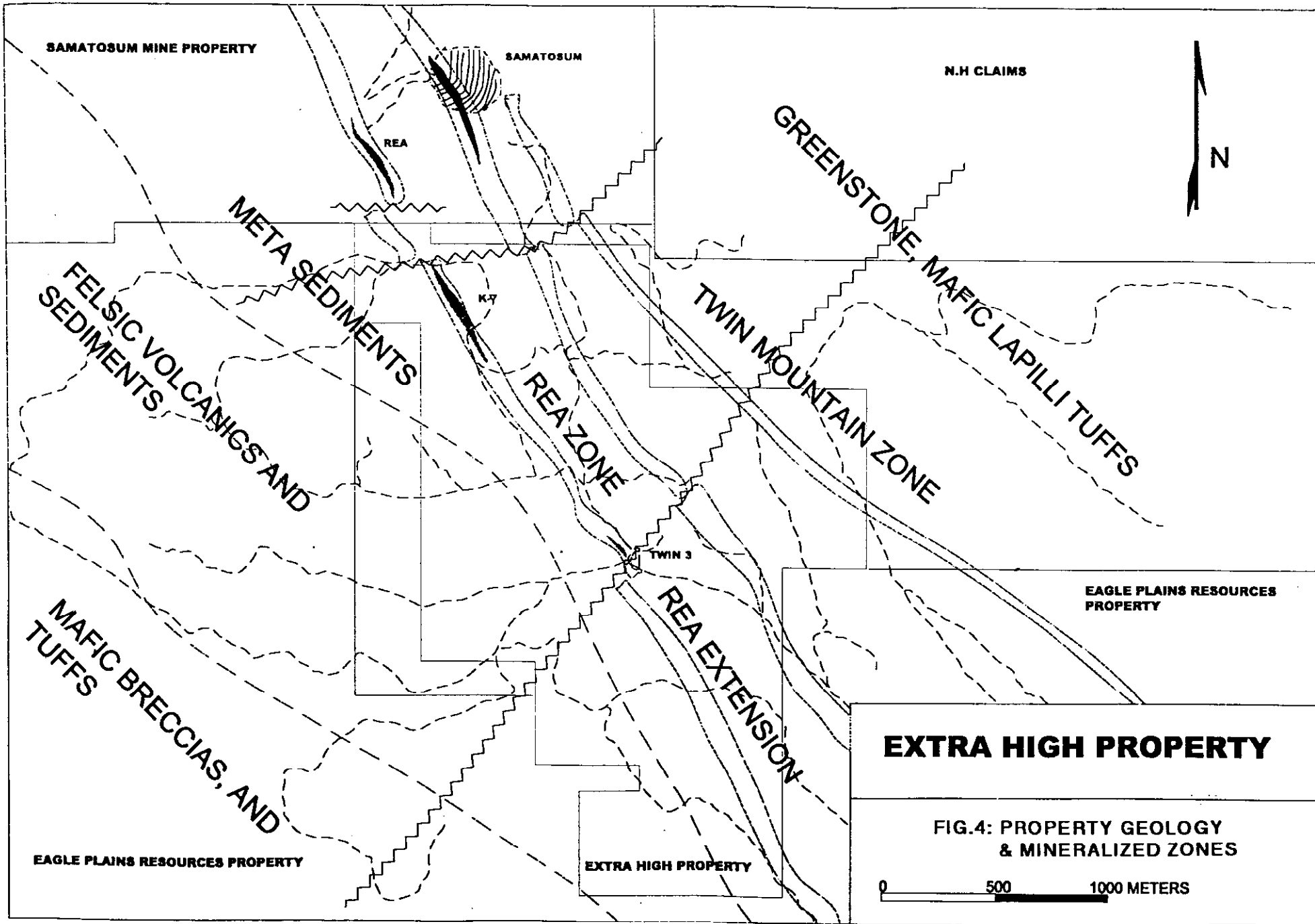
The geology of the former Kamad 7 claim is detailed in several assessment reports by Oliver and Marr (1987), Oliver (1987), Marr (1987), Heberlein (1988), Heberlein et.al (1989), Carmichael and Bozek (1990), and Carmichael (1991). Figure 4 is a property geology summary map with mineralized zones compiled from these earlier reports.

Several distinct northwest trending lithological units are exposed on the property area. The oldest (to west) consists of a thick sequence of foliated mafic flows and pyroclastic rocks called the footwall mafic volcanics (mafic breccias and tuffs). This unit is overlain by felsic volcanics, cherts and pyritic sediments of the Rea/Silver Zone which host the massive sulfide mineralization on the property. A sequence of turbidites, greywackes and conglomerates with intermediate to mafic volcanics overlie the mineralized horizon.

C

C

C



The lithological units strike northwest and dip 45° to 60° to the northeast. Previous geological work identified an isoclinal fold which repeats the mineralized horizon: the Silver Zone is on the upright limb and the Rea Zone is overturned. The Silver Zone is dismembered by a thrust fault which is subparallel to stratigraphy.

Within the Rea and Silver Zones occurs a common stratigraphy involving from stratigraphic bottom to top:

1. Graphitic chert and argillite.
2. Sericitic tuff with local interbedded chert. The chert is often mineralized with stringers of pyrite, sphalerite, galena, arsenopyrite and chalcopyrite.
3. Felsic pyroclastic rocks (footwall to K7 sulfide horizon). Intense sericite-pyrite alteration, local chlorite and stringer sulfides.
4. Pyritic siltite with up to 60% pyrite. This is stratigraphic equivalent to the K7 massive sulfide horizon and has anomalous base and previous metal values.

The Rea/Silver horizon has been the main target for base-precious metal massive sulfide exploration on the property and has been tested with over 8000 metres of diamond drilling by Esso and Homestake (to depths of over 300 m). Lenses of massive sulfide up to several metres in thickness were discovered on the Kamad 7 and Twin 3 claims approximately a kilometre apart.

The larger K7 sulfide lens in the north and western parts of the Extra High 1 claim lies a few hundred metres south of the Rea massive sulfide deposit in the same stratigraphy. Massive polymetallic sulfides form lenses in pyritic siltite and consist of variably banded, fine to medium grained pyrite, galena, sphalerite, arsenopyrite with local chalcopyrite. Trenching and drilling outlined a resource of 375,000 tonnes (from surface to 150 metres depth) grading 4.0 g/t Au, 55 g/t Ag, 0.5% Cu, 4.8% Pb, and 6.1% Zn. An example of one of the better width/grade intersections (hole K88040) was a 11.60m interval averaging 3.56gt Au, 77.8gt Ag, 0.56% Cu,

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6.85%Pb, 8.40% Zn and 2.65% As. The spacing of drill pierce points on longitudinal section is 50 to 75 metres in the K7 area. At surface the K7 lens is approximately 200 metres in length based on Homestake's 1991 geological plans.

