1996 ASSESSMENT REPORT

RACINE PROPERTY
(TP CLAIM)

DIAMOND DRILLING AND LITHOGEOCHEMICAL ROCK SAMPLING PROGRAM

ATLIN MINING DIVISION
NTS 104M/10E
LATITUDE 59°41' N, LONGITUDE 134°41' W

CLAIM OWNER
WESTMIN RESOURCES LIMITED

OPERATOR
WESTMIN RESOURCES LIMITED

REPORT BY

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PAUL G. LHOTKA, Ph.D., P.Geo.
WESTMIN RESOURCES LIMITED

FILMED

DECEMBER 10, 1996

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,844

RPT/96-006

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1.0 SUMMARY

The 1996 exploration program was designed to investigate the potential for an economic gold-cobalt skarn deposit on the Racine property in northwestern B.C.. Diamond drilling, lithogeochemical sampling, and petrographic examinations were performed.

The 150 m long by 15 m wide, N-trending, semi-conformable skarn mineralization at the Main Showing on the TP claim does not have significant down-dip extensions. Drillholes oriented to intersect the E-dipping semi-comformable skarn mineralization along the entire length of the showing failed to delineate significant zones of gold-cobalt mineralization. Detailed core logging revealed that extensive faulting subsequent to skarn formation has largely removed the skarn at depth. Quartz and quartz-feldspar porphyries along with lesser quartz±chlorite±biotite-amphibole schist occur in place of skarn in the drillholes.

The development of skarn is closely related to the emplacement of quartz and quartz-feldspar porphyries. Significant endoskarn is developed at the contacts between the larger dykes/sills and the schists. The quartz and quartz-feldspar porphyries are commonly intensely altered, especially at the surface. This alteration caused previous workers to misidentify the true proportions of quartz and feldspar phenocrysts, and resulted in the conclusion that quartz and quartz-feldspar porphyries were unrelated magmatic events. Textural and temporal relationships in drillcore, however, revealed that these porphyries are actually members of a compositional continuum, likely related to an evolving magma chamber at depth. The degree of alteration and deformation is largely related to the distance from faults and breccias in the Main Showing area. Close to the faulted magnetite and clinopyroxene skarns, porphyries are very strongly altered and only the glassy grey "quartz eye" phenocrysts are apparent in the friable chalky-white rock. Feldspar phenocrysts have been obliterated by argillic, and to a lesser degree, silicic alteration. Moving away from the faults, the porphyries can be quite fresh with the tabular feldspar phenocrysts readily visible.

The twelve lithogeochemical samples collected over the TP claim failed to show significant gold enrichment. Other metal abundances were generally low.

Further work on the Main Showing is not recommended. The skarn mineralization is extensively faulted and there seems little chance of solving the stuctural controls over the mineralization without further drilling and oriented drill core. Furthermore, surface exposures of skarn and faults in the Main Showing underestimate the true degree of deformation and faulting associated with this prospect as determined from drill core.

2.0 INTRODUCTION

2.1 Location and Access

The Racine property is located in the Atlin Mining District approximately 55 km west of Atlin, British Columbia, on NTS map sheet 104M/10E at 59° 41' N latitude, 134° 41' W longitude. The property consists of six mineral claims - TP, RACE 1, RACE 2, RACE 3, RACE 4, and RACE 5, although work was only carried out on the TP claim (Fig. 1). This claim lies on the southwest face of Teepee Peak, approximately 20 km east of Fraser, British Columbia. Fraser is on Highway 2, which links Whitehorse, Yukon Territory, to the deep water port of Skagway, Alaska.

Access to the property is by helicopter from Altin. The camp and diamond drill were trucked from Whitehorse to a sand and gravel pit on the east side of Highway 2, about 20 km north of Fraser. It was from this location that camp and diamond drill mobilization and demobilization occurred.

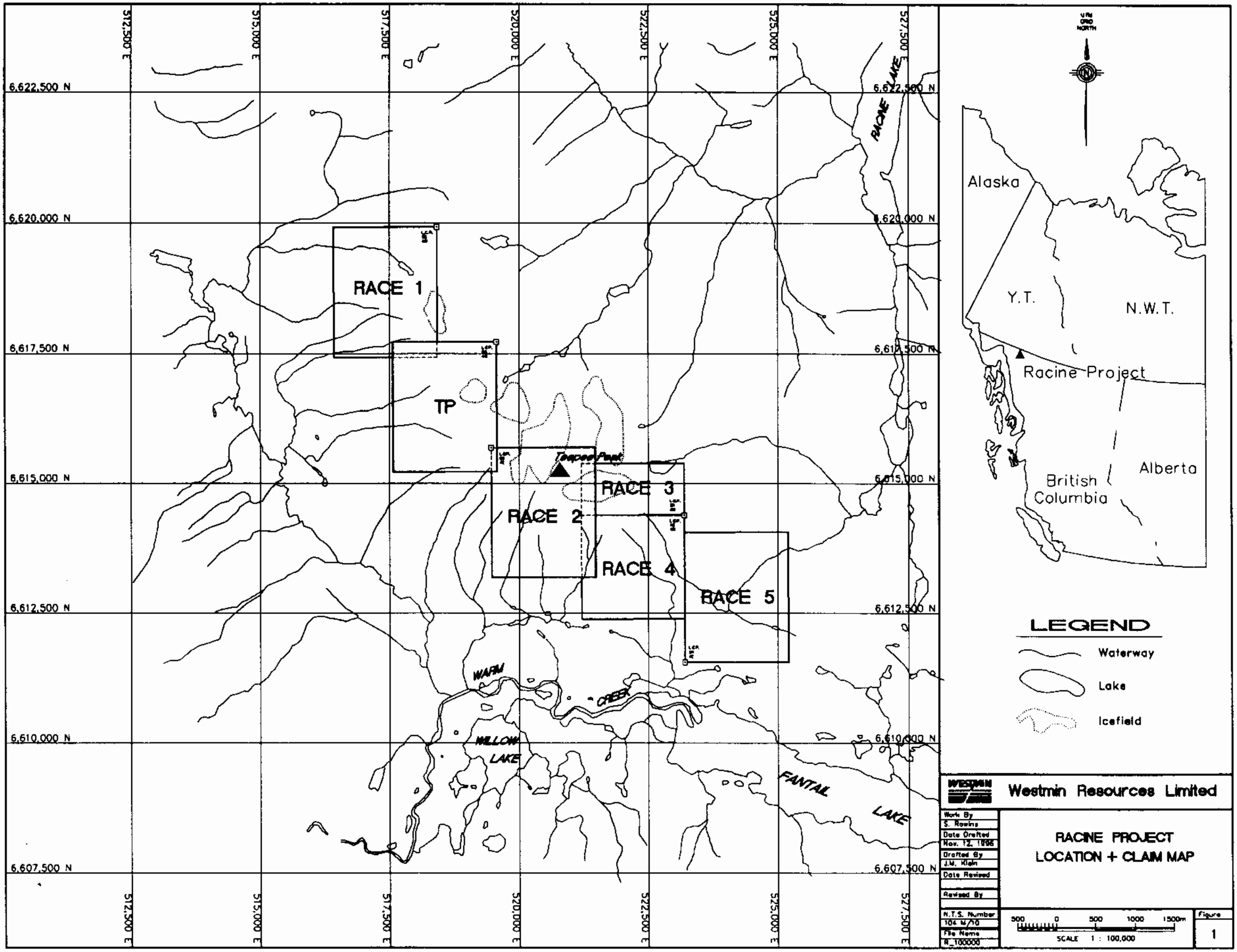
2.2 Physiography and Vegetation

The region is mountainous with peaks ranging up to 2,300 m. Separating these peaks are broad U-shaped glacial valleys with valley floors at elevations of 650 m above sea level (a.s.l.). At higher elevations, winter snow may persist until early July. This past summer, snow flurries occurred on July 4 and a covering of snow remained over the drill sites for the duration of the work program.

The property is situated on very steep terrain which slopes southwestwards towards Teepee Creek. This creek lies at the bottom of a 2 km wide valley. Treeline varies from 1000 to 1400 m elevation. Above treeline elevation, vegetation is light and consists of alpine mosses, grasses, and small patches of buckbrush. In general, ground surface above treeline is dominated by exposed bedrock and talus.

2.3 Mineral Claims and Tenure

The Racine Property consists of six contiguous mineral claims (104 claim units). The location of the claims is shown on Figure 1, and pertinent details are listed in Table 1. All claims are owned and operated by Westmin Resources Limited, and are the subject of an option agreement with White Hawk Ventures Inc..


512,500 E
515,000 E
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6,615,000 N
6,612,500 N
6,610,000 N
6,607,500 N
RACE 1
TP
RACE 2
RACE 3
RACE 4
RACE 5
Teepee Peak
RACINE LAKE
WARM CREEK
WILLOW LAKE
FANTAIL LAKE
Alaska
Y.T.
N.W.T.
Racine Project
British Columbia
Alberta
LEGEND
Waterway
Lake
Icefield
Westmin Resources Limited
Work By
S. Rowins
Date Drafted
Nov. 12, 1996
Drafted By
J.M. Klein
Date Revised
Revised By
N.T.S. Number
104 M/10
File Name
R_100000
RACINE PROJECT
LOCATION + CLAIM MAP
500 0 500 1000 1500m
SCALE 1 : 100,000
Figure
1

TABLE 1 RACINE PROPERTY CLAIMS				
Claim Name	Tenure No.	No. of Units	Record Date	Expiry Date*
TP	339511	20	1995/08/25	1996/08/25
RACE 1	342652	20	1996/02/14	1997/02/14
RACE 2	343653	20	1996/02/14	1997/02/14
RACE 3	343654	8	1996/02/14	1997/02/14
RACE 4	343655	16	1996/02/15	1997/02/15
RACE 5	343656	20	1996/02/15	1997/02/15
* Expiry dates do not reflect filing of the current assessment work.				

2.4 Previous Work

The earliest exploration on the Racine property region dates back to the 1890's when prospectors travelling to the Klondike and Atlin goldfields prospected en route. The abandoned settlement of Teepee, just south of the property, was on the overland link between Atlin to the east and the Chilkoot trail and White Pass railroad to the west. None of the early work, however, was documented in assessment records or Ministry of Mines Reports.

Gold-cobalt skarn mineralization was discovered on the southwest face of Teepee Peak in 1982 by exploration geologists working for Trigg, Wollett Consulting Ltd. on behalf of Texaco Canada Resources Ltd. (Lhotka and Olsen, 1982). An exploration program on the TP mineral claim in 1983 by Trigg, Wollett Consulting Ltd. for Texaco focused on two occurrences termed the "Main Showing" and the "Camp Showing" (Assessment Report 11,300). Work performed included geological mapping, trenching, sampling and ground geophysical surveys (magnetometer and VLF-EM). The company kept the claims in good standing but failed to continue work in this area until 1988, when Durfeld Geological Management Ltd. undertook geological, geochemical, and geophysical studies for the Main Showing on behalf of Cyprus Gold Canada, which had optioned the property under a joint venture agreement (Assessment Report 18,766). Cyprus Gold Canada underwent a name change in 1991 to Cyprus Canada Inc., and subsequently sold 100% ownership of the TP mineral claim to Hemlo Gold Mines Inc. in June,1993. In November, 1993, Hemlo Gold Mines sold the TP claim ownership back to Cyprus Canada Inc., which held the claim until forfeiture in August, 1995. Westmin Resources Limited re-staked the TP mineral claim in November, 1995, and staked five new adjoining claims (RACE 1 to 5) in February, 1996.

2.5 1996 Work Program

In 1996, Westmin Resources Limited completed a program of diamond drilling and lithogeochemical sampling on the TP claim. The diamond drilling was concentrated on a 15 m wide by 200 m long, NNW-trending zone of semi-conformable gold-cobalt skarn mineralization termed the Main Showing. A total of 694 m (2276 ft) was drilled in six holes over three drill sites. Sections of drill core showing alteration and mineralization were submitted for fire assay and multi-element analysis to Chemex Laboratories Ltd. in North Vancouver, British Columbia. Lithogeochemical prospecting resulted in the collection of twelve rock grab samples for fire assay and multi-element analysis.

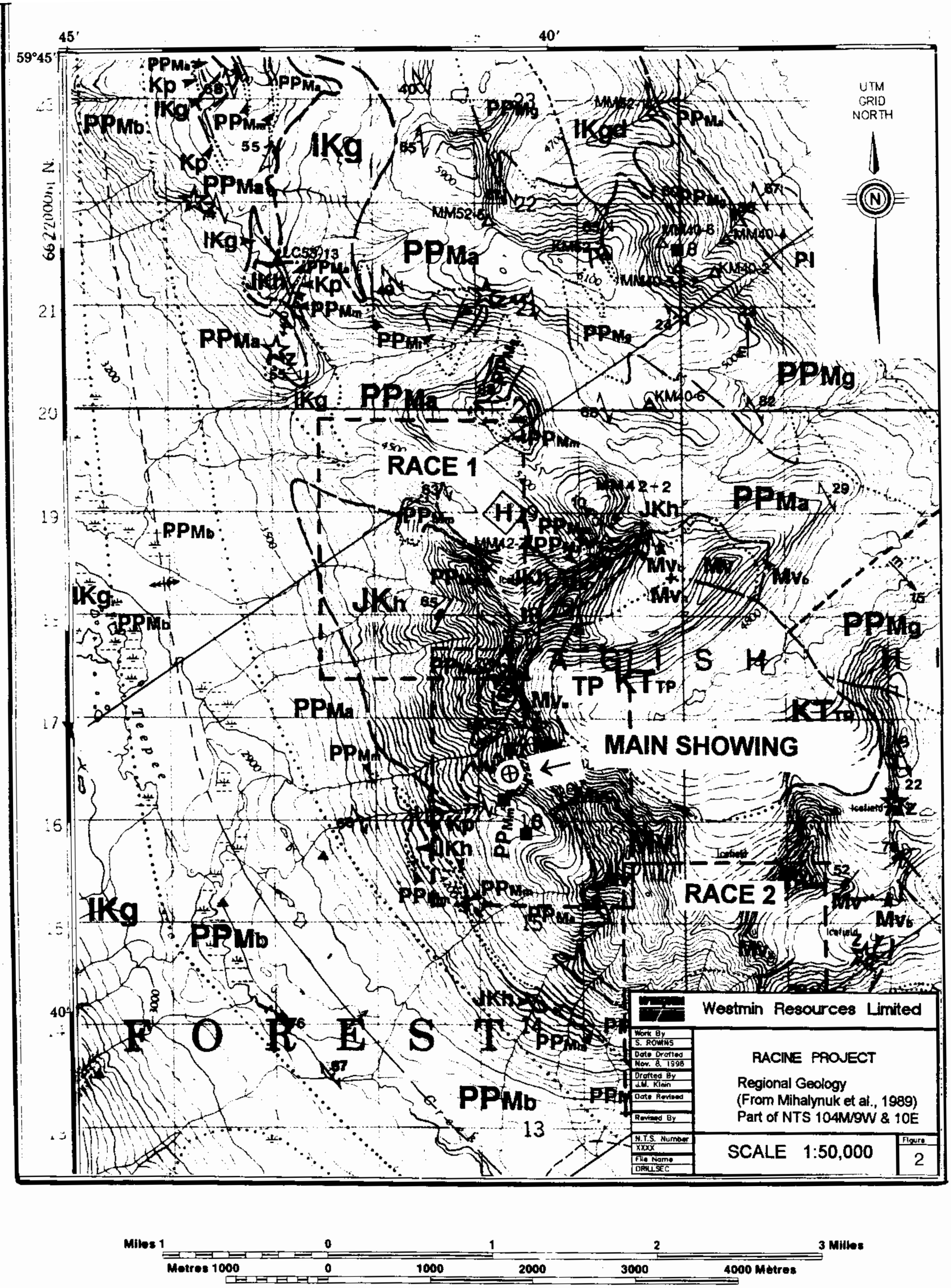
3.0 REGIONAL GEOLOGY

The regional geology of the Racine Property has been described by Mihalynuk (1989) and Mihalynuk et al. (1989). The TP and RACE 1-5 claims lie within the NW-trending belt of pre-Permian rocks termed the "Boundary Ranges Metamorphics" (Fig. 2). These are the oldest exposed rocks in the region and are composed mainly of schists with lesser marble, quartzite, and orthogneiss. Multiple episodes of veining and faulting imply a long and variable metamorphic and deformational history.

Intruding the Boundary Ranges Metamorphics is a tabular, NW-trending body of hornblendite dated at 187 Ma (K/Ar on hornblende; M. Mihalynuk, pers. comm., 1996). The hornblendite crops out at two distinct locations: (1) southeast of the TP claim and, (2) northwest of the TP claim (Fig. 2). The smaller occurrence northwest of the claim is likely the northwesterly extension of the main body.

The "Teepee Peak volcanics", dated at 54 to 56 Ma (U-Pb on zircon; M. Mihalynuk, pers. comm., 1996), is 1500 to 2000 m thick and crops out only at higher elevations on Teepee Peak. These rocks unconformably overlie the older metamorphic rocks and may mask the controlling structure of mineralization (Lhotka and Olsen, 1983). The base of the volcanics is a sharp angular unconformity. Mihalynuk et al. (1989) have divided the volcanics into four units: (1) a lowermost basal breccia/conglomerate, (2) a rhyolite flow, (3) a hornblende-feldspar-porphyry breccia and (4) a heterolithic lapilli-tuff.

Early and late Cretaceous granitoids of the Coast Crystalline Plutonic Complex crop out about 4 km southwest of the TP claim (Fig. 2). The late Cretaceous granite is more extensively exposed and surrounds the earlier foliated granodiorite.



UTM
GRID
NORTH
RACE 1
MAIN SHOWING
RACE 2
FOREST
Westmin Resources Limited
Work By
S. ROWINS
Date Drafted
Nov. 8, 1998
Drafted By
J.M. Klein
Date Revised
Revised By
N.T.S. Number
XXXX
File Name
DRILLSEC
RACINE PROJECT
Regional Geology
(From Mihalynuk et al., 1989)
Part of NTS 104M/9W & 10E
SCALE 1:50,000
Figure
2
Miles 1 0 1 2 3 Miles
Metres 1000 0 1000 2000 3000 4000 Mètres

LEGEND FOR FIGURE 2

INTRUSIVE ROCKS

LATE CRETACEOUS TO TERTIARY

TEEPEE PEAK STOCK

KT_{TP}	*GRANODIORITE TO TONALITE, MEDIUM-GRAINED, BIOTITE 10%, HORNBLENDE 15%, QUARTZ 30-60%, ALTERED PLAGIOCLASE 40 %, K-FELDSPAR 5%; 20cm CHILLED EASTERN CONTACT, PYROPHYLLITE AND MOLYBDENITE (2%) VEINED*

LATE CRETACEOUS

LATE CRETACEOUS GRANITE

lKg	*PINK, NON-FOLIATED, MEDIUM TO COARSE-GRAINED; 1-5% K-FELDSPAR MEGACRYSTS UP TO 5cm LONG; TOTAL K-FELDSPAR 40-45%, PERTHITIC, ZONED; PLAGIOCLASE 10-15%, <6mm; INTERSTITIAL QUARTZ 40%; BIOTITE FINE TO MEDIUM-GRAINED EUHEDRAL BOOKLETS, 2-3%; ROUNDED TO BLOCKY WEATHERING; RESISTANT.*

PROBABLE LATE JURASSIC TO EARLY CRETACEOUS

HORNBLENDITE

JKh	*BLACK, VERY COARSE HORNBLENDE (95%) TO MEDIUM-GRAINED HORNBLENDE DIORITE; MAY INCLUDE 'DIORITIZED' HOST ROCK VEINED BY EPIDOTE AND FELDSPAR; RESISTANT, BLACK WEATHERING*

LAYERED ROCKS

TERTIARY

TEEPEE PEAK VOLCANICS

(UNDIVIDED AS **MV***)*

Mv_v	HETEROLITHIC LAPILLI TUFF: *BLACK, VITROPHYRIC, CRYSTAL AND HETEROLITHIC LAPILLI TUFF; VARIABLE PROPORTIONS OF GREEN, BROWN AND GREY, SPARSELY FELDSPAR-PHYRIC TO APHANITIC VOLCANICLASTS IN A DARK, VITRIC MATRIX DISPLAYING EUTAXITIC TEXTURE; EUHEDRAL, FRAGMENTED PLAGIOCLASE UP TO 15%; WEATHERS TAN, RED OR MAROON.*
Mv_h	HORNBLENDE-FELDSPAR PORPHYRY BRECCIA: *DARK GREY-GREEN TO BROWN-BLACK, MONOLITHOLOGIC, INDURATED, INTERBEDS OF COARSE ASH AND LAPILLI TUFFITES, BLOCKY WEATHERING ?*
Mv_r	RHYOLITE FLOWS, DOMES AND PYROCLASTIC BRECCIAS: *APPROX. 500m THICK, VARIABLE; STRATIGRAPHICALLY EQUIVALENT TO UNIT* Mv_h*; PINK, GREY AND WHITE-BANDED, SPHERULITIC FLOWS INTERLAYERED WITH PYROCLASTIC BRECCIAS OF THE SAME SPARSELY FELDSPAR-PHYRIC ROCK TOGETHER WITH INTERMEDIATE FRAGMENTS AND ASH; SUBVOLCANIC (?) INTRUSIVES FORM A CONTINUUM WITH THE EXTRUSIVE ROCKS*
Mv_b	BASAL BRECCIA/CONGLOMERATE: *AT CONTACT WITH* PP_M *AND AS DYKE-LIKE BODIES; ANGULAR TO SUBROUNDED BLOCKS <25cm OF WELL-FOLIATED METAMORPHICS > FELDSPAR PLUS QUARTZ-PHYRIC RHYOLITE FRAGMENTS > INTERMEDIATE VOLCANIC FRAGMENTS*

LEGEND FOR FIGURE 2 CONTINUED

PROTEROZOIC TO PALEOZOIC?

BOUNDARY RANGES METAMORPHICS

(UNDIVIDED AS PP$_M$; OTHER THAN THE METAINTRUSIVE ROCKS, NO RELATIVE AGE IS IMPLIED BY THE POSITION OF METAMORPHIC LITHOLOGIES)

PPM$_i$ — *META-INTRUSIVES*

PPM$_{ia}$ — HALE MOUNTAIN HORNBLENDE-BIOTITE GRANODIORITE: *LIGHT GREEN-GREY, FELDSPAR PORPHYROBLASTIC, STRONGLY FOLIATED; ALTERED, CHLORITE (12%) AND EPIDOTE (2%) PROBABLE* MINIMUM *AGE IS LATE TRIASSIC.*

PPM$_{ib}$ — BIGHORN GRANITE: *WHITE, MEDIUM-GRAINED, MODERATE TO STRONG FOLIATION, FELDSPAR 40%, QUARTZ 50%, COMBINED MUSCOVITE, CHLORITE, BIOTITE 6-7%; WHITE TO PINK WEATHERING, ROUNDED RESISTANT OUTCROPS.*

PPM$_a$ — CHLORITE-ACTINOLITE SCHISTS: *GREEN AND WHITE BANDED PLAGIOCLASE AND QUARTZ 50+% COMBINED; MINOR BIOTITE, RARE GARNET (ABUNDANCE OF BIOTITE LAYERS INCREASE TOWARDS UNIT PPM$_b$); CHLORITE FINE GRAINED; ACTINOLITE DARK GREEN, ACICULAR, 1-30mm, COMMONLY OUTLINE A DISTINCT LINEATION, <CHLORITE IN ABUNDANCE.*

PPM$_b$ — BIOTITE-PLAGIOCLASE-QUARTZ SCHISTS: *RUSTY, WELL FOLIATED, MEDIUM TO FINE GRAINED, NORMALLY BIOTITE < PLAGIOCLASE < QUARTZ; BIOTITE LAYERS <10cm THICK ARE COMMON; SPARSE GARNET PORPHYROBLASTS, 1-30mm; MUSCOVITE AND ACTINOLITE MAY BE SUBEQUAL TO BIOTITE IN CONFINED LAYERS; DARK GREY, COMPACT, SLABBY WEATHERING.*

PPM$_{a+b}$ — *INTERLAYERED PPM$_a$ AND PPM$_b$ IN VARIABLE, BUT GENERALLY SUBEQUAL ABUNDANCES*

PPM$_c$ — CHLORITE SCHISTS: *DARK GREEN, GRADE FROM CHLORITE TO CHLORITE > QUARTZ > PLAGIOCLASE; TYPICALLY FINE-GRAINED, RARE PORPHYROBLASTS UP TO 2cm DIAMETER; WELL-DEVELOPED CRENULATIONS AND HIGHLY STRAINED ZONES COMMON; ACCESSORY PYRITE; RUBBLY, RECESSIVE.*

PPM$_g$ — GRAPHITIC SCHISTS AND PHYLLITES: *SILVER WITH BLACK FOLIA; POORLY DEVELOPED GRAPHITE AND MUSCOVITE(?); MAY GRADE INTO PPM$_s$; COMMONLY HOSTS CALCAREOUS INTERLAYERS; QUARTZ, CHLORITE AND FELDSPAR CONTENTS VARIABLE; RUBBLY TO BLOCKY OUTCROPS.*

PPM$_m$ — MARBLE: *CARBONATE LAYERS UP TO 200m THICK, MEDIUM-GRAINED; RESISTANT, YELLOW, ORANGE AND TAN-WEATHERING*

PPM$_p$ — PYROXENE-PLAGIOCLASE SCHISTS: *DARK GREEN; PYROXENES 1-50%, 0.5-1cm, WITHIN A MATRIX OF CHLORITE, ACTINOLITE AND PLAGIOCLASE*

PPM$_q$ — IMPURE META-QUARTZITES: *QUARTZ-RICH BIOTITE SCHISTS TEXTURALLY INDISTINGUISHABLE FROM PPM$_b$; TYPICALLY <10% BIOTITE AND <20% FELDSPARS.*

PPM$_s$ — MUSCOVITE SCHISTS: *SILVER TO GREY-BROWN; MAINLY FINE TO MEDIUM-GRAINED MUSCOVITE; MAY CONTAIN A SIGNIFICANT AMOUNT OF CHLORITE AND/OR BIOTITE AND MINOR INTERLAYERS OF MOST OTHER METAMORPHIC LITHOLOGIES OF SEDIMENTARY ORIGIN; RUSTY, RECESSIVE WEATHERING*

The Teepee Peak Stock, a small granitic plug approximately 2.5 km in diameter, is exposed 750 m northeast of the TP claim. It has been dated at 54 to 56 Ma (M. Mihalynuk, pers. comm., 1996), the same age as the Teepee Peak volcanics, which suggests that these rocks are comagmatic. Pyrophyllite-molybdenite veins occur at the southeastern margin of the stock (Mihalynuk et al., 1989).

Northwest-trending, late Cretaceous pyroxenite dykes crop out about 1 km southwest of the TP claim, where they crosscut the Boundary Ranges Metamorphics. These dykes range from 5 to 25 m in thickness and are composed of medium-grained pyroxene, with lesser magnetite and rare phlogopite. Their age is uncertain, but they crosscut the thermal aureole of the hornblendite, implying that they are younger than 187 Ma.

Lhotka and Olsen (1983) report that mineralization at the TP claim may be related to a NW-striking structure which they called the Teepee fault. The surface expression of this fault cuts the pre-Permian Boundary Ranges Metamorphics both to the southeast and to the northwest of the Main Showing. Lhotka and Olsen (1983) note that two en echelon fracture zones related to this fault crosscut magnetite and calcsilicate-calcite skarns and show sinistral motion.

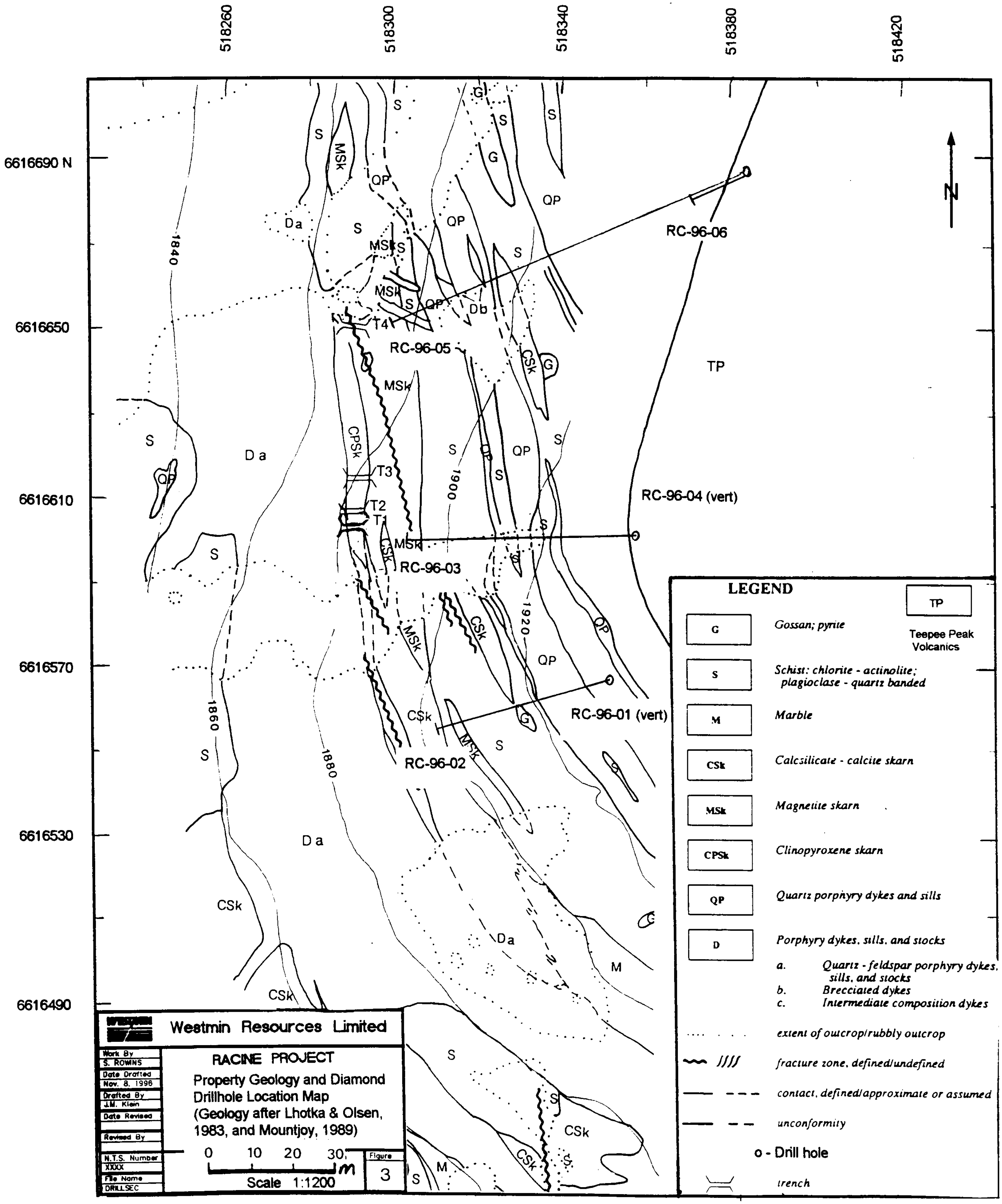
4.0 PROPERTY GEOLOGY

Previous assessment reports by Lhotka and Olsen (Assessment Report 11,300) and Durfeld (Assessment Report 18,766) provide the most comprehensive overviews of the main geologic features associated with gold-cobalt mineralization on the TP claim. Studies by Mountjoy (1988), Ettlinger and Ray (1989), and Mihalynuk et al. (1989a) also provide some useful information.

4.1 Geology of the Boundary Ranges Metamorphics (PPMa and PPMm)

Mihalynuk and Rouse (1988) termed low-grade metamorphic rocks in the Tutshi Lake area, previously called Yukon Group (Christie, 1957), the "Boundary Ranges Metamorphics". Evidence exists for a variety of protoliths in this suite of rocks. These include quartzose, pelitic, carbonaceous, and calcareous marine sediments and tuffaceous strata, plus ultramafic, gabbroic, dioritic, granodioritic, and granitic intrusions.

Medium-green to yellowish brown, chlorite-actinolite schists and biotite-plagioclase-quartz schists are the most abundant rock-types on the property (Fig. 3). The exact name applied to the schists can change over several metres since the proportions of chlorite, biotite, amphibole, quartz, and plagioclase vary according to the sedimentary precursor. Other common minerals in these schists include muscovite/sericite, epidote, magnetite, and garnet.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518300
518340
518380
518420
6616690 N
6616650
6616610
6616570
6616530
6616490
RC-96-06
RC-96-05
RC-96-04 (vert)
RC-96-03
RC-96-01 (vert)
RC-96-02
T1
T2
T3
T4
TP
1840
1860
1880
1900
1920
N
LEGEND
G Gossan; pyrite
S Schist: chlorite - actinolite; plagioclase - quartz banded
M Marble
CSk Calcsilicate - calcite skarn
MSk Magnetite skarn
CPSk Clinopyroxene skarn
QP Quartz porphyry dykes and sills
D Porphyry dykes, sills, and stocks
a. Quartz - feldspar porphyry dykes, sills, and stocks
b. Brecciated dykes
c. Intermediate composition dykes
TP Teepee Peak Volcanics
extent of outcrop/rubbly outcrop
fracture zone, defined/undefined
contact, defined/approximate or assumed
unconformity
o - Drill hole
trench
Westmin Resources Limited
Work By S. ROWINS
Date Drafted Nov. 8, 1996
Drafted By J.M. Klein
Date Revised
Revised By
N.T.S. Number XXXX
File Name DRILLSEC
RACINE PROJECT
Property Geology and Diamond Drillhole Location Map
(Geology after Lhotka & Olsen, 1983, and Mountjoy, 1989)
0 10 20 30 m
Scale 1:1200
Figure 3

Minor marble forms whitish grey, discontinuous beds ranging from 2 to 10 m in thickness. The fabric is granoblastic in more coarse-grained varieties, with grain size approaching 1 mm in diameter. Other marble beds, however, are fine- to medium-grained and weather to a distinctive yellowish-brown colour. Regardless of whether coarse- or fine-grained, marble is notably "pure" outside the vicinity of the Main Showing, leaving little chance for the development of calc-silicate skarn assemblages (i.e., there is a lack of chemical reactants).

Thin (< 1 m wide) quartz veins and boudins are common, and typically oriented within the plane of foliation. Sulphides are rarely associated with the veins. More commonly, pyrite and pyrrhotite form discrete clots or thin (< 1 cm wide) veins and veinlets oriented within the plane of foliation. Other vein-types encountered include calcite, ankerite-dolomite, and limonite (after pyrite-pyrrhotite) varieties.

Foliation, defined by metamorphic layering, and presumably bedding, measured on both the surface and in drill core, indicate that the Boundary Ranges schists dip moderately to the east at the Main Showing. Lower down the slope, however, a reversal in dip direction occurs.

4.2 Geology of the Teepee Peak Volcanics (Mv)

The late Tertiary volcanic succession at Teepee Peak was originally mapped as "Mesozoic Volcanics of Uncertain Age" by Christie (1957). Lhotka and Olsen (1983) included them with the Upper Triassic Stuhini Group. More recently, Mihalynuk et al. (1989) mapped them as a distinct unit, much younger and considerably more felsic than the Stuhini Group. The absence of conglomerates and augite porphyries, so common in the Stuhini Group, also helps to distinguish this unit in the field.

The TP volcanic suite occurs in the central part of the TP claim area (Fig. 2) and comprises the top of some drillholes (Fig. 3 and Appendix A). The lower basal contact with the Boundary Ranges Metamorphics, immediately east of the Main Showing, is a sharp angular unconformity. It is marked by felsic to intermediate tuffs and porphyritic flows containing a variety of clasts derived from the underlying Boundary Ranges Metamorphics. The lower contact also shows evidence of faulting in the form of tuff breccias. The unconformity generally strikes to the northwest and dips shallowly to the northeast. However, northeast of the Main Showing, the trace of the unconformity turns sharply uphill to the east and then turns back sharply to the northwest. Lhotka and Olsen (1983) note that the change in the trace of the unconformity at this locale is spatially coincident with the assumed trace of the Teepee fault.

Outcrop and fresh rock specimens from drill core at the Main Showing reveal the dominant rock-types to be fine-grained, crystal-lithic felsic lapilli-tuff and porphyritic felsic flows. Flows contain white, euhedral, 1-7 mm long feldspar phenocrysts (1 to 7 vol.% of the rock) and show cross-twinning, glomerocrystic habit, and varying degrees of alteration to yellow sericite and epidote. Dark greenish black, euhedral, 1-3 mm long phenocrysts of biotite and amphibole may comprise up to 7 vol.% of the rocks. In both tuffs and flows, angular, heterolithic clasts (2 mm to 6 cm in diameter) are common. Types of clasts include, (1) dark green amphibole schist with yellowish white sericite-chlorite reaction rims, (2) fine- to very fine-grained black biotite schist and/or mafic dykes, (3) greyish white albite-scapolite-quartz altered fragments (endoskarn?), (4) fine-grained, massive, pale grey quartz vein fragments, (5) medium-grained, greenish white fragments of quartz-feldspar-pyroxene (granodiorite?), and (6) red hematized chlorite-amphibole schist. Most lithic clasts have reaction rims consisting of thin (1-3 mm wide) yellowish white bands of feldspar. Rock colour varies according to rock type. The groundmass, characteristically light grey to dark grey-green, is peppered with small white feldspars and black mafic phenocrysts, and larger dark green-brown clasts. Foliation, where well developed, is defined by dark brown biotite-rich bands alternating with medium-green amphibole/chlorite-rich bands.

4.3 Intrusive Rocks

4.3.1 Hornblendite (JKh)

Black hornblendite intrudes the Boundary Ranges Metamorphics in the western part of the TP claim (Fig. 2). It does not crop out near the Main Showing. Mihalynuk et al. (1989) report that large alteration haloes are associated with the hornblendite. In some cases, rocks up to 1 km away from the main NW-trending body have been affected. They also note that hornfelsing may result in "dioritized" host-rock, where feldspar and chlorite clots produce a medium- to fine-grained igneous texture. At other localities, an increase in the amount of primary plagioclase (up to about 50 vol.% of the rock) transforms the "hornblendite" into a meladiorite *sensu stricto*.

4.3.2 Teepee Peak Stock (KTTP)

The western part of this semi-circular pluton crops out on the eastern margin of the TP claim (Fig. 2). It is separated from the Main Showing to the west, by a high, NW-trending spine of rock. The stock is a pale pink, medium-grained granodiorite to tonalite. It consists of quartz (30-60 vol.%), plagioclase (35-40 vol.%), K-feldspar (5-10 vol.%), hornblende (0-15 vol.%), biotite (5-10 vol.%), and muscovite (5 vol.%).

4.3.3 Granitoid Dykes and Sills

The two most common varieties of felsic dykes and sills encountered in the vicinity of the Main Showing are, (1) Quartz-feldspar porphyry dykes and, (2) Quartz porphyry dykes. Detailed core logging showed that these two dyke compositions are gradational into one another. They are members of a compositional continuum which ranges from feldspar porphyries to quartz porphyries. In both drill core and on surface, they display mutually cross-cutting relationships indicating their coeval nature in addition to their cogeneity. Previous workers have tended to distinguish the altered and deformed quartz porphyries in direct spatial association with the gold-cobalt skarn (QP on Fig. 3), from those lower down on the mountain side, which are more feldspar-rich and less altered in general (Da on Fig. 3). Although this compositional distinction still may be valid, no inference should be made regarding different origins for the dykes. Significantly, temporal relationships in drill core provide clear evidence that some of the dykes are associated with the formation of calcsilicate (calcite-albite-scapolite-diopside) endoskarn. The porphyries relationships to the magnetite skarn is less certain.

Some of the more altered dykes contain several volume percent disseminated pyrite and pyrrhotite. Small sulphide-filled fractures are also present in the porphyries.

4.3.4. Intermediate and Mafic Dykes

Fine- to very fine-grained, green dykes of probable intermediate composition (Dc on Fig. 3) were mapped near the Main Showing by Lhotka and Olsen (1983). They were not identified in any of the drill core, however. Fine to very fine-grained mafic dyke were present, however, in several drillholes. These dykes appear to consist primarily of a fine grained mafic phase with lesser feldspar and magnetite. The latter is deduced on the basis of the high magnetism of the dykes. In one dyke, small white phenocrysts (1 mm wide) of plagioclase were present.

4.4 Structure

Gold and cobalt mineralization at the Main Showing is spatially related to two NW-trending fracture zones adjacent to the contact between a quartz-feldspar porphyry sill, a calc-silicate skarn, and a schist (Fig. 3). Since most of the Main Showing was covered by snow throughout the summer drill program, surficial geological mapping was not possible. According to previous work (Lhotka and Olsen, 1983), however, the northern zone dips approximately 70° east and displays only very minor sinistral motion. The sense of motion on the southern zone is unknown, although it dips approximately 45° east (Lhotka and Olsen, 1983).

Results from the diamond drilling program (Section 5.0) indicate that substantial fault displacement has occurred at the Main Showing. This is evidenced by the absence of mineralized skarn in the drill core (e.g., Figs. 4, 5, 6).

4.5 Alteration and Mineralization

The Main Showing is a semi-concordant skarn- and porphyry-hosted magnetite-cobalt-gold-bearing deposit, approximately 200 m long by 15 m wide. The dominant types of skarn identified are (1) magnetite skarn, (2) calcsilicate-calcite skarn, (3) clinopyroxene±garnet±epidote±calcite skarn and, (4) amphibole skarn. There are a whole variety of skarn sub-types and a complete gradation between the four skarns exists (see Appendix A for the various permutations identified in the drill logs). On surface, the semi-concordant skarn dips moderately (~45°) to the east, largely mimicking the stratigraphy. Brief descriptions of the salient features of the four types of skarn are given below. Detailed petrographic and mineralogic descriptions of selected samples of magnetite, clinopyroxene, and amphibole skarn are also listed in Appendix B. Ettlinger and Ray (1989) have carried out microprobe studies of some garnets and pyroxenes from the clinopyroxene skarn.

4.5.1 Magnetite Skarn

Massive magnetite skarn is composed typically of >80 vol.% dark grey to black magnetite, with lesser garnet (euhedral, wine-red), calcite (anhedral infill, white), chlorite (anhedral, light-medium green), diopside (subhedral, light green) amphibole (subhedral, medium-green), and epidote (anhedral, lime green). The massive texture may give way in places to a weakly banded one, defined by pale green bands (0.5-2 cm wide) of chlorite, amphibole, and calcite. Silvery pink cobaltite and silvery white arsenopyrite may form semi-massive bands in intimate association with light green patches of intergrown diopside and amphibole. In weathered samples, purple erythrite bloom (after cobaltite) on limonite-stained fracture surfaces is common. In drill core, distinction between the two silvery minerals is difficult because arsenopyrite does not exhibit the euhedral crystal terminations so typical of this mineral in other mineral deposit-types (i.e., Archean Lode-gold systems). Pyrite, pyrrhotite, and chalcopyrite are rare. As the proportion of magnetite diminishes, magnetite skarn grades into either a clinopyroxene or, more rarely, an amphibole skarn. In places, magnetite appears to have been replaced by clinopyroxene. If this relationship is correct, then magnetite skarn is a temporally early metasomatic event.

4.5.2 Clinopyroxene Skarn

Fine-grained diopsidic clinopyroxene is the major constituent of this skarn. It is associated most commonly with calcite, garnet, epidote, albite, scapolite, amphibole, magnetite, pyrite, pyrrhotite, cobaltite, and arsenopyrite. The variability of mineral proportions over the scale of several metres precludes any precise definition of mineral proportions - any of the gangue minerals mentioned above may dominate a particular area of outcrop or section of drill core

(Appendix A). Consequently, the colour and texture (banded or layered versus massive) of clinopyroxene skarn can change dramatically.

In general, Clinopyroxene skarn is fine-grained and light green. Thin (2-5 mm wide) veinlets of dark to medium-green amphibole±sulphides/arsenides and creamy white calcite veins (up to 10 cm wide) characteristically cut this skarn. Pyrite, pyrrhotite, cobaltite, arsenopyrite, and chalcopyrite are intimately associated with clinopyroxene. Purple erythrite, the alteration product of Co-bearing arsenides, can be used to distinguish cobaltite from arsenopyrite.

Detailed petrographic studies of clinopyroxene skarn (Appendix B) indicate that the main Co- and Bi-bearing phases are cobaltite and bismuthinite, respectively. Both are hosts for native gold. The bismuthinite is commonly associated with late amphibole veins/veinlets which cut earlier formed grains of cobaltite and diopside. Also, native bismuth is commonly associated with blebs of gold in cobaltite. Other less common minerals identified by X-ray diffraction include Bi-tellurides and talc.

4.5.3 Calcsilicate-calcite Skarn

This skarn is really only abundant downslope (west) of the Main Showing near the large, N-striking quartz-feldspar porphyry sill (e.g., Fig. 3). It is rarely encountered in drill core. Where calcite becomes dominant, this skarn is, in fact, an impure marble. Where clinopyroxene becomes the dominant mineral in the calcsilicate-calcite skarn, it becomes a clinopyroxene skarn.

