1990 GEOLOGICAL AND GEOCHEMICAL REPORT ON THE CUDS 1-4 CLAIMS

Located in the Galore Creek Area
Liard Mining Division
NTS 104G/4E
57° 01' North Latitude
131° 38' West Longitude

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,138

-prepared for-
LORICA RESOURCES LTD.

-prepared by-
Ann L. Doyle, Geologist

March, 1991

1990 GEOLOGICAL AND GEOCHEMICAL REPORT ON THE CUDS 1-4 CLAIMS

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1.0 INTRODUCTION

The Cuds 1-4 claims were staked in March 1989 to cover favourable geology south of the Porcupine River, approximately 155 kilometres northwest of Stewart in northwestern British Columbia (Figure 1). Limited mapping and geochemical sampling in September 1989 led to the discovery of the Duc Zone, a system of narrow quartz-sulphide veins assaying up to 5.49 g/tonne (0.160 oz/ton) gold and 370.3 g/tonne (10.8 oz/ton) silver. The geological similarity to the Iskut River, Sulphurets and Stewart mining camps to the south, and the discovery in the past few years of several major precious metals occurrences elsewhere in the Galore Creek district, has sparked renewed exploration interest throughout the area.

Reconnaissance exploration, consisting of geological mapping, prospecting and geochemical sampling, was carried out over the Cuds 1-4 property during October of 1990. Equity Engineering Ltd. conducted this program for Lorica Resources Ltd. and has been retained to report on the results of the fieldwork.

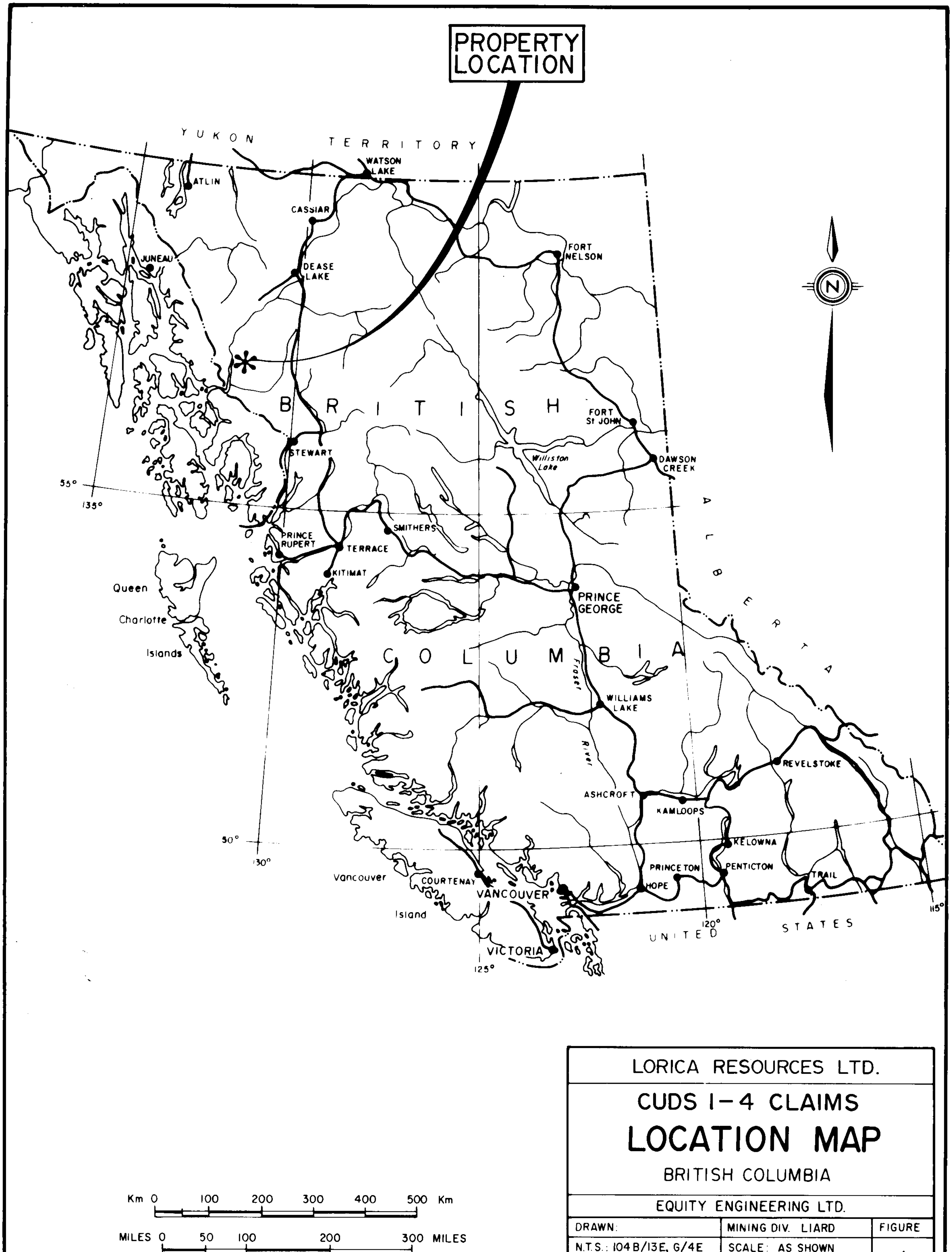
2.0 LIST OF CLAIMS

Records of the British Columbia Ministry of Energy, Mines and Petroleum Resources show that the Cuds 1-4 claims (Figure 2), located in the Liard Mining Division, are owned by Pass Lake Resources Ltd.. Separate documents indicate that they are under option to Lorica Resources Ltd.. Claim data for the Cuds 1-4 property are summarized in Table 2.0.1.

TABLE 2.0.1
CLAIM DATA

Claim Name	Record Number	No. of Units	Record Date	Expiry Year
Cuds 1	5837	20	March 2, 1989	1991
Cuds 2	5838	20	March 2, 1989	1991
Cuds 3	5845	20	March 2, 1989	1991
Cuds 4	5846	20	March 2, 1989	1991
		80		

The claims overlap previously staked ground of the PL 8 claim to the north and the Cuds 5 claim to the east, reducing the actual ground coverage of the claim group to approximately 76 units. The position of the legal corner posts for the Cuds 3 and 4 claims have been verified by Equity Engineering Ltd. personnel, while the location of the other legal corner posts has yet to be confirmed.



LORICA RESOURCES LTD.