The Twin 3 massive sulfide lens lies a kilometre to the southeast in the same Rea Zone stratigraphy as the K7 and appears to be 100m long at surface? This however seems to be an interpretation from shallow drilling, one hole (87003) returned a 1.83m interval averaging 30.86gt Au, 250.29 Ag, 0.77% Zn, 2.1% Pb and 0.24% Cu. This is associated with bedded barite, massive sulfide and stockwork mineralization featuring tetrahedrite, galena, sphalerite and some chalcopyrite. Pyritic tuffs occur above and below. The lens appears to lie close to surface, a large number of follow-up holes in this area did not encounter any significant mineralization.

Drilling is very limited below 200 metres from surface and large gaps >200 metres occur along strike on longitudinals for both zones leaving room for large sulfide lenses. Homestake geologists recommended deep drilling (>500 metres) on both zones with pulse EM. These geologists also noted stratigraphic thickening of felsic sections within the favourable stratigraphy suggesting "felsic domes."

The Twin Mountain Zone has received little recent exploration. Sulfide bearing quartz-carbonate-barite lenses are conformable and hosted by pyritic and calcareous chlorite-sericite-quartz schists with darker chloritic schists. Mineralization involves galena, sphalerite, pyrite and chalcopyrite in carbonate-quartz-barite lenses. This mineralization (to date) is erratic, predominantly disseminated to local massive (up to 10 cm wide) in baritic lenses up to several metres in width.

## **4.0 2002-2003 EXPLORATION PROGRAM**

### **4.1 Introduction**

No exploration took place on the property in 2001. With the greater interest in gold properties in 2002 a two day field examination was conducted on the Extra High in September 2002. This examination was by the author accompanied by Paul Watt with a cost of \$1,050 (Including this report). Massive sulfide samples taken in 2002 were oxidized and could not be used for thin section work, consequently a visit was made in May 2003 to obtain replacements and take photographs. This work after May 6, 2003 had associated costs of \$2,244.98

The main aim of the 2002-2003 examination was to become more familiar with the geological setting of the K7 massive sulfide deposit..

### **4.2 Geological Examination K7 Sulfide Lens Area**

#### **a) Comments on Previous Exploration**

Figure 5 was taken from a much larger geological plan from the report by R. Carmichael (1991) and shows drill hole collars and the majority of trails in the K7 sulfide lens area.. The drilling and trenching took places well before logging in this area and would have required access preparation and some clearing of timber. Much of the geology in this area would have been interpreted from the drilling as outcrops were sparse prior to logging.

Approximately 30 holes were drilled on the K7 target between 1985 and 1991. Incomplete assay results are available for 20 of these holes reports by Marr (1989) and Carmichael (1991). The majority of the drilling with 17 holes was in two phases in 1988 (Marr, 1989). Seven holes in the high potential area intersected massive polymetallic sulfides over



variable lengths up to 11.6m. These were holes K88033 to 035, 040,041 and 047. Faulting may be responsible for the absence of massive sulfides in holes 32 and 39. It is interesting to note that massive sulfide does occur in hole 37 which is 300m south of the lens (at surface). This hole returned 0.5m with 0.84gt Au, 38.5gt Ag, 0.19% Cu, 2.53% Pb and 4.70% Zn. There is ample room above 200m depth to expand the known K7 lens.

#### **b) Surface Examination, K7 Area**

The surface examination in September concentrated on the area around the K7 Lens in the western parts of the Extra High 1 claim as illustrated in Figure 5. Previous visits to this area by the owner indicated very limited outcrop and several well reclaimed trenches from the Esso - Homestake exploration programs. The locations of three of the larger trenches labelled Tr#1 to #3 are shown on Figure 5.

Fairly detailed examinations by the author during the September visits largely confirmed the previous geological interpretations. Very limited exposures and subcrops mainly in the old trench areas indicate a stratigraphy from west to east (bottom to top) featuring variably foliated and deformed units; Unit 7 Pyritic Siltstone with Unit 6 Massive Sulfide lenses-beds containing variable pyrite > sphalerite + galena + arsenopyrite + chalcopyrite with interstitial quartz > carbonate + sulfates. Unit 3 Sericitic Tuffs (local chert) with gradational contacts with pyritic siltites below. This unit is variably foliated, often strongly (milky) quartz veined and forms the higher ground east of the K7. Unit 1 graphitic chert and argillites on the ridge top are very poorly exposed.

An examination of the reclaimed trenches produced mixed results. Trench#1 at the southern end of the K7 Lens has the better subcrop exposures and sulfide float concentrations. Variably bedded to lensy massive sulfides occur within highly pyritic siltite at the northeast end of the clearing-trench. The sulfide rich zone appears to be several metres in width with a core of



massive pyrite, galena, sphalerite, arsenopyrite and chalcopyrite with patchy quartz. Pyrite clasts are locally common in the siltite. Sericitic schists to the east are variably pyritic with numerous milky quartz veins and stockworks containing spotty coarser pyrite and galena. Some metre scale boulders of quartz vein material occur on surface to the west. Three representative samples of massive sulfide were taken from float and subcrop, these are described in the following section (c). Trenches #2 and #3 to the north were well reclaimed but do contain float and rare subcrop of strongly oxidized K7 sulfides. No samples of fresh sulfides were available. Because of the recent logging it is presently possible to follow the K7 sulfide zone for 170 metres NNW. From Trench #3.

### **c) K7 Massive Sulfide Samples**

Three samples of weakly oxidized massive sulfide float were collected by the author from the north end of Trench#1. Each of these were broken into three, one part for thin section another for assay and a third for reference. Standard size polished thin sections were prepared by Vancouver Petrographics Ltd. in Langley, BC. These were stained for potassium feldspar, then examined using a metallurgical microscope by the author. The geochemical samples were sent to Eco-Tech Lab. In Kamloops, BC. and assayed for Au, Ag, Cu, Pb and Zn plus 28 element ICP. This data occurs with Certificates of Analysis AK 2003-158 in Appendix 3. Approximate values for arsenic in samples EH01 and 02 were determined from the ICP analyses. The sample data is summarized as follows:

#### **Sample EH01**

This 12x10x8 cm, massive sulfide sample is non magnetic with weak spotty carbonate reaction to HCL. Fine to medium grained sulfides, predominantly pyrite (>30%) display crude banding with local mesh textures and possible fragments. Interstitial quartz forms local centimetre scale patches generally separate from smaller patches of fibrous gypsum? and carbonate.

In polished thin section there is approximately 60% sulfides and 40% disseminated to patchy silicates. The latter consist predominantly of anhedral clear to strained quartz (some pressure shadow lamellar quartz) and extremely fine grained sericite laths locally with palisade rim textures. Numerous small cavities in these areas possibly contained carbonate and, or gypsum. Fine to local medium grained and often fractured pyrite (early) forms disseminated subhedral to cubic grains and semi-continuous aggregates. The other sulfides are extremely fine to fine grained and paragenetically later, interstitial to the pyrite or disseminated in silicate mosaics. Abundant anhedral arsenopyrite is highly noticeable possibly >20%. Fine galena is difficult to estimate and patchy often in aggregates with light coloured sphalerite (4%) and chalcopyrite (3%). No gold was observed.

