GEOLOGY REPORT
PACKSACK PROPERTY
Ecstall River Area
Skeena Mining Division
British Columbia

53°46'N, 129°26'W
NTS 103H/14W

A Zinc-Copper Prospect

for

COMINCO LIMITED
700 - 409 Granville Street,
Vancouver, B.C. V6C 1T2

by

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September 1990

Table of Contents

page

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOGRAPHS

SUMMARY

The geology of the region around the showing was remapped in detail and a new topographic base map was prepared. The stratigraphic section was divided into six main intervals, in which thirteen lithologic units were distinguished. A drill program of three holes and 3064 feet (934 m) total length tested the down-dip extension of the deposit, which previously had been defined by two surface outcrops, an EM survey, and shallow drill holes.

The Packsack Showing is a stratabound, volcanogenic massive sulfide deposit which occurs in strongly deformed, Paleozoic(?) mafic to felsic volcanic rocks and which marks the culmination of a period of felsic volcanism. A well developed footwall stringer zone contains lenses of sulfides dominated by pyrite, early veinlets and lenses of quartz-calcite, main-stage veins of quartz-(calcite-chlorite-pyrite), and late veins of quartz-(calcite).

The massive sulfide is dominated by pyrite, with minor to moderately abundant sphalerite and chalcopyrite. Values in precious metals and lead are very low. The presence of two massive sulfide lenses in some 1960 drill holes may be the result of two pulses of hydrothermal activity, or may be the result of tight folding of one layer.

During an early, major period of deformation, D1, rocks were sheared strongly and folded tightly to isoclinally about steeply dipping axial planes trending north-south and plunging 40^0 to 60^0 to the north. A later, period of weak deformation, D2, produced kink folds and a lineation plunging 60^0 southeast.

The 1990 drill program tested the down-dip extension of the massive sulfide body at a depth of 250 metres below surface. DDH 90-1 and 90-2 intersected the favorable horizon, but encouantered only minor lenses of massive and semi-massive sulfides with sub-economic values in copper and zinc and very low values in precious metals. DDH 90-3 contained very little sulfides in general and did not intersect the favourable horizon. It intersected a volcanic plug(?) containing abundant lapilli tuffs and subvolcanic intrusions, the latter characterized by abundant quartz phenocrysts.

Because the 1990 drill-hole intersections are narrow and very low grade, the potential for discovering economic mineralization in the Packsack deposit is considered poor. It is recommended that no further work be done at this time on the Packsack deposit.

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose was to re-examine the geology of the Packsack claim group, and to test the projected extension of the main volcanogenic massive sulfide zone at depth. The study focussed on the structure and stratigraphy of the deposit in an attempt to better define the down-dip projections of massive sulfide lenses and the location of extensions of the favorable stratigraphic unit.

1.2 LOCATION AND ACCESS

The property is in the Coast Range Mountains, 80 km south of Prince Rupert and 50 km west-southwest of Kitimat (Figure 1). It is in the major south-facing bend in the Ecstall River, which from there flows north to meet the Skeena River at Tyee, which is 33 km by Highway 16 southeast of Prince Rupert. Access to the property is along the Ecstall River by helicopter from Prince Rupert or Tyee. Ecstall Lake, south of the property, is suitable for float planes. A road could be built to tide-water along broad, flat valley of the Quall River to Douglas Channel 15 km south of the property or along the Ecstall River to near the Skeena River 25 km to the north.

1.3 PHYSIOGRAPHY

From a broad ridge-top in the west at an elevation of 400-450 m., the property drops down steep, heavily wooded slopes broken by benches to the broad valley of the Ecstall River at an elevation of 65 m. The ridge-top, underlain by siliceous sedimentary rocks and mafic plutons, is covered by scrub forest and bushes, open meadows and a few small lakes, including Packsack Lake. Slopes are covered by an old forest dominated by spruce, hemlock, and yellow cedar. On the slopes, felsic and less commonly intermediate volcanic rocks form cliffs averaging a few to several metres high. Areas on slopes between cliffy sections are covered by soil and locally by coarse, blocky talus. Benches commonly are underlain by felsic volcanic rocks, and are covered by swampy meadows dotted with small ponds; the dominant tree species is scrub yellow cedar. Gullies eroded by a few youthful creeks on the east slope provide good stratigraphic sections. Glacial erratic boulders up to a few metres across and mainly of medium to coarse grained diorite are widespread and are concentrated locally in patches and trains on the slopes. The Ecstall River is an old, meandering river, whose broad, valley bottom contains abundant small lakes, beaver ponds, and swamps.

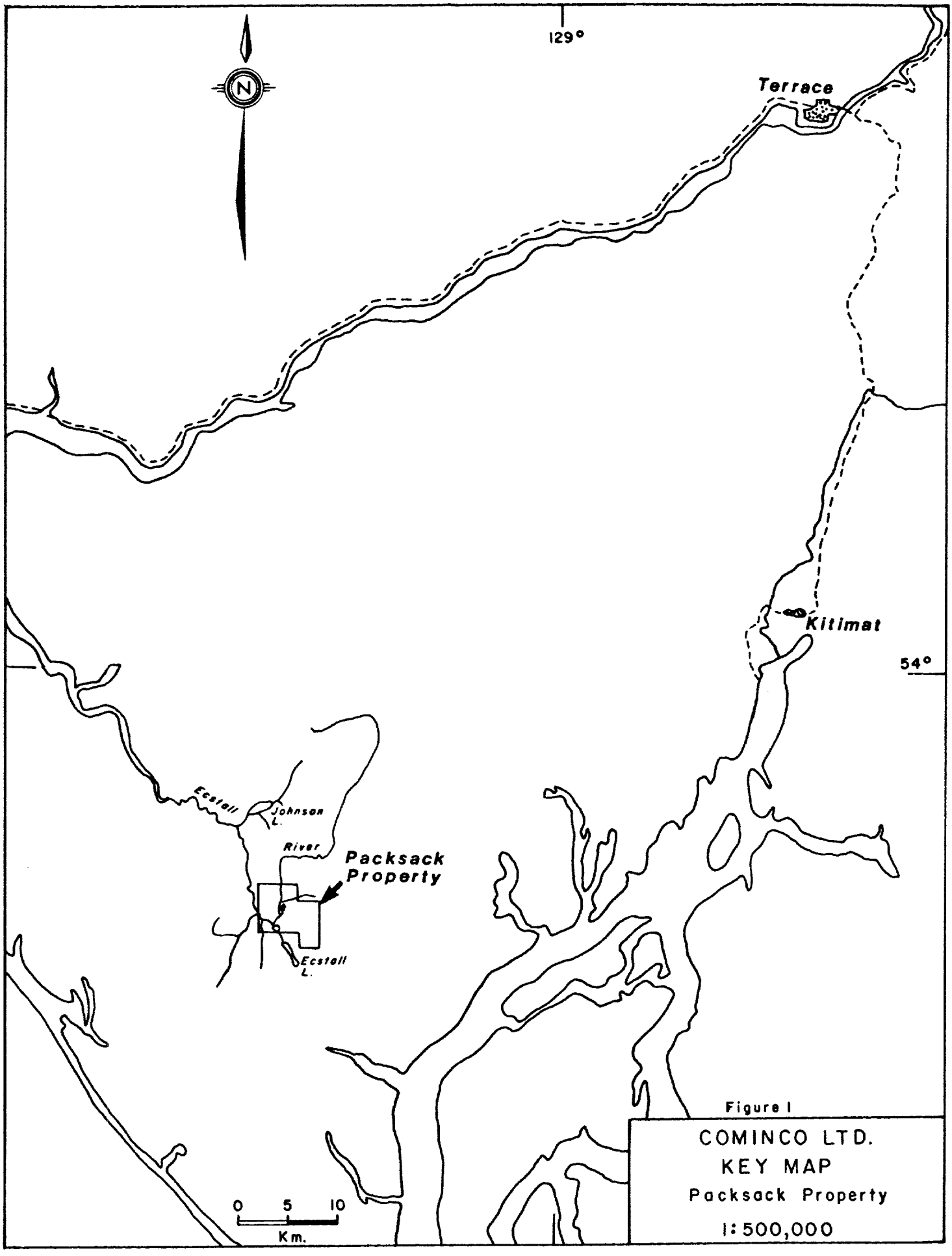


Figure 1

COMINCO LTD.
KEY MAP
Packsack Property
1:500,000

1.4 PREVIOUS WORK

1890s The Ecstall deposit was discovered.

1900-1952 The Ecstall deposit was developed intermittently.

1958-1960 Texas Gulf discovered, mapped, and drilled the Packsack deposit. In 1960 Texas Gulf explored the Horsefly deposit by geological mapping, prospecting, and a ground E.M. survey.

1973 The Packsack deposit was mapped geologically and soil-sampled; 119 grid samples were analysed for Cu, Pb, and Zn.

1981 The Ecstall joint venture examined the region for volcanogenic massive sulfide deposits, using airborne EM, regional silt geochemistry, and prospecting.

1986 Several showings were examined by Noranda using airborne EM and magnetometer surveys, followed by ground HLEM and magnetometer surveys, line-cutting and detailed geological mapping.

1989 Cominco Limited optioned claims including the Packsack and Horsefly properties from the owner, Ecstall Mining Corporation.

1.5 CLAIM DATA

The claims and pertinent registration data are shown in Figure 2.

1.6 LOGISTICS

Mapping for the 1:2000 geological map prepared in 1986 was done mainly on an "orthogonal" grid with line spacing of 100 metres, and was plotted on an enlargement of the 1:50,000 topographic map. The station spacings of 25 metres were plotted as horizontal distances, whereas most were surveyed as slope distances. Several grid lines were not oriented perpendicular to the base line or were curved or bent up to 15°. Also the grid was misplotted with respect to major topographic features such as Packsack Lake and Packsack Creek. Altimeter readings were taken at each station, and inter-station distances were corrected for slope. A few slope distances between stations were much less than 25 metres, and these were corrected by eyeball estimation. The ends of many of the lines were tied using a compass and topofil survey. A new topographic base was made from these data and the grid was tied to major topographic features on the aerial photograph. Some adjustment had to be made in the lengths of a few lines to fit creek intersections to creek orientations. Thus, the accuracy of the map is limited by the survey methods. On the 1986 map, many outcrops were plotted much larger than in reality, and well over half were misplotted. In that study, volcanic rocks were divided into two main lithologic units, whereas in this study three main lithologic units and thirteen stratigraphic units were distinguished.

On the 1:600 detailed topographic map showing 1960 drill locations, the base line and north arrow are misoriented by about 4° in a clockwise rotation. This also suggests that the drill holes were misplotted by the same angular rotation. These were corrected in the map in this report (Figure 5).

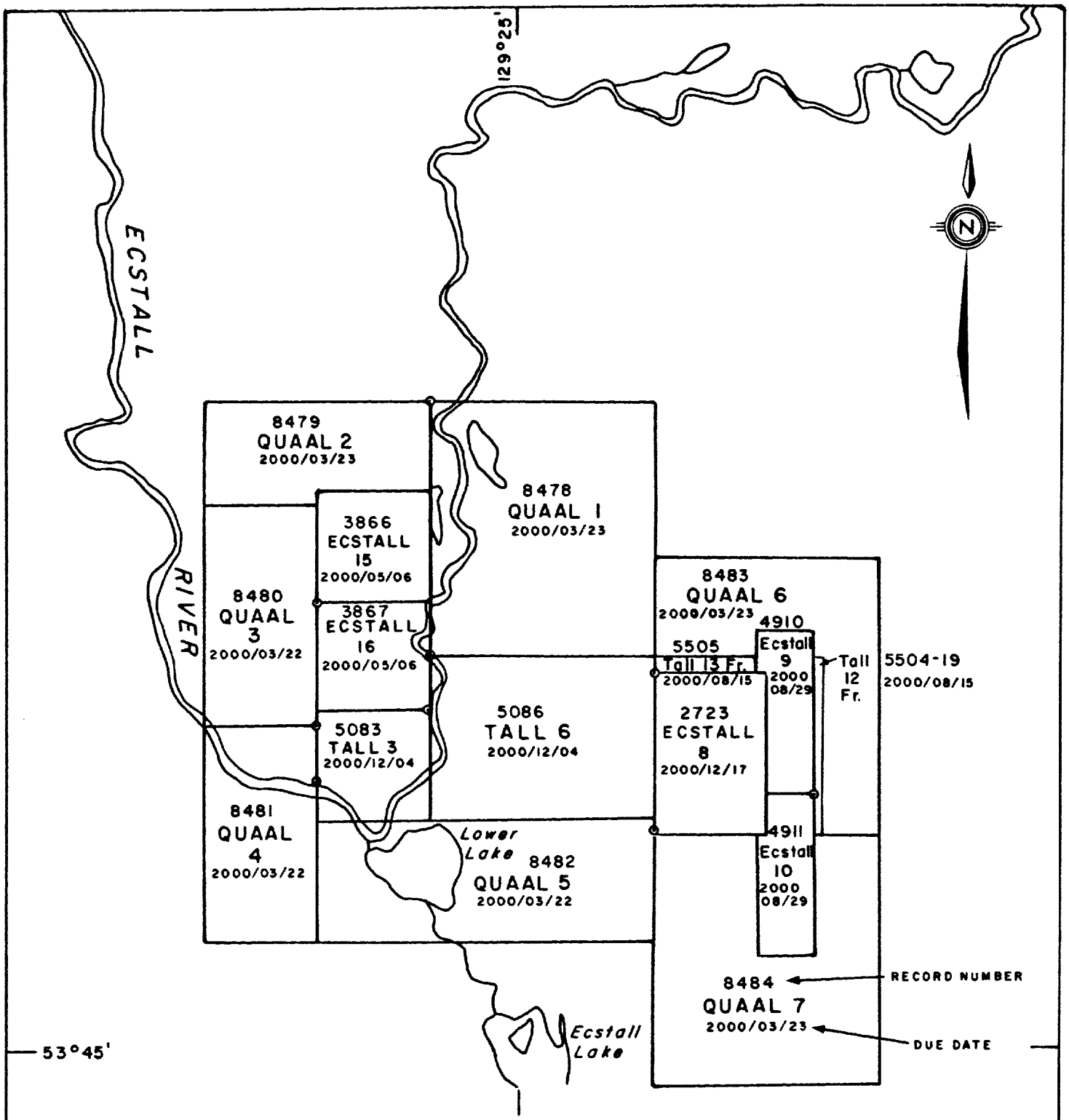


Figure 2

COMINCO LTD.

CLAIM MAP

Packsack Property

Skeena Mining Division

N.T.S. 103 H/14 W

2.0 GEOLOGY

2.1 REGIONAL GEOLOGY (see Figure 3)

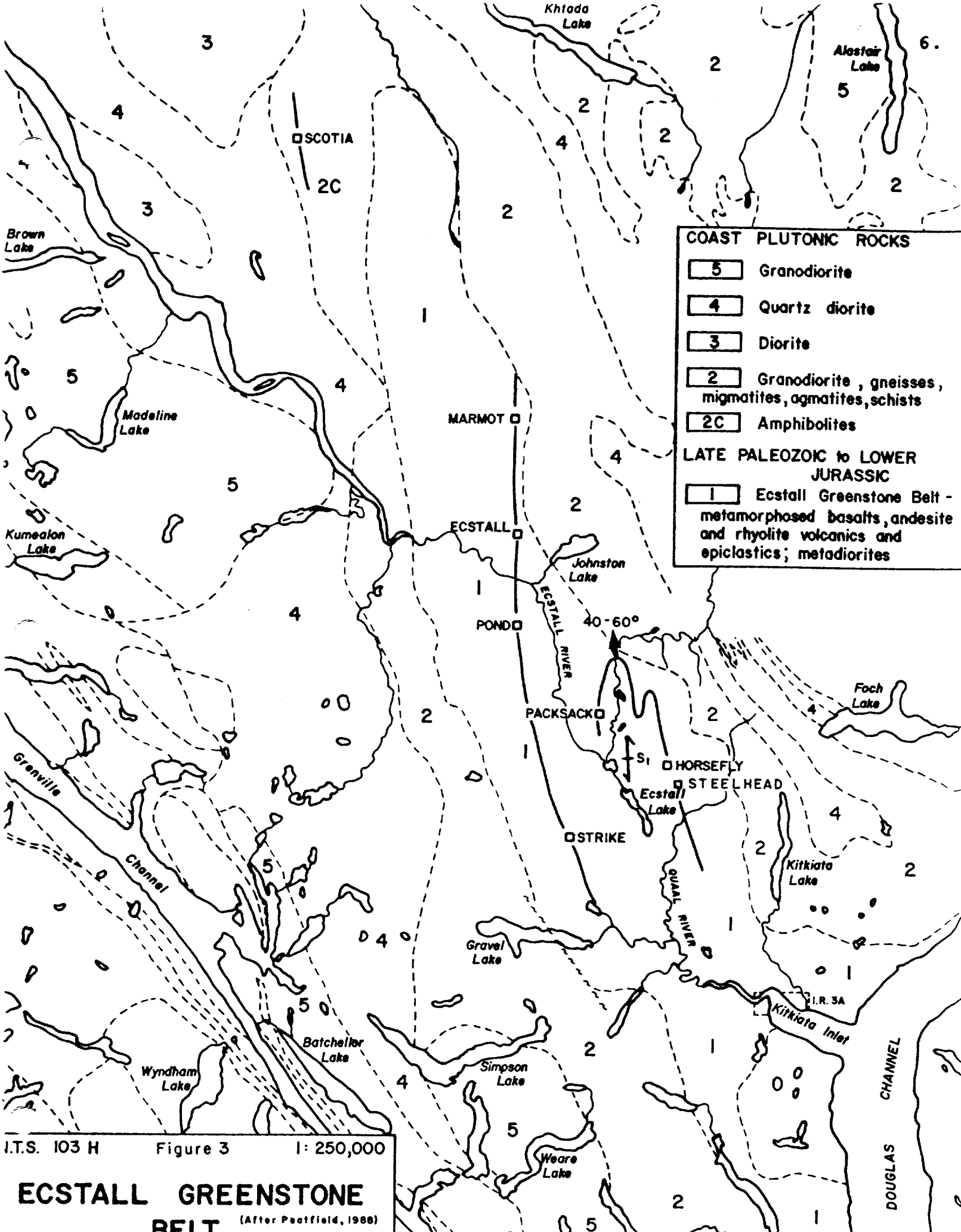
The Ecstall-Quall Rivers area is underlain by complexly deformed metamorphic rocks of the Alexander Terrain of mid-Paleozoic or older age (Graf, 1981). The rocks form the core of a large geosynclinal(?) trough known as the Central Gneiss Complex (Hutchinson, 1970, 1982). Outcropping in a band up to 120 km long and 15 km wide, this belt is dominated by a series of steeply dipping, north-trending schists and gneisses of volcanic and sedimentary origin, which were metamorphosed regionally in the middle greenschist to middle amphibolite facies.

The outer parts of the Central Gneiss Complex were metamorphosed regionally in the almandine amphibolite facies. These rocks represent an original deep marine environment dominated by turbidites, basic volcanic rocks, and mafic to ultramafic intrusions. Hutchinson interpreted them to be older than the more weakly metamorphosed rocks in the core of the belt. Turbidites were metamorphosed to quartz-feldspar-biotite-(garnet) gneiss, quartz-staurolite-sericite-pyrite schist, and quartz-sericite-biotite-pyrite schist. Basic volcanic rocks were metamorphosed to hornblende-biotite-quartz gneiss and hornblende-biotite-garnet gneiss; they are cut by coeval gabbro and ultramafic bodies.

In the core of the complex, rocks were metamorphosed regionally in the greenschist to lower amphibolite facies. Adjacent to the surrounding higher-grade gneiss is the most abundant unit in the core, a meta-sedimentary sequence, which may represent a submarine fan and turbidite environment. It consists of massive to thickly bedded greywacke and quartzite with interlayers of finely laminated siliceous siltstone and dark grey to black argillite. A few thin layers are of quartz-pyrite exhalite, and a few others are rich in magnetite.

In the center of the belt is a pile of mafic to felsic meta-volcanic rocks containing minor to locally abundant tuffaceous sedimentary rocks and argillite. They are regionally metamorphosed in the greenschist facies, and like other rocks in the belt, are deformed very strongly; nevertheless relic fragmental textures are preserved locally, especially in fold noses. Felsite (rhyolite to rhyodacite) tuffs, flows, and subvolcanic intrusions are metamorphosed to quartz-sericite-(chlorite) schist and quartz-sericite-pyrite schist. A few subvolcanic intrusions contain minor to abundant phenocrysts of quartz and plagioclase. Intermediate (dacite to andesite) tuffs and flows were metamorphosed to quartz-sericite-chlorite schist and quartz-chlorite-sericite schist. A few contain abundant plagioclase phenocrysts. Mafic (andesite to basalt) tuffs and associated diorite/gabbro sills were metamorphosed to chlorite-quartz-calcite schist and chlorite-quartz-(biotite-calcite) schist. A few mafic tuffs contain lapilli of more-felsic units.

Volcanogenic massive and semi-massive sulfide deposits dominated by pyrite, with generally much less sphalerite and chalcopyrite, minor galena and very little precious metals, occur in two main stratabound zones in the belt. In a western, linear zone are the Ecstall Mine, and Marmot, Pond, and Strike Showings. No data is available regarding the top of the section in this zone. In an eastern, folded zone are the Packsack and Horsefly/Steelhead Showings. The stratigraphic and structural relationship between these two zones is unknown.



N.T.S. 103 H Figure 3 1: 250,000

ECSTALL GREENSTONE BELT

(After Peatfield, 1988)

The rocks in the belt were subjected to intense shear deformation prior to intrusion of the surrounding plutons. A large, moderately north-plunging antiform east of the Packsack showing may equate the stratigraphy at the Packsack and Horsefly showings (Graf, 1981). This interpretation of structure would be at odds with the geosyncline proposed by Hutchinson (1970, 1982).

The belt is bounded by diorite to granodiorite plutons of the Coast Range Intrusive Complex. To the west is the Ecstall Pluton, and to the east is a series of small plutons containing scattered patches of gneiss. Plugs of diorite intrude the core of the belt; one such plug is just west of Packsack Lake. All rocks are cut by Tertiary lamprophyre and hornblende porphyry dikes.

Tertiary strike-slip faults have been interpreted to exist along a set of linear depressions trending 150-165°. No evidence for late shearing along or displacement across these depressions was found.

2.2 PROPERTY GEOLOGY

2.2.1 General

The Packsack-Horsefly region is underlain by an isoclinally folded sequence dominated by metamorphosed mafic to felsic volcanic rocks, now represented by a variety of schists dominated by quartz, chlorite, and sericite/muscovite. A major north-plunging anticline is interpreted grossly from a discontinuous, distinctive "marker" interval containing abundant felsic volcanic rocks, now represented by quartz-sericite-(pyrite) schist (Figure 3). Near the top of this interval are stratabound lenses of pyrite-rich schist and exhalite dominated by sulfides and quartz. Sulfides are dominated by pyrite, with local concentrations of sphalerite and lesser chalcopyrite. A few diorite/gabbro sills intrude the section; one prominent sill is stratigraphically just above the Packsack massive sulfide horizon. On the west limb of the fold, a zone of meta-sedimentary rocks is dominated by quartzite and argillaceous quartzite, with less abundant siltstone, and locally abundant magnetite-rich layers. Contorted quartz veins are common in the metamorphic rocks.

A few plugs of massive to slightly foliated Cretaceous(?) diorite/gabbro cut the meta-sedimentary rocks. A few Tertiary dikes are of lamprophyre, hornblende porphyry and andesite.

2.2.2 Nomenclature of Volcanic Rocks

In the field, volcanic rocks were grouped into three main types, based mainly on hardness and color, as follows:

felsite	hard to very hard, white to light green, dominated by quartz and sericite with minor chlorite.
dacite/latite	moderately hard to moderately soft, light green to medium green, commonly with felsic and mafic lenses, about equal amounts of quartz, sericite, and chlorite
andesite	soft, medium to dark green, dominated by chlorite with less quartz and sericite.

34 samples were analysed using a lithium borate fusion and X-ray fluorescence and classified into rock types based on SiO2 and TiO2 abundances (Table 1). Samples which do not fit include pyritic samples unusually low in SiO2 and CaO, and one mafic sample which contains siliceous lenses. Samples rich in carbonate have high LOI.

Table 1 X-Ray Fluorescence Whole Rock Analyses

Sample	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	Ba	LOI	Total	Unit
Rhyolite														
140	77.3	0.24	12.8	1.1	0.03	0.6	1.4	1.0	3.0	0.01	0.28	1.6	99.3	3
363	74.8	0.24	11.7	3.9	0.09	2.3	1.4	3.4	0.4	0.03	0.02	1.9	100.0	5i
155	73.8	0.22	10.6	5.3	0.05	2.8	1.2	2.7	0.8	0.02	0.08	2.6	100.1	3
Rhyodacite														
1-522	71.6	0.33	12.2	4.3	0.10	2.8	2.9	2.0	0.5	0.06	0.01	2.4	99.3	3/2
3-183	69.2	0.30	13.3	5.1	0.13	2.9	2.4	4.3	0.6	0.04	0.01	1.8	99.9	3/2
1-131	68.2	0.29	14.4	5.4	0.08	3.3	0.9	4.5	0.7	0.05	0.02	2.2	100.0	3
1- 75	67.6	0.43	16.4	3.5	0.06	1.8	1.3	4.4	2.1	0.07	0.05	2.1	99.9	3
1-486	67.2	0.34	14.0	5.4	0.09	4.7	0.8	3.2	0.9	0.07	0.02	2.9	99.7	2
224	66.4	0.33	15.1	7.3	0.12	2.8	0.9	1.7	2.4	0.05	0.16	2.9	100.2	2
296	65.5	0.34	15.2	6.1	0.06	5.5	0.2	0.6	2.7	0.04	0.10	3.7	100.0	11
3-178	61.2	0.52	15.4	7.4	0.17	3.8	3.1	4.6	0.7	0.08	0.01	2.7	99.6	3/2
Dacite/Latite-Andesite														
311	62.6	0.72	14.5	7.6	0.21	4.2	3.5	2.6	0.6	0.09	0.01	3.2	99.9	2
1-837	58.8	0.56	15.5	7.2	0.16	4.3	5.3	5.0	0.3	0.09	0.01	3.0	100.1	8
1-862	57.0	0.58	16.5	8.0	0.18	6.4	3.4	3.0	1.6	0.08	0.08	3.3	100.0	8/9
76	56.5	0.65	18.0	8.6	0.13	5.1	2.0	6.0	0.1	0.10	0.01	3.0	100.2	2
1-531	56.4	0.71	19.0	7.5	0.13	4.2	4.1	3.8	0.9	0.09	0.02	3.7	100.6	2
1-172	55.4	0.82	17.6	9.9	0.14	4.0	2.2	5.4	0.7	0.04	0.01	3.1	99.2	2
Andesite														
1-804	54.4	0.77	18.3	9.0	0.18	6.2	1.6	4.6	1.0	0.12	0.05	3.8	100.0	8/7
1-283	54.0	0.66	17.6	8.6	0.19	3.9	4.7	5.3	1.3	0.09	0.02	3.1	99.4	2/1
1-373*	53.4	0.67	17.5	11.0	0.10	5.7	0.6	4.1	1.2	0.10	0.03	5.0	99.3	2py
E-3	53.8	1.16	15.3	9.1	0.10	5.9	6.1	4.0	0.1	0.17	0.01	4.2	99.9	2
E-1	52.8	1.19	16.2	13.0	0.13	6.4	1.3	4.9	0.0	0.12	0.01	3.8	99.8	2
E-2	51.6	0.81	19.4	9.4	0.20	5.9	3.0	4.4	0.7	0.13	0.02	3.9	99.4	2
1-720*	47.7	0.74	21.3	11.7	0.18	7.2	0.6	3.3	1.8	0.08	0.09	5.9	100.5	2py
Basalt-Basaltic Andesite														
1-753$	58.7	1.00	14.9	10.1	0.14	5.8	3.3	2.9	0.0	0.14	0.01	3.5	100.5	6a
289	49.5	1.09	17.4	13.2	0.19	7.2	2.0	4.4	0.1	0.13	0.01	4.8	100.0	10
378	48.1	1.88	12.9	15.9	0.40	7.9	4.8	2.2	0.0	0.08	0.01	5.7	99.9	1/6b
1-779*	46.4	0.82	17.7	16.4	0.13	7.8	0.5	0.5	2.1	0.15	0.12	7.1	99.6	8/7
239	44.6	0.86	18.0	11.7	0.17	11.9	2.3	2.4	0.7	0.06	0.08	7.6	100.2	1
165	42.8	0.94	17.5	12.3	0.16	11.6	7.8	1.3	0.2	0.14	0.01	4.8	99.6	8
1-191#	42.1	1.13	13.9	11.5	0.27	8.3	9.7	1.8	0.1	0.11	0.01	10.0	99.0	2/1
Gabbro-Diorite														
370	44.5	0.97	14.6	11.8	0.18	14.7	5.1	2.6	0.0	0.03	0.01	5.3	99.9	6a/b
302	43.9	0.69	16.5	10.6	0.18	13.0	7.2	2.3	0.1	0.06	0.01	5.4	99.9	6a
1-771#	41.1	0.66	16.3	8.9	0.21	10.5	8.1	2.6	0.3	0.07	0.04	10.3	99.1	6a

* high pyrite, low SiO2, CaO $ + siliceous lenses (high SiO2)
\# high carbonate (high CaO, LOI; low SiO2)
302 surface sample station 1-771 1990 drill hole sample

At one end of the spectrum, rhyolite and rhyodacite are characterized by high values in Si, K, and Ba, and low values in Ti, Al, Fe, Mn, Mg, Ca, and P. At the other end, basalt and basalt/andesite typically have high values in Ti, Fe, Mg, Mn, and Ca, and low values in Si, K, and Ba. Diorite-gabbro is similar to basalt/andesite, but commonly has lower TiO_2 and higher MgO.