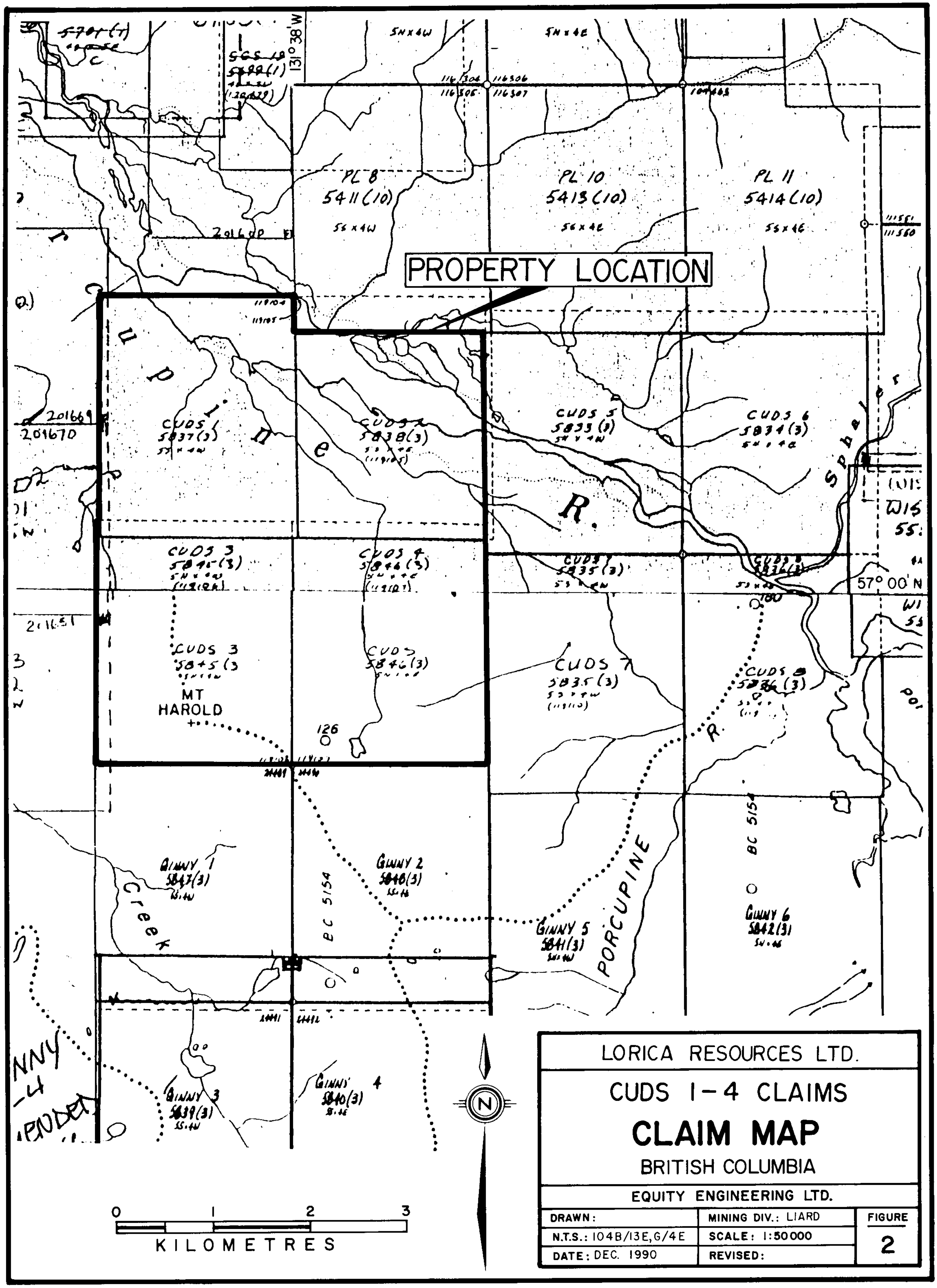
CUDS 1–4 CLAIMS

LOCATION MAP

BRITISH COLUMBIA

EQUITY ENGINEERING LTD.

DRAWN:	MINING DIV. LIARD	FIGURE
N.T.S.: 104 B/13E, G/4E	SCALE: AS SHOWN	1
DATE: DEC. 1990	REVISED:	



131° 38' W
PL 8
5411 (10)
PL 10
5413 (10)
PL 11
5414 (10)
PROPERTY LOCATION
CUDS 1
5837 (3)
CUDS 2
5838 (3)
CUDS 3
5845 (3)
CUDS 4
5846 (3)
CUDS 5
5833 (3)
CUDS 6
5834 (3)
CUDS 7
5835 (3)
Porcupine R.
Spheler
57° 00' N
MT HAROLD
126
180
GINNY 1
GINNY 2
GINNY 3
GINNY 4
GINNY 5
GINNY 6
Creek
BC 5154
PORCUPINE R.
0 1 2 3
KILOMETRES
LORICA RESOURCES LTD.
CUDS 1-4 CLAIMS
CLAIM MAP
BRITISH COLUMBIA
EQUITY ENGINEERING LTD.
DRAWN:
MINING DIV.: LIARD
FIGURE
N.T.S.: 104B/13E, G/4E
SCALE: 1:50000
2
DATE: DEC. 1990
REVISED:

3.0 LOCATION, ACCESS AND PHYSIOGRAPHY

The Cuds 1-4 claims are located within the Boundary Range of the Coast Mountains, approximately 160 kilometres northwest of Stewart and 100 kilometres south of Telegraph Creek in northwestern British Columbia (Figure 1). These claims lie within the Liard Mining Division, centred at 57° 01′ north latitude and 131° 38′ west longitude.

Access to the Cuds 1-4 property during the 1990 field season was provided by daily helicopter setouts from the Porcupine River base camp and airstrip, which is located a few hundred metres east of the Cuds 2 claim. During the field season, the Porcupine camp was serviced by fixed-wing aircraft up to the size of a Twin Otter, based out of Smithers, Wrangell or Telegraph Creek.

On the Alaskan side of the border, Wrangell lies approximately 80 kilometres to the southwest, and provides a full range of services and supplies, including a major commercial airport. The Stikine River has been navigated by 100-ton barges upriver as far as Telegraph Creek in the past, allowing economical transportation of heavy machinery and fuel to the confluence of the Porcupine and Stikine Rivers, located approximately six kilometres northwest of the property.

The Cuds 1 and 2 claims straddle the Porcupine River floodplain from six to ten kilometres above its confluence with the Stikine River. The Cuds 1, 3 and 4 claims cover the northern slopes of Mount Harold. Topography is rugged, typical of mountainous and glaciated terrain, with elevations ranging from 90 metres on the Porcupine River floodplain to over 1430 metres on Mount Harold. Approximately 25 units of the Cuds 1 and 2 claims cover a thick sequence of fluvial and glacial sediments on the Porcupine River flood plain.