The geochemistry of this sample features a surprisingly high gold value at 38.4 g/t and 14% arsenic. Silver 66.4 g/t, 0.82% Cu, 6.48% Pb and 2.06% Zn. Much of the silver would report to the galena and possibly sphalerite. The gold is either unevenly distributed or (more likely) extremely fine grained.

### **Sample EH02**

This 12x10x10cm massive sulfide sample is non magnetic and gives a very weak, spotty carbonate reaction to HCL. Predominantly fine grained sulfides with abundant pyrite and interstitial finer sulfides and patchy quartz with minor gypsum? Local narrow quartz veinlets with clusters of medium grained galena, minor pyrite.

In polished thin section there is approximately 65% sulfides with 40% fine to medium grained anhedral to cubic pyrite. Much of this pyrite appears paragenetically early and is fractured and locally veined by other sulfides. This pyrite is cemented by finer grained (later) sulfides and quartz. The former includes anhedral and patchy (variable proportions) galena, yellowish sphalerite (both 5 to 10%) and up to 5% fine to medium grained chalcopyrite. Aggregates of all

three sulfides are common. Arsenopyrite forms clusters of extremely fine grains and aggregates (up to 5%) disseminated in quartz generally separate from the other sulfides. A prolonged search did not locate any gold grains. Anhedral fine grained quartz is the dominant interstitial silicate (25%) with patchy finer sericite (2-3%) and traces of carbonate and gypsum. Fine quartz veinlets <0.5mm wide cut and clearly post-date pyrite and locally other sulfides.

The geochemistry of this sample fits well with the petrography, values include 0.53% Cu, 7.65% Pb, 2.94% Zn and approximately 2.6% As. The silver at 64.8 g/t probably reports to galena and sphalerite?, the gold is again high at 8.36 g/t but was not found in thin section (very fine?).

### **Sample EH03**

This large float sample of massive sulfides 25x20x20cm is non magnetic and was taken from the north-central clearing (trench) area. The sulfides and quartz-carbonate gangue are clearly banded (bedded) with variable, predominantly fine grain size. Clusters of medium grained subhedral pyrite occur in a matrix of abundant finer pyrite and galena, minor other sulfides. Some lensy sulfide concentrations probably represent 'clasts'.

In polished thin section there is approximately 55% sulfides with 42% quartz and 2% carbonate (fine) matrix. Pyrite is the dominant sulfide (40-45%) occurring as fine to medium, subhedral to cubic, often fractured (early) grains and small aggregates. This pyrite is cemented by fine galena (8-10%) and up to 4% patchy light coloured sphalerite. Trace amounts of fine grained chalcopyrite and arsenopyrite are disseminated throughout. Fine grained, commonly lamellar quartz occurs interstitial to the sulfides with fine anhedral carbonate restricted to small patches and bands.

The geochemistry for this sample featured the lowest arsenic value of the three at 1660 ppm and gold at 0.94 g/t. Lead was high at 11.6% with zinc (2.70%), copper (0.43%) and silver (72.8 g/t) similar to the two other samples. There is an apparent correlation between Pb-Ag and possibly Zn-Ag.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Of the three known horizons/zones on the Extra High Property the Rea (western) appears to offer the best potential for sizeable polymetallic targets. The K7 deposit and Twin 3 Lens are hosted by the Rea Zone on the property. K7 has a sizeable resource at shallow depth up to surface and features the highest Pb, Zn grades of the known deposits (Table 3) combined with significant Au, Ag and Cu. Further drilling and possibly trenching could increase this resource. There is little available information on the Twin 3 lens to the southeast. Previous drilling returned 2 to 11 metre intervals with significant gold and silver with associated base metals (Table 3).

A compilation of available exploration data on the property was very useful and demonstrated that there were sizeable gaps in the drilling on the K7, Twin 3 and Silver Zones especially at depth. Most of the 2002-2003 work focussed on K7 deposit, recent logging has greatly improved access for any future trenching and drilling. One of the main problems with the K7 massive sulfide deposit has been its high arsenic content which is often in the 2 to 10% range. The limited petrographic and geochemical work by the author suggests that the gold is extremely fine grained and in the fine sulfide matrix with arsenopyrite. The K7 polymetallic Cu, Pb, Zn, Au and Ag ore would probably require roasting and presents environmental problems. There is potential however for sending a high grade concentrate to other operations for blending.

Exploration for massive sulfide and Samatsum style gold-silver (vein) targets outside of the known deposits/lenses has been fairly limited. Both the Silver and Twin horizons on the property have potential for polymetallic mineralization with significant gold, silver and much lower arsenic levels. Future exploration should focus on this potential. Some metallurgical work on K7 ore may be very useful.

## 6.0 STATEMENTS OF COSTS

### EXTRA HIGH PROGRAM 2002-2003

#### May 2002 Assessment Year

September Field Examination	
R. Wells 2 days @ \$425/day	\$850.00
Expenses-Truck and gas	<u>100.00</u>
Total:	\$1050.00

#### May 2003 Assessment Year

Field Visit, Petrography and Report ( After May 6, 2003)	
R. Wells 4 days at \$425/day 1 day Visit, 3 days Report and Petrography	\$1700.00
P. Watt 1 day at \$200	200.00
Expenses- Truck and gas	75.00
a) Analytical Eco-Tech Laboratories Ltd	
3 Rocks ICP, Au, Ag, Cu, Pb & Zn assays	129.94
b) Vancouver Petrographics Ltd. # polished thin sections.	<u>140.04</u>
Total:	\$2244.98

**Total Program Cost : \$3294.98**

## 7.0 STATEMENT OF QUALIFICATIONS

I, Ronald C. Wells, of the City of Kamloops, British Columbia, hereby certify that:

1. I am a Fellow of the Geological Association of Canada
2. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
3. I am a graduate of the University of Wales, U.K. with a B. Sc. Hons. in Geology (1974), did post graduate (M. Sc.) studies at Laurentian University, Sudbury, Ontario (1976-77) in Economic Geology.
4. I am presently employed as Consulting Geologist and President of Kamloops Geological Services Ltd., Kamloops, B.C.
5. I have practised continuously as a geologist for the last 25 years throughout Canada, USA and Latin America and have past experience and employment as a geologist in Europe.
6. Ten of these years were in the capacity of Regional Geologist for Lacana Mining Corp., then Corona Corporation in both N. Ontario / Quebec and S. British Columbia.
7. The author oversaw exploration on the Extra High property documented in this report.