The volcanic rocks show a range in composition from rhyolite to basalt, and commonly are somewhat more basic in composition than indicated by the field classification. Thus the field classification was modified as shown in Table 2. A more general classification is used in the descriptive section to designate broader groups of rocks.

Table 2. Lithologic Classifications

field classification	final classification	general classification
felsite	rhyolite to rhyodacite	felsic
felsite/dacite	dacite/latite	felsic
dacite/latite	dacite/latite to andesite	intermediate
dacite/andesite	andesite	mafic
andesite	basalt to basalt/andesite	mafic

2.2.3 Stratigraphy

Based on the volcanogenic massive sulfide model and the fact that sulfides are abundant to the east (footwall) and sparse to the west (hangingwall), the section at the Packsack property is interpreted to face west. The section is divided into five main intervals, which are subdivided into lithologic subunits which commonly are lenticular and interlayered. Relations are sufficiently complex in some intervals (especially Interval 3) and in parts of others where outcrop is sparse, that no adequate correlation could be made between grid lines. Lithologic units in different intervals commonly are similar.

2.2.3.1 Interval 1 (Units 1-4)

The lowest sequence mapped contains abundant felsic (Unit 3) and intermediate (Unit 2) tuffs, flows, and subvolcanic intrusions, interlayered with less abundant mafic tuffs (Unit 1), and a few, thin interlayers of black argillite (Unit 4). Towards the top of the interval, rocks commonly contain abundant pyrite (designated by suffix "p", e.g., Subunit 3p), and locally contain concentrations of sphalerite, chalcopyrite, and galena (designated by Zn, Cu, and Pb). Lower in the section are a few concentrations of base-metal sulfides.

In DDH 90-3 and locally on surface to the southeast of its collar are massive felsic rocks containing 3-10% prominent quartz phenocrysts and less prominent plagioclase phenocrysts. Quartz phenocrysts commonly are blue. One occurrence is at the down-dip projection of the near-surface massive sulfide in DDH 90-6. Thus, the rocks are interpreted as subvolcanic intrusions, domes, and stubby flows, which are associated with the culmination of felsic volcanic activity and massive sulfide formation, and are designated as Subunit 5i.

A few lenses of foliated diorite/gabbro intrude this interval parallel to foliation. One prominent body was intersected in DDH 90-2 between 166' and 238', and a small outcrop was found on the up-dip projection of this body at surface. The basalt/andesite just east of camp contains lensy zones of diorite with a texture similar to that of Unit 6, and is designated as Subunit 1/6.

2.2.3.2 Interval 2 (Unit 5)

This interval is up to a few tens of metres wide and contains lenses of massive sulfide (Subunit 5a) and semi-massive sulfide (Subunit 5b) "interlayered" in part with pyritic felsite (Subunit 5c). Some of this "interlayering" may be the result of close to isoclinal folding, which is suggested by minor folds, especially in the well exposed section along Packsack Creek, and by the sharp right-lateral offset of the massive sulfide zone just north of the creek. Subunit 5c is similar to Subunit 3p, and where Subunit 5c overlies Subunit 3p, the contact was drawn arbitrarily. Felsite with prominent quartz phenocrysts occurs in DDH 90-3 and locally on surface; it is interpreted as part of this unit and designated Subunit 5i.

2.2.3.3 Interval 3 (Unit 6)

Directly above the Packsack massive sulfide or separated from it by a narrow layer of Subunit 5c is a distinctive unit dominated by fine to locally coarse grained diorite/gabbro (Unit 6a), commonly surrounded by finer grained meta-basalt/andesite (Unit 6b). The diorite/gabbro generally was deformed strongly to a soft, dark green, coarse chlorite-calcite schist with a knobby texture. In places this grades into rocks of Subunit 6b, and elsewhere the contact is sharp.

2.2.3.4 Interval 4 (Units 7-9)

This interval contains a thick zone of mainly dacitic to andesitic tuffs (Unit 8), generally containing very little sulfides, and commonly uniform in composition. Interlayered with Unit 8 are lenses and patches of more mafic rocks, mainly tuffs (Unit 7) and of more felsic rocks (Unit 9). Generally outcrop is too sparse and local complexity too high to allow meaningful correlation between grid lines. In contrast to rocks of Interval 1, these rocks generally contain only sparse sulfides. In DDH 90-1 and 90-3, the dominant sulfide is pyrrhotite rather than pyrite, whereas in DDH 90-2, pyrite with minor chalcopyrite and pyrrhotite are present.

2.2.3.5 Interval 5 (Units 10-12)

Overlying Interval 4 is a section dominated by mafic tuffs rich in chlorite (Unit 10) with a few major lenses of felsic tuff (Unit 11). Most rocks of Unit 10 are fissile and weather recessively. In some fissile layers, biotite is moderately abundant as fine to medium grained flakes, either disseminated or concentrated in biotite-rich seams (Subunit 10b). Biotite is most abundant near the top of the unit. One locality contain very abundant disseminated octahedra of magnetite averaging 0.5-1 mm in size (Subunit 10m).

Elongate bodies up to a few tens of metres thick are of a distinctive pale grey rhyodacite/latite tuff or flow showing strong shear deformation (Unit 11). Locally associated with it are thin lenses of pyritic black argillite (Unit 12).

2.2.3.6 Interval 6 (Unit 13)

Unit 13 is dominated by a sequence of generally well bedded, platy sedimentary rocks, including white to grey quartzite (Subunit 13a), grey to green siltstone (Subunit 13b), and dark grey to black, argillaceous quartzite (Subunit 13c). Minor distinctive intervals consist of quartzite and greywacke with 2-3% distinctive, disseminated flakes of biotite (Subunit 13d), and quartzite containing magnetite beds averaging 3-10 mm wide and quartzite containing 1-3% disseminated magnetite grains averaging 0.05-0.1 mm in size (Subunit 13e). Subunit 13a is most abundant towards the south and Subunit 13c is most abundant towards the north. Magnetite-rich beds occur mainly along the lower contact of the unit.

2.2.4 Cretaceous(?) Intrusive Rocks

Diorite/gabbro (Unit 20) forms a zoned plug in the extreme southeast of the property, where it intrudes rocks of Unit 10. The plug is dominated by medium grained diorite (Subunit 20a) containing 15-20% hornblende (altered strongly to chlorite). Locally it consists of coarse to medium grained gabbro (Subunit 20b) dominated by clinopyroxene and hornblende. Foliation is absent to weak. A pluton of slightly foliated, medium grained mafic diorite (Subunit 20a) intrudes rocks of Unit 13 just west of Packsack Lake, and extends over the crest of the ridge west of the property.

2.2.5 Tertiary Dikes

The deformed volcanic rocks are cut by several lamprophyre to andesite dikes (Subunit 21a). Some large dikes occur along major creeks at the north end of the Packsack grid (8300N, outside the present map area). Others outcrop in Packsack Creek just below DDH 90-1, and a small one occurs in DDH-90-1 and DDH 90-2.

An outcrop of a dike of hornblende porphyry containing 7-10% medium grained hornblende phenocrysts in a fine grained, mainly felsic groundmass occurs in the southwest part of the property (Subunit 21b). It weathers by exfoliation of circular patches averaging 2-3 cm across, beneath which the rock is weathered to a lighter grey color than that of the surrounding surface; this gives the surface a coarsely mottled appearance.

In DDH 90-3 is a massive dike of very fine to fine grained, porphyritic andesite with 10-15% plagioclase phenocrysts in a dark green groundmass (Subunit 21c).

3.0 STRUCTURE

3.1 Regional

The regional structure has not been studied in much detail, and some interpretations are conflicting. Rocks of the Central Gneiss Complex were deformed strongly about steeply dipping axial planes trending 180° to 160°. Graf (1981) postulated a broad anticline along the valley of the Ecstall River between the Packsack and Horsefly showings. Data at the Packsack property from this study support Graf's interpretation, and indicate that the axis of the anticline plunges north at 40° to 60°. These data conflict with the model of Hutchinson that the rocks occupy a broad geosyncline. The higher degree of metamorphism of rocks on the outer parts of the gneiss complex probably is because of their proximity to the core of the Coast Range Intrusive Complex, rather than because they are older than those in the core of the belt. Major faults may separate terrains of different metamorphic grade and origin in the Central Gneiss Complex. Much more field work is required to understand the regional structure.

3.2 Property

The volcanic and sedimentary rocks were deformed strongly during a major period of shear deformation (D1), and recrystallized to schists in which the dominant structural feature is foliation (S1) (Photos 1 and 2). In minor fold noses, remnants of bedding (So) are preserved and are folded tightly (Photos 2 and 3). In moderately deformed rocks, tiny folded segments of So commonly can be recognized between planes of S1 spaced from 1-3 mm apart. In strongly deformed rocks on limbs of folds, So is transposed parallel to S1 and commonly obliterated. On a broad scale, most lithologic contacts are parallel to S1, although locally at the scale of few centimetres, So trends across S1. Generally S1 strikes between 160° and 190° and dips steeply west or east. At the south end of the grid near the baseline, S1 dips moderately to the east.

A lineation (L1) was developed widely as the intersection of So and S1, and generally is parallel to fold axes of minor folds developed during D1 in beds and in quartz veins. Quartz veins commonly show evidence of strong deformation during D1, including tight folds, boudins, and knots [many of which represent segments of veins preserved in fold noses] (Photos 3, 4 and 5). In the plane of S1, L1 generally plunges 40° to 60° to the north. These data suggest that the major fold interpreted by Graf to link the Packsack and Horsefly deposits plunges in the same direction. Vergence on most minor folds in the Packsack property supports the model that a major anticlinal axis is to the east (Photo 6). The fact that the massive sulfide zone dips almost vertically for over 230 metres indicates that no major drag folds are present in that region. Locally a lineation, which may be L1, plunges 25° to 30° to the north.

A second, weak stage of deformation, D2, produced local kink folds, F2, and a more widespread lineation (L2). These are prominent in a few outcrops, mainly near large quartz veins which had been contorted during D1, especially near the south end of the grid (Photo 7). L2 generally plunges southeast at 60° to 65°. Most kink folds are of the scale of a few mm to one centimetre, but locally folds are up to a few tens of centimetres across.

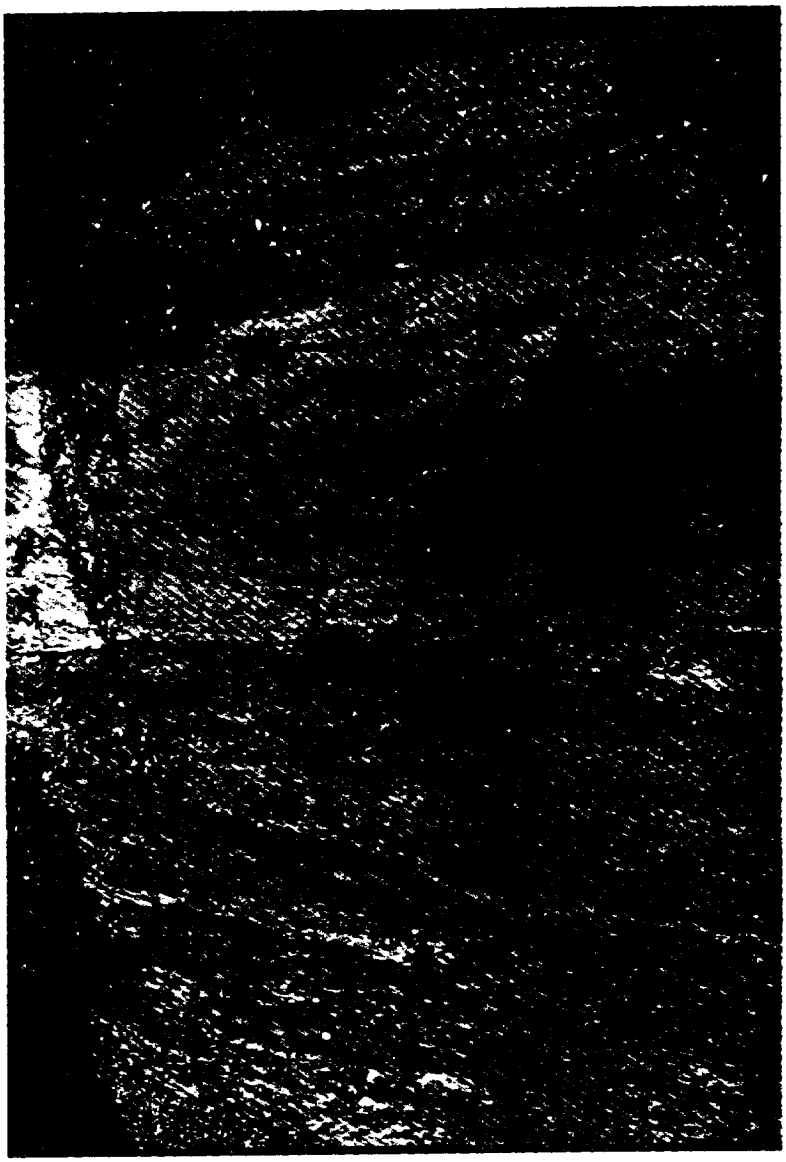


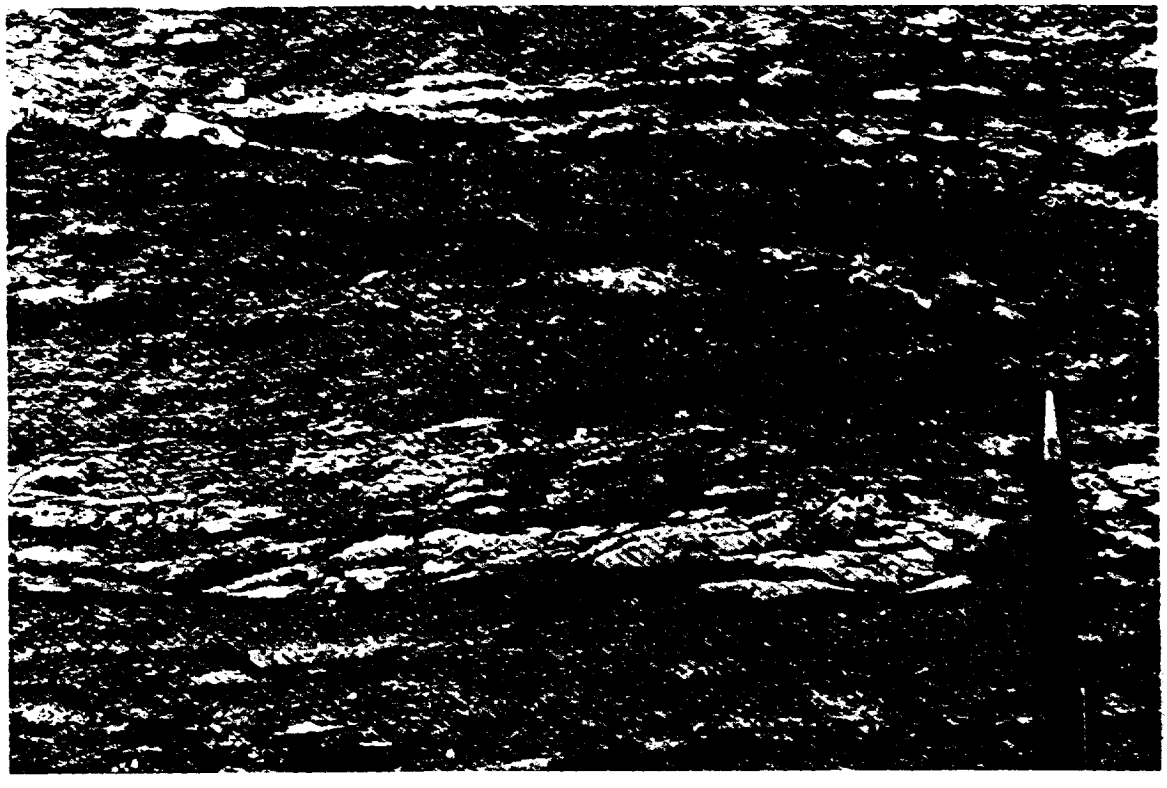
Photo 1. (left)

Foliated felsic dike (Subunit 5d) cuts strongly deformed, porphyritic latite of Subunit 2f.

Base Line, 6740N.

Photo 2. (below)

Close-up of deformed latite in lower part of Photo 1.
Note smeared-out fold noses and plagioclase phenocrysts



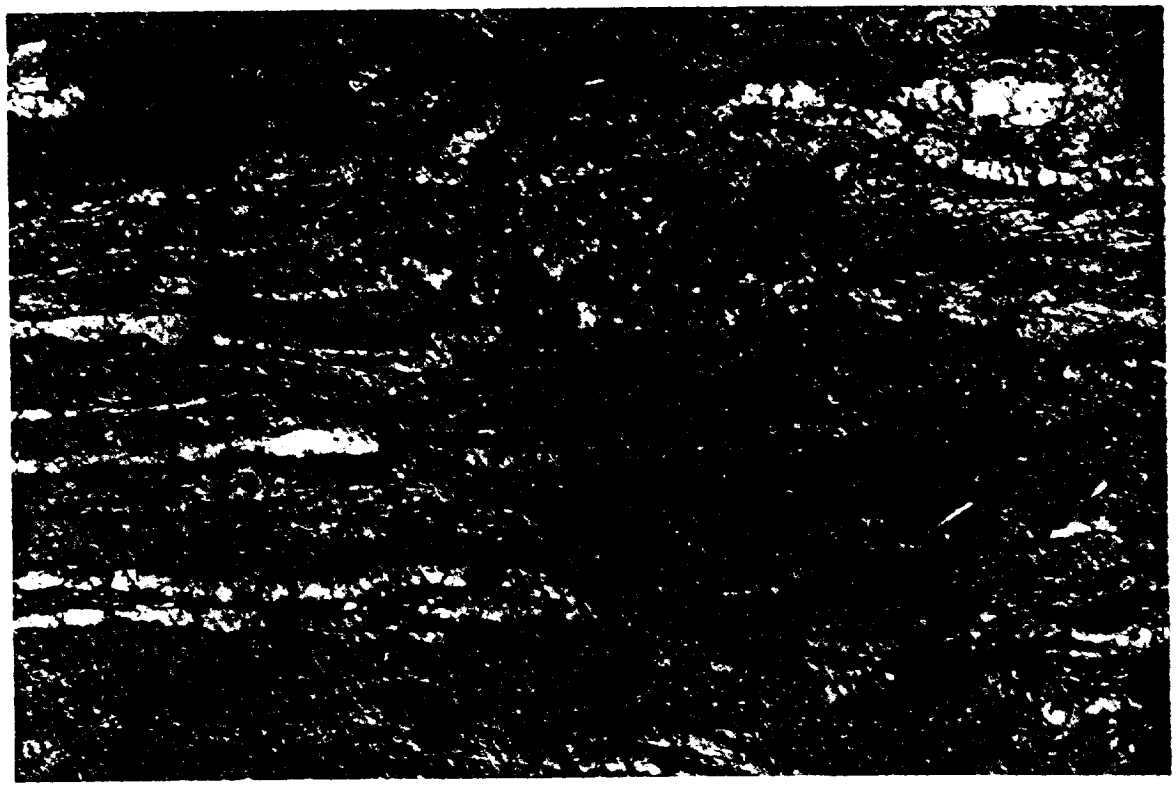


Photo 3. Remnants of siliceous layers (beds?) and quartz veins tightly folded during D1 in Unit 3. 7170N, 7130E.

Photo 4. Deformed large quartz vein in Unit 3, 7170N, 7120E

Photo 5. Folded and boudinaged quartz vein in Unit 2; F1 fold noses preserved in host rock near quartz vein. 6800N, 7020E.

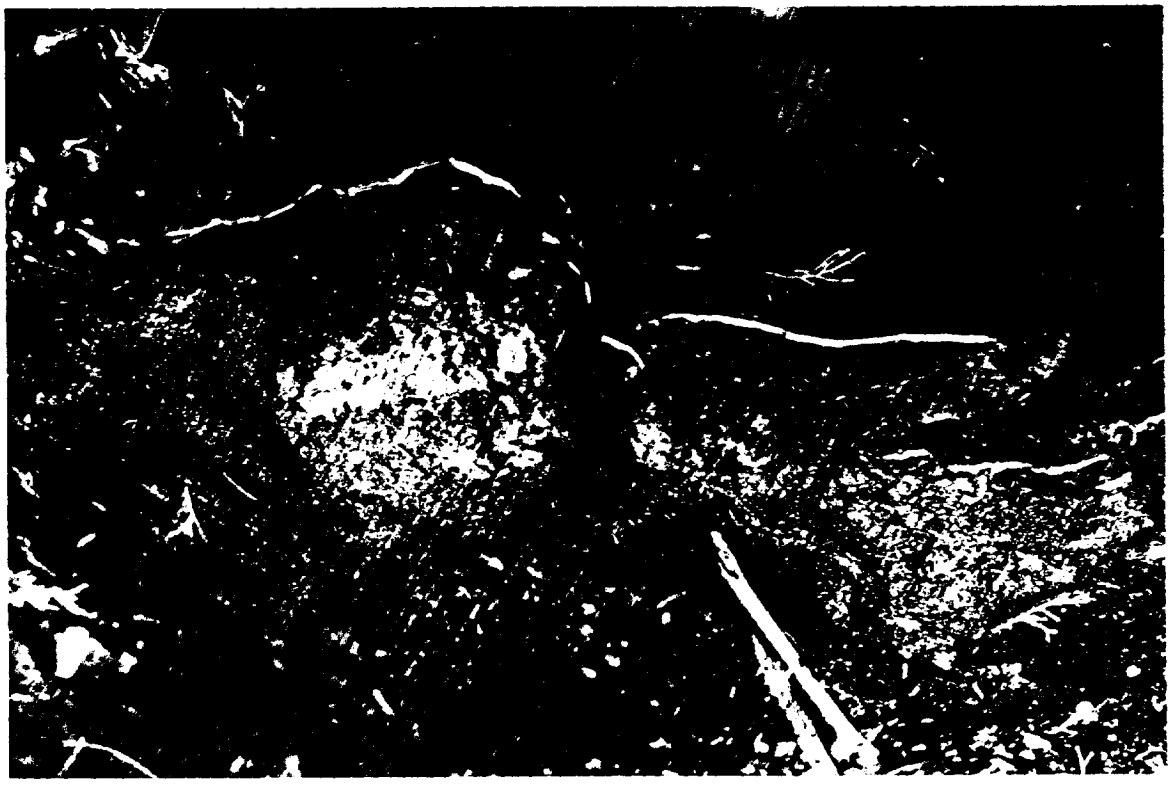


Photo 6. Contact between Subunit 5c (mainly under water) and underlying Subunit 5a, folded about axis plunging north at 60° (=pencil); thin lenses of 5c in 5a in fold nose near contact. Vergence indicates anticline to east. 7130N, 7030E.

Photo 7. Thinly laminated tuffaceous sediments or cataclastically deformed tuff of Unit 2 showing well developed D2 kink folds with fine lineation parallel to fold axes. 6620N, 7020E.

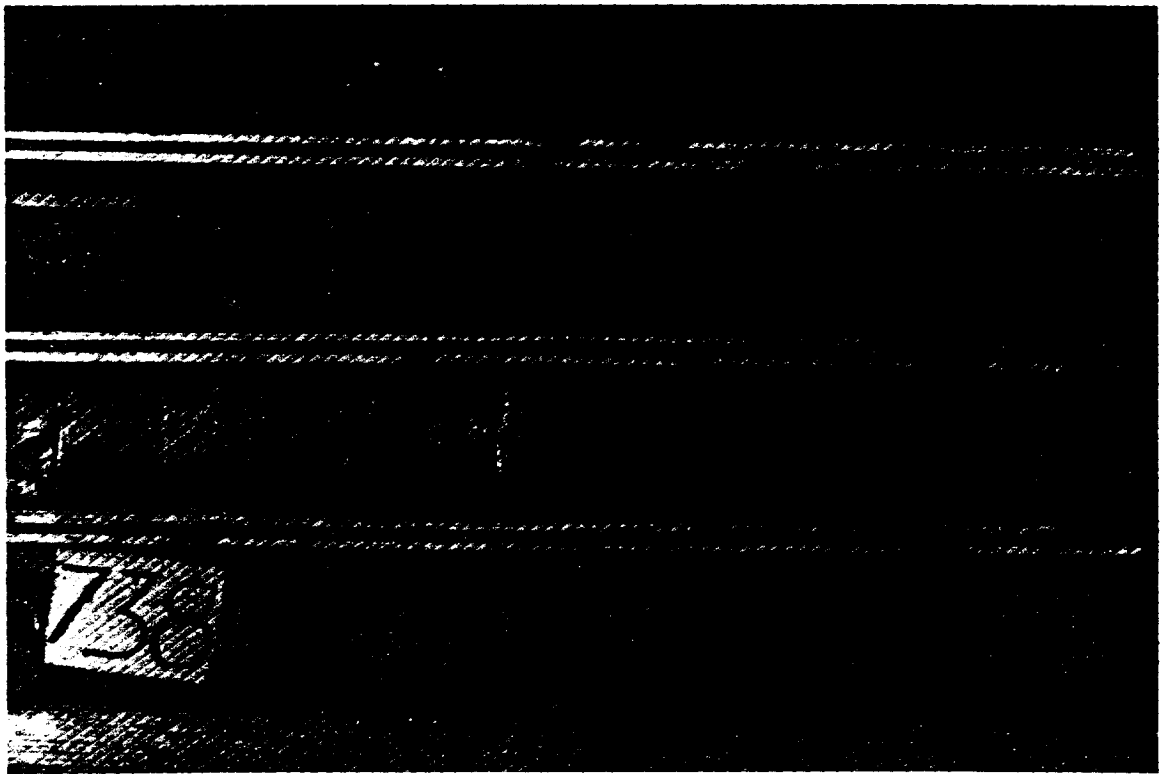


Photo 8. Hole 90-1, Pyritic felsite (Subunit 5c) with bands of semi-massive sulfide (Subunit 5b) [bottom row, 738.2-738.6'] and massive sulfide (Subunit 5a) [second row, 733.7-744.5']

A prominent linear trend at 165° is marked by several parallel linear topographic depressions, which previously were interpreted as faults. Many of these valleys formed along the foliation plane in fissile, readily weathered mafic schists, along which no evidence of faulting was recognized. In the drill cores, the presence of only minor zones of gouge and broken rock suggests that on the property late faulting was not significant. The massive sulfide horizon also is marked by a linear topographic depression.

4.0 ECONOMIC GEOLOGY

4.1 Regional Bedrock

In the Ecstall region are two stratigraphic intervals containing volcanogenic massive sulfide deposits associated with accumulations of felsic volcanic rocks in an island arc environment (see Figure 3). Sulfides are dominated by pyrite with local concentrations of sphalerite and chalcopyrite. Massive sulfides are uniformly low in precious metals. To the west, a linear zone contains the Ecstall deposit and the Marmot, Pond, and Strike showings. To the east a folded zone contains the Packsack and Horsefly-Steelhead prospects.

The **Marmot showing**, 5.5 km north of the Ecstall mine, contains a region in which soils are moderately anomalous in Cu and Zn. This region is associated with a band of altered felsic volcanic rocks, now a rusty quartz-sericite-pyrite schist, contained in a wider zone of chloritic, metamorphosed andesite.

The **Ecstall (Red Gulch) deposit** occurs in a 100-metre-thick band of meta-andesite and meta-rhyolite (quartz-sericite-pyrite schist) enclosed in meta-sedimentary rocks dominated by quartzite. Three separate massive sulfide deposits are hosted in the meta-rhyolite. The average grade is 0.9% Cu, 3.1% Zn, 0.01% Pb, 0.8 oz/ton Ag, and 0.013 oz/ton Au, with local patches up to 5% Cu and 15% Zn. The two main deposits, averaging 6 m thick, 500 m in length and at least 500 m down-dip, together contain 8 million tons of drill-proven reserves.

The **Pond showing** is 3 km south of the Ecstall deposit. A 30-metre section of meta-felsite (quartz-sericite-chlorite-pyrite schist and massive quartz-pyrite-[mariposite] layers) extends to the Ecstall deposit. A bed of rusty-weathering black argillite borders the meta-felsite on the west. The best of four representative sulfide samples assayed 0.013% Cu, 0.01% Pb, 0.13% Zn, 0.12 oz/ton Ag, and 0.001 oz/ton Au. A few soil samples are anomalous in Cu, Zn, and Pb.

The **Strike showing** is 12 km south of the Pond showing. Two bands of meta-felsite (quartz-sericite-pyrite schist) are associated with a rusty weathering, silicified argillite. The eastern zone is 20 m thick and over 500 m long. No soil sampling was done. The western zone, 1.5 km to the west, is 5 m thick and at least 200 m long. Numerous fine grained, massive sulfide boulders up to 50 cm across occur in talus below the showing. One boulder assayed 0.174% Cu, 0.27% Pb, 2.83% Zn, 1.13 oz/ton Ag, and 0.01 oz/ton Au. In a zone up to 2000 m to the north are numerous stream silt samples anomalous in Cu and Zn.

The **Mass showing** (not located on Figure 3) is 12 km southeast of the Ecstall mine and in a similar geological environment. It consists of a layer of massive sulfide averaging 8 m wide over a strike length of 700 m, which occurs in an interval of meta-felsite (quartz-sericite-pyrite schist). Drilling outlined a body of 3 million tons grading 0.5% Cu, 0.2% Zn, 0.01% Pb, 1.0 oz/ton Ag and 0.01 oz/ton Au. It is open to depth and probably to the north.