Lower slopes are covered by a mature forest of hemlock, spruce and balsam fir with a dense undergrowth of devil's club, alder and huckleberry. Above treeline, which occurs at approximately 900 metres, the creek beds and slopes are covered by dense slide alder and willow growth. Steeper slopes are covered in short heather and other alpine vegetation. Northerly-facing slopes are covered with permanent snowfields at higher elevations.

The Cuds 1-4 property lies in the wet belt of the Coast Mountains, with annual precipitation between 190 and 380 centimetres (Kerr, 1948). Except during July, August and September, precipitation at higher elevations falls mainly as snow, with accumulations reaching three metres or more. Both summer and winter temperatures are moderate, ranging from -5°C in the winter to 20°C in the summer months.

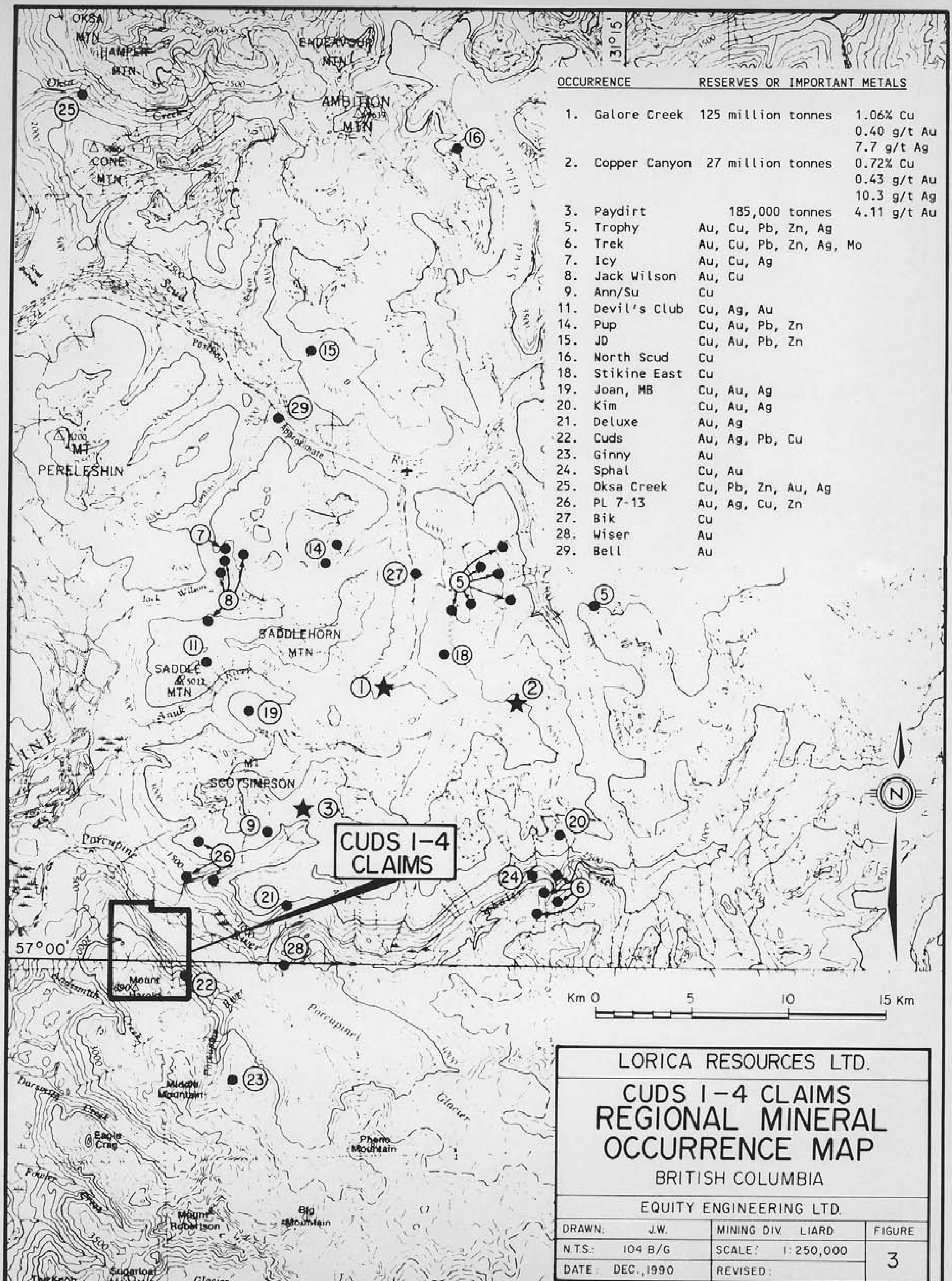
4.0 PROPERTY MINING HISTORY

4.1 Previous Work

The Galore Creek district was extensively explored for its copper potential throughout the 1960's, following the discovery in 1955 of the Galore Creek copper-gold porphyry deposit (Figure 3). This deposit, whose Central Zone hosts reserves of 125 million tonnes grading 1.06% copper and 400 ppb gold (Allen et al., 1976), is located approximately fifteen kilometres northeast of the Cuds claims. Several major mining companies conducted regional mapping and silt sampling programs over the entire Galore Creek area, and the Copper Canyon copper-gold porphyry, estimated by Dobell and Spencer (1958) to contain 27 million tonnes at a grade of 0.72% copper and 0.43 g/tonne (0.012 oz/ton) gold, was discovered eight kilometres east of the Central Zone in 1957. The Copper Canyon deposit and some of the peripheral zones on the Galore Creek property were subjects of diamond drilling programs for their gold potential during 1990.

In the mid-1950's, prospecting crews for K. J. Springer noted abundant low-grade chalcopyrite mineralization on the north side of Split Creek approximately five kilometres northeast of the Cuds 2 claim (Figure 3). In 1965, Julian Mining Co. Ltd. conducted geological mapping, induced polarization surveys, bulldozer trenching and 2,190 metres of diamond drilling on these showings, known as the Ann or Su prospect, intersecting extensive mineralization grading around 0.1% to 0.2% copper. In 1981, Teck Corp. staked the Ann/Su prospect and discovered the Paydirt gold deposit approximately one kilometre northeast of the centre of the Ann/Su copper porphyry deposit. Soil geochemistry, rock sampling, trenching and 760 metres of diamond drilling on the Paydirt deposit delineated 185,000 tonnes of indicated reserves grading 4.11 grams gold per tonne (Holtby, 1985).