R.C. Wells, P.Geo., FGAC



*R. C. Wells, P.Geo., FGAC. Kamloops Geological Services Ltd.*

## 8.0 REFERENCES

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- Goutier, F., Godwin, C.I., and Howy, T.: Mineral Deposits of the Birk Creek Area: An Introduction to a Metallogeny Study of the Adams Plateau - Clearwater Area; B.C. Ministry of Energy, Mines and Pet. Res., Geological Fieldwork, 1984, Paper 1985-1, p. 67-76.
- Hoy, T., and Goutier, F., 1986: Rea Gold (Hilton) and Homestake Volcanogenic Sulphide-Barite Deposits, Southeastern British Columbia in BCMEMPR Geol. Fieldwork, 1985, Paper 1986-1.
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- Preto, V.A. and Schiarizza, P.A., 1985: Geology and Mineral Deposits of the Adams Plateau Clearwater Region; Geol. Soc. Am. Cordilleran Section Meeting, Guidebook Field Trip No. 16, pp. 1-11.
- Schiarizza, P.A., and Preto, V.A., 1984: Geology of the Adams Plateau - Clearwater Area; B.C. Ministry of Energy, Mines and Pet. Res., Preliminary Map 56.
- Schiarizza, P.A., and Preto, V.A., 1987: Geology of the Adams Plateau - Clearwater Area - Vavenby Area; B.C. Ministry of Energy, Mines and Pet. Res., Paper 1987-2, 88 pp.
- Wells, R.C., 2001: Soil Geochemistry and Prospecting (Assessment Report) for the Extra High Property.



**APPENDIX I**



**STATEMENT OF WORK, CASH PAYMENT, RENTAL**

Mineral Tenure Act  
Sections 29, 30, 31, 33 and 50

Type of Title: Mineral  Placer

Mining Division: KAMLOOPS

OFFICE USE ONLY	
EVENT NO.	<u>3194179</u>
\$ 100 MAY - 6 2003 GOVERNMENT AGENT KAMLOOPS	
Per	<u>#31</u>
Gold Commissioner Approval of Physical Work: _____	

I, PAUL WATT  
(Name)  
1058 Moncton Ave  
(Address)  
Kamloops BC  
V2B 1S4 376-6480  
(Postal Code) (Telephone)  
Client Number 128402

Agent for self.  
(Names of all recorded holders)  
\_\_\_\_\_  
(Address)  
\_\_\_\_\_  
(Postal Code) (Telephone)  
Client Number \_\_\_\_\_

**If recording work, complete the following and continue onto Page 3.  
If paying cash in lieu of work or lease rental, turn to (and complete) Page 4.**

List the titles (claim name, lease, tenure number, crown grant lot) on which the work specified below was actually done:

EXTRA-HIGH 1 (376044)

Date work started 1 Sept 2002 completed 30 Sept 2002 WORK PERMIT No. NA.

**TYPE OF WORK AND TOTAL VALUE FOR EACH TYPE BEING CLAIMED ON THIS STATEMENT**

Physical Refer to Page 2 for claimable physical work types and requirements \$  A

Technical Prospecting Report to follow \$  B

Geological, Geochemical, Geophysical, and/or Diamond Drilling \$ 2000.00 C

Portable Assessment Credit (PAC) Withdrawal (Box D)  
either  30% of value in Box B & C only  
or  Total PAC \$  D

from the account(s) of: \_\_\_\_\_

TOTAL VALUE OF WORK (Complete Page 3) A + B + C + D = E \$ 2000.00 E

**WORK CREDITS APPLIED TO CLAIMS**

EVENT NUMBER: 3194179

I wish to apply \$ \_\_\_\_\_ of the total value in Box E (from Page 1) as follows:

Claim Name (one claim per line)	Tenure Number	No. of Units*	Expiry Date	Work to be applied		Recording Fee	New Expiry Date
				Value	Years		
EXTRA HIGH 1	376044	1	2003/5/06	\$200	1	\$10.00	2003/5/06
EXTRA HIGH 2	376045	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 3	376046	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 4	376047	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 6	376049	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 8	376051	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 9	376610	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 10	376612	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 13	376614	1	2003/5/06	\$200	1	10	2004/5/06
EXTRA HIGH 15	376616	1	2003/5/06	\$200	1	10	2004/5/06
				TOTALS	\$2000.00	\$100.00	

\* 2 Post, Fraction, Rev. Crown Grant and Placer Claims are one unit each.

NOTICE TO GROUP / CAD EVENT NUMBER: 3163973 RECORDED April 9/01

Value of work to be credited to portable assessment credit (PAC) account(s). (May only be credited from the approved value of Box C not applied to claims.)	
Name	Amount
Name of owner/operator 1. _____	\$ _____
2. _____	\$ _____

I, the undersigned Applicant, hereby confirm that the information is supplied and the credits are claimed in accordance with the requirements in the Mineral Tenure Act, the Mineral Tenure Act Regulation, and the Mineral Act Regulation. I hereby acknowledge and understand that it is an offence to knowingly provide false information under the *Mineral Tenure Act*. I acknowledge and understand that if the statements made, or information given, in this Statement of Work are found to be false and the exploration and development has not been performed, then the work reported on this Statement will be cancelled and the subject mineral or placer claims(s) may, as a result, forfeit and vest back to the Province under section 35 of the Mineral Tenure Act.

6 May, 2003  
April  
Date

[Signature]  
Signature of Applicant



**STATEMENT OF WORK, CASH PAYMENT, RENTAL**

Mineral Tenure Act  
Sections 29, 30, 31, 33 and 50

Type of Title: Mineral  Placer

Mining Division: KAMLOOPS

OFFICE USE ONLY	
EVENT NO. <u>3195787</u>	#125 <sup>00</sup>
JUN 11 2003	
GOVERNMENT AGENT, KAMLOOPS	
Per. <u>14</u>	<u>AB</u>
Gold Commissioner Approval of Physical Work: _____	

I. <u>PAUL WATT</u> (Name)	Agent for _____ (Names of all recorded holders)
<u>B 104 - 1371 SUMMIT DRIVE</u> (Address)	_____ (Address)
<u>KAMLOOPS, BC</u>	
<u>V2C 5S1</u> (Postal Code)	_____ (Postal Code)
Client Number <u>128402</u>	Client Number _____
_____ (Telephone)	_____ (Telephone)

If recording work, complete the following and continue onto Page 3.  
If paying cash in lieu of work or lease rental, turn to (and complete) Page 4.

