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MAPPING AND SAMPLING

on the

STAR CLAIMS

OMINECA MINING DIVISION

N.T.S. 94-C-5E and 94-C-12E

Lat.: 56° 29'N Long: 125° 40'W

by

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April, 2001

**GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT**

26,524

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**Maps**

Property Geology 1:20000  
Sample Location Map 1:2500

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in pocket

**Appendix**

Analytical Data

## 1.0 Introduction

On August 5 and 6, 2000, two men mapped and samples the ridge south of Capricorn Creek, the bowl at the headwaters of Capricorn Creek and the area surrounding a 1987 soil grid. Mapping of the ridge and around the soil grid located numerous feldspar pegmatite dykes and a major diorite body with substantial sulphides at the contact of the granitics and the ultramafic. Forty-eight rock samples were collected and analysed for 30 elements by ICP and Au, Pt, Pd by Ultra/ICP.

## 2.0 Location and Access

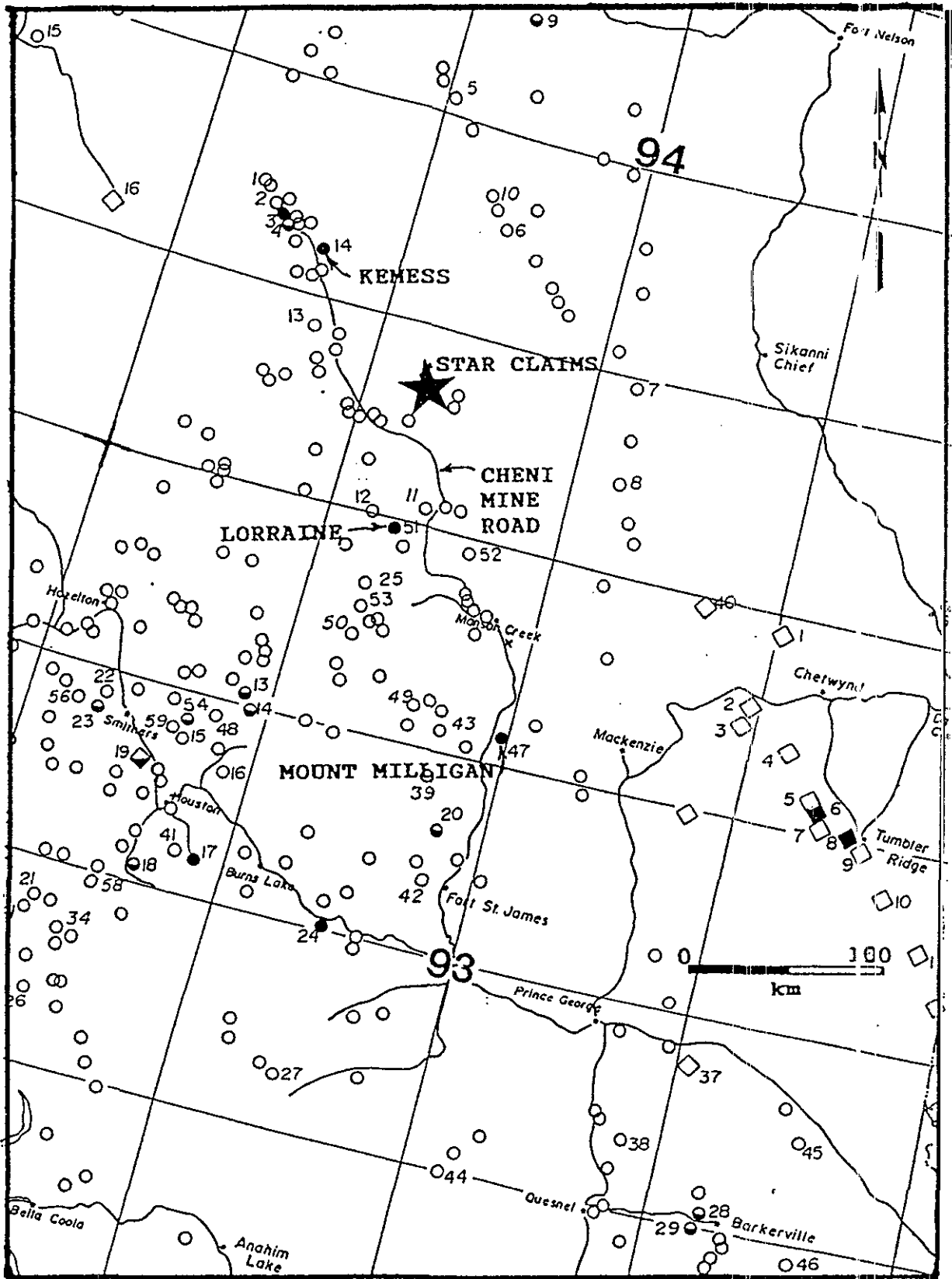
The Star claims, which are located on map sheets 94-C-5E and 94-C-12E, are 13 km northeast of Aiken Lake and 100 km almost due north of Germansen Landing. The property is located at co-ordinates 56° 29'N and 125° 40'W.

Access to the property is by helicopter from Fort St. James approximately 300 km due south. The Cheni Mine Road (Omineca Forestry Road) and the Kemess power line pass within 8 km of the property boundary. Logging roads reach the outer boundary of the property.

## 3.0 Claim Data

The Star property consists of five 20 unit claims totalling 100 units. The property is located within the Omineca Mining Division.

Claim Name	Record Number	No. of Units
Star 1	334025	20
Star 2	334026	20
Star 3	334027	20
Star 4	334028	20
Star 5	334029	20