Several significant precious metal occurrences were discovered on each of the Trek, Trophy, Icy and JW properties during the 1988 field seasons (Figure 3). In each case, these properties had been explored for copper during the 1960's, but had never received due attention for their gold potential. During the following year, initial reconnaissance exploration was carried out on an additional 25,000 hectares of the Galore Creek district which had received essentially no previous exploration for base or precious metals. Grab samples up to 75.4 g/tonne (2.20 oz/ton) gold were taken from the PL 7-11 property, which adjoins the Cuds 1-4 property to the north. Also on the PL 7-11 property, approximately 1500 metres north of the Cuds 2 claim, a narrow quartz vein hosted within pre-Permian metasediments assayed 18.4 g/tonne (0.536 oz/ton) gold (Caulfield and Kasper, 1989). A float sample assaying 282.9 g/tonne (8.25 oz/ton) gold was found in Deluxe Creek, 4500 metres east of the Cuds 2 claim, apparently related to a major northerly-



OCCURRENCE RESERVES OR IMPORTANT METALS
1. Galore Creek 125 million tonnes 1.06% Cu 0.40 g/t Au 7.7 g/t Ag
2. Copper Canyon 27 million tonnes 0.72% Cu 0.43 g/t Au 10.3 g/t Ag
3. Paydirt 185,000 tonnes 4.11 g/t Au
5. Trophy Au, Cu, Pb, Zn, Ag
6. Trek Au, Cu, Pb, Zn, Ag, Mo
7. Icy Au, Cu, Ag
8. Jack Wilson Au, Cu
9. Ann/Su Cu
11. Devil's Club Cu, Ag, Au
14. Pup Cu, Au, Pb, Zn
15. JD Cu, Au, Pb, Zn
16. North Scud Cu
18. Stikine East Cu
19. Joan, MB Cu, Au, Ag
20. Kim Cu, Au, Ag
21. Deluxe Au, Ag
22. Cuds Au, Ag, Pb, Cu
23. Ginny Au
24. Sphal Cu, Au
25. Oksa Creek Cu, Pb, Zn, Au, Ag
26. PL 7-13 Au, Ag, Cu, Zn
27. Bik Cu
28. Wiser Au
29. Bell Au
OKSA MTN
HAMPER MTN
ENDEAVOUR MTN
AMBITION MTN
CONE MTN
MT PERELESHIN
SADDLEHORN MTN
SADDLE MTN
MT SCOTSIMPSON
CUDS 1–4 CLAIMS
131°15'
57°00'
Mount Harold
Middle Mountain
Eagle Crag
Pheno Mountain
Big Mountain
Mount Robertson
Sugarloaf Mountain
The Knob
Km 0 5 10 15 Km
N
LORICA RESOURCES LTD.
CUDS 1–4 CLAIMS
REGIONAL MINERAL OCCURRENCE MAP
BRITISH COLUMBIA
EQUITY ENGINEERING LTD.
DRAWN: J.W.
MINING DIV. LIARD
FIGURE 3
N.T.S.: 104 B/G
SCALE: 1:250,000
DATE: DEC., 1990
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trending structure (Kasper, 1989).

During September of 1989, Pass Lake Resources Ltd. carried out initial exploration on the Cuds 1-4 claims, consisting of geological mapping, prospecting and stream sediment sampling, taking 4 field-sieved stream sediment samples, 4 silt samples and 29 rock samples. The Duc Zone, a system of narrow quartz-sulphide veins within a zone of silicification and clay alteration, was discovered near the eastern boundary of the Cuds 4 claim. A float boulder from this zone assayed 5.49 g/tonne (0.160 oz/ton) gold and 370.3 g/tonne (10.8 oz/ton) silver. High arsenic values were found in silt samples taken from Bud Creek and Camp Creek. For Bud Creek, this reflects auriferous arsenopyrite mineralization found upstream to the east of the Cuds 2 claim, however, no source for the Camp Creek anomaly was found (Kasper, 1990).

4.2 1990 Work Program

During October of 1990, Lorica Resources Ltd. carried out limited exploration on the Cuds 1-4 claims, consisting of geological mapping, prospecting and stream sediment sampling. This program was targeted at gold-rich mesothermal base metal veins and gossanous areas similar to those occurring elsewhere in the Galore Creek district and within a similar geological environment which stretches south through the Iskut River, Sulphurets and Stewart mining districts.

During the course of this program, 1 silt sample, 8 soil samples and 17 rock samples were taken. A line of contour soil samples was taken at 100 metres elevation, on the ridge separating Misty Creek and the Porcupine River, and analyzed geochemically for gold and 32 elements by ICP. The silt sample was taken from the backwaters of a small creek, along the contour soil line, and also analyzed geochemically for gold and 32 elements by ICP (Figure 5).

Prospecting and reconnaissance geology were carried out over the property using a 1:10,000 topographic orthophoto as a base (Figure 5). Rock samples, described in Appendix C, were taken from zones of alteration and mineralization and analyzed geochemically for gold and 32 elements by ICP. Samples exceeding 1000 ppb gold were fire assayed. Analytical certificates are attached in Appendix D.