Calcsilicate-calcite skarn is a striking-looking rock with coarse-grained (typically < 5 mm diameter) garnet, calcite, and diopside dominating the mineral assemblage. Actinolitic amphibole may be locally significant. Overall texture is granoblastic to porphyroblastic. Wine-red garnets (1 mm up to 1 cm in diameter) occur as fractured aggregates containing inclusions of diopside, actinolite, and calcite. Medium-green diopside occurs as either subidioblastic or idioblastic grains forming monomineralic aggregates several millimetres in diameter. White to pale grey calcite, with or without dolomite, characteristically occurs as equidimensional interlocking grains forming a granoblastic framework. As with the clinopyroxene skarn, late-forming veins of calcite may cut calcsilicate-calcite skarn.

4.5.4 Amphibole skarn

Fine-grained, medium-green actinolitic amphibole is the major constituent of this skarn. Pyrite, pyrrhotite, chalcopyrite (rare), arsenopyrite, and cobaltite are locally important metallic minerals. The Amphibole skarn generally post-dates clinopyroxene skarn. Most commonly, veins (<1 mm to 30 cm wide) and irregularly-shaped patches of amphibole plus associated metallic minerals, replace light green clinopyroxene in the clinopyroxene skarn. Detailed petrography (Appendix B) shows that bismuthinite commonly accompanies cobaltite along the margins of amphibole veins.

Amphibole skarn can be difficult to distinguish from the chloritized amphibole schist of the Boundary Ranges Metamorphics. In general, however, amphibole skarn is coarser grained, fresher, and has a slight bluish tinge which reflects the actinolitic composition of it's constituent amphibole. Amphibole skarn would be classified as the "retrograde" or "hydrous" skarn according to Einaudi et al. (1982) and Meinert's (1989) nomenclature. Along with clinopyroxene skarn, it is responsible for most of the gold and cobalt mineralization at the Main Showing.

5.0 DIAMOND DRILLING

A total of 694 m (2276 ft) of diamond drilling was performed in six holes from June 19 to July 23, 1996, at the Racine Property. The drilling was done under contract by E. Caron Diamond Drilling Ltd., 7 Roundel Road, Whitehorse, Yukon Territory. A Boyle Brothers BBS-15 diamond drill was used to obtain NQ size core. Water required for the drilling was pumped (three-stage) from a stream approximately 500 m below the drill sites. One hundred and fifty-six core samples were analyzed for gold, silver, cobalt, copper, lead, and zinc in addition to other elements. All of the analyses were performed by Chemex labs Ltd., 212 Brooksbank Avenue, North Vancouver, British Columbia. Drillhole logs are included as Appendix A and analytical results are included in Appendix C. Geotechnical logs of core recovery are on file at the offices of Westmin Resources Limited, Vancouver, British Columbia. All core is secured and stored on the Racine Property at the old camp site.

Vancouver Petrographics made thin sections of eight drill core samples, and polished thin sections of 10 drill core samples. These sections were used to aid in the identification of fine-grained minerals in drill core.

5.1 Drillhole RC-96-01

Hole RC-96-01 was drilled vertically for 109.4 m to test the projected down-dip extension of the east-dipping (approximately 45°), semi-conformable skarn mineralization exposed at the surface (Figs. 3, 4). The hole failed to intersect any significant precious or base metal mineralization. Most of the core consists of porphyry and chlorite-biotite-actinolite schists interlayered with thin beds of marble. Barren quartz veins oriented in the plane of foliation cut the schist in the upper sections of the hole. Magnetite skarn was intersected at several locations (44.95-47.5 m; 57.0-58.0 m; and 89.6-91.0 m), but gave gold assays below detection limits (<0.03 g/t Au) and contained only mildy elevated cobalt concentrations (10 ppb or less). The development of fine-grained epidote-albite endoskarn (91.0-91.45 m) at the contact between magnetite skarn and underlying quartz-feldspar porphyry is good evidence that this porphyry is involved in the skarnification process.

Faults are abundant in the deeper sections of the hole at lithologic contacts. This feature explains the break in the down-dip projection of the mineralized surface skarn.

5.2 Drillhole RC-96-02

This hole was also drilled to test the projected down-dip extension of the east-dipping, semi-conformable skarn exposed at the surface (Figs. 3, 4). The hole is 70.1 m long, and was drilled at -60° in a southwest orientation (254°) from the same collar location as hole RC-96-01. RC-96-02 tests the intervening ground between the sloping surface and RC-96-01 (i.e., Fig. 4). Similar to RC-96-01, this hole consists mainly of porphyry and chlorite-biotite-amphibole schist with numerous faults and breccias. However, unlike RC-96-01, significant intervals of massive to semi-massive magnetite±arsenopyrite mineralization and diopside-garnet-amphibole skarn are present. Assays for the magnetite±arsenopyrite mineralization, however, show only low gold, silver, cobalt, and copper abundances (Table 2).

TABLE 2

DRILL CORE ASSAY RESULTS FOR MAGNETITE SKARN FROM RC-96-02

Interval (m)	Sample No.	Au (g/t)	Ag (ppm)	Co (ppm)	Cu (ppm)
44.1-45.1	138570	<0.03	1	20	<10
45.1-46.15	138571	0.31	6	120	<10
46.15-47.55	138572	<0.03	5	30	<10
57.75-59.0	138575	0.03	1	10	<10
59.0-60.0	138576	<0.03	2	10	<10
60.0-61.0	138577	0.93	47	1580	10
61.0-62.35	138578	0.31	10	220	<10
64.7-65.7	138579	0.82	3	370	<10

Note: The entire set of assay data for these intervals is given in Appendix C

The epidote-albite-scapolite endoskarn developed at the contact between magnetite skarn and quartz-feldspar porphyry in RC-96-01, is also developed in this hole over a 4 m wide interval from 62.4 to 66.8 m. This endoskarn shows intimate spatial association with magnetite skarn suggesting a genetic link. As shown on Figure 4, correlation of the surface skarn mineralization with that in the drillholes is uncertain owing to post-mineralization faulting.

5.3 Drillhole RC-96-03

Hole RC-96-03 was drilled approximately 45 m north of holes RC-96-01 and RC-96-02. Its purpose was to test the down-dip extension of more northerly outcropping skarn (Figs. 3, 5). The hole was drilled 105.2 m at an inclination of -60° and at an azimuth of 269°.

The hole was collared in crystal-lithic felsic lapilli-tuff of the Teepee Peak Volcanics, but quickly passed into variably skarnified quartz±chlorite±amphibole-biotite schists and porphyry. A 10 m wide intersection of semi-massive magnetite skarn occurred between 70.0 and 79.75 m but did not contain any gold or cobalt mineralization. Quartz veins were typically barren as were all the skarns. Faults in the upper and middle sections of the hole are likely responsible for the lack of correlation between skarns at the surface with those in the drillhole (Fig. 5).

5.4 Drillhole RC-96-04

This vertical hole is 128.3 m long and was drilled from the same collar location as RC-96-03. The hole tested the down-dip extension of the mineralized surface skarn behind RC-96-03 (Fig. 5). Like RC-96-03, the hole was disappointing in that it failed to intersect significant gold and cobalt mineralization. The top 4 m of core consisted of highly altered crystal-lithic felsic lapilli-tuff (Teepee Peak Volcanics). The rest of the hole comprises porphyry and quartz±amphibole-biotite schists with minor skarn. Schists and skarn dominate the upper half of the hole and, in places, are strongly veined by quartz (Fig. 5). The lower half of the hole is dominated by faulted porphyry. The porphyry in this hole varies strongly in its intensity of alteration. Remnant textures and the gradual change in the intensity of alteration of the porphyry down drillhole shows that the high-level "quartz porphyry dykes and sills" (unit QP on Figure 3) are simply altered equivalents of the quartz-feldspar porphyry dykes and sills (unit Da on Figure 3). There are quartz porphyries *sensu stricto* but, by-in-large, the alteration, especially that at the surface, masks the presence of the feldspar phenocrysts. Most dykes display sub-equal proportions of quartz (1-5% vol.%) and feldspar (1-4% vol.%) phenocrysts. All porphyries are likely genetically related to the same evolving magma chamber (at depth), with cross-cutting relationships observed at the Main Showing (Lhotka and Olsen , 1983) reflecting local temporal variations in magma discharge. Compositional differences simply reflect changes in the chemistry of the melt and its water content, parameters that will change throghout magma crystallization (i.e, Cox et al., 1986). The degree of alteration is directly related to whether the porphyry is adjacent to a post-mineralization fault or breccia zone. At such locales, metasomatic fluids are able to pervasively flood and alter porphyry. The development of endoskarn in this drillhole attests to the relationship between calcsilicate-calcite and clinopyroxene skarn formation and the quartz-feldspar porphyries.

5.5 Drillhole RC-96-05

Hole RC-96-05 was drilled approximately 85 m north of RC-96-04 and RC-96-03 (Fig. 3). Its purpose was to test the northern exposure of the Main Showing where the widest expanse of magnetite skarn occurs. The hole was drilled 152.4 m at an inclination of -60° and at an orientation of 248°.

The hole was collared in crystal-lithic felsic lapilli-tuff, but below 19.3 m, consisted of quartz- and chlorite-biotite-amphibole schist and quartz-feldspar porphyry (Fig. 6). Gold-cobalt mineralization and magnetite skarn were absent. Some biotite-amphibole skarn and calcite-garnet-diopside skarn was encountered in the middle of the hole at 66.9-68.4 m and 76.3-79.8 m, respectively. Between 122.0 and 126.0 m, albite-scapolite-diopside endoskarn was developed in quartz-feldspar porphyry. Lesser amphibole skarn was also encountered in this interval. Like the endoskarn in other drillholes, especially RC-96-04, this endoskarn is evidence that clinopyroxene, amphibole, and calcsilicate-calcite skarns are related to the intrusion of the quartz-feldspar porphyries. The deep porphyry intersected at the bottom of the drillhole between 135.5 to 152.4 m contained numerous fine-grained diorite and melagranitoid xenoliths (Appendix A). Their presence suggests that porphyry magma rose through 187 Ma hornblende-diorite at depth. There are also cognate xenoliths of quartz-feldspar porphyry. These are typically fine-grained and dark grey with small whitish feldspar phenocrysts and black mafic phenocrysts. The presence of cognate xenoliths is evidence for multi-phase igneous activity at the Main Showing. The various porphyries can be considered members of a cogenetic magma series.

Barren quartz veins are common in drill core. Neither breccias nor the massive magnetite skarn on the surface reproduced down-dip in the drillhole (Fig. 6).

5.6 Drillhole RC-96-06

This hole is 139.0 m long and was drilled southwest at 248° from the same collar location as RC-96-05 (Fig. 3). The hole tested the down-dip extension of the surface mineralization behind RC-96-05 (Fig. 6). Like RC-96-05, the hole was disappointing in that it failed to intersect significant gold and cobalt mineralization. The top 25 m of the hole consisted of highly altered crystal-lithic felsic lapilli-tuff which passed through to 55 m of quartz-amphibole-biotite schists overprinted by a variety of skarns, the most common being amphibole skarn (Fig. 6). Barren to weakly mineralized quartz veins, oriented in the plane of foliation, commonly cut the schists and skarns. The bottom 60 m of the hole consists of fine-grained quartz-feldspar porphyry. Much of this bottom porphyry is notable for the amount of disseminated pyrite/pyrrhotite and stringer sulphide mineralization that it contains. It resembles porphyry copper-style mineralization, although assay results indicate that copper, gold, and cobalt abundances are low (Appendix C).

The lithologies encountered in this drillhole cannot be correlated with up-dip lithologies in either RC-96-05 or on the surface (Fig. 6). Clearly, faulting after skarn formation has modified the shape of the original zone of mineralization.

In summary, rock units logged in all six drillholes show that the semi-conformable skarn mineralization mapped on the surface does not extend down-dip to any appreciable degree. A series of post-mineralization faults has displaced much of the mineralization in the Main Showing. Detailed core logging indicates that the quartz and quartz-feldspar porphyries are members of a compositional continuum that produced significant clinopyroxene, calcsilicate-calcite and amphibole skarn. The relationship with the magnetite skarn is more ambiguous as textural relationships in core from RC-96-02 show diopside and amphibole replacing magnetite in massive magnetite skarn (60-62.25 m).

6.0 LITHOGEOCHEMICAL SAMPLING PROGRAM

Twelve rock grab samples were collected from the TP claim and analyzed for gold, silver, cobalt, copper, lead, zinc, and a host of other elements. Although elevated elemental abundances were noted in several samples, none were deemed particularly encouraging. The location of the samples is shown on Figure 7 and abundances of gold, arsenic, cobalt, and copper are plotted on Figures 8, 9, 10, and 11, respectively. Brief descriptions of the samples are given in Appendix D. The complete set of analytical data are presented in Appendix E.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The 150 m long by 15 m wide, N-trending, semi-conformable skarn mineralization exposed at the Main Showing on the TP claim does not have significant down-dip extensions. Drillholes oriented to intersect the E-dipping semi-comformable skarn mineraliation along the length of the showing failed to delineate significant zones of gold-cobalt mineralization. Core logging showed that extensive faulting subsequent to skarn formation largely removed the skarn. Instead, drillholes are largely comprised of quartz and quartz-feldspar porphyry, with lesser quartz±chlorite±biotite-amphibole schist. The development of skarn appears to be closely related to the emplacement of quartz and quartz-feldspar porphyries. Significant endoskarn is present at the contacts between the larger dykes/sills and the schists. The quartz and quartz-feldspar porphyries are commonly intensely altered, which caused previous workers to misclassify them as being unrelated. Textural and temporal relatinships in drillcore, however, revealed that these porphyries are all members of a compositional continuum, most likely related to an evolving magma chamber at depth. The degree of alteration and deformation can be related to the distance from faults and breccias in the Main Showing area. Close to the faulted magnetite and clinopyroxene skarns, porphyries are very strongly altered and only the glassy grey "quartz eye" phenocrysts are visible in the friable chalky-white rock: feldspar phenocrysts have been obliterated by argillic alteration. Further away from the faults, however, the porphyries may be quite fresh with tabular feldspar phenocrysts readily observable.

Lithogeochemical samples collected over the TP claim failed to show significant gold enrichment. Other metal abundances were generally low.

Further work on the Main Showing is not recommended. The skarn mineralization is extensively faulted and there seems little chance of solving the stuctural controls over the mineralization without further drilling and oriented drill core. Furthermore, surface exposures of skarn and faults in the Main Showing underestimate the true degree of deformation and faulting associated with this prospect as determined from drill core.

8.0 REFERENCES

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9.0 STATEMENT OF EXPENDITURES

Racine Property Exploration Program Expenditures, March, 1996 to November, 1996

Diamond Drilling: E. Caron Diamond Drilling	
Direct costs, 694 m thin wall NQ, mob-demob, etc...	$ 94,078
Drill Pad Construction: Bear Mountain Enterprises	
Labour, blasting, lumber supplies, etc...	$ 12,581
Helicopter: Discovery Helicopters	
Drill moves/mob-demob, camp mob-demob, set-outs for mapping, camp re-supply	$ 85,389
Camp Construction and Expenses:	
Labour, tent floors, water- & propane-lines, hardware, etc...	$ 11,593
Geophysical Contractors: RGI & Woods Geophysical Consulting Ltd.	
Remote sensing, aeromagnetic re-interpretation	$ 6,813
Geological Consultants: Leslie Investments Ltd.	
Mineralogic and Petrographic study	$ 3,897
Materials and Supplies:	
Groceries, sample bags, field gear, propane, showers, etc...	$ 25,824
Equipment Rentals:	
5 Hp water pump, 1000 ft water hose, survey transit, truck, satellite phone, two-way radios	$ 9,247
Equipment Repairs/Maintenance:	
Generators, chain saws, fax box	$ 725
Camp Fuel:	

Diesel & gas	$ 1422

Trucking/Shipping/Handling:

Camp gear mob-demob Vancouver to Whitehorse (return), core samples to Chemex Labs Ltd. in Vancouver	$5,757

Assays/Geochemical Analysis: Chemex Labs Ltd.

Drill core (Low-S assay), 119 samples @ $15.53/sample	$1,848
Drill core (High-S assay), 27 samples @ $23.95/sample	$ 647
Drill core (High-Cu assay), 1 sample @ $7.80/sample	$ 7.8
Rock geochemistry, 12 samples @ 15.53/sample	$ 186

Travel Costs to Racine Camp:

Air Travel, motel accomodations, meals	$ 6,895

Vehicle Costs:

Vehicle rental, 6 days @ $45/day	$ 270
Gas (6 days)	$ 49

Telephone/FAX Communications:

Northwestel/Infosat telecommunications charges	$ 6,309

Miscellaneous Expenses:

Delivery, courier	$ 200
Office supplies	$ 76
Printing, reproductions, field mylars	$ 410
Maps, reports, photocopying	$ 1,128

Drafting:

In-house, base map preparation, map layouts	$ 900
Drafting supplies	$ 66

Salary Breakdown:

Pre-field: hiring, drill bids, logistics, maps

Stephen Rowins, project geologist, 23 days @ $317/day	$ 7,291

Paul Lhotka, project geologist, 15 days @ $340/day	$ 5,100
Dan Brotea, geologist, 5 days @ $230/day	$ 1,150

Drill and Field Program (June 3 to July 28, 1996):

Stephen Rowins, project geologist, 56 days @ $317/day	$ 17,752
Paul Lhotka, project geologist, 6 days @ $340/day	$ 2,040
Adrian Brotea, geologist, 35 days @ $230/day	$ 8,050
Geoffrey Bradshaw, geologist, 5 days @ $185/day	$ 925
Larry Poznikoff, junior geologist, 47 days @ $156/day	$ 7,332
Alexander Paramonoff, surveyor/assistant, 56 days @ $210/day	$ 11,760
Dawn Thompson, cook/medic, 56 days @ $231/day	$ 12,936

Post-field: report, data compilation, drafting, reclamation

Stephen Rowins, project geologist, 21 days @ $317/day	$ 6,657
Total Salaries	$ 80,993

Total Expenditures, Exploration Program, Racine Property **$ 370,852**

10.0 STATEMENT OF QUALIFICATIONS

I, Stephen M. Rowins, of the Municipality of Burnaby, in the Province of British Columbia, hereby certify that:

1. I am a Fellow (registration # F6362) of the Geological Association of Canada, residing at 4640 Bond Street, Burnaby, Burnaby, British Columbia, V5H 1G8, with a business address at #904-1055 Dunsmuir Street, P.O. Box 49066, The Bentall Centre, Vancouver, British Columbia, V7X 1C4.

2. I graduated with a B.Sc. (Honours) in Geology from Queen's University, Kingston, Ontario in 1987, a M.Sc. in Geology from the University of Ottawa, Ottawa, Ontario in 1990, and a Ph.D. in Geology from the University of Western Australia, Perth, Australia in 1994.

3. I have practised my profession continuously for ten years working in Canada and Australia.

4. I directly performed or supervised the work which is described in this report.

5. I have no direct financial interest in this property; however, I do own shares and have stock options in Westmin Resources Limited.

DATED this 12th day of December, 1996 at Vancouver, British Columbia.

GEOLOGICAL ASSOCIATION OF CANADA
S.M. ROWINS
F 6362
FELLOW
ASSOCIATION GÉOLOGIQUE DU CANADA

Stephen M. Rowins, Ph.D., F.G.A.C.

10.0 STATEMENT OF QUALIFICATIONS

I, Paul G. Lhotka, of 254 East 18th Street, North Vancouver, British Columbia, V7L 2X6, hereby certify that:

1. I hold a B.Sc. in Geology obtained from the University of Manitoba in 1981, and a Ph.D. in Geology obtained from the University of Alberta in 1988.

2. I am registered as a professional geologist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

3. I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum and an associate of the Geological Association of Canada.

4. I have practised my profession continuously for seventeen years working in Canada.

5. I have no direct financial interest in this property; however, I do own shares and have stock options in Westmin Resources Limited.

DATED this 10th day of December, 1996 at Vancouver, British Columbia.

Paul G. Lhotka, Ph.D., P.Geo.

APPENDIX A

DIAMOND DRILL LOGS

Abbreviations Used in Drill logs

Brecc.	breccia
Fol	foliation
Mod	moderate
Str	strong
Wk	weak
Sul	sulphide
Mass	massive
Tr	trace
Ar	argillic alteration
Skn	skarn
Na	sodic alteration
Alt'n	alteration
Struc	structure
Weat	weathering
Min'l	mineralization
DGACSKN	diopside-garnet-amphibole-calcite skarn
DGAME	diopside-garnet-amphibole-magnetite-epidote
CALGMG	calcite-garnet-magnetite
DGAM	diopside-garnet-amphibole-magnetite
ALSCP	albite-scapolite

Mineral Abbreviations

Mus	muscovite
Ser	sericite
Cl	chlorite
Bi	biotite
Ep	epidote
Di	diopside
Gar	garnet
Qz	quartz
Ca	calcite
Car	carbonate
Lim	limonite
Mag	magnetite
Hem	hematite
Amp	amphibole
Eryth	erythrite
Fe	iron
Mal	malachite
Ab	albite
Po	pyrrhotite
Py	pyrite
Ga	galena
Co	cobaltite
Cpy	chalcopyrite
Aspy	arsenopyrite
Au	gold
Scp	scapolite
Non	nontronite

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JUNE 21, 1996
HOLE NO.: RC-96-01	**DATE COMPLETED**: JUNE 26, 1996
LOCATION: UTM - 6616579 N, 518349 E LOCAL - 15008 N, 5046 E	**GROUND ELEVATION**: 1873 m
LOGGED BY: STEPHEN ROWINS	**AZIMUTH**: N/A
DATE: JUNE 23, 1996 and onwards	**INCLINATION**: -90° (vertical) at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 109.4 m (359 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: First hole of the program. Drilled off the most southerly drill pad to intersect the down-dip extension of the surface skarn.

WESTMIN
DRILL LOG

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
0.00	12.00	FINE GRAINED MEDIUM GREEN CHLORITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist. Strongly foliated with core axis-foliation angle of 30-40 deg. Foliation defined by 1-30 mm wide bands of chlorite. Up to 1 m thick veins of qz+/-car occur sporadically. Non-magnetic. 4.50-5.15 BRECCIATED QUARTZ VEIN Greyish white vein with numerous cross-cutting fractures filled with medium green chlorite/amphibole(?). Non-magnetic. Barren of sulphides 5.35-5.75 BRECCIATED QUARTZ VEIN Irregular form with boudinage structure. Surrounding schist is biotite-rich and highly strained, with <1 to 10 mm wide bands of chlorite alternating with biotite 7.00-9.00 FINE GRAINED CHLORITE BIOTITE SCHIST Numerous 1-2 mm wide quartz/Fe-oxide veinlets in cross-cutting arrays. Limonitic staining prominent. Minor pyrite	CL/QZ/CAR/	STR FOL	MOD	WK SUL	QZ
12.00	13.25	VERY FINE GRAINED BUCK WHITE QUARTZ VEIN Vein with 0.5-8 mm chlorite- & epidote-filled microfractures oriented parallel to the foliation in the schist. Minor milk white albite (?), sericite, biotite, & sulphides (now largely converted to Fe-oxides) also associated with chlorite in fractures.1-20 mm wide slivers of wallrock schist incorporated into vein margins.	CL/QZ/CAR/	MASS		WK SUL	QZ
13.25	13.90	FINE GRAINED APPLE GREEN EPIDOTE-CHLORITE-AMPHIBOLE SCHIST Mottled apple to medium green with abundant buck white quartz veins/veinlets. Some skarning. Zones of reddish orange to deep purple staining associated with silvery mineral (hematite?). Fe-oxide replacement of hypogene sulphides. Non-magnetic. 13.80-13.95 VERY FINE GRAINED CHLORITE BIOTITE SCHIST Grey black contact aureole ?	EP/QZ/CL	MASS to WK FOL	WK	MOD SUL	
13.90	17.00	FINE GRAINED MEDIUM GREEN CHLORITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist with significant biotite. Yellowish-white patches of albite associated with amphibole (weak skarn development). Strongly foliated with core axis-foliation angle of 30-40 deg. Foliation defined by 1-8 mm wide bands of chlorite. Non-magnetic. 14.40-14.60 GREY WHITE ALBITE SCAPOLITE ALTERATION Breccia zone with rounded, 1-2 cm long, fragments of albite/scapolite/sericite schist and grey quartz. Pseudo matrix of black biotite. All fragments display throughgoing fractures filled by green chlorite/amphibole.	CL/QZ/CAR/	MASS to WK FOL	WK	WK SUL	

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
17.00	18.00	FINE GRAINED LIGHT BROWN CHLORITE-AMPHIBOLE SCHIST Strongly epidotized, light brown schist in contact with quartz porphyry. Apple green epidote weathers to buff brown. Core consists of 1-10 cm long fragments. Strongly silicified. Non-magnetic.	CL/QZ/C AR/	FOL	STR	WK SUL?	
18.00	24.20	FINE GRAINED GREY WHITE QUARTZ PORPHYRY Porphyritic quartz granite (?) ranging from intensely silicified to strongly argillized and ferrunginized. Argillized sections are very soft and friable. Pyrrhotite/pyrite (<2% of rock) occurs as disseminations (cubes 1-2 mm across) and in thin fractures (<1 mm) along with amphibole, chlorite & Fe-oxides to form a cross-cutting network of fractures (stringer zones). Pyrite commonly oxidized to yellow/brown/black limonite. White calcite, apple green epidote/sericite/nontronite, and black manganese dendrites are common in fractures and on fractured surfaces. Weakly magnetic in places (Po). 18.33-22.00 ARGILLIZED QUARTZ PORPHYRY Soft, friable, fragments (1-20 cm long) of grey white porphyry	AR/QZ/F E/CAR	FRIABLE TO MASS	WK/S TR	WK SUL?	
24.20	25.80	FINE GRAINED GREEN BROWN CHLORITE-AMPHIBOLE SCHIST Strongly foliated dark green-yellow brown schist. Core is broken & stained with limonite. Zone of contact metamorphism. Sulphide mineralization weak.	AR/QZ/F E/CAR	STR FOL & BROK EN COR	MOD	WK	QZ
25.80	40.00	FINE GRAINED GREY WHITE QUARTZ PORPHYRY Fine grained, porphyritic, quartz granitoid ranging from intensely silicified to strongly argillized and ferrunginized. Aphanitic groundmass encloses 3-5% quartz phenocrysts (glassy grey, 1-2 mm diameter) & 1-2% feldspar phenocrysts (pale white, 2-3 mm diameter). Argillized sections are very soft and friable. Pyrrhotite & pyrite (<2% of rock) occurs as disseminations (cubes 1-2 mm across) and in thin fractures (<1 mm) along with amphibole, chlorite & Fe-oxides to form a cross-cutting network of fractures (stringer zones). Pyrite commonly oxidized to yellow/brown/black limonite. White calcite, apple green epidote/sericite/nontronite & black manganese dendrites are common in fractures and on fractured surfaces. Lower contact with schist is ~15 deg to core axis (TCA) with slight chilling (?) over last 1.5 m. Weakly magnetic in places (Po).	QZ\EP\A R\FE	STR FOL & BROK EN COR	WK/S TR	WK/MO D	
40.00	43.60	FINE GRAINED DARK GREY-BLACK BIOTITE AMPHIBOLE SCHIST Strongly foliated (35-45 deg. TCA) & contact metamorphosed schist with biotite > amphibole. Foliation defined by <1mm wide bands of biotite alternating with similar sized bands of quartz & amphibole. Brown-yellow limonitic staining reflects the high pyrite content (up to 2% in some sections). Pyrite occurs as <1 mm to 5 mm wide clots & veinlets. Non-magnetic	FE/QZ/C L/CAR	STR FOL & BROK EN COR	MOD	STR PY	

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		40.10-40.40 FINE GRAINED CHLORITE BIOTITE SCHIST Light lime green zone containing irregular chlorite alteration 43.30-43.60 FINE GRAINED BIOTITE AMPHIBOLE SCHIST Rubble zone (1-4 cm long fragments)					
43.60	44.80	FINE GRAINED LIME GREEN EPIDOTE CHLORITE BIOTITE SCHIST Intense alteration (skarnification) of chlorite-quartz-biotite schist by epidote & lesser quartz. Relict 2-10 cm wide bands of medium green chlorite and grey biotite/quartz.	EP/CL/Q Z	MASS TO BANDED	WK		
44.80	44.95	BLEACHED WHITE CLAYEY CAVE 1-3 cm wide pebbles of argillized quartz porphyry and chlorite-amphibole schist. This is cave in the hole after reaming.					
44.95	47.50	FINE GRAINED LIGHT BROWN/BLACK MAGNETITE-GARNET-DIOPSIDE-AMPH SKARN Variably textured magnetite-diopside-garnet-amphibole skarn. Lighter tan brown/pale green patches are the garnet-diopside skarn. Darker green zones are chlorite & amphibole-rich. Commonly, garnet is fractured and brecciated, with dark green chlorite (?) & black magnetite forming the cement. Magnetite skarns replaces the calc-silicates. Some zones ranging up to 40 cm in length contain semi-massive magnetite. Sulphides are rare, & calcite is a minor phase, typically filling thin fractures in the garnet-diopside skarn	MAG SKARN	SEMI MASS		STR MAG/S UL?	
47.50	53.70	FINE GRAINED DARK GREY-BLACK CHLORITE-BIOTITE-AMPHIBOLE SCHIST Very strongly foliated schist (40-45 deg. TCA) containing zones of strong limonitic staining & rare buck white quartz veins (4 cm across) plus augen (up to 10 mm across). Non-magnetic & only weakly carbonatized. 52.00-52.80 FINE GRAINED BIOTITE-QUARTZ-AMPHIBOLE SCHIST Very strong banding (alternating, 1-3 mm wide, quartz & biotite/amphibole) with numerous S-folds. 53.10-53.40 FINE GRAINED BIOTITE-QUARTZ-AMPHIBOLE SCHIST Highly contorted banding & brecciation of biotite-quartz schist	CL/FE/Q Z/CAR	STR FOL	WK/M OD	WK SUL	QZ /AMP/ CAL
53.70	62.40	FINE GRAINED MEDIUM GREEN DIOPSIDE-EPIDOTE-GARNET-AMPH-CALCITE SKARN Zone of well developed, light to medium green diopside-epidote- garnet-actinolite-calcite skarn with 0.5 to 1 m sections of significant magnetite mineralization. Overprints chloritized amphibole schist. Thin 1-5 mm wide, dark green amphibole veinlets (mineralized?) cross-cut diopside-garnet-actinolite skarn. Thin (<3 mm wide) veinlets of white calcite also	DGACSK N	MASS	WK	MAG	QZ /AMP/ CAL

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		cut skarn. Both veinlet-types strike in the same direction as the foliation in the host schist (40 deg TCA). Garnet is commonly fractured and elongated in the plane of foliation. These features suggest that the skarn is later than the deformation responsible for the development of schist, but younger than that which aligned the cross-cutting amphibole & calcite veinlets. Foliation of the garnet is likely a local effect related to prospect-scale faulting/deformation. Lime green epidote commonly overprints skarn, probably synchronous with late calcite veining (propylitic alteration). 57.70-58.00 FINE GRAINED DIOPSIDE-GARNET-MAGNETITE SKARN Zone of abundant magnetite 59.00-60.00 FINE GRAINED DIOPSIDE-GARNET-AMPHIBOLE SKARN Zone of numerous, thin (1-3 mm wide), white calcite veinlets 61.90-62.40 FINE GRAINED DIOPSIDE-GARNET-AMPH-MAGNETITE SKARN Highly magnetic skarn					
62.40	62.90	FINE GRAINED LIGHT GREY MARBLE Banded, marbled limestone with 1 mm wide veinlets of white calcite, green amphibole/chlorite, & purple-red hematite? Banding (2 mm to 5 cm wide) occurs at 45-55 deg TCA. Veinlets occur in random orientations.	CA/CL/AMP/DI	STR FOL	WK	MAG	CAR/AMP/HEM?/ERYTH
62.90	64.30	COARSE GRAINED MEDIUM BROWN MARBLE Striking-looking rock with brown limonite & limonite-stained calcite crystals ranging up to 6 cm in length. Euhedral quartz crystals up to 3 cm in length. Specular hematite common. In places, minor brecciation has occurred and marbled limestone is cemented by green chlorite/amphibole/Fe-oxides. THIS ZONE APPEARS TO BE A HEALED & RECRYSTALLIZED FAULT. Note the deformation at lower contact.	FE/CAR/QZ	MASS & BRECC	STR	MOD? SUL	CAR/AMP/HEM?/ERYTH
64.30	69.50	FINE GRAINED LIGHT GREY MARBLE Marbled limestone with patches of green chlorite/amphibole alteration. Creamy brown dolomitic fragments (?) are replaced by irregularl zones of pale grey calcite+/-chlorite+/-amphibole. Slight brecciation of dolomite occurs. Cross-cutting, dark brown, hairline fractures filled with carbonate (random orientation). 1-7 mm wide calcite veinlets less common. Some 10-20 cm long intervals contain up to 10% magnetite. Pyrite & pyrrhotite are rare. Lower contact is faulted at ~45 deg. TCA & contains minor gouge.	CL/AMP/QZ/FE	MASS & BREC?	WK	MOD? SUL	CAR
69.50	71.20	FINE GRAINED MEDIUM GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist with significant biotite. Very strongly foliated with core axis-foliation angle of 40-45 deg. Foliation defined by 1 mm wide bands of alternating dark brown biotite and medium green chlorite/carbonate. Prominent	CL/CAR/QZ	MASS & BREC?	MOD	WK	QZ

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		crenulation cleavage (cm scale). Core is broken. Lower contact is faulted at 62 deg. TCA.					
71.20	73.80	VERY FINE GRAINED CREAM WHITE MARBLE Marbled limestone with patches of green chlorite/amphibole alteration. Creamy brown dolomite is replaced (?) by irregular zones of pale grey calcite+/-chlorite+/-amphibole. Cross-cutting, grey-white, hairline fractures filled with carbonate/pyrite/pyrrhotite (random orientation). 1-7 mm wide calcite/pyrite veinlets less common. Not as strongly Fe-stained as preceeding limestone interval.	CL/FE	MASS		WK PY/PO	CAL/DOL
73.80	76.50	FINE GRAINED MEDIUM GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist with significant biotite. Very strongly foliated with core axis-foliation angle of 40-45 deg. Foliation defined by 1 mm wide bands of alternating dark brown biotite & medium green chlorite/carbonate. Prominent crenulation cleavage (cm scale). Core is broken in some intervals. 74.60-75.50 FINE GRAINED CHLORITE-BIOTITE-AMPHIBOLE SCHIST Very strongly foliated & crenulated schist with yellow-brown limonite staining after pyrite & pyrrhotite. Rock has a tiger-striped appearance. Broken core	CL/CAR/QZ	STR FOL	WK	WK PY/PO	CAR/QZ
76.50	77.30	VERY FINE GRAINED CREAM WHITE MARBLE Silicified & marbled limestone. Thin bands (1-4 mm wide) of green chlorite/amphibole alteration. Banding at 40-50 deg. TCA. Cross-cutting, randomly oriented, grey-black, hairline fractures filled with carbonate & Fe-oxides (after pyrite & pyrrhotite common). Top contact is faulted at ~45 deg. TCA. Angular breccia fragments (1-2 cm wide) in 15 cm wide fault zone.	CL/QZ/AMP	FOL TO MASS	WK	WK PY/PO	CL-AMP
77.30	79.60	FINE GRAINED MEDIUM GREY CHLORITE-BIOTITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist with significant sulphide & magnetite. Some parts have a strong bluish tinge due to Na-amphibole (reibeckite?). Strongly foliated with core axis-foliation angle of 40-45 deg. Limonitic staining is well developed and associated with green malachite. Core weakly magnetic & broken in some intervals. 77.70-77.90 MEDIUM GREY QUARTZ VEIN 20 cm wide vein cutting schist at 70 deg TCA. Highly fractured. Dark green to black hairline fractures are pervasive & filled with magnetite/chlorite/amphibole/sulphide (?).	CL/NA/QZ/CAR	STR FOL	MOD	MOD PY/PO & MAL	QZ/CAR
79.60	82.00	FINE GRAINED LIGHT GREY MARBLE Silicified & marbled limestone. Incipient skarnification associated with intensely fractured zones - grading to a jigsaw breccia. Irregular bands or domains (1-20 mm wide) of green chlorite/amphibole/epidote/sericite (?) alteration. Weak banding at 40-50 deg TCA.	CL/NA/QZ/CAR	BANDED TO BRECC		WK PY/PO & MAG	MAG-CAR-CHL

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		Cross-cutting, randomly oriented, grey-black, hairline fractures filled with magnetite/carbonate/Fe-oxides (after pyrite & pyrrhotite common). Magnetite needles oriented perpendicular to vein margins indicating extensional fractures. Both top and bottom contacts are minor faults with argillic alteration & traces of malachite. Top fault is at ~55 deg. TCA. Bottom fault is at ~80 deg. TCA.					
82.00	84.90	FINE GRAINED MEDIUM GREEN CHLORITE-QUARTZ-AMPHIBOLE SCHIST Strongly silicified & chloritized schist. Patches of pale yellow-green are the most intensely silicified parts. Strongly foliated with core axis-foliation angle of 40-45 deg. Limonitic staining is well developed and associated with green malachite (Cu-hydroxide). Core weakly magnetic & broken in some intervals.	CL/QZ/CAR	STR FOL	WK	WK PY/PO & MAL	QZ
84.90	87.10	FINE GRAINED DARK BROWN QUARTZ-AMPHIBOLE-BIOTITE SCHIST Strongly foliated schist with dark brown biotite-rich bands (1-3 mm wide) oriented 35 deg TCA. Minor folding. Buck white quartz fragments are commonly stretched and aligned in the plane of foliaton. Suggests brecciation of quartz vein during deformation of schist. Non-magnetic and little sulphide.	QZ/FE	STR FOL	WK	WK	QZ
87.10	89.60	FINE GRAINED LIGHT GREY MARBLE Silicified & marbled limestone. Incipient skarnification associated with intense fracturing - grading to a jigsaw breccia. Irregular bands or domains (1-20 mm wide) of green chlorite/amphibole/epidote/sericite (?) alteration. Weak banding at 40-50 deg TCA. Cross-cutting, randomly oriented, grey-black, hairline fractures filled with magnetite/carbonate/Fe-oxides (after pyrite & pyrrhotite common. Magnetite needles oriented perpendicular to vein margins indicating extensional fractures.	QZ/CL/FE/CAR	MASS TO BRECC		WK PY/PO & MAG	MAG-CAR
89.60	91.00	MASSIVE GREY BLACK MAGNETITE SKARN Semi-massive magnetite skarn over carbonatized chlorite amphibole schist. White calcite with limonite staining fills interstices between magnetite grains and occurs as hairline fractures in random orientation. In intervals where magnetite is weakly developed, chloritized schist is highly foliated (30-40 deg TCA) and shows green malachite staining. Sulphides are rare.	MAG-CAR SKAR	SEMI-MASS		MAG/CO?/AU?	
91.00	91.45	FINE GRAINED PALE PINK-GREEN EPIDOTE ALBITE ENDOSKARN Contact zone (endoskarn) between magnetite skarn & fresh quartz-feldspar porphyry. Very strongly silicified with minor carbonate, chlorite, & sericite/epidote. Pale, pinkish white patches are probably lightly hematized albite-scapolite. Pinkish-grey patches are silicified & hematized porphyry. Similar to endoskarn in RC-96-02 at 62.4-63.7 m & 65.53-66.95 m. Rapid transition.	QZ/CL/SER/EP	MASS			

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
91.45	109.40	FINE TO MEDIUM GRAINED LIGHT GREY-GREEN QUARTZ FELDSPAR PORPHYRY Fresh, texturally homogeneous, quartz-feldspar granite porphyry with fine-grained, grey-green groundmass (mainly feldspars) & medium-grained plagioclase (euhedral, white, 1-7 mm long laths), quartz (euhedral, glassy-grey, 1-5 mm diameter crystals), & biotite/amphibole (euhedral, black-green, 1-5 mm long sheaths) phenocrysts. Feldspars comprise ~10% of rock, mafics ~3-5%, & quartz <1%. Feldspars are in various stages of breakdown to sericite & saussurite. Many feldspar phenocrysts are compositionally zoned. Thin (1-3 mm wide) veinlets of carbonate throughout porphyry. Some small enclaves of green schist. Black manganese dendrites & lime green nontronite/chlorite clay on some exposed fracture surfaces. Top contact is gradational with epidote-albite endoskarn. Unlike quartz porphyries up section, there is no disseminated sulphide/Fe-oxide mineralization. Non-magnetic. Limonitic staining rare. Appears to unmetamorphosed & undeformed.	SER/CAR/CL/Q	WK FOL (?)		VERY WK SUL	CAR

*** END OF HOLE *** 109.40

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JUNE 27, 1996
HOLE NO.: RC-96-02	**DATE COMPLETED**: JULY 1, 1996
LOCATION: UTM - 6616578 N, 518348 E LOCAL - 15008 N, 5044 E	**GROUND ELEVATION**: 1872 m
LOGGED BY: STEPHEN ROWINS	**AZIMUTH**: 254°
DATE: JUNE 28, 1996 onwards	**INCLINATION**: -60° at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 70.1 m (230 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: Second hole of the program. Drilled off the most southerly drill pad to intersect the down-dip extension of the surface skarn.

WESTMIN
DRILL LOG

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
0.00	7.62	FINE GRAINED MEDIUM GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST Moderately chloritized, silicified & carbonatized schist. Strongly foliated with core axis-foliation angle of 30-40 deg, although foliation is convoluted in places. Foliation defined by thin, mafic-rich bands (typically 1-5 mm wide) alternating with quartz-rich ones. Green chlorite/amphibole alteration replaces biotite schist (e.g., 0.3-0.6 m). Thin quartz veins (up to 15 cm wide) & stretched boudins aligned in the plane of foliation. Dark brown intervals dominated by biotite. Pyrrhotite commonly forms thin lenses (1-3 mm wide) elongated in the plane of foliated. Limonitic staining especially common in broken sections of core. 4.40-4.50 BUCK WHITE QUARTZ VEIN Recrystallized vein with numerous fractures filled with green chlorite. Oriented with foliation (45 deg TCA). Irregular margins. 6.40-7.00 FINE GRAINED CHLORITE-BIOTITE-AMPHIBOLE SCHIST Core has a net-veined appearance. Black-brown biotite schist is veined & altered by an anastomosing array of pale green chlorite/amphibole?/quartz. Some alteration domains show preferential orientation with foliation.	CL/QZ/CAR	STR FOL	MOD	WK PO/PY	QZ
7.62	25.60	FINE GRAINED GREY WHITE QUARTZ PORPHYRY Homogeneous, porphyritic, quartz granite. Highly silicified & recystallized with local argillization & ferrunginization. Pyrrhotite and pyrite (<3% of rock) occur as disseminations (cubes 1-2 mm across) & in thin cross-cutting fractures (<1 mm) along with magnetite(?) and green mafic minerals, probably amphibole & chlorite. Forms a weak stringer sulphide zone. Pyrite commonly oxidized to yellow/brown/black limonite. Black manganese dendrites and yellowish green sericite/nontronite/calcite common on fracture surfaces 8.90-9.10 VERY FINE GRAINED MAFIC DYKE Black, weakly magnetic mafic dyke consisting of very fine grained amphibole (?),& magnetite. Intrudes quartz porphyry in same orientation as the foliation in schist (i.e., 40 deg TCA).	QZ/FE/CAR/AR	MASS	WK/MOD	WK/MOD PO/PY	PO/PY
25.60	26.30	GRANULAR LIGHT BROWN EPIDOTE-BIOTITE-AMPHIBOLE SCHIST Contact zone between porphyritic quartz granite and biotite-amphibole schist. Original fabric of schist almost completely replaced by lime green epidote and clays. Punky texture.	EP/AR/CL	FRIABLE & BROKEN COR	STR		
26.30	39.10	FINE GRAINED MEDIUM GREEN CHLORITE BIOTITE AMPHIBOLE SKARN Strongly chloritized, amphibolitized, epidotized, carbonatized & silicified schist and skarn. Complex sequence of alteration events resulting in intervals of massive epidote-amphibole-calcite+/-garnet+/-	CL/AM/EP/CAR	STR FOL	WK/MOD		CAR

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		magnetite skarn. Skarn is best developed in schist, not limestone. Dip of foliation is quite variable but may be steeper (60 deg TCA) than up section. Bluish amphibole alteration (reibeckitic?) is medium grained and associated with lime green epidote. These zones are friable and punky. Some bluish green amphibole bands (1-3 cm wide) are breccia zones, cementing angular, buck white quartz fragments (2-10 mm long). Pale grey-green alteration zones are chlorite/quartz-rich. White calcite fills interstices between amphibole grains and in thin fractures (1-3 mm wide) along with yellow-brown limonite. Strongly magnetic in places (i.e., 38.8 m). Sulphides are rare. 32.00-33.00 FINE GRAINED EPIDOTE-CALCITE-AMPHIBOLE SKARN 1 m interval of lime green to dark green epidote-amphibole skarn with interstitial calcite and magnetite in schist. Strongly magnetic 35.95-37.00 FINE GRAINED EPIDOTE-GARNET-AMPHIBOLE-CALCITE SKARN Pale pink to light green epidote- & garnet-rich skarn replaced by dark green amphibole. Thin (<1 mm wide) fractures filled with same late overprinting green-black amphibole. No sulphides visible. 37.80-39.00 FINE GRAINED EPIDOTE-MAGNETITE-AMPHIBOLE SKARN Lime green patches of epidote in a dark green black amphibole-magnetite skarn. Some thin fractures (<5 mm wide) are filled with white calcite, which has fibres perpendicular to fracture margins (i.e., Extensional fractures)					
39.10	44.10	FINE GRAINED DARK GREENISH GREY QUARTZ-AMPHIBOLE-BIOTITE SCHIST 0.5-5 mm wide black-brown biotite bands alternating with grey white quartz-albite-carbonate bands imparts a tiger-striped appearance to the schist. Top contact with biotite-amphibole schist at 39.1 m is 75 deg TCA. Bottom contact with magnetite skarn is 70 deg TCA. Foliation is highly convoluted, although a general 45-55 deg angle with core-axis is present. Abundant quartz boudins (1-3 cm long) commonly elongated in the plane of foliation. Green amphibole-rich zones appear to replace whitish-yellow albite/scapolite(?) alteration. Minor arsenopyrite at 41.9 m. Non-magnetic	CL/QZ/AB/CAR	STR FOL	WK	WK PO/PY/ASPY	
44.10	47.55	MASSIVE DARK GREY MAGNETITE SKARN Fine grained , grey-black magnetite comprises ~80% of rock; the remainder is 20% garnet (euhedral, wine red), calcite (anhedral infill; white), chlorite (anhedral; light green), amphibole (sub-euhedral, medium green), & epidote (anhedral; lime green). Massive texture gives way to weakly banded one defined by pale green bands of chlorite/amphibole/calcite. No cobaltite. Very weak sulphide mineralization.	CAR/CL/EP	MASS. TO WEAK BANDED	WK	WK PO/PY/ASPY	CAR?