LOCATION MAP : STAR CLAIMS

FIGURE 1

**94-C-12E**

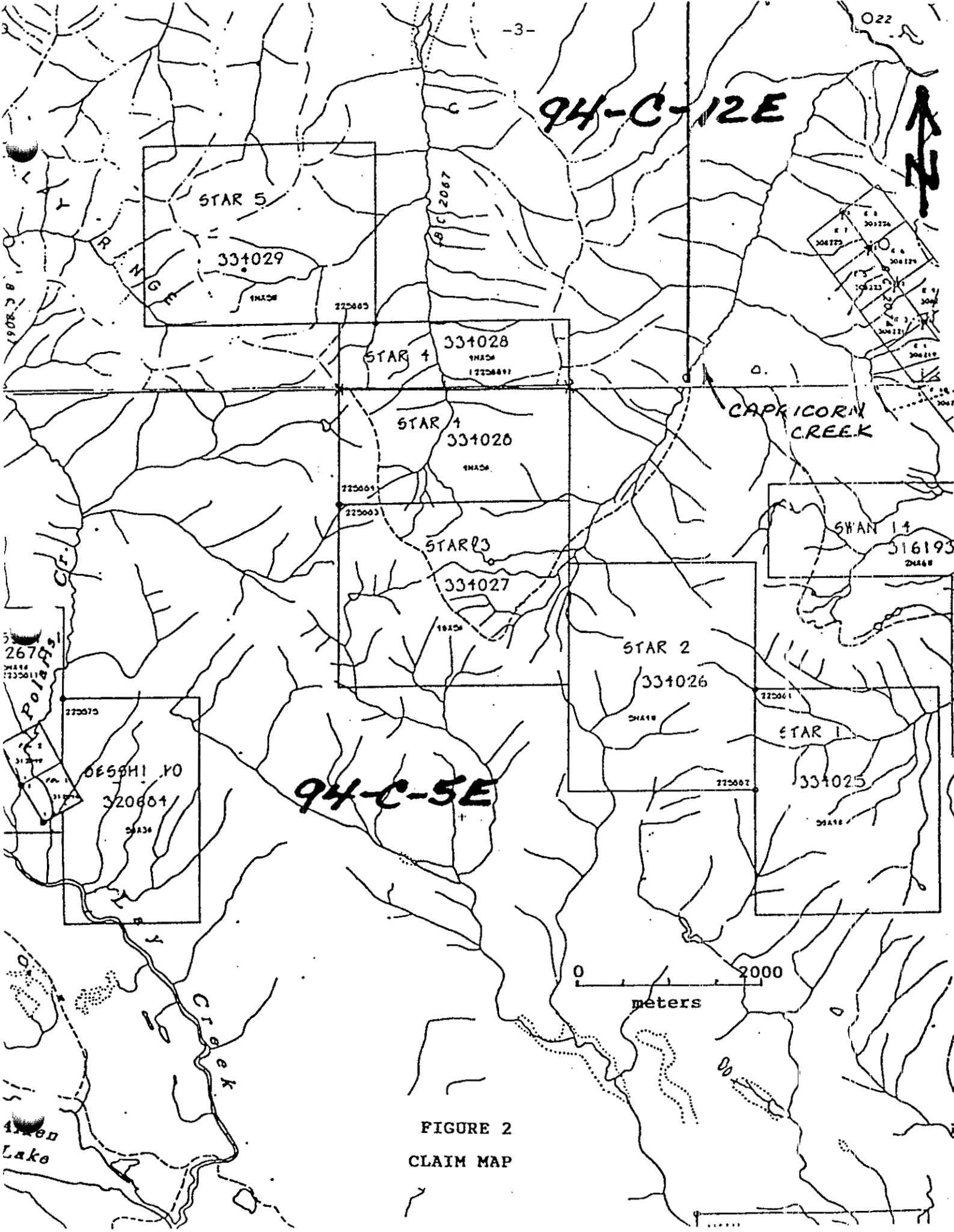


FIGURE 2  
CLAIM MAP

#### 4.0 History

The area of the Polaris Complex has been examined by R. G. McConnell in 1894, V. Dolmage in 1927, D. Lay in 1939 and J. E. Armstrong in 1945. The first mapping of the Polaris Complex was done by E. F. Roots in 1946, 1947 and 1948.

No geological activity is recorded until 1968 when T. N. Irvine made petrologic studies of the Polaris Complex. The area remained idle until 1974 when T. N. Irvine and F. H. Foster mapped the Polaris Complex in some detail.

In 1986, a small portion of the Polaris Complex was staked by Equinox Resources who conducted an extensive silt and rock sampling program in a search for Pt and Pd. In 1987, Lacana Mining Corporation and Esso Minerals also staked portions of the Polaris Complex. In 1988 and 1989, the Polaris Complex was mapped and petrologically studied by the BCDM as part of a Pt-chromite study.

The Star 1 - 5 claims were staked in February, 1995 to cover the pyroxenitic outer phase of the Polaris Complex and also to cover known mineralization.

#### 5.0 Regional Geology

The Polaris Complex is located in the Omineca Crystalline Belt which is bounded on the west by Triassic Takla volcanics and sediments. The eastern side of the Omineca Crystalline Belt is separated from the Upper Proterozoic Ingenika Group and the Wolverine Metamorphic Complex, which both consist of sediments and metasediments including gneisses and schists, by the Swannell Fault.

The area immediately west of the Polaris Complex is underlain by the Lay Range Assemblage which has also been called the Slide Mountain Group and the Harper Ranch Group by various authors. The lithologies consists of mafic tuffs, argillites, metavolcanics, metasediments and limestones and are of Middle Pennsylvanian to Permian in age. The area to the east of the Polaris Complex is underlain by shale, argillite and limestone of

either Upper Devonian to Lower Permian Big Creek Group, Cooper Ridge Group or the Slide Mountain Group.

The Polaris Complex, a crudely zoned ultramafic massif, is approximately 15 km long and 3 to 4 km wide. The core of the Complex is olivine-rich lithologies of dunite, peridotite and wehrlite. The ultramafic becomes progressively more pyroxene-rich towards the outer periphery and the lithologies range from olivine clinopyroxenite to pyroxenite to hornblende-magnetite pyroxenite and finally to hornblendite and metamorphosed and metasomatized volcanics and sediments. The Polaris Complex exhibits a thermal halo up to 2500 meters in width. In certain areas, the metasomatism has been so intense that hornblende crystals up to 1 meter in length have been observed.

The Polaris Complex and the surrounding area have been intruded by Late Triassic to Cretaceous syenites and diorites which are probably related to the Hogem Intrusive Complex. Potassium-argon dating of biotite forming a potassic halo around one intrusive in the Polaris Complex yielded ages of  $167 \pm 9$  Ma and  $156 \pm 15$  Ma.

Mineral deposits in the vicinity of the Polaris Complex include several high grade but small gold-bearing quartz veins associated with intrusive dykes in argillites, amphibolite containing coarsely crystalline pyrrhotite, pyrite, chalcopyrite and arsenopyrite as seams and as massive sulphide bodies up to 8 meters wide and 150 meters long and also shale-hosted zinc-lead sedex-type mineralization.

## 6.0 Property Geology

### 6.1 General

The Star claims are underlain by a variety of lithologies including dunite, peridotite, olivine clinopyroxenite, pyroxenite and amphibolite. The ultramafic, where mapped, appears to be a zoned and layered body with a central core of dunite which to peridotite, olivine clinopyroxenite and then pyroxenite towards the outer periphery of the ultramafic. The ultramafic layers appear to be relatively flat-lying except on a small portion of the ridge south of Capricorn Creek where the layers strike  $320^\circ$  and are vertically dipping.



The ultramafic has been intruded by late stage diorite stocks and dykes, feldspar pegmatite dykes and minor granite and gabbro dykes. The contacts of the diorite are marked by a metamorphic and metasomatised assemblage of porphyritic hornblendite, porphyritic hornblendite-porphyrific pyroxenite, porphyritic pyroxenite and then unaltered ultramafic. The contacts of the diorite are also frequently marked by the development of listwarite.

Minor amounts of siltstone and marble have been seen.

#### 6.2 Dunite

Yellow weathering dunite occurs on the north-easterly portion of the Star 1 and 2 claims. The dunite is very fine grained to fine grained, dense and is fresh in appearance. Occasionally the dunite contains very coarse grained (2.5 cm) flakes of phlogopite, biotite and muscovite which can form up to 25% of the rock.

#### 6.3 Peridotite

The peridotite is usually blackish in colour, very fine grained to fine grained, dense and fresh in appearance. The peridotite is found adjacent to the dunite core. Occasionally pyroxene crystals of up to 2.5 cm are observed. The peridotite also occasionally contains phlogopite, biotite and muscovite flakes up to 2.5 cm which can form up to 25% of the rock.