List the titles (claim name, lease, tenure number, crown grant lot) on which the work specified below was actually done:

EXTRA HIGH 1 (376044) - See also EVENT 3194179

Date work started May 6, 2003 completed June 10, 2003 . WORK PERMIT No. NA

**TYPE OF WORK AND TOTAL VALUE FOR EACH TYPE BEING CLAIMED ON THIS STATEMENT**

Physical	Refer to Page 2 for claimable physical work types and requirements	\$	A
Technical	Prospecting <u>REPORT SUBMITTED</u>	\$	B
	Geological, Geochemical, Geophysical, and/or Diamond Drilling	\$ <u>2244.98</u>	C
Portable Assessment Credit (PAC) Withdrawal (Box D)			
	either <input type="checkbox"/> 30% of value in Box B & C only		
	or <input type="checkbox"/> Total PAC	\$	D
from the account(s) of: _____			
TOTAL VALUE OF WORK (Complete Page 3)		A + B + C + D = E	\$ <u>2244.98</u> E

**WORK CREDITS APPLIED TO CLAIMS**

EVENT NUMBER: 3195787

I wish to apply \$ 2000.00 of the total value in Box E (from Page 1) as follows:

Claim Name (one claim per line)	Tenure Number	No. of Units*	Expiry Date	Work to be applied		Recording Fee	New Expiry Date
				Value	Years		
EXTRA HIGH 1	376044	1	2004/5/06	\$200	1	\$10.00	2005/05/06
EXTRA HIGH 2	376045	1	2004/5/06	"	1	"	"
EXTRA HIGH 3	376046	1	2004/5/06	"	1	"	"
EXTRA HIGH 4	376047	1	2004/5/06	"	1	"	"
EXTRA HIGH 6	376049	1	2004/5/06	"	1	"	"
EXTRA HIGH 8	376051	1	2004/5/06	"	1	"	"
EXTRA HIGH 9	376010	1	2004/5/06	"	1	"	"
EXTRA HIGH 11	376612	1	2004/5/06	"	1	"	"
EXTRA HIGH 13	376614	1	2004/5/06	"	1	"	"
EXTRA HIGH 15	376616	1	2004/5/06	"	1	"	"
				TOTALS	\$2000.00	\$100.00	

\*2 Post, Fraction, Rev. Crown Grant and Placer Claims are one unit each.

NOTICE TO GROUP / CAD EVENT NUMBER: 3163973 RECORDED \_\_\_\_\_

Value of work to be credited to portable assessment credit (PAC) account(s). (May only be credited from the approved value of Box C not applied to claims.)		
Name		Amount
Name of owner/operator	1. <u>P. Watt</u>	\$ <u>244.98</u>
	2. _____	\$ _____

I, the undersigned Applicant, hereby confirm that the information is supplied and the credits are claimed in accordance with the requirements in the Mineral Tenure Act, the Mineral Tenure Act Regulation, and the Mineral Act Regulation. I hereby acknowledge and understand that it is an offence to knowingly provide false information under the *Mineral Tenure Act*. I acknowledge and understand that if the statements made, or information given, in this Statement of Work are found to be false and the exploration and development has not been performed, then the work reported on this Statement will be cancelled and the subject mineral or placer claims(s) may, as a result, forfeit and vest back to the Province under section 35 of the Mineral Tenure Act.

11 June 2003  
Date

Paul Watt  
Signature of Applicant

**APPENDIX 2**

Ministry Home

Government of British Columbia

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 Energy & Mines

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### MINFILE Capsule Geology and Bibliography

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### Capsule Geology and Bibliography



082M 244

Production Report

Name	SAMATOSUM	Mining Division	Kamloops
Status	Past Producer	NTS	082M04W NAD 27
Latitude Longitude	51 08 40 N 119 48 30 W	UTM	11 5669419 303562
Commodities	Silver Gold Zinc Lead Copper Antimony	Deposit Types	G06 : Noranda/Kuroko massive sulphide Cu-Pb-Zn. I05 : Polymetallic veins Ag-Pb-Zn=Au.
Tectonic Belt	Omineca	Terranes	Kootenay.

#### Capsule Geology

The Samatosum deposit is located in structurally complex metasedimentary and metavolcanic rocks of the Paleozoic (Lower Cambrian and older(?) to Mississippian) Eagle Bay Assemblage (Formation). The assemblage has a complex deformational history involving multiple stages of thrust faulting and folding during the Jura-Cretaceous which produced strongly foliated and overturned rocks trending northwest and dipping northeast. These Paleozoic rocks are intruded by mid-Cretaceous granodiorite and quartz monzonite (such as the Baldy batholith about 30 kilometres to the north of the deposit), and Early Tertiary quartz-feldspar porphyry, basalt and lamprophyre dykes. These are all locally overlain by Miocene plateau lavas, now represented in the area by occasional erosional remnants.

The deposit area can be divided into several northwest trending, northeast dipping units. From northeast to southwest these are: 1) the Tshinikan Limestone which forms steep, massive landforms dominating the area; 2) mixed sediments consisting of interbedded cherts and argillite; 3) mafic volcanics; 4) the "Mine Series" of rocks which consist of a zone of more mixed sediments and mafic volcanics, with minor felsic to intermediate volcanics, which form the host stratigraphy for both the Samatosum and Discovery or Rea Gold zone (082M 191) deposits; and finally 5) a thick unit of argillites and wackes and a package of felsic rocks which lie in the structural footwall of the Mine Series.

The generalized ore stratigraphy reveals the apparent stratabound nature of the orebody within the hanging wall portion of the heavily strained and highly altered Mine Series rocks. The orebody

lies near the interface of altered mixed sediments and predominantly altered argillites/wackes. Original terms such as "sericitic tuffs" for the mixed sediments, and "muddy tuffs" for the altered argillite/wackes are now largely out of favour as it is really alteration products that one sees rather than original lithologies (Friesen, 1990).

The mixed sedimentary unit (SERT) is characterized by a strong yellow to white sericitic content, interbedded with up to 30 per cent cherty/quartz lenses. The altered argillites (MUT) are characterized by light silvery grey muscovite and sericite. They may also often locally contain up to 60 per cent very fine-grained pyrite and host low grade values of base and precious metals. Both units represent altered lithologies; their protoliths were probably variations of an original argillite/wacke/tuff sequence.

Both the SERT and MUT lie structurally below a thick unit of chloritic mafic volcanics, which in the deposit area are most commonly tuffaceous to lapilli in texture; but with an occasional pillowed component.

Both the Samatosum and original Discovery zone or Rea Gold zone (082M 191) 500 metres to the southwest are contained in a very similar stratigraphy; within a package of mixed sediments, argillites and their sericitic equivalents of SERT and MUT, and both are structurally overlain by mafic pyroclastics. There is much speculation regarding their structural and genetic associations. There is a strong suggestion of repetition by folding and/or faulting (which supports a long favoured theory of a thrust fault zone located between the deposits). Alternatively, but currently discounted, the two deposits may exist within similar stratigraphic cycles overprinted by a crosscutting alteration package (Friesen, 1990).