5.0 REGIONAL GEOLOGY

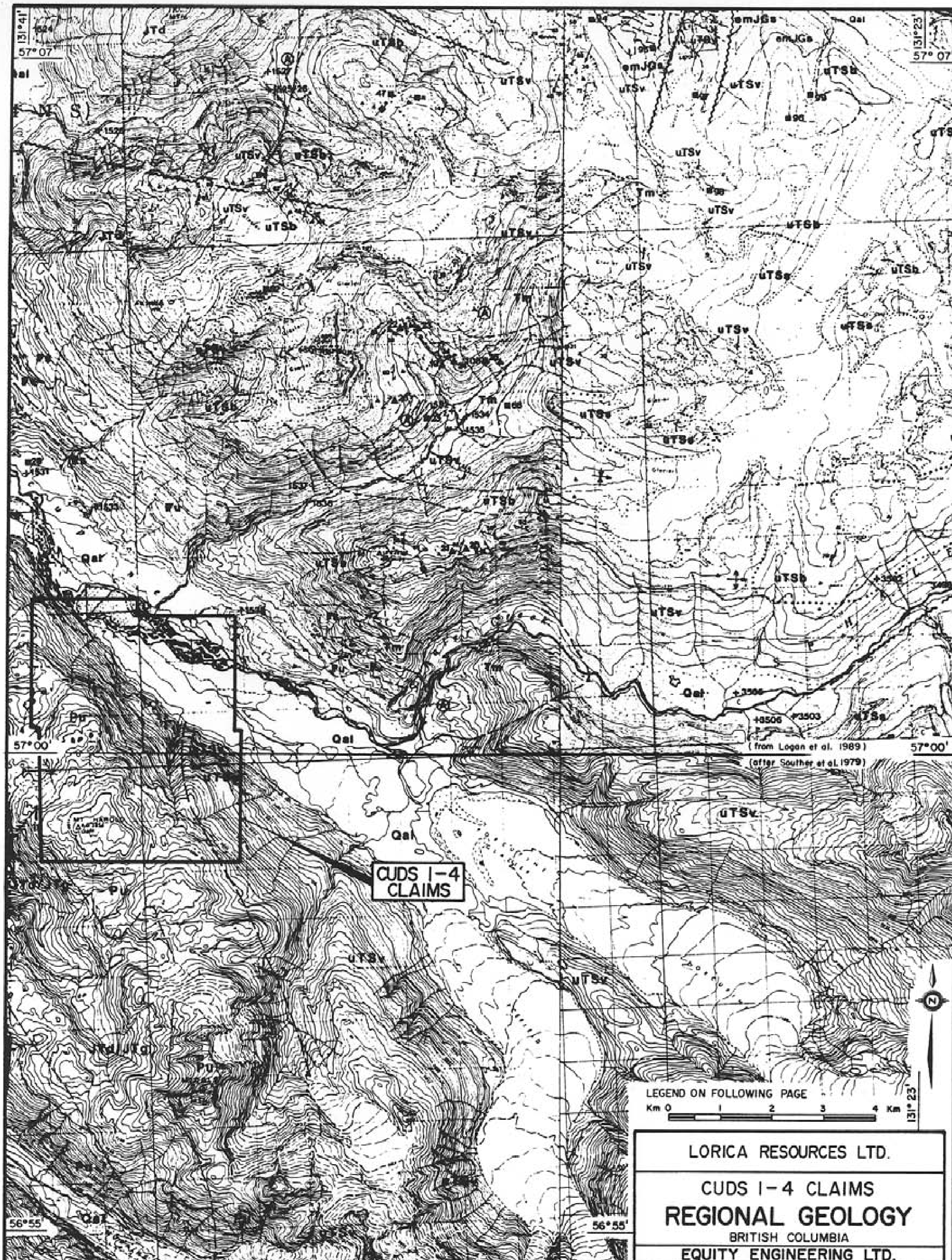
The first geological investigations of the Stikine River in northwestern British Columbia began over a century ago when Russian geologists came to Russian North America assessing the area's mineral potential (Alaskan Geographic Society, 1979, <u>in</u> Brown and Gunning, 1989a), and was followed by the first Geological Survey of Canada foray of G.M. Dawson and R. McConnel in 1887. Several more generations of federal and provincial geologists have been sent to the Stikine, including Kerr (1948), the crew of Operation Stikine (GSC, 1957), Panteleyev (1976), Souther (1972), Souther and Symons (1974), Monger (1977), and Anderson (1989). The British Columbia Geological Survey has recently completed regional mapping of the area at a scale of 1:50,000 by Brown and Gunning (1989a,b), Logan and Koyanagi (1989) and Logan et al (1989).

The Galore Creek camp lies within the Intermontane Belt, a geological and physiographic province of the Canadian Cordillera, and flanks the Coast Plutonic Complex to the west (Figure 4). At Galore Creek, the generally northwest-trending structure of the Intermontane Belt is discordantly cut across by the northeast-trending Stikine Arch which became an important, relatively positive tectonic element in Mesozoic time when it began to influence sedimentation into the Bowser Successor Basin to the southeast and into the Whitehorse Trough to the northwest (Souther et al., 1979).

Stikinian stratigraphy ranges from possibly Devonian to Jurassic, and was subsequently intruded by granitoid plutons of Upper Triassic to Eocene age. The oldest strata exposed in the Galore Creek camp are Mississippian or older mafic to intermediate volcanic flows and pyroclastic rocks (Units 4A and 4B) with associated clastic sediments (Units 4C, 4D, 4G and 4J) and carbonate lenses (Unit 4E). These are capped by up to 700 metres of Mississippian limestone with a diverse fossil fauna (Map Unit 4E). It appears from fossil evidence that all of the Pennsylvanian system is missing and may be represented by an angular unconformity and lacuna of 30 million years, though field relationships are complicated by faulting (Monger, 1977; Logan and Koyanagi, 1989a). Permian limestones (Units 6A, 6B and 6C), also about 700 metres thick, lie upon the Mississippian limestone but are succeeded by a second lacuna amounting to about 20 million years from the Upper Permian to the upper Lower Triassic.

Middle and Upper Triassic siliciclastic and volcanic rocks (Unit 7) are overlain by Upper Triassic Stuhini Group siliciclastic (Units 8A and 8B) and volcanic (Units 8D, 8E, 8G, 8H and 8I) rocks, consisting of mafic to intermediate pyroclastic rocks and lesser flows. The Galore Creek porphyry copper deposit appears from field evidence to mark the edifice of an eroded volcanic centre with numerous sub-volcanic plutons of syenitic composition. Jurassic Bowser Basin strata onlap the Stuhini Group strata to the southeast of Iskut River but, because of erosion and non-deposition, are virtually absent from the Galore Creek area.

The plutonic rocks follow a three-fold division (Logan and Koyanagi, 1989a,b). Middle Triassic to Late Jurassic syenitic and broadly granodioritic intrusions are partly coeval and cogenetic with the Stuhini Group volcanics and include the composite Hickman Batholith (Unit 9) and the syenites of the Galore Creek Complex



131°41'
57°07'
131°23'
57°07'
emJGs
uTSv
uTSb
uTSs
Tm
Qal
(from Logan et al. 1989)
(after Souther et al. 1979)
57°00'
57°00'
CUDS 1–4 CLAIMS
56°55'
56°55'
131°41'
131°23'
LEGEND ON FOLLOWING PAGE
Km 0 1 2 3 4 Km
NTS 104B/13E, 14W; 104G/3W, 4E
LORICA RESOURCES LTD.
CUDS 1 – 4 CLAIMS
REGIONAL GEOLOGY
BRITISH COLUMBIA
EQUITY ENGINEERING LTD.
DRAWN: J.J.E.
MINING DIV.: LIARD
FIGURE 4
N.T.S.: AS SHOWN
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DATE: DEC. 1990
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LEGEND

(To accompany Figure 4)

LAYERED ROCKS

QUATERNARY

Qal	Unconsolidated glacial till and poorly sorted alluvium (Unit 20)