#### 6.4 Olivine clinopyroxenite

Present mapping indicates the olivine clinopyroxenite forms a somewhat discontinuous zone adjacent to the peridotite. Generally this unit is very fine grained to fine grained but in the vicinity of the diorite stock on the Star 2 claim pyroxene crystals up to 1 cm in length and porphyroblasts of olivine up to 7 mm have been seen.

#### 6.5 Pyroxenite

The pyroxenite forms a discontinuous zone next to the olivine clinopyroxenite and is fine grained to medium grained except in the vicinity of the diorite stock on the Star 3 claim. In this area pyroxene phenocrysts reach 5 cm in length and are

clearly formed from metamorphic and metasomatic processes.

#### 6.6 Amphibolite

The amphibolite is black and varies from a medium grained dense felted mass of hornblende up to porphyritic hornblendite with hornblende crystals up to 15 cm in length. The amphibolite has been postulated to be a metamorphic and metasomatic halo of the Polaris ultramafic complex. The present mapping indicates that the amphibolite and the porphyritic hornblendite are metamorphic and metasomatic haloes associated with diorite intrusives.

#### 6.7 Diorite

Diorite is found as stocks and dykes on the Star claims. The stocks seem to form a northwesterly trending belt. The stock on the Star 3 claim is fresh, medium grained with 30% hornblende except near the contact with the ultramafic. Near the contact the diorite becomes a dark grey, is fine grained, contains augite as well as hornblende and also contains black breccia fragments of presumably ultramafic. The diorite stock on the Star 3 claim is also locally intensely altered by pervasive epidote. The contacts of the diorites are often marked by intense listwanite development and also as on the Star 2 claim by brecciation of the ultramafic.

#### 6.8 Feldspar Pegmatite

White feldspar pegmatites form dykes ranging in width from 0.3 to 10 meters. The dykes which are composed almost entirely of orthoclase, plagioclase +/- sanidine and rarely hornblende crystals up to 15 cm in length, appear to form a parallel swarm of dykes which can be traced for 6 km. Eight feldspar pegmatite dykes have been found on the ridge south of Capricorn Creek. The dykes appear to be controlled by lithological/chemical changes within the ultramafic

#### 6.9 Granite

A small granite dyke and granite talus was located on the Star 5 claim. The granite dyke is pink in colour whereas the granite talus was intensely pervasively replaced by epidote

## 6.10 Sediments

Very little sediments has been encountered to date and include siltstone interbanded with chert located above the 1987 soil grid and also one small isolated outcrop of marble. The siltstone appears to be flat-lying and is in fault contact with micaceous dunite to the north and also overlies olivine clinopyroxenite.

## 7.0 Mineralization

### 7.1 General

Mineralization of economic significance consists of magmatic Pt-Pd-bearing chalcopyrite, pyrite +/- pyrrhotite. To date the best values of Cu, Pt and Pd have been found within the olivine clinopyroxenite in close proximity to feldspar pegmatite dykes and diorite stocks and dykes

### 7.2 Olivine Clinopyroxenite

Mineralization in this unit consists of 3 to 5% very fine grained, disseminated chalcopyrite and pyrite. The sulphides are of magmatic origin. The best Pt and Pd values have been collected from samples located near diorites, feldspar pegmatite and granite dykes and stocks. It is suspected that the original magmatic sulphides may have been remobilized by the granitic activity. The sulphides are not accompanied by any discernible alteration.

Olivine clinopyroxenite which overlies a diorite stock on the Star 1 claim returned 250 meters of anomalous Cu, Pt and Pd values. A sample collected in 1998 near a diorite dyke returned a value of 3020 ppm Cu, 277 ppb Pt and 254 ppb Pd.

Olivine clinopyroxenite near a feldspar pegmatite dyke returned a value of 1405 ppm Cu, 581 ppb Pt and 1552 ppb Pd.

Olivine pyroxenite near a granite dyke on the Star 5 claim returned a value of 1389 ppm Cu, 101 ppb Pt and Pd.

Although the best Pt-Pd values are associated with chalcopyrite-pyrite mineralization, the best Pt-Pd values are not necessarily associated with the higher copper values. Olivine clinopyroxenite without any visible sulphides has returned elevated Pt and Pd values suggesting the presence of particulate Pt and Pd.

### 7.3 Pyroxenite

The pyroxenite is locally well mineralized with pyrite and chalcopyrite +/- pyrrhotite. The sulphides are of magmatic origin and range from 0 to 40% of the rock. The sulphides are generally coarse grained and form as disseminations and clots. Previous thin section examination has shown that there is a second stage of sulphide mineralization which forms sulphide haloes around pyroxene crystals. Although well mineralized this unit does not appear to be particularly prospective for Pt or Pd. The best value to date is 2697 ppm Cu, 94 ppb Pt and 84 ppb Pd. The sulphides in this unit are geochemically distinct from the sulphides in the olivine clinopyroxenite. Sulphides in the pyroxenite carry very elevated Co and Ag values.

### 7.4 Amphibolite

Although locally well mineralized with pyrite +/- chalcopyrite this unit contains relatively low Pt and Pd values. The sulphides are coarse grained and disseminated throughout the rock when present. The sulphides also show remobilization occurring as wormy streaks. Total sulphide content may reach up to 40% of the rock. The best value from this unit is 2692 ppm Cu, 28 ppb Pt and 52 ppb Pd.

### 7.5 Diorite

The diorite are locally well mineralized with coarse grained pyrite, minor chalcopyrite and a trace of bornite. Sulphides occur as disseminations and on fracture surfaces. On the Star 5 claim shear zones within the diorite are well mineralized with pyrite and minor chalcopyrite. The best value to date is 1840 ppm Cu, 10 ppb Pt and 14 ppb Pd.

## 7.6 Other

The dunites and peridotites are host to very fine grained nickel sulphides and minor chromite. Generally Pt and Pd values are only in the trace amounts in both rock types. Sporadically the chromites contain some Pt +/- Pd values the best being 785 ppb Pt, 0 ppb Pd and 239 ppb Pt and 285 ppb Pd. Minor chalcopyrite has also been found in some dunite on the Star 1 claim.

The listwanites are host to minor very fine grained pyrite +/- arsenopyrite. Gold values in the listwanites range from nil to 110 ppb. A soil sample collected previously near a listwanite returned a value of 8631 ppb Au. The listwanites also have weak Pt and Pd values the best result being 72 ppb Pt.

## 8.0 Alteration

The most impressive and probably the most extensive alteration on the Star claims is the porphyritic hornblendite and the porphyritic pyroxenite metamorphic and metasomatic halo surrounding the diorite stocks. Hornblende crystals commonly reach 15 cm in length but are generally 10 cm long. Memoir 274 reports that hornblende crystals 1 meter long were found. Pyroxene crystals average 5 cm in length.

The most obvious alteration are the red-orange weathering carbonate listwanite zones which are located at the contact of the diorite stocks and dykes and occasionally at the contacts of the feldspar pegmatite dykes. The largest listwanite zone found to date is 500 meters long and 50 meters wide and is dominantly composed of carbonate with minor quartz and mariposite.

Coarse-grained phlogopite, biotite and muscovite occur in dunites, peridotites and pyroxenites in close proximity to dioritic intrusions. The mica which composes up to 25% of the rocks is commonly 1 cm in diameters but reaches 2.5 cm on occasion.

Other than the presence of mica, most ultramafic lithologies appear to be fresh save for small areas of weak serpentinization.