The **Packsack showing** contains tabular lenses of massive and semi-massive sulfide dominated by pyrite near the top of a major pile of felsic volcanic rocks. In 1960, 11 drill holes over a strike length of 500 m outlined a deposit of 3 million tons to a depth of about 70 m averaging 0.5% Cu, 3% Zn, 0.01% Pb, and 39 g/ton Ag; the average grade increases slightly towards the north end. The 1990 drill program tested the zone about 250 m below surface.

The **Horsefly-Steelhead showing**, 7 km southeast of the Packsack showing, is a massive pyrite-rich sulfide zone up to 1 m wide (no length reported) in a zone of meta-felsite (rusty-weathering quartz-sericite-pyrite schist) averaging 10 m wide and over 1 km long. One massive pyrite sample assayed 0.3% Cu, 4.55% Zn, 0.08% Pb, 1.5 oz/ton Ag, and 0.01 oz/ton Au. Soil and silt samples indicate a zone of anomalous Cu, Pb, and Zn over 2000 m long.

The **Marilyn showing** (not located on Figure 3) is 2 km east of the Horsefly showing in a faulted zone of meta-felsite (quartz-sericite-pyrite schist) and enclosing meta-andesite. A rusty weathered quartz-sericite schist 25 metres thick and several kilometres long contains pyrite as disseminations and as layers up to a few mm thick. The best assay of a sulfide sample was 0.005% Cu, 0.01% Pb, 0.05% Zn, 0.05 oz/ton Ag and 0.002 oz/ton Au. Only a few of the silt samples taken along the zone were moderately anomalous.

4.2 Property

4.2.1 Hydrothermal Events

The massive sulfide deposits in the region are typical of those of volcanogenic origin, having been formed by hydrothermal activity associated with late stages of felsic volcanism. The Packsack deposit has a well developed footwall alteration zone. The hangingwall rocks were formed after the main hydrothermal event, and generally contain only minor sulfides.

One of the earliest hydrothermal events may have been the formation of lenses, patches and veinlets of very fine grained, commonly granular quartz-calcite. These generally are less than 1 cm wide, and are most common in mafic units. They contain very little pyrite or chlorite, and commonly are parallel to foliation.

In the main-stage alteration, footwall rocks were altered slightly to moderately to assemblages of quartz-sericite-chlorite-pyrite-(carbonate). No pervasive silicification was recognized. Sulfides occur mainly as wispy to discrete, very fine to fine grained lenses parallel to S1. Pyrite is by far the most abundant sulfide, and is most common in lenses averaging 1-3 mm thick. Textures indicate that sulfides were mobilized into the lenses during D1.

In felsic rocks, pyrite commonly also forms 0.5-2% disseminated, extremely fine grains. In mafic rocks, it locally forms patches of medium to coarse, disseminated, cubic grains. The average pyrite content of the footwall alteration zone is 1-3%. Some thin mafic units between thicker felsic units contain abundant lenses and patches of pyrite (up to 10% of the rock). Sphalerite forms disseminated grains and patches, commonly associated with and interstitial to pyrite. Chalcopyrite and pyrrhotite are concentrated in coarser grained patches, which probably were formed by remobilization during later stages of D1.

Lenses of massive and semi-massive sulfides of Subunits 5a and 5b, respectively, are up to a few metres thick. Herein, massive sulfide is defined as rock containing over 50% sulfides, and semi-massive sulfide as rock containing 20-50% sulfides. Typically both are dominated by granular aggregates of pyrite and quartz. Sphalerite and chalcopyrite generally form interstitial grains and patches in massive sulfide, and occur in adjacent, altered felsic volcanic rocks and quartz veins as coarser grained lenses and patches. Semi-massive sulfide commonly grades into strongly altered rhyolite/rhyodacite of Subunit 5c, which consists of quartz and sericite with 5-15% sulfides (mainly pyrite).

Early veins up to a few metres across (averaging 2-10 cm) are dominated by fine to coarse grained, milky quartz. Locally these contain moderately abundant patches of one or more of calcite, chlorite, and sulfides. Large quartz veins occur mainly in the southeastern part of the property. One large vein in DDH 90-3 has a narrow, vuggy core, probably formed during late recrystallization. Pyrite and chlorite are common in quartz veins in the footwall of the massive sulfide. Chalcopyrite and pyrrhotite occur in quartz veins in and near the massive sulfide zone (both below and above), commonly as medium to coarse grained clots averaging 0.3-1 cm in size. It is difficult to determine what percentage of the vein material was formed by hydrothermal alteration prior to metamorphism, and what percentage was formed by segregation during early stages of metamorphism.

Late veins averaging 1-3 cm in width cut across S1 at a moderate to high angle. Many dip moderately to steeply southwest. Those in outcrops are dominated by quartz. In the drill holes, they consist of quartz and/or calcite, and a few also contain minor pyrite or chlorite.

4.2.2 Soil and Silt Geochemistry

Previous studies of soil and silt geochemistry have yielded weakly anomalous zones in copper, zinc, or lead, but no consistent patterns have emerged (Peatfield, 1988). Two test lines over the sulfide outcrops at the Packsack showing returned no appreciable values from two soil horizons.

Graf reported silt samples in many of the drainages on the property and beyond. Several weak to moderate anomalies were present in creeks draining known base-metal showings, but did not point directly to any new potential massive sulfide occurrences.

4.2.3 Rock Geochemistry (Surface)

Grab samples were taken of surface exposures of massive sulfides and of quartz-sericite-pyrite schist from the Packsack and Horsefly-Steelhead showings (Maxwell and Bradish, 1987). Most of these showed slightly to moderately anomalous values in copper, zinc, silver, and gold, and a few showed significantly anomalous values in one or more of these metals.

Three zones of concentrations of sulfides were discovered during mapping in 1990. All are in felsite of Unit 3 in the footwall alteration zone of the main massive sulfide zone. At station 203 (on Packsack Creek at 7130E), is a stratabound band up to 3 cm wide of sphalerite-pyrite-quartz-galena. At Station 148 (7100N, 7270 E) in a zone of quartz-sericite alteration, a layer up to 10 cm wide contains abundant sphalerite and galena in lenses parallel to foliation. The surrounding felsite contains 1-2% pyrite as lenses and disseminated grains. At Stations 248 and 250 (7300N, 7150-7200 W), felsite contains lenses up to a several cm wide with 10-15% pyrite and pyrrhotite. Assay results are shown in Table 3.

Table 3. Significant Assays - Surface Samples
(Maxwell & Bradish, 1987; Payne, 1990)

Grid	Sample	Cu(ppm)	Zn(%)	Pb(%)	Ag(ppm)	Au(ppb)	Source
Packsack	88120	220	>4%		8.0	340	M&B
	99029	5,190	0.32		17.0	940	M&B
	99030	925	7.7		3.1	2000	M&B
	99033	3,370	7.95		16.0	190	M&B
	148	62	1.75	3.35	25.3	60	P
	203	392	17.0	3.42	86.4	800	P
	248a	37	0.04	0.01	0.7	<10	P
	248b	17	0.11	0.01	0.7	<10	P
Horsefly	88077	11,600	0.041		6.4	70	M&B
	88080	3,160	4.0		18.8	1080	M&B
	88193	4,000	3.8		33.0	500	M&B
	88195	370	4.6		3.4	30	M&B
	88197	11,600	0.039		13.0	15	M&B
	14902	240	1.05		0.2	<5	M&B
Steelhead	88085	700	3.8		4.4	40	M&B
	88118	300	1.3		3.0	20	M&B
	88177	10,800	0.97		28.0	420	M&B
	88180	13,700	0.04		39.0	400	M&B
	14976	1,700	3.6		21.0	10	M&B
	14979	400	2.6		0.4	10	M&B

5.0 Diamond Drilling

5.1 1960 Program

In 1960, eleven drill holes totalling 2,891 feet tested the Packsack showing over a strike length of 2,000 feet (see Figure 5). All holes intersected hydrothermally altered meta-rhyolite/rhyodacite, and all contained intervals of massive and semi-massive, pyrite-rich sulfide with sphalerite and chalcopyrite. Two main lenses were interpreted as the main zone (mz) and, to the west, the hangingwall zone (hwz). The most anomalous intersections are shown in Table 4.

Table 4. Anomalous Assays - 1960 Drill Program
(listed from north end to south end of deposit)

Drill Hole	Zone	True Thickness (metres)	Cu(%)	Zn (%)	Cu/(Cu+Zn)
11	mz	2.5	0.40	5.60	0.07
	hwz	4.7	0.23	1.59	0.13
1	mz	2.0	0.31	2.04	0.13
10*	mz	1.7	0.40	4.75	0.08
	hwz	3.7	0.27	4.76	0.05
2	mz	2.7	1.58	0.88	0.64
	hwz	2.8	0.49	3.16	0.13
9*	mz	6.2	0.10	0.76	0.12
3	mz	2.3	0.18	2.46	0.07
	hwz	1.6	0.98	1.46	0.40
4	mz	5.9	0.52	2.57	0.17
5	mz	2.7	0.24	2.42	0.09
	hwz	2.8	0.23	1.63	0.12
6	mz	4.0	0.65	1.24	0.34
	hwz	4.2	0.35	3.21	0.10
7	mz	8.0	0.35	1.46	0.19
8	mz	6.5	0.53	0.95	0.36

* deeper holes

A preliminary isopach map of the deposit indicates that it is thicker at depth (up to 70 m) than at surface, and that the Cu/(Cu+Zn) ratio decreases with depth (Peatfield, 1988).

5.2 1990 Program

5.2.1 Introduction & Logistics

In July 1990, three drill holes totaling 3064 feet (934 m) tested the Packsack deposit at a depth of up to 250 metres below surface over a strike length of 360 metres (see Figures 4 to 8 and Table 5). Hole 90-1 was drilled at -50° and drill sites were prepared west of the base line to allow for the possibility that the target zone was offset by F1 folding to the west, and might be missed by too steep a hole. This proved not to be the case. As well, the hole flattened to -39°. Thus, holes 90-2 and 90-3 were drilled at -60° and -61°, respectively,

in order to intersect the target at a projected depth of 250 metres. Hole 90-2 was stopped at 888 feet because of high water pressure and very slow drilling. Because of the presence of moderately abundant pyrite and minor chalcopyrite at the end of the hole, and because it had not intersected the distinctive gabbro/diorite of Unit 6 on the hangingwall, it was deepened later. The hole was re-entered easily, but continued high water pressure caused the drill to lose completely its drilling power at a depth of 948 feet, while still cutting rocks containing moderately abundant pyrite. (Note: the drill contractor was to have provided a drill capable of drilling to 1400 feet).

Table 5. Drill Hole Data - 1990 Program

Number	Azimuth° top	Azimuth° end	Dip° top	Dip° end	Depth (feet)	Footwall Stringer Zone (Units 2, 3) (feet)	Pyritic Felsite, Lenses of Massive & Semi-Massive Sulfide (feet)
90-1	270	266	-50	-39	998	540-702	729.5-744.0
90-2	275	280	-60	-53	948	554-625	713.8-759.0
90-3	270	280	-61	-51	1108	328-333 (?)	-

5.2.2 Geology

Drill logs are shown in Appendix 1 and are summarized in Table 6. In the latter, sulfides other than pyrite are designated as cp (chalcopyrite) and po (pyrrhotite). The favorable horizon (Unit 5) was intersected in DDH 90-1 and DDH 90-2. Both contain minor intervals of massive and semi-massive sulfides (Photo 8).

Table 6. Summary of Drill Logs - 1990 Program

footage	geological unit(s)	vein abundances QC	Q(CL)	Py	MS
DDH 90-1					
0- 5	(Casing)				
5- 39	Unit 1				
39- 147	Unit 3			*	
147- 167	Unit 1			*	
167- 239	Unit 2, minor Unit 3			** +cp	
239- 247	Unit 21a				
247- 338	Unit 2, minor Units 1 and 3	**			
338- 397	Unit 2, minor Unit 3		*	*	
397- 435	Unit 3, Unit 2		*	** +cp	
436- 486	Unit 2/1			**	
486- 500	Unit 3		**	*	
500- 702	Unit 2, minor Units 1, 3		**	*** +cp	
702- 730	Unit 2			**	
730- 744	**Unit 5c, lenses of 5b, minor 5a**			***	**
744- 761	Unit 6b			*	
761- 777	Unit 6a				
777- 819	Unit 8, 7		*		
819- 830	Unit 9		*		
830- 998	Unit 8, minor Unit 8/9, Unit 7	*	**	*	=po

Table 6. Summary of Drill Logs (continued)

DDH 90-2		QC	Q(CL)	Py	MS
0- 9	(Casing)				
9- 19	Unit 1, minor Unit 3		*	*	
19- 166	Unit 3	*	*	*	(po)
166- 238	Unit 6a (sill)	*	*		
238- 343	Unit 3, minor Units 1 and 2			*	py,po
343- 383	Unit 1, less Unit 2/3	*		*	
383- 425	Unit 2			**	
425- 454	Unit 3, less Unit 2			*	
454- 525	Unit 2, minor Unit 3	*		*	
525- 554	Unit 3		*		
554- 585	Unit 2	*	*	**	+cp
585- 642	Unit 3		*	**	+cp
642- 683	Unit 1 (or Unit 6b)	*		*	+po-cp
683- 697	Unit 6a				
697- 714	Unit 2/1	*	*	*	
714- 759	**Unit 5c**			***	*
759- 948	Unit 8, minor Unit 9		*	**	+cp

DDH 90-3		QC	Q(CL)	Py	MS
0- 7	(Casing)				
7- 77	Unit 2		*		
77- 132	Unit 2/1L minor ep fragments	*	**	*	
132- 152	Unit 21c				
152- 231	Unit 3	*		*	
231- 390	Unit 2, massive, flow(?), minor Unit 3		**	*	
390- 402	Unit 3 flow(?)		***		
402- 421	Unit 1 flow(?)		*	*	
421- 517	Unit 5i, minor Unit 3f/5f interlayers		*		
517- 576	Unit 2/3L (distinctive) felsic fragments		*		
576- 742	Unit 1, minor Unit 3(flow)	*	*		
742- 781	mixed Units 1, 2, and 3			*	
781- 838	Unit 3 (flow)		*	*	
838- 853	Unit 1				
853- 900	**Unit 5i porphyritic**		**		
900- 984	Unit 6b (or Unit 7)		**		
984-1034	Unit 9 (flow)		*		
1034-1118	Unit 8, 9 interlayered		*		

QC	early quartz-calcite	*	minor
Q(CL)	quartz-(calcite-chlorite)	**	moderately abundant
P	pyrite stringers	***	very abundant
MS	massive sulfide		

DDH 90-1 and DDH 90-2 intersected the footwall stringer zone in rocks of Units 2 and 3 and much less abundantly in rocks of Unit 1. This zone contains abundant pyrite seams and veinlets and quartz-(pyrite) veins, and minor concentrations of chalcopyrite, pyrrhotite, and sphalerite. In DDH 90-3, the footwall lithology is unusual, in

that it contains several intervals of relatively massive felsite characterized by abundant quartz (commonly blue) and plagioclase phenocrysts; these are interpreted as subvolcanic intrusions or stubby flows (Subunit 5i). Similar rocks were seen locally on surface just southeast of the collar of DDH 90-3. This hole also intersected a few bodies of a distinctive fragmental latite, with epidote-rich fragments averaging 1-2 cm in size. Another rock type found mainly in this hole consists of thin, aphanitic felsite flows. Large (over 50 cm wide) quartz veins are abundant in this hole and on surface to the east. The combination of subvolcanic intrusive rocks, coarser fragmental rocks, aphanitic felsite flows and abundant quartz veins suggests the presence of a felsic volcanic neck. It may be that DDH 90-3 missed the stratabound sulfide unit because of an original topographic high associated with the volcanic center.

In DDH 90-1 and DDH 90-3, the hangingwall rocks are very low in sulfides, and pyrrhotite is dominant over pyrite (especially in DDH 90-1). In DDH 90-2, pyrite and locally abundant chalcopyrite occur in the hangingwall rocks. In DDH 90-1, above the massive sulfide is the diorite-gabbro of Unit 6a. This distinctive hangingwall unit was not intersected in DDH 90-2 or DDH 90-3, although a similar unit was intersected in DDH 90-2 in the immediate footwall of the main sulfide zone.

5.2.3 Assays

Intervals of the footwall stringer zones, the pyritic felsite (Subunit 5c), massive and semi-massive sulfides (Subunits 5a and 5b), and sulfide-rich intervals in the hangingwall were split and sampled at lengths averaging 3-5 feet. These were assayed in the Cominco laboratory. Detailed results are shown in Appendix 2. Intervals with highly anomalous values in base and/or precious metals are shown in Table 7.

Table 7. Highly Anomalous Assays - 1990 Drill Program
(values in ppm except Au, which is in ppb)

Hole	Interval (feet)	width (feet)	Unit	Au	Ag	Cu	Zn	Pb
90-1	144.5-146.8	2.3	3p	<10	0.8	476	4580	16
	727.0-729.5	2.5	5c	24	0.8	348	383	8
	729.5-732.5	3.0	5c	24	1.6	240	2030	200
	732.5-736.2	3.7	5b,5c	232	10.9	1010	4710	1820
	736.2-737.5	1.3	5c	<10	<0.4	81	473	10
	737.5-739.2	1.7	5c,5b	40	2.1	216	5340	537
	739.2-744.2	5.0	5c	<10	1.4	273	1770	309
90-2	723.0-728.2	5.2	5c	56	0.9	1260	68	4
	746.2-749.8	3.6	5c	<10	1.0	1970	126	10
	934.0-939.0	5.0	9p	56	0.8	1260	228	15
90-3	no samples taken because of low abundances of sulfides							

Most anomalous values come from Unit 5. The interval in DDH 90-1 from 144.5-146.8 feet is similar in texture and composition to Subunit 5c. The intersection in DDH 90-2 from 934.0-939.0 feet is well in the hangingwall. Note the two high Pb and Zn values in sulfide-rich surface showings in rocks of Unit 3 east of the zone of drilling (Table 3).

The footwall stringer zones contain broad sections of slightly to moderately anomalous copper and zinc. In the hangingwall in DDH 90-2 are several stringer zones which are anomalous in copper but not in zinc. None of the stringer zones are anomalous in precious metals or lead. Anomalous values are listed in Table 8 as median values (for more than 2 samples and as average values for 2 samples. Values of zinc which are not anomalous or are only weakly anomalous are bracketed ( ).

Table 8 Anomalous Assays in Stringer Zones - 1990 Drill Program

Hole	Interval (feet)	Width (feet)	No. of samples	Unit(s)	Cu(ppm) (median)	Zn(ppm (median)
90-1	605.5-727.0	121.5	25	2p,3p	223	
	624.0-727.0	103.0	21	2p,3p		319
90-2	556.0-580.0	24.0	5	2p	247	210
	606.0-611.0	5.0	1	3/2p	295	288
	713.8-723.0	9.2	2	5c,5b	323	(37)
	728.2-746.2	14.0	4	5c	195	(106)
	749.8-759.0	9.2	2	5c	665	(90)
	810.0-820.0	10.0	2	8p	835	(65)
	902.0-948.0*	41.0	9	8p	242	(75)

* excluding interval 934.0-939.0 (see Table 7)

CORE STORED ON SITE

6.0 CONCLUSIONS

1. The Packsack showing is a volcanogenic massive sulfide deposit with a well developed, footwall stringer zone. It strikes north-south with a few major warps, and dips steeply. The host rocks, massive sulfide lenses, and quartz veins were deformed strongly during a major period of shear deformation (D1).

2. The only evidence of F1 folding on the scale of several metres is suggested by the sharp discontinuity in the massive sulfide zone on surface just north of Packsack Creek. Such folding would be expected to offset the Packsack massive sulfide deposit to the west across foliation at depth. This did not occur in the zone tested by drilling (215-260 metres (700-850 feet) below surface.

3. The favourable stratigraphic horizon was intersected in DDH 90-1 and DDH 90-2, but not in DDH 90-3. Its position in the stratigraphic section in DDH 90-3 may be occupied by a subvolcanic felsic dome or intrusion. In the drill sections, the favourable stratigraphic horizon dips steeply to the east.

5. Below the intersections at surface and in the shallow 1960 drill holes, the massive sulfide zone thins at depth and the grade decreases from marginal to moderately anomalous but of little economic interest. The best assay in DDH 90-1 over 3.7' is:

   232 ppb Au, 10.9 ppm Ag, 0.10% Cu, 0.47% Zn, and 0.18% Pb.

   In DDH 90-2, the two best assays are:
   56 ppb Au, 0.9 ppm Ag and 0.13% Cu over 5.2 feet; and 0.20% Cu over 3.6 feet. (metals not listed in these assays are at most only weakly anomalous).

6. The thick zone of felsic volcanic rocks in the footwall of the Packsack deposit continues at least as far north as Line 7500 North.

7. 1990 diamond drilling showed the Packsack massive sulfide deposit to be narrow and too low grade to provide an economic target.

7.0 RECOMMENDATIONS

1. Because of the narrow width and low base/precious metal grades, no further work is recommended at this time on the Packsack deposit.

Reported by: _____ For
John Payne

Endorsed by: _____
M.J. Casselman
Senior Geologist

Approved for
Release by: _____
W.J. Wolfe,
Manager, Exploration-

8.0 REFERENCES

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9.0 CERTIFICATE OF ENGINEER

I, John G. Payne, do hereby certify that:

1. I graduated from Queen's University, Kingston, Ontario in 1961 with a B.Sc. degree in Geological Engineering.

2. I graduated from McMaster University, Hamilton, Ontario in 1966 with a PhD in Geochemistry.

3. I am a Fellow of the Geological Association of Canada.

4. From 1967 to the present, I have been actively engaged as a geologist in mineral exploration in the North American Cordillera.

5. In June and July, 1990, I mapped in detail part of the Packsack Property and supervised the 1990 drill program.

6. I have no interest in the Packsack Property, Cominco Ltd., or Ecstall Mining Corporation.

7. This report may be used in a prospectus or a Statement of Material Facts by Cominco Ltd. or Ecstall Mining Corp.

8. I live at 877 Old Lillooet Road,
North Vancouver, B.C.,
V7J 2H6;

Tel: (604)-986-2928.

John G. Payne, PhD
September 1990

Drill Hole Record

Property	PACKSACK	District	SKEENA	Hole No.	90-1
Commenced	July 1990	Location		Tests at	200 270 -50; 400 273 -48
Completed	July 1990	Core Size		Corr. Dip	600 273 -44.5; 800 265 -36
Co-ordinates				True Brg.	948 266 -39; 270 -50
Objective	DOWN-DIP EXTENSION of MASSIVE SULFIDE			% Recov.	100%

Hor. Comp.

Vert. Comp.

Logged by JOHN PAYNE

Date JULY 1990

1/9

S = Structure
L = Lithology
M = Mineralization (veins, dissem, etc)

Footage From	Footage To		Description	S	L	M	Sample No.	Length
0.0	5.0		Casing					
5.0	34.0		Unit 1t Andesite Tuff - medium to fine, dark green w. plagioclase rich patches ±2mm, local lensy	XXXX				
		30	color variations 11-12 Q,c veinlets 1 mm, 14-18 carb ±pyrite veinlets 3mm, 24 albite? vein 1 cm				q,c; c±py	
			27-30 leached carbonate 30 ·0.4" fault gouge at low angle to S_1	xx				
			32' 4" Unit 3L lensy felsite - contact ∥ S_1 33 2 Qz veins up to 2 cm, one has carb patches				a	
		25		~	xx		q,c	
34.0	36.5		~~Unit 3L~~ siliceous, light grey, minor chloritic lenses · leached carbonate @ 36.0-36.2					
36.5	39.0	30	Unit 1t a.a. contact @ 36.5 slightly interfingered / Qvein, vuggy @ 38.0 in broken zone	xx			q, py	
39.0			Unit 3L lensy, minor pyrite-rich lenses @ 39.1 color varies - grey - pale blue/green 40.2-40.5 Unit 1t 40.5-42.0 Qvein				q, py	
			49.5 - 2-3cm Qvein cut by carb-limonite stringer + shear					
			53-53.5 5-7% coarse pyrite - concentrated in lenses ∥ S_1 - minor gouge at start of py zone					
		30	53.5-63 0.5-1% pyrite disseminated, locally up to 2% 58· small fault + 2-3mm chl-carb vein	~			py	
			60.3 2-3 mm patch cpy + sphalerite(?)				cl, c	
			62.3, 62.7 1 cm quartz vein + pyrite, chlorite; 2nd vein 1% py.	~			cpy	
		25	63-65 several py-rich lenses, patches up to 2 mm wide commonly with chlorite lenses				q, ±py, cl	
			63-100 0.1-0.2% py disseminated, locally concentrated in patches, lenses up to a few mm wide				py	
			68-70 - darker green color - but still very hard, lensy texture less obvious and narrower lenses					
			73-74 - a few patches, lenses with 5-7% py - up to 1mm wide.					
			78 - irregular quartz + carb vein 1-2 mm					
			85-85.5 broken core + grey gouge zone 1-2 cm wide				q ± c	
		30	pyrite concentrations ~ 5-7% @ 83, 88.5, 91.0, 98.9 ± Qvein lens up to 1 cm @ 88.5	~			py	
			93-98 - slightly darker color - similar texture				py, q	
			97.5-97.8 andesite - vf grained - medium green - fragment or dike				py	
			102 quartz vein (1mm) - late - cuts S_1				py	
			105.5 2" andesite inclusion? (like 97.5-97.8) (not shown in log)				q	
			106.5, 107 py concentration 5-7% over 1 cm				py	

Drill Hole Record

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	M	Sample No.	Leng
39.0	144.8	35	112.5, 113 veins 1-3mm quartz ± ankerite <0.1% py disseminated 116, 117 gouge zones 1-2mm, minor respectively, zone is bleached + limonitic 113-115 darker green color - more lensy texture - with bands up to 1cm of andesitic(?) material = Unit 2L(?) 122 1mm quartz + ankerite vein 124 - minor gouge 125 minor (<1mm) gouge + broken rock (5cm) 130 - minor gouge + limonite 129.5-130 contorted quartz vein 128-130 - a few patches of 5-10% py over 1-2cm 135 minor gouge + limonite (as seams ∥ foliation) 134-134.5 a few inclusions up to 3cm of andesite (angular) 134.5-134.9 andesite inclusion - several pyrite seams (overall 3-5% of rock)				q ± ank q-ank q ± ank py Q py	
		40	Unit 3t finely laminated, light grey quartz sericite - 3-5% py - locally 5-7% py, 1% sphalerite at end.				144.5-146.8	2.
144.8 - 146.8		50	145-145.5 - Unit 3L finely banded - <0.1% py				py ± sph	
146.8 - 152.5			Unit 2t Dacite tuff medium green, lensy - grades towards Unit 1t in places 2-3% pyrite over 1-2 cm @ 147.0, 148.0.				py	
152.5 - 166.5			Unit 1t Andesite tuff as 5.0-34.0. rel. uniform - locally weakly layered lensy veins 0.5-1cm of quartz - chlorite ± pyrite @ 152.5, 153.5; chlorite ± pyrite conc. @ 154.5 zones of harder, lighter green - lensy textured Unit 2L/t @ 156.3-157.0, 158.3-158.6 minor gouge 161.5, less @ 162.0; minor @ 164.5 generally <0.1% pyrite				q-cl ± py py	
		30						
166.5 - 193.8			Unit 2L, t Dacite lapilli tuff, tuff. variable lighter green and darker green lenses, locally gradational to Unit 1t. generally 0.1-0.2% py. with concentrations 2-3% @ 166.5, 168.3, 169, 172 - commonly pyrite occurs in chlorite-rich lenses. 174.5 @ vein 1cm 181 ± broken core, gouge - py concentrations 5-10% over 1cm @ 175.3, 180.5, 182, 187(2), 187.8, 188 (0.5-1) 185 - lensy quartz ± carbonate zone (early vein?) 4mm. 192, 192.8 186-188 → grades to Unit 1t				py py py-cl q py py py qcc py py	
		45						
		55	189, 191.5 ± gouge					
193.6 - 201.0			Unit 2L/t, 3L mixed zone - mainly 2L/t, locally 3t/L @ 193.6-194.5, 195.3-195.5 - medium green - locally darker, grading to 1t 0.2-0.5% py - conc. py @ 195.1, 195.3-195.5 (10% & 15%), 199.3, 199.5-199.8				py py ± q py q = (2 veins)	
201.0 - 205.5			Unit 3L - uniform, not lensy. <0.1% py quartz veins - 195.2 (lensy - up to 1cm), 199 (1.2cm), 199.2 (0.8cm) 203 - minor gouge, broken core					
205.5 - 209.8		50	Unit 2/1t medium green, variable to dark, lensy to granular <0.1% py					
209.8 - 212.5			Unit 3/2L/t pale to medium green, lensy, generally 0.5% py quartz vein 3mm @ 212				py py q	
212.5 - 239			pyrite seams 5-10% over 0.3-0.5mm @ 210.0, 210.5 5-10% over 20cm @ 212.5; minor cp @ 212 Unit 2t, with zones of 1t and 3t - thinly interlayered 2-3mm gouge @ 217.4 ± py-qz lens @ 215, 219, 219.6, 220.2 Unit 1t @ 218-220.7				q-py Q-py	