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
47.55	49.70	FINE GRAINED MEDIUM GREEN DIOPSIDE-GARNET-AMPH-MAG-EPIDOTE SKARN Pale green zones with pink patches are diopside-garnet-magnetite skarn. Replaces foliated (50 deg. TCA) chlorite-amphibole schist. Granular, lime green epidote replaces diopside & garnet. Subsequently, the epidotized diopside-garnet-magnetite skarn is replaced by bluish actinolitic (?) amphibole. Thin (<1-5 mm wide), white calcite veinlets are oriented parallel to the plane of foliation (e.g., 50 deg TCA) & cut all lithologies. Some calcite veinlets contain dark green amphibole needles, a silvery mineral (bismuthinite/cobaltite?), and reddish crystals of hematite. Irregular calcite patches (1-3 mm wide) are surrounded by fine-grained garnet crystals in the garnet-rich skarn. Patches (up to 7 mm wide) of black magnetite are preferentially associated with bluish amphibole. Weak pyrite & pyrrhotite mineralization. 48.50-49.10 COARSE GRAINED QUARTZ-CALCITE-LIMONITE FAULT INFILL Fault zone in which coarse grained quartz (euhedral, pale grey-green, up to 3 cm long) and calcite (euhedral, pale coffee brown, up to 2 cm long) grew in open spaces. Fault later sealed by yellow-brown limonite. SEE INTERVAL BELOW FOR MORE INFORMATION.	DGAME SKARN	MASS	WK	WK PO/PY & MAG	CAL/QZ/AMP
49.70	55.60	COARSE GRAINED YELLOW BROWN QUARTZ-CALCITE-LIMONITE FAULT INFILL Fault zone in which coarse grained quartz (euhedral, pale grey-green, up to 5 cm long) and calcite (euhedral, pale coffee brown, up to 6 cm long) grew in open spaces. Fault later sealed by yellow-brown limonite. Top contact of fault at 55 deg TCA) & has euhedrally terminated quartz crystals (1 cm long) pointing inwards at 90 deg to fault contact. Botton fault contact (65 deg TCA) has been reactivated - 20 cm wide basal section hosts rounded fragments (3-20 mm across) of quartz-calcite in a foliated (65 deg TCA) fine grained limonite matrix. Thin (1-3 mm wide) calcite veins cross-cut all fabrics/structures. Bright green malachite on fractured core surfaces. CORRELATES WITH QUARTZ-CALCITE-LIMONITE FAULT IN RC-96-01 at 62.9-64.30 m ??	FE/MAL	FAULT INFILL/GOUGE	STR	MOD SUPERGENE CU	
55.60	57.75	FINE TO MEDIUM GRAINED LIGHT GREY GREEN MARBLE Mottled grey green marble with pink-brown patches of euhedral garnet (2-6 mm across) and green chlorite/amphibole. Minor magnetite. Yellow-green nontronite clay and black manganese dendrites on fractured surfaces.	CALGMG SKARN	MASS	WK	WK PO	CAL

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
57.75	60.00	FINE GRAINED MEDIUM GREEN DIOPSIDE-GARNET-AMPH-MAGNETITE SKARN Dark green chlorite-amphibole schist largely replaced by pale grey marble & medium green to pink-brown diopside-garnet- amphibole-magnetite skarn. Minor epidote replacement of skarn. Late calcite veinlets cut all lithologies at random orientation.	DGAM SKARN	MASS	WK	WK SULP ?	CAL
60.00	62.25	FINE GRAINED DARK GREY GREEN MAGNETITE SKARN Magnetite skarn with ~50-60% fine grained magnetite (dark grey, massive), ~20% disseminated & patchy calcite (light grey, granular), & 10-15% patchy diopside/actinolitc amphibole (pale green, fine grained, anhedral) which replaces (?) magnetite. Bright grey-white coloured mineral is likely arsenopyrite & is associated with pale green diopside/amphibole patches. No erythrite bloom on limonite-stained fracture surfaces - therefore, no cobaltite.	MAG/AS PY SKN	SEMI MASS.	WK	ASPY	
62.25	63.70	FINE GRAINED LIGHT GREEN QUARTZ FELDSPAR PORPHYRY Intensely altered quartz feldspar granite porphyry. Top contact with magnetite skarn is 60 deg. TCA. Milky white feldspar phenocryts (1-6 mm long, euhedral) are sericitized/silicified & account for ~ 2-5% of rock. Mafic phenocrysts are smaller (1-2 mm) & account for 1-2% of rock. Patches of massive, texturally destructive lime green epidote-altered porphyry. Light grey bleach zones surround thin (<1 mm wide) quartz-calcite veinlets. Non-magnetic. No disseminated sulphides	QZ/EP/C AL	MASS TO WK FOL	WK		CAR
63.70	64.95	FINE GRAINED PINKISH GREY GREEN EPIDOTE-ALBITE-AMPHIBOLE ENDOSKARN Highly epidotized, silicified, & albitized quartz-feldspar porphyry (endoskarn) similar to that down hole at 66.2-66.8 m. Pale pinkisk white patches are probably lightly hematized albite-scapolite. Lime green patches are epidote. Pinkish-grey patches are silicified & hematized porphyry. Minor medium/dark green chlorite-amphibole alteration zones & veinlets. Non-magnetic. No sulphides	EP/QZ/A B/SCP	MASS	WK		CL-AMP/ CAL
64.95	65.53	FINE GRAINED DARK GREEN-BLACK MAGNETITE SKARN Magnetite skarn with ~50-60% fine grained magnetite (dark grey, massive), 10-15% patchy diopside/actinolitc amphibole (pale green, fine grained, anhedral), which appears to replace magnetite, & 10-20% bright grey-white arsenopyrite which is associated with pale green diopside/amphibole patches. No erythrite bloom on weathered, limonite-stained fracture surfaces - therefore no cobaltite. Core is broken with ~60% recovery. Very similar to magnetite skarn at 60.0-62.25 m.	MAG/AS PY SK	SEMI-MASSIVE	WK/M OD	ASPY	CL-AMP

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
65.53	66.95	FINE GRAINED PINKISH GREY GREEN EPIDOTE ALBITE ENDOSKARN Highly epidotized, silicified, & albitized quartz feldspar porphyry (endoskarn). Similar to up-section endoskarn at 62.4-63.7 m. Pale, pinkish white patches are probably lightly hematized albite-scapolite. Lime green patches are epidote. Pinkish-grey patches are silicified & hematized porphyry. At the bottom of the interval (66.6-66.8 m), remnant, euhedral feldspar phenocrysts are pinkish green-white, the result of alteration to epidote, sericite, & albite with subsequent hematite staining. Minor breccia zone (dark green-black) with significant magnetite at 65.6-65.8 m. Thin (<2 mm wide), calcite veinlets tend to be oriented at 45 deg TCA. No sulphides.	EP/AB/S CP/QZ	MASS	WK		CAL
66.95	70.10	VERY FINE GRAINED LIGHT GREY GREEN FELDSPAR PORPHYRY Euhedral, white-green feldspar phenocrysts (typically 2-6 mm long laths) comprise ~10-15% of rock. Sub to euhedral, dark green to black phenocrysts of biotite & amphibole are smaller (1-3 mm wide) & comprise ~2-5% of the rock. Groundmass is very fine grained feldspar/quartz/mafics. Some feldspar laths are completely altered to yellow sericite and green chlorite, the latter mineral occuring as a rimming phase. Both cognate & exotic xenoliths/xenocrysts (up to 2 cm across) of darker green rocks/minerals are present & typically strongly altered. Two populations of feldspar phenocrysts may exist - some are totally altered to sericite/chlorite whereas others, located several mm's away, are fresh. Small black magnetite phenocrysts form <1% of rock. Pyrite replaces the core of some mafic phenocrysts. Hairline fractures with random orientations, filled with calcite/chlorite+/-magnetite, crosscut all other features. Although mapped as an intrusive porphyry, this core does have a vague volcanic-extrusive look to it.	SER/EP/ CAR	MASS	WK	WK PY/PO	CL-MAG & CAL

*** END OF HOLE *** 70.10

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JULY 3, 1996
HOLE NO.: RC-96-03	**DATE COMPLETED**: JULY 6, 1996
LOCATION: UTM - 6616691 N, 518385 E LOCAL - 15110 N, 5105 E	**GROUND ELEVATION**: 1877 m
LOGGED BY: LARRY POZNIKOFF STEPHEN ROWINS	**AZIMUTH**: 269°
DATE: JULY 4, 1996 onwards	**INCLINATION**: -60° at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 105.2 m (345 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: Third hole of the program. Drilled off the second drill pad to intersect the down-dip extension of the surface skarn.

WESTMIN
DRILL LOG

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
0.00	0.20	FINE GRAINED LIGHT GREEN CRYSTAL-LITHIC FELSIC LAPILLI TUFF Volcaniclastic rock with abundant feldspar phenocrysts (white, euhedral, 1 - 5 mm long, 3 - 7% of rock), amphibole & biotite phenocrysts (greenish-black, euhedral, <1-3 mm wide, 1-5% of rock) & lithic fragments. Many feldspars are altered to green epidote/chlorite and yellow sericite. Lithic compositions are variable. Fragments range in size from 1 mm to 3 cm in diameter & include (a) angular, pale greenish pink, albite-scapolite-quartz endoskarn (at 0.12 m), (b) angular, pale green chlorite-amphibole schist, (c) angular dark brown chlorite-amphibole-biotite schist.	CL/QZ/CAR	MASS TO FOL	WK	WK SUL	CAR
0.20	9.64	FINE GRAINED MEDIUM GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST Moderately chloritized, silicified, & carbonatized schist. Foliated at 47 deg. TCA. Defined by quartz-rich bands & net-vein zones parallel to sub-parallel to foliation. Weakly magnetic pyrrhotite & pyrite are disseminated throughout the schist. Hairline fractures filled with carbonate and limonite cross-cut the foliation. 0.80-1.15 MEDIUM GREEN CAVE Cave fragments (1 to 4 cm long) consisting of chlorite-biotite-amphibole schist. 1.90-2.55 MEDIUM GREEN CHLORITE BIOTITE AMPHIBOLE SKARN Zone of skarn containing lenses of pyrite (<1 mm to 1.3 cm in length) in association with patches of chlorite-biotite-amphibole schist. 2.55-3.35 BUCK WHITE QUARTZ FELDSPAR PORPHYRY Highly fractured, silicified and ferrunginized quartz vein. Upper and lower contacts with schist (defined by minor faulting(?) and breccia fragments) are 70 deg. TCA. Manganese oxide dendrites and sericite occur on fractured surfaces. Pyrite has been oxidized to yellow/brown/black limonite. 3.35-4.13 MEDIUM GREEN CHLORITE BIOTITE AMPHIBOLE SKARN Amphibole Skarn over schist. Carbonatized with little or no foliation. Limonite staining occurs around carbonate/sulphide veinlets. 4.25-4.75 MEDIUM GREEN CAVE 50 cm long zone of cave fragments.	CHL/QZ/CAR	FOL	WK	WK SUL	CAR/LIM
9.64	11.55	FINE GRAINED BUCK WHITE QUARTZ VEIN Highly fractured, silicified and ferrunginized. Upper and lower contacts with schist have bands of limonite along contacts, which are 70 deg. TCA. Manganese oxide dendrites and sericite on fractured surfaces. Pyrite/pyrrhotite is weakly disseminated & oxidized to black limonite.	QZ/CAR	WK FOL/BROKEN	WK/MOD	WK SUL	CAR

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
11.55	27.30	FINE GRAINED DARK BLUE-GREEN CHLORITE-AMPHIBOLE-BIOTITE SCHIST Strong foliation at 72 deg. TCA defined by 1 to 3 mm wide quartz- & amphibole-rich bands. Quartz boudins (<2 cm wide) are aligned in the plane of foliation. 14.20-14.70 YELLOW BROWN CHLORITE-AMPHIBOLE-BIOTITE SCHIST 50 cm zone of fractured core and rubble. 14.95-16.15 LIGHT GREEN AMPHIBOLE DIOPSIDE SKARN Strongly silicified, weakly foliated (78 deg. TCA) skarn over schist. Near upper contact with schist there is a 15 cm wide zone of brecciated pale gray albite-scapolite alteration with medium-green amphibole infilling of fractures. Bands of black biotite/magnetite(?) exibit weak magnetism in this breccia zone. 17.00-19.10 MEDIUM GREEN DIOPSIDE-AMPHIBOLE SKARN Brecciated upper and lower contacts (68 deg. TCA) (20 cm wide). Albite-scapolite alteration, plus amphibole & carbonate infilling distinguishes schist from skarn. Skarn is moderately foliated. Banding parallels the contact. Minor pyrrhotite veins and late cross-cutting limonite veinlets. 19.40-20.40 MEDIUM GREEN DIOPSIDE-AMPHIBOLE SKARN Weak foliation at 20 to 30 deg. TCA defined by bands of dark-green amphibole alternating with pale-green diopside. Light apple-green epidote/diopside alteration surrounds fractures in amphibole (replacing?). Veinlets of pyrrhotite & pyrite are partially to completely oxidized to orange/brown limonite. 22.12-22.50 BRECCIATED, YELLOW-BROWN QUARTZ VEIN Zone of intense quartz veining in chlorite-biotite-amphibole schist. Vein contact approximately 57 deg. TCA.	CHL/QZ/CAR	STR FOL	WK	WK SUL	QZ/CAR/AMP
27.30	36.20	FINE GRAINED LIGHT PINK AND GREEN EPIDOTE-AMPHIBOLE-DIOPSIDE-GARNET-SKARN Pink garnet-rich skarn, medium green diopside-rich skarn & dark green amphibole-rich skarn dominate this interval. Abundant silica, carbonate & chloritie alteration. Less than 1 to 10 mm wide patches of light green epidote alteration in the garnet skarn. Carbonate veinlets (0.5 to 2 mm wide) common. Correlates with skarn in RC-96-04 at 36-41.5 m. 34.60-34.90 BUCK WHITE QUARTZ PORPHYRY Silicified & limonite-stained porphyry dyke (30 cm wide) cutting diopside-amphibole skarn. Upper and lower contacts are 75 deg. TCA.	QZ/CAR/EP	WK FOL	`WK	WK	CAR/AMP

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
36.20	53.20	FINE GRAINED BUCK WHITE QUARTZ PORPHYRY Silicified, carbonatized, & limonitized porphyry. Yellow/brown limonite & black manganese oxide dendrites on fracture surfaces & in cross-cutting veinlets. Core is fractured. 46.30-46.90 DARK BROWN BIOTITE AMPHIBOLE SCHIST 60 cm wide enclave? in quartz-feldspar porphyry. Foliation in schist is 49 deg. TCA, sub-parallel to the porphyry/schist contact at 40 deg. TCA. 5 cm wide zones of yellow/gray limonite-albite-scapolite alteration at the schist/porphyry contact. 51.15-53.20 WHITE QUARTZ PORPHYRY Zone of argillized & fractured porphyry core.	ALSCP/CAR/FE	WK FOL	WK TO STR	WK SUL	FE/CAR
53.20	68.55	FINE GRAINED MEDIUM GREEN QUARTZ-AMPHIBOLE-BIOTITE SCHIST Strong foliation (80 deg. TCA) to convoluted banding and boudinization (80 deg. TCA). Veinlets and disseminations of arsenopyrite & pyrite. White, soft, flaky carbonate & talc on fractured surfaces (55.25 m). 53.50-54.40 MEDIUM GREEN QUARTZ-AMPHIBOLE-BIOTITE SCHIST Zone of fractured core. 54.40-54.60 MEDIUM GREEN CAVE 20 cm of cave. 68.43-68.55 MEDIUM GREEN QUARTZ-AMPHIBOLE-BIOTITE SCHIST 12 cm of fractured core.	CAR/QZ	STR FOL	WK TO MOD	ASPY	CAR/LIM
68.55	70.00	FINE GRAINED MEDIUM GREEN AMPHIBOLE-DIOPSIDE-ALBITE-SCAPOLITE SKARN Chlorite, carbonate, & albite-scapolite common alteration minerals. Strongly foliated (53 deg. TCA) to convoluted banding, with incipient net-vein texture. Cross-cutting veinlets of carbonate/epidote, & amphibole. Pink bands (70.25 to 70.35 m) likely due to either ankerite, rhodochrosite or hematite.	CAR/QZ	FOL	WK	WK PY/PO	CAR/AMP
70.00	79.75	FINE GRAINED BLACK MAGNETITE SKARN Remnant foliation is visible. Magnetite bands (1 to 3 cm wide) separated by < 1 cm wide zone of white calcite parallel to foliation in schist above (50 to 55 deg. TCA). Coarse-grained calcite crystals may show limonite-stained outer edges. Very weak sulphide mineralization. 70.50-70.70 MEDIUM GREEN CAVE Cave fragments (2 to 4 cm) of diopside-magnetite-amphibole skarn. 74.60-75.10 GREEN GREY MAGNETITE SKARN OVER BIOTITE-AMPHIBOLE SCHIST Weakly developed magnetite skarn over a chloritized biotite-amphibole schist. 76.20-77.50 FINE GRAINED CALCITE VEIN Strong foliation defined by pale gray quartz- & dark green biotite-rich bands at 31 deg. TCA. Late pale gray carbonate veinlets. S-folds throughout interval.	CAR	FOL TO MASS	WK	WK SUL	CAR

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		78.50-79.25 FINE GRAINED AMPHIBOLE-DIOPSIDE-ALBITE-SCAPOLITE SKARN Abundant chlorite, carbonate, & albite-scapolite alteration. Strongly foliated to convoluted banding (50 - 60 deg. TCA). Cross-cutting veinlets of carbonate/epidote, & amphibole. Pink banding due to ankerite, rhodochrosite or possibly hematite. 79.25-80.20 LIGHT GREEN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST/SKARN Pale gray/pink albite-scapolite skarn replacing chloritized and silicified schist. Pink mineral (?) ankerite or hematite staining.					
79.75	92.85	FINE GRAINED LIGHT GREEN QUARTZ DIOPSIDE AMPHIBOLE SCHIST Strong foliation & widely spaced quartz boudins (1 to 3 cm wide) oriented 50 deg. TCA. Carbonates, epidote, & limonite on fractured surfaces & in veinlets that cross-cut schist.	CL/CAR/FE	STR FOL	WK	WK SUL	EP/FE/CAR
92.85	105.20	FINE GRAINED MEDIUM GREEN QUARTZ FELDSPAR PORPHYRY Chloritized and silicified porphyry with phenocrysts of (a) 1 to 3 mm long laths of dark green amphibole and/or biotite, (b) white, euhedral, randomly oriented, 1 to 5 mm long laths of feldspar with rare glomerocrystic habit, and (c) rare, glassy gray, 1 to 3 mm wide, euhedral phenocrysts of quartz. Cross-cutting, yellow-brown carbonate and limonite veinlets oriented at 70 deg. TCA. Rare, 5 mm to 2 cm wide enclaves of dark green amphibole schist. Fractures at 36 deg. TCA in porphyry are infilled by dark green amphibole & chlorite.	CL/SER/CAR	WK FOL TO MASS	WK	WK SUL	CAR/SER

*** END OF HOLE *** 105.20

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JULY 7, 1996
HOLE NO.: RC-96-04	**DATE COMPLETED**: JULY 11, 1996
LOCATION: UTM - 6616691 N, 518385 E LOCAL - 15110 N, 5105 E	**GROUND ELEVATION**: 1877 m
LOGGED BY: STEPHEN ROWINS	**AZIMUTH**: N/A
DATE: JULY 8, 1996 onwards	**INCLINATION**: -90° (vertical) at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 128.3 m (421 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: Fouth hole of the program. Drilled off the second drill pad to intersect the down-dip extension of the surface skarn.

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
0.00	3.80	FINE GRAINED MEDIUM GREEN CRYSTAL-LITHIC FELSIC LAPILLI TUFF Intensely to weakly altered & deformed volcaniclastic rock with fresh feldspar phenocrysts (white, euhedral, 1-7 mm long laths, 2-7% of rock). Feldspars may show cross-twinning. Mafic phenocrysts not present unlike DDH's RC-96-03, -05, & -06. Possibly destroyed via intense chloritization, amphibolitization, & carbonatization. Angular, heterolithic, clasts (2 mm to 8 cm diameter) include, (1) dark green amphibole schist with yellowish-white sericite/chlorite reaction rims, (2) small (2-6 mm diameter) mafic clasts (biotite schist?), (3) greyish-white albite-scapolite-quartz clasts (endoskarn?), (4) whitish-grey felsic clasts (quartz vein?), (5) quartz-feldspar-cpx? (diorite?). Overall rock colour is one of a light grey groundmass with small white feldspars & numerous, larger, dark green brown clasts. Foliation is generally irregular, but locally strong (~45 deg. TCA) - defined by alternating dark brown biotite-rich & green amphibole/chlorite-rich bands (e.g., 3.2 m). Strong post-depositional deformation/alteration has created this ugly rock.	CL/EP/Q Z/AB	MASS TO SHEARE D	WK	WK PO & PY	
3.80	4.00	FINE GRAINED MEDIUM GREY QUARTZ PORPHYRY Silicified porphyry dyke intruding at contact between overlying volcanics and schist. Upper contact ~63 deg. TCA. Lower contact ~60 deg. TCA. Abundant yellow-brown limonite veinlets (after pyrrhotite/pyrite?) & black manganese dendrites.	QZ/FE	MASS	MOD	WK PO/PY '	LIM
4.00	5.16	FINE GRAINED DARK GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Weakly magnetic schist with foliation at 65-75 deg. TCA. The green brown schist is partially replaced by bluish green amphibole skarn & lesser grey quartz. Minor lime to pale green epidote/chlorite alteration. Thin calcite veinlets (<1 mm wide, random orientation) partly altered to yellow limonite. Lower contact with quartz porphyry at 60 deg. TCA is faulted. Twenty cm wide zone contains small (2 mm to 2 cm wide), medium grey fragments of porphyry.	EP/CL/A M/CAL	STR FOL	WK	WK PO/PY	CAL/LI M
5.16	6.40	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY High-level quartz porphyry sill/dyke (with minor feldspar phenocrysts), identical to that mapped in other DDH's. Intensely silicified & argillized, with numerous small fractures filled with white-green clays (chlorite/nontronite) and black manganese oxide. Strong limonite staining on broken core. Lower contact with schist is sheared (~52 deg. TCA) and ferrunginized.	QZ/AR/F E	MASS & RUBBLE D	MOD	WK SULP?	LIM
6.40	14.90	FINE GRAINED DARK GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Weakly magnetic schist with foliation at a high angle TCA (~60-70 deg.). Brown biotite-rich bands (2-10 mm wide) alternate with green chlorite/amphibole-rich	CL/AM/Q Z/CA	STR FOL TO MSS	WK	SKARN & WK PO/PY	LIM/C AL

From	To	Geological Log	ALT'N	STRUC	WEAT!	MIN'L	VEINS
		ones. Dark brown biotite-rich schist is partially replaced by bluish green amphibole skarn & lesser grey quartz/albite? along fractures. Minor lime to pale green epidote/chlorite alteration. Thin calcite veinlets (1-2 mm wide, at angle to fol.) partly altered to yellow limonite. 1-3 cm wide, pale grey-green quartz-chlorite veins (in plane of fol.) with surrounding green-grey alteration halos common (e.g., 10.6 m). Rare lenses (1-3 mm wide) of pyrrhotite/pyrite parallel to foliation. 9.50-10.40 DARK BROWN QUARTZ-BIOTITE SCHIST Strongly foliated schist (60 deg. TCA) with brown biotite-rich bands (~1mm wide) alternating with whitish grey quartz-rich bands. Whitish specks (1mm across) are elongated in the plane of foliation and may be original feldspar phenocrysts/porphyroblasts. 11.80-12.00 BLUISH GREEN AMPHIBOLE SKARN Fracture-controlled skarning of quartz-biotite schist. Minor grey quartz (+/- albite) associated with skarn. 12.20-12.40 YELLOWISH GREY QUARTZ VEIN Ferrunginized and highly fractured quartz vein. 12.50-13.40 MEDIUM GREEN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Foliated schist with abundant pale green bands (1-3 cm wide) of actinolite/chlorite/diopside? alteration. Minor pyrrhotite/pyrite.					
14.90	17.40	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Ferrunginized & silicified porphyry in which the whitish outline of feldspar phenocrysts (1-3 mm long, euhedral, 1-3% of rock) are visible, in addition to grey quartz eye phenocrysts (1-4 mm wide, euhedral, 2-5% of rock). Limonite and pyrrhotite/pyrite in fractures. Some disseminated pyrrhotite/pyrite grains too. Black manganese dendrites on fresh fracture surfaces. Excellent example of an altered, high-level porphyry containing sub-equal proportions of feldspar & quartz phenocryts. ALL PORPHYRIES ARE JUST COMPOSITIONAL VARIANTS WITH THE INTENSITY OF ALTERATION RELATED TO PROXIMITY TO FAULTS & SKARN FLUID PATHWAYS. Both upper & lower contacts are rubble zones. 15.54-15.64 CAVE PEBBLES Cave pebbles	FE/QZ/A R/CAR	MASS	WK/M OD	WK PO/PY	LIM
17.40	35.10	FINE GRAINED MEDIUM GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Weakly magnetic schist with foliation at a steep angle TCA (~60-70 deg.). Brown biotite-rich bands (2-10 mm wide) alternate with green chlorite/amphibole-rich ones. Dark brown biotite-rich schist is partially replaced by bluish green amphibole skarn & lesser	CL/QZ/A M/CAR	STR FOL TO MASS	WK	SKARN & PO LENSE S	CAL/LI M

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		grey quartz/albite? along fractures. Minor lime to pale green epidote/chlorite alteration. Thin calcite veinlets (1-2 mm wide, at angle to fol.) partly altered to yellow limonite. 1-3 cm wide, pale grey-green quartz-chlorite veins (in plane of fol.) with surrounding green-grey alteration halos common (e.g., 10.6 m). Lenses (1-8 mm wide) of pyrrhotite/pyrite rimmed by green amphibole selvages are oriented in the plane of foliation. 17.90-18.10 GREY WHITE QUARTZ VEIN Ferrunginized vein with yellow limonite staining & limonite-filled fractures. Partly brecciated. 18.10-18.45 MEDIUM GREEN AMPHIBOLE SKARN Zone of fracture-controlled amphibole-quartz (albite?) skarn. Replacing brown, biotite-rich schist. 23.20-24.00 FINE GRAINED QUARTZ-AMPHIBOLE-SERICITE ALTERATION Zone of fractured core with abundant grey-white quartz, green amphibole/chlorite, & yellow sericite alteration 24.20-24.70 MEDIUM GREY QUARTZ VEIN Intensely carbonatized, silicified, chloritized, & sericitized. Vein(s) has been shear faulted. Abundant yellow-brown limonite staining. Fractures in quartz filled with chlorite/limonite. Minor pyrrhotite. Upper contact is 63 deg. TCA. Lower contact rubbled.					
35.10	36.00	FINE GRAINED MEDIUM GREEN AMPHIBOLE SKARN Largely fracture-controlled amphibole skarn replacement of dark brown biotite-rich schist. Pale green chlorite/actinolite/cpx? patches and associated grey-white alteration (albite/quartz/scapolite?) tend to follow original schist foliation (42 deg. TCA). Minor yellow sericite. Foliation contorted around 20 cm wide quartz vein at 35.2 m. Tiny specks of sulphide in core. Non-magnetic	CL/QZ/AB/SER	WK FOL	WK	WK SULH	QZ
36.00	41.50	FINE TO MEDIUM GRAINED PINKISH BROWN EPIDOTE-DIOPSIDE-GARNET SKARN Skarn comprised mainly pink garnet & calcite, with minor intervals of lime to forest green diopside/epidote skarn. Thin quartz veins (2 mm - 1 cm wide) are commonly associated with limonitized pyrite (white-yellow), chalcopyrite (brass yellow), & dark green amphibole. Yellow sericite commonly associated with zones of diopside/epidote skarn. Upper contact with skarnified schist is ~25 deg. TCA.	QZ/SER/AM/FE	MASS	WK	WK PY, CPY, PO	QZ & AMP
41.50	49.07	FINE GRAINED LIGHT TO MEDIUM GREEN AMPHIBOLE SKARN Pale olive-green diopside-amphibole skarn & associated alteration minerals chlorite (pale green), quartz (grey), albite/scapolite? (yellowish-white), epidote (lime green) & sericite (yellow). Similar to	CL/EP/AB/QZ	CONTORTED BANDING	WK	WK SULP	QZ & CAL

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		amphibole skarn at 35.1-36 m. Complex sequence of progressive alteration events over a dark brown, biotite-rich schist. Some skarning tends to follow the original schist foliation (~30 to 40 deg. TCA), although in many places, the foliation and skarn banding is highly contorted (some S-folds). Late, white calcite veins cross-cut all lithologies at a very shallow angle TCA (< 10 deg.). Some thin quartz vein and boudins. Non-magnetic & very weak sulphide mineralization. 44.50-46.10 BLEACHED WHITE QUARTZ VEIN Intensely argillized rock surrounds an irrgularly-shaped quartz vein. Abundant carbonatization. Cave rubble suspected in this zone.					
49.07	59.80	FINE GRAINED MEDIUM GREY QUARTZ FELDSPAR PORPHYRY Strongly ferrunginized, silicified, & argillized porphyry with sub-equal proportions of white feldspar phenocrysts (1-5 mm long laths, euhedral, 1-5% of rock) & grey quartz eye phenocrysts (1-4 mm wide, euhedral, 2-5% of rock). Limonite & pyrrhotite/pyrite occur in thin fractures (< 2 mm wide) & as small disseminations (grains <2 mm). Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Yellow-green sericite/nontronite/chlorite clays & black manganese dendrites common on fresh fracture surfaces. Some sections of porphyry are strongly fractured (argillic alteration more intense). This porphyry is very similar to, but slightly less altered than, the quartz-feldspar porphyry at 14.9 to 17.4 m. 51.25-51.70 FINE GRAINED BLACK MAFIC DYKE Mafic dyke intruding porphyry. Upper contact at ~45 deg. TCA; lower contact ~30 deg. TCA. Contact chill zone or reaction rim not visible. Small white laths & equant crystal are likely feldspar phenocryts. Groundmass is very fine grained and black. Strongly magnetic.	QZ/AR/FE/CAR	MASS	WK/MOD	WK PO/PY	LIM
59.80	64.31	FINE GRAINED DARK GREY GREEN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Strongly foliated schist typical of that occurring up section. Steep angle of foliation (~70-80 deg? TCA). Numerous buck white quartz veins (0.5-15 cm wide) at a high angle TCA (55-85 deg). Many quartz veins have fractures filled with variably limonitized sulphides & green chlorite (often at the vein/schist contact). Late, creamy white to yellow-brown calcite/limonite veinlets (1-3 mm wide) cut the schist at 66-75 deg. TCA. Some sections of core are strongly fragmented. The lower 1 m of core is a rubble zone with intense ferrunginization & carbonatization - likely a shallowly dipping fault.	QZ/FE/CAR	STR FOL	WK TO STR	WK PO/PY	QZ/CAL/LIM

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
64.31	79.25	FINE GRAINED BLEACHED WHITE QUARTZ FELDSPAR PORPHYRY Strongly silicified, ferrunginized, & argillized porphyry. Similar to the high-level dykes/sills in other DDH's. Whitish feldspar phenocrysts (1-4 mm long, euhedral, 5-7% of rock) and glassy-grey quartz phenocrysts (1-4 mm diameter, euhedral hexagons 5-7% of rock) in fine-grained matrix. Pyrrhotite & pyrite occur as small disseminations (grains < 2mm wide) and in thin fractures with yellow-brown limonite. Limonite staining intense adjacent to limonite fractures (2-5 cm wide alteration halo). Calcite/limonite veining NOT found in this section unlike porphyry below. Core structure ranges from massive to rubble, with fracture surfaces stained with yellow limonite and black manganese dendrites.	FE/QZ/AR	MASS	MOD/STR	WK PO & PY	LIM
79.25	79.60	FINE GRAINED LIGHT GREY GREEN QUARTZ FELDSPAR PORPHYRY INTRUSIVE CONTACT?? between strongly silicified, ferrunginized, & argillized quartz-feldspar porphyry & fresher, medium grey-green quartz-feldspar porphyry below. Contact is fairly sharp at ~30 deg. TCA. There is no brecciation or fault gouge. It may be an alteration front (chemical contact) marking the limit of Si- & Fe-rich fluid infiltration into the higher sections of porphyry. Alternatively, it may be an intrusive contact between two batches of cogenetic granite porphyry magma. The altered porphyry reflects a more hydrous melt with more intense autometasomatism. Altered porphyry has white feldspar phenocrysts (1-4 mm long, euhedral, 5-7% of rock) and glassy-grey quartz phenocrysts (1-4 mm diameter, euhedral hexagons 5-7% of rock) in fine-grained matrix. Pyrrhotite & pyrite occur as small disseminations (grains < 2mm wide) and in thin fractures with yellow-brown limonite. Limonite staining intense adjacent to limonite fractures (2-5 cm wide alteration halo). White feldspar phenocrysts in the fresher grey-green porphyry are more abundant (5-10% of rock) & larger (1 mm - 1.7 cm) than in the altered porphyry. Glassy grey quartz phenocrysts account for only 2-5% of the fresh porphyry. Amphibole phenocrysts in the fresher porphyry are preserved & comprise 2-4% of the rock. Fractured core surfaces are stained with yellow limonite and black manganese dendrites. Green chlorite & calcite alteration noted in the zone (0.5 m) surrounding the contact.	QZ/FE/AR/CAR	INTRUSIVE CONTACT	MOD	WK SULP?	CAL
79.60	101.00	FINE GRAINED MEDIUM GREEN GREY QUARTZ FELDSPAR PORPHYRY Fairly fresh granite porphyry with large white feldspar phenocrysts (1 mm - 1.7 cm long, euhedral, 5-10% of rock) and glassy-grey quartz phenocrysts (1-4 mm diameter, euhedral hexagons 2-5% of rock) in fine-grained matrix. Dark green amphibole phenocrysts comprise 2-4% of the rock. Pyrrhotite & pyrite occur	QZ/FE/AR/CAL	MASS	WK/MOD	WK PO/PY	CAL/LIM/CL

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		as small disseminations (grains < 2mm wide) and in thin fractures with yellow-brown limonite. Limonite staining intense adjacent to limonite fractures (1-3 cm wide alteration halo). Fractured core surfaces are commonly stained with yellow limonite and black manganese dendrites. High angle calcite veins with pale green chlorite/epidote alteration selvages (up to 10 cm from veins). 80.57-81.00 FAULTED QUARTZ FELDSPAR PORPHYRY Intensely ferrunginized & carbonatized porphyry (feldspar phenocrysts still visible). Brecciated porphyry fragments are elongated & cemented in a matrix of yellow-brown limonite/calcite. This is a minor FAULT. 81.50-81.80 FAULTED QUARTZ FELDSPAR PORPHYRY Intensely ferrunginized & carbonatized porphyry breccia (feldspar phenocrysts still visible). Porphyry fragments are elongated & cemented in a matrix of yellow-brown limonite/calcite. This is a minor FAULT. 86.15-86.35 FAULTED QUARTZ FELDSPAR PORPHYRY Minor fault with both upper & lower contacts at ~50 deg. TCA. Intensely ferrunginized & carbonatized porphyry fragments are elongated & cemented in a matrix of yellow-brown limonite/calcite.This alteration appears to overprint earlier, 1 cm wide, white calcite/chlorite veins. 88. 50-88.60 LIGHT GREY GREEN XENOLITHS Zone in the quartz-feldspar porphyry which contains 5 mm to 1.5 cm wide xenoliths (enclaves) of pale grey-green granodiorite(?). 95.40-96.00 YELLOW BROWN LIMONITE-CARBONATE ALTERATION ZONE Highly carbonatized and limonitized zone in the middle of porphyry. It does not show evidence of faulting. May be a fluid pathway.					
101.00	102.41	ORANGE-BROWN BROKEN CORE FAULT Intensely ferrunginized & carbonatized core (broken fragments). Highly sheared FAULT ZONE. Silicification, sericitization, argillization are also prominent. Black maganese dendrites & green malachite on the surfaces of fractured core.	CAR/FE/ QZ/SE	SHEARE D	STR	MAL	
102.41	104.00	FINE GRAINED PALE PINK-GREEN AMPHIBOLE-GARNET-DIOPSIDE-CALCITE SKARN Skarn comprises mainly pinkish calcite with minor intervals of pale to medium green diopside/amphibole skarn. Pinkish-red garnet is minor. Yellow sericite associated with zones of diopside/amphibole skarn. Upper contact with porphyry is rubbled; lower contact with porphyry is ~50 deg. TCA.	SKARN	MASS	WK	WK SULP?	AMP

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
104.00	105.15	FINE GRAINED FAULT QUARTZ FELDSPAR PORPHYRY Intensely carbonatized & ferrunginized porphyry (broken core). Highly sheared FAULT ZONE (at 20 deg. TCA) adjacent to skarn. Minor cross-cutting, white calcite veinlets (< 5 mm wide). Lower contact with less ferrunginized porphyry is 78 deg. TCA. Here, thinly banded, calcite-rich & limonite-rich layers (1-2 mm wide) give the rock a striped appearance.	CAR/LIM	SHEARE D FAULT	STR	WK	CALCI TE
105.15	125.00	FINE GRAINED YELLOWISH GREY QUARTZ FELDSPAR PORPHYRY Intensely carbonatized, silicified & limonitized porphyry. Similar to porphyry up section at 14.9 - 17.4 m. Abundant yellowish-brown-black limonite veinlets (after sulphides) & black mangnese oxides. Pyrrhotite & pyrite are widely disseminated in porphyry & are commonly limonitized. White calcite veinlets cut at a low angle TCA. Although much of the porphyry is bleached white from argillic alteration, remnant phenocrysts of whitish feldspar (1-5 mm long, 3-7% of rock) and glassy-grey quartz (1-5 mm wide, 2-5% of rock) are visible. Except for the intensity of carbonic & argillic alteration, this rock is very similar to the fresher grey-green porphyry above (79.6-101.0 m).	CAR/AR/ QZ/FE	MASS TO FRIABLE	MOD/ STR	WK PO & PY	CAL/LI M
125.00	125.50	FINE GRAINED GREEN GREY QUARTZ FELDSPAR PORPHYRY Intensely carbonatized & chloritized porphyry with a greenish tinge to it. Abundant thin (< 2 mm wide), white calcite veinlets.	CAL/CHL /QZ	MASS	STR	WK	CAL
125.50	128.30	FINE GRAINED CREAM WHITE QUARTZ FELDSPAR PORPHYRY Porphyry with a pink tinge to it (hematite staining?) & greenish black specks (1-3 mm across) of chlorite/limonite/pyrrhotite/pyrite. Rock has a brecciated appearance, but the angularity of the porphyry fragments? (homolithic frags.) suggests this may be an incipient chemical breccia. Initially, intense argillic alteration along a cross-cutting array of fractures, separated the porphyry into zones of weakly & strongly argillized rock. Later silicification stopped the brecciation process.	QZ/HEM/ CL/FE	MASS BRECCI A?	MOD/ STR	WK SULP	ARGIL LIC?

*** END OF HOLE *** 128.30

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JULY 12, 1996
HOLE NO.: RC-96-05	**DATE COMPLETED**: JULY 18, 1996
LOCATION: UTM - 6616711 N, 518394 E LOCAL - 15127 N, 5117 E	**GROUND ELEVATION**: 1876 m
LOGGED BY: STEPHEN ROWINS	**AZIMUTH**: 248°
DATE: JULY 14, 1996 onwards	**INCLINATION**: -60° at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 152.4 m (500 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: Fifth hole of the program. Drilled off the third, most northerly drill pad, to intersect the down-dip extension of the surface skarn.