UPPER TRIASSIC

Stuhini Group (where undivided denoted as **uTSv**)

uTSs	Siltstone, sandstone, conglomerate, minor limestone (Units 8A, 8B, 8C)
uTSt	Well-bedded green and maroon lapilli ash tuffs and epiclastics (Unit 8G)
uTSb	Intermediate to mafic fragmentals, breccia, tuff, lahar (Unit 8H)

STIKINE ASSEMBLAGE

PERMIAN AND OLDER

Pv	Plagioclase porphyry flows, volcaniclastics, purple ash tuff, chlorite schist (Units 4B, 4I)
Ps	Silver phyllite, slate and phyllitic argillite (Unit 4H)
Pu	Undivided green and maroon foliated metavolcanics and metasediments (Unit 4)

INTRUSIVE ROCKS

TERTIARY

Tm	Biotite quartz monzonite (Unit 13)

JURASSIC TO TERTIARY

Coast Intrusions

JTg	Medium-grained, pink, biotite granite (Unit 12C)
JTd	Medium-grained, biotite-hornblende diorite (Unit 12B)

EARLY TO MIDDLE JURASSIC

Galore Creek Intrusions

emJGs	Syenite, orthoclase porphyritic monzonite (Units 11A, 11B)

SYMBOLS

- Geological contact (defined, approximate, assumed)
- Unconformable contact (defined, assumed)
- Bedding (horizontal, inclined, overturned)
- Foliation
- Fault (observed, inferred)
- Thrust or high angle reverse fault (defined, assumed)
- Anticline (direction of plunge indicated)
- Syncline (direction of plunge indicated)
- Minor fold axis. (S, Z, and M symmetry), lineation
- Joint
- Dyke
- Vein
- Limit of geologic mapping (limit of permanent snow and ice)
- Macro Fossil locality (indeterminate, positive identification)
- Micro fossil locality
- Isotopic age determination site
- Assay sample site — 14
- MINFILE location — 26
- Regional Geochem Survey sample site — + 1224
- Massive outcrop visited

Geology from Souther et al (1979) and Logan et al (1989).

(Unit 11). Jura-Cretaceous Coast Plutonic Complex intrusions (Unit 12) occur on the west side of the Galore Creek camp, along the Stikine River, with the youngest of these intrusions occupying more axial positions along the trend of the Coast Plutonic Complex flanked by older intrusions. The youngest intrusives in the Galore Creek camp are Eocene (quartz-) monzonitic plugs (Unit 13), felsic and mafic sills and dykes (Unit 14), and biotite lamprophyre (minette) dykes (Unit 14C).

The dominant style of deformation in the Galore Creek area consists of upright north-trending, open to tight folds and northwest-trending, southwest-verging, folding and reverse faulting in the greenschist facies of regional metamorphism. Localized contact metamorphism ranges as high as pyroxene hornfels grade; biotite metasomatism is also noted near intrusions. Upright folding may be an early manifestation of a progressive deformation which later resulted in southwest-verging structures. Southwest-verging deformation involves the marginal phases of the Hickman Batholith and so is, at least in part, no older than Late Triassic.

Steeply dipping faults which strike north, northwest, northeast, and east have broken the area into a fault-block mosaic. North-striking faults are vertical to steeply east-dipping and parallel to the Mess Creek Fault (Souther, 1972), which was active from Early Jurassic to Recent times (Souther and Symons, 1974); northwest-striking faults are probably coeval with the north-striking faults, but locally pre-date them. East-west trending faults are vertical or steeply dipping to the north and have normal-type motion on them (i.e., north-side down), whereas northeast-striking faults are the loci of left lateral transcurrent motion (Brown and Gunning, 1989a).

A number of metallic deposit types have been recognized in the Galore Creek camp: porphyry copper ± molybdenum ± gold deposits, structurally-controlled, epigenetic precious metal vein/shear deposits, skarns and breccia deposits (Figure 3). Porphyry copper deposits of this area include both the alkalic Galore Creek copper-gold and calc-alkalic Schaft Creek copper-molybdenum deposits. Galore Creek, which is associated with syenitic stocks and dikes rather than a quartz-feldspar porphyry, is further contrasted from the calc-alkaline Schaft Creek in that molybdenite is rare, magnetite is common and gold and silver are important by-products. The mineralization is clearly coeval and cogenetic with the spatially associated intrusive bodies.

The Ann/Su porphyry copper prospect, centred approximately five kilometres northeast of the extreme northeastern corner of the Cuds 1-4 property, consists of disseminated pyrite and chalcopyrite in Stuhini Group andesitic tuffs, flows and subvolcanic diorite. Diamond drilling and bulldozer trenching were carried out over an area one kilometre in diameter, with the best hole returning grades in the order of 0.10% to 0.20% copper over its entire 230 metre length (BCDM, 1966). Other porphyry copper occurrences in the Galore Creek area include the Copper Canyon, Bik and Jack Wilson Creek deposits (Figure 3).

Structurally-controlled gold-silver deposits have been the focus of exploration in recent years. The vein/shear occurrences are similar throughout the Galore Creek camp in that they are mesothermal in nature, containing base metal sulphides with strong silica veining and alteration. However, it appears that the intrusive bodies associated with this mineralization fall into two classes on the basis of age and composition. These two classes are reflected in differences in the style of structures, sulphide mineralogy and associated alteration products. The intrusive types are: 1) Lower Jurassic alkaline "Galore Creek" stocks; and 2) Eocene quartz monzonite to porphyritic granodiorite intrusions. Lead isotope data from the Stewart mining camp (Alldrick et al., 1987) further supports the proposition that separate Jurassic and Tertiary mineralizing events were "brief regional-scale phenomena".

Structures associated with the Lower Jurassic syenites are typically narrow (less than 2.0 metres) quartz-chlorite veins mineralized predominately with pyrite, chalcopyrite and magnetite. Examples of these structures in the Galore Creek camp include many of the discrete zones peripheral to the Galore Creek deposit and the gold-rich veins at Jack Wilson Creek.

The Tertiary mineralization is comprised of discrete quartz veins and larger 'shear' zones characterized by pervasive silicification, sericitization and pyritization whose total sulphide content is commonly quite low. The quartz veins contain a larger spectrum of sulphide minerals including pyrite, chalcopyrite, pyrrhotite, arsenopyrite, galena and sphalerite. Unlike the Jurassic mineralization, silver grades may be very high. The most fully explored example of the Tertiary mineralization type is the Paydirt gold deposit, located seven kilometres northeast of the Cuds 2 claim, which is a zone of silicification, sericitization and pyritization of andesitic volcaniclastics (Holtby, 1985). The zone, which is exposed on surface over an area of 100 metres by 25 metres, strikes northerly and dips moderately to the west. Gold mineralization occurs preferentially in intensely silicified and heavily pyritic material rather than with more sericitic alteration. The best diamond drill intersections averaged 5.86 grams gold per tonne over 12.0 metres in hole 85-1 and 10.59 g/tonne gold over 4.95 metres in hole 85-4 (Holtby, 1985).