Drill Hole Record

Comico

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	Sample No.	Leng
212.5	239.0		Unit 3p 221-222.4 1-2% py - @ 222.2-222.4 - 2" with 2-5% cpy in clots up to 5mm across w qtz-py	cp.py.q	
			Unit 1t 222.4-223.5 1-2% py conc. in lenses; 1-2% cpy in clots @ 223.3-223.5	cp-q	
			-Unit 2t ±1t 0.2-0.5% py conc in clots, lenses @ 224, 224.8-225, quartz veins @ 224 (up to 2.5 cm, 225.2-225.8, 226.2, 227.2, 227.6-227.7, 228, 228.5, 228.7, 228.9	q	
			0.2-0.5 % py	q±py	
			231 - 1.2 cm gouge 231.9 2cm quartz-(carbonate) vein	py-q	
		52	py concentrated 5-7% with quartz @ 230.9 (also chlorite-carbonate) over 2cm, py seams <1mm @ 238.7	q	
			several quartz veinlets 1-5mm 233-235, 1-2cm @ 238	q	
239.0	247.0		Mafic dike (basalt) dk green-black. ±matic phenocrysts, 1-2% calcite-(chlorite) amygdules <2mm massive, late. chilled margins 1-2" wide (Unit 2(a)		
247.0	311.0		Unit 2/1 t, medium green, moderately soft, lensy, moderately abundant veinlets of quartz-carbonate minor pyrite concentrated in seams	q-c	
			249.8-250.1 Ø vein 250.1-251 3t	q-c	
			unit becomes harder after 260 - but still medium green. quartz-carb veinlets common - those over 0.5mm are @ 252, 252.7, 261, 262.5, 263, 266.2, 266.9, 267.8		
		60	<0.1% pyrite - locally up to 1% in py-rich seams up to 2 mm		
			Q-carb veins continue - those over 5mm @ 269, 270.5, 273 (3cm), 274, 277.2, 277.9, 278.6, 279.3 284.7, 284.9, 285.2	q-c	
			270.8 1.5cm band Unit 3t	q-c	
				q-c	
				q-c	
			lensy unit continues - 2t - 2/1t variable texture - quartz-carbonate veins continue to ~296. major veins (>0.5cm) @ 291, 292.5 (2-3cm), 292.6, 293.2, 294.9, 296 (2-3cm), 299.8 (braided)	q-c	
			fold nose? @ 290-291.5	q-c	
		60	295.3 - @ 0.5-1 cm gouge	q±c	
			298.0, 299.5 gouge - 0.3cm and 1 cm respectively	q±c	
			quartz-carb veins >0.5 cm @ 304.8, 304.9, 306-307 (several), 307.8		
			py generally <0.1% local concentrations @ 306.2	q-c	
				q-c	
311.0	324.0	60	Unit 2. L/t; gradational from above, harder, paler green in part - some zones still medium green	q	
			Quartz veins 311 (2.5cm), 320-321.5 (contorted), local py-chl concentrations 321.1, 321.5, 322.5 (2.5")		
			313-314.5 Unit 3t - fine texture. 314.5-316.5 Unit 2t siliceous - medium green		
			323-323.5 Unit 3t - unusual siliceous lensy unit - lenses 1-2cm with thin selvages of sericite±chlorite	q±py-chl	
				q	
324.0	327.5	45	Unit 3/2t - fairly siliceous - lensy - light to medium green		
327.5	330.0		Unit 1t - medium to dark green - 5-7% pyrite 327.5-328.0; 1-2% py 329.7-330.0	py	

Drill Hole Record

Cominco

4/9

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	Sample No.	Len
330.0	330.2		Unit 3t - siliceous 10-15% pyrite - similar to 144.5-146.8	py Q	
330.2	338.3		Unit 2t/1t - variable - medium ± dark green generally 0.1% py Q veins 330.4 (2cm) py seams 0.2-0.5mm 337.6		
338.3	346.0	60	Unit 3/2t - 3t - light green, mainly hard 0.1% py 342.8-343.6 - Unit 1t Q veins 338.6 (3") 338.9-339.6 (1-2cm) irregular +chl on margins, bleached halo, 344.2 (1-2cm)	Q py Q-cl Q	
346.0	393.0		Unit 2L/t medium green, variable, lensy ± intervals of Unit 3t @ 351.4-352.5, 348.5-351.2 minor gouge @ 350.2, late fracture II core 353-357 py concentrated in seams, patches ~average 1-2% 346-351 - conc. @ 347.5, 347.9, 349.6, 350.2-350.4, 355, 356-356.5 qtz veins 353-353.4 (2-3cm, folded?), 355.2-356.2 (1-2cm, folded + late fracture)	py py Q py py	
			quartz veins @ 363 (2"), 364.5 (1", folded), 369 (1cm), 376.5 (1cm)) py conc @ 368.8, 370.4 zones of Unit 3L or 3/2L/t @ 364.5-365.5, 372-378 - with 2-3% py - locally conc @ 373.5	Q q	
		60		py Q py py	
			py 2-5% 378.8-380, minor +1% cpy @ 378.8. (over 1cm) generally 2L - siliceous lenses in sericite ± chlorite groundmass quartz veins 382 (1cm folded), 385.8-386 (2-3cm, folded), 388.5 (2cm, folded), 390.5-392 (up to 10cm, folded) - pyrite concentrated on border of vein (1-2%) pyrite seam 1-2cm 7-10% 389.3 coarse py clots 0.5-1.5cm @ 392.5, 393.3 1-2cm gouge in 2 zones @ 393 - on contact, minor gouge 1mm @ 395	Q py ± cp q q q ± py Q	
393.0	397.5		Unit 1t ± Unit 2t/1t, soft, medium green, very fine grained, granular - abundant folded quartz vein segments py conc 5-7% @ 394 1-2 cm - probably ? folded	py py Q py	
397.5	413.8	55	Unit 3/2L/t - gradational to 3L - light green - rel. hard - with softer seams py conc. in seam 399.3 (1cm) 5-7% quartz veins 401.2 (1-2cm), 403 (1cm), 406 (1cm) 413.5 pyrite in seams 1-2cm 401, 403 (±cpy), 403.8-404.4 - a few (2cm) - 405.6, 405.9, minor @ 411, 413	py Q q - py q py	
		60			
413.8	421.4		Unit 2L/t as 346.0-393 medium green 3-4% pyrite in seams ll s, conc to 10-15% @ 417.2 over 2cm quartz veins 413.5 (3-4cm folded), 417.3-418 broken core, ± quartz-carb vein py conc. 5-7% over 1-2cm @ 419.6, 420.5	Q py py py	
421.4	435.7		Unit 3L/t white - pale green (darker near 421.4-423) 0.2-0.5% py - discrete py seams ≤ 1mm thick qz ± py vein 1cm @ 427.6 slight kink at first contact @ 426.4, 426.9.	Q-py py ± cpy	
		60			
435.7	448.5		Unit 2/1t medium green, moderately soft 3-5% pyrite in seams, patches, concentrated 7-10% over 2cm @ 438 grades to 2t/1L variable - lensy texture, light to medium green 3.5% py continues 437.8	py py	

Drill Hole Record

Comineo

Property	District	Hole No. 90-1	5/9
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	S	L	m Q	m Sul	Sample No.	Leng
435.7	448.5		pyrite in lenses thruout, concentrated over 1.5 cm 10-15% @ 447.5; 1 cm @ 444.8 (7-10%), 448.2 (2-3mm · 50%)					py	
			gradational contact to next unit					py	
448.5	458.0		Unit 3/2 L lensy, siliceous lenses in a groundmass of sericite-chlorite-pyrite · 3-5% pyrite overall - moderately concentrated in lenses up to 1cm wide @ 448.6, 449, 450, 452.5 to 454.0 (several), 455.5 after 458 - pyrite 1-2% - seam @ 459					py	
458.0	485.6	58	Unit 1t - fragments 3-4" recess 451.0-451.3, 454.6-454.8 (<0.1% pyrite) quartz veins 457.8 (2cm ±py), 457.9 (5mm) Unit 2/1 L-t - very fine to fine, minor lenses of siliceous material, medium to light green quartz veins 463 (two, lensy <0.8cm), 468 (1.2cm), 465.5 lensy, 472 (two, lensy <1cm) pyrite 1-2% seams @ 458.1, 459.3, 473.4, 468.8 after 468 - py 0.2-0.5% except 2-3% 474-474.5					qz ± py	
		53						py	
			texture becomes more variable after 475 - very fine grained 484.4-485.0 → 2t (light green)						
			structures: minor gouge 482.8, 483					q-c q-c	
485.6	499.6		Unit 3L lensy siliceous zones with stringers, seams, patches of sericite-quartz-(chlorite) quartz veins - generally irregular, folded - 489-1cm, 489.6-489.9, 490.4-491.2, 491.5-491.6, 491.9 (1cm), 492 (1cm+ct), 492.2; lensy quartz 488.5-488.6 (+ct) pyrite 0.1-0.5%, concentrated in seams @ 487.2, with quartz @ 490.4, 490.7, 491.2					py q-c	
		50	somewhat gradational to next unit					py	
499.6	508.0		Unit 2t/L medium-light green with grey siliceous lenses - 0.1-0.5% pyrite, conc. in lenses, seams @ 501.0, 501.1 quartz veins <1cm 499.8, 505.3, 504.5 (2cm) somewhat gradational to next unit					py	
508.0	513.0	56	Unit 2/1 t commonly granular, fine to medium, medium green - pyrite conc. with quartz @ 510.9 (1cm), 511.6, abundant quartz-calcite patches, irregular - esp 510.9-512					py q-c	
513.0	520.5		Unit 2t - gradational from previous unit, light green, moderately soft, minor gouge 516.0 quartz-pyrite conc @ 518.8, 519-519.1, 519.3-519.6, 526.4 (1.5cm), 517.6 (1cm); pyrite-quartz 513.6, 514.2					py	
520.5	525.4		Unit 3/2 L-t - similar - but more siliceous than previous unit quartz-pyrite conc @ 521.5 (1.5cm), 524.5-525.0 (10-15% py) gradational to next unit					q-py q-py	
525.4	534.0		Unit 2t/L - less siliceous, otherwise similar pyrite: lenses @ 525.6, 527 (minor), 529.9, 529.8 (<1cm) quartz ± pyrite veins: 526.4 (1cm, folded), 526.8 (0.7cm), 529.4-529.5 (2" - 10-15% py), 531.1 (1cm), 532.5-532.7 (folded)					q-py	
534.0	544.0		Unit 3/2L - variable hardness, color minor gouge 536.8 pyrite 0.2-0.5% - conc. in seams @ 534.7-535.0 (a few), 537.6, 539.7, 540.4 (+Q vein), 542.4 (+Qe), 545.8, 550.8, 551.5 chalcopyrite conc @ 540.5 in 1cm web of pyrrhotite; with pyrite @ 550.8, with quartz @ 542.2 quartz ± pyrite veins 534 (1cm - folded), 540 (5mm), 540.5 (1cm), 541.9 (1cm), 542.1, 542.2, 543.5 (1cm) 544.7 (2cm, folded)					py-cp-po py-cp-po	

Drill Hole Record

Cominco

61

Property	District	Hole No. 90-1	6/9
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	Sample No.	Leng
534.0	564	58	from 550 - mixed zone of 3/2L and 3/2t - locally grading to 2t. light to locally medium green - some siliceous zones are grey with minor seams of sericite - (chlorite). quartz veins 552.2, 552.6, 554.2 (all 1cm); 556.7 (3 cm ±po), 558.9 (7mm), 562 (lensy - 1cm - folded) pyrite 0.1-0.5%, conc. in seams @ 559.5, 560.0, 561.0, 561.5, 561.6, 563.2 (±cpy), 565.9, 566.5.5 cpy conc. in seams alone or with pyrite @ 563.1, 564.8		
564	570.5		Unit 2t → 2/1t medium green slightly darker and softer than previous unit, but similar texture. pyrite 0.5-1%, conc. in seams @ 565.9, 566.5, 567.5, 568.1, 568.2, 568.6, 569.5 - 570.0		
570.3	571.8		Unit 3L/2L cpy concentrated with pyrite @ 568.1		
571.8	585.6	50	dark green sericite - chlorite zones @ 565.8 (2") and 570 (1.5" - surrounding quartz vein abundant siliceous lenses in sparse to abundant matrix - medium green. 2-3% py. conc. in lenses // Si. Unit 2/1t blob of chalcopyrite 1.5cm long @ 571.3 py 0.5%. conc. in lenses @ 574.1, 575.0, 576.6 ±cp, 578.8 - 580.7 (several) 582.6 (2cm) fine, uniform, medium green, relatively soft for 2t. qtz veins @ 572.5 (1cm) 577.9 (1cm, folded), 581 (1cm, lensy) 583 (5cm) folded		
585.6	589.7		Unit 3L/2L (locally) 3-4% py, locally minor cpy qtz veins 588.2 (0.7cm, folded), 588.6 (2cm - 5cm, folded)	585.6	4.1
589.7	605.5		Unit 2L/t ± 1t variable unit - coarser varieties have siliceous lenses in chlorite - sericite rich groundmass 2L/t 591-596, 598.2 - 606.8 1t 589.7 - 591 2tp 596 - 598.2 qtz veins @ 590.8 ± 591.3 (1-2cm, folded), 599 (0.5cm) 603.5 (2cm + bleached halo 20cm), 603.9 (also bleached) pyrite 0.5-1% - conc in seams @ 590, 590.5, 591.5, 592.2, 592.4, 593.9, 594.1, 598.3, 602.5, 603.0, 605.0 (2cm) gouge - 593.5 (2-3mm), 603.5 (1-2mm), 606-607 a few seams up to 5mm, broken rock	589.7	
				594.2	4.5
				600	5.8
				bleached	halo
605.5	611.3	50	Unit 1t medium to dark green, soft 5-7% pyrite conc. in seams @ 608.0, 608.2, 609.9, 610.3 - 610.9, 611.2. cpy ± sphal @ 608.2 with py. qtz vein 609.2 (1-2cm folded), cpy @ 610.9 with py - moderately abundant	605.5	
				611.3	5
611.3	618.0		Unit 2/3L - siliceous lenses in matrix of sericite - quartz - chlorite ± pyrite 2-3% py - conc. in seams @ 614.7, 615.8, 616.8 - 616.9 (a few)		6
618.0	624.8		Unit 3L - gradational from previous unit - more abundant siliceous lenses 3-5% pyrite conc. in seams @ 621.0 - 621.2, 621.5, 624.5 - 624.8 (10-12%)	618.0	3
				621.0	3
624.8	647.0	55	Unit 2L/t finely laminated in part. 2-3 %py - conc. in seams @ 627.5 629.0 - 629.8 (several), 630.6, 631.9 626.3 - 2mm gauge ±50 cm bleached halo 633.0, 633.9, 636.8, 637.0, 637.7, 638.0, 639.0, 640 quartz vein 633.4 (3-5cm, folded) 641.2 - 641.5 minor cpy locally - conc. in pyrite - rich seams minor gauge 640.0 after 643 1-2% py conc. moderately in seams @ 645 - 645.5	624.8	
				±cpy	5
				630	5
				635.0	5
				640.0	5
				643.0	3
				647.0	4
647.0	653.0	48	Unit 2/1 t - finely laminated in part between grey and dark green (648.5 - 651.5), other is very fine grained py 2-3% from 648.5 - 657.5 - conc. moderately in seams @ 649.2, 649.9, 650.6, elsewhere py < 0.5%	652.0	5
653.0	662.5		Unit 2L/t - lensy - relatively uniform. 2-3% py. conc. in seams @ 658, 664, 664.5	657.0	5
					5

Drill Hole Record

Cominco

7/9

7/9

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	S	L	M	Sample No.	Leng
653.0	662.5							
662.5	729.5		Unit 2L lensy siliceous zones 2-5mm thick in groundmass of sericite-chlorite-quartz-pyrite				662.0 py	5.
		50	3-5% pyrite, concentrated to 10-12% in zones from 0.5-2cm wide @ 664.3, 664.7, 665.4-665.8				py	5.
			5-7% pyrite 665.4-672, then 1-2% pyrite - concentrated 3-5% @ 673.2, 677.0, 677.3, 678.3				667.0	5.
		45	distinctive non-homogeneous unit - less siliceous lenses after 668, therefore the rock				py 672.0	5.
			is greener and softer (approaching 2/1L in places - but overall 2L)					5.
			Q-carb vein (5mm) @ 684.				py 677.0	5.
			pyrite 0.2-0.5% from ≈685, local seams 4-8mm wide 693.5				Q-c 682.0	5.
			687.3, 687.9 1-2mm gouge - bleached halos - up to 10cm on first zone, minor on second				687.0	5.
			695-702 2-3% pyrite, concentrated in seams up to 8mm @ 696.2, 697.7, 700.2, 700.6, 701.7, 702.0				py 692.0	5.
			siliceous lenses generally <3mm - a few >5mm across - much less distinctive unit				py 697.0	5.
		47	702-718 0.5-2% pyrite, concentrated in seams @ 708.2-708.4, 712.0, 714.5, 714.7, 715.9				py 702.0	5.
			704-708 more granular texture, some fine color banding - pale-medium green					5.
note: 708-718 @12'		50					py 707.0	5.
			713-715 - abundant stubby felsic (siliceous) lenses 3-6mm wide				712.0 py	5.
		58	718-729.5 2-3% pyrite, concentrated in seams @ 723 (1cm, with quartz), 727.4.				py 717.0	5.
							py-Q 722.0	5.
							727.0	5.
729.5	744.0						sms 729.5	2.
		53	Unit 5c - light grey, siliceous, as 144.5-146.8 massive pyrite >50% @ 733.7-734.5, MS - granular pyrite + quartz (minor sphalerite)				sms py±cp, sl	3.
			semimassive pyrite 25-50% @ 729.7 (2cm), 732.3-732.7, 735-736, 737.5-737.8, 738.2-738.6				sms	2.
			blob of cpy @ 733.2 (3mm) 740-740.2, 743.9-744.0				sms py±sl	1.
		60	Sphalerite - v.fine grained with pyrite - concentrated in some lenses 0.7-2% @				sms py	5.
744.0	752.3	52	Unit 6b - medium - dark green, very fine grained - with scattered to locally abundant siliceous lenses				py sl-py-Q-cpy-sl	
			0.5% py as coarse disseminations, and concentrated alone or with quartz @ 744.1 (MS), 747.9				py-Q	
			py-qtz-cpy-sl in irregular vein up to 2cm wide @ 747.3, lensy sl @ 746.7					
752.3	760.8	43	Unit 6b/a or fine grained Diorite - granular texture common - medium green, soft. minor coarse					
			disseminated pyrite. Quartz-carbonate vein up to 1cm @ 757.9				Q-c	
			well banded texture 757.0-757.6					
760.8	776.8	50	Unit 6a Diorite - coarse to medium texture - chlorite-carbonate alteration					
			quartz ± pyrite veins 762.0 (0.9cm)				q±py	
			772.7, 772.9 lensy zone of quartz (as in lenses in tuff) - first one contains minor pyrite					

Drill Hole Record

Cominco

8/9

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	Sample No.	Length
760.8	776.8	63	Unit 6a coarsest grained zone from 765.5-768.0		
776.8	790.9		Unit 8t/L lensy to granular, light to medium green. lensy zones contain siliceous lenses in softer sericite-chlorite matrix. Unit somewhat softer than normal 780.9 5mm gouge 115°; 784.4 (2 mm gouge - after Q-(cl-py) vein 0.5-1% pyrite concentrated in seams @ 784.1, 791.2 (+Q-C) quartz-carbonate veinlets @ 777.8 (1cm), 779, 780.2 (+py), 781.5, 783, 789.6 quartz-(chlorite-pyrite) veins @ 783.7 (1.8"), 784.2 (1"), 784.4 (1") - also carbonate	Q-c ±py Q-c py Q-(cl-py)-c)	
790.9	819.2		Unit 8/7t/L variable fine to coarse texture, composition, but all generally similar composition	Q-c Q-c-py	
		60	granular, fine to medium. (8/7t) 791.5-808.5, coarse, lensy (8L) 808.5-809.7, 810.7-	Q	
			very fine granular - dark green (7/8t) 790.9-791.5, 809.7-810.7 quartz veins 798.6-799 (1-3 cm, folded), 799.3 (3cm), 803 (0.8cm purplish = lenses), 810.4 (1cm) 813.0 (0.7cm, purplish = lenses), 813.2 (= 813.0) pyrite - generally <0.1% - no concentrations except 791.2 (0.8cm + quartz-carbonate) as in lenses		
			pyrite concentrated in seams 816.5-817	q±c py	
819.2 -	830.1		Unit 9L/t mainly coarse, lensy texture. light grey with light to medium green seams, hard. - 819.2-819.6 very fine grained 0.1-0.5% pyrite, concentrated slightly @ 823-824 quartz veins 824-824.8 (1cm, slightly folded) 827.8 (2cm - lensy + py) 829.5 (1cm - lensy)	py Q Q-py	
830.1 -	838.6	40 45	Unit 8t - lensy - light green, abundant quartz-carb veinlets, folds @ 833.6-834.6 quartz veins 834.1 (5 cm - folded), 837.2-837.4 (quartz-chlorite) 838.2-838.6 (q-c-cl) 3-5 cm - folded zone of siliceous 9L - 835.9-836.9	Q Q-cl Q-c-cl Q	
838.6 -	859.0		Unit 8t tL? medium to dark green, moderately hard, variable texture including unusual mottled texture of plagioclase spots 1-3mm in sparser chloritic matrix (mainly 840.5-842; 846-847.5 pyrite 0.1-0.2% quartz veins 840 (3cm) poor foliation thruout unusual unit - becomes harder after ~855		
		57			
859.0 -	866.5		Unit 9/8 L/t light blue-green with darker green patches, in part similar to previous unit pyrite <0.1%		
866.5 -	875.0	56	Unit 8 ts variable, thinly bedded intervals, locally showing tight folds - light to dark green. (folded) unusual unit, minor very siliceous zones, esp 869.5-869.7, pyrite <0.1%; quartz vein 874.0 (2cm, minor gouge 874.0	Q	
875.0 -			Unit 8L/t - unusual - medium green with dark green lenses 0.5-1.2 cm thick and siliceous lenses up to 0.5 mm thick ragged texture quartz veins <1cm 878.3, 887.8 (lensy) po 0.1-0.5% - conc in seams @ 879.4, 880.4, 880.9, 876 (w. quartz), 878.4	po-Q po Q	

Drill Hc , Record

Cominco

9/9

9/9

Property	District	Hole No. 90-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	M	Sample No.	Length
875.0	888.0		Unit 8 Lt 881.3-881.6 quartz vein with patches of pyrrhotite, sphalerite (3-5%) and minor galena po concentrated @ 880.9, 882.5, 886, 886.5, 887.7				Q-po-sl±gl	
		60	minor folding @ 887.5				po	
			890-892 - minor gouge in fracture ∥ core				po	
888.0	898.6		Unit 8 t,ts - medium green, commonly finely banded - relatively hard quartz-carbonate braided zone 893-893.1 tgL @ 895.1-895.4 minor seams limonite after pyrrhotite or carbonate				Q-c	
898.6	948.5		Unit 8 t/L ±gL - similar to last unit - but coarser grained - gL 905.5-908.2 - much more abundant siliceous lenses quartz-carbonate stringers + veinlets common - a few > 0.8 mm @ 899.1, 900.6, 902.6, 903.1 sulfides ≤ 0.1% except 909.8-910.2 2-3% pyrrhotite, 0.2-0.5% chalcopyrite possibly originally 0.2-0.5% disseminated pyrrhotite - altered to brown limonite in wispy seams ∥S, 912-920 - folded - So variable at low angle to core, warped quartz-carbonate (early) veinlets @ 913.4-913.0 (a few ≤ 0.5 cm), 916.5, 923.5 (1 cm) 926.8 (1 cm) quartz veins @ 912.4 (2 cm), 921.0 (1-2 cm lensy), 927.4-928 (several 2-3 cm - or folded)		Folds		Q-c Q-c Q-c	
		56	pyrrhotite concentrated w quartz @ 912.2-912.3 (1-2%), 921.0, 927.5-928 919.4 - vein quartz-chlorite-(carbonate) ± gouge				Q, po Q-c	
			0.1% disseminated ± pyrrhotite, minor conc. in wispy seams, - mainly with quartz quartz vein 931.8 (3 cm), 933.1 (3 cm), 943.6-944 (1-2 cm. folded), 944.6 (8 cm) wispy siliceous patches common 938-943				Q-c Q-po Q	
			939.0 minor gouge					
							Q-(po)	
948.5	990.0		Unit 8/9 t - gradational contact with previous unit - harder, pale green-grey quartz veins 955.4-955.6 (5-10 cm - folded) 960.0 (5 cm, folded) generally 0.1-0.2% disseminated pyrrhotite, very fine grained 959.5-960 3-5% dissem pyrrhotite - seac. slightly in seams ∥S, 964-967 2% dissem pyrrhotite 960.5 1-2 mm gouge + 1 cm broken rock 969-970 1-2% dissem. po from 968 - variable - mainly fine tuff - medium tuff elsewhere ≤ 0.2% quartz vein 977.5 (5 cm) + a few blebs of pyrrhotite up to 1 cm (non-magnetic to very weakly magnetic 982.4 (3-5 cm ± po (magnetic) 983.0 (3.5 cm ± po - non-magnetic) - folded 984.2 (2 cm + abundant po - slightly magnetic) 987.7-988.0 (2-3 cm) + chl-ct-po folded				Q po Q po po Q-p° Q±po Q-po Q-cl-c-po	
		55	Unit 8 t,ts very fine to fine, light green, some fine layers quartz-(pyrrhotite) veins 994.9-995.4 10 cm folded 995.8-996.3 (folded - 3-5% pyrrhotite)				Q-po	

Drill Hole Record

Comaco

Property	PACKSACK	District	SKEENA	Hole No.	90-2		1 of 9
Commenced	July 1990	Location		Tests at	500 280 -57 700 281 -54.7 888 280 -53	Hor. Comp.	
Completed	"	Core Size		Corr. Dip		Vert. Comp.	
Co-ordinates				True Brg.	275, -60	Logged by	John Payne
Objective	TEST DOWN-DIP EXTENSION of MASSIVE SULFIDE			% Recov.	100%	Date	July 1990

Footage From	Footage To	Δ	Description	S	L	M	Sample No.	Length
0.0	9.0		Casing					
			9.1-9.2 1-2" Qtz±chl with blob of pyrrhotite 1cm				Q(-cl-po)	
9.0	12.4	25	Unit 3/2t wispy seams of silica in light grey groundmass. 3-5% py conc. slightly in seams, 2-3% @ 12.3 (1cm)				py	
12.4	19.2		Unit 1t/L andesite, very fine grained, medium green, +lenses ≤1cm of quartz-carbonate				py, sph	
			pyrite ~0.5-1% - conc. slightly @ 12.9, 14.0; quartz±carb @ 12.9 (1cm), 17.8 (1")				py	
			17.3-18.7 broken core ± gouge				Q-(c)	
19.2	42.9		Unit 3L - coarse felsite - light grey with seams, selvages of sericite-chlorite; 0.1-0.2% py, conc. in coarse grains				Q	
			qtz veins: 19.4 (3"), 21.4 (5mm, 1cm lense), 37.5-38.4 (folded)				Q	
		30	tens of pyrrhotite 1mm @ 27.6, 2-3mm @ 41.4 1% dissem. po 30-31 - altd strongly to limonite				po	
			unusual concentration (vein?) or segregation chlorite-muscovite ½" - folded - medium grained: 32.4-32.6					
			33.8-34.8 fine grained andesite (Unit 1t) inclusion?					
		32					Q	
							po	
42.9	50.4		Unit 1 Diorite - dark green - with abundant white spots (plagioclase) - numerous irregular lenses of quartz-(carbonate) ± broken core, gouge @ 48.0, 48.0 (1-2" gouge + broken core), 49.6-50 (broken core)					
50.4			Unit 3L as 19.2-42.9 siliceous lenses with seams of sericite-chlorite (darker, more chloritic at start (→ 3/2L))					
			51.1-52.2 moderately broken core, 52.8-53.2 53.0-54.2 dk green andesite (Unit 1t/diorite)					
			56, 56.2 early siliceous concentrations 1-2 cm 58.7 thin seam of po ± sl?					
		42	generally minor sulfides				po ± sl?	
			63-63.4 several veins and seams 1-3 cm py-po-sl, sl, po-sl, respectively in order				po-sl-py	
			po seams up to 2mm @ 66.9 (1mm), 72.0 (2mm)				po	
			quartz veins + carb on borders. 73.5 (1cm), 74.5 (3mm)				po	
			sulfides generally <0.1% concentrations in seams @ 88.4 (3mm po-sphal), 93.4 (2cm zone 10% po-sl),				Q-c	
			major fold begins ≈ 86 - 5, at low angle to core until : coarser chlorite, muscovite				Q-c	
			88.5 - broken rock + moderate limonite alteration					
		10	gouge ± broken rock 87.0 (2-3mm). broken rock 91-91.5 (moderate-fractured on S_1), 92.3 minor broken rock + leached carbonate	lim			po-sl	
		5	late vein 2-3mm - cuts S_1 @ 99.2 (q-c-cl)	major fold in S_0	S_0			
			96-96.5 1% dissem. pyrrhotite				po	
			rock hard - but with the appearance of moderately abundant chlorite and sericite/muscovite				Q-c-cl	
			broken rock 104.4-104.6, 106.8-106.9 (minor), 113-116.2 several fractures ⊥ core + limonite alteration				Q	
			quartz veins 103.3 (1"), 115.5-116.5 (1-2", folded) ± pyrrhotite, chlorite)	thalos			Q-c	
			quartz-carbonate 105-107 (5mm)					