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
0.00	19.30	FINE GRAINED MEDIUM GREEN CRYSTAL-LITHIC FELSIC LAPILLI TUFF Volcaniclastic rock with abundant feldspar phenocrysts (white, euhedral, 1-5 mm long, 3-7% of rock), amphibole/biotite phenocrysts (greenish-black but commonly altered to chlorite, euhedral, 0.5-3 mm wide, 1-3% of rock) & lithic fragments (clasts). Many feldspars are altered to green epidote/chlorite & yellow sericite. Lithics range from ~ 5 mm up to 5 cm in diameter (average 1-2 cm diameter) & include, (a) angular, pale greenish pink, albite-scapolite-quartz-chlorite endoskarn (e.g., 11.45 m), (b) angular, dark green, chlorite-amphibole schist, (c) angular, dark brown, chlorite-amphibole -biotite schist, (d) pale grey quartz vein fragments, & (e) reddish (hematized), chlorite-amphibole schist. Thin (1-4 mm wide) lenses of partially oxidized pyrite & pyrrhotite. Black manganese dendrites on fractured surfaces. 15.30-15.90 FINE GRAINED CRYSTAL-LITHIC FELSIC LAPILLI TUFF BRECCIA Yellowish brown, limonite stained, volcaniclastic breccia. Bleached white fragments (5 mm to 5 cm) with zones of intense, pale green-yellow sericite/chlorite/epidote/quartz alteration are cemented in a brown limonite & calcite matrix. Some relict white feldspar phenocrysts in fragments. Veins of limonite/calcite cut fragments. Black manganese dendrites common. Core is soft & friable in zones of intense argillic/nontronitic alteration. Lower fault contact with Teepee Peak volcanics at 15.9 m is 70 deg. TCA.	CL/EP/QZ	MASS?	WK	WK PO & PY	
19.30	21.00	FINE GRAINED YELLOW BROWN TO CREAM WHITE CHLORITE-AMPHIBOLE SCHIST Intensely silicified, ferrunginized & bleached rock. Precursor lithology difficult to ascertain - may be quartz porphyry, volcaniclastics, possibly schist. Appears to be a faulted contact zone between volcaniclastics and underlying schist. Cave pebbles at 20.27-20.37 m.	QZ/AR/FE	BROKEN CORE	STR		
21.00	22.30	FINE GRAINED MEDIUM GREEN CHLORITE-AMPHIBOLE SCHIST Weakly to strongly foliated schist with foliation at a steep angle TCA. Foliation in some places highly contorted. Pinkish grey-white patches of albite/quartz/scapolite.	CL/AB/QZ/SCP	WK TO STR FOL	WK	WK SUL	
22.30	24.35	FINE GRAINED GREY WHITE QUARTZ PORPHYRY Silicified and bleached quartz+/-feldspar granite porphyry. Some sections soft and friable due to argillic alteration. Abundant yellow-brown limonite staining. Black manganese dendrites and green clays (sericite/nontronite/chlorite) common on fracture surfaces.	AR/QZ/FE	MASS TO FRIABLE	STR		

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
24.35	36.45	FINE GRAINED GREEN BROWN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Strongly foliated schist (55-65 deg. TCA) with brown, biotite-rich bands (1-4 mm wide) alternating with green amphibole-rich bands. Irregular zones of pinkish grey albite/scapolite alteration. Upper contact with quartz porphyry is 70 deg. TCA. Lower contact with quartz porphyry is 75 deg. TCA. Buck white quartz veins at 29.4 & 30.5 m. White, 1 cm wide calcite vein at 36.1 m, surrounded by a 2 cm wide alteration selvedge of brown (Fe-stained) calcite/dolomite. 29.40-29.55 BUCK WHITE QUARTZ VEIN Barren of sulphides. Upper contact with schist is at 65 deg. TCA. Lower contact with schist is 65 deg. TCA. 30.50-30.80 BUCK WHITE QUARTZ VEIN Barren of sulphides. Upper contact with schist is at 73 deg. TCA. Lower contact with schist is 63 deg. TCA.	CL/QZ/A B/SCP	STR FOL	WK	WK PO/PY	CAR
36.45	47.40	FINE GRAINED BLEACHED WHITE QUARTZ FELDSPAR PORPHYRY Intensely argillized porphyry. Total destruction of original rock fabric has made the identification of original quartz & feldspar phenocrysts impossible. May be either quartz porphyry or quartz-feldspar prophyry. Black manganese dendrites and green-yellow nontronite/chlorite clays cover fractured surfaces.	AR/CL/N ON/SE	FRIABLE & CLAYE Y	VERY STR	WK SUL	
47.40	55.85	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Gradational change over several metres from intensely argillized porphyry to intensely silicified quartz-feldspar porphyry such as seen at the bottoms of RC-96-01 & 02. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) & in thin fractures with limonite. Lower contact with schist is at 80 deg. TCA. This quartz-feldspar porphyry is clearly related to the more argillized porphyry up section. Therefore the silicified/argillized quartz prophyries in all DDH's are likely slight compositional variants of the fresh quartz-feldspar porphyry unit.	AR/QZ/C L/FE	MASS	WK/M OD	WK PO/PY	
55.85	56.80	FINE GRAINED DARK GREEN CHLORITE-AMPHIBOLE-BIOTITE SCHIST Strongly foliated schist (~65 deg. TCA) with numerous quartz boudins & veins oriented in the plane of foliation. Dark brown sections are biotite-rich. Dark green sections are amphibole/chlorite-rich. Significant (1-2%?) pyrrhotite occurs as both disseminations & in hairline fractures commonly oriented parallel to the foliation. Syn-deformational mineralization? Lower contact with quartz-feldspar porphyry is at ~47 deg. TCA.	CL/QZ	STR FOL	WK	WK/MO D PO & PY	QZ

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
56.80	66.90	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified quartz-feldspar porphyry such as up-section at 47.4-55.85 m. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites are common and form a peripheral band (1-5 mm) adjacent to the limonite alteration haloes surrounding limonite veinlets. Irregular lower contact with skarnified schist at 66.9 m is 45 deg. TCA. This quartz-feldspar porphyry is clearly related to the more argillized porphyries up section.	QZ/FE/AR/CL	MASS	WK/MOD	WK PO & PY	LIM
66.90	68.40	FINE GRAINED MEDIUM GREEN CHLORITE BIOTITE AMPHIBOLE SKARN Foliated schist (~45 deg. TCA) with sections of massive, pale green to whitish grey, diopside-amphibole-quartz-calcite skarn. Pyrrhotite strongly associated with (1) dark brown biotite-rich intervals, & (2) in thin (1-4 cm wide) quartz veins oriented at 45 deg TCA (same as schist fol.). Lower contact with quartz-feldspar porphyry (55 deg. TCA) is partly faulted/brecciated. Angular, 1-5 mm wide fragments of porphyry are cemented in a siliceous matrix in the contact zone. 67.14-67.20 BUCK WHITE QUARTZ VEIN Vein cuts at ~45 deg. TCA. Fractures filled with pyrrhotite. 67.26-67.35 FINE GRAINED DIOPSIDE-AMPHIBOLE-CALCITE-QUARTZ SKARN Massive, texturally-destructive zone of skarn with abundant pyrrhotite.	DI+AMP SKARN	FOL TO MASS	WK	WK/MOD	QZ
68.40	76.30	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified quartz-feldspar porphyry. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites are common. This quartz-feldspar porphyry is clearly related to the more argillized porphyries up section.	QZ/AR/FE/CL	MASS	WK/MOD	WK PO & PY	LIM

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
76.30	79.76	FINE GRAINED PALE PINK-GREEN EPIDOTE-CALCITE-GARNET-DIOPSIDE SKARN Pale greenish-pink skarn in contact with quartz-feldspar porphyry at 25 deg. TCA (upper contact). Non-magnetic.	SKARN	MASS	WK	WK PY/PO	
79.76	81.20	FINE GRAINED MEDIUM GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST Strongly foliated schist (~65 deg. TCA) with weak diopside-garnet-calcite skarn development. Pale greyish-green albite-scapolite patches associated with skarn. 1-4 mm wide lenses of pyrrhotite in dark brown biotite-rich bands in schist & are oriented with the plane of foliation. Thin (<1 mm wide) veinlets of calcite/chlorite in schist. Lower contact with porphyry is very sharp (but not faulted) & at 68 deg TCA.	WK SKARN	FOL TO MASS	WK	WK/MOD SUL	CAR/CL
81.20	84.40	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified & ferrunginized quartz-feldspar porphyry. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Odd cauliflower texture exhibited by of some feldspars (?) when veiwed with hand-lens. Possibly scapolite alteration. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites & greenish nontronite/chlorite clays are common. This quartz-feldspar porphyry is clearly related to the porphyries up section. 83.00-84.40 ARGILLIZED QUARTZ FELDSPAR PORPHYRY Intensely argillized section of porphyry	QZ/AR/FE/CL	MASS	WK/MOD	WK PO/PY	
84.40	88.85	FINE GRAINED GREYISH GREEN-BROWN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Quartz-veined, strongly foliated (variable 60-80 deg. TCA) schist with alternating biotite-rich & chlorite/amphibole/quartz-rich bands. Abundant pyrrhotite (2-5%) is aligned at ~80 deg TCA as thin lenses (1-3 mm wide) within the biotite-rich bands. Quartz veins (5 mm-20 cm wide) in schist are generally oriented at ~60 deg. TCA. Biotite appears to replace the green chlorite/amphibole/quartz bands (e.g., 84.95 m where biotite bands wrap around fragments of amphibole schist - potassic alteration?). Upper contact with quartz-feldspar porphyry is 55 deg. TCA. Lower contact with quartz-feldspar porphyry is 70 deg. TCA. 84.95-85.00 FINE GRAINED CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Biotite foliation wraps around fragmented schist 85.20-85.28 BUCK WHITE QUARTZ VEIN	CL/QZ	STR FOL	WK	WK PO	QZ

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		Fractures in vein filled with pyrrhotite. 87.00-87.18 BUCK WHITE QUARTZ VEIN Fractures in vein filled with black limonite & pyrrhotite. Whitish fragments in vein are albite (?) or just another generation of quartz. 87.80-88.00 BUCK WHITE QUARTZ VEIN Fractures in vein filled with pyrrhotite.					
88.85	92.35	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified & ferrunginized quartz-feldspar porphyry. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Possibly albite-scapolite alteration. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites & greenish nontronite/chlorite clays are common. This quartz-feldspar porphyry is clearly related to the porphyries up section. Lower contact with schist is 80-90 deg. TCA.	QZ/AR/FE/SCP	MASS	WK/MOD	WK PO/PY	
92.35	94.20	FINE GRAINED LIGHT GREY-GREEN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Quartz-veined, strongly foliated (80-90 deg. TCA) schist with alternating dark brown biotite-rich & green amphibole-rich bands (1-4 mm in thickness). Green chlorite preferentially associated with biotite. Abundant pyrrhotite (1-3%) is aligned at ~80 deg TCA as thin lenses (1-3 mm wide) within the biotite-rich bands. Quartz veins (5 mm-2 cm wide) & boudins (<1 cm wide) in the schist are generally oriented in the plane of foliation. Bluish-green amphibole skarn overprints foliated biotite-amphibole schist. Lower contact with quartz-feldspar porphyry is 60 deg. TCA. 92.60-93.00 MEDIUM GREEN AMPHIBOLE SKARN Texturally-destructive amphibole skarn replacing biotite-amphibole schist.	CL/QZ	FOL TO MASS	WK	WK PO/PY	QZ
94.20	99.75	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified & ferrunginized quartz-feldspar porphyry. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Partly altered to green-yellow epidote-sericite. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) after mafic phenocrysts & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites & greenish nontronite/chlorite clays are common. Lower contact with schist is at 65 deg. TCA.	QZ/AR/FE/CAR	MASS	WK/MOD	WK PO/PY	

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
99.75	111.00	FINE GRAINED MEDIUM GREEN GREY CHLORITE-BIOTITE-AMPHIBOLE SCHIST Strongly foliated schist (55 deg. TCA) with abundant high angle, buck white quartz-albite-sulphide veins (5 mm- 3 cm wide). Foliation is highly contorted around some quartz veins (S-folded), but is generally defined by very thin (<1 mm wide) dark mafic bands alternating with light grey quartz-rich bands. Pyrrhotite & pyrite associated with green chlorite which overprints the schist along thin (1-2 mm wide) fractures. Disseminated magnetite in schist. Some sections are very weakly carbonated. Lower contact with quartz-feldspar porphyry at 55 deg. TCA.	CL/QZ/FE/CAR	STR FOL	WK	WK PO/PY	QZ & CAR
111.00	114.85	FINE GRAINED GREY WHITE QUARTZ FELDSPAR PORPHYRY Intensely silicified & ferrunginized quartz-feldspar porphyry. Glassy grey, hexagonal quartz eye phenocrysts are 1-2 mm across & 1-3% of the rock. White feldspar phenocrysts are 1-4 mm long laths & 4-8% of the rock. Partly altered to green-yellow epidote-sericite. Pyrrhotite & pyrite occur as small disseminations (grains <2 mm) after mafic phenocrysts & in thin fractures with limonite. Limonite staining is pervasive & especially well-developed around limonite veinlets (1-4 cm wide alteration halo). Black manganese dendrites & greenish nontronite/chlorite clays are common.	QZ/AR/FE/CAR	MASS	WK/MOD	WK PO/PY	
114.85	124.80	FINE GRAINED MEDIUM GREEN CHLORITE-QUARTZ-BIOTITE-AMPHIBOLE SCHIST Strongly foliated (~70 deg TCA) schist with skarn replacement. Pyrrhotite abundant in dark brown biotite-rich bands. Some zones of strongly contorted foliation with parasitic Z-folds (118.2 m). Thin quartz veins (5 mm- 15 cm) with white-grey albite & minor pyrrhotite/pyrite oriented in the plane of foliation. 121.00-121.45 DARK BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Abundant pyrrhotite in foliated biotite-rich bands. 121.45-122.00 LIGHT GREENISH PINK EPIDOTE-QUARTZ-ALBITE-SCAPOLITE-DIOP SKARN Fine-grained skarn with hematized(?) albite-scapolite. Z-folds defined by pale green chlorite-diopside skarn bands (1-2 mm wide) interlayered with hematized albite-scapolite. Minor calcite 122.65-122.90 LIGHT GREENISH PINK EPIDOTE-QUARTZ-ALBITE-SCAPOLITE-DIOP SKARN Fine-grained skarn with hematized(?) albite-scapolite. Pale green chlorite-diopside skarn bands (1-2 mm wide) interlayered with hematized albite-scapolite. Minor calcite	SKARN	STR FOL TO MASS	WK	WK/MOD PO/PY	QZ/CAR

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		123.00-123.70 BLUISH GREEN AMPHIBOLE SKARN Abundant bluish-green amphibole skarn replacing greenish brown amphibole-biotite schist.					
124.80	126.00	FINE GRAINED LIGHT GREEN GREY DIOPSIDE-ALBITE-SCAPOLITE-EPIDOTE-AMPHIBOLE ENDOSKARN Endoskarn developed over quartz-feldspar porphyry. Very Silicified. The skarn is formed in the 1 m transition zone from schist to porphyry. Only minor sulphide/limonite. Good evidence that DIOPSIDE-ALBITE-SCAPOLITE-EPIDOTE-AMPHIBOLE SKARNS IN OTHER DRILLHOLES ARE RELATED TO INTRUSION OF QUARTZ-FELDSPAR PORPHYRY. THESE SKARNS AT LEAST, ARE CLEARLY FORMED BY THE INTERACTION BETWEEN PORPHYRY AND COUNTRY ROCK (i.e., See RC-96-04).	SKARN	MASS	WK	WK SULP	
126.00	135.50	FINE GRAINED LIGHT GREY QUARTZ FELDSPAR PORPHYRY Silicified porphyry with feldspars altered to yellow sericite & green epidote/chlorite. Strongly fractured & slightly deformed. Fractures filled with green chlorite. Abundant black manganese dendrites & hematitic staining. Black magnetite veinlet (6 mm wide) at 131.85 m	QZ/CL/FE	MASS TO WK FOL?	WK/MOD	WK SULP	CL & MAG
135.50	152.40	FINE GRAINED MEDIUM GREEN QUARTZ FELDSPAR PORPHYRY Gradational contact. Change in porphyry appearance from fairly silicified to fresh & undeformed. White feldspar phenocrysts (1-6 mm long) comprise 5-15% of rock. Green-black mafic phenocrysts (0.5-3 mm long) are ~2-7%. Numerous fine-grained diorite (?) & melagranitoid xenoliths. Suggests porphyry magma rose through 187 Ma diorite-hornblendite at depth. Some cognate xenoliths too. Xenoliths vary from <1 cm up to 10 cm in diameter (probably larger, but core diameter limits size estimates). Cognate xenoliths are typically fine grained, dark grey, with whitish feldspar phenocrysts & black mafics (biotite/amphibole). Cognate xenoliths usually only show minor reaction rims. Very little veining in porphyry except for thin (1 mm wide) calcite veinlets. Non-magnetic. Very few quartz phenocrysts here, unlike porphyries higher up. However, spatial/compositional relationships in the drillcore demonstrate that all these porphyries are part of the same magma series.	CL/QZ	MASS	WK		

*** END OF HOLE *** 152.40

WESTMIN RESOURCES LIMITED - DRILL LOG SUMMARY

PROJECT: RACINE (BRITISH COLUMBIA)	**DATE STARTED**: JULY 18, 1996
HOLE NO.: RC-96-06	**DATE COMPLETED**: JULY 22, 1996
LOCATION: UTM - 6616711 N, 518394 E LOCAL - 15127 N, 5117 E	**GROUND ELEVATION**: 1877 m
LOGGED BY: STEPHEN ROWINS	**AZIMUTH**: 248°
DATE: JULY 20, 1996 onwards	**INCLINATION**: -85° at collar
CONTRACTOR: E. CARON DIAMOND DRILLING, WHITEHORSE, YUKON TERRITORY	**TOTAL LENGTH**: 139 m (456 ft)
CORE SIZE: NQ	**CORE RECOVERY**: VERY GOOD
DIP TESTS: NONE	**COMMENTS**: Final hole of the program. Drilled off the third, most northerly drill pad, to intersect the down-dip extension of the surface skarn.

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
0.00	25.15	FINE GRAINED MEDIUM GREEN GREY CRYSTAL-LITHIC FELSIC LAPILLI TUFF Intensely to weakly altered & deformed volcaniclastic rock with fresh feldspar phenocrysts (white, euhedral, 1-7 mm long laths, 2-7% of rock) & amphibole/biotite phenocrysts (dark green-black, euhedral, 1-3 mm long, 1-7% of rock). Feldspars may show cross-twinning, glomerocrystic habit & varying degrees of alteration to yellow epidote/sericite. Angular, heterolithic, clasts (2 mm to 6 cm diameter) include, (1) dark green amphibole schist with yellowish-white sericite/chlorite reaction rims, (2) black mafic clasts (mafic dyke/biotite schist?), (3) greyish-white albite-scapolite-quartz clasts (endoskarn?), (4) whitish-grey felsic clasts (quartz vein?), (5) greenish-white quartz-feldspar-cpx? (granodiorite?). Thin (1-3 mm wide reaction rims) surround some clasts, particularly, the black mafic clasts. Overall rock colour is one of a dark grey-green groundmass with small white feldspars & black mafic phenocrysts, plus numerous, larger, dark green-brown clasts. A generallized foliation is absent. 18.10-18.60 YELLOW-GREEN TO YELLOW-BROWN CRYSTAL-LITHIC FELSIC LAPILLI TUFF Limonitized Teepee volcanics with white-yellow calcite/limonite veins at 55 deg. TCA. Core is commonly rubbled. Fracture surfaces show black manganese dendrites & yellow-brown limonite staining. 18.60-20.00 MEDIUM GREEN CRYSTAL-LITHIC FELSIC LAPILLI TUFF Teepee volcanics cut by yellow-brown limonite veins (<1 cm wide) at ~20 deg. TCA. 20.00-25.15 RUSTY RED CRYSTAL-LITHIC FELSIC LAPILLI TUFF Extensively rubbled Teepee volcanics with intense, rusty red, limonite/hematite staining. Whitish calcite/quartz alteration, & greenish chlorite/argillite clays are abundant. This is the faulted unconformity between the overlying Teepee volcanics & underlying Boundary Ranges Metamorphics. Chlorite-quartz-biotite-amphibole schist. Unconformity also present in DDH's RC-96-03, -04, & -05.	CL/CAR/ EP/SE	MAS TO CONTOR -TED FOL	WK	TR SUL	
25.15	63.40	FINE GRAINED MEDIUM GREEN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Strongly foliated schist (70-75 deg. TCA) overprinted by a wide variety of alteration/skarn events. Identical to schist in DDH's RC-96-04 & -05. Foliation typically defined by pale grey quartz (albite?)-rich bands (<1 to 3 mm wide) alternating with dark green chlorite/amphibole bands in silicified sections of core (e.g., 26.8-27.9 m). In other places, thin (<1 to 3 mm wide), brown-black, biotite-rich bands alternate with	QZ/CL/F E/CAR	STR FOL TO BRECC.	WK TO STR	WK PO/PY/ CPY/MA L	QZ/LI M/CAL / CL-AMP

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
		bluish-green amphibole bands. These foliated bands are at a shallower angle TCA (~35 deg.) & are essentially amphibole skarn. Small (1 mm wide), deformed, white crystals(?) in some biotite-rich schist may be original feldspar/quartz(?) phenocrysts/porphyroblasts. Many sections show intense silicification with numerous pale grey quartz veinlets/veins oriented in the plane of foliation (1-3 cm wide; normally barren). Whitish calcite and yellow-brown limonite are abundant in both thin veinlets (<2 mm wide) & as diffuse alteration patches. Non-magnetic. Minor sulphide (mainly in limonitized veinlets). 28.55-28.75 YELLOWISH GREY QUARTZ VEIN Yellow-brown limonite fills fractures in broken quartz vein. Abundant yellowish green sericite/chlorite alteration. Upper contact with schist at 60 deg. TCA. 29.72-30.00 GREY QUARTZ VEIN Fractured quartz vein with fracture-filling brown limonite. White, albitic plagioclase & green chlorite in some thin fractures & irregular patches. Upper contact is rubble. Lower contact 56 deg. TCA. 32.00-36.50 GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Strongly foliated schist (35 deg. TCA) defined by dark brown biotite-rich bands (1-5 mm wide) and pale grey-green quartz bands. Between 33.4 and 34.5 m is a very ferrunginized & deformed section of core - possibly a minor fault. Green malachite & limonite on fracture surfaces 36.85-37.00 LIME GREEN EPIDOTE CHLORITE BIOTITE SCHIST 15 cm wide band of lime green epidote/amphibole alteration over schist. Some pyrrhotite & pyrite associated (especially in fractures). 37.00-38.00 BLUISH GREEN AMPHIBOLE SKARN Amphibole skarn with whitish quartz/albite replacing chlorite-quartz-amphibole-biotite schist. Amphibole & thin bands of whitish quartz/albite tend to follow foliation in the schist (~40 deg. TCA). 39.85-40.50 GREYISH BROWN ALTERATION Zone of intense brown calcite/limonite veining & alteration. Veins at ~40 deg. TCA (same orientation as foliation in schist). Minor chlorite/argillite alteration & incipient jigsaw brecciation. Trace of sulphide? 41.46-43.60 GREENISH GREY-YELLOW CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST					

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		Zone of strong yellow-brown limonite/carbonate veining/alteration over greenish grey schist. Highly strained & foliated (40-50 deg. TCA). The limonite/carbonate veins (1-8 mm wide) have up to 15 cm wide yellow-brown alteration haloes & are oriented in the plane of foliation. 47.00-47.60 BUCK WHITE QUARTZ VEIN Quartz vein with green amphibole alteration in greenish-brown schist. Minor chlorite infills fractures. 49.50-52.00 MOTTLED WHITE-GREEN AMPHIBOLE SKARN Chlorite amphibole skarn (medium green, & associated albite/quartz alteration (grey-white), replacing dark brown biotite-rich schist. Skarn is intensely altered by yellow-brown calcite/limonite veining. Minor sulphide in limonite fractures. Late calcite (whitish) are in random orientation. Minor epidote. 58.60-60.90 QUARTZ VEIN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Zone of intense quartz veining (1-25 cm wide veins) & associated minor amphibole skarn in foliated schist (~45 deg. TCA). Minor pyrrhotite/pyrite fill fractures in veins. Dark green chlorite/amphibole also fill fractures. Non-magnetic except for local pyrrhotite.					
63.40	67.40	FINE GRAINED TAN-BROWN GREEN DIOPSIDE-AMPHIBOLE SKARN Intensely ferrunginized, chloritized, silicified & carbonatized(?) diopside-amphibole skarn. The dark green patches are amphibole, with the paler green patches likely chloritized & sericitized diopside. The ferrunginization of the rock is so intense that it is unclear whether garnet and/or magnetite were originally present in the skarn. Magnetite has completely gone to limonite/hematite, & the yellow-brown Fe-staining masks the pinkish colour of typical garnet. The 5 mm to 1 cm diameter, yellowish-green euhedral crystals at 63.7 to 64.2 m may be epidotized/sericitized/limonitzed garnets. Thin (1-3 mm wide), cream-brown veins at very shallow angles TCA are quartz/limonite.	FE/QZ/SER/CL	STR FOL TO BRECC.	STR	STR SUL?	QZ/LIM/CAR?
67.40	70.00	FINE GRAINED LIGHT TO MEDIUM GREEN EPIDOTE-ALBITE-AMPHIBOLE SKARN Chloritized, sericitized, silicified, & carbonitized (diopside?) amphibole skarn over chlorite-quartz-amphibole-biotite schist. Much less ferrunginized than the preceding skarn interval. Pale grey patches of quartz-albite-scapolite alteration. Thin calcite veinlets (whitish-brown, 1-2 mm wide) cut at a low angle TCA. Foliation in schist at 65 deg. TCA. Weakly disseminated pyrite/pyrrhotite mineralization in skarnified schist.	SKARN	MASS TO FOL	WK	STR SUL?	CAR

From	To	Geological Log	ALT'N	STRUC	WEATI	MIN'L	VEINS
70.00	72.85	FINE GRAINED DARK GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST Typical schist with dark brown, biotite-rich bands alternating with green chlorite/amphibole/quartz bands (1-6 mm wide). Foliation at 53 deg. TCA. Buck white quartz veins (5 mm - 3 cm wide; 50 deg. TCA) are commonly boudinaged & fractured. Near quartz veins, foliation is contorted.	CL/QZ/	MOD FOL	WK	WK PO/PY	CAR & QZ
72.85	75.40	FINE GRAINED GREEN BROWN AMPHIBOLE SKARN Dark brown, strongly foliated (55-65 deg. TCA), biotite-rich schist partially replaced along foliation planes, & along fractures, by medium green quartz-albite-amphibole (?) skarn. Minor lime green epidote, yellow sericite, & white calcite alteration associated with skarn. Weak yellow-brown limonite staining after pyrite/pyrrhotite.	CL/QZ/AB/SCP	FOL. SKARN	WK	WK PO/PY	QZ/AMP/CAL
75.40	81.40	FINE GRAINED GREEN BROWN CHLORITE-QUARTZ-AMPHIBOLE-BIOTITE SCHIST/SKARN Strongly foliated (45-65 deg. TCA), schist partially replaced along foliation planes & fractures by medium green quartz-albite-amphibole skarn. Classic fracture-controlled skarn. Substantial sulphides (pyrrhotite mainly) are found with the amphibole skarn, & oriented in the plane of foliation in biotite-rich schist (e.g., 79-80 m). Minor lime green epidote, yellow sericite, & white calcite alteration associated with skarn. Weak yellow-brown limonite staining after pyrite/pyrrhotite. In sections of core that are skarn-free, the well-foliated biotite-amphibole bands in the schist are evident. Buck white quartz veins are common and show both boudinage (e.g., 76.4m) & faulting (e.g., 78.8 m). 77.05-77.40 YELLOWISH GREY QUARTZ VEIN Quartz vein with fractures filled with green chlorite & white albite(?). Minor limonite. Upper contact with schist ~80 deg. TCA. Lower contact with schist~75 deg. TCA.	CL/QZ/CAR/AB	FOL TO MASS	WK	WK /MOD PO/PY	QZ/AMP/CAL
81.40	139.00	FINE GRAINED GREY QUARTZ FELDSPAR PORPHYRY Weakly to moderately silicified, argillized, & limonitized porphyry. Upper contact with skarnified schist is sharp, at 53 deg. TCA. Similar to porphyry at the base of other DDH's. Pyrrhotite, pyrite, & lesser chalcopyrite and arsenopyrite are widely disseminated in porphyry (as 1-2 mm wide grains/clots) and in thin (0.5-3 mm wide) veinlets. They may show preferred orientation at 55 deg. TCA. More commonly, they are randomly oriented & form small stockwork-stringer zones. Brown limonite veinlets (after sulphides) plus surroundng alteration haloes (1-10 cm wide), & black mangnese oxides are common - similar to other porphyries (e.g., RC-96-05; 105.15 to 125 m). Rare, white calcite veinlets cut at a low angle TCA.	QZ/FE/AR/CAR	MASS	WK/MOD	MOD PO/PY/CPY/ASPY	CAR & QZ

From	To	Geological Log	ALT'N	STRUC	WEAT	MIN'L	VEINS
		Phenocrysts of whitish feldspar (1-5 mm long, 3-7% of rock), blackish biotite/amphibole? (1-3 mm long, 1% of rock), & glassy-grey quartz eyes (1-5 mm wide, 2-5% of rock) are visible. The proportion of quartz & feldspar phenocrysts can varying significantly over several metres. This PORPHYRY IS NOTABLE FOR ITS AMOUNT OF DISSEMINATED SULPHIDE AND STRINGER SULPHIDE MINERALIZATION. SIMILAR TO PORPHYRY COPPER-STYLE OF MINERALIZATION.					

*** END OF HOLE *** 139.00

APPENDIX B

PETROGRAPHIC AND MINERALOGIC REPORT

MINERALOGY OF SAMPLES FROM THE TP SKARN, ATLIN AREA, B.C.

Prepared for: **WESTMIN RESOURCES LIMITED**
Vancouver, B.C.

April 1996

LRC

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MINERALOGY OF SAMPLES FROM THE TP SKARN, ATLIN AREA, B.C.

EXECUTIVE SUMMARY

Mineralogical study of four samples from the TP claim, a Co-Au skarn prospect near Atlin, B.C., showed that they consist predominantly of diopside with generally minor, variable amounts of amphibole, chlorite, and magnetite ± mica ± talc. The principal sulfide mineral is cobaltite (Co,Fe)AsS, which occurs as relatively coarse grains (up to 1 mm along on edge) and as aggregates that are predominantly aligned along inconspicuous fractures bordered by "bleached" margins purged of host-rock disseminated magnetite. Crystallization of cobaltite was followed by fracturing and the formation of hairline-width veinlets of amphibole that are bordered by well-defined margins of bismuthinite (Bi_2S_3). Minute blebs of pyrrhotite and chalcopyrite are present in trace amounts as inclusions in cobaltite in all samples, and small amounts of arsenopyrite, pyrite, and a Bi telluride occur in individual samples. Numerous blebs of native bismuth, and numerous small blebs (all <15 µm) of native gold are common as inclusions within cobaltite, and both the bismuth and gold are restricted exclusively to this type of association. The relatively coarse grain size of cobaltite and the apparent confinement of native gold to occurrences within cobaltite indicate that high recoveries of Co and Au would be expected in a sulfide flotation concentrate.

INTRODUCTION

Four hand samples from the TP skarn, a Co-Au prospect at Teepee Peak, 50 km west of Atlin, B.C., were received from P. Lhotka in November 1995. The request was for reconnaissance petrographic work on the samples in reflected and transmitted light. The focus of the study was to be the determination of the mineral forms of Co and Au, if present, and characterization of the different types of skarn represented by the four samples.

To achieve the objectives the samples were examined megascopically and then were cut with a diamond saw to select sulfide-rich areas for microscopic examination. Five polished thin sections and three polished sections were prepared from opaque-rich areas; the off-cuts were crushed and the powders were used to obtain bulk mineral compositions by X-ray diffractometry. The sections were examined by optical microscopy, and sulfides in two of the sections were qualitatively checked by scanning electron microscopy with energy-dispersion capabilities. Individual sulfide minerals were identified by the Debye-Scherrer X-ray method, using mounts prepared while viewing the selected areas by optical microscopy.

The four as-received samples had been labeled with the prefix TP and the individual designations TR-1, TR-1 area, and TR-4 (two samples). The first two samples, and one of the TR-4 samples, were redesignated TP-1, TP-1A, and TP-4, respectively; the other TR-4 sample, which apparently had been selected because of its high magnetite content, was relabeled as TP-4M.

RESULTS

Sample TP-1

Megascopic

The smallest of the four samples, TP-1 prior to cutting was approximately 7 cm long and 2 cm thick; width at one end was 5 cm, tapering to 2 cm at the other. Maximum dimensions were at the weathered surface, which in part had black irregular patches and poorly developed dendrites of (apparently) Mn oxide. The fresh rock is pale, slightly greenish grey, and fine-grained. Sulfides are evident in multiple, hairline-wide fractures that are mainly discontinuous, but with a few extending the length of the sample. Sulfides also are evident as irregular patches and wisps, the largest roughly 2 × 7 mm. The cut surfaces of the sample show that the black patches and wisps are not a surface phenomenon; these extend throughout the rock, and black zones also form the margins of the hairline veinlets.

Microscopic and XRD

The rock consists largely of fine-grained, anhedral diopside. Average grain size is about 100 µm, and a few subhedral prisms up to 500 µm in length are present. The texture is uneven, somewhat mottled (Fig. 1), with coarser aggregates surrounded by finer grained and more turbid masses. The texture in part results from turbidity related to microfractures, but the main cause is that the coarser grains of diopside have a weakly radial arrangement, and these coarser groups are surrounded by fine-grained, anhedral diopside. Amphibole and traces of chlorite occur interstitially to the pyroxene, and account for most of the megascopic black patches. As well, however, a few disseminated aggregates of ilmenite, up to 0.5 mm across, are scattered in the host groundmass. The ilmenite varies from fresh to replaced extensively by rutile and titanite

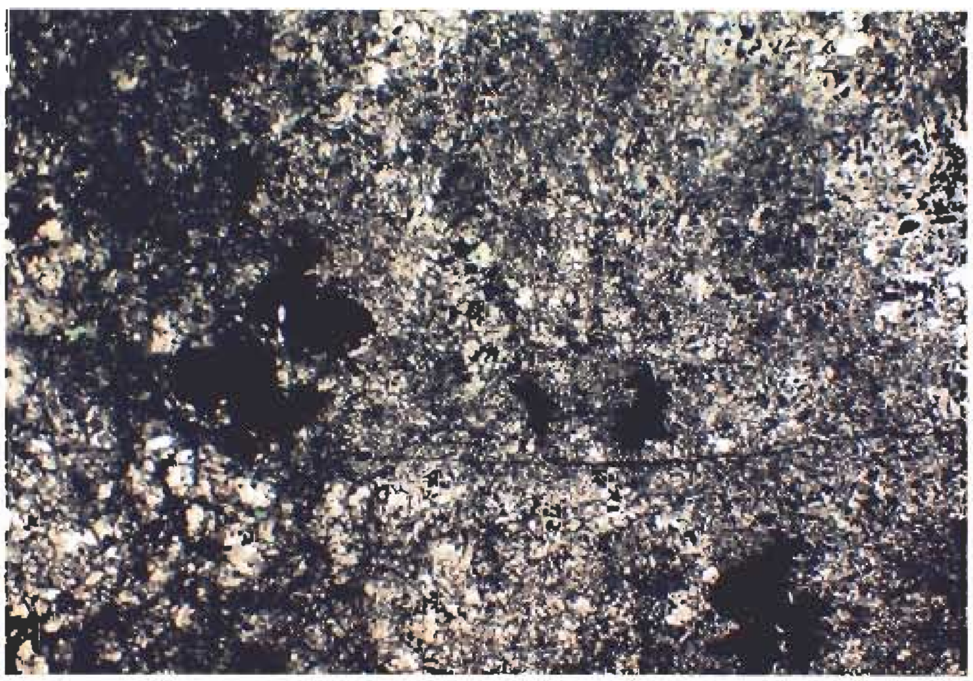


Figure 1. Transmitted-light overview of TP-1 (width of field 7.8 mm), showing a somewhat mottled texture of groundmass diopside, with slight greenish colour (especially upper left) reflecting the presence of amphibole. Large opaque grains are mainly ilmenite (see Fig. 2); small opaque peppering is mainly a spurious effect from polishing.

Figure 2. Reflected-light photo of TP-1, showing details of large opaque grains illustrated in Figure 1. The composite grains consist largely of ilmenite, titanite (grey, tn), and rutile (ru, white) in a dark grey groundmass of diopside. Fracture at left contains mainly epoxy, but black margins are erythrite. Width of field 2.0 mm.

(Fig. 2). The chlorite and ilmenite are too sparse to be detected in the bulk-sample X-ray diffractogram (Fig. 3).

The groundmass contains a few grains and ragged-edged aggregates of cobaltite (ideally CoAsS), with the aggregates up to 3-4 mm in diameter. The cobaltite occurs sporadically as patches in some parts of the matrix, but most grains seem to be related to fractures, though not as a discrete, fracture-filling constituent. Rather, the alignment of cobaltite grains into "trains" indicates a structural control even though, in some instances, no discrete fracturing is evident microscopically. In some cases the cobaltite trains are aligned with the "main" set of fractures, and some trains are partly incorporated within the fractures. This main set consists of sub-parallel veinlets, all of which are <1 mm in width, and some of which bifurcate. The veinlets consist of amphibole and well-defined margins of bismuthinite Bi_2S_3 (Fig. 4). Despite their narrowness, the veinlets are megascopically conspicuous because they appear, on planar surfaces, as black lines on a pale greenish background. The veinlets post-date the crystallization of the cobaltite, as is

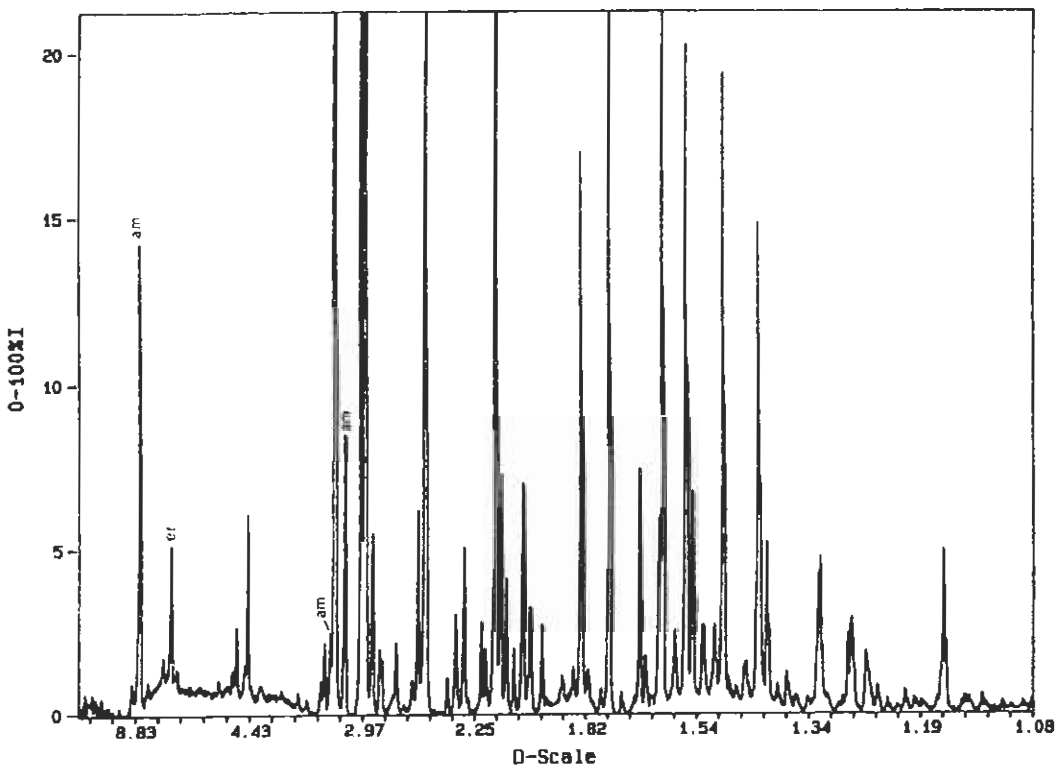


Figure 3. X-ray diffractogram of whole-rock sample of TP-1. Main peaks are attributable to diopside; other peaks are am amphibole, and er erythrite. Not detectable: chlorite, mica, talc.

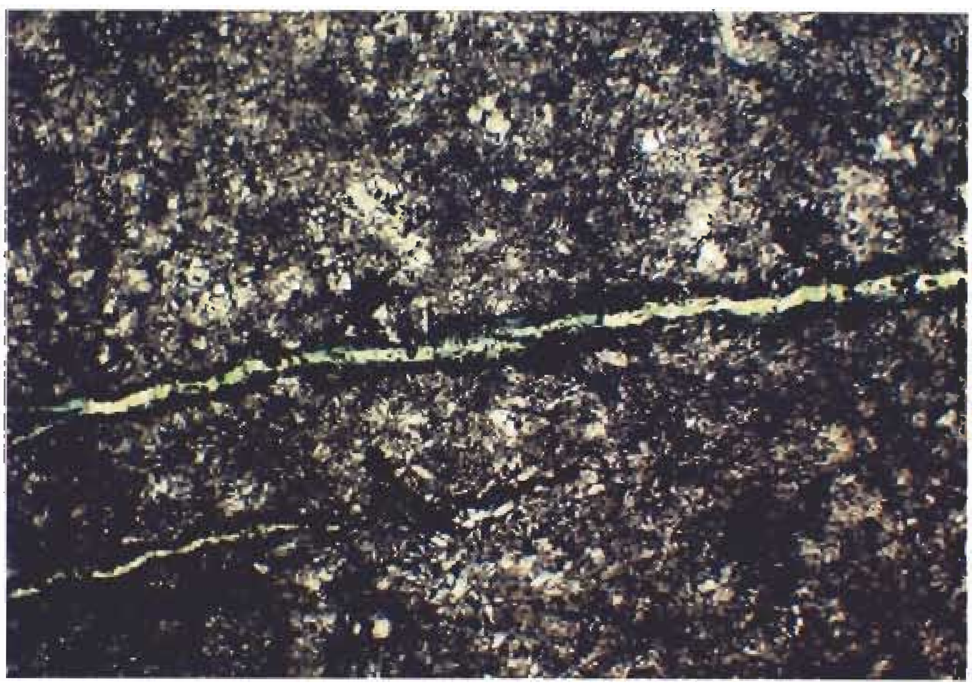


Figure 4. Transmitted-light photo of TP-1, showing veinlets of amphibole (green) with well-defined margins of bismuthinite (opaque); groundmass is diopside. Width of field is 7.8 mm.

evident from the partial penetration or deflection of the veinlets around the cobaltite aggregates (Fig. 5), and from the crosscutting relationships between cobaltite and bismuthinite (Fig. 6). Bismuthinite is closely restricted to these veinlets and to occurrences within cobaltite. Native bismuth and lesser amounts of native gold, as well as a minute bleb or two of almost submicroscopic pyrrhotite and chalcopyrite, occur exclusively within the cobaltite. The maximum size of the grains of native bismuth, which is relatively common, is about 30 μm across. The grains occur either in direct contact with bismuthinite, or as composite grains with bismuthinite in cobaltite. The maximum size of native gold is about 15 μm in diameter, but several grains, mostly <5 μm, were observed in the two sections available for TP-1. Other than being restricted to within cobaltite, the associations of the gold grains seem to be non-specific: the mineral occurs in contact with cobaltite alone, with composite grains of cobaltite and silicates, and with various combinations of bismuth–bismuthinite–cobaltite.

The sample contains at least four sets of fractures. The "main" or amphibole–bismuthinite set post-dates crystallization of cobaltite. Some of the trains of cobaltite do not have an observed fracture control, and yet none of these trains are aligned with the bismuthinite–amphibole veinlets, thus suggesting that cobaltite may not have crystallized at the onset of the stresses that produced the bismuthinite-bearing fractures. Nevertheless, the intimate relationships between amphibole and diopside, between amphibole and bismuthinite, and between bismuth and cobaltite suggest that all had a close genetic relationship to skarn formation. Additional minor fractures post-date the amphibole–bismuthinite veinlets, and a subsequent set of more conspicuous fractures also was formed. The last set was at least in part calcite-bearing, and is now the site for prominent veinlets of erythrite (Fig. 7).

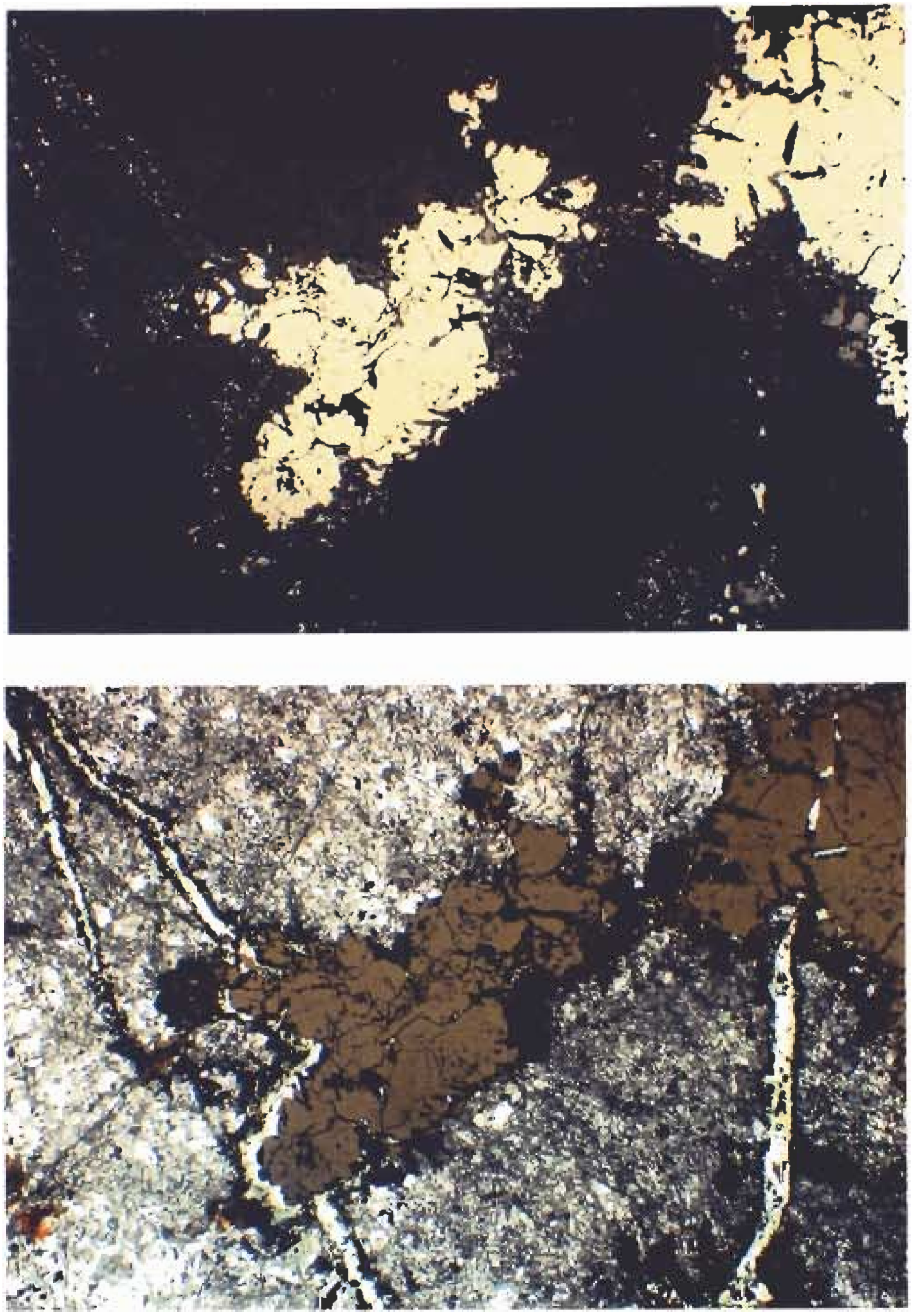


Figure 5. Reflected-light photo (top), showing aggregates of cobaltite (white) in a groundmass of diopside. Veinlets at upper left and bottom right are amphibole with fine-grained bismuthinite (white) margins. Bottom photo is the same area, shown in combined transmitted and reflected light. Note the deflection of the amphibole – bismuthinite veinlet at lower left, and partial penetration of cobaltite at right. Width of field 7.8 mm.