The Samatosum deposit is an early, highly deformed quartz vein system containing massive to disseminated components of tetrahedrite, sphalerite, galena and chalcopyrite hosted in structurally complex wallrocks. The upper portion of the orebody is tabular, averages about 5 metres in thickness, has a northwesterly strike length of about 500 metres and dips at an average of 30 degrees northeasterly for 100-150 metres. In the northern half of the deposit the tabular nature of the orebody gives way downdip to an apparent synformal structure, which is currently interpreted to be caused by slicing and imbrication by local overturning and thrust faulting. The northern half of the orebody has a northwesterly plunge of about 20 degrees, whereas the southern half displays a very slight plunge to the southeast (phase 2 folding?).

Tetrahedrite is the most valuable mineral in the ore zone, followed by sphalerite, chalcopyrite and galena. The tetrahedrite contains 36 per cent copper, 25 per cent sulphur, 23 per cent antimony, 5 per cent zinc, 4 per cent silver, 3 per cent arsenic and 2 per cent iron. Tetrahedrite appears to be the most uniformly distributed, while the sphalerite, galena and chalcopyrite often appear more erratically distributed in the northern end of the orebody as semimassive to massive lenses within the quartz vein host; perhaps indicating more than one mineralizing episode. It is important to note to note that whereas chalcopyrite, sphalerite and galena can be present in minor amounts in virtually any quartz vein occurrence throughout the property; tetrahedrite has so far been rarely found outside the immediate ore zone (Friesen, 1990).

The principal ore-related gangue minerals are quartz (30 per cent), dolomite (19 per cent) and pyrite (11 per cent).

Sericite and muscovite are by far the dominant alteration minerals in the Mine Series rocks and are thought to be a deformational product of the original ore-related alteration. All units from the lower portion of the mafics through the entire Mine Series stratigraphy are sericitic. Muscovite/sericite alteration fronts producing MUT commonly crosscut bedding and foliation, often leaving behind unaltered argillite/wacke remnants.

Other significant alteration in the deposit area includes: silicification or silica flooding of portions of wallrock surrounding the orebody (eg. many original "quartzites" and black cherts are now believed to be silicified MUT and argillites); dolomitc, much more intense than previously



believed, the bulk of which is probably a late-stage fault-related overprint; pyritization, as a replacement feature of lapilli in the mafic pyroclastics; and the green mica fuchsite, so far almost entirely restricted to a several metre thick occurrence associated with the argillites/MUT along the immediate sheared footwall portion of the ore zone.

Underground mineable reserves at Samatosum are 80,278 tonnes grading 1.2 per cent copper, 2.9 per cent zinc, 1.7 per cent lead, 1021.5 grams per tonne silver and 1.7 grams per tonne gold (Northern Miner - August 5, 1991). Both open pit and underground reserves are expected to be exhausted by October 1992. The underground reserve is the strike extension of the open pit deposit and extends approximately 198 metres beyond the pit wall before it is structurally terminated.

The Samatosum deposit was discovered in 1986. During 1988 a feasibility study determined the deposit could be mined economically by open pit methods, despite an unusually high 25:1 waste-to-ore stripping ratio. Mine stripping began in March 1989; ore production and milling began in May 1989; shipments began in June 1989.

Mining ceased in July 1992 and milling ceased in September 1992.

#### Bibliography

EMPR PF (Friesen, R.G. (1990): Geology of the Samatosum Deposit - Field Trip B2, GAC-MAC Joint Annual Meeting, Vancouver 1990, Mineral Deposits of the Canadian Cordillera; Preliminary Engineering Geology, Hydrogeology and Rock Mechanics Assessments for the Proposed Underground Mine, Samatosum Project - May 1991; Memorandum to Geological Survey Branch, P. Schiarizza - June 14, 1990; Press Release, Rea Gold Corporation, Feb.21, 1991; M.E.G Luncheon Talk notes, Jan.13, 1988)  
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 GCNL #4,#57,#131,#135,#153,#172,#177,#210, 1986; #8,#76,#96,#108, #111,#112,#116,#117,#118,\*#133, 1987; #33,#70,#78,#207, 1988; #1(Jan.3),#56(Mar.21),#123(June 27),#205(Oct.25), 1989; #19(Jan.26),#52(Mar.14),#90(May 9),#179(Sept.17),#186(Sept.26), 1990; #38(Feb.22),#52(Mar.14),#68(Apr.9),#127(Jul.3),#147(Jul.31), #200(Oct.17), 1991  
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*Database last posted: June 11, 2001*

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## MINFILE Production Report

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### Production Report

MINFILE Number: 082M 244

Name: SAMATOSUM

Status: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1992	71,950	129,374	Silver Gold Copper Lead Zinc	66,346,000 100,977	594,597 571,995 1,624,135
1991	78,229	177,615	Silver Gold Copper Lead Zinc	142,704,089 166,160	1,158,895 1,167,141 2,515,683
1990	174,738	169,152	Silver Gold Copper Lead Zinc	166,154,000 279,907	1,462,819 2,050,850 3,220,028
1989	28,212	78,732	Silver Gold Copper Lead Antimony Zinc	54,152,687 92,074	461,705 1,279,141 97,620 2,178,417

### Summary Totals

	Metric	Imperial
Mined:	353,129 tonnes	389,148 tons
Milled:	554,873 tonnes	611,470 tons
Recovery:	Silver : 429,356,776 grams	13,804,139 ounces
	Gold : 639,118 grams	20,548 ounces

Copper :	3,678,016	kilograms	8,108,554	pounds
Lead :	5,069,127	kilograms	11,175,397	pounds
Antimony :	97,620	kilograms	215,213	pounds
Zinc :	9,538,263	kilograms	21,028,055	pounds

*Database last posted: June 11, 2001*

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## MINFILE Inventory Report

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### Inventory Report

**MINFILE Number: 082M 277**

**Name: K-7**

**Status: Developed Prospect**

File Name Year	Resource Category	Commodity	Grade	Notes/Comments
<b>LENS</b> 1991	375 kt Unclassified	Silver Gold Copper Lead Zinc	55.00 g/t 4.00 g/t 0.500 % 4.800 % 6.100 %	Assessment Report 22389, page 1. This inventory is based on several drill holes.

**Database last posted: April 30, 2003**

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**MASTER REPORT**  
 GEOLOGICAL SURVEY BRANCH  
 MINISTRY OF ENERGY & MINES

MINFILE Number: 082M 277

National Mineral Inventory:

Name(s): K-7, KAMAD 7, K7

Status: Developed Prospect

Mining Division: Kamloops

Regions: British Columbia

NTS Map: 082M04W (NAD 83)

UTM Zone: 11 (NAD 83)

Latitude: 51 08 26 N

Northing: 5669218

Longitude: 119 48 47 W

Easting: 303223

Elevation: 1520 Metres

Location Accuracy: Within 500M

Comments: The K-7 zone on the northern slopes of Samatosum Mountain, 25 kilometres east of Barriere and 60 kilometres north of Kamloops (Assessment Report 18822, Map No. 2).