Skarns represent a minor percentage of the precious metal-bearing occurrences in the Galore Creek camp. The mineralogy of these deposits could be influenced by the composition of the intrusion driving the hydrothermal fluids, in much the same way as described above for the structurally-controlled deposits. If the invading intrusives are alkalic, the skarn assemblage will be dominated by magnetite and chalcopyrite, as at the Galore Creek deposit and the Hummingbird skarn on the east side of the South Scud River.

The breccia hosted precious metal deposits discovered in the Galore Creek camp appear to be unique in style and mineralization. Three occurrences have been located in the camp: (1) the zinc-silver-gold Ptarmigan zone in the South Scud River area, (2) the copper-molybdenum-gold-silver breccia at the Trek property on Sphaler Creek and (3) the copper-bearing and magnetite breccias of the complex Galore Creek deposit. The single common denominator of each is that the zones are located along fault structures which may represent the main conduit for mineralizing fluids.

6.0 PROPERTY GEOLOGY AND MINERALIZATION

6.1 Property Geology

The majority of the Cuds 1-4 claims are underlain by Mississippian or older metasedimentary and metavolcanic rocks of the "Stikine Assemblage". Stuhini Group volcanics outcrop immediately south of the Porcupine River on the Cuds 4 claim. The contact relationship between the two rock groups is uncertain. Stocks of the Jurassic to Cretaceous Coast Plutonic Complex and of the Early to Middle Jurassic Galore Creek Suite intrude the pre-Permian strata south of the Porcupine River, on the Cuds 3 and 4 claims. Eocene stocks and Tertiary dykes intrude the pre-Jurassic stratigraphy. Greenschist facies metamorphism, and weak to moderate chlorite, calcite and epidote alteration, are pervasive throughout the pre-Tertiary rock units.

Geology in Figure 5 has been modified from Kasper (1990), Souther et al. (1979) and Logan and Koyanagi (1989) by reconnaissance mapping during the current program.

Mississippian and older metasedimentary and metavolcanic rocks (Unit 4) are the dominant rock unit on the property. South of the Porcupine River, these rocks form a broad belt which trends southeasterly. Fine-grained siliciclastics consisting of interbedded argillites and siltstone (Unit 4C) and fine-grained greywacke (Unit 4D) were the main rock units encountered. The sediments are thin-bedded and exhibit moderate foliation. Two episodes of folding have been noted in these units on adjoining properties (Kasper, 1989).

Interlayered with the siliciclastics are lesser amounts of crystal tuffs and metavolcanics (Units 4A and 4B). The greenish-grey tuffs consist of a crystal hash, with crystal fragments up to 2 millimetres in length, within an aphanitic groundmass. In places, the groundmass is potassium feldspar altered. The metavolcanic rock is comprised mainly of intermediate volcanic flows, with feldspar phenocrysts up to one millimetre in length within a grey, aphanitic matrix. Logan et al (1989) mapped a thick sequence of this unit outcropping along the Porcupine River on the Cuds 1 claim. Logan and Koyanagi (1989) describe this unit as "comprising greenstones and chlorite schists derived from intermediate flows, sills and tuffs at the base, followed by a thick section of purple-green ash lapilli tuff, in turn overlain by plagioclase-phyric flows, sills and volcaniclastics".

The ridge between the Porcupine River and Misty Creek, is underlain by metavolcanics with minor intercalated sedimentary units (Units 4C and 4D). The metavolcanics are dominated by a chlorite-feldspar-quartz schist (Unit 4I), which locally exhibits a gneissic texture defined by biotite-rich segregations. A similar chlorite schist unit, also assigned to Unit 4I, was mapped to the south of the Duc Zone. The foliation is oriented parallel to the fault which bounds it to the north. Further mapping is necessary in order to determine whether this is an extensive unit or due to a local deformation event.

Upper Triassic Stuhini Group sedimentary and volcanic rocks (Unit 8) outcrop along the lower slopes on the south side of the Porcupine River (Souther et al., 1979). A felsic tuffaceous horizon (Unit 8G), bounded on either side by north-northwest trending faults, was identified immediately south of the Duc Zone. A question exists as to whether the well laminated nature of the tuff is due to deformation along the fault or whether the tuff is actually of Mississippian or older age.

Jurassic to Cretaceous stocks of the Coast Plutonic Complex intrude the Mississippian or older strata in a broad belt centered along Andismith Creek, south and west of the Cuds 3 claim, with a small portion of this unit trending onto the Cuds 3 claim. Souther et al (1979) indicates the composition of these stocks to range from a quartz diorite to granodiorite (Unit 12b). Where observed on the surrounding properties by Kasper (1989), the diorite was found to be medium-grained with up to 2% magnetite. These greyish-white phases consist of equigranular, medium-grained plagioclase (45%), potassium feldspar (35%) and quartz (20%). Quartz monzonitic and granitic phases were also located within this broad belt on adjoining properties.

An outcrop of medium- to coarse-grained monzonite (Unit 11B) was mapped on the southwestern part of the Cuds 4 claim. It contains equal amounts of pink potassic feldspar and light grey plagioclase crystals. Coarse hornblende crystals are locally abundant. The extent of this unit is not known, however, it appears to form a 100 metre wide belt trending northwest. This unit has been mapped as an Early to Middle Jurassic Galore Creek equivalent (Unit 11B). Skarnified limestone xenoliths are visible within the mozonitic intrusive (Unit 11B) outcropping to the east of the common legal corner post for the Cuds 3-4 and Ginny 1-2 claims. Skarn mineralization consists of epidote and diopside with grossularite garnets up to one centimetre in size.

Eocene biotite monzonite to biotite quartz-monzonite stocks and plugs (Unit 13A) intrude the pre-Jurassic stratigraphy north of the Porcupine River. One of these plugs, described as monzonitic in composition, outcrops north of the Porcupine River, on the Cuds 2 claim.

Two dioritic dykes (Unit 14D), of assumed Tertiary age, intrude the pre-Permian metasediments just west of Camp Creek. The medium grey to black dykes are fine-grained and equigranular, ranging in width between 2 to 2.5 metres.