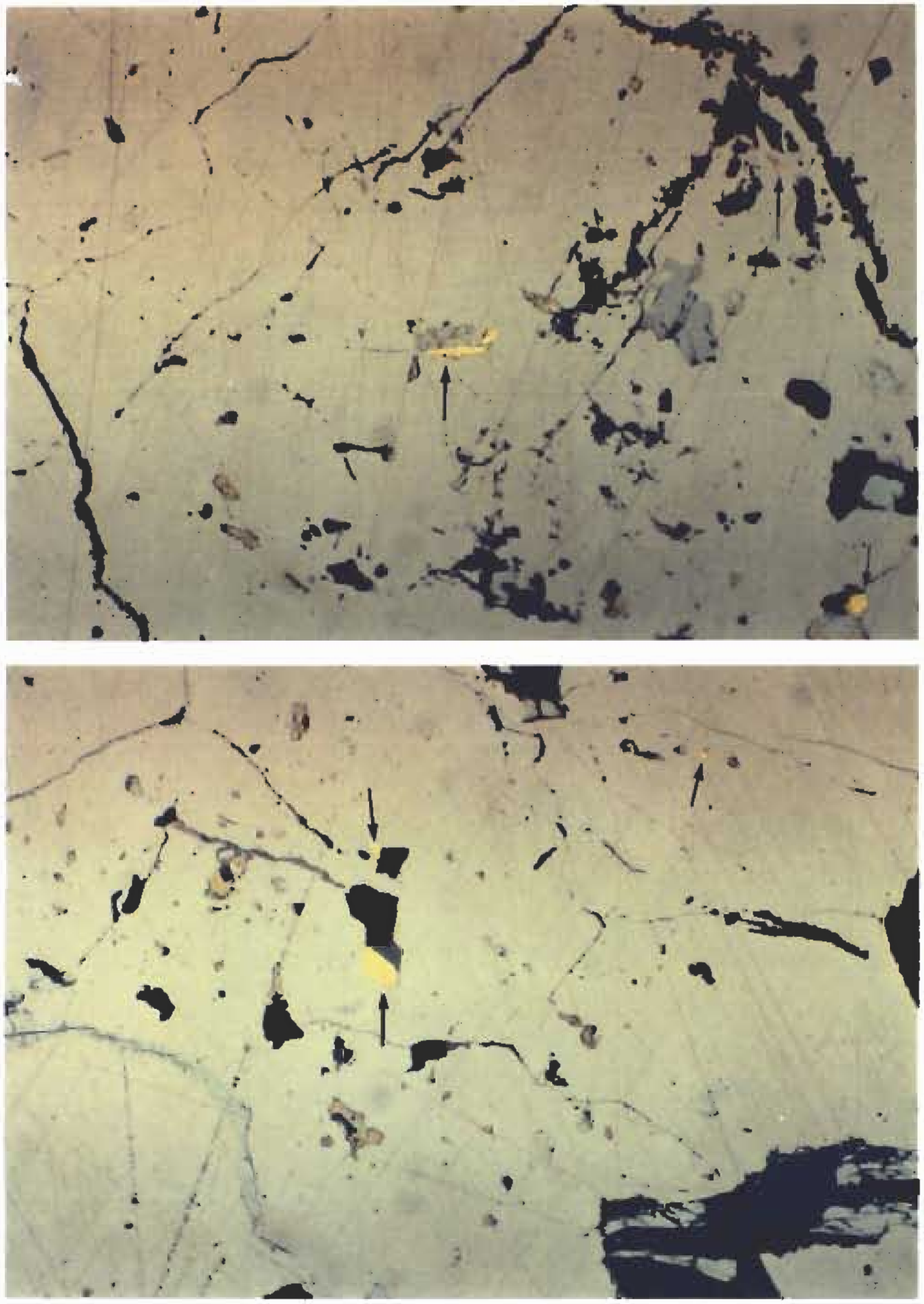


Figure 6. Reflected-light photos of native gold in cobaltite in TP-1. Upper photo shows three grains of gold (arrows) within cobaltite (central grain is about 5 × 25 μm); adjoining grey mineral at centre and bottom right is bismuthinite, slightly pinkish mineral is native bismuth (bi), and black veinlets are oxidation (weathering) effects. Lower photo shows three grains of native gold (largest grain is 8 × 12 μm), numerous inclusions of native bismuth, and veinlets of bismuthinite at lower left and right. Width of field 0.5 mm.

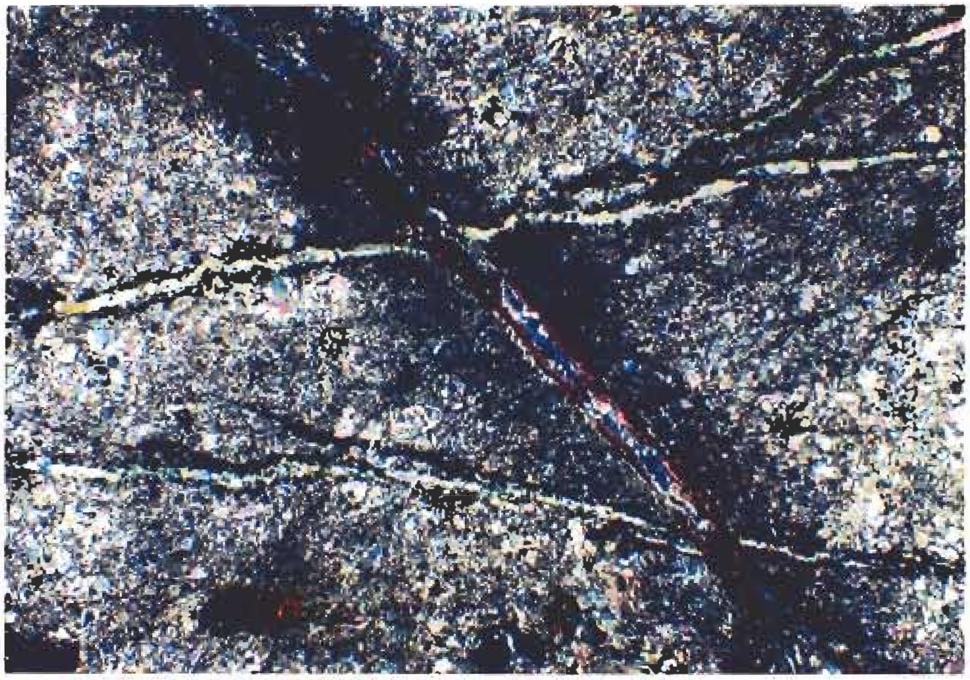


Figure 7. Amphibole–bismuthinite veinlets crosscut by late-stage veinlet that was probably calcite-bearing, and is now erythrite-bearing (pink). Transmitted light, crossed polarizers; width of field 7.8 mm.

Sample TP-1A

Megascopic

The sample was 7 × 4 × 4.5 cm, with most sides planar. Two weathered surfaces, and especially the parallel, fractured underside, were coated extensively with erythrite. Sparser, but still prominent erythrite was present on all other surfaces and in hairline fractures both parallel and at ~30° to the underside. Sparse goethite-like alteration was associated with two porous, sulfide-bearing, elongate patches, seemingly fracture-controlled.

The host rock is pale greenish grey, fine-grained, and is not uniform. Dark grey to black patches and wisps of silicate minerals are irregularly distributed: portions of the rock lack black minerals, whereas in other portions the light and dark portions are intermixed, typically with diffuse boundaries, thus giving the rock an overall medium to dark grey color.

Microscopic and XRD

The polished thin section of the sample shows it to consist largely of prismatic grains of diopside, with minor interstitial amphibole (Fig. 8) and traces of chlorite either associated with

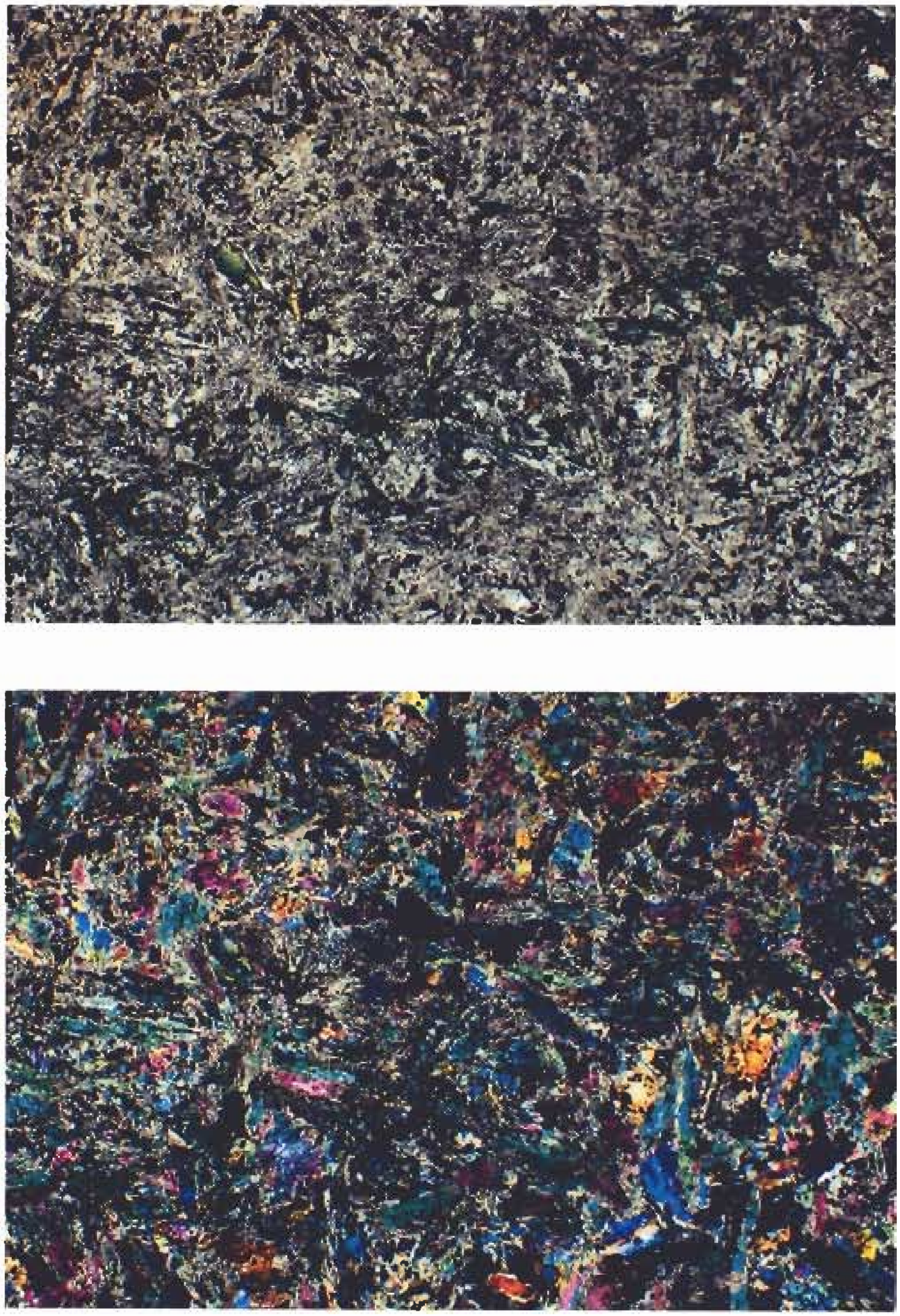


Figure 8. Overview of TP-1A in transmitted light, showing prismatic diopside and dark green interstitial amphibole. Upper photo with plain light, and lower photo with crossed nicols. Width of field 7.8 mm.

the amphibole or isolated in interstices. Some of the pyroxene is in poorly developed radial groups, but this texture and the resultant mottling are less pronounced, on a microscopic scale, than in sample TP-1. The content of opaque minerals, including magnetite or ilmenite, is negligible; the dark colours evident megascopically result mainly from variations in the content of amphibole/chlorite. The section is cut by several parallel to sub-parallel veinlets, but none contains sulfides, and no sulfides are present elsewhere in the section.

A polished section prepared from a sulfide-rich portion of the hand specimen is similar to TP-1 in that the sulfides reside within a megascopically black, amphibole-rich area. The main opaque minerals are cobaltite and bismuthinite. The two largest grains of cobaltite in the section are shown in Figure 9, but it is evident from pseudomorphic outlines that at least ten similar grains occurred in this area prior to oxidation. The pseudomorphs consist partly of erythrite, but brownish to yellowish alteration products are also present; an X-ray mount prepared from one of the yellowish pseudomorphs gave an unidentifiable pattern, possibly in part that of a mixture of erythrite and parasymplesite $Fe_3(AsO_4)_2 \cdot 8H_2O$.

Bismuthinite, also partly replaced by oxidation products, occurs as disseminated grains

Figure 9. Reflected-light overview of cobaltite-rich area in TP-1A. Large cobaltite grains (white) show various degrees of replacement, to complete pseudomorphism (black grains at extreme right). Fine-grained associated sulfide is predominantly bismuthinite (see Fig. 10).

Figure 10. Reflected-light photo of two large cobaltite grains (at extreme top left and far right, extensively replaced). Grains between cobaltite are bismuthinite (many grains partly replaced at edges, and many complete pseudomorphs) accompanied by slightly whiter and more resistant grains of bismuth telluride (arrows). Sample TP-1A; width of field 2.0 mm.

peripheral to the cobaltite (Fig. 9). A few grains (most of which are shown in Fig. 10) of a slightly yellowish, strongly anisotropic bismuth telluride (Appendix I, II) are associated with the bismuthinite, and also occur as minute inclusions in cobaltite. The weathered grains show well the effect of differential alteration, with the telluride mineral distinctly more resistant to replacement than bismuthinite, and with native gold residual in cobaltite (Fig. 11).

The X-ray diffractogram of a bulk sample of TR-1A is shown in Figure 12. Aside from major clinopyroxene (diopside) and amphibole, other detectable minerals are chlorite, talc, erythrite, and cobaltite. Talc was not observed microscopically in the section available.

Figure 11. Reflected-light photograph of sample TP-1A, showing residual cobaltite (white) in originally large grains that have weathered to partial pseudomorphs. Arrow at left points to a grain of residual native gold. Width of field is 2.0 mm.

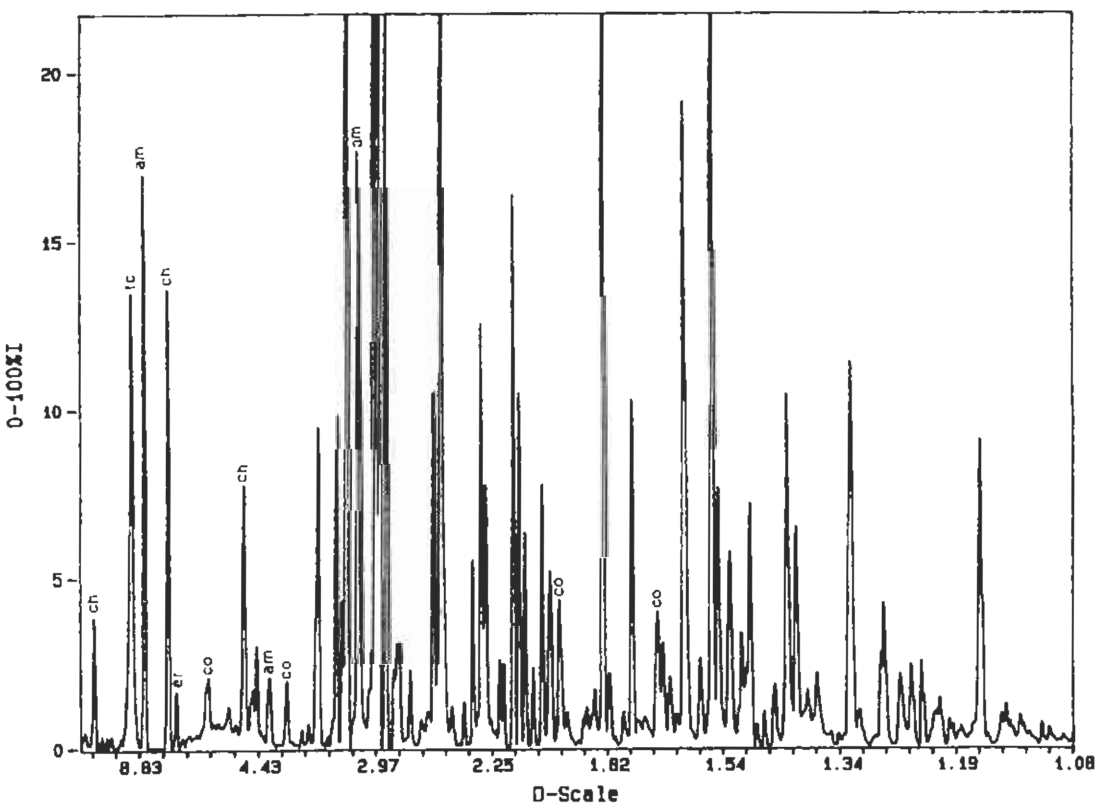


Figure 12. X-ray diffractogram of sample TP-1A. Main peaks are attributable to diopside; other peaks are ch chlorite, tc talc, am amphibole, er erythrite, co cobaltite.

Sample TP-4

Megascopic

The as-received sample was triangular in outline, roughly 8 × 10 × 10 cm, and about 5 cm thick. All faces were smooth to variably rough, showing obvious fracture control. All surfaces were partly coated with abundant erythrite. Sulfides occurred in elongate, fracture-controlled patches whose widths were in millimetres, and lengths up to 3 cm. The cut surfaces also show sulfide (cobaltite) aggregates up to 4 mm across. A few isolated grains of cobaltite occur in the matrix, but most seem to be in trains. The bulk of the rock varies from pale grey to pale green portions in a mottled to breccia-like association. The pale grey portion resembles fragments supported in a lighter-colour and more greenish matrix. The fragments are rarely sharply defined or angular, and on most cut surfaces the texture is more layered than fragmental. Most, but not all, of the sulfides are associated with amphibole-rich areas.

Microscopic and XRD

Sample TP-4 is similar to the preceding ones in that it consists largely of diopside, with minor amphibole and lesser amounts of chlorite. The X-ray diffractogram (Fig. 13) also shows

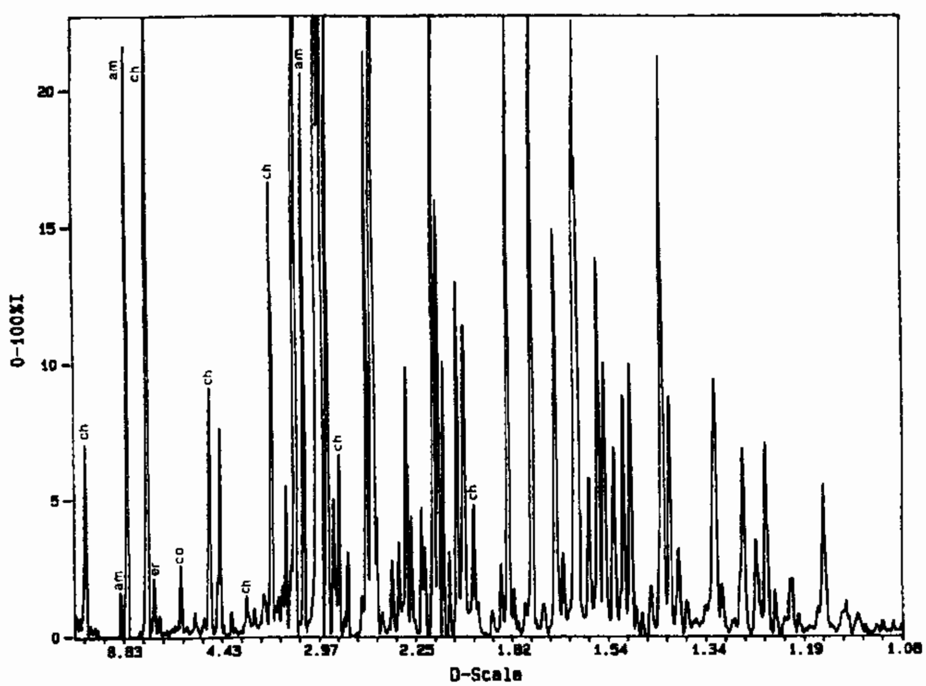


Figure 13. X-ray diffractogram of whole-rock sample of TP-4. Main peaks are attributable to diopside; other peaks are ch chlorite, am amphibole, er erythrite, co cobaltite.

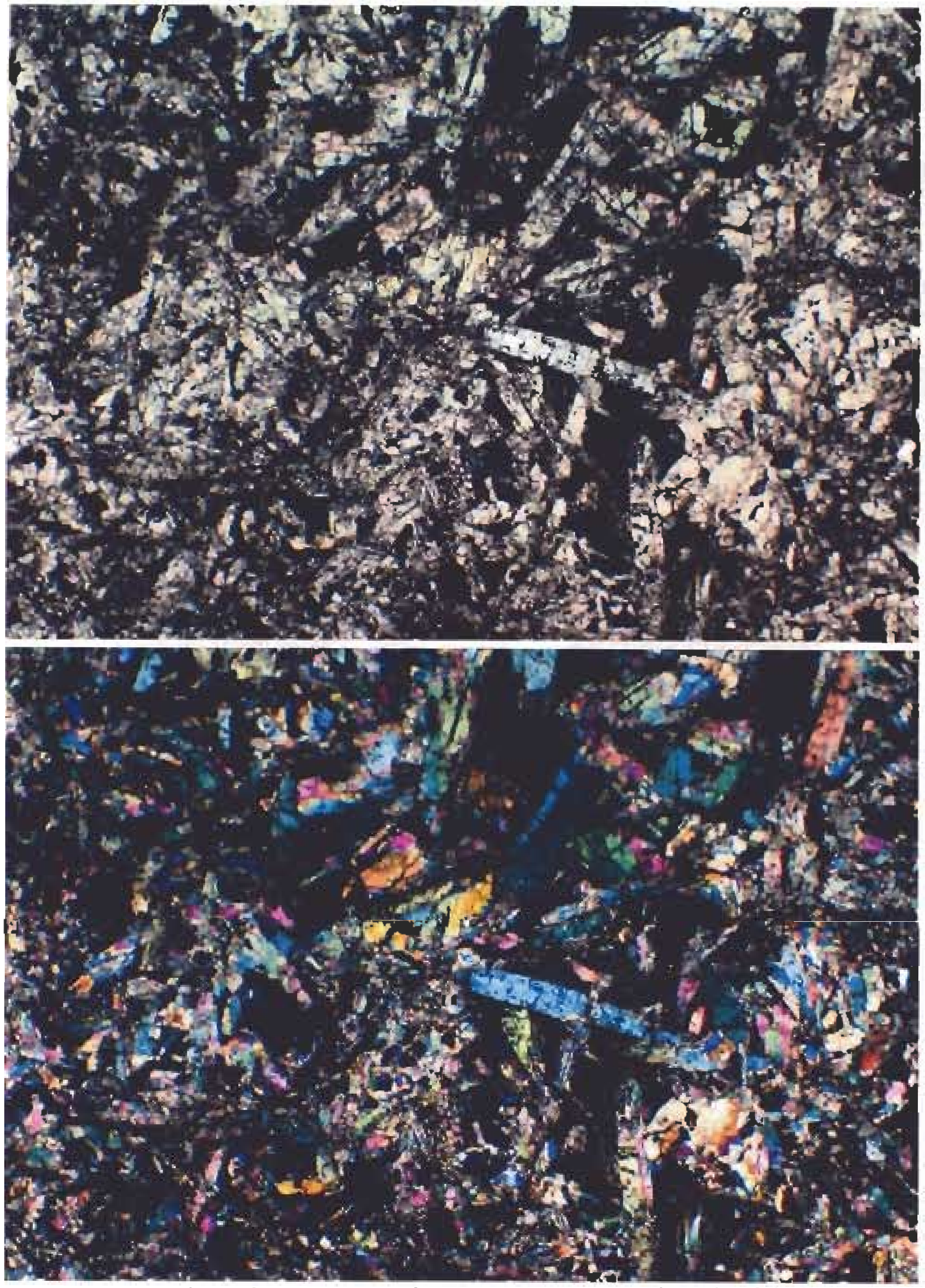


Figure 14. Overview of TP-4, width of field 7.8 mm. Upper photo in plain light shows groundmass diopside with interstitial amphibole and chlorite (green). Lower photo with crossed nicols.

detectable cobaltite and erythrite, whereas talc is absent.

The texture of TP-4 in thin section is similar to that of TR-1A, *i.e.*, diopside shows a weak trend to development of radiating aggregates (Fig. 14), but the texture is not as well-formed as in TR-1A. Amphibole and chlorite are typically interstitial. Some of the amphibole shows simple, binary zoning in which a green core is surrounded by a much paler rim of similar width. Chlorite is commonly among the interstices of amphibole, thus indicating that the crystallization of silicates followed a path of increasing hydration, *i.e.*, diopside → amphibole → chlorite.

The coarse opaque grains that are visible megascopically are cobaltite, and finer grained sulfides are almost wholly bismuthinite (Fig. 15). The close association between amphibole and bismuthinite was noted for veinlets in TP-1; in TP-4 the association is equally intimate, but the amphibole occurs in irregular patches outlined by well-defined margins of bismuthinte (Figs. 16, 17). Bismuthinite also occurs with chlorite, which has a deep green colour and is unusual in that it is present in relatively large patches, a feature not seen in the TP-1 samples. The patches consist of laths and sheaves, and some of these aggregates are more than 3 mm in diameter.

Within the cobaltite are a few small inclusions of arsenopyrite, and arsenopyrite also occurs sparingly at the margins of cobaltite grains (Fig. 18). Both cobaltite and arsenopyrite are locally rimmed and penetrated by bismuthinite. Blebs of native bismuth and small blebs of gold occur in the cobaltite; the maximum size of the five grains observed in the section is about 5 × 15

Figure 15. Sample TP-4 in reflected light, showing a train of relatively coarse grains of cobaltite at far left; smaller white grains throughout the remainder of the photo are bismuthinite. Same photo in transmitted light is shown in Figure 16. Width of field is 7.8 mm.

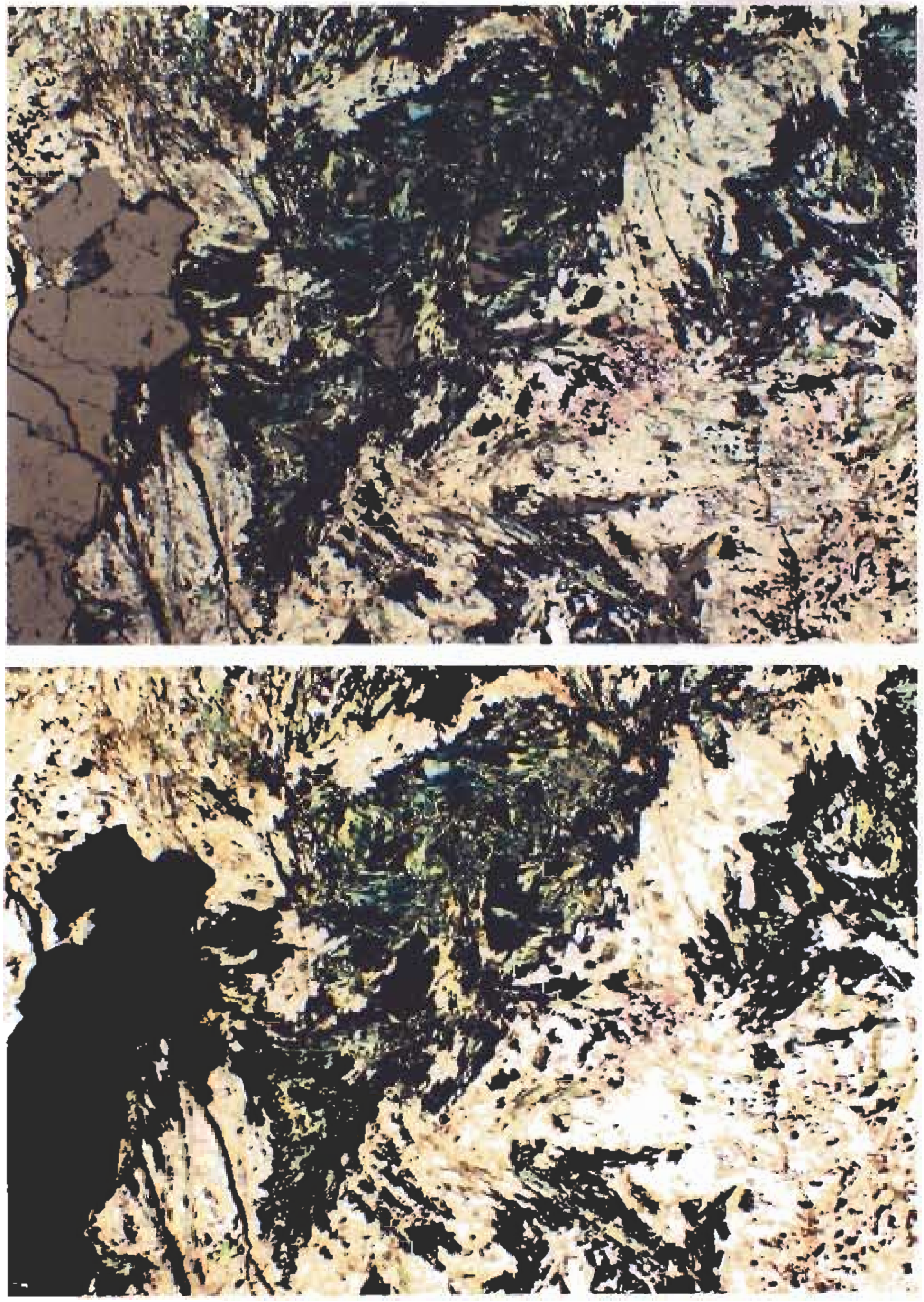


Figure 16. Same area of TP-4 as in Figure 15. Top photo is with combined transmitted and reflected light, showing relatively coarse cobaltite at left, and greenish, amphibole-rich areas surrounded and outlined by opaque bismuthinite. Bottom photo is same area, but with transmitted light.

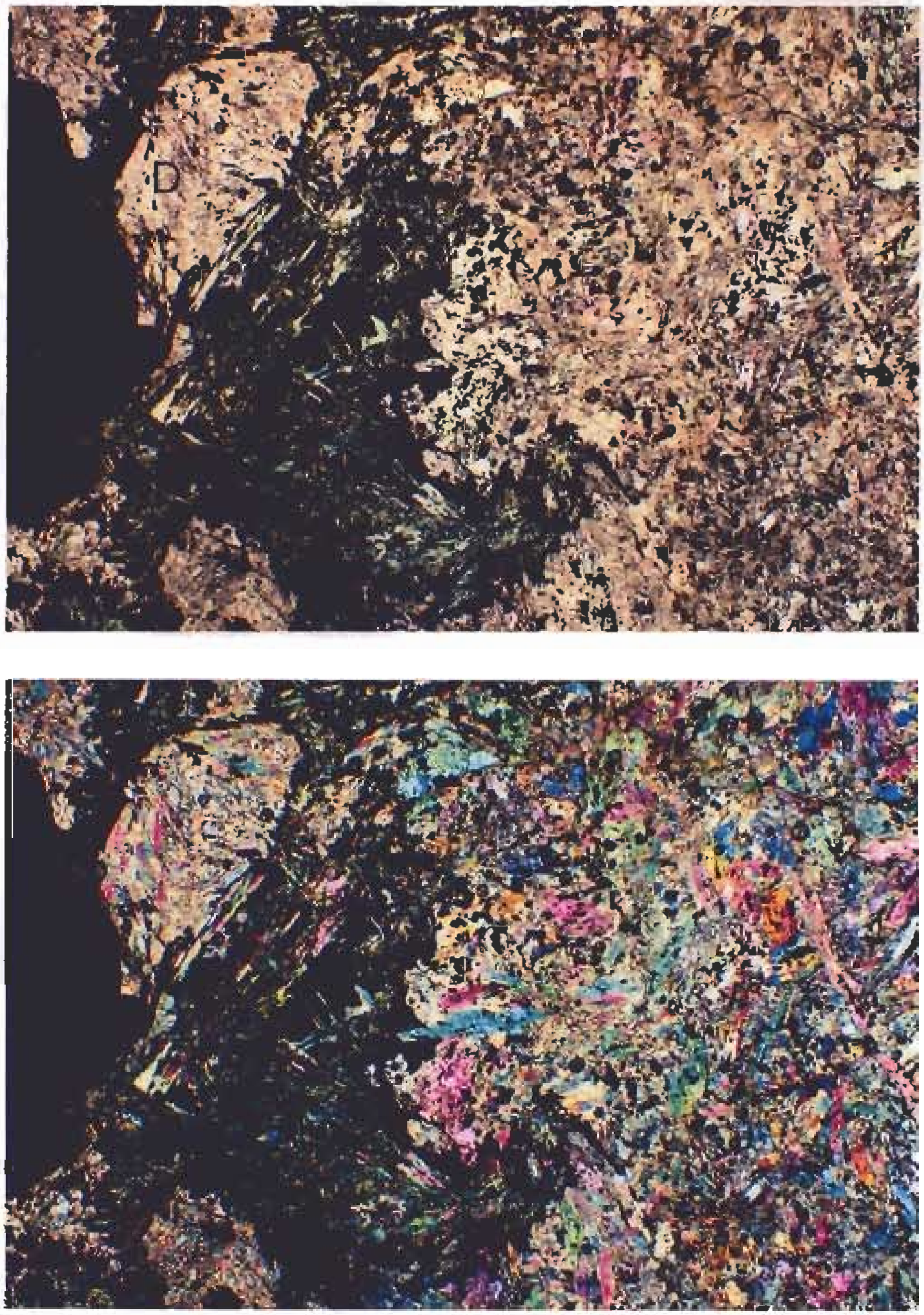


Figure 17. Similar to Figure 16. Large opaque grain at extreme left is cobaltite, and adjoining greenish area is amphibole and chlorite rimmed by bismuthinite (opaque); matrix is diopside. Bottom photo, taken with nicols crossed, shows the prismatic habit of the matrix diopside; large, somewhat ovoid inclusion of finer grained mineral at upper left is also diopside (D), as was confirmed by an X-ray pattern.

μm (Fig. 19). A few minute inclusions of chalcopyrite, pyrrhotite, and bismuth telluride are present within cobaltite.

Numerous small grains of magnetite are disseminated in the host rock, but have been purged in a selvage zone bordering the sulfide veinlets (Fig. 20). The purged zones are up to 1 cm wide, and correspond to megascopically "bleached" selvages. That the selvages are related to cobaltite deposition is evident in a section cut from another part of the rock. In this section the cobaltite occurs in two well-defined trains of grains at right angles to one another. The grains are numerous and up to 1 mm across, and aggregates are up to 1 × 3 mm. The selvages show no distinct textural changes in the clinopyroxene, and the only mineralogical changes are the absence of magnetite and a slight increase in chlorite near the cobaltite trains. The chlorite, however, is mainly interstitial to pyroxene rather than being in contact with cobaltite or showing a direct spatial relationship to it. These observations indicate that the purging of magnetite and the resultant selvages are related to the crystallization of cobaltite rather than the later development of the amphibole–bismuthinite veinlets. The Fe released by the dissolution of

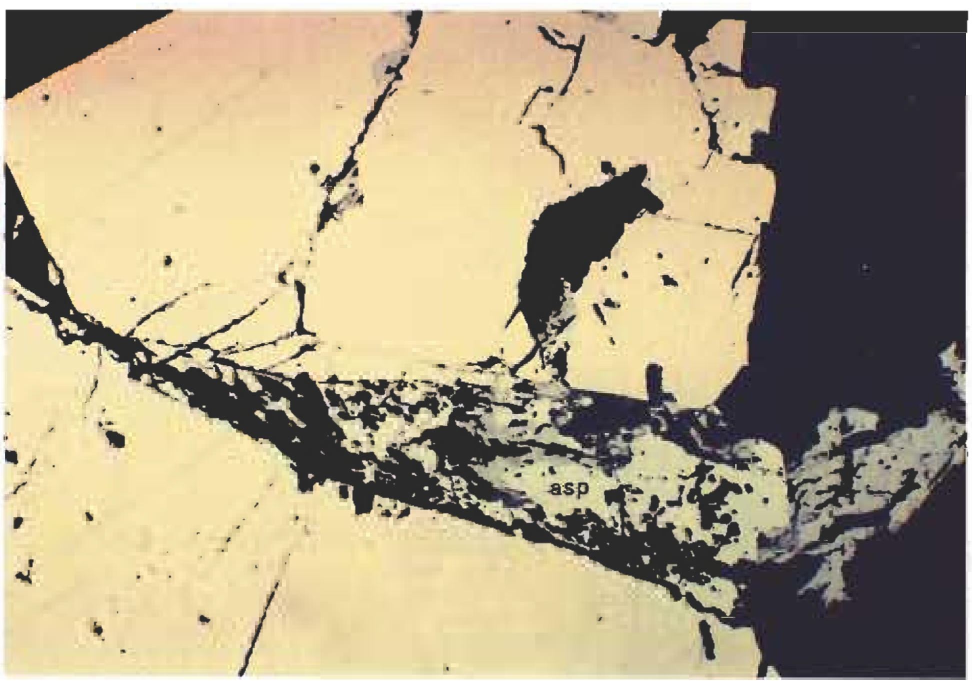
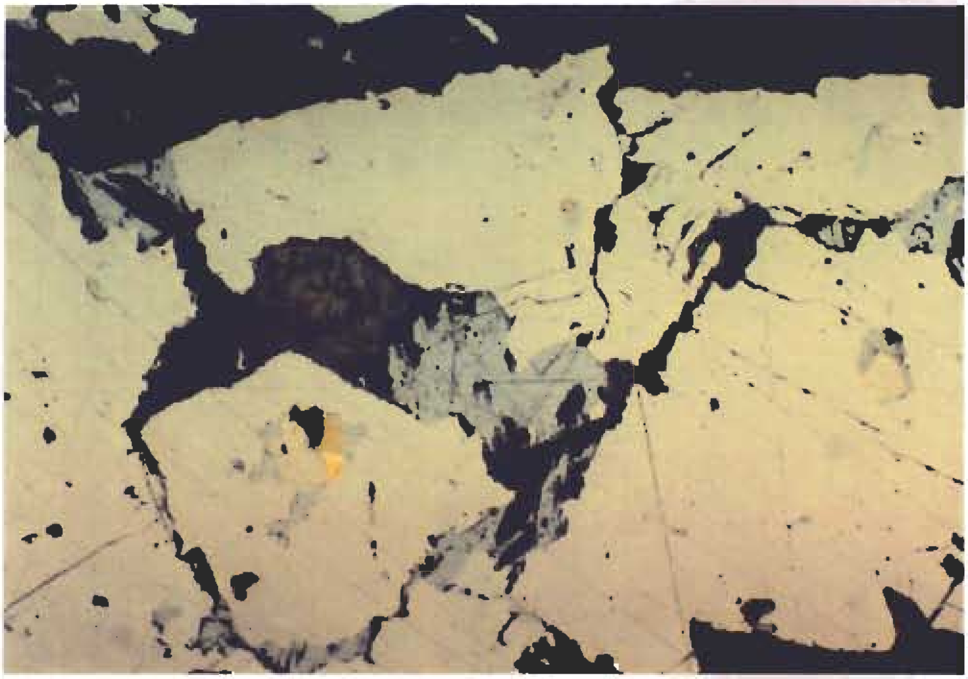


Figure 18. Sample TP-4 in reflected light, showing two large grains of cobaltite separated by ragged, spongy arsenopyrite (asp), with both minerals rimmed or veined by bismuthinite (grey). Width of field is 2.0 mm.



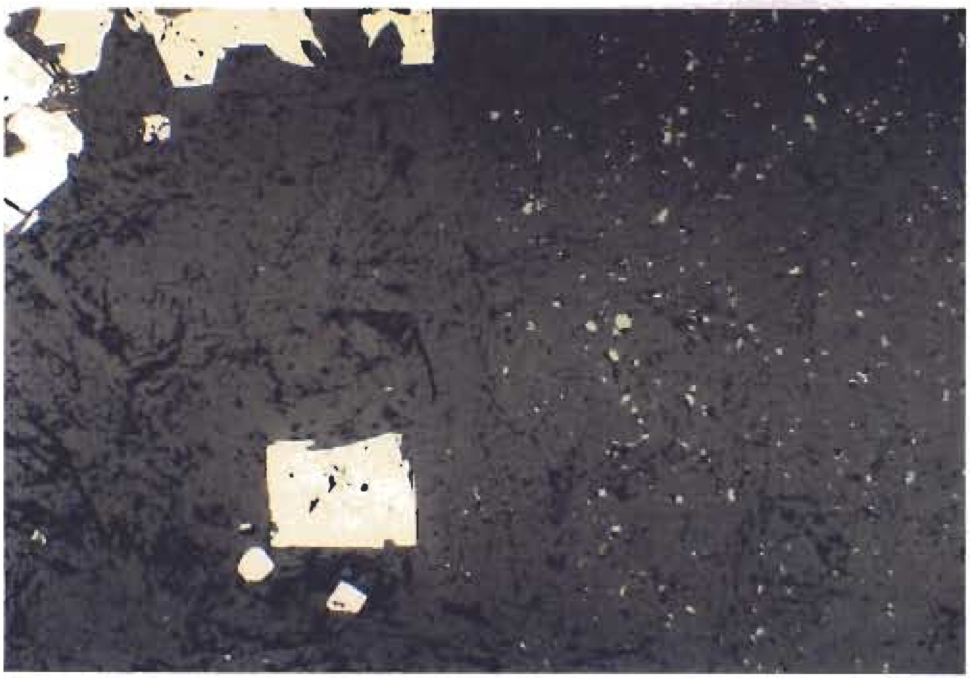


Figure 19 (top). Reflected-light photo of TP-4. Main mineral (white) is cobaltite, and grey mineral is bismuthinite (centre). Composite grain at left shows native gold adjoining chalcopyrite (above) and bismuth telluride (left), all partly surrounded by bismuthinite. Width of field is 0.5 mm.

Figure 20 (bottom). Cobaltite grains (white) in a magnetite-free matrix of diopside. Right side shows numerous disseminated grains of magnetite (grey) that occur only in the non-mineralized part of the host rock. Field width 7.8 mm.

magnetite clearly did not move outward, into the host rock (Fig. 20); thus, Fe either was removed from the system or, more likely, was incorporated in chlorite or cobaltite, or both. An energy-dispersion analysis of the cobaltite confirmed that it is Fe-bearing, though the amount of Fe is small. The cobaltite also contains a small amount of Sb (only a minute fraction of that of As), and Ni content is negligible.

Sample TP-4M

Megascopic

Unlike the preceding three samples, all of which are variably light grey to light greenish, and all of which are leucocratic, sample TP-4M is black, with all surfaces iron-stained. The sample was only 7 × 7 × 3 cm prior to cutting, but its heft suggested the presence of abundant minerals of high specific gravity. The sample proved to be strongly hand-magnetic.

One of the cut surfaces of the sample shows about 30% magnetite, much of it occurring at one side of the sample as massive magnetite. The remainder of the magnetite mainly forms a matrix for white, breccia-like fragments. The largest fragment is about 1.5 × 2 cm, and most are about half this size. Another cut surface shows a contorted, rather than brecciated, heterogeneous distribution of magnetite and the white silicate (diopside), with one area rich in chlorite. Disseminated cobaltite and pyrite are spatially associated with the magnetite and chlorite rather than diopside. The largest sulfide aggregate is about 2 × 4 mm.

Microscopic and XRD

A polished thin section cut from the magnetite-rich zone shows an elongate curved lens of massive magnetite about 3 mm wide and 3 cm long. Abundant magnetite is also disseminated through most, but not all, of the section. The massive zone of magnetite is partly rimmed by cobaltite and lesser amounts of pyrite, both of which also occur as anhedral grains and aggregates in other parts of the section.

The host rock on the concave side of the magnetite lens consists of randomly oriented clinopyroxene (diopside) subhedral prisms up to 1 mm long, and averaging about 0.4 mm. Laths and sprays of biotite and chlorite occur interstitially, and increase in abundance toward the lens. The mica is extensively chloritized, and few grains are deeply colored; most grains are pale

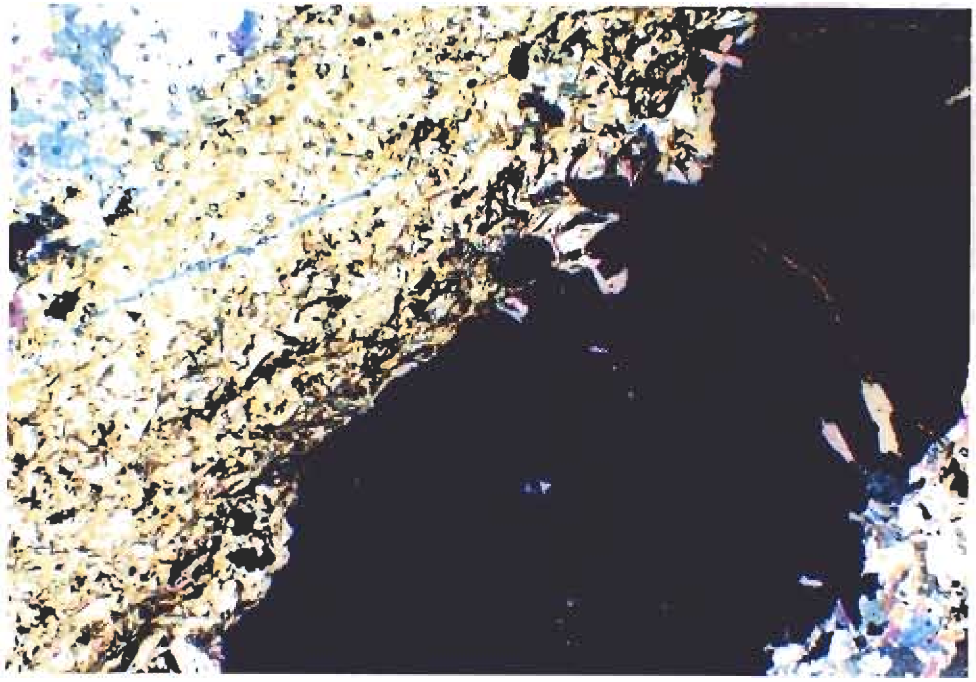


Figure 21. Sample TP-4M, showing a portion of a magnetite lens (black) overlain on left by a fine-grained brownish layer of mica and chlorite, which is succeeded by diopside (top left). Note the absence of mica at the opposite (bottom right) contact of the magnetite. Transmitted light, crossed nicols (lighting at above-normal intensity). Width of field is 7.8 mm.

brown, pale green, or colourless, thus resembling muscovite. The opaque minerals consists of anhedral grains and aggregates of magnetite, minor anhedral aggregates of fine-grained pyrite, a few disseminated grains of fine-grained (<200 μm) cobaltite, and traces of pyrrhotite and chalcopyrite. Some of the pyrite is fracture-related, but no alteration selvages adjoin the pyrite, and the fractures along continuity are tight and barren.