Drill H e Record

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	Sample No.	Length
50.4 -	165.8	0-20	weak foliation at low angle to core - folded broadly(?) quartz veins 117.4-118.8 (1-2cm ± carb on borders), 120.5-122 ± carb. on borders) - 2cm wide.	Q-c Q-(po-cp)	
			- continues very siliceous, lenses contorted broadly (still with weak S, ≈ ll core) - vein: 122.0 - quartz-(chlorite) 5mm - folded minor po-chlorite lenses @ 137.6-138, minor po patches 126.5	Q Q-c Q-cl	
		0-30		po	
			minor gouge, broken core @ 140.4, 147.0; 1-2mm gouge 148.0	po-cl	
			quartz veins 148-148.9 (3cm - qtz+carbonate), 157.5 (3mm), 159 (7mm - q-c) 146-147 - Unit 1c - vf grained andesite with patches of chlorite mottles - very soft dike? (it appears to cut a vein of quartz-pyrrhotite sphalerite 1cm wide @ 147-147.2	Q-py-sl Q-c	
				q-c Q-c	
		30			
165.8 - 195.6			Unit 1 Diorite - fine grained - dark green, soft, moderately abundant veinlets <1cm of quartz+carbonate 172-175 - coarse texture - resembles "gabbro" patchy vein: quartz-carbonate 170.6 (2-3cm) 170.5 - minor gouge - brown alteration from carbonate vein: quartz-(carbonate) 175.8 (2.5cm) 178-195.5 - mainly coarse textured = altered "gabbro" - carbonate-quartz veinlets continue	q-c Q-c q-c Q-c Q-c	
			186.5 quartz vein 2-3cm 188 - minor lens 1-2mm - po-py 190-190.4 - 1-2mm gouge + broken rock.	Q po-py	
195.6 - 198.5		15	Unit 3-ts 196-196.4 - two fractures - limonite + bleached halo; 197-197.3 ± 1-2mm gouge - broken rock siliceous, very finely banded, very hard 198.2 ± po-cp-sm	po-cp	
198.5 -			Unit 1d - Diorite - medium grained - dark green, soft, abundant carbonate-quartz veins quartz vein: 207.5 (1cm), 214.5 (2-3cm, folded, + patches of pyrrhotite) ≈17.2-217.6 4" (folded)	Q	
			Inclusions? of 3L @ 215.5-218.4, 219.2-220.6, 223.0-229.5, 232.0-237.8 faults - broken rock @ 217.5-217.7 1-2mm gouge + broken rock, 218.2-218.3 - same, 225-225.4 (strongly broken - possibly contaminated from surface!?)	Q-(po) Q	

Drill Hole Record

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	Sample No.	Length
220	198.5	238.4	siliceous zones commonly have concentrations of pyrrhotite - @ 223-223.5 (2-3% ± cpy)		
			225.5		
			229.5 (5cm quartz vein)		
230			230.5-230.6 carbonate-quartz vein 230.5 - weathered carbonate - limonite on small fracture	c-q	
			towards the end of the unit - andesite/diorite is finer grained - more like andesite - but still with igneous texture		
240	238.4	247.7	Unit 3L siliceous, light grey		
			moderate pyrrhotite 2-3% in part small quartz vein @ 242-243.5 + disseminated	py-po	
250	247.7	253.0	Unit 1t - some siliceous lenses dark green, very fine grained 250-251.3 several zones of gouge, broken core	py	
			quartz vein 251.3-2cm 252.8-1cm ; 2-3% dissem py cubes 1-3mm 252 - minor gouge	q	
	253.0	276.8	30 Unit 3L hard - variable from grey to light greenish grey - locally medium green ish grey - hard throuout		
			2-3% dissem. pyrrhotite ± pyrite 260.5-266.0 - locally 4-8% in seams @ 264.5-265	po, py	
260			28 quartz vein 3cm @ 268.7 4-5% in seams 271-272 (po-(cpy)) + py (possibly sph)	q	
			pyrrhotite ± cpy seam 2-3mm @ 268.5, smaller zone ~270.5	po	
			generally <0.2% sulfides - locally 0.5-1% in disseminated lenses 11.5, @ 273-274	po±cp	
270					
			20	po-(cpy) py (sl?)	
				po	
	276.8	281.0	Unit 1t - fine to very fine grained, medium grece, uniform texture, abundant carbonate veinlets, patches	po-(cp)	
280			277.0 1-2mm lens po-(cp)		
	281.0	293.0	Unit 2L - variable - lensy - mixed siliceous lenses and chloritic-rich groundmass.		
			30 softer than Unit 3 - carbonate ± quartz lenses 0.1-0.2% dissem. pyrrhotite ± pyrite		
	287.0	293.0	grades into Unit 3L ~293		
290					
	293.0	343.0	Unit 3L - moderately abundant, coarse chlorite-muscuvite lenses, patches - but overall very hard	po	
			lenses of sulfides 294.3 (po) 296.9 po-(cp) 1-2mm., 302.1 (1mm) 304-305 - 0.2-0.5% dissem. pyrite	po-(cp)	
300			302.4-304. Unit 1t? vfgrained - uniform 302.5-302.7 (3-5cm Q vein - folded 303.8 - broken rock (2°) ± gouge	po, q, py	
			35 more typical 3L		
310			44		
			0.2-0.5% dissem. pyrite (vfgrained)	py	
320			concentrations of pyrite ± cpy @ 322, 328.3 (<2 mm seams)	py±cp	
			45		
			50	py±cp	

Drill Hole Record

Cominco

419

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	S	L	M	Sample No.	Length
293.0	343.0	50	Unit 3L - very siliceous from 328. concentrations of pyrite in lenses 1-2mm (10-20%) @ 330.0, 339.5, 341.5 (wider = 5mm 5% py)				py	
							py	
		35					py	
343.0	352		Unit 1t medium-fine grained - dark green, soft - abundant calcite patches, veinlets up to several mm across 347.9 cl-qtz+(py) vein 1cm, 348.0 - same + chl. (folded), qtz-chl-ct-(py) - 351.3-351.7 (folded minor gouge 351.9 py 1-2% 348.5 (2cm)				q+(py)-c py	
3.							q-c-cl(py)	
352.0	360.5	50	Unit 3/2L - as 293-343 but commonly more chlorite py 4-5% 357-357.6 355.5 -2" Unit 1t 360.5 1cm gouge + breccia				py	
		5						
360.5	373.0	5	Unit 1t fine-medium grained, medium green, soft - several small <2mm late calcite veinlets					
		40	some dacite (Unit 2L) patches - probably part of previous unit @ 360.5-361, 361.5-362, 369-372.5 py 2-3% 365-365.5, 363.3-363.4, 367.5, 368.8, 369.5-369.7 qtz vein ± carbonate 366.8 (2cm) chalcopyrite - bleb ± py @ 370.8				py	
							py	
							q-(c)	
							py	
							py cp	
373.0	375.2		Unit 3L very siliceous 374.4 1mm gouge + late ct vein (1mm)					
375.2	382.5		Unit 1L coarse textured andesite, dark green, abundant calcite lenses locally 0.2-0.5% dissem. pyrite 381.0 qtz-ct vein party - 1cm				py	
							q-c	
382.5	425.0		Unit 2L lensy siliceous zones with chlorite-rich patches and seams, carbonate-quartz veinlets common.					
		30	py 1-2% @ 386-386.4 more pyritic from 388 1-2% overall - conc. in seams @ 397.9, 402.0, 405.0, 391.7-391.9 (±cp)				py	
			→ overall medium green color from chlorite - with pale green to blue grey siliceous lenses				py ±cp	
							py	
							py	
							py	
			quartz vein 406.0 (10cm) - qtz-ct-chl-(py)				c-cl-(py)	
		35	carbonate-quartz veins throuout - large one = 5cm folded @ 406.8, 421.5-422 - several				c-q	
			pyrite 3-4% 411.5-416.5, 421.8; 1-2% overall 416.5-421.8 - then <0.2%				py	
							py	
							py	
							py	
		45	gradational contact to next unit					
425.0	441.0		Unit 3t light green, locally medium green, hard, generally finely banded (lensy) - color bands - pyrite 1-2% overall - conc. - 3-5% @ 426.5, 427.7-430.0, 435.7 quartz vein 5-10cm @ 428.5, 4mm @ 431.5, lensy 1cm @ 436.5 carbonate-quartz veinlets throuout, abundant @ 441.5, carb-chl @ 442.1				py	
							py	
							py	
							c	
			gradational contact to next unit					

Drill Hole Record

Cominco

5/9

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	Sample No.	Leng
441.0	447.2	45	Unit 2L medium green. siliceous lenses in chlorite-sericite groundmass, moderate carbonate-quartz veinlets, abundant @ 441.5, c-cl vein 442.1 quartz vein 444.0 - 1cm folded	c-qc-cl Q	
447.2	454.2		Unit 3L very siliceous - 95% quartz - 2-3% pyrite disseminated in seams with sericite and chlorite	py	
		45			
454.2	525.3		Unit 2/1t medium green, moderately soft with some siliceous lenses, moderately abundant carbonate-quartz veinlets, local dissem. coarse pyrite, minor py lenses @ 455 (1mm), 467 large one — 460.0 - 1cm, 466.5. quartz vein 2-3cm · 460.7 + carbonate	py py c-q Q-c	
		55	grades to Unit 2L - coarser - slightly more siliceous leases. @ 463 - still abundant calcite-quartz veins (early)		
			467.5-470.5 Unit 3t siliceous. very fine texture, 1-2% disseminated ± lensy pyrite	py-q py	
			471-472 1-2% py in several seams	py	
			473.4-474.0 badly broken core - chips + green gouge, abund carbonate in chips, one qtz-carb vein 7mm	py q-c	
			476-477. moderately broken core, minor gouge		
			482.5-485.5, 486.7-487.2, Unit 3L siliceous + pyrite as 467.3-470.5 1-2% pyrite		
		45	veins: calcite-quartz 492.5, 495.0-495.3 (two-folded) quartz-(calcite) 492.7-492.9	q-c	
			495-496.5 - 5-7% biotite; , 1% cpy, 2% pyrite - in part assoc. with carbonate-quartz veins - less biotite extends from 494-498. (bio)	tc-cp-py q	
			506 - 2cm 3-5% py. in stringers.		
			506.3-507 - Unit 3L/t		
			Continues with moderately abundant calcite-quartz veinlets	py	
			509-512. 1-2% dissem. to lensy biotite		
			514-514.5. Unit 1t v.f.-grained, bands up to 1.0cm bio; abund ct-qz veinlets, one with abund coarse py biotite 3-5% for 2 cm @ 514.5-514.6 in Unit 2L (bio)	py	
		40	519.8 - 3" broken core		
			becomes more siliceous towards end of unit - gradational to next unit		
			523.8, 524.0 py-po assoc. with <1cm ct-qtz veinlets	c-q-py-po	
525.3	554.0	50	Unit 3L - very siliceous, minor sericite-chlorite seams		
			526.4-527.2. felsite dike. aphanitic, very hard 529.3-529.5 quartz vein 2-3cm folded	Q	
			533-540 - blocky core		
			538.2 - ct-qtz vein. - irregular ~1cm; 538.3 - quartz-(carbonate) vein 0.5-1cm		
			539.8-540.2 Late mafic dike (as 239-247 in 90-1) ± calcite-(chlorite) amygdules.	Q-c c-q	
		45	545.9-547.3 ~½ core is late mafic dike as 539.8-540.2, moderately irregular contact - less siliceous from @ 547 - more chlorite-sericite seams, patches.		

Drill Hole Record

COMINCO

6/9

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	M	Sample No.	Leng
525.3	554.0		551.0 Quartz-carb vein ~1cm + late shear 551.9 0.5-1 cm vein: qtz-(chl-ct-py) pyrite mainly 0.1-0.2% dissem. conc. @ 551.4, 552.1, 552.7					
554.0	584.8		Unit 2Lit variable - light green - medium green, moderately hard - at start gradational from previous unit scattered quartz-carbonate (early) veinlets - largest @ 560.5, 563.5-565.5, 568.1, 577.5, 578.8					5
		45	quartz-(carbonate-chlorite) veins - 563.3 (0.5-1.5 cm), 578.4 (2cm) ± py Hobs sulfides - mainly 0.2, conc in seams up to 1cm wide @ 566.6, 567.4, 567.6, first py-cp-po, others py				561.0	
			broken core 576.5-577.0; 581.8 - 1cm gouge; 582.8 minor gouge					5
			568.6-570.6 3-5% sulfides - py-po ± cpy + lenses + patches bio very fine grained and intergrown with carbonate - medium brown color					
			571.6 blob of py-po with siliceous lens, 572.5-575 2-3% sphalerite? very fine grained, dissem. in lenses with quartz; 573.0 - lens of py-(po-cp) up to 2 cm thick, 573.4 - bleb 1mm - cpy					5
		40	sulfide zone (blebs) 1.5cm across in carb-qtz vein - pyrrhotite, lesser chalcopyrite @ 577.5 (po. strongly magnetic)	xx				
			584.8 blobs of py ± po on contact (1-2% py over 5cm)					
584.8			Unit 3LPL very siliceous light grey 2-3% pyrite overall - concentrated in seams - mainly < 3mm with chlorite @ 586.5 (1-2mm), 587.6-587.8 (after), 588.8 (1cm) py ± sl, cp, from ~583 1-2% pyrite - disseminated with chlorite-rich seams — on broken surface - rock appears more like dacite - moderate chlorite				py ± sl, cp	
			broken core 598.0-598.3, 603.0-603.7, 606.4-606.9 + 1-2m gouge.					
		47	quartz veins 597.3 (2cm), 607.7 (10cm), 601 (7mm), 604.2 (1cm, lensy)	xxx				
			pyrite seams 599.0 (1-2mm), from 606 - py 2-3% - disseminated, and concentrated in thin seams, especially @ 606.0, 607.6, 608.2, 608.6	xxx			606.	
		45	chalcopyrite-pyrrhotite vein 610.9 (1-5mm)					5
			quartz veins 613.1-613.6 3-5cm - folded; 616.4 1cm; 621.3-622 (q-c ± py)				611.	
			pyrite seams 609.5-610.5 (several), 611.4, 612.7, 616.2, 616.6, 620.4,					
			becomes darker green after 615 up to 619.5					
622.5	625.3		Unit 2t medium to light green, moderate hardness, pyrite 0.5% - seams @ 623.1, 624.7					
625.3	642.0	47	Unit 3L siliceous - stringers + patches of chlorite ± pyrite pyrite 1-2%; slightly conc. in stringer zone @ 626.0-626.6, 630.6-631.2 — 625.5 minor gouge, quartz-carb vein					
		30	631.2-632.6 Unit 1t vfine grained, light green (possibly dike), ± 3cm incl. Unit 3L.					
		27	634.2-636.8 Unit 1t medium grained, medium green, abundant calcite-quartz veins, lenses					
			quartz veins 631.0 (5-8mm), 641 - 1cm					
			after 636.8 - minor pyrite - conc. slightly in lenses @ 637.6, 638.1					
			642.0 - minor gouge, broken core					
642.0	655.0	38	Unit 1t fine to medium, medium-dark green, scattered carbonate-quartz lenses - chlorite mottles	x				
			veins: 643.5 late calcite-quartz (2mm), 643.6 - patch of quartz 1-2cm, 643.7 (Q-carb - 1cm) 644.8-645					
			649-653 - Coarse textured → lensy meta-gabbro 646.1 (carb-quartz lens) qtz-(chl) folded abundant carbonate-quartz lenses					
			sulfides <0.1% 653.0 broken core 1-2"	xx				
655.0	657.6	32	Unit 3L siliceous at start - becomes more chloritic and grades into following unit 656.6 1cm py-qtz				py-qtz	
657.6	660.6		Unit 2L/t light to medium green moderately hard. minor py - 660.3					

Drill Hole Record

Cominco

7/9

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	M	Sample No.	Length
660.6	682.5		Unit 1t/L (or 66) medium to dark green, moderately soft (but harder than normal) - variable granular to lensy texture - locally resembling fine grained diorite. quartz-carbonate lensy veins 662.8 (a few < 1cm) sulfides: mainly <0.1% 663-664 1-2% coarse dissem pyrite cubes in finer grained, lensy zone.					
			670.2 5mm sil zone + cp ± po 2-3% cp 672.7 1cm 20% po, 1% cp					
		26	673.1 1cm qz-po-(cp) vein-chl 673.7- 2cm quartz-(calcite-chlorite vein)					
			673.6 8mm seam with abundant medium grained biotite books.					
			679.8 5-8mm quartz vein					
682.5 -	697.0		Unit diorite - generally salt/pepper texture of plagioclase spots in dark green chloritic groundmass - medium to fine grained, moderately abundant quartz-carbonate veinlets, lenses					
			veins: quartz-carbonate 695.3-695.7 folded, 697.4, 697.6-697.7, 697.8 <1cm, folded in part					
		48	quartz-chlorite-(pyrite) 696.2-696.4, 696.8-697.0					
			pyrite mainly <0.2% locally conc: lens @ 688.7, coarse cubes 695.6, @ 696.1					
			pyrrhotite-(chalcopyrite-pyrite) 8mm lens @ 685.0					
697.0	708.0		Unit 2/1 t±L - variable, medium green, very fine texture, commonly lensy, moderate hardness					
			pyrite <0.2% - locally conc. in lenses @ 699.1 (<1cm), 706.6 (<1cm)					
			quartz ± py veins 706.7 (5mm) 707.2 (1cm) 706.5 ± gouge, broken core					
		37	gradational contact to following unit	x				
708.0	713.8		Unit 2L/t light green, medium texture, moderately hard to hard pyrite <0.2%, conc. locally @ 709.7 (+po)					
		36	becoming much finer grained → 2t's @ 712.0-713.8 712.2-712.5 vein: quartz ± c-cl-po-(cp)					
713.8	723.2		Unit 5c light grey - siliceous ± sericite - abundant pyrite					
		30	this is the main "ore" horizon? @715.4 714-717.0 → ~10% of unit					
			713.8-718.9 4-5% py in dissem lenses //S, minor cpy - abundant quartz veins, leases 1-3cm - folded					
		50	718.7-720.0 8-10% py - coarser grained lenses, 720.0-721.7 ~2-3% py 721.7 - 1" MS (py) 721.8 @ po-cp lenses					
			722.0-723.2 3-5% py, a few lenses of po-cp and of cp-po					
723.2 -	759.0	32	Unit 5c - siliceous, medium texture - generally not lensy, grey to light green					
			723.2-726.8 8-10% pyrite, fairly coarse, concentrated slightly in lenses 726.8-728.1 (15-20%)					
			726.9-727.1 10% cpy, 3-5% pyrrhotite 728.1-732 3-5% py, conc. moderately in lenses //S,					
			732-737.5 1-2% py - conc. in seams - and in narrow quartz-calcite stringer @ 733.0					
			737.5-742.7 <0.2% py					
			742.7-749.7 8-10% py - relatively uniform. chalcopyrite @ 746.5 (1mm lenses), 749.5-749.7 (a few lenses)					
		35						
			749.7-759.0 1-2% pyrite - concentrated in lenses @ 756.3, 757.7, 758.1, 758.2, 758.5, 759.0					
			751.4-751.7 2-3% cpy in lenses up to 3mm wide, 1.2cm long					
			753- coarse cpy, po ± covellite, pyrite					
			758.0 3-5cm broken rock					
		40	759.0 5mm gouge ± broken rock	kx				
759.0 -			Unit 8L/t medium green, fine, lensy texture with some siliceous lenses and more chloritic groundmass					
			759-763 pyrite 2-3%, then pyrite 1-2% → 1% concentrated in seams (narrow) @ 769.0-769.1,					
		40	773.1-773.2, 773.8					
			cpy-py lenses locally, large ones >1mm @ 774.6, 775.0					

Drill Hole Record

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

8/9

Footage From	To		Description	S	L	M	Sample No.	Leng
770	848.0		Unit BLlt py lenses @ 777.3, 778.8 (2-3mm - 25-50% py)					
			775- pyrite 1-2 - locally 3-5% in seams @ 779.2, 780.0, 781.0, 782.0					
			775.8 5mm gouge + crushed rock					
780		33	unusual texture of dark green (slightly more chloritic mottles 1-2cm in size in paler green groundmass					
			pyrite conc. in seams @ 784.2, 785.4					
			784.1 - lensy quartz vein ~1cm.					
			786.8 - 792 pyrite 2-3%, slightly concentrated in seams (most < 2mm)					
790			792 - 796.5 pyrite 1%. 796.5- pyrite 2-3%, conc. in seams @ 796.6, 798.7					
		36						
800			from 798 2L - gradational locally to 2/3L light to medium green - some segregation of					
			siliceous + mafic lenses. pyrite 1-2% - conc. in narrow seams @ 802.5, 803.0, generally medium, locally coarse grained					
			801.1 - 801.2 - 20% py (coarse) + chlorite, 1% cpy					
810		40	quartz - chl - (py) veins - 805.7 (1-2cm - folded), 810.7 - 811.2 (q - cl ±py, cp) folded, 813.2 (1cm)					5
			810.2 - 810.5 - a few seams coarse pyrite + 1-2% cpy; locally abundant chlorite					
			structures: 801.2 minor gouge, 810.1 - minor gouge, 812.5 minor gouge + late ct-qz vein					
820		35	after 818.0 - becomes slightly more granular texture → 2t - medium grained					
			quartz veins 817.2 - 817.85 - + chlorite patches - a few blebs of chalcopyrite up to 1cm long; folded					
			825.5 - 1cm lensy					
			pyrite 0.5 - 1% - conc. in narrow seams - largest @ 818.4, 822.0, 831.4, 834.4 - 835.0 (3), 839.0, 839.5					
830			gouge: 825.3, 826.3 - minor; 827 (2mm), 828.0 (?) mud + chips at end of run. possibly exotic	?				
		37						
840								
		38	pyrite: 840.5 - 842.0 (several) - total 4-5% pyrite,					
			gouge: 835.6 (minor) 844.0 - 844.5 broken rock ± gouge, late quartz - calcite vein					
850	848.0 - 852.8		Unit 9L siliceous, light grey					
		45	0.5% pyrite - conc. in lenses, patches @ 849.5, 850.9					
	852.8 - 888.0	25	Unit 8tlL as 818.0 - 848.0					
860		35	pyrite mainly <0.5%, conc. in seams @ 852.8, 853.8, 854.8, 855.1 - 855.6 (several - total 4-5% py), 857.3 - 857.5, 865.1					
			quartz veins 855.0 (1cm), 869.8 - 870 (+ankerite seam, blebs of pyrite), 870.6					
			structure: 856 14-5" broken core, S; warped, 858 - minor gouge, broken core (end of run)					
			870 - 870.3 a few small pyrite stringers, py conc in stringers 870.6, 872.2, 872.4, 872.8; 876.2, 876.8 (minor)					
870			quartz veins 870.7 - 871.0 (+ patches cpy (1%) of vein); 879.2 (1cm), 879.4 (8cm - folded + minor patches po-cp)					
		37	880.2 - 881.1 + abundant pyrite - chlorite 880.8 - 881.1 (folded);					
			882.5 - 883.3, folded abundant pyrite in zones 1-2cm wide on borders					
880								
			885.6 minor gouge + late calcite - quartz vein					

Drill Hole Record

Cominco

9/9

Property	District	Hole No. 90-2	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	MV	MSul	Sample No.	Leng
852.8	897.1							py-cl Q py Q	
			pyrite conc. in seams @ 889.0-889.1, 890.8-890.9, 891.6, 891.7-892.1 (ms-2-3cm - folded) 892.5-892.8 (three seams), 893.3, 893.5, 895.1, 895.2					py Q py ms-py py	4
			vein: 890.0 - quartz (1cm), 896.3 (quartz-calcite - (1cm, irregular)					py	
		40						py	5
897.1 -	916.2		Unit 8t very fine to fine grained, dark grey-green - unusual <0.2% pyrite - conc. slightly in seams @ 900.2; 898.4-898.6 - patches 0.2-0.5% overall					py py 2-c 897.	5
		40							5
			pyrite - minor concentrations @ 906.8-906.9; 909.4 - coarse, dissem. pyrite grades to Unit 3/2t, 3t @ 908-913 minor broken core @ 906.5, 908.0	x x x x				py py	5
		50	pyrite leases 915.4-915.8; 914-915 - several (1-2% overall)					py py	5
916.2	938.0		Unit 8t - medium grained, granular, light to medium green - variable hardness					c-p py, po	5
			918 - minor chalcopyrite; 920 - minor pyrite, pyrrhotite; 922.5-922.6 - 1-2% py					py Q ± py py	5
		47	923.1 - minor quartz ± pyrite (folded), pyrite seams 929.5, 933.0-933.5 (1-2% py), 934-934.2 (a few)						5
			928.3 - quartz vein ± calcite, pyrite - 1-2cm; 934-934.2 quartz veins ± pyrite (1-2cm)					Q tot, py	5
			934.5-936.4 scattered veins - quartz-pyrite						
			936.4-938.0 70% veins - quartz-pyrite + lenses and patches of pyrite; cpy @ 936.4, 936.7, 937.3					py Q + py py	2
								Q-py	
938.0	939.4		Unit 7t - soft, dark green 30% pyrite, 1-2% chalcopyrite - patch of quartz-calcite (2cm) qtz vein 938.4-938.7					Q-py (30%) cpy; py	5
939.4	948.0	40	Unit 8t - bleached to pale grey-green 939.4-940.5; then medium grained as 916.2-938.0 80% ± calcite,					py-cpy 2 py	5
			pyrite conc. in seams 1-2% - 940.5-942.1; 3-4% 942-943.4, 1-2% 943.4-948 py leases 939.3-939.4						
		50						py	4
948									
END of HOLE									

Drill Hole Record

Cominco

1/11

Property	PACKSACK	District	SKEENA	Hole No.	90-3		
Commenced	July 1990	Location		Tests at	308 270 -59.5 608 273 -57 908 280 -51.5	Hor. Comp.	
Completed	July 1990	Core Size		Corr. Dip		Vert. Comp.	
Co-ordinates				True Brg.		Logged by	John Rayne
Objective	TEST DOWN-DIP EXTENSION of MASSIVE SULFIDE			% Recov.	100	Date	July 1990

Footage From	To	Description	S	L	M Qv	M Sul	Sample No.	Length
0	7.0	Casing						
7.0	38.0	Unit 2-3f(L) - variable texture, hard to moderate - pale grey with medium green patches, lenses veins - folded: quartz-chlorite-(pyrite) 9.0 (1-2cm), 9.5 (2-3cm), 10.3-11.0 (3-5cm) broken, lost core 7.0-8.0? pyrite <0.2%, conc. in patches 15.0-15.2 quartz ± chlorite veins - folded: 15.6 (<1cm), 18.8 (<1cm), 20.8-21.2 (1-2cm) late qtz-carb 19.6 21.5-22.0 strongly broken core ± gouge 22.0-22.5 less strongly broken core 22.5-23.5 Unit 1 Andesite tuff - medium green, soft, some fine banding: quartz vein 22.7, 23.4 pyrite lensy zone 23.0-23.1, 23.7 minor patches, lenses of pyrite @ 28.8-29.2, 32.9-33.2 quartz vein 33.2 (<1cm) - folded	LC				Q-cl-(py) Q-cl-py py Q q-c Q py Q py Q py	
38.0	45.5	Unit 2/1f/f - texturally similar to previous unit, but finer grained, medium green, and relatively soft - very uniform spy - lens 1cm long 39.4; pyrite 1-2% 40.0-40.6, minor lenses @ 43.0, 43.8 broken core 46.0-46.3 ± 1-2mm gouge - gradational contact					cp py py	
45.5	58.6	Unit 2t/L - harder than previous unit - same texture - finely banded, light green veins: quartz-chlorite ± pyrite on borders: 50.2 (1-2cm), 51.5-52.8 (2-4cm), 53.0-53.8 (folded), 54.3-54.8 (1-2 cm, folded), ± calcite pyrite - patches 50-50.2 (3-5% of rock) 56.3 irregular quartz-calcite veinlet - gradational to next unit					py Q-cl Q-cl ± py q-c	
58.6	77.3	Unit 2/3f? harder than previous unit - light green with chlorite-sericite seams pyrite <0.1% broken core 60.4-61.0 ± limonite, 1mm gouge; 63.0-63.4 broken core ± late quartz-calcite vein @ 65 m pyrite 0.1-0.3%; minor lenses 74.6, 70.0, 70.8, bleb @ 72.5 quartz vein 68.8 (<1cm, folded), 67.8 (1cm-1.5cm) leached calcite-quartz veins 71.5-72 (1 cm), 70.5 (5mm) broken core 76.2-76.4 115, ± calcite-quartz veins, lenses, chloritic lenses 76.4-77.3					Q Q py c-q py c-q py c-q q-c	
77.3	84.0	Unit 1t - dark to medium green - moderately soft - abundant quartz-calcite veinlets 78.0-80.0 leached calcite-quartz @ 77.3					c-q	
84.0		Unit 2/1L - medium to dark green - lensy texture with siliceous lenses and chloritic seams - generally fairly hard 84.0-84.2 = 3L (light grey) 84.2-84.7 - andesite + abundant calcite-quartz stringers (early) pyrite 0.1-0.3% some chlorite-rich patches, lenses + minor py on borders veins: quartz-chlorite 91.1-91.4, quartz-(calcite-chlorite) 91.8-95.2, 95.5 (2 cm)					a-cl Q-c-cl py py	
DISTINCTIVE FRAGMENTAL UNIT		102.5-118 - scattered fragments 1-5cm - mainly epidote-rich - pale to light yellowish green - ragged fragments - groundmass - hard, dark green - grey ± bio @ 118-118.3 pyrite 0.2-0.5% - conc. @ 103.7-105.1, 105.7, 108.4-108.8, 109.4-109.7 (+qtz-ct) generally weak foliation scattered qtz-carb lenses <1cm					q-c py q-c py q q-c	