Alteration of the diorite and granite intrusives ranges from fresh to intensely pervasively epidotized. No quartz or carbonate veining is present in either rock type.

#### **9.0 Work Program**

On August 5 and 6, 2000 two men continued mapping and sampling the ridge south of Capricorn Creek as a continuation of the 1999 mapping and sampling. Several sites that returned anomalous Cu, Pt and Pd values in the 1999 sampling were re-sampled.

The bowl in the vicinity of the 1987 soil grid was also mapped and sampled in an attempt to locate the source of a sample collected by Lacana which returned values of 1114 ppb Pt and 830 ppb Pt, 990 ppb Pd.

Mapping and sampling were also continued in the bowl at the headwaters of Capricorn Creek.

A total of 48 rock samples were collected. All samples were analysed for 30 elements by ICP and Au, Pt, Pd by Ultra/ICP.

Approximately 2325 meters of ridge and bowl were traversed.

## 10.0 Sample Descriptions

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158407	Knobby weathering black peridotite with 15% brown c.g. phlogopite; trace white silvery metallic	8	7	5
158408	Rusty weathering medium grey vfg diorite; 0.5% vvfq disseminated pyrite	183	10	11
158409	Rusty weathering black c.g. to porphyritic pyroxenite; cut by white carbonate veinlet; 0.5% disseminated vfg pyrite, chalcopyrite	128	50	60
158410	Rusty weathering c.g. pyroxenite; 0.5% disseminated vfg pyrite	363	8	11
158411	Extremely rusty red and black coated; dark greenish black olivine pyroxenite? with 1% vfg disseminated chalcopyrite, pyrite	2439	22	38
158412	Slightly rusty medium grey banded siltstone and chert; no visible sulphides; old sample site 6144	61	-	4
158413	As 158411	1073	3	5
158414	Yellow weathering black dunite; trace vfg disseminated silvery metallic	6	2	1
158416	Yellow weathering black f.g. dense dunite with 10% vfg black biotite; trace sulphide	6	-	4
158417	Rusty weathering black dense dunite; trace vvfq silvery metallics	2	2	5
158418	Slightly rusty weathering black, dense dunite; fractures covered with an adamantine black cubic non-magnetic mineral	34	-	3
158419	Hackly textured dark grey olivine pyroxenite with olivine occasionally as light yellow green phenocrysts; pyroxene crystals 5 mm. no visible sulphides	3	22	2
158420	Coarse grained pyroxenite veinlet with rust-filled fractures	4	5	2
158421	Yellow weathering black dense dunite with pyroxene phenocrysts occasionally up to 1 cm; no visible sulphides	1	15	5
158422	Black dense olivine pyroxenite with minor rusty patches; 0.5% vvfq disseminated white silvery metallic	38	31	17

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158423	Black dense dunite with pyroxene phenocrysts up to 1 cm; 0.5% vvf <sub>g</sub> disseminated white silvery metallic	4	-	6
158424	Brownish weathering sooty black dense dunite with occasional pyroxene phenocrysts up to 5 cm; 10% black mica; no visible sulphides	3	2	-
158425	Orange-red weathering whitish grey carbonate listwanite; minor vfg disseminated sulphides; weak mariposite	3	-	4
158426	Very rusty weathering cg olivine pyroxenite with olivine and pyroxene as phenocrysts; 5% vfg disseminated sulphides	541	-	11
158427	Very rusty weathering light grey fg diorite with 5% vfg disseminated sulphides; old sample 158187	582	2	10
158428	Very rusty black olivine pyroxenite with 3% disseminated vfg pyrite; old sample 158192	2982	195	274
158429	Black olivine pyroxenite; no visible sulphides; old sample 158193	387	40	59
158430	Black peridotite with a 2 cm band of dense black vfg olivine pyroxenite?; no visible sulphides	34	-	22
158431	Coarse grained granular black olivine pyroxenite with uniform pyroxene crystals of 2 to 4 mm; trace vvf <sub>g</sub> chalcopyrite, pyrite; abundant malachite stain only on interior of rock	2945	26	45
158432	Coarse grained granular black olivine pyroxenite with uniform pyroxene crystals of 2 to 4 mm; trace vvf <sub>g</sub> chalcopyrite, pyrite; some malachite stain on interior of rock	1405	581	1552
158433	Extremely rusty peridotite; no fresh surface; pyroxene crystals up to 1 cm; no visible sulphides	24	10	16
158434	Dark grey peridotite with pyroxene phenocrysts up to 1 cm; trace vvf <sub>g</sub> sulphides; minor vfg white mica	9	2	3
158435	Slightly rusty weathering black peridotite with pyroxene phenocrysts up to 1 cm; trace vvf <sub>g</sub> white silvery metallic; no visible sulphides	8	1	8



Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158436	Coarse grained black olivine pyroxenite with both olivine and pyroxene phenocrysts equigranular and 5 to 7 mm; trace vfg disseminated sulphides; rusty weathering	3	34	9
158437	Extremely rusty weathering diorite? with 3% disseminated pyrite, chalcopyrite; minor malachite	203	10	34
158438	Heavily stained reddish diorite; no fresh surface; no visible sulphides	62	45	79
158439	Very rusty medium grey vfg diorite; 70% fresh feldspar and 30% black biotite; 3% vfg disseminated pyrite; trace chalcopyrite	188	-	9
158440	Very rusty medium grey fg diorite; 70% fresh feldspar and 30% black biotite; 5% vfg disseminated pyrite	153	2	9
158441	Rusty weathering porphyritic pyroxenite with pyroxene crystals up to 1.5 cm; 5% pyrite, chalcopyrite as disseminations, clots and irregular stringers; occasionally sulphides as rims on pyroxene crystals	693	24	24
158442	Very rusty weathering mg pyroxenite with 10% vfg disseminated pyrite and pyrrhotite?	199	1	3
158443	Very rusty weathering pyroxenite?; no fresh surface; no visible sulphides	963	24	44
158443A	Very rusty weathering cg pyroxenite with pyroxene crystals up to 1 cm; 10% vfg disseminated pyrite	567	5	-
158444	Very rusty weathering porphyritic pyroxenite with pyroxene crystals up to 2 cm; 10% fg disseminated pyrite	138	34	40
158445	Slightly rusty weathering cg to porphyritic olivine pyroxenite; trace vfg disseminated sulphide	404	55	78
158446	Very rusty breccia; fragments consist of pyroxene and fg olivine; no visible sulphides; minor vfg white mica	1104	42	102
158447	Very rusty black cg pyroxenite; 1 to 3% vfg disseminated pyrite	170	71	130
158448	Slightly rusty dark grey massive olivine pyroxenite; trace vfg disseminated sulphide	195	6	13

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158449	Olive green, mg sucrosic epidote? altered olivine? no visible sulphides	5	4	2
158450	Brown weathering medium green, very altered amphibolite? with a 5 cm clot of semi-massive pyrite, chalcopyrite; 2% disseminated sulphides; patches of white carbonate and quartz?	186	-	-
158451	Reddish black weathering porphyritic pyroxenite with pyroxene crystals up to 2 cm; 3% disseminated pyrite and as rinds on pyroxene crystals	1435	1	-
158452	Rusty weathering fg pyroxenite? with 5% disseminated chalcopyrite, pyrite; minor malachite staining	975	35	50
158453	Reddish brown weathering pyroxenite? with 3% disseminated sulphides	283	10	15
158454	Deep red brown weathering dark green black pyroxenite; sulphides range from trace to 10%; sulphides vfg pyrite, pyrrhotite and chalcopyrite	151	13	20

## 11.0 Results

### 11.1 Ridge south of Capricorn Creek

Mapping in 1999 located 5 feldspar pegmatite dykes and one diorite dyke. The 2000 mapping located an additional 4 feldspar pegmatite dykes plus 2 more diorite dykes.