The convex side of the magnetite lens consists of mica laths and chlorite in a zone about 2.5 mm wide (Fig. 21); this is overlain by a pyroxene zone, about 3 mm wide, which is almost free of mica and magnetite, and which is succeeded by another mica–chlorite–magnetite zone. Pyrite and cobaltite occur abundantly, especially in proximity to magnetite. Chalcopyrite occurs in grains up to 70 μm; although more abundant and coarser than in other samples, both chalcopyrite and pyrrhotite are not more than trace constituents. Bismuthinite occurs sparingly, and native bismuth and gold, although present, are less abundant than in the TP-1 samples; thus, much of the cobaltite is relatively inclusion-free. The crystallization sequence is magnetite→ cobaltite→ pyrite→ bismuthinite (youngest). Traces of covellite are present as a secondary

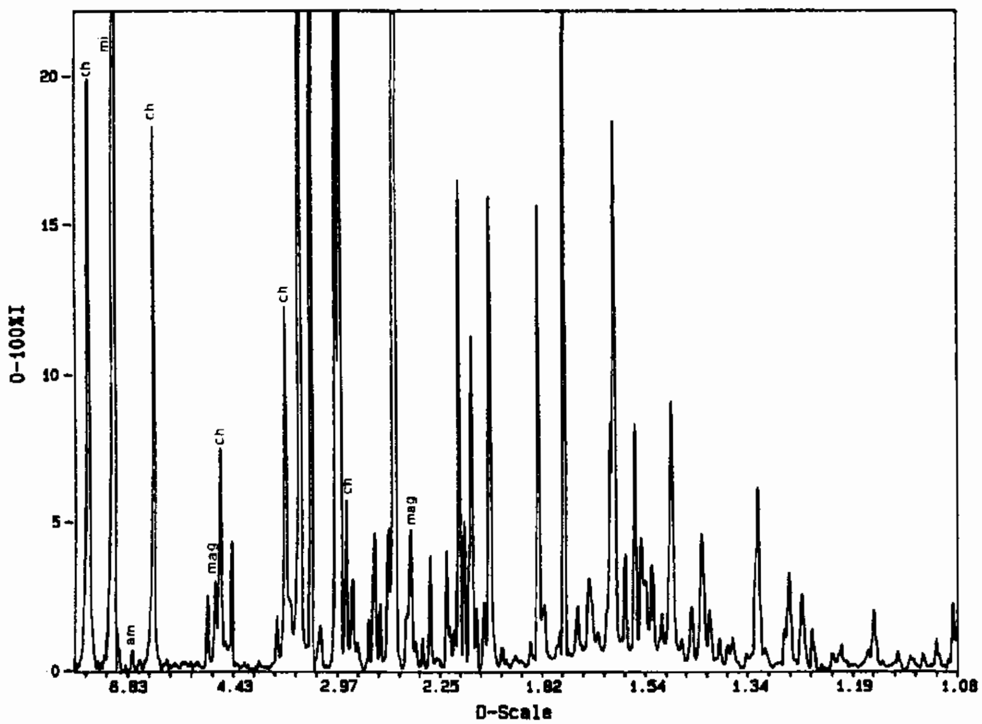


Figure 22. X-ray diffractogram of whole-rock sample of TP-4M. Main peaks are attributable to diopside; other peaks are ch chlorite, mi mica, am amphibole, mag magnetite.

mineral derived from the weathering of chalcopyrite. The X-ray diffractogram (Fig. 22) shows that clinopyroxene, chlorite, mica, and magnetite are the principal minerals; cobaltite is detectable, and a trace of amphibole is present.

SUMMARY AND CONCLUSIONS

The four grab samples, although showing some variation in mineralogy, are similar in that the principal host rock is diopside skarn, and the principal sulfide minerals are cobaltite – bismuthinite – native bismuth – native gold. The samples thus are not representative of the TP skarn, for which Ettlinger and Ray (1989) reported facies consisting of magnetite – calcite – garnet – amphibole; calc-silicate skarn with garnet – epidote – calcite; marble-rich skarn; and amphibole-rich skarn that hosts most of the fracture-controlled mineralization. No garnet, epidote, or carbonates were observed in the samples studied here. Ettlinger and Ray (1989) also reported that a sulfide-rich grab sample from pyroxene – cobaltite skarn assayed 4.2 g/t Au, 33 g/t Ag, 0.15% Pb, 1.7% Co, 2.3% As, and 0.32% Bi. Ettlinger and Ray did not report the presence of bismuthinite, which is by far the most abundant source of Bi in the samples examined here; on the other hand, none of the examined samples has a mineralogy that would account for the assay values of Pb and Ag. Ettlinger and Ray reported that galena occurs in the skarn, and presumably this mineral accounts for at least a portion of the assay Pb.

The two metals of principal concern from an economic viewpoint are Co and Au. The mineralogical study has shown that the only primary Co mineral is cobaltite, and all of it occurs as relatively coarse grains that should be readily amenable to separation and flotation. Arsenopyrite is a potential Co carrier, but the mineral occurs sparingly in the samples available, and all is either relatively coarse-grained or occurs as inclusions encapsulated within cobaltite.

Numerous grains of native gold were observed in the samples. All are small (<15 μm), but all occur within cobaltite. Numerous grains of native bismuth are present, and they too are confined within cobaltite. Ettlinger and Ray (1989), however, reported that not all native bismuth is enclosed by cobaltite, and this is a potentially important observation in that possibly all of the native gold is likewise not enclosed within cobaltite. Nevertheless, the current indications are that a cobaltite concentrate should also contain most, if not all, of the gold.

REFERENCE

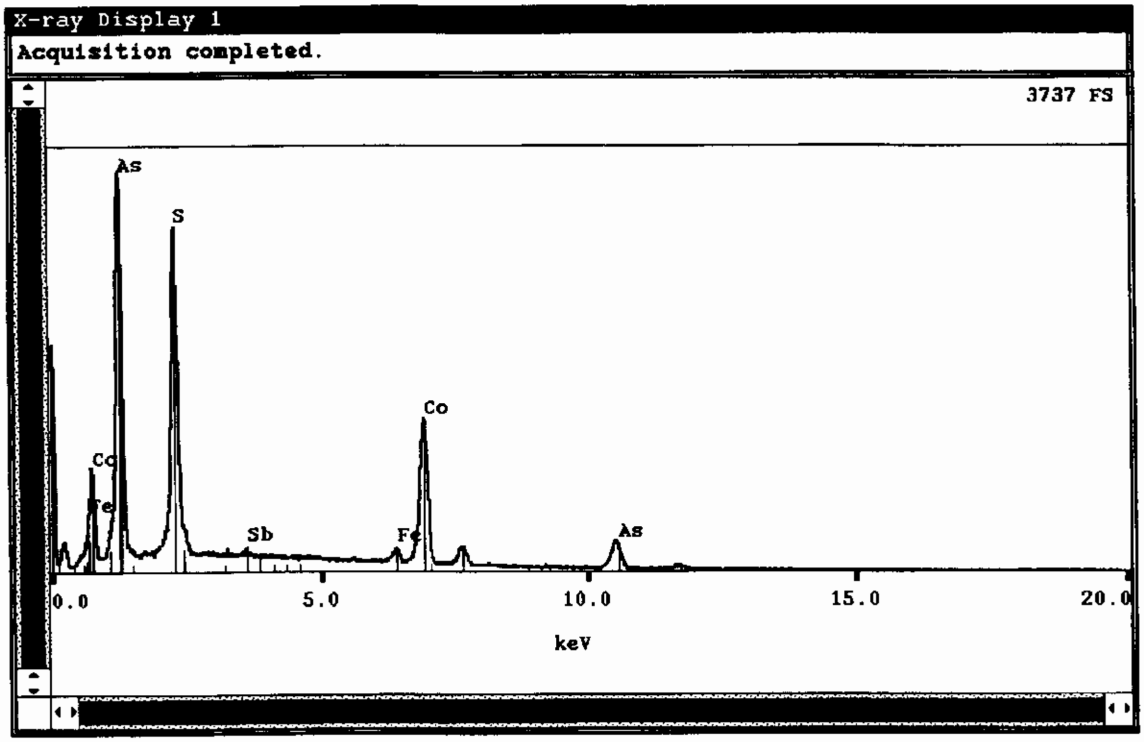
ETTLINGER, A.D. and RAY, G.E. (1989): TP claims. *In* Precious Metal Enriched Skarns in British Columbia: An Overview and Geological Study. British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Survey Branch Paper 1989-3, p. 40.

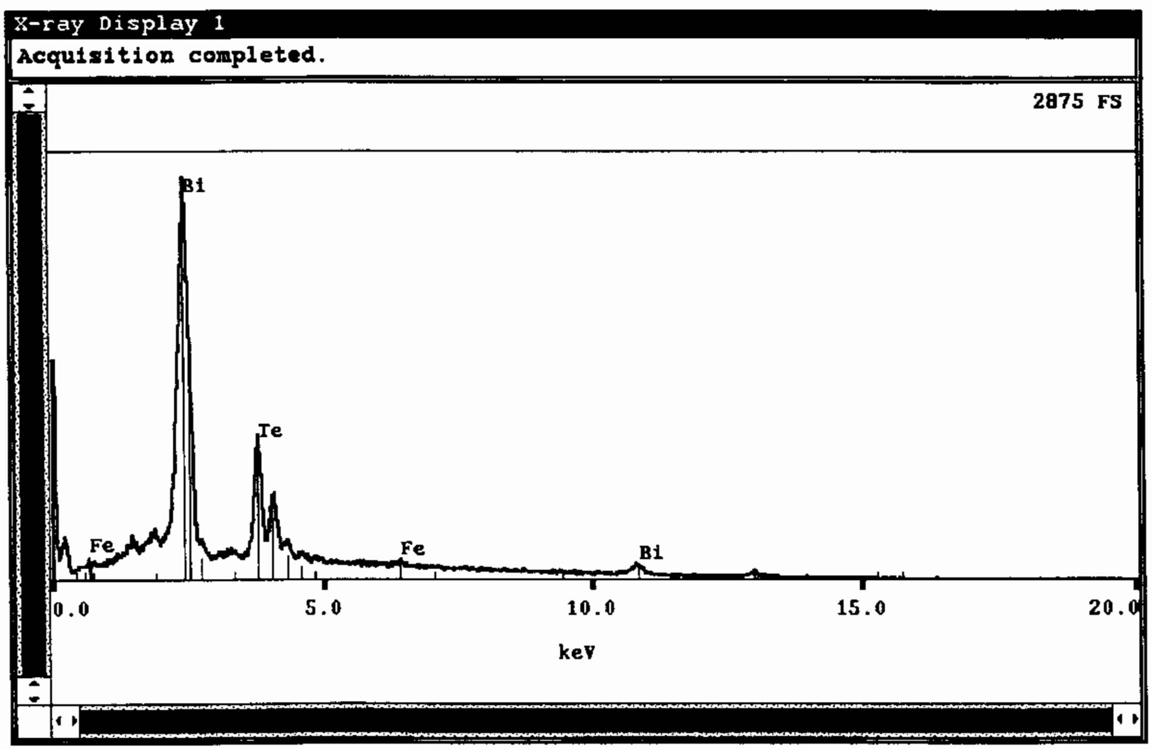
APPENDIX I

Debye-Scherrer X-ray Mounts

Number	Comments
95-096	Attempt to identify or confirm presence of Mn oxides on weathered surface. Coatings are minute, and most of the black areas are silicates. XRD = diopside.
95-097	Mount prepared from pseudomorph after cobaltite. XRD pattern is that of a mixture, but strongest lines are appropriate for parasymplesite and erythrite.
95-098	Mount prepared from erythrite-bearing hairline fracture in hand specimen TP-1. Similar veinlets in thin section contain only erythrite; other minerals in the veinlets either were not present or were plucked during section preparation. XRD of a veinlet core: calcite + quartz
95-099	White core material in fracture in TP-1, as for 95-098. XRD = calcite + quartz.
96-007	Bismuth sulfide. XRD = bismuthinite
96-019	Fine-grained diopside, in TP-4, appearing as the ovoid at upper left of Figure 17. XRD = diopside.
96-020	Silicate border adjoining cobaltite grain in section TP-4. Appears opaque in transmitted light, but probably an anomalous optical effect. XRD = diopside.
96- 021	Arsenopyrite (?) adjacent to cobaltite; almost identical in occurrence to that shown in Figure 18. XRD = arsenopyrite.
96-028	Rutile(?) in composite grain illustrated in Figure 2. XRD = rutile + titanite.
96-029	Ilmenite(?) grain in TP-1. Homogeneous and unaltered. XRD = ilmenite.
96-030	Soft, yellowish, anisotropic Bi telluride associated with bismuthinite in TP-1A (Fig. 10). XRD = Bi telluride group, trigonal type. See Appendix II.

APPENDIX II





Energy-dispersion spectra of cobaltite (top) and unidentified Bi telluride or telluride-sulfide (bottom).

APPENDIX C

GEOCHEMICAL RESULTS, CORE SAMPLES

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9624668

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	34	Geochem ring to approx 150 mesh
226	34	0-3 Kg crush and split
3202	34	Rock - save entire reject
229	34	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	34	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	34	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	34	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	34	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	34	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	34	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	34	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	34	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	34	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	34	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	34	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	34	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	34	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	34	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	34	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	34	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	34	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	34	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	34	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	34	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	34	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	34	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	34	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	34	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	34	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	34	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	34	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	34	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	34	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	34	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	34	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	34	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	34	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 25-JUL-96
Invoice No. : I9624668
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624668

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138501	205	226	< 5	0.2	3.08	20	50	< 0.5	< 2	2.53	1.0	6	151	4	2.10	< 10	2	0.09	< 10	1.12	600
138502	205	226	< 5	0.2	2.44	2	700	< 0.5	< 2	0.33	< 0.5	1	69	8	2.96	< 10	1	1.38	< 10	1.30	455
138503	205	226	< 5	< 0.2	1.06	8	90	< 0.5	< 2	0.48	0.5	1	104	3	2.41	< 10	< 1	0.40	< 10	0.26	485
138504	205	226	< 5	< 0.2	1.65	2	60	< 0.5	< 2	0.71	< 0.5	3	69	4	2.81	< 10	1	0.10	< 10	0.81	695
138505	205	226	< 5	< 0.2	2.78	2	200	< 0.5	< 2	1.52	< 0.5	4	63	12	1.29	< 10	1	0.43	< 10	0.56	195
138506	205	226	< 5	0.2	0.61	6	10	< 0.5	< 2	8.54	< 0.5	4	42	24	1.37	< 10	< 1	0.04	< 10	0.29	500
138507	205	226	< 5	0.2	0.32	< 2	10	< 0.5	< 2	>15.00	< 0.5	1	7	4	0.75	< 10	1	0.05	< 10	0.45	555
138508	205	226	< 5	< 0.2	0.16	< 2	10	< 0.5	< 2	1.31	< 0.5	75	203	< 1	5.82	< 10	< 1	0.04	< 10	14.80	990
138509	205	226	< 5	0.2	0.05	< 2	< 10	< 0.5	< 2	>15.00	< 0.5	< 1	< 1	< 1	0.11	< 10	< 1	< 0.01	< 10	9.53	80
138510	205	226	< 5	< 0.2	0.64	4	80	< 0.5	< 2	0.32	< 0.5	6	98	33	1.96	< 10	< 1	0.33	< 10	0.29	150
138511	205	226	< 5	0.2	1.36	2	130	< 0.5	< 2	0.93	< 0.5	8	23	64	3.22	< 10	1	0.48	< 10	0.72	255
138512	205	226	< 5	< 0.2	2.31	2	710	< 0.5	< 2	1.01	< 0.5	11	48	20	3.00	< 10	< 1	1.03	< 10	1.30	395
138513	205	226	< 5	0.2	0.44	8	150	< 0.5	< 2	0.17	< 0.5	5	85	37	0.93	< 10	< 1	0.11	< 10	0.05	170
138514	205	226	< 5	< 0.2	0.39	2	110	< 0.5	< 2	0.09	< 0.5	< 1	69	29	0.78	< 10	< 1	0.13	10	0.04	35
138515	205	226	< 5	< 0.2	0.05	< 2	10	< 0.5	< 2	0.69	< 0.5	45	177	< 1	3.38	< 10	< 1	< 0.01	< 10	12.20	505
138516	205	226	4150	41.0	0.06	1780	10	< 0.5	< 2	0.01	< 0.5	13	254	31	1.62	< 10	< 1	0.04	< 10	0.05	25
138517	205	226	< 5	0.2	0.04	< 2	< 10	< 0.5	2	0.15	< 0.5	77	449	< 1	4.32	10	< 1	< 0.01	< 10	>15.00	800
138518	205	226	< 5	0.6	0.08	18	70	< 0.5	< 2	2.40	< 0.5	52	151	< 1	4.61	< 10	< 1	0.06	< 10	11.60	770
138519	205	226	< 5	< 0.2	2.28	8	30	< 0.5	2	1.65	0.5	4	33	< 1	0.51	< 10	1	0.03	< 10	0.36	190
138520	205	226	< 5	< 0.2	0.98	98	110	< 0.5	< 2	0.46	< 0.5	3	80	8	2.19	< 10	1	0.31	10	0.27	240
138521	205	226	< 5	1.6	0.10	22	20	< 0.5	< 2	2.44	< 0.5	59	76	5	5.00	< 10	< 1	0.06	< 10	13.90	730
138522	205	226	< 5	< 0.2	0.27	< 2	30	< 0.5	< 2	3.31	< 0.5	< 1	154	< 1	0.62	< 10	< 1	0.06	< 10	0.18	385
138523	205	226	< 5	< 0.2	0.56	< 2	130	< 0.5	< 2	0.09	< 0.5	2	62	2	1.09	< 10	< 1	0.15	< 10	0.17	160
138524	205	226	< 5	< 0.2	0.40	2	90	< 0.5	< 2	0.06	< 0.5	< 1	58	3	0.49	< 10	< 1	0.15	< 10	0.05	115
138525	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
138526	205	226	< 5	0.2	4.59	8	200	< 0.5	< 2	1.11	< 0.5	20	47	76	4.09	< 10	1	0.45	< 10	2.89	295
138527	205	226	< 5	0.2	5.21	34	520	< 0.5	< 2	1.73	< 0.5	16	47	68	3.58	< 10	< 1	1.67	< 10	2.14	380
138528	205	226	< 5	< 0.2	1.56	8	60	< 0.5	< 2	0.32	0.5	11	190	17	2.30	< 10	1	0.19	< 10	0.73	330
138530	205	226	< 5	0.2	4.20	12	190	0.5	< 2	2.08	0.5	17	55	13	4.42	< 10	2	0.91	< 10	1.58	855
138531	205	226	< 5	< 0.2	0.35	12	10	0.5	< 2	0.14	< 0.5	1	92	18	0.63	< 10	1	0.13	10	0.05	100
138532	205	226	< 5	< 0.2	0.32	20	< 10	< 0.5	< 2	0.23	< 0.5	2	74	17	0.63	< 10	< 1	0.14	10	0.04	150
138533	205	226	< 5	< 0.2	0.46	10	< 10	0.5	< 2	0.09	< 0.5	2	84	31	0.70	< 10	< 1	0.14	10	0.08	100
138536	205	226	< 5	< 0.2	4.33	58	430	< 0.5	< 2	0.48	< 0.5	22	49	41	5.68	10	1	1.23	< 10	2.63	735
138537	205	226	< 5	0.2	1.27	16	< 10	< 0.5	< 2	6.24	< 0.5	1	25	< 1	1.92	< 10	< 1	< 0.01	< 10	0.82	2380
138540	205	226	< 5	0.2	0.43	46	10	< 0.5	< 2	>15.00	< 0.5	5	51	4	1.08	< 10	< 1	0.08	< 10	9.20	1005

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.
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212 Brooksbank Ave., North Vancouver
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P.O. BOX 49066, THE BENTALL CENTRE
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number : 1-B
Total Pages : 1
Certificate Date: 25-JUL-96
Invoice No. : I9624668
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624668

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138501	205	226	< 1	0.65	19	830	80	< 2	10	132	0.16	< 10	< 10	92	< 10	196
138502	205	226	1	0.10	1	1070	10	< 2	11	38	0.16	< 10	< 10	55	< 10	58
138503	205	226	3	0.11	2	220	16	6	7	19	0.08	< 10	< 10	13	< 10	80
138504	205	226	< 1	0.08	6	790	8	4	4	19	0.13	< 10	< 10	54	< 10	58
138505	205	226	< 1	0.39	20	740	16	< 2	7	163	0.14	< 10	< 10	57	< 10	44
138506	205	226	5	0.05	2	350	2	2	3	76	0.01	< 10	< 10	15	< 10	16
138507	205	226	< 1	0.01	< 1	40	6	6	2	276	< 0.01	< 10	< 10	5	< 10	8
138508	205	226	< 1	< 0.01	885	70	6	2	6	108	< 0.01	10	< 10	< 1	< 10	< 2
138509	205	226	< 1	< 0.01	< 1	40	10	< 2	< 1	128	< 0.01	10	< 10	< 1	< 10	< 2
138510	205	226	5	0.10	3	250	18	< 2	3	16	0.08	< 10	10	17	< 10	34
138511	205	226	3	0.12	1	1620	12	< 2	5	38	0.18	< 10	< 10	85	< 10	20
138512	205	226	< 1	0.18	2	1120	6	< 2	3	68	0.14	10	< 10	75	< 10	60
138513	205	226	6	0.12	4	100	26	< 2	< 1	23	0.02	< 10	< 10	1	< 10	48
138514	205	226	4	0.11	1	50	10	< 2	1	10	0.04	< 10	< 10	1	< 10	6
138515	205	226	< 1	< 0.01	565	30	2	< 2	2	107	< 0.01	10	< 10	< 1	< 10	< 2
138516	205	226	1	< 0.01	65	20	8	48	< 1	3	< 0.01	< 10	< 10	4	< 10	20
138517	205	226	< 1	< 0.01	1195	60	2	< 2	1	4	< 0.01	10	< 10	< 1	< 10	< 2
138518	205	226	< 1	< 0.01	751	70	6	6	7	222	< 0.01	10	10	1	< 10	8
138519	205	226	< 1	0.47	13	600	48	< 2	1	221	0.18	< 10	< 10	23	< 10	112
138520	205	226	3	0.11	2	200	30	< 2	5	17	0.05	< 10	< 10	18	< 10	56
138521	205	226	< 1	< 0.01	771	60	8	2	7	195	< 0.01	10	< 10	< 1	< 10	< 2
138522	205	226	< 1	< 0.01	4	70	2	< 2	< 1	32	< 0.01	< 10	< 10	1	< 10	8
138523	205	226	< 1	0.08	5	130	10	< 2	< 1	7	0.03	< 10	< 10	3	< 10	28
138524	205	226	< 1	0.10	1	80	10	2	< 1	4	< 0.01	< 10	< 10	< 1	< 10	20
138525	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
138526	205	226	< 1	0.28	16	640	10	< 2	11	86	0.06	10	< 10	158	< 10	40
138527	205	226	< 1	0.31	13	560	10	< 2	13	109	0.11	10	< 10	143	< 10	52
138528	205	226	3	0.07	10	70	14	< 2	4	18	0.03	< 10	< 10	65	< 10	44
138530	205	226	< 1	0.27	15	580	28	2	12	122	0.13	10	< 10	127	< 10	116
138531	205	226	1	0.10	1	10	10	< 2	< 1	5	< 0.01	< 10	< 10	1	< 10	14
138532	205	226	3	0.11	1	10	16	< 2	< 1	5	0.01	< 10	< 10	< 1	< 10	20
138533	205	226	< 1	0.11	2	20	14	2	1	1	< 0.01	< 10	< 10	1	< 10	16
138536	205	226	1	0.10	15	410	14	< 2	28	52	0.15	< 10	< 10	201	< 10	62
138537	205	226	< 1	< 0.01	3	610	30	< 2	1	84	0.07	< 10	< 10	20	< 10	56
138540	205	226	< 1	< 0.01	45	80	6	6	< 1	146	< 0.01	20	< 10	2	< 10	28

CERTIFICATION: [signature]

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V7X 1C4

A9624669

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9624669

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
258	8	RUSH Assay ring approx 150 mesh
295	8	RUSH crush and split (0-3 Kg)
3202	8	Rock - save entire reject
290	8	Assay HF ICP digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
953	8	Au g/tonne: RUSH, 1 assay ton	FA-AAS	0.03	150.00
1263	8	Ag ppm: high grade 24 element	AAS	0.5	200
4031	8	Al %: A22 ICP package	ICP-AES	0.05	30.0
4032	8	Ba ppm: A22 ICP package	ICP-AES	100	50000
4033	8	Be ppm: A22 ICP package	ICP-AES	10	10000
4034	8	Bi ppm: A22 ICP package	ICP-AES	20	50000
4035	8	Ca %: A22 ICP package	ICP-AES	0.05	30000
4036	8	Cd ppm: A22 ICP package	ICP-AES	10	10000
4037	8	Co ppm: A22 ICP package	ICP-AES	10	100000
4038	8	Cr ppm: A22 ICP package	ICP-AES	10	100000
4039	8	Cu ppm: A22 ICP package	ICP-AES	10	100000
4040	8	Fe %: A22 ICP package	ICP-AES	0.05	30.0
4041	8	K %: A22 ICP package	ICP-AES	0.1	20.0
4042	8	Mg %: A22 ICP package	ICP-AES	0.05	30.0
4043	8	Mn ppm: A22 ICP package	ICP-AES	10	100000
4044	8	Mo ppm: A22 ICP package	ICP-AES	10	100000
4045	8	Na %: A22 ICP package	ICP-AES	0.05	20.0
4046	8	Ni ppm: A22 ICP package	ICP-AES	10	100000
4075	8	Pb %: high grade 24 element	AAS	0.001	10.00
4047	8	Sr ppm: A22 ICP package	ICP-AES	10	100000
4048	8	Ti %: A22 ICP package	ICP-AES	0.05	20.0
4049	8	V ppm: A22 ICP package	ICP-AES	10	50000
4050	8	Zn ppm: A22 ICP package	ICP-AES	20	100000

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Page Number : 1-A
Total Pages : 1
Certificate Date: 25-JUL-96
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Account : GP R

CERTIFICATE OF ANALYSIS A9624669

SAMPLE	PREP CODE		Au g/t RUSH	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
138529	258	295	< 0.03	< 1.0	4.70	< 100	< 10	< 20	5.80	< 10	100	160	130	10.85	0.3	0.85
138534	258	295	< 0.03	< 1.0	5.80	< 100	< 10	< 20	13.20	< 10	10	70	< 10	19.30	0.5	1.10
138535	258	295	< 0.03	< 1.0	5.55	< 100	< 10	< 20	15.85	< 10	10	60	< 10	12.60	0.2	1.35
138538	258	295	< 0.03	< 1.0	2.25	< 100	< 10	< 20	15.15	< 10	10	90	< 10	11.75	< 0.1	3.80
138539	258	295	< 0.03	< 1.0	1.35	< 100	< 10	< 20	14.00	< 10	10	200	< 10	8.35	< 0.1	0.95
138541	258	295	< 0.03	< 1.0	1.00	< 100	< 10	20	21.3	< 10	< 10	170	10	1.65	0.3	9.00
138542	258	295	< 0.03	< 1.0	6.10	600	< 10	20	4.95	< 10	30	970	< 10	6.60	2.5	10.95
138543	258	295	< 0.03	< 1.0	1.70	100	< 10	< 20	2.05	< 10	10	160	< 10	>30.0	0.5	6.70

CERTIFICATION: ____________

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CERTIFICATE OF ANALYSIS A9624669

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	Pb % AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	Zn ppm (ICP)
138529	258	295	1920	< 10	0.20	20	0.019	350	0.15	130	140
138534	258	295	4980	< 10	0.35	10	0.018	70	0.30	120	180
138535	258	295	4060	< 10	0.25	10	0.019	80	0.25	100	180
138538	258	295	9080	< 10	0.05	10	0.019	80	0.15	50	380
138539	258	295	8310	< 10	< 0.05	50	0.018	60	0.05	30	100
138541	258	295	1070	< 10	< 0.05	60	0.018	260	< 0.05	40	60
138542	258	295	1830	< 10	0.20	390	0.017	90	0.35	170	320
138543	258	295	1720	< 10	< 0.05	70	0.018	20	0.05	30	160

CERTIFICATION: [signature]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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VANCOUVER, BC
V7X 1C4

A9623626

Comments: ATTN:STEVE ROWINS

CERTIFICATE A9623626

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 21-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
226	20	0-3 Kg crush and split
3202	20	Rock - save entire reject
229	20	ICP - AQ Digestion charge
* NOTE	1:	

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	20	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	20	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	20	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	20	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	20	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	20	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	20	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	20	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	20	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	20	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	20	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	20	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	20	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	20	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	20	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	20	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	20	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	20	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	20	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	20	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	20	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	20	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	20	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	20	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	20	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	20	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	20	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	20	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	20	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	20	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	20	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	20	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	20	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.
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To: WESTMIN RESOURCES LTD.
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Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 21-JUL-96
Invoice No. : I9623626
P.O. Number :
Account :GP R

CERTIFICATE OF ANALYSIS A9623626

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138544	205	226	10	0.4	1.30	100	< 10	1.0	< 2	>15.00	2.0	37	422	1	3.35	< 10	< 1	< 0.01	< 10	1.84	2300
138545	205	226	< 5	< 0.2	0.85	24	10	0.5	< 2	>15.00	2.0	1	46	< 1	0.90	< 10	< 1	0.03	< 10	7.60	930
138546	205	226	< 5	0.4	0.56	172	10	0.5	< 2	>15.00	1.5	2	61	155	1.22	< 10	< 1	0.07	< 10	9.40	755
138547	205	226	< 5	< 0.2	3.83	< 2	430	< 0.5	< 2	0.69	0.5	8	49	15	2.90	10	< 1	1.57	10	2.55	390
138548	205	226	< 5	< 0.2	0.68	6	50	< 0.5	< 2	0.96	< 0.5	1	49	1	1.05	< 10	< 1	0.10	10	0.38	275
138549	205	226	< 5	< 0.2	0.17	< 2	40	< 0.5	< 2	0.11	< 0.5	3	210	7	0.62	< 10	< 1	0.09	< 10	0.07	180
138550	205	226	< 5	< 0.2	2.27	< 2	140	< 0.5	< 2	2.31	0.5	13	95	3	3.96	10	< 1	0.13	10	2.05	655
138551	205	226	< 5	< 0.2	2.20	< 2	60	< 0.5	2	1.41	0.5	14	126	14	3.17	10	< 1	0.07	< 10	1.88	525
138552	205	226	< 5	< 0.2	1.18	< 2	150	< 0.5	< 2	1.42	< 0.5	6	62	41	2.98	10	< 1	0.41	20	0.55	480
138557	205	226	< 5	0.2	0.05	28	< 10	0.5	< 2	>15.00	2.0	< 1	6	< 1	0.47	< 10	< 1	0.01	< 10	10.55	210
138558	205	226	< 5	< 0.2	0.26	10	30	0.5	4	>15.00	2.5	< 1	14	3	0.57	< 10	< 1	0.05	< 10	0.51	115
138559	205	226	< 5	0.2	0.43	6	50	0.5	2	7.62	1.0	16	28	51	3.83	< 10	< 1	0.27	< 10	2.73	815
138560	205	226	< 5	< 0.2	0.02	8	< 10	0.5	2	>15.00	2.5	< 1	7	< 1	0.21	< 10	< 1	0.01	< 10	0.39	95
138561	205	226	< 5	< 0.2	0.36	66	10	< 0.5	< 2	0.50	< 0.5	3	87	8	0.57	< 10	< 1	0.12	10	0.06	120
138562	205	226	< 5	< 0.2	0.18	10	< 10	< 0.5	< 2	0.18	< 0.5	< 1	75	6	0.33	< 10	< 1	0.09	10	0.02	70
138563	205	226	< 5	< 0.2	0.26	46	10	< 0.5	< 2	0.59	< 0.5	4	128	16	0.47	< 10	< 1	0.11	10	0.05	190
138564	205	226	< 5	0.2	0.87	50	40	1.0	< 2	3.76	< 0.5	2	38	< 1	1.45	< 10	< 1	0.26	10	0.18	950
138565	205	226	30	< 0.2	2.53	88	50	< 0.5	2	3.59	0.5	18	145	3	4.05	10	< 1	0.25	< 10	0.84	1925
138566	205	226	675	2.2	3.37	2290	40	0.5	10	4.61	< 0.5	74	49	< 1	2.45	< 10	< 1	0.14	< 10	0.46	1140
138567	205	226	45	0.8	1.74	60	50	< 0.5	2	4.49	0.5	32	33	< 1	4.29	< 10	< 1	0.31	< 10	0.37	1665

CERTIFICATION: [signature]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
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V7X 1C4

Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 21-JUL-96
Invoice No. : I9623626
P.O. Number :
Account :GP R

CERTIFICATE OF ANALYSIS A9623626

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138544	205	226	< 1	< 0.01	202	440	94	< 2	3	215	0.03	< 10	10	25	< 10	108
138545	205	226	< 1	< 0.01	16	190	24	< 2	2	161	< 0.01	10	10	23	< 10	42
138546	205	226	1	< 0.01	29	110	12	6	< 1	168	0.01	< 10	10	14	< 10	62
138547	205	226	< 1	0.12	4	270	2	< 2	12	149	0.11	< 10	< 10	41	< 10	28
138548	205	226	< 1	0.08	3	520	22	< 2	4	29	0.13	< 10	< 10	18	< 10	44
138549	205	226	< 1	< 0.01	4	160	< 2	< 2	< 1	3	< 0.01	< 10	< 10	4	< 10	6
138550	205	226	< 1	0.09	33	2220	2	< 2	5	55	0.21	< 10	< 10	93	< 10	52
138551	205	226	< 1	0.03	23	850	8	< 2	5	60	0.12	< 10	< 10	63	< 10	70
138552	205	226	< 1	0.04	3	450	4	< 2	4	21	0.04	< 10	< 10	22	< 10	48
138557	205	226	4	< 0.01	6	40	32	2	< 1	243	< 0.01	< 10	10	5	< 10	14
138558	205	226	< 1	< 0.01	4	200	12	< 2	< 1	275	< 0.01	< 10	30	6	< 10	20
138559	205	226	< 1	0.02	35	960	6	< 2	6	182	< 0.01	< 10	< 10	27	< 10	64
138560	205	226	< 1	< 0.01	3	90	12	< 2	< 1	241	< 0.01	10	30	1	< 10	6
138561	205	226	< 1	0.07	1	10	14	< 2	1	10	0.02	< 10	< 10	4	< 10	18
138562	205	226	< 1	0.05	1	10	12	< 2	< 1	4	0.01	< 10	< 10	< 1	< 10	8
138563	205	226	< 1	0.05	20	10	16	< 2	< 1	9	< 0.01	< 10	< 10	1	< 10	32
138564	205	226	< 1	0.01	12	40	6	2	< 1	26	< 0.01	< 10	< 10	3	< 10	26
138565	205	226	< 1	0.09	76	360	22	< 2	6	70	0.14	< 10	< 10	52	< 10	88
138566	205	226	1	0.24	37	380	102	< 2	4	195	0.07	< 10	< 10	47	< 10	68
138567	205	226	< 1	0.15	42	250	26	< 2	4	42	0.07	< 10	< 10	40	< 10	84

CERTIFICATION:

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V7X 1C4

A9623652

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9623652

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 12-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
258	4	RUSH Assay ring approx 150 mesh
295	4	RUSH crush and split (0-3 Kg)
3202	4	Rock - save entire reject
290	4	Assay HF ICP digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
953	4	Au g/tonne: RUSH, 1 assay ton	FA-AAS	0.03	150.00
1263	4	Ag ppm: high grade 24 element	AAS	0.5	200
4031	4	Al %: A22 ICP package	ICP-AES	0.05	30.0
4032	4	Ba ppm: A22 ICP package	ICP-AES	100	50000
4033	4	Be ppm: A22 ICP package	ICP-AES	10	10000
4034	4	Bi ppm: A22 ICP package	ICP-AES	20	50000
4035	4	Ca %: A22 ICP package	ICP-AES	0.05	30000
4036	4	Cd ppm: A22 ICP package	ICP-AES	10	10000
4037	4	Co ppm: A22 ICP package	ICP-AES	10	100000
4038	4	Cr ppm: A22 ICP package	ICP-AES	10	100000
4039	4	Cu ppm: A22 ICP package	ICP-AES	10	100000
4040	4	Fe %: A22 ICP package	ICP-AES	0.05	30.0
4041	4	K %: A22 ICP package	ICP-AES	0.1	20.0
4042	4	Mg %: A22 ICP package	ICP-AES	0.05	30.0
4043	4	Mn ppm: A22 ICP package	ICP-AES	10	100000
4044	4	Mo ppm: A22 ICP package	ICP-AES	10	100000
4045	4	Na %: A22 ICP package	ICP-AES	0.05	20.0
4046	4	Ni ppm: A22 ICP package	ICP-AES	10	100000
4075	4	Pb %: high grade 24 element	AAS	0.001	10.00
4047	4	Sr ppm: A22 ICP package	ICP-AES	10	100000
4048	4	Ti %: A22 ICP package	ICP-AES	0.05	20.0
4049	4	V ppm: A22 ICP package	ICP-AES	10	50000
4050	4	Zn ppm: A22 ICP package	ICP-AES	20	100000

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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

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Certificate Date: 12-JUL-96
Invoice No. : I9623652
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9623652

SAMPLE	PREP CODE		Au g/t RUSH	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
138553	258	295	< 0.03	< 0.5	8.75	400	< 10	< 20	5.70	< 10	30	120	130	7.50	1.5	3.35
138554	258	295	< 0.03	1.0	8.40	300	< 10	< 20	4.95	< 10	30	110	90	6.05	1.4	3.40
138555	258	295	< 0.03	2.0	9.30	400	< 10	< 20	6.40	< 10	30	100	200	6.55	1.4	3.45
138556	258	295	< 0.03	1.0	8.60	400	< 10	< 20	6.65	< 10	10	70	10	5.65	1.1	2.65

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

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Certificate Date: 12-JUL-96
Invoice No. : I9623652
P.O. Number :
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CERTIFICATE OF ANALYSIS A9623652

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	Pb % AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	Zn ppm (ICP)
138553	258	295	1860	< 10	2.75	40	0.006	310	0.40	220	160
138554	258	295	1230	< 10	2.20	30	0.006	360	0.45	250	100
138555	258	295	1390	< 10	2.45	40	0.005	450	0.50	270	100
138556	258	295	2230	< 10	3.10	30	0.005	410	0.45	190	140

CERTIFICATION: Hart Bichler

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Comments: ATTN:STEVE ROWINS

CERTIFICATE A9623624

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 21-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	5	Geochem ring to approx 150 mesh
226	5	0-3 Kg crush and split
3202	5	Rock - save entire reject
229	5	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	5	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	5	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	5	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	5	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	5	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	5	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	5	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	5	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	5	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	5	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	5	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	5	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	5	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	5	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	5	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	5	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	5	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	5	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	5	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	5	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	5	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	5	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	5	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	5	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	5	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	5	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	5	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	5	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	5	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	5	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	5	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	5	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	5	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Page Number :1-A
Total Pages :1
Certificate Date: 21-JUL-96
Invoice No. : I9623624
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9623624

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138568	205	226	10	0.4	3.13	30	30	0.5	2	6.99	2.0	10	59	< 1	11.35	10	< 1	0.25	< 10	0.80	2920
138569	205	226	15	0.2	3.19	3140	110	0.5	< 2	2.13	< 0.5	40	43	8	1.99	10	< 1	0.31	< 10	0.79	375
138573	205	226	5	0.6	0.14	100	< 10	0.5	2	>15.00	3.0	10	44	2	3.91	< 10	< 1	0.03	< 10	0.24	5830
138574	205	226	< 5	2.4	0.47	570	30	0.5	2	5.61	2.0	13	136	1	6.10	< 10	< 1	0.07	< 10	0.48	4390
138580	205	226	< 5	< 0.2	1.11	12	60	< 0.5	< 2	1.86	0.5	3	64	< 1	2.07	10	< 1	0.10	10	0.74	680

CERTIFICATION: [signature]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 21-JUL-96
Invoice No. : I9623624
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9623624

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138568	205	226	< 1	0.13	17	410	24	< 2	7	85	0.13	< 10	< 10	66	< 10	208
138569	205	226	< 1	0.34	29	380	14	< 2	8	185	0.11	< 10	< 10	82	< 10	96
138573	205	226	3	< 0.01	28	110	20	< 2	1	118	< 0.01	< 10	20	9	< 10	110
138574	205	226	1	< 0.01	47	220	32	4	3	45	< 0.01	< 10	< 10	20	< 10	164
138580	205	226	< 1	0.07	4	650	12	< 2	7	55	0.16	< 10	< 10	36	< 10	72

CERTIFICATION: [signature]

Chemex Labs Ltd.
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o: WESTMIN RESOURCES LTD.
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V7X 1C4

Comments: ATTN:STEVE ROWINS

CERTIFICATE A9623625

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 12-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
258	8	RUSH Assay ring approx 150 mesh
295	8	RUSH crush and split (0-3 Kg)
3202	8	Rock - save entire reject
290	8	Assay HF ICP digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
953	8	Au g/tonne: RUSH, 1 assay ton	FA-AAS	0.03	150.00
1263	8	Ag ppm: high grade 24 element	AAS	0.5	200
4031	8	Al %: A22 ICP package	ICP-AES	0.05	30.0
4032	8	Ba ppm: A22 ICP package	ICP-AES	100	50000
4033	8	Be ppm: A22 ICP package	ICP-AES	10	10000
4034	8	Bi ppm: A22 ICP package	ICP-AES	20	50000
4035	8	Ca %: A22 ICP package	ICP-AES	0.05	30000
4036	8	Cd ppm: A22 ICP package	ICP-AES	10	10000
4037	8	Co ppm: A22 ICP package	ICP-AES	10	100000
4038	8	Cr ppm: A22 ICP package	ICP-AES	10	100000
4039	8	Cu ppm: A22 ICP package	ICP-AES	10	100000
4040	8	Fe %: A22 ICP package	ICP-AES	0.05	30.0
4041	8	K %: A22 ICP package	ICP-AES	0.1	20.0
4042	8	Mg %: A22 ICP package	ICP-AES	0.05	30.0
4043	8	Mn ppm: A22 ICP package	ICP-AES	10	100000
4044	8	Mo ppm: A22 ICP package	ICP-AES	10	100000
4045	8	Na %: A22 ICP package	ICP-AES	0.05	20.0
4046	8	Ni ppm: A22 ICP package	ICP-AES	10	100000
4075	8	Pb %: high grade 24 element	AAS	0.001	10.00
4047	8	Sr ppm: A22 ICP package	ICP-AES	10	100000
4048	8	Ti %: A22 ICP package	ICP-AES	0.05	20.0
4049	8	V ppm: A22 ICP package	ICP-AES	10	50000
4050	8	Zn ppm: A22 ICP package	ICP-AES	20	100000

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Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 12-JUL-96
Invoice No. : I9623625
P.O. Number :
Account :GP R

CERTIFICATE OF ANALYSIS A9623625

SAMPLE	PREP CODE		Au g/t RUSH	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
138570	258	295	< 0.03	1.0	1.25	< 100	< 10	< 20	3.60	< 10	20	80	< 10	>30.0	< 0.1	1.30
138571	258	295	0.31	6.0	0.80	< 100	< 10	120	10.75	< 10	120	80	< 10	29.9	< 0.1	3.75
138572	258	295	0.03	5.0	1.70	< 100	< 10	20	10.10	< 10	30	310	< 10	>30.0	< 0.1	2.05
138575	258	295	0.03	1.0	1.05	< 100	< 10	< 20	15.60	< 10	10	80	< 10	11.50	0.1	2.45
138576	258	295	< 0.03	2.0	1.20	< 100	< 10	< 20	13.45	< 10	10	150	< 10	11.80	0.2	2.85
138577	258	295	0.93	47.0	1.50	< 100	< 10	2700	5.00	< 10	1580	100	10	>30.0	0.2	4.50
138578	258	295	0.31	10.0	1.90	< 100	< 10	340	11.25	< 10	220	220	< 10	24.6	0.3	5.40
138579	258	295	0.82	3.0	4.90	100	< 10	500	6.05	< 10	370	200	< 10	20.0	0.9	4.70