Drill Hc Record

Cominco

2/11

Property	District	Hole No. 90-3	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
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Objective		% Recov.	Date

Footage From	Footage To		Description	S	L	M Qv	M Sul	Sample No.	Length
84.0	132.1		minor quartz-calcite lenses 114.0-114.5. minor pyrite 118.8. from 121-132.0 moderately abundant epidote-rich fragments 1-3 cm., a few up to 5mm. most lensy, also irregular epidote-rich patches, a few zones, especially 122-122.4 - epidote appears to replace abundant subhedral plagioclase grains (2-3mm) and patches up to 1cm long several quartz-calcite lenses, esp 122.8-123.0 126.4, 126.9 quartz ± chlorite 125.7 (2-3 cm - folded) + pyrite pyrite lenses 1-2mm @ 127.4, 127.5, 130.4					q-c py q-c Q-cl-(py) py py	
132.1	151.8		Unit 2Lc - massive very fine to fine grained andesite dike (?) 10-15% plag ϕ < 1mm in moderately hard, dark green groundmass; coarsely broken core 136.0-137.0 ∠ 2mm pyrite - minor disseminated, concentrated @ 138.1-138.2 (1-2%); several quartz-calcite veins (late) inclusions of 2L a previous unit @ 141.8-142.7, 144.5-145.6 (1-2% pyrite - in clusters.	x x				py py	
151.8	211.0	variable 10-30	Unit 3/2f - coarse textured - siliceous + chloritic patches, lenses - mottled appearance : similar to 7.0-38.0 scattered quartz-carbonate lenses (<1cm), 0.1-0.2% py pyrite 0.5% from 161-177 ; conc. in lenses @ 174.2 (2-3 cm), 175.2 (2-3 cm + patchy) broken ground 157.4-158.8 quartz-calcite lenses, veins @ 168.6, 169.0, 174.1 (all ≈ 0.5-1 mm) quartz veins 174.3 (1-2 cm - folded), 175.3-175.7, 178.0 + py, 181.3-182.3 (± py, trace po) becomes more siliceous → Unit 3f - very weak foliation py. conc. in lenses: 182.8 (2-4 mm) then 0.2-0.5% disseminated commonly autobreccia - crackle breccia weakly developed quartz-calcite lenses - veinlets <1 cm 190.6-190.8 minor gouge - dark brown fracture - 190.3 195-199 - slightly porphyritic - plag equartz 0.5-1.2 mm. veins: quartz quartz-calcite lenses 197.7, 202.5 (± chl), 203.2, 203.5, 206.8, 209.8 quartz-chlorite, chlorite-quartz-(pyrite) 202.3, 203.0 near end - more chlorite → 3/2f	x x x x				py q-c py Q-py py Q py Q Q-(c ± py) py q-c q-c q-c-cl cl q-c q-c q-c-cl	
211.0	215.6	30	Unit 3f - siliceous, light grey, very hard to hard quartz-sericite - moderate banding ± foliation. veins 211.5 1 cm quartz-calcite-chlorite					q-c-cl	
215.6	226.0		Unit 3/2f as parts of 151.8-211.0 - dark green - weak foliation - patchy texture pyrite 0.1-0.2%; conc. in seams, lenses @ 217.4					py	

Drill Hole Record

Cominco

3/11

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Footage From	To		Description	S	L	M Veins	M Sul	Sample No.	Length
215.6	226.0		pyrite lens 2-5mm @ 224.5 minor late quartz-calcite veinlets thruout					py	
226.0	231.0	25	Unit 3f - very siliceous, light grey, massive to slightly foliated : py patch @ 226.1 py±cp @ 230.9 quartz vein 228.0 (2-3cm)					py Q py-(cp)	
231.0	268.6		Unit 2f - as 215.6-226.0 medium green, moderately hard quartz-calcite lenses scattered <1cm quartz veins 243 <1cm.						
		30	late quartz-calcite veins <1mm - largest @ 241.3 quartz calcite lenses @ 246.3, 241.4 epidote-rich patches 0.5-3cm 239- 3-5% of rock.	x x					
			pyrite <0.1% - conc. in a few lenses: 243.6 (2-3mm) broken core 238.0-238.5, 251.0-251.5					q-c (late) Q py	q-c
								q-c	
			a few epidote-rich fragments 255-259	x x x					
			Unit 3f? siliceous zones 263-264 (moderately); 264.0-266.9 (very), 268.6-						
			quartz-chlorite ± pyrite vein 256.9-257.1 (2cm - folded)					q-cl-(py)	
			quartz-calcite lenses common (1cm) 262-263					q-c	
			pyrite 1-2% 264-266.2 disseminated lenses, conc. @ 266.0 w chlorite					py py-cl	
268.6	274.5	15							
			Unit 3f/L? very siliceous - as inclusions above						
274.5	280		Unit 1f/f - dark green, abundant epidote-rich lenses // S; , esp. 278-280 - finely foliated - with minor epidote lenses - also // S; - gradational to next unit 275.6-276.2 siliceous breccia zone					py Q-py-(cl)	
280	285.4	27	Unit 2f/1 - similar to 231.0-268.6 277.8 qz-py ± chl vein 1-2cm folded 276.6-276.7 1-2% py						
285.4	298.1		Unit 3f/1 - very siliceous, darker grey and more chlorite than 268.6-274.5 - commonly crackle breccia - pyrite 0.5% conc @ 286.5, 287.4 - patches : quartz-calcite vein (early) 288.2 (1cm) uniform.					py-py q-c	
			pyrite-pyrrhotite patches 2-8mm - 290.9; po-py-cp 293.0, 293.2, 294.9 (no cp) qtz-(cc) 295.6 (1cm), 295.8-296.4 (±py-chl), 297.1 (3cm) + po ± cp					py-po po-py-cp py	
		25						q-c Q ± py-cl q-(po±cp)	
298.1	316.8		Unit 2f similar to 231.0-268.6 - medium green - variable - some with siliceous lenses, some more 300.8-302.0 Unit 3f, also 305.1-307.0 uniform.					py Q-(ct-cl) - py-po-cp	
		25	veins: quartz-(calcite-chlorite) with patches of pyrrhotite, pyrite, chalcopyrite 299.2-299.7, 307.9-308.5 py-conc in lenses 302.8-302.9, 300.9, 304.7-305.0 lens up to 5mm wide of cpy @ 305.0					py cpy	
			py - lens 308.6-308.7 3-5mm, 312.7 (patch on edge of vein 312.8-313 - lenses up to 3mm // S; quartz-(calcite) vein 310-312.7 ± altered rock frags., qtz ± chl, py 314.9-315.2 (1cm), 316.2-316.4 (3cm)					Q ± cl, py py	
			py - minor lenses 313.2, 313.6					Q-(c) py py	
316.8	327.7		Unit 3f white, hard - siliceous, lensy at start - then more massive, crackle breccia					Q	
			quartz veins: 317.5 (1cm), - some blue quartz patches 1-3mm @ 329.5-325.0					py	
			pyrite: minor 320.5, 325.9 broken core 319.0-319.4; 327.8-328.0	x x					
		15						py	
327.7			Unit 2f similar to 298.1-316.8 - variable - some slightly more siliceous zones	x x x				py py pg	

Drill Hole Record

Cominco

4/11

Property	District	Hole No. 90-3	
Commenced	Location	Tests at	Hor. Comp.
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Footage From	To		Description	S	L	m V	m Sul	Sample No.	Length
327.7	369.4	22	pyrite 2-3% 327.8-334.5 conc. in veins @ 329.5 (2-3mm), 330.6, 334.5 quartz-pyrite 330.2-330.7 (1-2cm-folded) ±cp ; quartz-(chlorite) 1-2cm folded 333.4 ; quartz (5cm) 335.3 biotite 2-10% 331.8-334.5 - then brecciated texture - rock bleached moderately to strongly to 336 - then less alteration → fresh @ 338.5 - moderately abundant quartz-ankerite lenses in bleached zone, smaller ones after 338. : light to medium green color.		W.			py Q-py±cp py Q-cl py Q	
DISTINCTIVE UNIT		25	- very fine-lensy texture after 338. siliceous lenses with seams of sericite-epidote-ankerite ±chlorite						
		10	- generally pale to light green color - grades to pinkish - quartz-(carbonate) lenses common @ 358-364 . pyrite <0.1%						
		15							
		55							
			363.0, 363.4 - minor pyrite-pyrrhotite 366.4-366.5 quartz-calcite veinlet-lens-breccia zone 346.6-366.8 quartz-(pyrite) vein (1-2cm-folded) broken core 367.5-368.0 — contact appears folded on very fine scale					py-po q-c Q-(py)	
		80		x x					
369.4	373.0		Unit 1f/f - fine to medium textured andesite - dark green, moderately soft						
373.0	390.0	15	Unit 2f - similar in part to 338-370 - not quite so uniform - locally finely banded - some more	folds					
		90	siliceous zones. - pale to medium green - some brownish shades (from ankerite?) - foliation wanders,					py	
			so probably tightly folded on scale of a few feet - esp 376-383 - where So ⊥ core + strongly folded on small						
		37	scale. pyrite - minor coarse grains @ 375.5-376.7					Q	
			quartz veins 381.4-381.7, 382.5-384.2 (2-5cm-folded), 384.8 (2-3cm)					Q	
			major quartz vein 385.4-396.5 . minor relics of 2f to 390 , minor coarse pyrite 387-388 in rock local patches of calcite , patches, seams of chlorite , disseminated grains of pyrite					py Q	
390.0	402.6		Unit 3f siliceous - medium grey - very hard - at first minor relics in quartz vein						
			397-398 - gradational to 2f - darker green.						
			392 - vuggy zone 3mm wide + euhedrally terminated quartz (=late effect)						
			396.9-397.2 quartz vein (2-3cm ±pyrite, folded) ; 397.8-399.7 quartz vein ±py on border ± calcite chlorite					Q ± py Q ±py-c-cl	
		25	400.0-401.0 quartz vein ±chlorite, pyrite 5-10 cm (folded)					Q ±cl-py	
402.6	420.6		Unit 1 andesite, relatively massive, dark green, probably flow -					py Q	
			pyrite - generally low ; conc @ 402.6-403.6 (2%), 407.4 (with quartz), 408.1-408.4 (5-7%)						
			409.5-410.2 (with irregular patches of epidote						
			quartz veins: 404.3 (late?), 411-411.6 (2-3cm, +chlorite, folded), 411.9-412.8 (+chlorite)					py-q py	
			413.1-414.0 (2-50cm + chlorite - calcite, minor pyrite) : 413-414.5 - Unit 3f - medium grey - py @ 414.3					py Q-cl py Q-cl-c-(py)	
			415.0-420.6 - more irregular texture minor fragments, abundant lenses up to 1cm wide of chlorite						
			broken core 417.5-418.0 minor pyrite concentration @ 418.0 elsewhere pyrite <0.2%	x x				py	
420.6	423.0	30	Unit 2/3L or flow - lensy and variable - may be border zone of following unit. minor pyrite @ 422.3					py Q	
	452.7		Unit 5i - variable, commonly porphyritic - plagioclase + bluish quartz, siliceous, dark bluish grey -					q-c (late)	
			some zones much finer grained, commonly weak foliation, stronger in finer grained zones						
			quartz veins 423.6 (2cm), 436.8 (lensy), 437.8-438.5 (+lenses, patches chlorite, pyrite), late quartz-calcite 426.5, 427.0 pyrite 0.2-0.5% 440.2 (+chlorite ±calcite)					cl-q-py	
		36	435-435.3 - chlorite-(quartz-py veins, lenses)					Q-cl-py	

Drill Hole Record

Cominco

5/11

Property	District	Hole No. 90-3	
Commenced	Location	Tests at	Hor. Comp.
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Footage From	Footage To		Description	S	L	m V	m S	Sample No.	Length
423.0	452.7		Unit 5i generally porphyritic, slightly to moderately foliated from 440-452. then becomes finer grained, less porphyritic and more foliated, and grades into the next unit				--	Q-cl py	
			several late quartz-chlorite-calcite veins at high angle to core <3mm, largest @ 440.6						
			pyrite 0.1-0.2 mm; very coarse pyrite 441.7 446.2, 446.25 - veins 2-3 mm quartz-pyrite-(calcite) +						
		32	bleached halos						
452.7	460.8		Unit 3f - medium grey, siliceous, very hard, well foliated, commonly lensy - flow - lenses elongate ∥ S,						
		20							
460.8	475.5		Unit 5i - coarser grained - moderately porphyritic - like 423.0-452.7.				--	py	
			pyrite 0.1-0.2% - cono. slightly @ 461.7, moderately @ 468.0, 469.2					py	
			veins: quartz-(pyrite-chlorite) 465.0 (4 cm); quartz-(chlorite) 473.2-473.7					Q-cl-py	
		25							
			472-473.3 - inclusion of Unit 1L or fx - dark green andesite with abundant fragments 1-5 cm long					py	
			containing abundant epidote., similar 475.5-477.5 - but fewer fragments py patch 476.4					Q-(cl)	
475.5	477.5		Unit 1L - andesite - dark green - similar to 472-473.3 but fewer fragments - pyrite-mineralized in patch @ 476.4				-	py	
477.5	493.4		Unit 3f - felsite flow - in part moderately color banded, 0.2% magnetite as grains <1 mm in size -						
		20	banding prominent 491.2-493.0 @ 491 - 10 cm layer? - folded by D_1 - cut by vein of quartz-pyrite-					Q-cl-f-py	
			(chlorite - post D_1)						
			rock is fairly hard - but not as hard as some units of 3f 481.9					Q-py-ct	
			veins 487.8 quartz-(chlorite)-2cm; several quartz-(pyrite-calcite) with bleached halos (late) 486.5					py	
			492.8 seams-veins chlorite-(pyrite)-quartz-ankerite 492.5 lensy <1cm qz-(py-chl)					Q-py-cl	
		24						chl-q-(py)-ank	
493.4	516.6		Unit 5i as at 460.8-475.5 variable - coarser to finer texture.					q-c-cl	
			veins: quartz-calcite-chlorite (1-2 cm) 495.8; lensy quartz-chlorite-pyrite 496.2; qz-chl-lensy 496.9					q-cl-py py	
			quartz 497.8-498.8, quartz-pyrite-chlorite 501.1 (<1cm), 502.6 (<1cm), 505, 505.3 (qz-py)					q-cl-(py)	
			pyrite seams 491.0, 504.0, 505.3						
			finer grained. more foliated, 505-513 - gradational contacts					py	
								Q-py, py	
		20	510.0 1cm quartz-calcite (late), irregular chlorite lens a few cm long nearby						
			513.7 ± pyrite patch					q-c	
		22	514.4 lens quartz ± calcite ~1cm - early				-	py	
			gradational to next unit						
516.6	536.0		Unit 2/3f - dark grey - some lighter bands, hard to moderately hard, very fine grained texture, moderate					q-cl-(py)	
			foliation, some fine, lensy zones of siliceous, chloritic banded layers <2mm wide. some coarser					Q	
		25	color banding.					Q-py-(cl)	
			veins: irregular quartz-(chlorite-(pyrite) 516.6-517.6 (2-3 cm); quartz 520.6 (3 cm)					Q-cl	
			524.5 qtz-py ± chl, 525.5 (1cm) - qtz-chl; 526.8-528 - qtz-py-chl. 5-10 cm (folded) - (3-5% py)					Q-py-cl	
			529.4-530.0 qz-py (3-5 cm - folded); 530.2-532.2 - qz-py-(chl) 5-15 cm - folded - py conc @ 530.9					py Q-py	
		30	py seams: 530.9, 529.7, 534.3 broken core 533.5-535.5					PY Q-py-(cl)	
								py	
536.0 -		35	Unit 3fx/o moderately abundant felsic fragments 0.5-5 cm in size in more chloritic matrix - some						
			2fx chlorite-rich lenses - generally 0.1% pyrite						
DISTINCTIVE			544.0 1cm vein py-ct-qz					py-ct-qz	
UNIT			frags > 2cm concentrated 538-548						
		40							

Drill H( ) Record

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6/11

Footage From	To		Description	Sample No.	Length
536.0	558.4		minor broken core 551-553 - probably no fault fragments less sharply defined after 550		
		95			
558.4	562.5		Unit 1t dark green, mainly soft, some siliceous lenses broken core 561.0-562.5	py	
562.5	576.5		pyrite 1-2% conc in seam 2cm wide @ 559.5		
			Unit 2/3fx-L - similar to 536.0-558.4 siliceous frags, chlorite lenses = frags.		
			some very coarse frags @ 564-570 , pyrite 0.1-0.2% , minor vein lets quartz-calcite (late)	q-c (late)	
		38	pyrite 0.1%		
			@ 575- gradational to andesite, finer laminations - pyrite 1-2% conc. @ 575.7, 576.3, 576.7	q-c (late)	
		42			
576.5	596.5		Unit 1/2L/t dark green, moderately soft, some siliceous lenses, some quartz-(calcite) lenses - early	py Q-cl-py	
			- inclusions - or lenses 2/3t - 578.0-578.3, 561.0-561.8		
			pyrite 0.2-0.5. conc. in lenses @ 577.6, 578.5, 581.4, 584.3-584.5, 587.4, 591.0-591.9	py Q	
			veins: quartz 578.6-579 + pyrite + chl; 579.7-580.0 + chl, py, 581.5 1cm	py	
			584-593 1-2% pyrite - conc. moderately in seams	py	
		50	592.2 1-2mm gouge + 1-2" broken core	py	
		40			
596.5	600.8		Unit 1/2t/s - very finely laminated, moderate calcite, pale-dark green layers pyrite 20.1% 596.6 qtz-chl ± py vein (3cm).		
600.8	626.3		Unit 1/2L/f - variable - to 607.4 - mainly 1/2L - scattered, irregular patches of epidote <2cm	q-c ± cl	
			607.4 - abundant plagioclase phenocrysts 1-1.5 mm - altd to epidote		
			scattered quartz ± calcite lenses, veinlets early - <1cm @ 608.8, 601.8	py	
		49	603-604 - quartz ± chlorite vein (2-4 cm - folded) ± pyrite 605.6, 607.2, 609.2	py	
			612-614 - more siliceous - 2L.	q-cl	
		51	614 - abundant epidote-rich fragments - 0.5-3 cm.	q-c	
			veins quartz-chlorite 611.5 (2cm), quartz-calcite-chlorite 612-613 (5cm - folded) calcite leached. moderately		
			625.5 1cm quartz vein, 626.3 - quartz vein - lensy 1-2cm on contact		
		41			
626.3	635.5		Unit 5t - intrusion. very siliceous - light ± medium green, 10-15% bluish quartz eyes 2-5 mm.		
			- variable - second contact chilled - blue quartz eyes present.		
		48	635.5 - quartz-(chlorite) vein - 4cm, pyrite 635.8		
635.5	64		Unit 1/2t - fairly hard - dark green, some more siliceous lenses	py Q-(cl)	
			640.8-642.8 - Unit 3ip 2-3% quartz eyes quartz-chlorite-py 642.8, 643.5 (2-3cm), q-ct (644-2cm)	Q-cl-py	
			quartz-chlorite-pyrite vein 637.7-638.3, quartz 638.8 (1cm), 639 (4cm + chlorite-pyrite), 640.2 (2-3cm + chl, py	q-cl py	
645.2	651.5/652.0	55	Unit 3t - very siliceous, aphanitic pyrite lens 651.0	Q-cl-ct	
			quartz ± chlorite vein 646.7-648.4 (± calcite patches), 648.6 (1cm)		
			second contact - grades to finer grained - aphanitic (darker green) - looks like next unit	py	
651.5/652.0	665.3	48	Unit 1/2t/L - andesite, dark green ± epidote-rich lenses and fragments (1-3cm)		
			siliceous (Unit 3f) lenses @ 657.3-657.5, 658.2-658.5, 655.8-656.2		
			pyrite minor 656.9	py	

Drill Hole Record

Cominco

7/11

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Footage From	To		Description	S	L	mV	mSul	Sample No.	Length
651.5/652.0	665.3		660.8 - quartz - calcite - lensy						
665.3	674.0	42	Unit 3f very siliceous, white w. pale green seams. 669.6 - becomes finer grained, darker → aphanitic - black ± dark green - commonly finely laminated 670.8 - minor pyrite seam					py	
		48							
674.0	686/687		Unit 1/2 t/ts mainly very fine grained, dark green, moderately hard, weak foliation - some finely to coarsely banded zones. 676.2 qtz (cc) vein (2 cm); 676.3, 676.4 - pyrite lenses					py q-c	
			678.6-680 - abundant quartz - calcite lenses, veins; epidote alteration; same 682-682.6					q-c (ep alt'n)	
		48	684.2-686 - abundant quartz - calcite lenses, veins, chlorite alteration					q-c (ep alt'n)	
			686.2 vein 1-2 cm: quartz - chlorite - calcite gradational to next unit					q-c (chl alt'n)	
686/687	723.4		Unit 2/1t - medium to dark green, relatively hard, - more siliceous than previous unit					Q-cl-c	
			pyrite 0.1% - conc in thin seams @ 689.2-689.4, 690.0, 691.3, 701.6, 697.6 (dissem), 704.5					py	
		63	broken core 686.5-688.7, 687.5, 688, 691.2-691.5 ± gouge @ 691.2					py Q Q ± py	
			quartz veins 686.9-687.3 (several = 70% of interval), 692.7 (1-2 cm), 693.3 ± py - 1 cm						
			from 700.5 paler green from epidote alteration associated with quartz-calcite lenses -702.5					py	
		54						py q-c (ep alt'n)	
		55	from 705 variable 2/1t, ts dark grey-green to medium grey - 2-5% biotite 707-709					py	
			pyrite 0.1%, local conc. @ 713.5, 718.1; scattered quartz-(calcite) lenses						
			quartz veins: 713.5-714.2 ± patches 2-3 cm of quartz-calcite, lenses of chlorite, t dissem'd patches pyrite) 720.2 (1 cm) ± epidote lenses at start					py Q-c-(cl-py)-ep	
		50	structures: 711-711.2 minor gouge, broken core ± pyrite - 719.7					py	
		50	minor 3f 723-723.2					py Q	
723.4	726.0	42	~~Unit 3f/1 - white, siliceous - aphanitic to 725 - then coarser, mottled texture~~						
726.0	742.5	52	Unit 1/2 t, ts - very finely laminated, dark green, moderately soft. from 739 contains abundant siliceous lenses → Unit 2t + discrete siliceous intervals					Q py	
		55	intervals of 3f/c - hard, dark grey with white spots (plagioclase? ± quartz phenocrysts) @ 733.2-734.4, 735.7-735.9, 740.1-740.3, 741.0-741.1						
		55	veins: quartz 735.5 (1 cm) + blob → 735.8 (1-2 cm - folded), 736.8-739.2 (60-70% vein - folded), 726.5 (<1 cm) ± ct, py (at start) 742-743 (1-2%)					py Q py (x) Q ± ct, py py	
			pyrite: 727.5, 728.3-729.5 (2-3% in a few seams), 735.5 ±						
742.5	760.0	45	Unit 2t/1 - similar to end of previous unit - siliceous lenses in fairly hard dark green matrix - some extremely finely banded intervals @ Unit 1/2 t/ts 743-747, 748.6-748.5 - other zones are gradational and partly mixed. 745-747 abund. quartz-carbonate lenses + epidote alteration. ; pyrite 0.1-0.5% late quartz veins 0.5-1 cm 753.1, 758.5, smaller ones 759.2, 759.3, 761.5 (quartz-calcite): 757.6 pyrite - seams and patches @ 748.8, 753.9 (± cp), 754.8, 754.9, 756.5 ± py + py seam 748.7					py py (x) cp - py py	
		45	pyrite - minor seams 758-760 - overall 0.5% more siliceous → 3f @ 757-758 - gradational to next unit					py py q ± c (chl alt'n)	
760.0	766.0	54	Unit 2ts - extremely finely laminated hard to soft. fresh, ts dark green, softer. altered - to light yellow - pink epidote - ankerite (?) ± hematite @ 763-766. assoc. with late quartz-calcite veins - ± py veins @ 764.					q-c py q-c	
766.0	778.0		Unit ~~3f~~ 3/2f kink folds locally moderately developed @ 761-761.5 - plag ϕ - 764.5-765.9 very hard - medium green - mottled to lensy - locally softer 0.2-0.5% pyrite ± in seams					py	

Drill H ɜ Record

Comineo

8/11

Property	District	Hole No. 90-3	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	Sample No.	Length
760.0	778.8		Unit 3		
		50			
778.8	781.2		Unit 1f/t - dark green - moderately soft - massive, very fine grained quartz vein + chl ± py 781.0-781.2 (1-2cm)	Q-cl-(py)	
781.2	823		Unit 3f ± p medium green, hard, chilled margin - grades to light green, mottled, very hard core -		
		45	3/2f ± p moderately banded: veins: quartz 785.5 (5cm), 788.5 (1cm ± py), 796.6, 797.5 (both ± py) 798.0-798.2 (± py)	Q	
			pyrite 0.1-0.3% conc. @ 789.8 ± quartz @ 792.5-793.5	py Q ± py	
		55		Q ±	
		55	797.7 minor gouge	Q ± py	
		53	802.0 - 802.4 Unit 1t - v. fine grained, dark green - 8% py	py	
			804.5 - 1cm 25-40% py	py	
			quartz veins 806.9 (<1cm), 807.7 (1cm), 813.3 (1cm ± py), 818 (<1cm + coarse py cube) - @ 817.5, 819.1 (<1cm)		
		48	810.5 - 811.7 Interval Unit 1t dark green, very fine to fine grained, moderate hardness	py Q	
			814 - 815 - felsic lenses look something like smeared fragments - up to 1cm wide - in more chloritic groundmass - composition grades to 3/2.	Q ± py	
		50	823.2 - 823.5 quartz - chlorite vein (5cm - 10cm - folded?)	Q ± py	
		53	823 - coarser grained - scattered blue quartz phenocrysts - locally >5%		
823.0	838.0		Unit 5i - coarser texture than before, 2-5% blue to grey quartz phenocrysts - pale green groundmass + darker chloritic lenses, veins 826.4 (2cm); 826.6, 826.9 (<1cm each),	Q-cl	
		58	pyrite 0.2-0.5% - slightly concentrated in seams seams	Q	
		59	834.9 quartz vein - braided (1-2cm)		
			836.2 1-2mm gouge	Q	
838.0	853.0	54	Unit 1/2 t/ts - dark to medium green - finely laminated, generally soft	q-c	
			pyrite 0.1% quartz - calcite (early) veinlets ~ 839-840.5 (several <1cm)		
			842-844.5 - pale green - possibly bleached andesite or Unit 2/3t/ts		
			844.6 1-2mm gouge		
			848-852 - scattered epidote-rich patches 0.3-2cm - probably fragments		
			852.4 quartz ± chlorite - braided - 2cm 852.6, 852.7 1-2mm gouge	Q-cl	
853.0	889.1	54	Unit 5i - aphanitic margin - grades to coarser texture with 3-8% quartz phenocrysts 1-2mm.		
		52	- phenocrysts vary in abundance in irregular patches - color - grey to blue		
			quartz veins 859.9; 861.5 (2-3cm ± chlorite), 865.9 <1cm); 869-870.3 (2cm - folded), 873.5	Q	
		54	(2cm), 869.8 (1cm) ± py, 871.3 (1-2cm, folded)	Q-cl	
			pyrite 0.1-0.2% conc. in patches, seams 866.0, 869.5-869.6, 870.8 (+ pink carbonate - rhodochrosite?)		
			868.9 - 870.6 Unit t/ts ± intervals of Unit t - mainly medium green - very fine grained	py	
		55	quartz veins: 878.5 (2cm - 3cm, braided), 885.0 - 885.3 (3 veins 1-2cm ± chlorite) ± pyrite	Q ± py, py	
			<1cm @ 876.0, 877.5, 882.5,	Q py, rhodocrosite	
				Q	
				Q-cl ± py	