The 1999 sample site 158193 which returned values of 2176 ppm Cu, 79 ppb Pt, 112 ppb Pd and 43 ppb Au was resampled. Sample number 158428 returned a value of 2982 ppm Cu, 195 ppb Pt, 274 ppb Pd and 44 ppb Au. The samples are of olivine pyroxenite located near a feldspar pegmatite dyke.

Samples 158431 and 158432 returned values of 2945 ppm Cu, 26 ppb Pt, 45 ppb Pd and 11 ppb Au and 1405 ppm Cu, 581 ppb Pt, 1552 ppb Pd and 166 ppb Au. Both samples are of olivine pyroxenite which is near feldspar pegmatite dykes.

11.2 Headwaters of Capricorn Creek

Five samples of pyroxenite were collected. The samples were well mineralized with pyrite and minor chalcopyrite. The best results were a maximum value of 1435 ppm Cu, 35 ppb Pt and 50 ppb Pd.

11.3 Notch Area

No significant values were obtained from talus samples. The sampling showed the presence of olivine pyroxenite and feldspar pegmatite dykes.

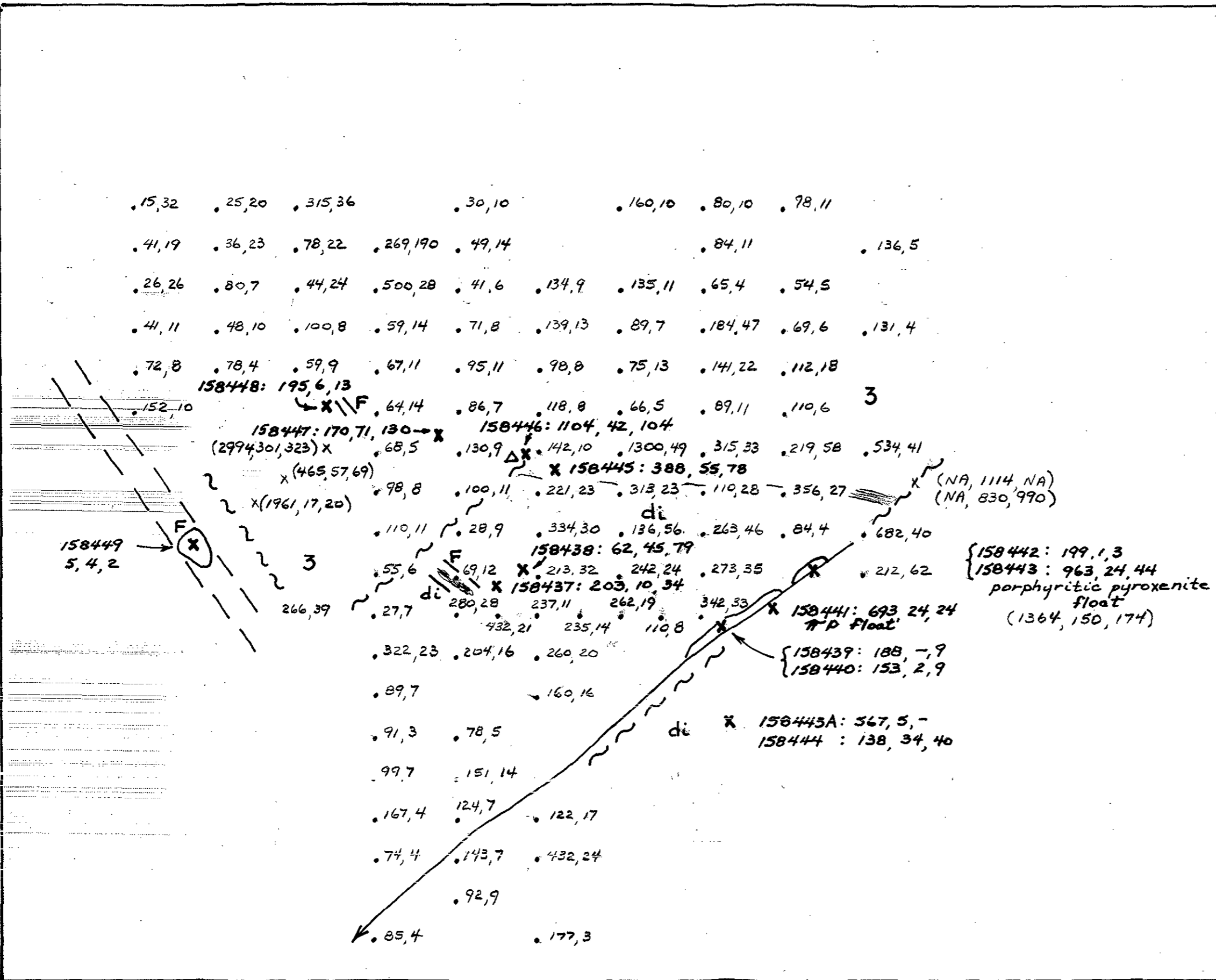
11.4 Ridge above soil grid

Mapping on the ridge located 3 diorite dykes and some feldspar pegmatite. Siltstone was found to form a substantial portion of the ridge. The ultramafics on the ridge show intense metamorphism and metasomatism near the diorite dykes which includes mineralogic gradation from porphyritic hornblendite to porphyritic pyroxenite to very micaceous dunite.

Sample 158411 which is rusty weathering olivine pyroxenite was collected near a diorite dyke and returned a value of 2439 ppm Cu, 22 ppb Pt, 38 ppb Pd and 147 ppm Co. The diorite, sample 158413 returned a value of 1073 ppm Cu.

11.5 Grid Area

Mapping in the grid area located a large diorite stock in fault contact with olivine pyroxenite. The contacts of the diorite are marked by a breccia and by listwanite. Mapping also located 3 feldspar pegmatite dykes some of which can be traced northward to the ridge south of Capricorn Creek. One feldspar pegmatite dyke was seen to cut the diorite. The diorite is intensely sheared in places with the shearing being 040°. Both shears and diorite are mineralized with pyrite. One samples of this material returned a value of 62 ppm Cu, 45 ppb Pt and 79 ppb Pd.



- 3 olivine pyroxenite
- di diorite
- F feldspar pegmatite
- listwanite
- Δ breccia
- fault zone

X 158446: 1104, 42, 104  
 rock sample number:  
 Cu ppm, Pt ppb, Pd ppb

x (NA, 830, 990)  
 previous rock sample site  
 Cu ppm, Pt ppb, Pd ppb

. 1300,49  
 1987 soil sample site  
 Cu ppm, Pt ppb

GRID AREA

SAMPLE LOCATION MAP

Figure 3



The breccia consists of pyroxene and olivine crystals and is located at the northerly contact of the diorite. A sample of this material returned a value of 1104 ppm Cu, 42 ppb Pt, 102 ppb Pd. A sample of unshered olivine pyroxenite near the breccia returned a value of 170 ppm Cu, 71 ppb Pt and 130 ppb Pd.