Commodities: Silver                      Gold                      Zinc                      Lead                      Copper

**MINERALS**

Significant: Sphalerite                      Galena                      Chalcopyrite

Mineralization Age: Unknown

**DEPOSIT**

Character: Stratabound                      Massive

Classification: Volcanogenic

Type: [Noranda/Kuroko massive sulphide Cu-Pb-Zn.]                      [Polymetallic veins Ag-Pb-Zn+Au.]

Shape: Unknown

**HOST ROCK**

Dominant Host Rock: Metasedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Paleozoic	Undefined Group	Eagle Bay	

Lithology: Altered Cherty Sediment/Sedimentary  
 Altered Argillite  
 Altered Wacke

**GEOLOGICAL SETTING**

Tectonic Belt: Omineca

Physiographic Area: Shuswap Highland

Terrane: Kootenay

Metamorphic Type: Regional

Relationship:

Grade: Greenschist

**INVENTORY**

Ore Zone: DRILLHOLE

Report On: N

Category: Assay/analysis

Year: 1888

Sample Type: Drill Core

Commodity	Grade
Silver	77.80 g/t
Gold	3.56 g/t
Copper	0.560 %
Lead	6.850 %
Zinc	8.400 %

Comments: From an 11.6-metre drill interval.  
Reference: Assessment Report 18822, page 17.

Ore Zone: LENS  
Category: Unclassified  
Quantity: 375 kt

Report On: Y  
Year: 1991

Commodity	Grade
Silver	55.00 g/t
Gold	4.00 g/t
Copper	0.500 %
Lead	4.800 %
Zinc	6.100 %

Comments: This inventory is based on several drill holes.  
Reference: Assessment Report 22389, page 1.

**CAPSULE GEOLOGY**

The K-7 prospect is located in structurally complex metasedimentary and metavolcanic rocks of the Paleozoic (Lower Cambrian and older(?) to Mississippian) Eagle Bay Assemblage (Formation). The assemblage has a complex deformational history involving multiple stages of thrust faulting and folding during the Jura-Cretaceous which produced strongly foliated and overturned rocks trending northwest and dipping northeast. These Paleozoic rocks are intruded by mid-Cretaceous granodiorite and quartz monzonite (such as the Baldy batholith about 30 kilometres to the north of the deposit), and Early Tertiary quartz-feldspar porphyry, basalt and lamprophyre dykes. These are all locally overlain by Miocene plateau lavas, now represented in the area by occasional erosional remnants.

The area can be divided into several northwest trending, northeast dipping units. From northeast to southwest these are: 1) the Tshinikan Limestone which forms steep, massive landforms dominating the area; 2) mixed sediments consisting of interbedded cherts and argillite; 3) mafic volcanics; 4) the "Mine Series" of rocks which consist of a zone of more mixed sediments and mafic volcanics, with minor felsic to intermediate volcanics, which form the host stratigraphy for both the Samatosum and Discovery or Rea Gold zone (082M 191) deposits; and finally 5) a thick unit of argillites and wackes and a package of felsic rocks which lie in the structural footwall of the Mine Series. See the Samatosum past producer (082M 244) for further details of area geology.

There is no record of work in the K-7 area prior to the discovery of the Rea Gold zone (082M 191) to the north. The Rea find resulted in geophysics and minor diamond drilling to be carried out in 1983 on the Kamad 7 claim. Further geophysics followed in 1984. Five holes totalling 369.7 metres were drilled on the Kamad 7 claim in 1985 for a company called "259146 B.C. Limited". Esso Minerals Canada optioned the property from Kamad Silver Company in 1985. In 1986, Esso carried out basic linecutting, geochemical sampling, HLEM - EM geophysical surveying and 1814 metres of drilling in 11 diamond drill holes. In 1988, Esso drilled 17 holes on the Kamad 7 claim and 7 holes intersected massive sulphide mineralization within the "Rea zone" and called it the K-7 lens.

One diamond drill hole (K88033) intersected intensely dolomitized mafic volcanics from 2.6 metres to 32.1 metres which forms the footwall of the Rea zone. Massive, polymetallic sulphides (32.1 to 34.0 metres) were found in sharp contact with the volcanics. The sulphides were medium-grained and crudely banded on a centimetre scale. Bands of massive chalcopyrite and sphalerite/galena were also observed as were "splashes" of galena and chalcopyrite up to 2 centimetres across. A weighted average of 4 assays yielded 1.82 metres of 1.26 per cent copper, 6.51 per cent lead, 6.87 per cent zinc, 53.51 grams per tonne silver, 7.54 grams per tonne gold and 5.30 per cent arsenic (Assessment Report 18822, page 9). Another drill hole (K88040) intersected semi-massive sulphide from 108.8 to 110.6 metres and banded, medium-grained, polymetallic massive sulphide from 110.6 to 120.0 metres. Assays from an 11.60 metre section yielded 0.56 per cent

copper, 6.85 per cent lead, 8.40 per cent zinc, 77.8 grams per tonne silver, 3.56 grams per tonne gold and 2.65 per cent arsenic (Assessment Report 18822, page 17). A rough estimate of the K-7 zone surface area as shown on Map 2 (Assessment Report 18822) is 100 by 200 metres.

A resource for the K-7 zone, attributed to Kamad Silver Company, was reported to be 375,000 tonnes grading 4 grams per tonne gold, 55 grams per tonne silver, 0.5 per cent copper, 4.8 per cent lead and 6.1 per cent zinc (Assessment Report 22389, page 1).

No work occurred on the property after the 1988 work was completed.

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EMPR OF 1992-1  
GSC MAP 48-1963; 5320G  
GSC OF 637  
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Preto, V.A. and Schiarizza, P. (1985): Geology and Mineral Deposits of the Adams Plateau - Clearwater Region - GSA Cordilleran Section Meeting, May 1985, pp. 16-1 to 16-11

Date Coded: 2000/06/19  
Date Revised: 2000/09/08

Coded By: GJP  
Revised By: GJP

Field Check: Y  
Field Check: N



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### Capsule Geology and Bibliography

[Printable Report](#)

**082M 276**

Name	TWIN 3	Nearest City	Kamloops
Status	Prospect	NTS	082M04W NAD 27
Latitude Longitude	51 08 05 N 119 47 47 W	UTM	11 5668300 304350
Commodities	Gold Silver Zinc Lead Copper	Deposit Type	G06 : Noranda/Kuroko massive sulphide Cu-Pb-Zn.
Tectonic Belt	Omineca	Terranes	Kootenay.