Drill Ho.. Record

Cominco

Property	District	Hole No. 90-3	9/11
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	Footage To		Description	S	L	M V	M Sul	Sample No.	Length
853.0	889.3		veins: quartz (<1cm) 886.8,						
		49							
889.3	891.6	45	Unit 7d - medium green, fairly hard, aphanitic ; Unit 7t - coarser - dark green, soft 892.0 - 892.6.					Q	
891.6	900.3		Unit 5t - as 853.0 - 889.1 - but finer grained - fewer quartz phenocrysts					Q	
			veins: quartz 892.5 (3cm), 891.6 (<1cm), 896.9 (1-2cm), 897.4 - 897.9 (80% quartz) + chlorite.					Q	
		55	pyrite <0.1%, conc. slightly in seams @ 892.5 898.2 - 898.3, 898.4					Q	
900.3	904.1		Unit 7t - medium to dark green, very fine to fine grained - pyrite - conc. in seam @ 902.5					py	
904.1	906.9		Unit 5t - similar to 891.6 - 900.3 - 2-5% quartz phenocrysts 904.9-905.3 vein-qz-chl±py folded					Q-cl ± py	
906.9	984.8		Unit 7t - medium to dark green - moderately shaft , pyrite <0.1 %						
			minor epidote-rich patches >1cm, more ~ 2-3 mm.						
			910-911 - a few spots - lenses of coarse pyrite quartz - (chlorite ± py) 912.5					py	
		50	veins 913 qz (4cm) <1cm), 916.9 (qz - 1-2cm - braided), 918.2 (qz, lensy up to 1cm), 925.9 (qz 1-2cm -					Q	
			folded), 930.9 (qz ± chl, py, <1cm), 921.9 (qz - chl - 1cm - folded)						
		42	917-919 - Dike Unit 8 f/dp - plag ϕ 10% ± quartz ϕ in medium green, hard groundmass					Q	
			919-923.5 medium green, very fine grained ± bio flakes (1-2%) @ 922.5-923.5 (alt'd to chlorite)					Q	
		50						Q-cl	
		55	929 - moderately porphyritic 10%-15% epidote spots - probably after plag/oclase					Q	
		50	variable tuff - very fine to fine, some chlorite-rich lenses - some weak banding					Q-cl, py)	
			veins: quartz - chlorite ± pyrite : 935.2 (1cm), 935.6-935.9; 936.1, 936.2 (<1cm); 937.4-937.6 (2-3cm, folded)					Q-cl	
		40	942-942.3; 942.4, 942.5 (chlorite), chlorite - quartz), 943.6 (2cm), 945.1 (<1cm), 947.3 (1cm),					Q-cl-py	
			950 - quartz - coarse pyrite (1cm)					Q-cl-py (late)	
			940.3 quartz - calcite (leached) - pyrite vein - appears late (<1cm)					Q-cl-py	
		50						Q-cl-q	
			veins: 953.0-953.4, 953.6 (1-2 cm - folded) - quartz ± pyrite, also 954.2 (1cm), 955.2, 955.8-956.2,					Q-cl	
		40	956.4-956.6 qtz - py (1-3cm folded) + pyrite seams, py seams continue to 956.9					Q-py	
			quartz: 958.8-959.2 2-4 cm - folded, 960 (2-3cm - folded); 960.8-961 - quartz + coarse pyrite					Q ± py	
		51						py Q-py	
								Q-py	
			Intervals of unit 9f - 975.3-975.5, 977.6-978.3,						
			972.6 quartz ± calcite (<1cm) 975.5 - quartz ± cpy, py 2-3cm; 975.7 (quartz - calcite - chlorite - 1cm - late?)					q-c	
		56	976.0 ± pyrite concentration					q±cpy	
			982.0-983.0 - a few up to 1.5cm quartz - calcite - chlorite ± pyrite, folded					q-c-cl - late?	
			984.0 - quartz - chlorite - calcite (2-5mm) - folded. 984.8 (1cm) - qtz-chl (±cc)					py	
								q-c-cl ± py	
								Q-cl-c	
984.8		40	Unit 9f - light green, siliceous, finely laminated in part - 0.2-0.5% pyrite						
			@ 987 - grades to Unit 3/2f/t.					q-py	

Drill Hole Record

Property	District	Hole No. 90-3	10/11
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage From	To		Description	S	L	M V	M Sul	Sample No.	Length
987	1034		Unit 9/8f veins: 989.2-989.5 quartz-pyrite (2-5cm - folded), 990.8 (1cm), from 993 2-5% biotite - mainly in streaks lenses, epidote from 994-996 (light green)					Q-py	
		57	993.0-993.6 several veins quartz±chlorite @993.3 ± po-cpy					po-cp Q±cl	
			990-992 1% dissem pyrite, commonly coarse, 1000.3 minor conc. pyrite					py	
			1003.3-1003.5 several quartz-calcite stringers, lenses, 1004.2, 1004.5 - qz (<1cm)					q-c	
		56	1005.0 - chl-qtz - irregular 3cm 1005.8 1cm biotite 1006.0-1006.3 - two quartz-chlorite					Q-cl bio	
			from 1008 → commonly granular to lensy Unit 2/3t - locally 3-5% biotite in (1-3cm)						
			seams and disseminated - esp. 1014-1015						
		50	siliceous lenses throughout						
			0.2-0.5% dissem po, py - local coe po-py±cp @ 1021.5						
			finergrained, more siliceous 1018-1020.						
		47	siliceous fragments @ 1022.8 ~1-2cm					po-py-cp	
			1027.1-1027.3 quartz-vein					Q	
			minor biotite 1028-1029						
		48	1031.6-1033.0 Unit 3fs very siliceous - locally kink folds in some layers - origin?						
1034-1049			Unit 8/9 t/fs - interlayered siliceous layers and as 1031.6-1033.0 and less siliceous layers a previous unit average a few cm thick to 20cm thick for siliceous layers (30% of unit					Q or silt layer	
			1035.6 2cm siliceous layer or vein. 1040.5 1 cm quartz-carbonate lens/vein.					Q-c-cl-ct-py (late?)	
		56	1036.8 1-2cm quartz-chlorite-pyrite-calcite vein (late?)						
			1046.0-1046.8 Possible Unit 3i - contains a few quartz phenos					Q ± po	
			1047.6-1047.9 - 2 veins - quartz 1-2cm, first ± blob of pyrrhotite						
1049-	1088.2		Unit 8/9 t - more uniform ≈ 987-1034. light green - biotite 2-5% 1056.5-1058						
		60	1054.8-1055.8 - 80-70% quartz vein - mixed intimately with rock; 1058.8 (1cm)					Q	
			1064.4 - quartz - calcite (late) - 1cm					Q	
		56	biotite 1-2% in lenses thru most of unit.						
			1064.8 - more biotite - siliceous lenses or vein lets, patch of pyrrhotite					po q-c (late)	
			1068.0-1068.4 - Quartz vein + patch po at start, 1068.6-1070 - Q±po vein 2-4cm folded					Q po q	
			1069.5 - <1cm quartz vein (late?)						
		56	1070.3-1071.5 - Unit 9f/t - very siliceous						
			1079.0-1079.6 a few quartz-calcite veins 1-3cm (early)					q-c	
		58	1081.2 Q-ct-cl vein (4cm) - calcite, chlorite are patchy					Q-c-cl	
			1082-1085 - 3-4% biotite 1084.5-1085.0 a few lenses pyrrhotite up to 2mm					po	
			1085.8-1087.3 - Unit 3f/t - very siliceous						
1088.2	1091.0	61	Unit 9.f/t very siliceous as previous lenses - aphanitic - mottled, pale green						
1091.0			Unit 8/9t as 1049-1088.2					Q	
			1091.2 - 3-4 cm vein quartz - folded						
	to	58 66	1099.8 - quartz ± chlorite vein (<1cm) late?					Q-cl (late?)	

Drill Hc Record

Property	District	Hole No. 90-3	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

11/11

Footage From	To		Description	S	L	MV	MSul	Sample No.	Length
			Unit B/gt minor lenses of biotite thruout						
			1108.2 - 1109.6 Unit 3f/t - very siliceous						
		55	1104.0 - 1104.6 a few quartz veins 1 cm folded - 1104.7 - 1104.8 quartz vein 2-3 cm folded						
			1104.9 - 1105.0 several quartz - calcite veinlets						
		56	1113.0 - 1115.2 Unit 3f/t - very siliceous, minor biotite, same 1117.8-1118.0						
			1115.0 seam - pyrrhotite # quartz 1-2 mm						
END of HOLE									

S = Structure

L = Lithology

MV = quartz, carbonate, chlorite veins

MSul = sulfide

PACKSACK-WD

ECSTALL R./90-1,3

Job V 90-0270R
Report date 31 JUL 1990

LAB NO	FIELD NUMBER	SiO2 %	TiO2 %	Al2O3 %	Fe2O3 %	FeO %	MnO %	MgO %	CaO %	Na2O %	K2O %	P2O5 %	Ba %	LOI %	TOTAL %
R9006744	90-1-75'	67.58	0.43	16.40	3.53		0.06	1.81	1.30	4.40	2.13	0.07	0.05	2.14	99.90
R9006745	90-1-131'	68.18	0.29	14.38	5.43		0.08	3.26	0.90	4.48	0.65	0.05	0.02	2.24	99.96
R9006746	90-1-172'	55.40	0.82	17.59	9.87		0.14	4.00	2.17	5.35	0.72	0.04	0.01	3.11	99.22
R9006747	90-1-191'	42.14	1.13	13.93	11.52		0.27	8.26	9.71	1.80	0.12	0.11	0.01	10.04	99.04
R9006748	90-1-283'	54.00	0.66	17.61	8.59		0.19	3.86	4.71	5.26	1.31	0.09	0.02	3.11	99.41
R9006749	90-1-373'	53.35	0.67	17.46	11.02		0.10	5.72	0.63	4.06	1.16	0.10	0.03	4.96	99.26
R9006750	90-1-485'	67.21	0.34	13.98	5.44		0.09	4.69	0.85	3.20	0.88	0.07	0.02	2.92	99.69
R9006751	90-1-522'	71.64	0.33	12.15	4.29		0.10	2.84	2.90	2.04	0.54	0.06	0.01	2.39	99.29
R9006752	90-1-531'	56.37	0.71	19.03	7.53		0.13	4.15	4.13	3.80	0.86	0.09	0.02	3.74	100.56
R9006753	90-1-720'	47.69	0.74	21.25	11.66		0.18	7.15	0.58	3.34	1.78	0.08	0.09	5.92	100.46
R9006754	90-1-753'	58.69	1.00	14.86	10.14		0.14	5.78	3.34	2.90	0.02	0.14	0.01	3.50	100.52
R9006755	90-1-771'	41.10	0.66	16.29	8.93		0.21	10.50	8.12	2.55	0.33	0.07	0.04	10.27	99.07
R9006756	90-1-779'	46.37	0.82	17.65	16.41		0.13	7.81	0.45	0.46	2.13	0.15	0.12	7.07	99.57
R9006757	90-1-804'	54.43	0.77	18.31	9.01		0.18	6.17	1.56	4.59	0.99	0.12	0.05	3.84	100.02
R9006758	90-1-837'	58.75	0.56	15.46	7.19		0.16	4.33	5.28	5.00	0.30	0.09	0.01	2.99	100.12
R9006759	90-1-862'	56.96	0.58	16.45	8.00		0.18	6.40	3.39	3.00	1.58	0.08	0.08	3.25	99.95
R9006760	90-3-178'	61.19	0.52	15.35	7.39		0.17	3.79	3.10	4.63	0.65	0.08	0.01	2.70	99.58
R9006761	90-3-183'	69.22	0.30	13.27	5.07		0.13	2.90	2.36	4.29	0.57	0.04	0.01	1.75	99.91
R9006191	76	56.53	0.65	18.04	8.60		0.13	5.12	2.00	5.98	0.06	0.10	0.01	3.00	100.22
R9006192	140	77.33	0.24	12.81	1.14		0.03	0.57	1.35	0.95	3.01	0.01	0.28	1.61	99.33
R9006193	155	73.81	0.22	10.59	5.25		0.05	2.81	1.16	2.68	0.79	0.02	0.08	2.59	100.05
R9006194	165	42.80	0.94	17.54	12.32		0.16	11.59	7.78	1.28	0.23	0.14	0.01	4.83	99.62
R9006195	224	66.42	0.33	15.08	7.28		0.12	2.83	0.94	1.67	2.43	0.05	0.16	2.92	100.23
R9006196	239	44.60	0.86	17.96	11.72		0.17	11.86	2.29	2.36	0.65	0.06	0.08	7.59	100.20
R9006197	289	49.54	1.09	17.40	13.22		0.19	7.15	2.04	4.39	0.05	0.13	0.01	4.77	99.98
R9006198	296	65.46	0.34	15.23	6.08		0.06	5.46	0.15	0.63	2.68	0.04	0.10	3.72	99.95
R9006199	302	43.85	0.69	16.52	10.60		0.18	13.03	7.18	2.34	0.05	0.06	0.01	5.39	99.90
R9006200	311	62.63	0.72	14.54	7.58		0.21	4.19	3.46	2.65	0.60	0.09	0.01	3.24	99.92
R9006201	363	74.76	0.24	11.66	3.89		0.09	2.28	1.41	3.37	0.38	0.03	0.02	1.88	100.01
R9006202	370	44.46	0.97	14.64	11.78		0.18	14.68	5.08	2.64	0.04	0.03	0.01	5.34	99.85
R9006203	378	48.13	1.88	12.85	15.94		0.40	7.85	4.79	2.16	0.03	0.08	0.01	5.69	99.81
R9005226	ECSTALL-1	52.76	1.19	16.24	13.03		0.13	6.39	1.28	4.85	0.03	0.12	0.01	3.80	99.83
R9005227	ECSTALL-2	51.62	0.81	19.39	9.39		0.20	5.92	2.98	4.39	0.65	0.13	0.02	3.89	99.39
R9005228	ECSTALL-3	53.75	1.16	15.32	9.12		0.10	5.91	6.12	4.00	0.13	0.17	0.01	4.15	99.94

10.3 APPENDIX 3 Assay Results

PACKSACK-WD

Job V 90-0269R
Report Date 8 AUG 1990

ECSTALL R./90-1,2

LAB NO	FIELD NUMBER	DRILL INTERVAL FROM (METRES)	TO	Au PPB	Wt Au GRAM	Ag PPM	Cu PPM	Zn PPM	Pb PPM
R9006690	90-1	144.50	146.80	<10	5	.8	476	4580	16
R9006691	90-1	585.60	589.70	<10	5	<.4	436	96	5
R9006692	90-1	589.70	594.20	<10	5	<.4	420	92	11
R9006693	90-1	594.20	600.00	<10	5	<.4	49	71	<4
R9006694	90-1	600.00	605.50	<10	5	<.4	168	83	<4
R9006695	90-1	605.50	611.30	<10	5	<.4	786	95	<4
R9006696	90-1	611.30	618.00	<10	5	<.4	286	57	<4
R9006697	90-1	618.00	621.00	<10	5	<.4	201	57	<4
R9006698	90-1	621.00	624.80	<10	5	<.4	203	54	<4
R9006699	90-1	624.80	630.00	<10	5	<.4	375	116	<4
R9006700	90-1	630.00	635.00	<10	5	<.4	143	282	<4
R9006701	90-1	635.00	640.00	<10	5	<.4	201	802	<4
R9006702	90-1	640.00	643.00	<10	5	<.4	203	627	<4
R9006703	90-1	643.00	647.00	<10	5	<.4	154	298	<4
R9006704	90-1	647.00	652.00	<10	5	<.4	223	485	14
R9006705	90-1	652.00	657.00	<10	5	<.4	376	1450	7
R9006706	90-1	657.00	662.00	<10	5	<.4	404	678	<4
R9006707	90-1	662.00	667.00	<10	5	<.4	550	1450	<4
R9006708	90-1	667.00	672.00	<10	5	<.4	613	1170	7
R9006709	90-1	672.00	677.00	<10	5	<.4	254	900	<4
R9006710	90-1	677.00	682.00	<10	5	<.4	138	1050	<4
R9006711	90-1	682.00	687.00	<10	5	<.4	294	205	4
R9006712	90-1	687.00	692.00	<10	5	<.4	155	164	<4
R9006713	90-1	692.00	697.00	<10	5	<.4	438	158	<4
R9006714	90-1	697.00	702.00	<10	5	<.4	298	198	4
R9006715	90-1	702.00	707.00	<10	5	<.4	279	281	4
R9006716	90-1	707.00	712.00	<10	5	<.4	193	319	<4
R9006717	90-1	712.00	717.00	<10	5	<.4	168	384	<4
R9006718	90-1	717.00	722.00	<10	5	<.4	141	396	<4
R9006719	90-1	722.00	727.00	<10	5	<.4	170	267	4
R9006720	90-1	727.00	729.50	24	5	.8	348	383	8
R9006721	90-1	729.50	732.50	24	5	1.6	240	2030	200
R9006722	90-1	732.50	736.20	232	5	10.9	1010	4710	1820
R9006723	90-1	736.20	737.50	<10	5	<.4	81	473	10
R9006724	90-1	737.50	739.20	40	5	2.1	216	5340	537
R9006725	90-1	739.20	744.20	<10	5	1.4	273	1770	309
R9006726	90-2	556.00	561.00	<10	5	.5	624	140	7
R9006727	90-2	561.00	566.00	<10	5	<.4	90	143	7
R9006728	90-2	566.00	571.00	<10	5	.5	460	210	4
R9006729	90-2	571.00	575.00	<10	5	<.4	205	481	<4
R9006730	90-2	575.00	580.00	<10	5	<.4	247	424	<4
R9006731	90-2	606.00	611.00	<10	5	<.4	295	288	4
R9006732	90-2	713.80	718.00	<10	5	.6	218	14	4
R9006733	90-2	718.00	723.00	<10	5	<.4	425	60	5
R9006734	90-2	723.00	728.20	56	5	.9	1260	68	4
R9006735	90-2	728.20	732.00	<10	5	<.4	114	77	<4
R9006736	90-2	732.00	737.40	<10	5	<.4	272	130	5
R9006737	90-2	737.40	742.70	<10	5	<.4	119	116	4
R9006738	90-2	742.70	746.20	<10	5	.4	680	96	<4
R9006739	90-2	746.20	749.80	<10	5	1	1970	126	10
R9006740	90-2	749.80	754.00	<10	5	.5	776	90	<4

PACKSACK-WE

ECSTALL RIVER

JOB V 90-0390R
REPORT DATE 1 SEP 1990

LAB NO	FIELD NUMBER	DRILL INTERVAL FROM (METRES)	TO	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	PB PPM
R9006741	90-2	754.00	759.00	<10	5	<.4	553	91	14
R9006742	90-2	810.00	815.00	<10	5	<.4	911	79	7
R9006743	90-2	815.00	820.00	<10	5	<.4	759	51	<4
R9008827	90-2	888.00	892.00	<10	5	<.4	29	37	47
R9008828	90-2	892.00	897.00	<10	5	<.4	102	46	<4
R9008829	90-2	897.00	902.00	<10	5	<.4	92	35	15
R9008830	90-2	902.00	907.00	<10	5	<.4	130	44	<4
R9008831	90-2	907.00	912.00	<10	5	<.4	273	51	7
R9008832	90-2	912.00	917.00	<10	5	<.4	164	152	<4
R9008833	90-2	917.00	922.00	<10	5	<.4	179	85	4
R9008834	90-2	922.00	927.00	<10	5	<.4	412	54	<4
R9008835	90-2	927.00	932.00	<10	5	<.4	290	52	<4
R9008836	90-2	932.00	934.00	<10	5	<.4	162	75	<4
R9008837	90-2	934.00	939.00	56	5	.8	1260	228	15
R9008838	90-2	939.00	944.00	<10	5	<.4	242	90	<4
R9008839	90-2	944.00	948.00	<10	5	<.4	269	101	<4

LAB NO	FIELD NUMBER	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	PB PPM
R9010918	148	60	5	25.3	62	E17800	E41500
R9010919	203	800	5	86.4	392	E170000	E54500
R9010920	248A	<10	5	0.7	37	365	136
R9010921	248B	<10	5	0.7	11	138	123

I=INSUFFICIENT SAMPLE X=SMALL SAMPLE E=EXCEEDS CALIBRATION C=BEING CHECKED R=REVISED
IF REQUESTED ANALYSES ARE NOT SHOWN /RESULTS ARE TO FOLLOW

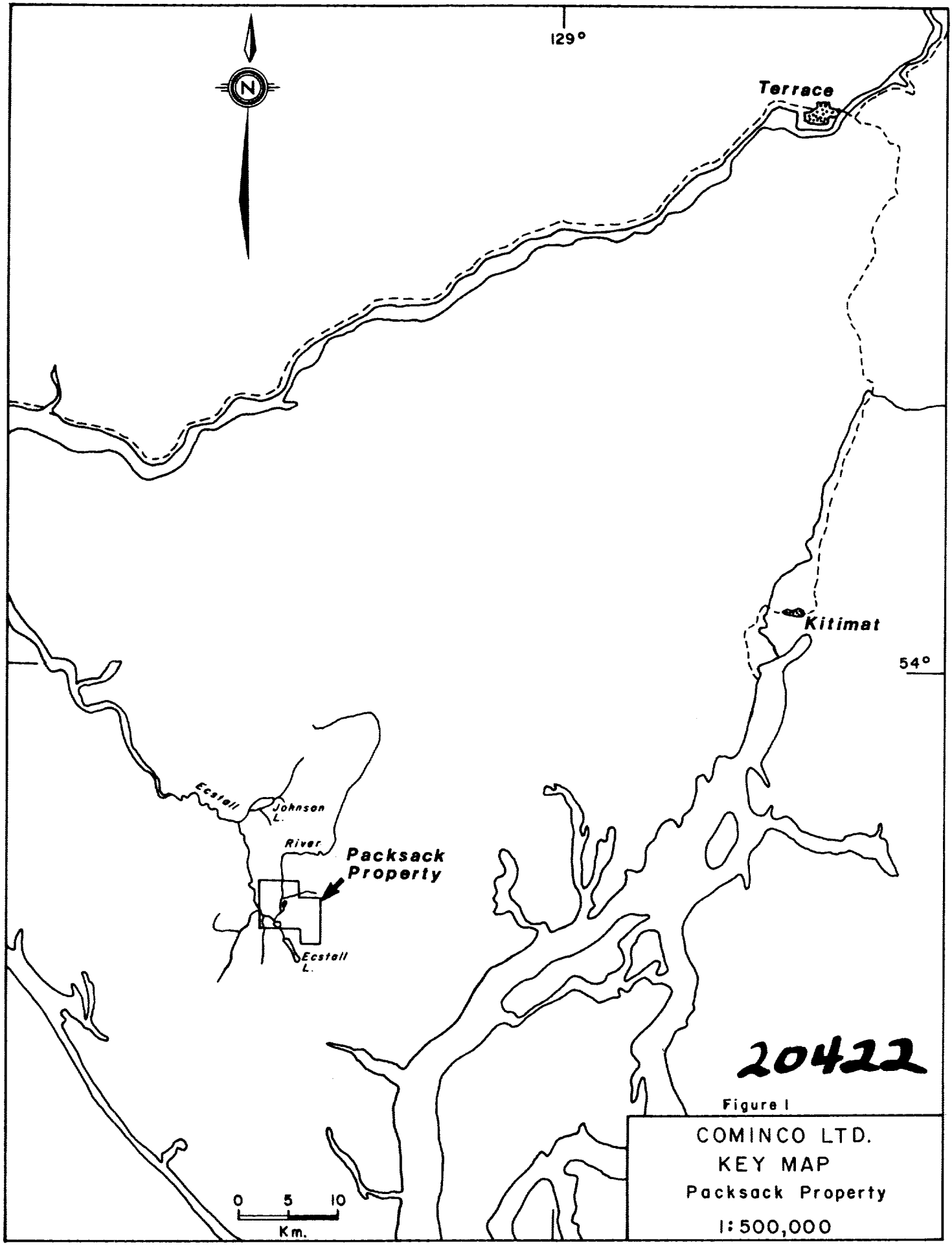
ANALYTICAL METHODS

AU AQUA REGIA DECOMPOSITION / SOLVENT EXTRACTION / AAS
WT AU THE WEIGHT OF SAMPLE TAKEN TO ANALYSE FOR GOLD (GEOCHEM)
AG AQUA REGIA DECOMPOSITION / AAS
CU AQUA REGIA DECOMPOSITION / AAS
ZN AQUA REGIA DECOMPOSITION / AAS
PB AQUA REGIA DECOMPOSITION / AAS

APPENDIX 4

STATEMENT OF EXPENDITURES

Salaries			
Permanent			
M.J. Casselman	21 days x $ 347.10	$ 7,289.10	
A.P. Roberts	52 days x $ 286.83	14,915.16	
Temporary			
D. Hick	27 days x $ 166.28	4,489.56	
Contractor			
J. Payne	37 days x $ 400.00	14,800.00	
			$ 41,493.82
Communications			1,000.00
Transportation/Mobilization			
Helicopter		$ 95,000.00	
Vehicle/Freight		2,000.00	
Expediting		2,500.00	
Camp Costs		20,000.00	
Expense Accounts		6,000.00	
Geochemistry & Assaying		2,000.00	
Drill Site Preparation		3,000.00	
Drafting & Report Writing		4,000.00	
Diamond Drilling including Fuel		90,000.00	
			224,500.00
	Total Expenditures		$ 266,993.82



20422

Figure 1

COMINCO LTD.
KEY MAP
Packsack Property
1:500,000

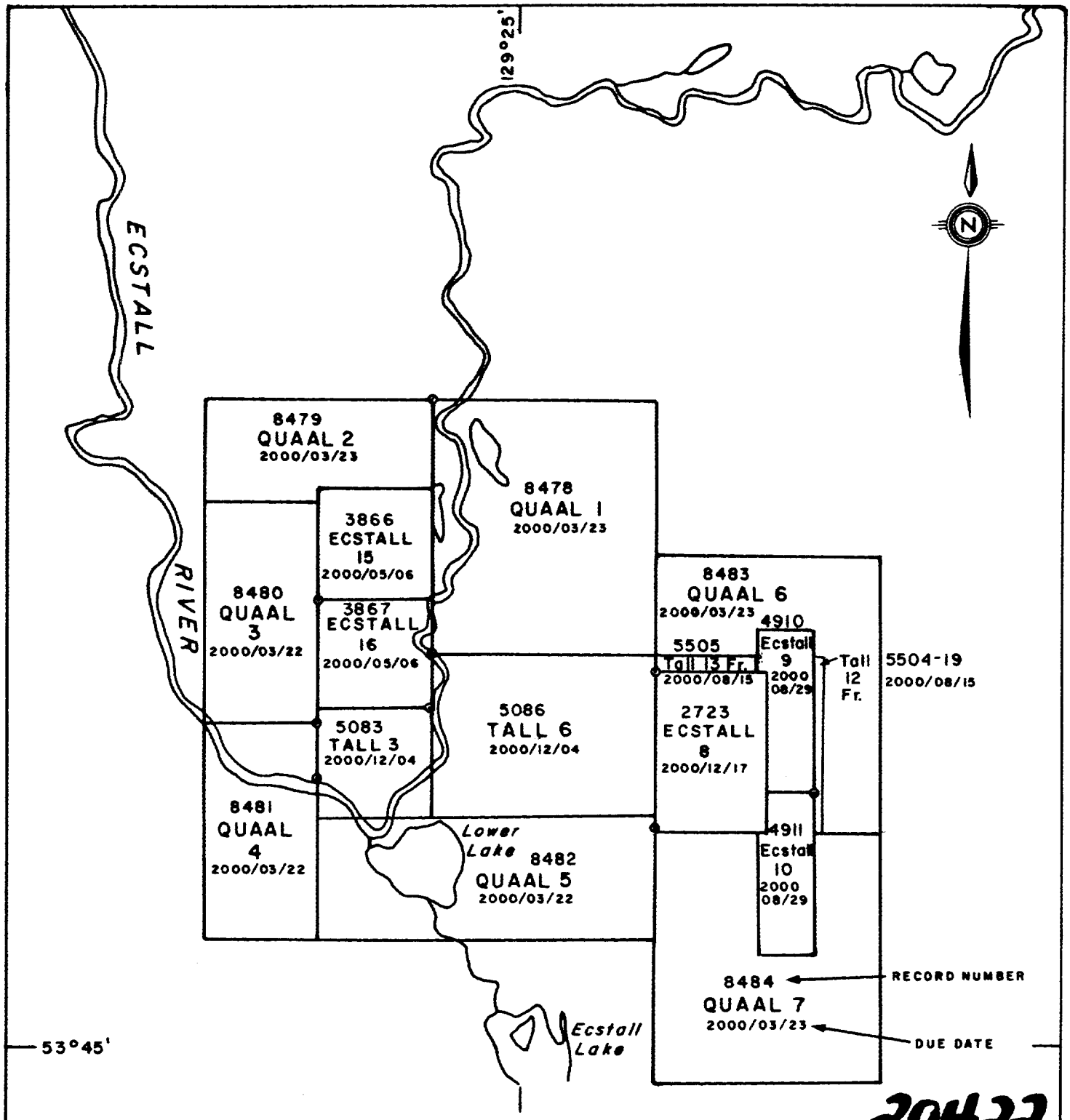


Figure 2

20422

0 1 2 Km.

1:50,000

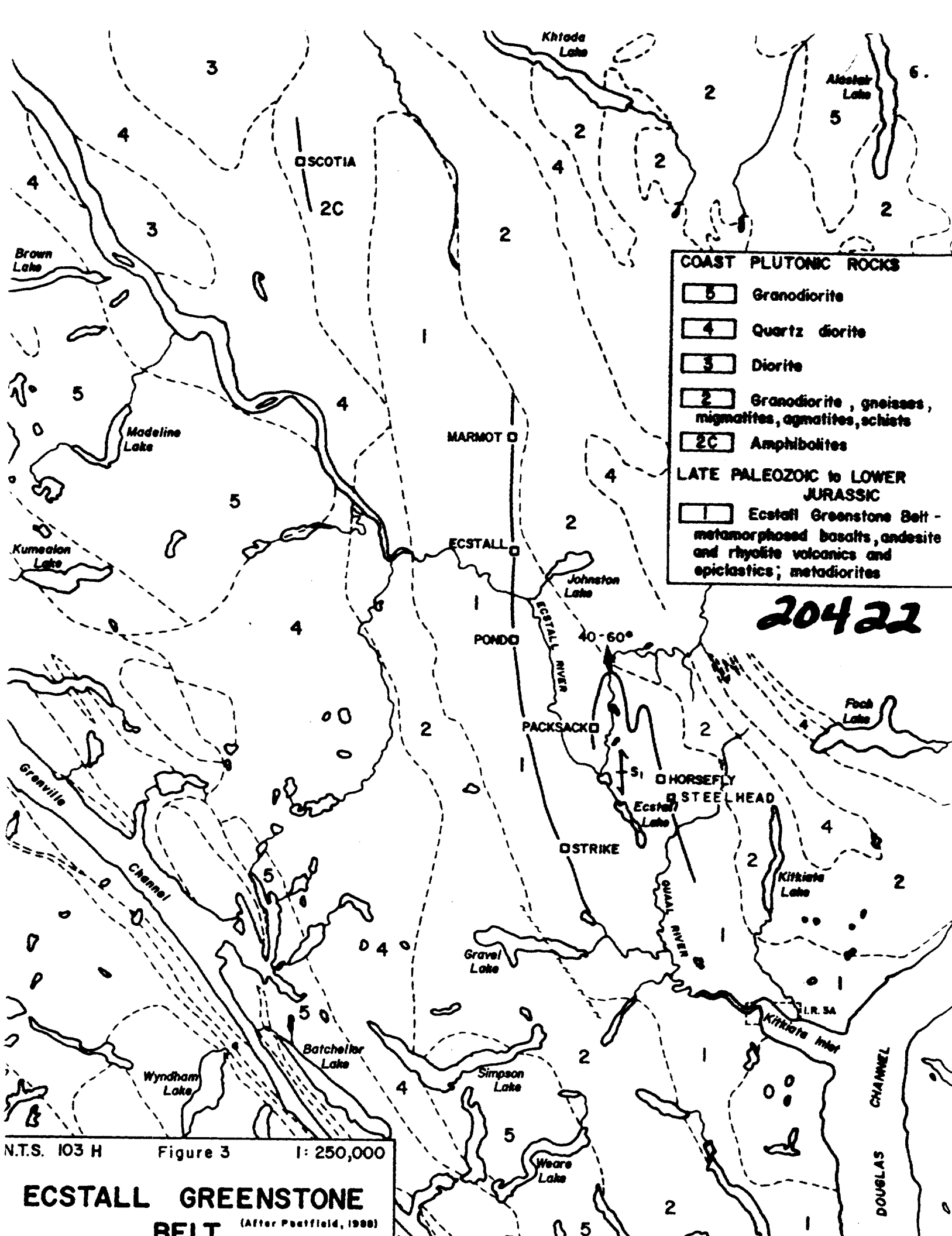
COMINCO LTD.