## 12.0 Conclusions

Sampling in 1998, 1999 and 2000 continue to strongly suggest that Pt and Pd values are enhanced by granitic activity within the olivine pyroxenite unit. Most frequently elevated Pt and Pd values are associated with elevated Cu. However Pt and Pd values have been obtained from pyrite-bearing olivine pyroxenite and also from olivine pyroxenite with no visible sulphides suggesting the possibility of particulate Pt and Pd. Sampling to date strongly suggests that the olivine pyroxenite is potentially the most significant lithology for economic mineralization.

The pyroxenite and amphibolite, except for the porphyritic phases are locally well mineralized with pyrite, chalcopyrite +/- pyrrhotite. However Cu, Pt and Pd values are generally low and frequently sporadic in nature.

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Assessment Report 25002, Geochemical and Petrographic Report on the Star Claims, by U. Mowat, P. Geo., February 1997.

Assessment Report 25488, Geochemical Report on the Star Claims, by U. Mowat, P. Geo., April 1998.

Assessment Report 25873, Sampling on the Star Claims, by U. Mowat, P. Geo., March 1999.

Assessment Report 26198, Mapping and Sampling on the Star Claims, by U. Mowat, P. Geo., March 2000.

**14.0 Statement of Costs**

Analyses	
48 rock samples analysed for 30 elements by ICP and Au, Pt, Pd by Ultra/ICP at \$16.65/sample	\$ 799.20
48 rock preps at \$4.50/sample	216.00
GST	<u>71.06</u>
	\$1086.26
Helicopter	
7.8 hours at \$630.00/hour	\$4914.00
700 liters fuel at \$0.80/liter	560.00
189.2 liters fuel at \$1.10/liter	208.12
GST	<u>397.75</u>
	\$6079.87
Labour	
1 man for 3 days at \$275.00/day	\$ 825.00
1 man for 18 days at \$400.00/day	<u>7200.00</u>
	\$8025.00
Accommodation	
1 room for 3 nights at \$36.97/night	\$ 110.91
1 room for 4 nights at \$59.80/night	<u>239.20</u>
	\$ 350.11
Meals	\$2245.00
Freight	\$ 61.13
Truck/Gas	\$ 300.00
Airfare	\$ 112.18
Bus	\$ 9.83
Taxi	\$ 27.00
Supplies	\$ 50.00
Photos	\$ 5.00
Reproduction	\$ 146.52
	<hr/>
<b>Total</b>	<b>\$16497.90</b>

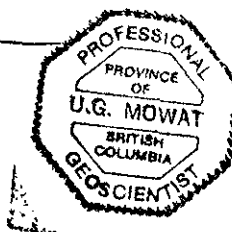


15.0 Statement of Qualifications

- 1.0 I am a graduate of the University of British Columbia having graduated in 1969 with a Bachelor of Science in Geology.
- 2.0 I have practiced my profession since 1969 in mineral exploration, oil and gas exploration and coal exploration.
- 3.0 I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia.
- 4.0 I have a direct interest in the Star Claims.

Ursula G. Mowat

Ursula G. Mowat, P. Geo



Dated this 4th day of April, 2001  
at Vancouver, B. C.

APPENDIX.

APPENDIX.