Capsule Geology	<p>The Twin 3 occurrence is underlain by Devonian or older rocks of the Eagle Bay Formation consisting of calcareous chlorite-sericite-quartz schist within unit EBG (Map 56). The schists were derived largely from mafic to intermediate volcanic and volcanoclastic rocks. The metavolcanics contain several thin layers of limestone and dolomite, as well as remnant pillow basalt structures. The Tshinakin limestone member lies to the northeast of the property.</p> <p>In this area, the Rea zone is a continuous, well-defined stratigraphic horizon which hosts several massive sulphide lenses (such as the Rea Gold (092M 191). A second mineralized stratigraphic horizon parallels the Rea zone to the northeast and is referred to as the Silver zone. This zone hosts the Samatsum deposit (082M 244).</p> <p>Mineral exploration on the Twin property started in the 1930s. The Twin Mountain occurrence (082M 020) is located about 1.5 kilometres to the southeast and is a silver-lead-zinc bearing quartz-dolomite vein discovered in 1936 and explored sporadically by several operators. The Twin claims were staked in 1980. In 1983, Lincoln Resources Inc. entered into an option agreement with Apex Energy Corp. to work on the Twin property. A</p>
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grid was established and a soil survey carried out. Falcobridge Copper acquired the property in 1984 and conducted mapping, rock sampling, Max-Min II and VLF-EM geophysical surveys. Two diamond drill holes were completed also. Lincoln Resources received the property back in 1985 and conducted a limited fill-in soil survey. In 1986, Lincoln extended the grid and conducted further rock and soil sampling and mapping. Genie EM and trenching were also conducted. In late 1986, Esso Minerals Canada optioned the property from Lincoln Resources and Apex Energy. Early in 1987, Esso Minerals conducted a VLF EM geophysical survey over geochemical target areas. This was followed by 2269 metres of diamond drilling which resulted in the discovery of a small gold-rich massive sulphide/barite lens on the Twin 3 claim. During the summer of 1988, Esso Minerals drilled 1278 metres in 8 holes and did additional geophysics and geological mapping. Homestake Canada acquired Esso's option in 1989 and did a limited amount of trenching on the Twin Mountain zone. In 1990, Homestake completed 4017 metres of diamond drilling in nine holes, and 2235 metres of down-hole Pulse EM geophysical surveying in six of the holes. Homestake conducted a further 4069 metres of diamond drilling in 6 holes in 1991. During this program the Silver zone, was intersected by 4 holes on the Twin property.

In 1987, Apex reported a 1.83-metre drill interval (Hole Twin 3 on the Rea Zone) that assayed 30.86 grams per tonne gold, 250.29 grams per tonne silver, 0.77 per cent zinc, 2.1 per cent lead and 0.24 per cent copper (George Cross Newsletter, No. 237, December 10, 1987). A 4.1-metre drill interval from the Twin property was reported to have yielded 12.8 grams per tonne gold, 108 grams per tonne silver, 0.2 per cent copper, 1.5 per cent lead and 0.6 per cent zinc (Assessment Report 22389, page 1). It may be that the former assay was a sub-interval of the latter.

The Silver zone consists of 50 metres of interbedded graphitic argillite and siltone, sericitic chert, and pyritic sediments. The pyritic sediments range from fine siltstone to coarse chert pebble conglomerates. Chert pebble conglomerate with interbedded wacke contain 30 to 40 per cent pyrite occurring both as very fine-grained matrix and recrystallized granoblasts. Traces of blebby sphalerite, galena and chalcopyrite also occur. This zone remains open along strike and down dip.

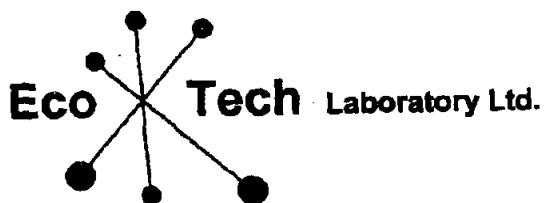
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 EMPR MAP \*56  
 EMR MP CORPFILE (Camoose Mines Ltd.)  
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 GSC OF 637  
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Database last posted: April 30, 2003

**APPENDIX 3**

*R. C. Wells, P. Geo., FGAC. Kamloops Geological Services Ltd.*



ASSAYING  
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ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 Dallas Drive, Kamloops, BC V2C 6T4  
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E-mail: info@ecotechlab.com  
www.ecotechlab.com

## CERTIFICATE OF ASSAY AK 2003-158

**KAMLOOPS GEOLOGICAL SERVICES LTD.**  
910 HEATHERTON COURT  
KAMLOOPS, B.C.  
V1S 1P5

5-Jun-03

**ATTENTION: RON WELLS**

*No. of samples received: 3*  
*Sample type: Rock*  
*Project #:EH*  
*Shipment #:01*  
*Samples submitted by: Ron Wells*

ET #.	Tag #	Au (g/t)	Au (oz/t)	Ag (g/t)	Ag (oz/t)	Cu (%)	Pb (%)	Zn (%)
1	EH01	38.4	1.120	68.4	1.94	0.82	6.48	2.06
2	EH02	8.36	0.244	64.8	1.89	0.53	7.65	2.94
3	EH03	0.94	0.027	72.8	2.12	0.43	11.6	2.70

**QC/DATA:**

**Resplit:**

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**Standard:**

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Mp-1A				68.9	2.01	1.44	4.30	19.01
CU106				135.0	3.94	1.43		

XLS/03  
FAX: 372-1012

**ECO TECH LABORATORY LTD.**  
Jutta Jealous  
B.C. Certified Assayer

6-Jun-03

ECO TECH LABORATORY LTD.  
10041 Dallas Drive  
KAMLOOPS, B.C.  
V2C 6T4

Phone: 250-573-5700  
Fax : 250-573-4557

ICP CERTIFICATE OF ANALYSIS AK 2003-0158

KAMLOOPS GEOLOGICAL SERVICES LTD.  
910 HEATHERTON COURT  
KAMLOOPS, B.C.  
V1S 1P6

ATTENTION: RON WELLS

No. of samples received: 3  
Sample type: Rock  
Project #:EH  
Shipment #:01  
Samples submitted by: Ron Wells

Values in ppm unless otherwise reported

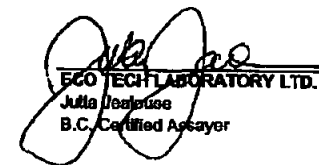
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2	EH02	>30	0.11	>10000	<5	<5	0.08	<1	13	84	5170	>10	20	0.29	<1	3	<0.01	14	210	>10000	235	<20	25	0.01	20	14	<10	4	>10000
3	EH03	>30	0.06	1660	<5	<5	0.04	55	9	88	4210	>10	20	0.23	<1	<1	<0.01	5	<10	>10000	1210	<20	3	<0.01	<10	4	<10	<1	>10000

QC DATA:

Standard:  
GEO03

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07149  
XLS03  
FAX: 572-1012

  
ECO TECH LABORATORY LTD.  
Julia Doolittle  
B.C. Certified Assayer

06/06/03 15:55 202505734557 ECO-TECH KAM. 777 WELLS-KON