CERTIFICATION: [signature]

Chemex Labs Ltd.
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212 Brooksbank Ave., North Vancouver
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V7X 1C4

Project : RACINE 6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 12-JUL-96
Invoice No. : I9623625
P.O. Number :
Account :GP R

CERTIFICATE OF ANALYSIS A9623625

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	Pb % AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	Zn ppm (ICP)
138570	258	295	2820	< 10	0.05	10	0.008	40	< 0.05	10	160
138571	258	295	5340	< 10	0.05	80	0.019	30	< 0.05	30	220
138572	258	295	5150	< 10	0.10	90	0.022	50	0.05	40	180
138575	258	295	9160	< 10	0.05	40	0.012	90	0.05	30	520
138576	258	295	10550	< 10	0.10	30	0.008	80	0.05	30	480
138577	258	295	1700	< 10	0.05	120	0.144	30	0.05	40	100
138578	258	295	3010	< 10	0.05	120	0.053	90	0.05	60	220
138579	258	295	1660	< 10	0.40	90	0.015	170	0.30	130	180

CERTIFICATION: [signature]

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Analytical Chemists * Geochemists * Registered Assayers
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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9624467

Comments: ATTN:STEVE ROWINS

CERTIFICATE A9624467

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE #6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	18	Geochem ring to approx 150 mesh
226	18	0-3 Kg crush and split
3202	18	Rock - save entire reject
229	18	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	18	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	18	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	18	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	18	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	18	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	18	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	18	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	18	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	18	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	18	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	18	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	18	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	18	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	18	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	18	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	18	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	18	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	18	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	18	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	18	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	18	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	18	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	18	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	18	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	18	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	18	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	18	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	18	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	18	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	18	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	18	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	18	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	18	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE #6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 25-JUL-96
Invoice No. : I9624467
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624467

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138581	205	226	< 5	0.2	6.71	36	260	1.0	< 2	2.90	1.0	21	110	8	4.88	< 10	< 1	0.41	< 10	6.59	730
138582	205	226	< 5	1.2	0.42	2	20	< 0.5	< 2	0.31	< 0.5	7	71	125	1.79	< 10	< 1	0.05	< 10	0.22	140
138583	205	226	< 5	< 0.2	0.63	4	60	< 0.5	< 2	0.14	< 0.5	4	74	21	2.02	< 10	< 1	0.10	20	0.17	180
138584	205	226	< 5	< 0.2	2.85	< 2	260	< 0.5	< 2	1.74	0.5	18	41	37	5.30	20	< 1	1.43	10	1.35	625
138585	205	226	< 5	< 0.2	5.45	160	100	1.0	< 2	3.14	0.5	13	72	46	3.19	10	< 1	0.51	< 10	0.77	420
138586	205	226	< 5	< 0.2	1.57	40	270	0.5	< 2	>15.00	2.5	5	45	5	0.43	< 10	< 1	0.70	< 10	9.38	130
138587	205	226	< 5	0.2	3.20	264	200	0.5	2	1.03	0.5	15	75	76	5.05	10	< 1	1.24	10	0.87	560
138588	205	226	< 5	0.2	6.13	50	480	0.5	< 2	2.10	0.5	19	113	75	5.55	20	< 1	1.73	< 10	1.37	420
138589	205	226	< 5	0.2	7.00	< 2	580	< 0.5	< 2	2.43	1.0	23	70	88	5.24	10	< 1	1.81	< 10	3.26	320
138590	205	226	< 5	1.6	2.08	8	20	0.5	2	9.72	1.0	4	59	224	8.46	10	1	0.20	< 10	0.23	3450
138591	205	226	< 5	< 0.2	4.60	20	280	0.5	< 2	3.01	1.5	12	39	25	6.41	10	< 1	1.49	< 10	1.64	1565
138592	205	226	< 5	< 0.2	0.35	22	10	0.5	< 2	0.18	< 0.5	2	57	29	0.73	< 10	< 1	0.11	20	0.05	160
138593	205	226	< 5	< 0.2	4.77	6	540	0.5	< 2	0.96	0.5	24	165	42	5.09	10	< 1	1.19	< 10	3.15	525
138601	205	226	< 5	< 0.2	3.30	12	130	< 0.5	2	1.79	0.5	18	70	6	4.20	10	1	0.38	< 10	1.94	470
138602	205	226	< 5	< 0.2	0.91	< 2	60	< 0.5	< 2	0.82	< 0.5	4	70	6	2.40	10	< 1	0.21	30	0.46	530
138603	205	226	< 5	0.6	0.07	8	< 10	< 0.5	2	8.65	1.0	1	84	12	1.13	< 10	< 1	0.03	< 10	4.15	480
138604	205	226	< 5	0.6	0.57	8	60	< 0.5	6	2.12	4.5	14	113	40	4.29	< 10	< 1	0.21	< 10	0.54	1730
138605	205	226	< 5	1.0	0.20	6	300	< 0.5	< 2	0.13	< 0.5	3	109	60	2.85	< 10	< 1	0.12	< 10	0.02	120

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE #6110
Comments: ATTN:STEVE ROWINS

Certificate Date: 25-JUL-96
Invoice No. : 19624467
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624467

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138581	205	226	4	0.08	53	1140	4	< 2	10	276	0.22	< 10	< 10	136	< 10	98
138582	205	226	2	0.06	3	70	10	< 2	2	10	0.10	< 10	< 10	7	< 10	16
138583	205	226	4	0.06	1	210	20	< 2	4	6	0.07	< 10	< 10	6	< 10	16
138584	205	226	1	0.26	3	1690	8	< 2	10	106	0.51	< 10	< 10	183	< 10	72
138585	205	226	< 1	0.43	10	370	14	< 2	10	195	0.16	< 10	< 10	139	< 10	78
138586	205	226	< 1	< 0.01	20	860	20	2	7	461	0.11	< 10	30	43	< 10	8
138587	205	226	2	0.15	19	270	18	< 2	15	52	0.10	< 10	< 10	100	< 10	140
138588	205	226	1	0.39	44	680	8	< 2	19	176	0.14	< 10	< 10	140	< 10	68
138589	205	226	< 1	0.47	22	610	2	< 2	18	170	0.14	< 10	< 10	214	< 10	52
138590	205	226	< 1	0.09	6	360	18	< 2	6	17	0.04	< 10	10	107	< 10	42
138591	205	226	1	0.17	23	230	6	< 2	12	114	0.09	< 10	< 10	96	< 10	266
138592	205	226	1	0.06	1	50	24	< 2	< 1	8	0.01	< 10	< 10	4	< 10	46
138593	205	226	< 1	0.17	73	340	8	< 2	22	88	0.12	< 10	< 10	149	< 10	62
138601	205	226	< 1	0.31	21	900	4	< 2	13	153	0.12	< 10	< 10	133	< 10	52
138602	205	226	< 1	0.08	3	410	14	< 2	5	35	0.17	< 10	< 10	28	< 10	58
138603	205	226	< 1	< 0.01	3	50	8	2	< 1	260	< 0.01	< 10	< 10	11	< 10	18
138604	205	226	2	0.03	5	540	48	< 2	1	54	< 0.01	< 10	< 10	14	< 10	478
138605	205	226	3	0.12	1	360	60	< 2	1	27	< 0.01	< 10	< 10	17	< 10	12

CERTIFICATION: ____________

Chemex Labs Ltd.
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o: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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V7X 1C4

A9624211

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9624211

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 17-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
258	7	RUSH Assay ring approx 150 mesh
295	7	RUSH crush and split (0-3 Kg)
3202	7	Rock - save entire reject
290	7	Assay HF ICP digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
953	7	Au g/tonne: RUSH, 1 assay ton	FA-AAS	0.03	150.00
1263	7	Ag ppm: high grade 24 element	AAS	0.5	200
4031	7	Al %: A22 ICP package	ICP-AES	0.05	30.0
4032	7	Ba ppm: A22 ICP package	ICP-AES	100	50000
4033	7	Be ppm: A22 ICP package	ICP-AES	10	10000
4034	7	Bi ppm: A22 ICP package	ICP-AES	20	50000
4035	7	Ca %: A22 ICP package	ICP-AES	0.05	30000
4036	7	Cd ppm: A22 ICP package	ICP-AES	10	10000
4037	7	Co ppm: A22 ICP package	ICP-AES	10	100000
4038	7	Cr ppm: A22 ICP package	ICP-AES	10	100000
4039	7	Cu ppm: A22 ICP package	ICP-AES	10	100000
4040	7	Fe %: A22 ICP package	ICP-AES	0.05	30.0
4041	7	K %: A22 ICP package	ICP-AES	0.1	20.0
4042	7	Mg %: A22 ICP package	ICP-AES	0.05	30.0
4043	7	Mn ppm: A22 ICP package	ICP-AES	10	100000
4044	7	Mo ppm: A22 ICP package	ICP-AES	10	100000
4045	7	Na %: A22 ICP package	ICP-AES	0.05	20.0
4046	7	Ni ppm: A22 ICP package	ICP-AES	10	100000
4075	7	Pb %: high grade 24 element	AAS	0.001	10.00
4047	7	Sr ppm: A22 ICP package	ICP-AES	10	100000
4048	7	Ti %: A22 ICP package	ICP-AES	0.05	20.0
4049	7	V ppm: A22 ICP package	ICP-AES	10	50000
4050	7	Zn ppm: A22 ICP package	ICP-AES	20	100000

Chemex Labs Ltd.

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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number : 1-A
Total Pages : 1
Certificate Date: 17-JUL-96
Invoice No. : I9624211
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624211

SAMPLE	PREP CODE		Au g/t RUSH	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
138594	258	295	< 0.03	< 1.0	4.75	700	< 10	40	4.55	< 10	50	1210	10	20.7	3.3	8.75
138595	258	295	< 0.03	< 1.0	1.60	100	< 10	20	3.05	< 10	20	430	< 10	>30.0	1.2	3.60
138596	258	295	< 0.03	< 1.0	1.25	< 100	< 10	< 20	0.75	< 10	10	60	< 10	>30.0	0.3	2.55
138597	258	295	< 0.03	< 1.0	2.10	300	< 10	20	4.20	< 10	30	150	< 10	>30.0	0.8	3.05
138598	258	295	< 0.03	< 1.0	1.00	< 100	< 10	< 20	2.65	< 10	40	190	< 10	>30.0	0.4	2.35
138599	258	295	< 0.03	< 1.0	1.45	100	< 10	< 20	2.80	< 10	10	50	< 10	>30.0	0.7	2.25
138600	258	295	< 0.03	< 1.0	4.10	300	< 10	20	4.50	< 10	30	210	< 10	>30.0	1.5	4.20

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number :1-B
Total Pages :1
Certificate Date: 17-JUL-96
Invoice No. : I9624211
P.O. Number :
Account :GP R

CERTIFICATE OF ANALYSIS A9624211

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	Pb % AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	Zn ppm (ICP)
138594	258	295	1730	< 10	0.25	400	0.002	40	0.20	130	740
138595	258	295	1530	< 10	0.05	140	< 0.001	10	0.05	60	420
138596	258	295	1540	< 10	< 0.05	10	< 0.001	< 10	0.05	40	220
138597	258	295	1760	< 10	0.05	50	0.001	50	0.10	50	200
138598	258	295	1320	< 10	< 0.05	90	< 0.001	< 10	0.05	40	140
138599	258	295	1380	< 10	0.05	10	< 0.001	10	0.05	40	260
138600	258	295	1820	< 10	0.25	110	< 0.001	150	0.20	110	300

CERTIFICATION:

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A9624790

Comments:

CERTIFICATE A9624790

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 28-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	13	Geochem ring to approx 150 mesh
226	13	0-3 Kg crush and split
3202	13	Rock - save entire reject
229	13	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	13	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	13	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	13	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	13	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	13	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	13	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	13	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	13	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	13	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	13	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	13	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	13	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	13	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	13	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	13	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	13	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	13	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	13	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	13	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	13	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	13	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	13	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	13	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	13	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	13	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	13	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	13	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	13	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	13	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	13	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	13	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	13	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	13	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.
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Project : RACINE 6110
Comments:

Certificate Date: 28-JUL-96
Invoice No. : I9624790
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624790

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138606	205	226	< 5	0.2	4.52	66	140	< 0.5	2	2.63	0.5	13	63	109	3.07	< 10	< 1	0.51	< 10	0.67	435
138607	205	226	< 5	< 0.2	0.25	44	10	< 0.5	< 2	0.03	< 0.5	3	143	17	0.56	< 10	< 1	0.12	10	0.03	45
138608	205	226	< 5	0.4	4.40	1770	340	< 0.5	< 2	2.01	< 0.5	23	62	57	3.92	< 10	< 1	0.50	< 10	1.86	290
138609	205	226	< 5	0.4	2.03	32	10	< 0.5	< 2	12.25	< 0.5	< 1	85	20	9.15	< 10	< 1	0.05	< 10	0.13	3100
138610	205	226	< 5	0.2	1.25	176	10	< 0.5	2	14.40	0.5	< 1	88	< 1	11.90	< 10	1	0.03	< 10	0.09	2430
138611	205	226	< 5	0.2	1.53	38	< 10	< 0.5	< 2	13.80	0.5	< 1	81	< 1	10.60	< 10	< 1	0.03	< 10	0.07	2220
138612	205	226	< 5	< 0.2	1.99	36	< 10	< 0.5	< 2	6.53	< 0.5	6	43	3	3.44	< 10	3	0.04	< 10	0.50	1260
138613	205	226	< 5	< 0.2	0.35	34	10	< 0.5	< 2	0.13	< 0.5	1	85	15	0.68	< 10	< 1	0.13	10	0.04	90
138614	205	226	< 5	0.2	2.64	476	110	0.5	< 2	0.66	< 0.5	26	48	116	5.89	< 10	< 1	0.40	< 10	1.11	575
138615	205	226	< 5	0.2	1.48	138	60	0.5	< 2	0.60	1.0	15	61	30	3.82	< 10	< 1	0.32	< 10	0.32	350
138616	205	226	< 5	< 0.2	0.31	20	< 10	< 0.5	< 2	0.13	< 0.5	1	117	14	0.81	< 10	< 1	0.11	10	0.05	95
138617	205	226	< 5	< 0.2	1.61	30	60	0.5	< 2	4.36	< 0.5	9	73	< 1	3.73	< 10	< 1	0.30	10	1.07	780
138618	205	226	< 5	< 0.2	0.98	48	180	1.0	< 2	8.22	< 0.5	7	29	< 1	3.22	< 10	< 1	0.29	< 10	0.42	2860

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
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Project : RACINE 6110
Comments:

Certificate Date: 28-JUL-96
Invoice No. : I9624790
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624790

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138606	205	226	1	0.52	15	720	42	< 2	9	164	0.13	< 10	< 10	84	< 10	74
138607	205	226	5	0.07	1	10	18	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	26
138608	205	226	< 1	0.48	16	620	16	4	8	144	0.06	< 10	< 10	115	< 10	56
138609	205	226	< 1	0.02	2	230	38	4	5	22	0.03	< 10	< 10	57	< 10	34
138610	205	226	< 1	0.01	1	380	42	6	3	10	0.01	< 10	< 10	26	< 10	16
138611	205	226	< 1	0.01	1	190	20	4	3	16	0.01	< 10	< 10	31	< 10	38
138612	205	226	< 1	0.01	13	410	10	6	6	99	0.13	< 10	< 10	59	< 10	106
138613	205	226	1	0.06	1	10	14	< 2	< 1	5	< 0.01	< 10	< 10	1	< 10	20
138614	205	226	< 1	0.04	18	100	12	4	8	30	0.01	< 10	< 10	51	< 10	62
138615	205	226	< 1	0.04	14	60	50	2	6	15	< 0.01	< 10	< 10	26	< 10	186
138616	205	226	1	0.08	1	10	16	< 2	1	5	< 0.01	< 10	< 10	1	< 10	24
138617	205	226	1	0.04	22	930	10	< 2	9	62	0.01	< 10	< 10	38	< 10	32
138618	205	226	< 1	0.01	14	960	8	2	9	65	< 0.01	< 10	< 10	18	< 10	48

CERTIFICATION: Hart Bichler

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To: WESTMIN RESOURCES LTD.
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V7X 1C4

A9626290

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626290

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 9-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	15	Geochem ring to approx 150 mesh
226	15	0-3 Kg crush and split
3202	15	Rock - save entire reject
229	15	ICP - AQ Digestion charge
* NOTE	1:	

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	15	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	15	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	15	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	15	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	15	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	15	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	15	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	15	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	15	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	15	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	15	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	15	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	15	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	15	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	15	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	15	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	15	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	15	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	15	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	15	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	15	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	15	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	15	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	15	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	15	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	15	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	15	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	15	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	15	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	15	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	15	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	15	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	15	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: WESTMIN RESOURCES LTD.
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 09-AUG-96
Invoice No. : I9626290
P.O. Number : 6110
Account : GP R

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A9626290

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138619	205	226	145	197.0	0.18	1065	< 10	< 0.5	Intf*	11.10	>100.0	36	40	>10000	7.49	< 10	< 1	< 0.01	< 10	0.22	1835
138620	205	226	< 5	0.2	2.87	< 2	140	< 0.5	< 2	1.94	< 0.5	20	30	195	3.76	< 10	< 1	0.67	< 10	1.03	235
138621	205	226	< 5	2.2	0.69	32	10	< 0.5	< 2	5.08	15.5	7	24	137	>15.00	10	< 1	< 0.01	< 10	0.10	2070
138622	205	226	< 5	2.2	3.26	4	20	< 0.5	< 2	10.60	0.5	4	75	1	7.39	< 10	< 1	0.01	< 10	1.32	6090
138623	205	226	< 5	0.2	1.49	14	10	0.5	< 2	>15.00	< 0.5	3	78	1	8.26	< 10	< 1	< 0.01	< 10	0.44	3060
138624	205	226	< 5	< 0.2	0.39	12	10	< 0.5	< 2	2.96	< 0.5	4	115	1	2.35	< 10	< 1	0.08	20	0.55	1250
138625	205	226	< 5	< 0.2	0.30	8	10	< 0.5	< 2	0.55	< 0.5	< 1	84	8	0.44	< 10	< 1	0.11	10	0.05	165
138626	205	226	25	0.6	5.78	66	610	< 0.5	< 2	1.81	0.5	16	54	98	4.81	10	< 1	2.49	< 10	2.63	880
138627	205	226	35	1.0	2.34	52	20	< 0.5	2	8.41	3.5	19	104	< 1	3.17	< 10	< 1	0.04	< 10	0.79	4320
138628	205	226	5	< 0.2	3.92	50	40	< 0.5	< 2	4.09	< 0.5	12	25	< 1	1.47	< 10	< 1	0.08	< 10	1.06	775
138629	205	226	< 5	< 0.2	2.32	< 2	140	< 0.5	< 2	1.16	< 0.5	7	53	< 1	3.69	10	< 1	0.83	10	1.01	610
138630	205	226	< 5	< 0.2	1.06	24	150	0.5	< 2	1.43	1.0	6	39	9	2.00	< 10	< 1	0.22	30	0.23	665
138631	205	226	< 5	< 0.2	5.48	76	270	< 0.5	< 2	2.35	1.0	13	79	20	4.51	10	< 1	1.34	< 10	1.07	735
138632	205	226	< 5	< 0.2	0.34	24	10	< 0.5	< 2	0.26	< 0.5	1	83	6	0.44	< 10	< 1	0.12	30	0.06	90
138633	205	226	75	< 0.2	5.34	258	250	0.5	< 2	2.39	0.5	27	121	109	4.35	10	< 1	1.46	< 10	1.57	425

CERTIFICATION: Hart Bichler

* INTERFERENCE: Cu on Bi and P

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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To: WESTMIN RESOURCES LTD.
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 09-AUG-96
Invoice No. : I9626290
P.O. Number : 6110
Account : GP R

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A9626290

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138619	205	226	< 1	0.01	397	Intf*	3550	< 2	< 1	74	< 0.01	< 10	< 10	10	Intf*	5270
138620	205	226	< 1	0.31	9	1220	10	2	8	115	0.15	< 10	< 10	133	< 10	46
138621	205	226	< 1	< 0.01	25	< 10	130	< 2	< 1	42	0.03	< 10	< 10	30	< 10	696
138622	205	226	< 1	< 0.01	5	490	146	< 2	6	68	0.09	< 10	< 10	34	< 10	180
138623	205	226	< 1	< 0.01	11	160	12	< 2	1	91	0.01	< 10	< 10	35	10	76
138624	205	226	< 1	< 0.01	5	20	< 2	< 2	1	66	< 0.01	< 10	< 10	3	< 10	18
138625	205	226	1	0.10	1	10	16	< 2	< 1	9	< 0.01	< 10	< 10	< 1	< 10	22
138626	205	226	< 1	0.30	14	550	6	2	18	285	0.24	< 10	< 10	161	< 10	108
138627	205	226	< 1	< 0.01	24	1170	80	< 2	4	75	0.11	< 10	< 10	37	< 10	246
138628	205	226	< 1	0.42	11	1240	26	< 2	3	276	0.13	< 10	< 10	48	< 10	64
138629	205	226	< 1	0.16	5	1070	22	< 2	6	57	0.25	< 10	< 10	78	< 10	102
138630	205	226	3	0.03	3	400	38	< 2	3	16	< 0.01	< 10	< 10	4	< 10	94
138631	205	226	1	0.30	25	180	14	2	14	137	0.16	< 10	< 10	96	< 10	192
138632	205	226	1	0.07	3	30	6	< 2	< 1	8	< 0.01	< 10	< 10	1	< 10	10
138633	205	226	4	0.22	69	660	4	< 2	13	142	0.09	< 10	< 10	94	< 10	92

CERTIFICATION: [signature]

* INTERFERENCE: Cu on Bi and P

Chemex Labs Ltd.

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A9627786

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9627786

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	1	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
301	1	Cu %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0

Chemex Labs Ltd.
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Project : RACINE 6110
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Certificate Date: 13-AUG-96
Invoice No. : I9627786
P.O. Number : 6110
Account : GP R

CERTIFICATE OF ANALYSIS A9627786

SAMPLE	PREP CODE		Cu %									
138619	244	--	2.54									

CERTIFICATION: [signature]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626289

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 11-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
226	20	0-3 Kg crush and split
3202	20	Rock - save entire reject
229	20	ICP - AQ Digestion charge
* NOTE	1:	

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	20	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	20	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	20	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	20	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	20	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	20	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	20	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	20	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	20	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	20	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	20	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	20	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	20	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	20	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	20	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	20	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	20	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	20	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	20	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	20	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	20	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	20	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	20	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	20	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	20	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	20	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	20	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	20	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	20	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	20	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	20	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	20	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	20	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number :1-A
Total Pages :1
Certificate Date: 11-AUG-96
Invoice No. : I9626289
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626289

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138634	205	226	< 5	< 0.2	3.16	238	30	< 0.5	< 2	2.29	< 0.5	23	202	2	0.92	< 10	< 1	0.43	< 10	0.93	160
138635	205	226	< 5	< 0.2	1.45	16	< 10	< 0.5	< 2	2.62	< 0.5	3	48	2	1.83	< 10	< 1	0.01	< 10	0.15	855
138636	205	226	10	0.2	2.04	16	< 10	< 0.5	< 2	5.69	< 0.5	4	73	4	2.77	< 10	1	0.01	< 10	0.21	2290
138637	205	226	< 5	0.2	3.60	114	180	< 0.5	< 2	1.69	< 0.5	16	244	100	1.94	< 10	1	0.94	< 10	1.24	265
138638	205	226	< 5	< 0.2	1.98	2	160	< 0.5	< 2	0.75	< 0.5	4	61	32	1.85	< 10	< 1	0.55	< 10	0.69	235
138639	205	226	< 5	< 0.2	1.68	2	200	< 0.5	< 2	0.77	< 0.5	14	50	104	3.32	< 10	< 1	0.59	< 10	0.92	205
138640	205	226	< 5	0.6	1.41	4	100	< 0.5	< 2	0.73	< 0.5	6	59	82	1.27	< 10	< 1	0.26	< 10	0.79	180
138641	205	226	< 5	< 0.2	5.78	< 2	240	< 0.5	< 2	2.70	< 0.5	16	35	142	2.40	10	1	0.69	< 10	0.75	80
138642	205	226	< 5	< 0.2	1.41	< 2	70	< 0.5	< 2	0.55	< 0.5	3	32	22	1.28	< 10	< 1	0.55	< 10	0.62	295
138643	205	226	< 5	< 0.2	3.10	6	10	< 0.5	< 2	4.62	1.0	8	22	26	3.54	< 10	< 1	0.19	< 10	0.29	65
138644	205	226	< 5	< 0.2	3.43	< 2	230	< 0.5	< 2	1.35	< 0.5	14	49	86	3.26	< 10	< 1	1.06	< 10	1.05	200
138645	205	226	< 5	0.2	2.57	< 2	460	< 0.5	< 2	0.74	< 0.5	34	289	310	3.61	< 10	< 1	1.29	< 10	2.48	270
138646	205	226	< 5	< 0.2	1.00	< 2	90	< 0.5	< 2	0.21	< 0.5	2	33	10	1.38	< 10	< 1	0.28	10	0.35	205
138647	205	226	< 5	< 0.2	1.49	< 2	190	< 0.5	< 2	1.12	< 0.5	13	148	36	1.75	< 10	< 1	0.46	< 10	0.88	200
138648	205	226	< 5	0.6	2.83	< 2	200	< 0.5	< 2	0.53	< 0.5	13	23	445	4.03	< 10	< 1	1.04	< 10	1.61	570
138649	205	226	< 5	< 0.2	1.06	< 2	10	< 0.5	< 2	1.20	< 0.5	5	46	22	1.34	< 10	< 1	0.01	< 10	0.14	220
138650	205	226	< 5	0.2	1.76	44	< 10	< 0.5	< 2	7.47	< 0.5	12	65	8	4.51	< 10	< 1	0.01	< 10	0.15	3850
138651	205	226	< 5	0.2	1.56	12	140	< 0.5	< 2	1.21	< 0.5	22	38	198	3.18	< 10	< 1	0.40	< 10	0.81	305
138652	205	226	< 5	0.8	0.61	14	< 10	< 0.5	< 2	2.70	12.0	3	15	19	>15.00	< 10	< 1	< 0.01	< 10	0.10	1770
138653	205	226	75	< 0.2	0.75	6220	< 10	< 0.5	2	2.74	3.0	64	20	3	1.97	< 10	< 1	< 0.01	< 10	0.48	960

CERTIFICATION: HartBichler

Chemex Labs Ltd.

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o: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page er :1-B
Total Pages :1
Certificate Date: 11-AUG-96
Invoice No. : I9626289
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626289

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138634	205	226	2	0.17	219	1820	2	< 2	3	126	0.06	< 10	< 10	25	< 10	26
138635	205	226	< 1	< 0.01	10	390	6	< 2	4	62	0.11	< 10	< 10	33	< 10	20
138636	205	226	< 1	0.01	20	330	6	2	7	26	0.11	< 10	< 10	57	< 10	12
138637	205	226	3	0.25	131	1090	14	< 2	6	127	0.10	< 10	< 10	57	< 10	52
138638	205	226	1	0.19	5	650	< 2	< 2	3	61	0.09	< 10	< 10	31	< 10	26
138639	205	226	< 1	0.17	16	770	< 2	< 2	8	47	0.11	< 10	< 10	120	< 10	40
138640	205	226	< 1	0.10	20	520	12	< 2	3	59	0.08	< 10	< 10	31	< 10	50
138641	205	226	1	0.65	16	1320	< 2	< 2	7	353	0.06	< 10	< 10	133	< 10	38
138642	205	226	< 1	0.11	3	350	2	< 2	2	25	0.05	< 10	< 10	17	< 10	34
138643	205	226	4	0.26	6	530	2	< 2	3	174	0.09	< 10	< 10	25	< 10	58
138644	205	226	< 1	0.31	13	680	2	< 2	6	90	0.15	< 10	< 10	81	< 10	24
138645	205	226	< 1	0.09	147	850	2	< 2	5	21	0.16	< 10	< 10	76	< 10	36
138646	205	226	3	0.08	2	160	< 2	< 2	3	18	0.04	< 10	< 10	6	< 10	14
138647	205	226	< 1	0.07	33	870	2	< 2	6	76	0.14	< 10	< 10	54	< 10	28
138648	205	226	< 1	0.07	11	620	2	2	13	40	0.21	< 10	< 10	151	< 10	52
138649	205	226	< 1	0.01	3	280	10	< 2	1	103	0.09	< 10	< 10	17	< 10	14
138650	205	226	< 1	< 0.01	15	290	10	< 2	3	12	0.04	< 10	< 10	20	< 10	36
138651	205	226	< 1	0.07	10	1790	4	< 2	6	72	0.16	< 10	< 10	83	< 10	30
138652	205	226	< 1	< 0.01	16	< 10	54	< 2	< 1	22	0.02	< 10	< 10	23	< 10	656
138653	205	226	1	< 0.01	28	570	2	< 2	4	45	0.07	< 10	< 10	19	< 10	30

CERTIFICATION: [signature]

Chemex Labs Ltd.
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VANCOUVER, BC
V7X 1C4

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626278

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 9-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	15	Geochem ring to approx 150 mesh
226	15	0-3 Kg crush and split
3202	15	Rock - save entire reject
229	15	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	15	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	15	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	15	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	15	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	15	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	15	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	15	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	15	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	15	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	15	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	15	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	15	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	15	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	15	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	15	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	15	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	15	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	15	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	15	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	15	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	15	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	15	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	15	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	15	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	15	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	15	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	15	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	15	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	15	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	15	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	15	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	15	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	15	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 09-AUG-96
Invoice No. : I9626278
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626278

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138654	205	226	< 5	< 0.2	2.66	20	150	< 0.5	< 2	0.37	< 0.5	19	80	116	5.13	< 10	< 1	0.61	< 10	0.90	225
138655	205	226	< 5	< 0.2	3.47	14	190	0.5	< 2	0.20	< 0.5	23	38	45	5.49	< 10	< 1	0.75	< 10	0.85	280
138656	205	226	< 5	< 0.2	2.19	< 2	80	0.5	< 2	0.19	< 0.5	9	39	30	2.96	< 10	< 1	0.41	< 10	0.76	220
138657	205	226	< 5	< 0.2	5.15	112	350	< 0.5	< 2	1.32	< 0.5	30	302	30	4.67	10	< 1	0.80	< 10	2.61	515
138658	205	226	< 5	< 0.2	0.42	8	< 10	0.5	< 2	0.04	< 0.5	< 1	84	3	0.94	< 10	< 1	0.13	10	0.05	120
138660	205	226	< 5	< 0.2	3.70	24	80	< 0.5	< 2	6.84	1.5	6	144	< 1	3.15	< 10	< 1	0.44	< 10	0.75	1175
138661	205	226	< 5	< 0.2	3.98	54	390	< 0.5	< 2	0.94	< 0.5	20	230	70	3.69	< 10	< 1	1.39	< 10	2.33	245
138662	205	226	< 5	< 0.2	5.05	238	160	< 0.5	< 2	3.89	2.0	23	294	38	2.69	< 10	< 1	0.85	< 10	1.59	465
138663	205	226	< 5	< 0.2	0.79	22	20	< 0.5	< 2	1.81	0.5	2	61	< 1	0.97	< 10	< 1	0.05	10	0.20	640
138664	205	226	< 5	< 0.2	4.76	78	270	0.5	< 2	0.71	0.5	21	226	38	5.31	10	< 1	1.59	< 10	1.44	305
138665	205	226	< 5	< 0.2	0.72	16	10	0.5	< 2	0.91	< 0.5	< 1	33	< 1	0.37	< 10	< 1	0.02	10	0.07	200
138666	205	226	< 5	< 0.2	0.16	8	30	3.0	< 2	0.67	< 0.5	< 1	43	24	0.47	< 10	< 1	0.01	30	0.01	120
138667	205	226	< 5	< 0.2	0.73	4	50	< 0.5	< 2	1.44	< 0.5	< 1	48	< 1	0.77	< 10	< 1	0.05	10	0.32	395
138668	205	226	< 5	< 0.2	0.81	2	80	< 0.5	< 2	0.64	< 0.5	3	60	5	2.26	< 10	< 1	0.25	20	0.37	460
138669	205	226	< 5	< 0.2	6.20	< 2	910	< 0.5	< 2	1.13	< 0.5	22	65	11	5.95	10	< 1	1.50	< 10	2.42	780

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number :1-B
Total Pages :1
Certificate Date: 09-AUG-96
Invoice No. : I9626278
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626278

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138654	205	226	10	0.09	20	200	2	< 2	7	31	0.06	< 10	< 10	62	< 10	38
138655	205	226	< 1	0.07	17	110	< 2	< 2	10	23	0.08	< 10	< 10	85	< 10	44
138656	205	226	1	0.06	8	70	< 2	< 2	3	24	0.03	< 10	< 10	37	< 10	34
138657	205	226	4	0.22	174	460	6	< 2	15	121	0.08	< 10	< 10	159	< 10	62
138658	205	226	2	0.09	2	10	14	< 2	1	3	0.01	< 10	< 10	< 1	< 10	26
138660	205	226	< 1	0.14	32	500	26	< 2	6	78	0.11	< 10	< 10	71	< 10	90
138661	205	226	6	0.15	78	620	2	< 2	11	83	0.10	< 10	< 10	177	< 10	46
138662	205	226	1	0.30	109	1260	56	< 2	8	105	0.07	< 10	< 10	96	< 10	158
138663	205	226	1	0.10	7	150	24	< 2	1	39	0.04	< 10	< 10	6	< 10	54
138664	205	226	< 1	0.13	77	510	2	4	18	77	0.09	< 10	< 10	142	< 10	46
138665	205	226	< 1	0.17	1	330	8	< 2	1	44	0.08	< 10	< 10	9	< 10	30
138666	205	226	1	0.08	1	60	24	< 2	< 1	27	0.04	< 10	< 10	3	< 10	22
138667	205	226	1	0.13	2	570	22	< 2	2	33	0.14	< 10	< 10	17	< 10	48
138668	205	226	1	0.09	3	410	14	< 2	4	21	0.15	< 10	< 10	22	< 10	66
138669	205	226	< 1	0.31	16	390	6	< 2	23	124	0.15	< 10	< 10	195	< 10	56

CERTIFICATION: [signature]

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9626707

Comments: ATTN: STEVE ROWINS CC:STEVE SUTHERLAND

CERTIFICATE A9626707

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	13	Geochem ring to approx 150 mesh
226	13	0-3 Kg crush and split
3202	13	Rock - save entire reject
229	13	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	13	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	13	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	13	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	13	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	13	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	13	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	13	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	13	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	13	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	13	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	13	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	13	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	13	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	13	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	13	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	13	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	13	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	13	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	13	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	13	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	13	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	13	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	13	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	13	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	13	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	13	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	13	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	13	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	13	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	13	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	13	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	13	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	13	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS CC:STEVE SUTHERLAND

Certificate Date: 13-AUG-96
Invoice No. : I9626707
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626707

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138669	205	226	< 5	0.2	1.37	2	80	< 0.5	< 2	0.83	< 0.5	4	66	27	2.37	< 10	< 1	0.27	10	0.68	485
138670	205	226	< 5	< 0.2	2.21	28	160	0.5	< 2	0.58	< 0.5	14	35	2	3.42	< 10	< 1	0.32	20	0.87	680
138671	205	226	< 5	< 0.2	1.87	32	110	0.5	< 2	0.85	< 0.5	5	52	4	2.89	< 10	< 1	0.50	10	0.69	550
138672	205	226	< 5	< 0.2	2.58	30	100	< 0.5	< 2	0.95	< 0.5	10	113	48	2.39	< 10	< 1	0.46	< 10	1.09	285
138673	205	226	< 5	< 0.2	3.22	120	320	< 0.5	< 2	2.05	< 0.5	11	110	26	4.66	< 10	1	0.56	10	1.77	545
138674	205	226	< 5	< 0.2	3.49	44	290	< 0.5	< 2	2.63	< 0.5	16	36	60	4.91	< 10	< 1	0.36	< 10	1.56	900
138675	205	226	< 5	< 0.2	2.30	20	260	< 0.5	< 2	1.06	< 0.5	9	81	10	1.82	< 10	< 1	0.55	< 10	0.95	205
138676	205	226	< 5	1.0	3.05	34	50	< 0.5	2	2.35	< 0.5	32	55	175	3.30	< 10	< 1	0.13	< 10	0.44	530
138677	205	226	< 5	0.2	4.28	12	100	< 0.5	< 2	2.77	< 0.5	20	41	81	2.51	< 10	1	0.13	< 10	0.65	445
138678	205	226	< 5	0.2	5.24	34	110	< 0.5	< 2	3.70	< 0.5	18	97	50	1.96	< 10	< 1	0.29	< 10	0.67	350
138679	205	226	< 5	0.6	5.76	30	150	< 0.5	< 2	3.92	< 0.5	13	73	97	1.99	< 10	< 1	0.35	< 10	0.53	315
138680	205	226	< 5	< 0.2	4.82	28	190	< 0.5	< 2	3.76	< 0.5	12	79	55	2.60	< 10	< 1	0.59	< 10	0.71	535
138681	205	226	< 5	< 0.2	6.79	12	840	0.5	< 2	2.30	< 0.5	15	52	31	4.41	10	< 1	1.70	< 10	2.07	335

CERTIFICATION:

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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS CC:STEVE SUTHERLAND

Certificate Date: 13-AUG-96
Invoice No. : I9626707
P.O. Number : 6110
Account : GP R

CERTIFICATE OF ANALYSIS A9626707

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138669	205	226	< 1	0.10	4	690	16	2	4	39	0.15	< 10	< 10	42	< 10	90
138670	205	226	1	0.04	3	1050	10	< 2	7	95	0.03	< 10	< 10	31	< 10	68
138671	205	226	1	0.11	5	730	14	< 2	5	42	0.11	< 10	< 10	41	< 10	74
138672	205	226	1	0.14	8	440	16	< 2	8	105	0.08	< 10	< 10	89	< 10	90
138673	205	226	1	0.05	39	520	22	10	10	55	0.03	< 10	< 10	61	< 10	72
138674	205	226	1	0.15	7	990	8	2	12	178	0.04	< 10	< 10	124	< 10	72
138675	205	226	1	0.15	13	690	6	2	7	74	0.07	< 10	< 10	57	< 10	44
138676	205	226	1	0.32	23	830	16	4	13	161	0.18	< 10	< 10	145	< 10	54
138677	205	226	1	0.30	16	810	24	2	11	721	0.19	< 10	< 10	124	< 10	72
138678	205	226	1	0.56	40	690	14	4	8	233	0.14	< 10	< 10	92	< 10	62
138679	205	226	1	0.59	18	580	4	2	10	240	0.14	< 10	< 10	118	< 10	52
138680	205	226	2	0.36	27	480	6	2	8	251	0.14	< 10	< 10	90	< 10	46
138681	205	226	3	0.24	10	610	2	2	15	198	0.11	< 10	< 10	121	< 10	72

CERTIFICATION: Hart Bichler

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A9626709

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626709

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	13	Geochem ring to approx 150 mesh
226	13	0-3 Kg crush and split
3202	13	Rock - save entire reject
229	13	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	13	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	13	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	13	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	13	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	13	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	13	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	13	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	13	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	13	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	13	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	13	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	13	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	13	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	13	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	13	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	13	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	13	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	13	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	13	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	13	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	13	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	13	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	13	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	13	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	13	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	13	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	13	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	13	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	13	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	13	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	13	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	13	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	13	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 13-AUG-96
Invoice No. : I9626709
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9626709

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138682	205	226	20	< 0.2	0.67	158	10	< 0.5	< 2	11.90	< 0.5	29	92	243	14.50	< 10	< 1	0.05	< 10	0.08	1955
138683	205	226	75	< 0.2	0.73	190	< 10	< 0.5	< 2	12.80	< 0.5	20	63	84	14.85	< 10	< 1	0.05	< 10	0.09	2260
138684	205	226	5	0.2	1.13	108	20	< 0.5	< 2	11.90	< 0.5	21	90	188	13.55	10	< 1	0.11	< 10	0.12	2610
138685	205	226	10	< 0.2	3.95	62	240	< 0.5	< 2	3.75	1.5	12	257	54	3.75	< 10	< 1	0.65	< 10	1.31	1235
138686	205	226	35	0.6	2.30	42	50	< 0.5	2	4.61	< 0.5	15	53	140	3.11	< 10	< 1	0.17	< 10	0.40	1180
138687	205	226	10	0.2	4.89	68	440	< 0.5	< 2	1.77	< 0.5	19	109	43	4.10	< 10	< 1	1.57	< 10	2.33	430
138688	205	226	15	< 0.2	4.97	40	230	0.5	< 2	3.54	< 0.5	13	40	43	2.20	< 10	< 1	0.82	< 10	0.88	540
138689	205	226	20	0.2	3.27	86	180	< 0.5	2	3.30	0.5	12	150	44	2.46	< 10	< 1	0.60	< 10	0.84	820
138690	205	226	20	< 0.2	5.33	50	410	0.5	< 2	2.64	< 0.5	10	49	43	2.70	< 10	< 1	1.15	< 10	1.20	415
138691	205	226	5	0.2	3.60	42	280	< 0.5	< 2	2.06	< 0.5	11	130	144	2.81	< 10	< 1	0.75	< 10	1.03	480
138692	205	226	< 5	< 0.2	0.34	14	40	< 0.5	< 2	0.15	< 0.5	1	101	31	1.20	< 10	< 1	0.10	20	0.06	100
138693	205	226	< 5	< 0.2	0.30	2	10	< 0.5	< 2	0.21	< 0.5	< 1	120	3	0.68	< 10	< 1	0.13	10	0.06	130
138694	205	226	< 5	< 0.2	0.32	10	< 10	< 0.5	< 2	0.20	< 0.5	< 1	113	5	0.79	< 10	< 1	0.13	10	0.05	85

CERTIFICATION:________________

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 13-AUG-96
Invoice No. : I9626709
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9626709

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138682	205	226	< 1	< 0.01	9	200	16	4	2	6	< 0.01	< 10	< 10	37	< 10	28
138683	205	226	< 1	< 0.01	8	190	12	2	3	5	< 0.01	< 10	10	56	< 10	26
138684	205	226	< 1	0.01	8	400	10	4	3	11	0.01	< 10	10	42	< 10	36
138685	205	226	1	0.09	56	500	12	6	8	144	0.12	< 10	< 10	85	< 10	344
138686	205	226	6	0.07	15	360	26	2	4	110	0.12	< 10	< 10	48	< 10	46
138687	205	226	2	0.09	120	310	< 2	2	12	116	0.08	< 10	< 10	97	< 10	72
138688	205	226	1	0.22	13	520	8	2	7	194	0.11	< 10	< 10	83	< 10	60
138689	205	226	2	0.12	43	810	20	< 2	5	110	0.08	< 10	< 10	58	< 10	110
138690	205	226	4	0.28	19	550	6	2	8	219	0.14	< 10	< 10	90	< 10	114
138691	205	226	7	0.21	41	500	14	2	8	158	0.09	< 10	< 10	79	< 10	94
138692	205	226	3	0.07	2	60	10	< 2	1	6	0.01	< 10	< 10	2	< 10	22
138693	205	226	1	0.08	1	20	10	< 2	< 1	5	0.02	< 10	< 10	1	< 10	16
138694	205	226	3	0.07	1	10	8	< 2	1	5	0.01	< 10	< 10	< 1	< 10	14

CERTIFICATION:

APPENDIX D

ROCK SAMPLE DESCRIPTIONS

APPENDIX D: ROCK SAMPLE DESCRIPTIONS

SAMPLE #	UTM N	UTM E	ELEVATION (m)	DESCRIPTION
138512	6616111	517675	1380	Foliated, medium-grained, dark green meladiorite with disseminated pyrite and pyrrhotite.
138519	6615571	517575	1270	Dark green mafic schist in contact with granitic dyke. Abundant silicification, argillization and carbonatization.
138509	6615470	517914	1200	Marble with epidote alteration and strong jointing. Neglegible sulphide minerals.
138502	6615220	518040	1350	Mafic schist in contact with marbled limestone.
138619	6616510	518232	1795	Marble skarn with arsenopyrite, chalcopyrite, pyrite, azurite, and malachite.
138620	6616508	518253	1730	Altered schist with minor pyrite and chalcopyrite.
138621	6616509	518350		Teepee Peak - lower down on mountain. Garnet-calcite-magnetite skarn.
138622	6616737	518533	1792	Teepee Peak - lower down on mountain. Chlorite-amphibole schist hosting garnet-magnetite skarn.
138650	6616553	518211	1770	Teepee Peak. Garnet-diopside-calcite-epidote skarn.
138651	6616523	518225	1760	Teepee Peak. Amphibolitized, fine-grained diorite with minor pyrite (limonite) and epidote.
138652	6616490	518240		Teepee Peak. Garnet-magnetite-calcite skarn.
138653	6616520	518200	1755	Teepee Peak. Silicified diopside-garnet-calcite-amphibole skarn with 1-2 vol.% pyrite & arsenopyrite?