GEOCHEMICAL ANALYSIS CERTIFICATE

Mowat, Ursula PROJECT STAR File # A002951 Page 1

1405 - 1933 Robson St., Vancouver BC V6G 1E7 Submitted by: Ursula Mowat

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb
B 158407	<1	8	3	38	<3	1347	83	836	5.04	2	<8	<2	24	<2	<3	<3	12	.17	.033	<1	358	13.40	102	.03	7	.54	.08	.31	<2	1	7	5	
B 158408	<1	183	<3	63	<3	48	28	1192	5.86	4	<8	<2	<2	171	.4	3	<3	186	4.99	.170	8	40	2.53	248	.12	7	2.28	.17	.14	<2	1	10	11
B 158409	<1	128	3	34	<3	73	30	745	5.11	19	<8	<2	<2	138	.4	3	3	165	4.41	.153	2	121	2.65	47	.13	6	1.24	.27	.21	<2	4	50	60
B 158410	<1	363	<3	26	.3	52	23	311	7.37	3	<8	<2	<2	45	.3	3	<3	464	1.37	.040	1	70	1.26	30	.25	6	1.15	.24	.12	<2	3	8	11
B 158411	2	2439	<3	40	.4	267	147	238	7.91	<2	<8	<2	<2	15	.3	3	<3	244	.92	.027	1	227	.65	5	.15	5	.93	.07	.03	<2	<1	22	38
B 158412	1	61	3	44	<3	20	9	176	2.49	<2	<8	<2	2	64	<2	<3	<3	89	.62	.050	8	28	.79	325	.14	3	1.37	.11	.23	<2	7	<1	4
B 158413	1	1073	<3	32	.3	25	27	364	5.38	4	<8	<2	<2	71	<2	<3	<3	229	2.34	.299	6	38	1.20	50	.21	3	1.62	.18	.13	<2	2	3	5
B 158414	<1	6	4	16	<3	1568	102	901	4.64	3	<8	<2	<2	<1	<2	15	<3	1	.08	.005	<1	26	21.94	<1	<3	.01	.01	<1	<2	2	2	1	
B 158416	2	6	<3	17	<3	1469	108	990	5.19	3	<8	<2	<2	1	<2	14	<3	1	.08	.004	<1	64	21.97	3	<1	16	.02	.01	<1	<2	3	<1	4
B 158417	<1	2	3	12	<3	1772	95	772	3.92	5	<8	<2	<2	3	<2	13	4	<1	.02	.004	<1	41	21.72	6	<1	23	.04	.01	<1	<2	2	2	5
B 158418	1	34	<3	17	<3	1237	89	882	4.84	3	<8	<2	<2	9	<2	<3	<3	6	.14	.012	<1	88	16.29	5	.01	18	.20	.02	<1	<2	3	<1	3
B 158419	<1	3	<3	14	<3	354	45	441	2.96	<2	<8	<2	<2	1	<2	<3	<3	4	.16	.003	<1	190	5.65	3	.01	5	.09	<1	<1	<2	3	22	4
B 158420	1	4	3	17	<3	345	52	616	3.32	<2	<8	<2	<2	4	<2	<3	<3	13	.43	.003	<1	278	6.75	14	.02	5	.35	.01	<1	<2	4	5	2
B 158421	<1	1	4	18	<3	1534	110	954	4.86	4	<8	<2	<2	2	<2	15	<3	1	.06	.003	<1	36	23.22	2	<1	6	.02	.01	<1	<2	2	15	5
B 158422	2	38	<3	15	<3	661	66	686	4.03	2	<8	<2	<2	2	<2	<3	<3	3	.15	.003	<1	180	9.71	4	.01	10	.10	.01	<1	<2	2	31	17
B 158423	<1	4	<3	21	<3	1804	105	904	4.81	3	<8	<2	<2	9	.2	12	<3	1	.09	.003	<1	41	23.80	3	<1	4	.01	.01	<1	<2	2	<1	6
B 158424	1	3	<3	17	<3	1544	100	868	4.75	3	<8	<2	<2	28	<2	14	<3	10	.36	.015	<1	372	20.49	25	.01	46	.22	.02	.14	<2	1	2	<1
B 158425	1	3	<3	14	<3	757	76	1200	5.93	118	<8	<2	<2	44	.2	<3	<3	11	2.42	.003	<1	214	11.56	23	<1	6	.05	.01	.03	<2	2	<1	4
B 158426	2	541	<3	8	<3	90	106	195	3.61	<2	<8	<2	<2	2	<2	<3	<3	<1	.22	.003	<1	36	2.74	12	<1	9	.05	<1	.01	<2	1	<1	11
B 158427	<1	582	<3	48	<3	48	50	365	5.40	3	<8	<2	<2	86	.2	4	<3	139	1.98	.123	2	37	1.08	12	.10	6	2.53	.10	.04	<2	2	2	10
B 158428	2	2982	4	21	.9	463	104	385	4.15	<2	<8	<2	<2	11	.3	3	<3	45	.47	.014	<1	309	3.34	9	.04	7	.33	.05	.02	<2	44	195	274
B 158429	<1	387	<3	20	.3	197	32	364	3.75	<2	<8	<2	<2	51	<2	<3	<3	104	.73	.044	<1	276	2.63	25	.07	5	.58	.08	.05	<2	21	40	59
B 158430	1	34	6	12	<3	1383	72	925	4.72	3	<8	<2	<2	4	<2	<3	<3	6	.13	.007	<1	236	16.34	20	.01	23	.13	.01	.07	<2	2	<1	22
RE B 158430	2	33	<3	12	<3	1365	71	909	4.64	2	<8	<2	<2	4	<2	<3	<3	5	.13	.006	<1	239	16.02	21	.01	24	.13	.01	.07	<2	6	<1	20
B 158431	2	2945	3	14	1.9	269	30	287	2.53	<2	<8	<2	<2	3	<2	<3	<3	21	.27	.003	<1	79	2.80	4	.03	3	.25	.01	.01	<2	11	26	45
B 158432	<1	1405	<3	14	1.3	232	33	364	2.71	<2	<8	<2	<2	3	<2	<3	<3	18	.22	.003	<1	219	3.47	4	.02	<3	.16	.01	<1	<2	166	581	1552
B 158433	1	24	<3	59	<3	921	134	1766	8.21	3	<8	<2	<2	2	.4	<3	<3	7	.06	.007	<1	187	14.70	28	.01	56	.08	<1	<1	<2	2	10	16
B 158434	<1	9	<3	48	<3	880	122	1624	7.86	4	<8	<2	<2	2	.2	6	<3	5	.06	.004	<1	222	18.12	5	<1	12	.08	.01	.04	<2	3	2	3
B 158435	1	8	<3	40	<3	803	98	1197	7.30	3	<8	2	<2	14	.2	<3	<3	45	.52	.005	<1	680	10.60	14	.04	79	.20	.01	<1	<2	<1	1	8
B 158436	<1	3	<3	38	<3	335	76	988	5.83	<2	<8	<2	<2	2	<2	<3	<3	27	.14	.004	<1	145	7.48	3	.02	4	.13	.01	<1	<2	2	34	9
B 158437	1	203	4	27	<3	33	27	297	6.13	26	<8	<2	<2	39	.2	<3	<3	405	1.44	.009	1	77	1.73	42	.39	9	1.66	.25	.12	<2	6	10	34
B 158438	<1	62	<3	33	.3	20	19	330	6.41	13	<8	<2	<2	76	.4	3	<3	487	1.92	.044	1	2	2.04	51	.35	9	2.01	.33	.22	<2	<1	45	79
B 158439	3	188	4	29	<3	15	16	239	3.51	<2	<8	<2	<2	12	.3	<3	<3	118	1.03	.082	4	14	.43	27	.11	4	1.24	.06	.07	<2	5	<1	9
B 158440	2	153	4	66	<3	5	22	318	4.35	2	<8	<2	2	43	.3	<3	<3	83	1.67	.190	11	5	.77	48	.21	3	1.57	.06	.12	2	3	2	9
STANDARD C3/FA-10R	27	66	34	165	5.7	39	12	818	3.52	63	19	2	21	30	25.2	15	23	80	.60	.095	18	169	.62	153	.09	21	1.83	.04	.17	15	495	478	481
STANDARD G-2	2	3	3	41	<3	9	4	545	2.09	<2	<8	<2	4	72	<2	<3	<3	39	.65	.098	8	76	.59	236	.13	<3	.94	.07	.47	2	-	-	-

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CU, CD, SB, BI, TH, U & B = 2,000 PPM; NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C AU\*\* PT\*\* & PD\*\* GROUP 3B BY FIRE ASSAY & ANALYSIS BY ULTRA/ICP.  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 11 2000 DATE REPORT MAILED: Aug 19/00 SIGNED BY: [Signature] D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only. Data FA



SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb	ppb	ppb
B 158441	1	693	<3	21	.6	87	51	249	4.23	<2	<8	<2	<2	40	.3	<3	<3	111	1.50	.128	<1	42	1.21	22	.24	<3	.83	.21	.07	<2	5	24	24
B 158442	<1	199	<3	5	<.3	23	162	93	3.47	2	<8	<2	<2	12	<.2	<3	<3	27	.71	.012	<1	52	.72	7	.04	<3	.32	.03	.01	<2	2	1	3
B 158443	<1	963	<3	6	.5	171	45	122	2.50	<2	8	<2	<2	6	.2	<3	<3	31	.56	.003	<1	143	.96	20	.03	<3	.16	.01	.01	<2	5	24	44
B 158443A	<1	567	<3	14	.3	37	114	177	4.08	<2	9	<2	<2	26	.2	<3	<3	86	.92	.022	<1	43	1.09	29	.09	<3	.59	.10	.05	<2	3	5	<1
B 158444	1	138	<3	29	.3	57	36	311	5.23	<2	<8	<2	<2	63	.4	<3	<3	284	1.57	.050	<1	22	1.32	44	.39	<3	1.15	.21	.10	<2	4	34	40
B 158445	<1	388	<3	9	.4	197	26	140	1.24	<2	<8	<2	<2	6	.2	<3	<3	25	.75	.007	<1	142	1.08	6	.04	<3	.32	.03	<.01	<2	4	55	74
RE B 158445	<1	404	<3	8	.3	204	27	144	1.28	<2	<8	<2	<2	7	<.2	<3	<3	26	.77	.007	<1	144	1.11	6	.04	<3	.33	.03	.01	<2	3	51	78
STANDARD C3/FA-10R	27	65	35	165	6.0	38	13	797	3.35	57	21	3	22	27	25.4	21	22	81	.56	.086	17	170	.62	146	.10	22	1.74	.04	.18	16	477	473	480