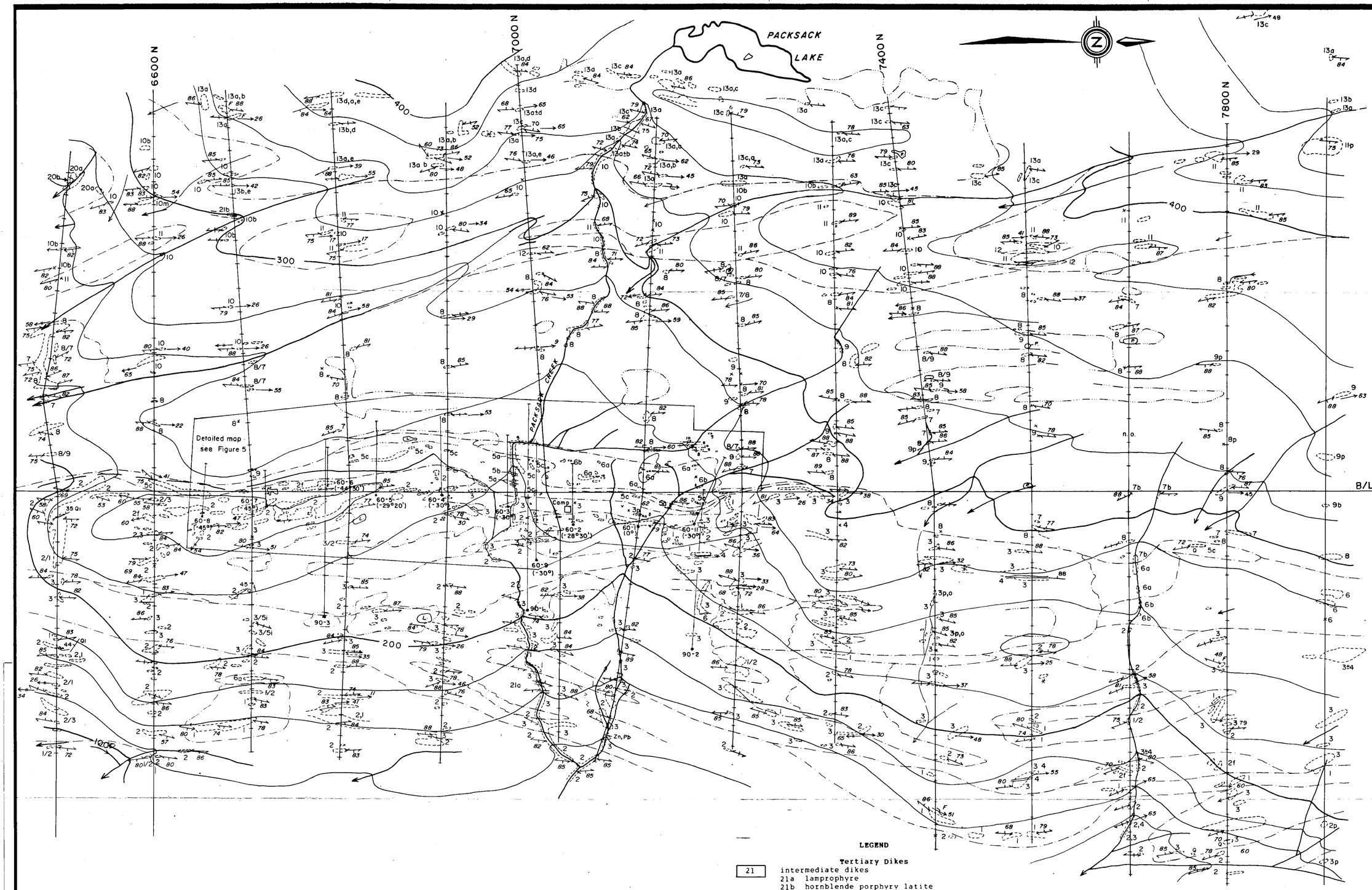
CLAIM MAP

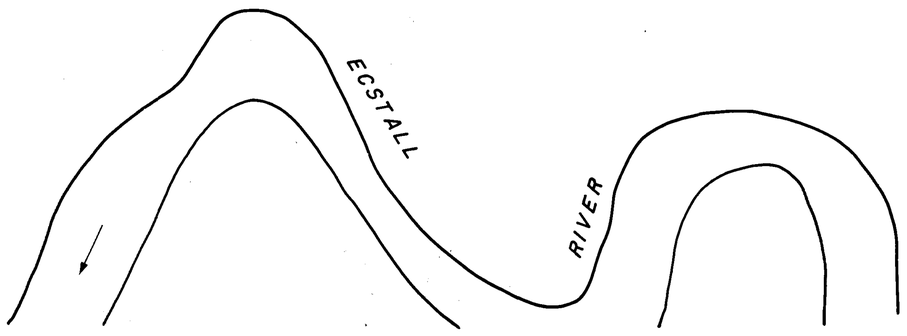
Packsack Property

Skeena Mining Division

N.T.S. 103 H/14 W


Khtada Lake
Alastair Lake
SCOTIA
2C
Brown Lake
Madeline Lake
MARMOT
ECSTALL
Kumealon Lake
Johnston Lake
ECSTALL RIVER
PONDO
40-60°
PACKSACK
Foch Lake
HORSEFLY
STEELHEAD
Ecstall Lake
STRIKE
Grenville
Channel
Kitkiata Lake
CHASM RIVER
Gravel Lake
I.R. 5A
Kitkiata Inlet
Batchellor Lake
Wyndham Lake
Simpson Lake
Weare Lake
DOUGLAS CHANNEL
COAST PLUTONIC ROCKS
5 Granodiorite
4 Quartz diorite
3 Diorite
2 Granodiorite, gneisses, migmatites, agmatites, schists
2C Amphibolites
LATE PALEOZOIC to LOWER JURASSIC
1 Ecstall Greenstone Belt - metamorphosed basalts, andesite and rhyolite volcanics and epiclastics; metadiorites
20422
N.T.S. 103 H
Figure 3
1: 250,000
ECSTALL GREENSTONE BELT
(After Peatfield, 1988)





LEGEND

Tertiary Dikes

21 intermediate dikes
- 21a lamprophyre
- 21b hornblende porphyry latite
- 21c andesite (possibly older)

Cretaceous(?) Intrusive Rocks

20 Diorite/gabbro
- 20a diorite
- 20b gabbro, mafic diorite

major deformation and metamorphism

Paleozoic(?) Volcanic and Sedimentary Rocks

Interval 6 Sedimentary Rocks

13 platy sedimentary rocks,
- 13a white to grey quartzite
- 13b grey to green siltstone
- 13c dark grey to black argillaceous quartzite
- 13d biotite prominent in quartzite/siltstone
- 13e magnetite beds and magnetite-rich quartzite

Interval 5 Mafic and Felsic Volcanic Rocks

12 black argillite, commonly pyritic
11 rhyodacite/dacite flow/tuff
10 basalt to andesite tuff
- 10b biotite prominent
- 10m magnetite prominent

Interval 4 Intermediate Volcanic Rocks

9 felsite tuff
8 basalt/andesite tuff
7 dacite/andesite tuff

6 **Interval 3 Gabbro-Basalt/Andesite**
- 6a gabbro/diorite
- 6b basalt/andesite flow/tuff

5 **Interval 2 Massive Sulfide - Felsite**
- 5a massive sulfide
- 5b semi-massive sulfide
- 5c pyritic felsite
- 5i porphyritic (quartz-plagioclase) subvolcanic intrusion or flow
- 5d felsite dike (age uncertain)

Interval 1 Felsic to Intermediate Volcanic Rocks

4 black argillite
3 felsic tuff, flow, and subvolcanic intrusion
2 intermediate tuff and flow
- 2f abundant plagioclase phenocrysts

1 mafic tuff

SYMBOLS

- Outcrop border, small outcrop
- Outcrop seen at a distance but not visited
- Geological contact : defined, approximate
- Bedding
- Foliation (S1)
- Lineation (L1)
- Lineation (L2)
- Drill hole
- Grid line, station
- Sample station
- Contour line, interval 25 metres
- Creek
- Pond
- Boundary of open area, commonly swampy

0 50 100 150
Metres

N.T.S. 103 H/14

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,422

PACKSACK PROPERTY

Drawn by: JGP | Traced by: APR

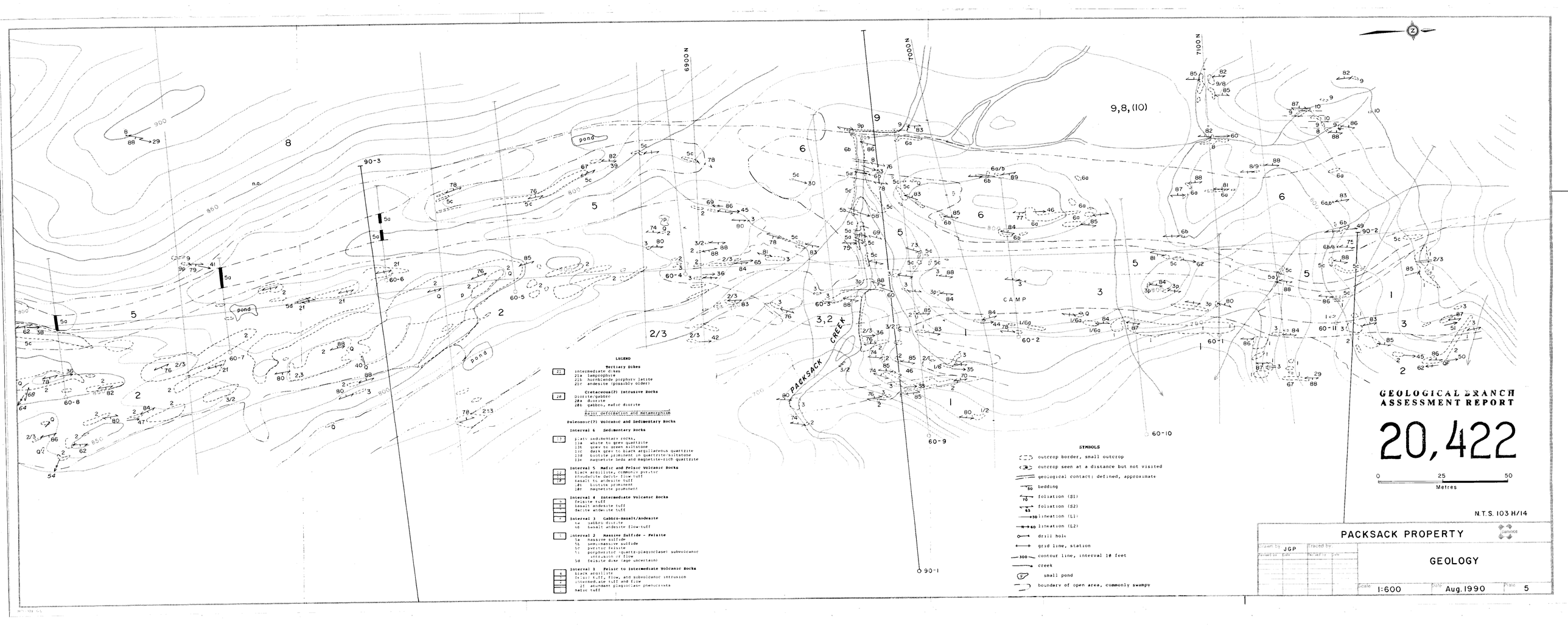
Revised by	Date	Revised by	Date

GEOLOGY

Scale: 1:2000 | Date: July, 1990 | Plate: 4

NCI - 117 - C.L.

FORM 210 0660


6900 N
7000 N
7100 N
90-1
90-2
90-3
60-2
60-3
60-4
60-5
60-6
60-7
60-8
60-9
60-10
60-11
CAMP
PACKSACK CREEK
9,8,(10)
pond
n.a.
LEGEND
Tertiary Dikes
21 intermediate dikes
21a lamprophyre
21b hornblende porphyry latite
21c andesite (possibly older)
Cretaceous(?) Intrusive Rocks
Diorite/gabbro
28a diorite
28b gabbro, mafic diorite
Major deformation and metamorphism
Paleozoic(?) Volcanic and Sedimentary Rocks
Interval 6 Sedimentary Rocks
13 platy sedimentary rocks,
13a white to grey quartzite
13b grey to green siltstone
13c dark grey to black argillaceous quartzite
13d biotite prominent in quartzite-siltstone
13e magnetite beds and magnetite-rich quartzite
Interval 5 Mafic and Felsic Volcanic Rocks
black argillite, commonly pyritic
rhyodacite clastic flow tuff
basalt to andesite tuff
biotite prominent
magnetite prominent
Interval 4 Intermediate Volcanic Rocks
felsite tuff
basalt andesite tuff
dacite andesite tuff
Interval 3 Gabbro-Basalt/Andesite
gabbro diorite
basalt andesite flow tuff
Interval 2 Massive Sulfide - Felsite
massive sulfide
semi-massive sulfide
pyritic felsite
porphyritic (quartz-plagioclase) subvolcanic intrusion of flow
felsite dike (age uncertain)
Interval 1 Felsic to Intermediate Volcanic Rocks
black argillite
felsic tuff, flow, and subvolcanic intrusion
intermediate tuff and flow
2f accumulated plagioclase phenocrysts
mafic tuff
SYMBOLS
outcrop border, small outcrop
outcrop seen at a distance but not visited
geological contact; defined, approximate
bedding
foliation (S1)
foliation (S2)
lineation (L1)
lineation (L2)
drill hole
grid line, station
contour line, interval 10 feet
creek
small pond
boundary of open area, commonly swampy
GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,422
0 25 50
Metres
N.T.S. 103 H/14
PACKSACK PROPERTY
GEOLOGY
Drawn by: JGP
Traced by:
Scale: 1:600
Date: Aug. 1990
Plate: 5

LEGEND

Tertiary Dikes

21c andesite (possibly older)

Paleozoic(?) Volcanic and Sedimentary Rocks

Interval 4 Intermediate Volcanic Rocks

9 felsite tuff
8 basalt/andesite tuff
7 dacite/andesite tuff

6 **Interval 3 Gabbro-Basalt/Andesite**

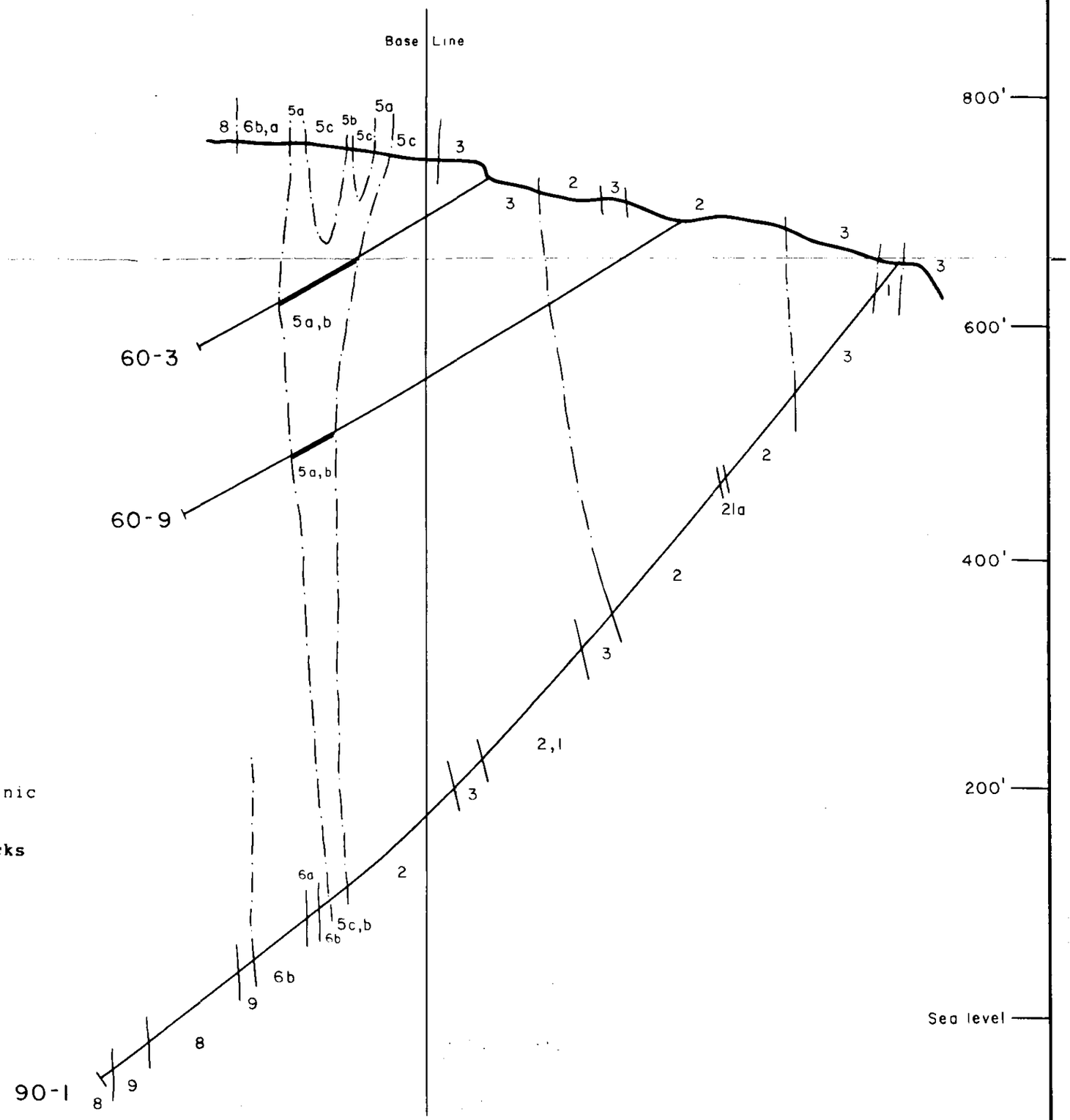
6a gabbro/diorite
6b basalt/andesite flow/tuff

5 **Interval 2 Massive Sulfide - Felsite**

5a massive sulfide
5b semi-massive sulfide
5c pyritic felsite
5i porphyritic (quartz-plagioclase) subvolcanic intrusion or flow

Interval 1 Felsic to Intermediate Volcanic Rocks

3 felsic tuff, flow, and subvolcanic intrusion
2 intermediate tuff and flow
2L lapilli tuff with epidote-rich fragments
2f abundant plagioclase phenocrysts
1 mafic tuff

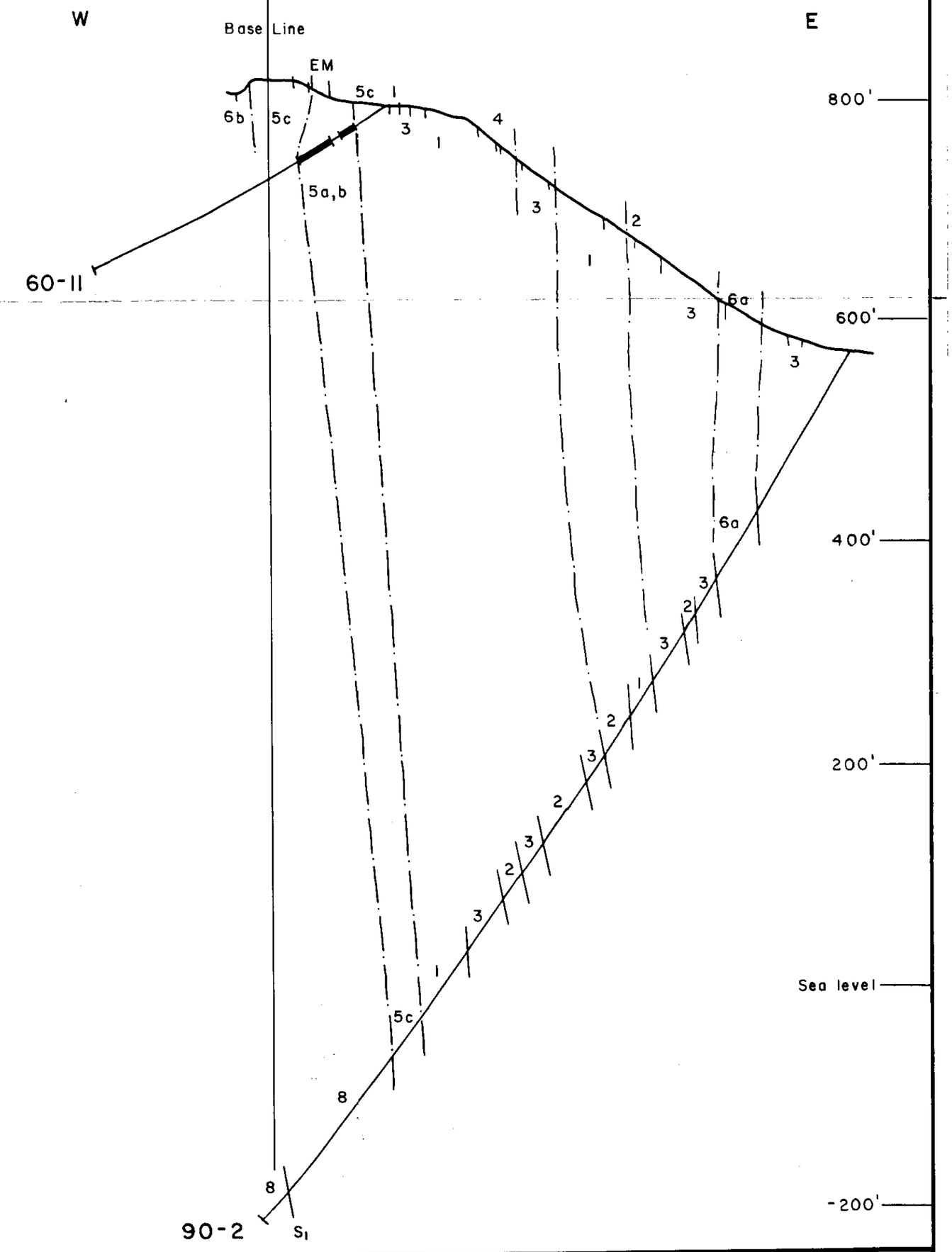


PACKSACK PROPERTY

Drawn by JGP | Traced by: | Revised by | Date | Revised by | Date

GEOLOGY SECTION DDH 90-1

Scale: 1"=100' | Date: Sept. 1990 | Plate: 6



LEGEND

Tertiary Dikes

21c andesite (possibly older)

Paleozoic(?) Volcanic and Sedimentary Rocks

Interval 4 Intermediate Volcanic Rocks

9 felsite tuff
8 basalt/andesite tuff
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6 **Interval 3 Gabbro-Basalt/Andesite**

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3 felsic tuff, flow, and subvolcanic intrusion
2 intermediate tuff and flow
2L lapilli tuff with epidote-rich fragments
2f abundant plagioclase phenocrysts

1 mafic tuff

GEOLOGICAL BRANCH ASSESSMENT REPORT

20,422

PACKSACK PROPERTY

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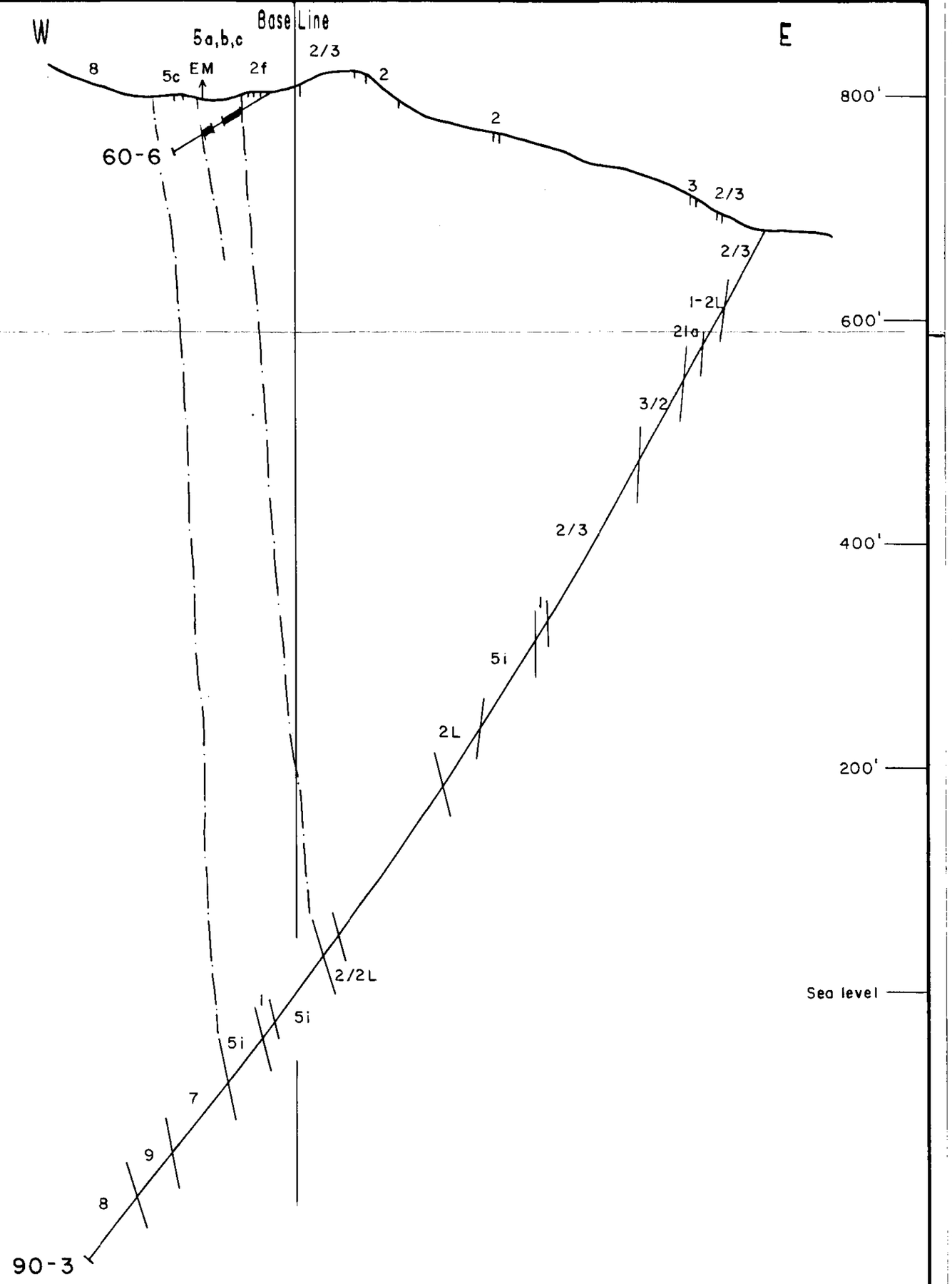
Revised by	Date	Revised by	Date

GEOLOGY SECTION DDH 90-2

Scale: 1"=100' | Date: Sept. 1990 | Plate: 7

210.3620



LEGEND

Tertiary Dikes

21c andesite (possibly older)

Paleozoic(?) Volcanic and Sedimentary Rocks

Interval 4 Intermediate Volcanic Rocks

9 felsite tuff
8 basalt/andesite tuff
7 dacite/andesite tuff

6 **Interval 3 Gabbro-Basalt/Andesite**
- 6a gabbro/diorite
- 6b basalt/andesite flow/tuff

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Interval 1 Felsic to Intermediate Volcanic Rocks

3 felsic tuff, flow, and subvolcanic intrusion
2 intermediate tuff and flow
- 2L lapilli tuff with epidote-rich fragments
- 2f abundant plagioclase phenocrysts

1 mafic tuff

PACKSACK PROPERTY

Drawn by JGP	Traced by		
Revised by / Date	Revised by / Date		

GEOLOGY SECTION DDH 90-3

Scale: 1" = 100' | Date: Sept. 1990 | Plate: 8