APPENDIX E

GEOCHEMICAL RESULTS, ROCK SAMPLES

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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A9624668

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9624668

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-JUL-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	34	Geochem ring to approx 150 mesh
226	34	0-3 Kg crush and split
3202	34	Rock - save entire reject
229	34	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	34	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	34	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	34	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	34	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	34	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	34	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	34	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	34	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	34	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	34	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	34	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	34	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	34	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	34	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	34	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	34	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	34	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	34	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	34	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	34	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	34	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	34	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	34	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	34	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	34	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	34	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	34	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	34	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	34	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	34	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	34	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	34	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	34	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number : 1-A
Total Pages : 1
Certificate Date: 25-JUL-96
Invoice No. : I9624668
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624668

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138502	205 226	< 5	0.2	2.44	2	700	< 0.5	< 2	0.33	< 0.5	1	69	8	2.96	< 10	1	1.38	< 10	1.30	455
138509	205 226	< 5	0.2	0.05	< 2	< 10	< 0.5	< 2	>15.00	< 0.5	< 1	< 1	< 1	0.11	< 10	< 1	< 0.01	< 10	9.53	80
138512	205 226	< 5	< 0.2	2.31	2	710	< 0.5	< 2	1.01	< 0.5	11	48	20	3.00	< 10	< 1	1.03	< 10	1.30	395
138519	205 226	< 5	< 0.2	2.28	8	30	< 0.5	2	1.65	0.5	4	33	< 1	0.51	< 10	1	0.03	< 10	0.36	190

CERTIFICATION: [signature]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 25-JUL-96
Invoice No. : I9624668
P.O. Number :
Account : GP R

CERTIFICATE OF ANALYSIS A9624668

SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138502	205 226	1	0.10	1	1070	10	< 2	11	38	0.16	< 10	< 10	55	< 10	58
138509	205 226	< 1	< 0.01	< 1	40	10	< 2	< 1	128	< 0.01	10	< 10	< 1	< 10	< 2
138512	205 226	< 1	0.18	2	1120	6	< 2	3	68	0.14	10	< 10	75	< 10	60
138519	205 226	< 1	0.47	13	600	48	< 2	1	221	0.18	< 10	< 10	23	< 10	112

CERTIFICATION: _______________

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9626290

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626290

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 9-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	15	Geochem ring to approx 150 mesh
226	15	0-3 Kg crush and split
3202	15	Rock - save entire reject
229	15	ICP - AQ Digestion charge
* NOTE	1:	

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	15	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	15	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	15	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	15	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	15	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	15	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	15	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	15	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	15	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	15	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	15	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	15	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	15	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	15	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	15	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	15	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	15	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	15	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	15	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	15	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	15	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	15	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	15	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	15	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	15	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	15	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	15	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	15	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	15	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	15	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	15	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	15	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	15	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Pa nber :1-A
Tot ges :1
Certificate Date: 09-AUG-96
Invoice No. : I9626290
P.O. Number :6110
Account :GP R

**PLEASE NOTE

CERTIFICATE OF ANALYSIS A9626290

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138619	205	226	145	197.0	0.18	1065	< 10	< 0.5	Intf*	11.10	>100.0	36	40	>10000	7.49	< 10	< 1	< 0.01	< 10	0.22	1835
138620	205	226	< 5	0.2	2.87	< 2	140	< 0.5	< 2	1.94	< 0.5	20	30	195	3.76	< 10	< 1	0.67	< 10	1.03	235
138621	205	226	< 5	2.2	0.69	32	10	< 0.5	< 2	5.08	15.5	7	24	137	>15.00	10	< 1	< 0.01	< 10	0.10	2070
138622	205	226	< 5	2.2	3.26	4	20	< 0.5	< 2	10.60	0.5	4	75	1	7.39	< 10	< 1	0.01	< 10	1.32	6090

CERTIFICATION: [signature]

* INTERFERENCE: Cu on Bi and P

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Page Number :1-B
Total Pages :1
Certificate Date: 09-AUG-96
Invoice No. :I9626290
P.O. Number :6110
Account :GPR

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A9626290

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138619	205	226	< 1	0.01	397	Intf*	3550	< 2	< 1	74	< 0.01	< 10	< 10	10	Intf*	5270
138620	205	226	< 1	0.31	9	1220	10	2	8	115	0.15	< 10	< 10	133	< 10	46
138621	205	226	< 1	< 0.01	25	< 10	130	< 2	< 1	42	0.03	< 10	< 10	30	< 10	696
138622	205	226	< 1	< 0.01	5	490	146	< 2	6	68	0.09	< 10	< 10	34	< 10	180

CERTIFICATION: [signature]

* INTERFERENCE: Cu on Bi and P

Chemex Labs Ltd.
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To: WESTMIN RESOURCES LTD.
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VANCOUVER, BC
V7X 1C4

A9626289

Comments: ATTN: STEVE ROWINS

CERTIFICATE A9626289

(GP R) - WESTMIN RESOURCES LTD.

Project: RACINE 6110
P.O. # : 6110

Samples submitted to our lab in Vancouver, BC.
This report was printed on 11-AUG-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
226	20	0-3 Kg crush and split
3202	20	Rock - save entire reject
229	20	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	20	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	20	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	20	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	20	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	20	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	20	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	20	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	20	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	20	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	20	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	20	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	20	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	20	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	20	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	20	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	20	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	20	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	20	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	20	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	20	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	20	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	20	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	20	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	20	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	20	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	20	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	20	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	20	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	20	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	20	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	20	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	20	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	20	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: WESTMIN RESOURCES LTD.
ATTN: STEVE ROWINS
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VANCOUVER, BC
V7X 1C4

Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Pag ber :1-A
Total es :1
Certificate Date: 11-AUG-96
Invoice No. : I9626289
P.O. Number :6110
Account :GP R

CERTIFICATE OF ANALYSIS A9626289

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
138650	205	226	< 5	0.2	1.76	44	< 10	< 0.5	< 2	7.47	< 0.5	12	65	8	4.51	< 10	< 1	0.01	< 10	0.15	3850
138651	205	226	< 5	0.2	1.56	12	140	< 0.5	< 2	1.21	< 0.5	22	38	198	3.18	< 10	< 1	0.40	< 10	0.81	305
138652	205	226	< 5	0.8	0.61	14	< 10	< 0.5	< 2	2.70	12.0	3	15	19	>15.00	< 10	< 1	< 0.01	< 10	0.10	1770
138653	205	226	75	< 0.2	0.75	6220	< 10	< 0.5	2	2.74	3.0	64	20	3	1.97	< 10	< 1	< 0.01	< 10	0.48	960

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
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Project : RACINE 6110
Comments: ATTN: STEVE ROWINS

Certificate Date: 11-AUG-96
Invoice No. : I9626289
P.O. Number : 6110
Account : GP R

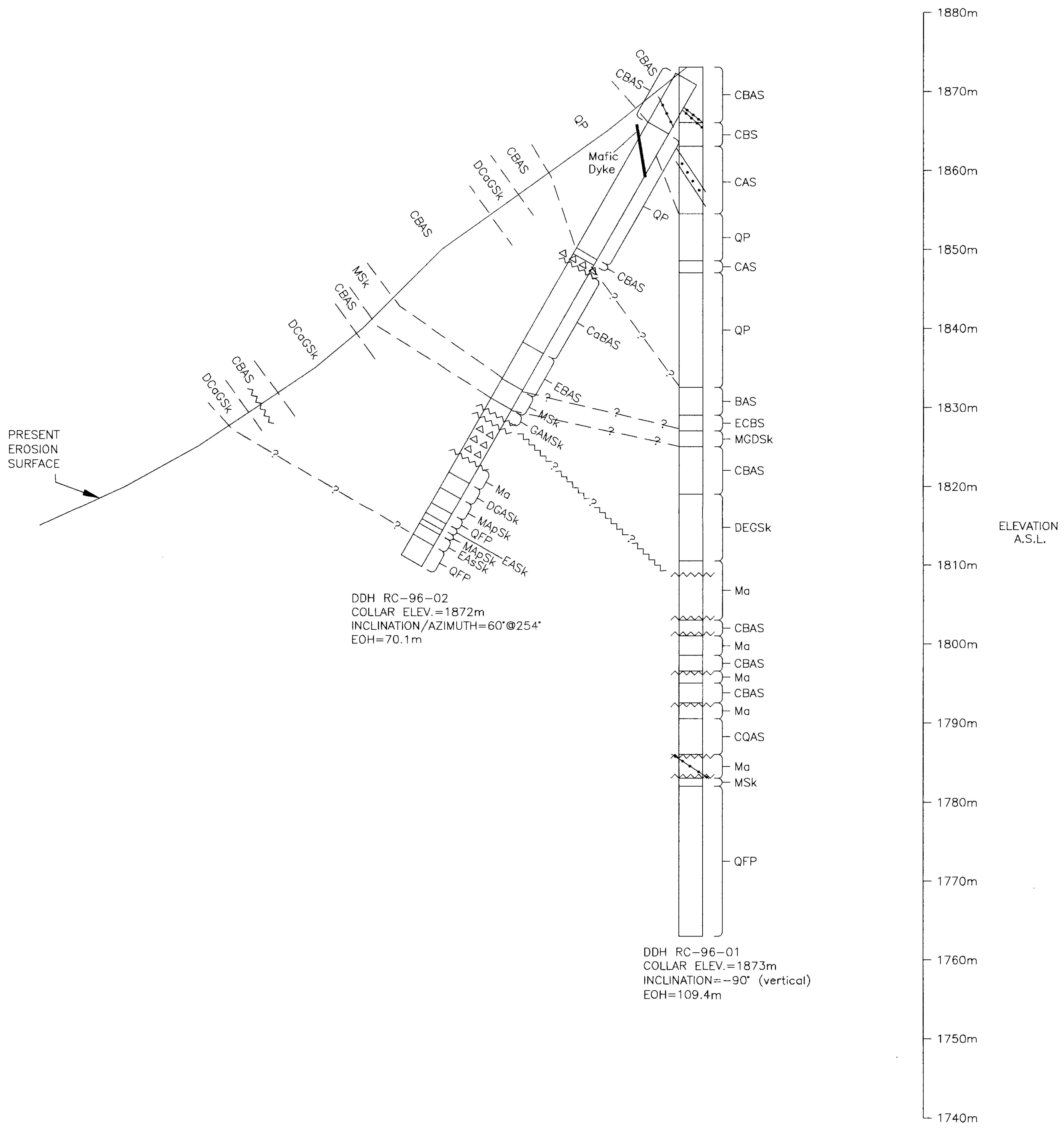
CERTIFICATE OF ANALYSIS A9626289

SAMPLE	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
138650	205	226	< 1	< 0.01	15	290	10	< 2	3	12	0.04	< 10	< 10	20	< 10	36
138651	205	226	< 1	0.07	10	1790	4	< 2	6	72	0.16	< 10	< 10	83	< 10	30
138652	205	226	< 1	< 0.01	16	< 10	54	< 2	< 1	22	0.02	< 10	< 10	23	< 10	656
138653	205	226	1	< 0.01	28	570	2	< 2	4	45	0.07	< 10	< 10	19	< 10	30

CERTIFICATION: ____________

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,844



LEGEND

LITHOLOGY

S Schist
Sk Skarn
Ma Marble
QP Quartz granite porphyry
QFP Quartz feldspar granite porphyry
LT Crystal-lithic felsic lapilli-tuff

MINERALOGICAL PREFIXES

C Chlorite
B Biotite
A Amphibole
D Diopside
G Garnet
E Epidote
As Albite & Scapolite
M Magnetite
Ap Arsenopyrite
Q Quartz
Ab Albite
Ca Calcite

SYMBOLS

Fault
Breccia
Quartz vein
Quartz vein (mappable width)
Dyke

Note: Maximum of three mineralogical prefixes used to describe lithologies. Minerals in composite rock names arranged in order of increasing amounts, i.e. a more abundant mineral falls closer to the root name than a less abundant mineral.

GEOLOGICAL ASSOCIATION OF CANADA
S.M. ROWINS
F 6362
FELLOW
ASSOCIATION GÉOLOGIQUE DU CANADA

Westmin Resources Limited

Work By S. ROWINS
Date Drafted Nov. 8, 1996
Drafted By J.M. Klein
Date Revised
Revised By

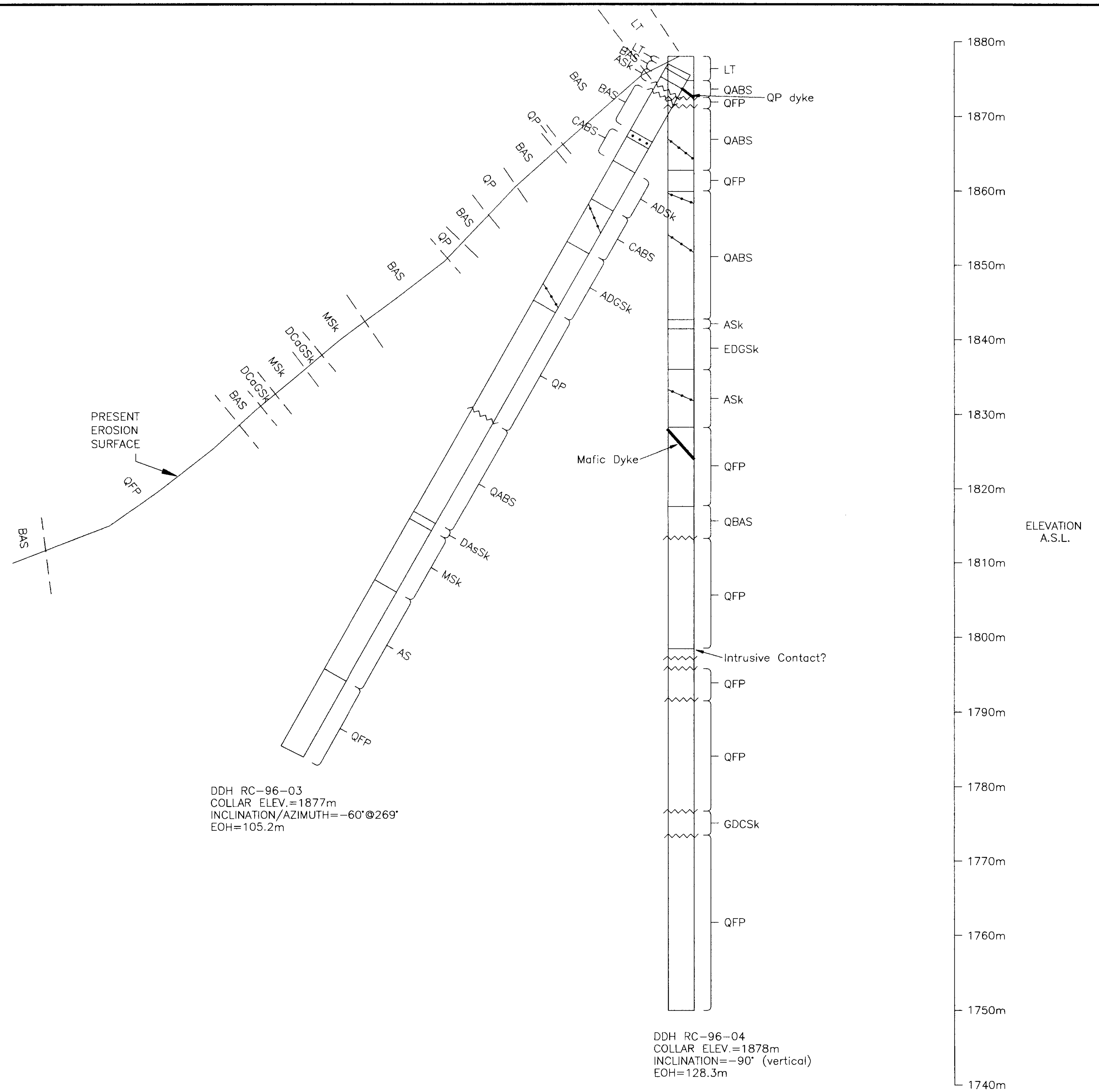
RACINE PROJECT

DRILL SECTION
DDH's RC-96-01, RC-96-02
LOOKING NNW

N.T.S. Number XXXX
File Name DRILLSEC

SCALE 1 : 500

Figure 4



GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT
24,744

LEGEND

LITHOLOGY

S Schist
Sk Skarn
Ma Marble
QP Quartz granite porphyry
QFP Quartz feldspar granite porphyry
LT Crystal-lithic felsic lapilli-tuff

MINERALOGICAL PREFIXES

C Chlorite
B Biotite
A Amphibole
D Diopside
G Garnet
E Epidote
As Albite & Scapolite
M Magnetite
Ap Arsenopyrite
Q Quartz
Ab Albite
Ca Calcite

SYMBOLS

Fault
Breccia
Quartz vein
Quartz vein (mappable width)
Dyke

Note: Maximum of three mineralogical prefixes used to describe lithologies. Minerals in composite rock names arranged in order of increasing amounts, i.e. a more abundant mineral falls closer to the the root name than a less abundant mineral.

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Westmin Resources Limited

Work By S. ROWINS
Date Drafted Nov. 8, 1996
Drafted By J.M. Klein
Date Revised
Revised By
N.T.S. Number XXXX
File Name DRILLSEC

RACINE PROJECT

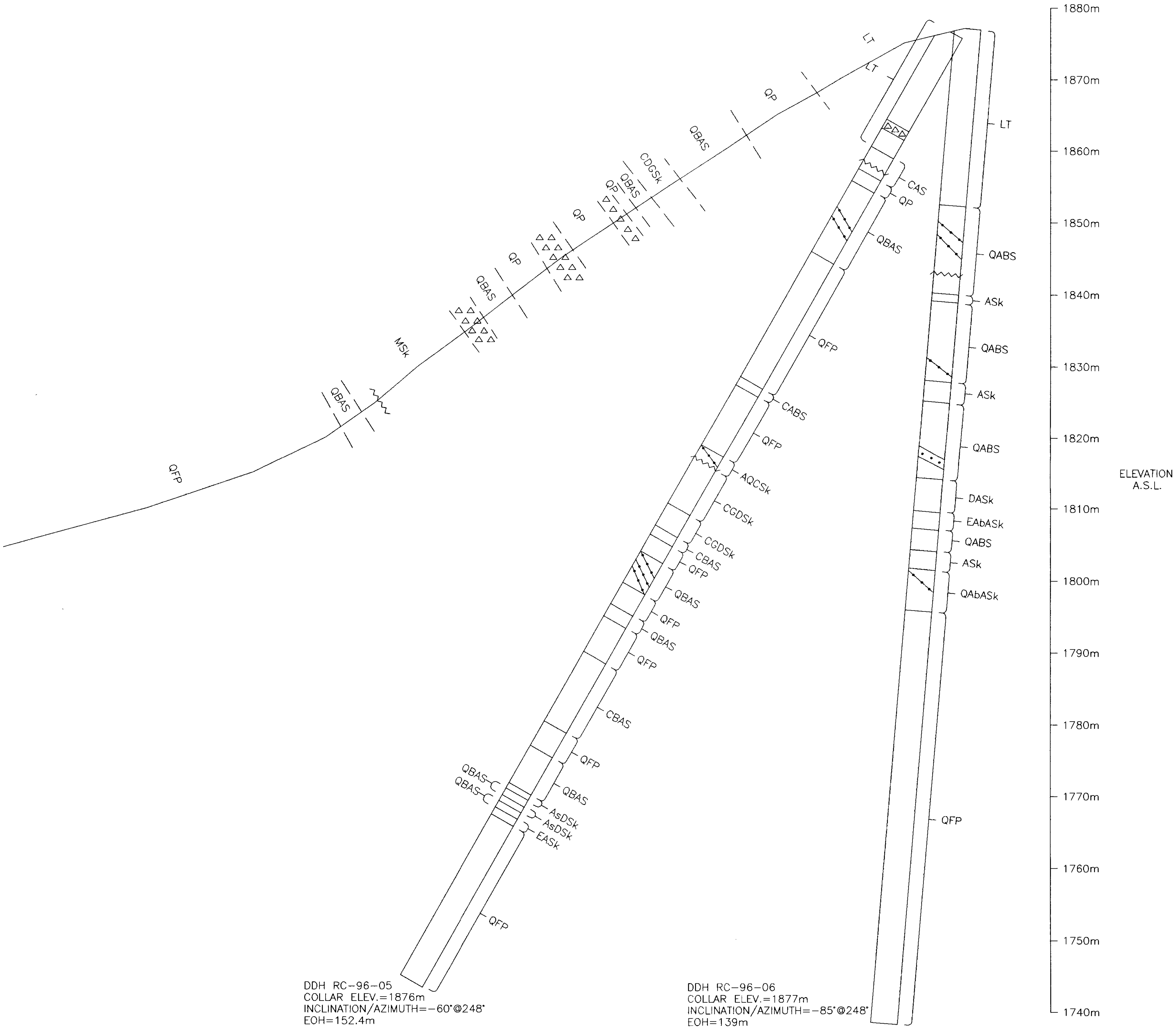
DRILL SECTION
DDH's RC-96-03, RC-96-04
LOOKING NNW

5 0 5 10
SCALE 1 : 500

Figure 5

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,844



LEGEND

LITHOLOGY

S	Schist
Sk	Skarn
Ma	Marble
QP	Quartz granite porphyry
QFP	Quartz feldspar granite porphyry
LT	Crystal-lithic felsic lapilli-tuff

MINERALOGICAL PREFIXES

C	Chlorite
B	Biotite
A	Amphibole
D	Diopside
G	Garnet
E	Epidote
As	Albite & Scapolite
M	Magnetite
Ap	Arsenopyrite
Q	Quartz
Ab	Albite
Ca	Calcite

SYMBOLS

- Fault
- Breccia
- Quartz vein
- Quartz vein (mappable width)
- Dyke

Note: Maximum of three mineralogical prefixes used to describe lithologies. Minerals in composite rock names arranged in order of increasing amounts, i.e. a more abundant mineral falls closer to the root name than a less abundant mineral.

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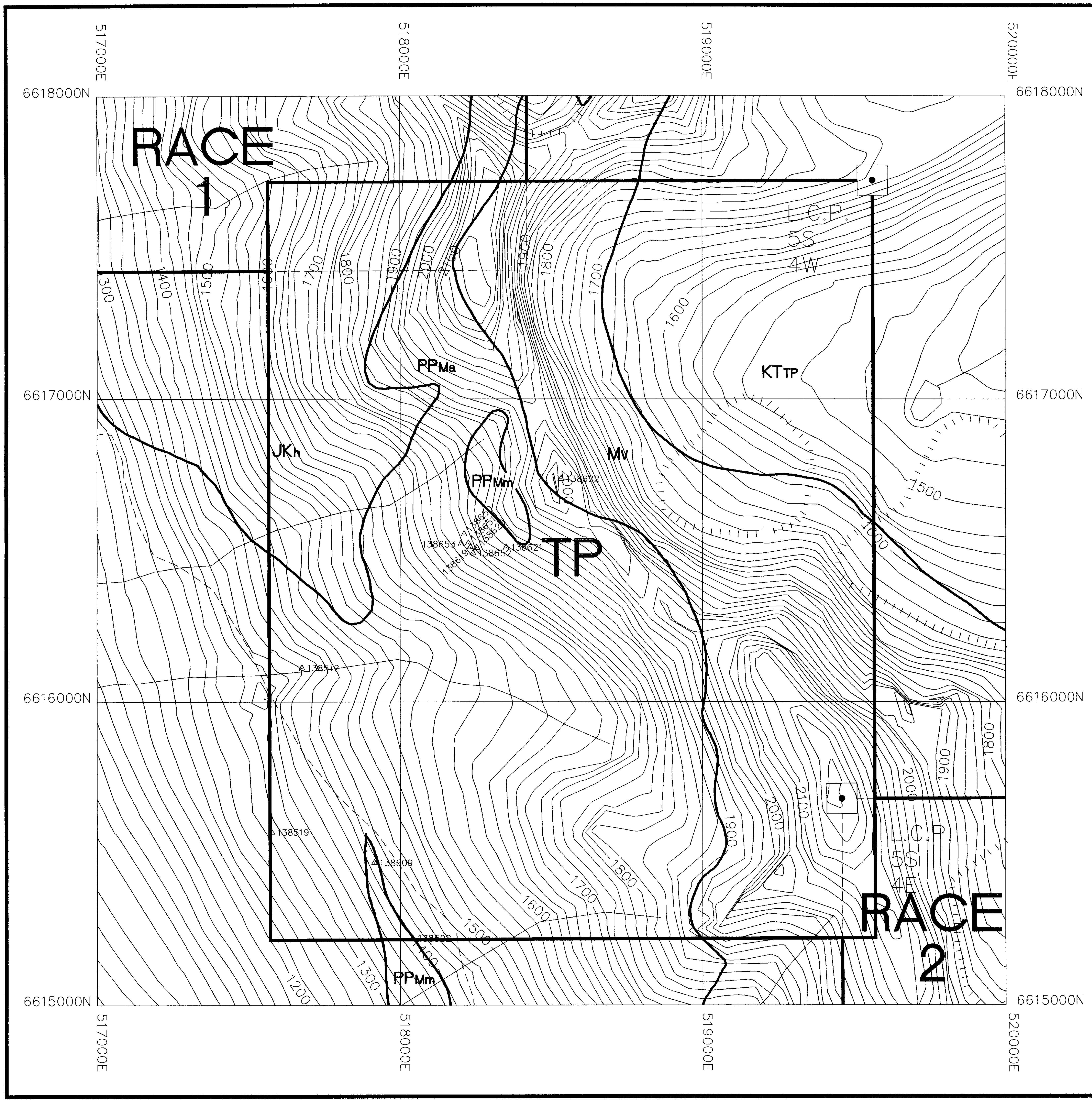
Westmin Resources Limited

Work By: S. ROWINS	RACINE PROJECT
Date Drafted: Nov. 8, 1996	DRILL SECTION
Drafted By: J.M. Klein	DDH's RC-96-05, RC-96-06
Date Revised	LOOKING NNW
Revised By	
N.T.S. Number: XXXX	SCALE 1 : 500
File Name: DRILLSEC	Figure 6

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT
24,944



UTM GRID NORTH

LEGEND

TERTIARY (54–56 Ma)

KTTP Teepee Peak Stock. Medium-grained grandorite to tonalite.

Mv Teepee Peak Volcanics. Heterolithic Lapilli tuff; Hornblende-feldspar porphyry breccia; Rhyolite flows, domes and pyroclastic breccias.

JURASSIC (187 Ma)

JKh Hornblendite to Hornblende-diorite.

PROTEROZOIC to PALEOZOIC (>245 Ma)

PPMa Boundary Ranges Metamorphics. Chlorite-actinolite-biotite schists.

PPMm Boundary Ranges Metamorphics. Marble.

NOTE: Geology from Mihalynuk et al., 1989 (BC MEMPR OPEN FILE 1989-13)

SYMBOLS

- Icefield
- Lake
- Waterway
- Rock sample
- Treeline
- Geological boundary

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FELLOW
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Westmin Resources Limited

Work By	S. Rowins
Date Drafted	Nov. 13, 1996
Drafted By	J.M. Klein
Date Revised	
Revised By	
N.T.S. Number	104 M/15
File Name	TP_CLAIM

RACINE PROJECT

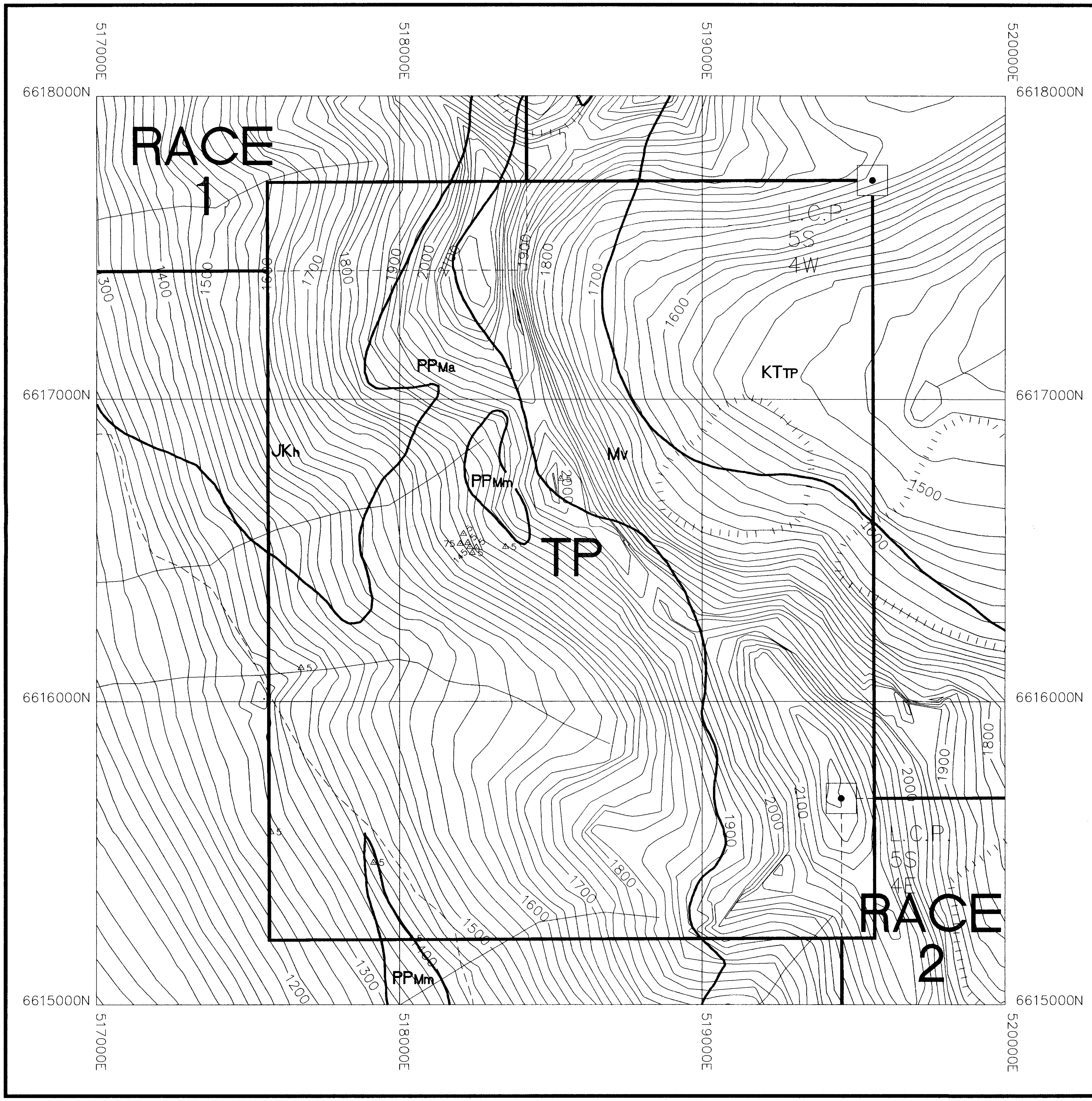
Location map for geochemical samples (rock) from the T.P. claim

200 0 200 400 600m

SCALE 1 : 10,000

Figure 7

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT



UTM GRID NORTH

LEGEND

TERTIARY (54–56 Ma)

KTTP Teepee Peak Stock. Medium–grained grandorite to tonalite.

Mv Teepee Peak Volcanics. Heterolithic Lapilli tuff; Hornblende–feldspar porphyry breccia; Rhyolite flows, domes and pyroclastic breccias.

JURASSIC (187 Ma)

JKh Hornblendite to Hornblende–diorite.

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PPMa Boundary Ranges Metamorphics. Chlorite–actinolite–biotite schists.

PPMm Boundary Ranges Metamorphics. Marble.

NOTE: Geology from Mihalynuk et al., 1989 (BC MEMPR OPEN FILE 1989–13)

SYMBOLS

- Icefield
- Lake
- Waterway
- Rock sample
- Treeline
- Geological boundary

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Westmin Resources Limited

Work By	S. Rowins
Date Drafted	Nov. 13, 1996
Drafted By	J.M. Klein
Date Revised	
Revised By	
N.T.S. Number	104 M/15
File Name	TP_CLAIM

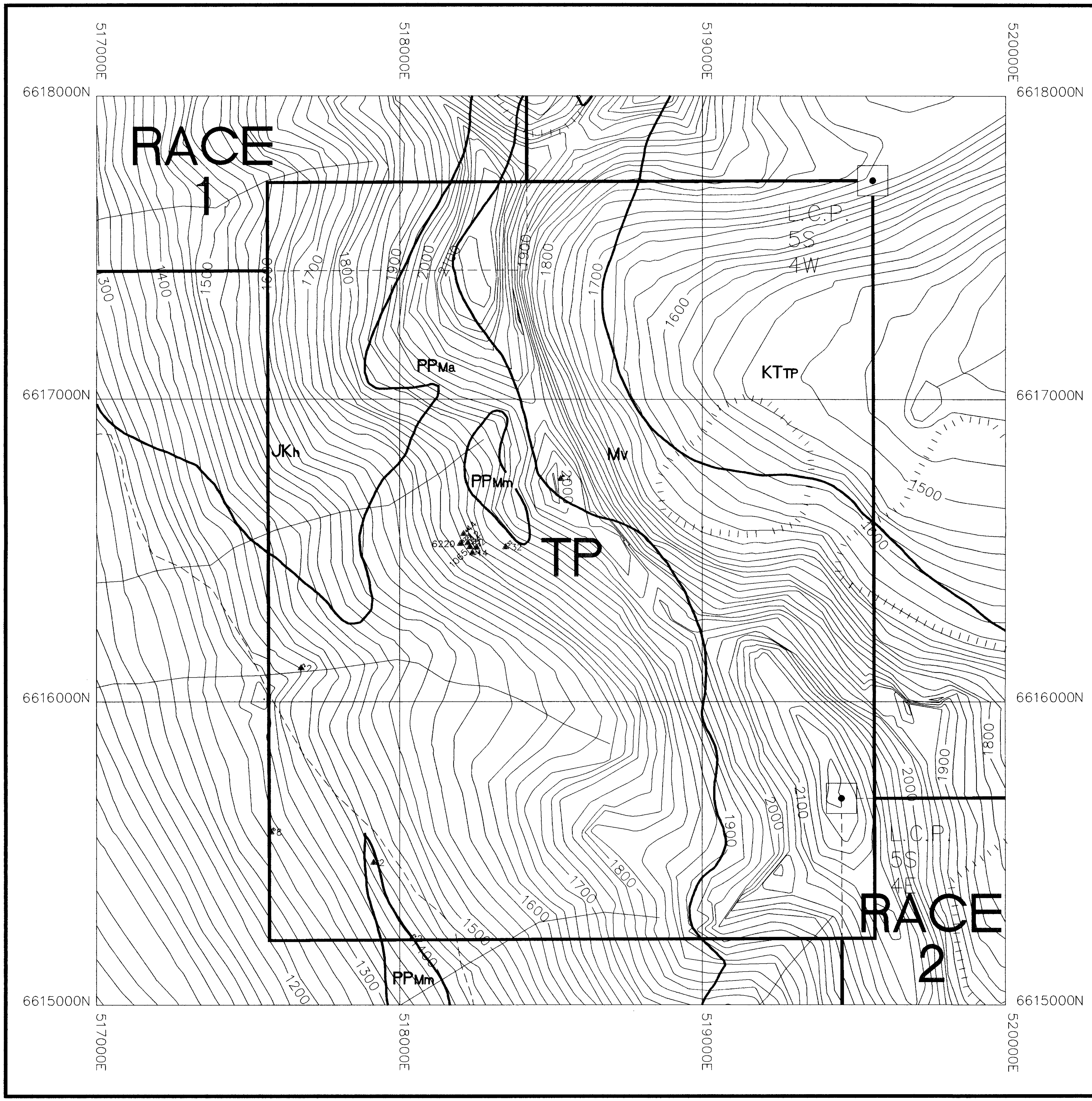
RACINE PROJECT
Au (in ppb) for rock samples from the T.P. claim

200 0 200 400 600m
SCALE 1 : 10,000

Figure 8

24,844

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT



UTM GRID NORTH

LEGEND

TERTIARY (54–56 Ma)

KTTP Teepee Peak Stock. Medium–grained grandorite to tonalite.

Mv Teepee Peak Volcanics. Heterolithic Lapilli tuff; Hornblende–feldspar porphyry breccia; Rhyolite flows, domes and pyroclastic breccias.

JURASSIC (187 Ma)

JKh Hornblendite to Hornblende–diorite.

PROTEROZOIC to PALEOZOIC (>245 Ma)

PPMa Boundary Ranges Metamorphics. Chlorite–actinolite–biotite schists.

PPMm Boundary Ranges Metamorphics. Marble.

NOTE: Geology from Mihalynuk et al., 1989 (BC MEMPR OPEN FILE 1989–13)

SYMBOLS

- Icefield
- Lake
- Waterway
- Rock sample
- Treeline
- Geological boundary

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S.M. ROWINS
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FELLOW
ASSOCIATION GÉOLOGIQUE DU CANADA

WESTMIN

Westmin Resources Limited

Work By	S. Rowins
Date Drafted	Nov. 13, 1996
Drafted By	J.M. Klein
Date Revised	
Revised By	
N.T.S. Number	104 M/15
File Name	TP_CLAIM

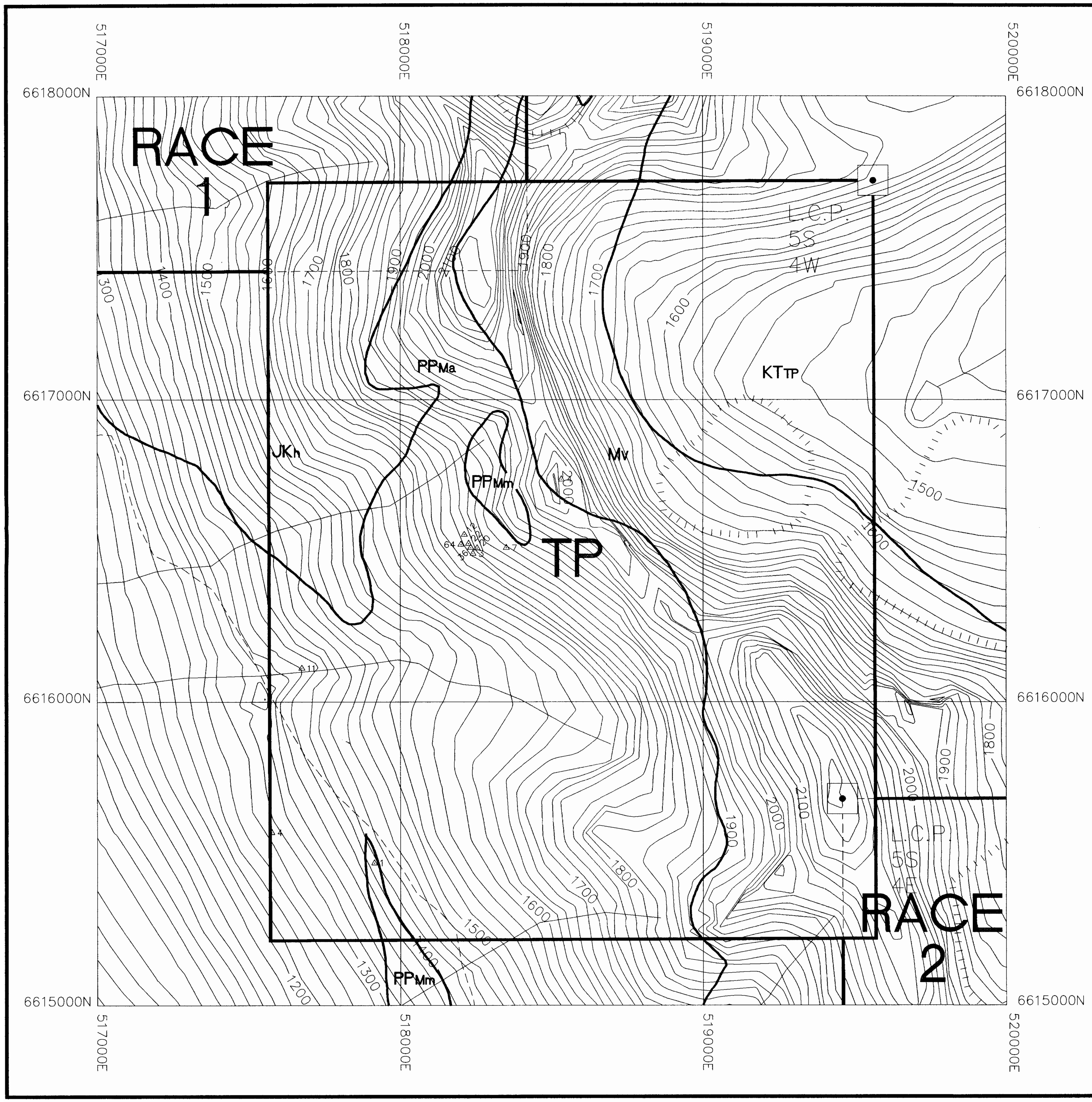
RACINE PROJECT

As (in ppm) for rock samples from the T.P. claim

200 0 200 400 600m

SCALE 1 : 10,000

Figure 9



UTM GRID NORTH

LEGEND

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RACINE PROJECT

Co (in ppm) for rock samples from the T.P. claim

200 0 200 400 600m

SCALE 1 : 10,000

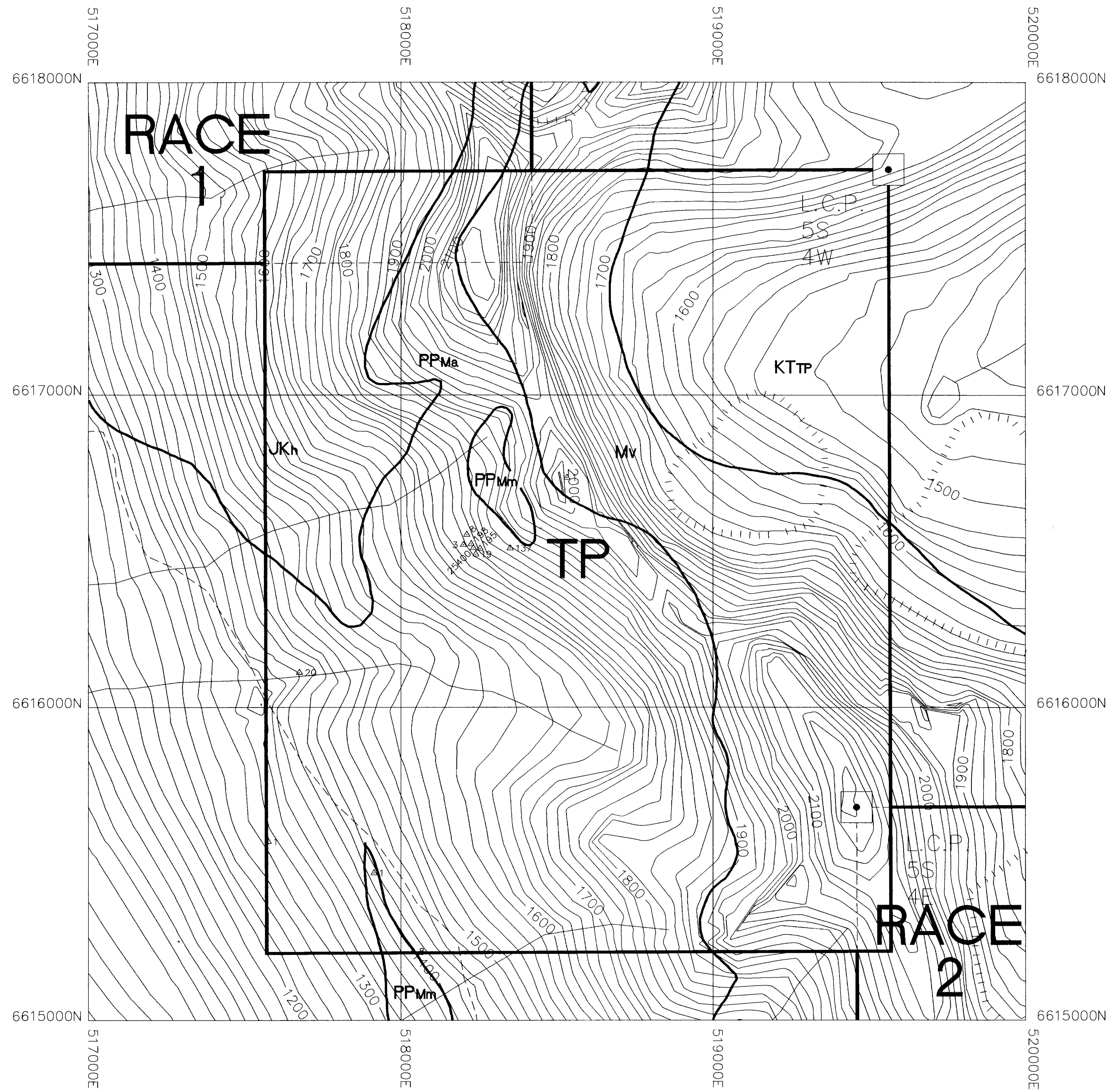
Figure 10

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT

24,344

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,844



UTM GRID NORTH

LEGEND

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SYMBOLS

Icefield

Lake

Waterway

Rock sample

Treeline

Geological boundary

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RACINE PROJECT

Cu (in ppm) for rock samples from the T.P. claim

200 0 200 400 600m

SCALE 1 : 10,000

Figure 11