Sample type: ROCK R150 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



GEOCHEMICAL ANALYSIS CERTIFICATE

Mowat, Ursula PROJECT STAR File # A003023

1405 - 1933 Robson St., Vancouver BC V6G 1E7 Submitted by: Ursula Mowat

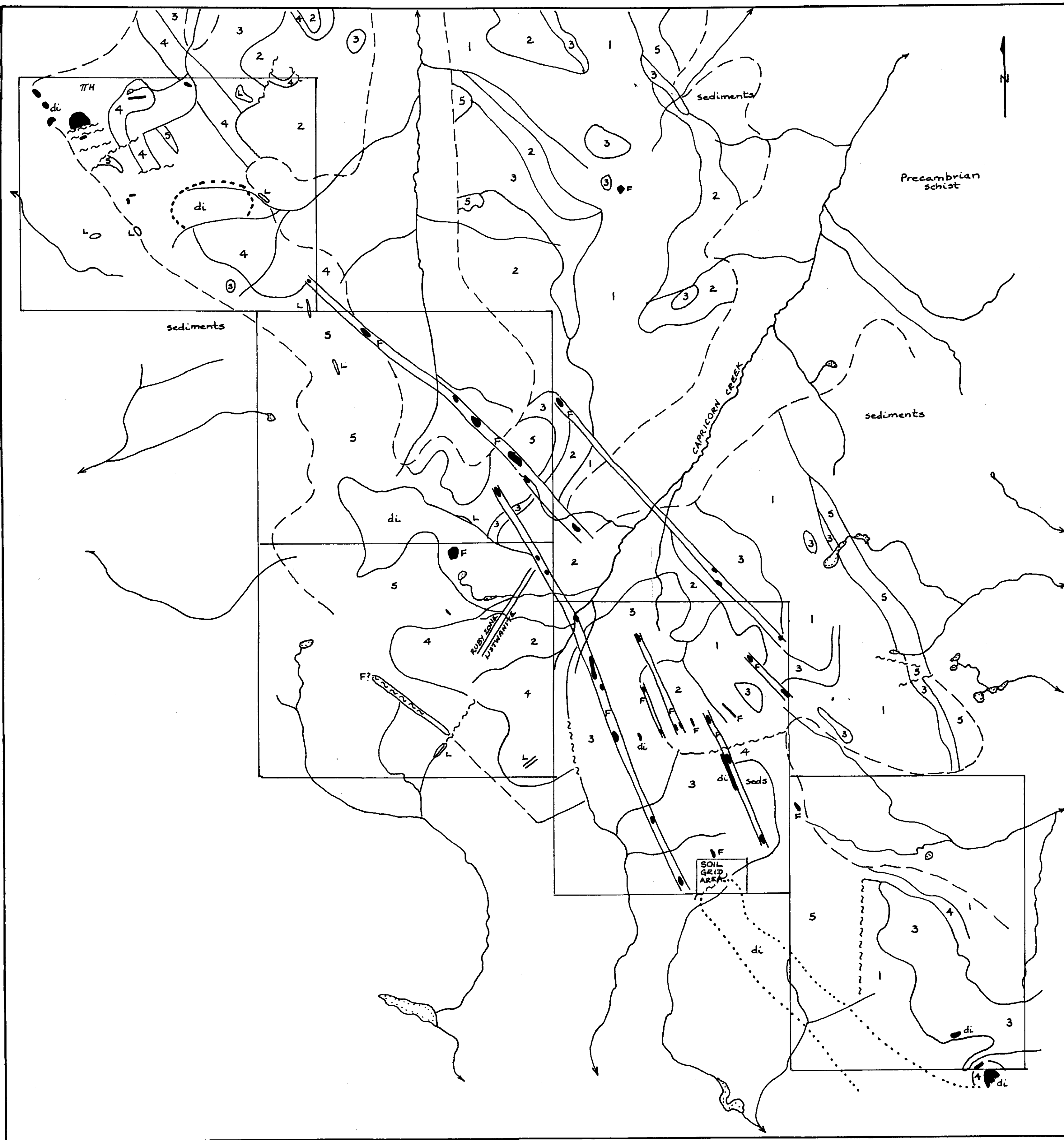
SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb
B 158446	<1	1104	<3	29	<.3	252	34	178	11.41	<2	<8	<2	<2	8	<.2	<3	<3	37	.33	.013	2	442	1.21	22	.04	<3	.44	.01	.01	2	2	42	102
B 158447	<1	170	<3	17	<.3	77	16	188	2.69	<2	<8	<2	<2	22	.2	<3	<3	66	1.20	.155	3	227	.94	13	.10	<3	.59	.12	.05	<2	4	71	130
B 158448	<1	195	4	54	<.3	499	58	730	4.86	2	<8	<2	<2	4	.4	<3	<3	39	.16	.004	2	541	7.16	7	.03	14	.20	<.01	<.01	2	<1	6	13
B 158449	<1	5	<3	6	<.3	42	5	59	.49	<2	<8	<2	<2	2	<.2	<3	<3	8	.40	.006	2	484	.79	2	.02	<3	.20	<.01	<.01	<2	1	4	2
B 158450	<1	186	4	124	<.3	5	30	1305	6.63	7	<8	<2	<2	153	<.2	7	<3	200	3.76	.219	<1	8	2.73	26	.11	<3	2.83	.03	.03	<2	<1	<1	<1
B 158451	<1	1435	<3	39	<.3	5	23	364	4.57	5	<8	<2	<2	115	.2	<3	<3	134	1.68	.184	3	6	1.02	19	.24	<3	1.27	.11	.06	2	2	1	<1
B 158452	<1	975	<3	62	<.3	42	54	415	10.08	3	<8	<2	<2	56	<.2	<3	<3	465	2.15	.483	3	77	.97	17	.09	<3	.89	.10	.05	<2	4	35	50
RE B 158452	<1	975	<3	63	<.3	43	54	419	10.10	5	<8	<2	<2	56	<.2	<3	<3	469	2.18	.490	3	78	.97	17	.10	<3	.90	.10	.05	<2	5	28	50
B 158453	<1	283	8	101	<.3	23	32	533	5.95	4	<8	<2	<2	264	.2	<3	<3	217	2.17	.199	2	10	1.96	69	.18	3	2.83	.14	.05	<2	1	10	15
B 158454	<1	151	<3	43	<.3	41	23	332	4.41	4	<8	<2	<2	61	.2	<3	<3	188	2.37	.141	1	133	1.14	50	.16	<3	1.78	.17	.08	<2	4	13	20
STANDARD C3/FA-10R	26	63	33	175	5.6	35	11	767	3.22	58	27	3	19	28	19.6	19	23	74	.55	.097	19	164	.58	156	.08	24	1.75	.04	.16	18	469	459	474
STANDARD G-2	2	5	3	47	<.3	7	3	517	1.96	<2	<8	<2	4	79	<.2	<3	<3	38	.66	.104	9	75	.58	246	.12	<3	1.03	.12	.53	2	<1	2	<1

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C AU\*\* PT\*\* PD\*\* BY FIRE ASSAY & ANALYSIS BY ULTRA/ICP. (30 gm)  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 15 2000

DATE REPORT MAILED: Aug 25/00

SIGNED BY: *C. Leong* .D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



- 1 dunite
- 2 peridotite
- 3 olivine pyroxenite
- 4 pyroxenite
- 5 amphibolite
- F feldspar pegmatite
- di diorite
- L listwanite

GEOLOGICAL SURVEY BRANCH  
 ALBERTA GOVERNMENT

26,524

STAR CLAIMS  
 PROPERTY GEOLOGY

0 1000  
 meters