A west-northwest trending fault separates the Mississippian or older strata from the Upper Triassic Stuhini Group north of the Porcupine River (Kasper, 1989). The nature of this contact to the south is still unknown. Smaller faults with a similar trend, offset the interlayered metavolcanic and metasedimentary rocks west and south of Camp Creek on the Cuds 4 claim. A strong quartz and carbonate altered zone accompanies these faults and drag folds were observed adjacent to some of the faults west of Camp Creek.

Camp Creek is thought to be controlled by a north-south fault. The rocks adjacent to the Camp Creek fault are foliated along the direction of this fault. Locally, these faults are also highlighted by gossans with strong quartz and clay alteration.

Logan and Koyanagi (1989) indicate at least two deformational events for the area around the Porcupine River which correspond with these folds. Kasper (1989) observed contorted foliation and bedding within the pre-Permian strata south of the Porcupine River corresponding to the deformation described by Logan and Koyanagi.

6.2 Mineralization

Two areas of favourable mineralization were discovered during the 1990 exploration program in addition to the Duc Zone, identified during the 1989 program.

Grab sample 463901, sampled 50 metres southwest of station 0+00 on the 100m contour soil line, returned a value of 1.23 g/tonne (0.036 oz/ton) gold, with slightly elevated silver, copper and zinc values. The sample consists of traces of chalcopyrite and sphalerite within foliated, highly chloritic, mafic volcanics. Only 0.5 metres are exposed due to overburden cover, but similar gossanous outcrops were observed in the immediate vicinity.

Four samples, located 500 metres east-northeast of the Cuds 3 and 4 claim post, are anomalous in gold and copper, with values ranging from 1.30 to 2.47 g/tonne (0.038 to 0.072 oz/ton) gold and 1.08 to 2.71% copper. Sample 39829, consisting of <1% pyrite and chalcopyrite hosted within foliated metavolcanics, returned the highest gold value. Samples 39830, 39831, and 39828, taken within a 20 metre wide area, consist of ≤1% pyrite, chalcopyrite and pyrrhotite and are hosted in strongly limonitic metavolcanics.

During the 1990 program, sampling was extended to the north and west of the Duc Zone, located 400 metres west of the eastern boundary of the Cuds 4 claim. The Duc Zone, approximately 400 metres by 100 metres in size, consists of a series of quartz veins ranging in width from 5 to 40 centimetres and striking in an east-west or southeast-northwest direction. Sulphide mineralization consists of pyrite, arsenopyrite and pyrrhotite with or without sphalerite, galena, chalcopyrite and molybdenite. The mineralization occurs along hairline fractures within crackled quartz veins. These veins are hosted within a strong silicified and clay altered zone containing blebs and stringers of pyrite and arsenopyrite and mineralized quartz veinlets.

Samples collected during the 1990 program from the western edge of the Duc Zone returned only slightly elevated values for base and precious metals. Sample 465576 consists of 3% pyrite and traces of galena and sphalerite hosted within silicified volcanics and returned the highest results of 85 ppb gold and 31.4 ppm silver. Gold was not detected in either of the samples taken north of the Duc Zone.

A gold value of 5.49 g/tonne (0.160 oz/ton), as well as elevated silver, copper, lead, zinc and arsenic values were returned from float sample 459636, collected during the 1989 field season, at the bottom of a talus slope, below the Duc Zone. A grab sample (459632) was taken in 1989 from a 20 to 40 centimetre wide quartz vein at the top of the talus slope returned lower but still anomalous values for gold, silver and arsenic. This vein is exposed within a steep gully for over 20 metres and further sampling will be needed to determine if this vein is the source of the anomalous float. Grab samples of the surrounding wall rock (459633 to 459635) were also collected, but no significant values were recovered.

A vein, similar to the Duc Zone veins, outcrops along Bud Creek, 750 metres to the east. The similarity in mineralogy and trace element geochemistry may indicate that these two occurrences are from a single gold-bearing structure. Table 6.2.1 summarizes significant results from the Duc Zone.

TABLE 6.2.1
DUC ZONE: SIGNIFICANT SAMPLING RESULTS

SAMPLE	WIDTH metres	GOLD (ppb)	SILVER (ppm)	LEAD (ppm)	ZINC (ppm)	ARSENIC (ppm)
172499*	0.1	3.91g/t	26.0	1885	5870	>10000
459628*	float	120	8.4	226	1.40%	7270
459632*	0.2	750	5.8	198	86	>10000
459636*	float	5.49g/t	370.3g/t	4190	2.95%	>10000
465576	0.1	85	31.4	1070	1505	260

* denotes 1989 samples

Numerous occurrences of altered metasedimentary rocks containing disseminated pyrite or pyrite stringers and blebs, were sampled throughout the property. While these samples did not contain significant precious metal values, some returned anomalous base metal values such as float sample 459617 (1295 ppm zinc) sampled 1250 metres north of the Cuds 3 and 4 claim post and float sample 463088 (3900 ppm copper) taken 1700 metres northwest of the Cuds 3 and 4 claim post. The source of sample 463088 is believed to be an area of malachite staining observed on an escarpment above the float sample location, just north of Mount Harold, whereas, the source for sample 459617 has yet to be determined.

7.0 GEOCHEMISTRY

During the course of the 1990 exploration program, eight soil samples were taken at 50 metre intervals along the 100 metre contour line, located in the northeast corner of the Cuds 2 claim (Figure 5). One silt sample was taken from a drainage located along this line. Geochemical data from silt samples taken north of the Porcupine River were compared with the statistical data for the government silt sampling survey of the Telegraph Creek-Sumdum map sheet, while samples taken in previous years, south of the Porcupine River, were compared with the statistical data for the Iskut River map sheet (GSC, 1988a,b). The silt samples are directly comparable to the government results listed in Figure 5, and anomalous results can be defined in the same way. Field-sieved stream sediment samples whose geochemical values have been variably enhanced during the sieving process cannot be directly compared to the silt samples. There were not enough soil samples taken to conduct a meaningful statistical analysis but is felt that the following levels are anomalous: gold (25 ppb), silver (1.0 ppm), copper (100 ppm), lead (20 ppm), zinc (150 ppm) and arsenic (20 ppm).

Six of the soil samples returned encouraging results. Anomalous arsenic values were present in samples CL100, 0+50E and 1+00E. Sample CL100, 0+50E also contained an anomalous gold value of 25 ppb, while the sample taken at 1+00E contained 2.0 ppm silver in addition to 330 ppm arsenic.

An area of anomalous copper, lead and zinc was identified further along the soil contour line, centered around CL100, 1+50E, with lead and zinc anomalies extending out for 50 to 100 metres in either direction. The lead and zinc values ranged as high as 106 ppm and 372 ppm, respectively. Elevated lead values of 22 ppm were returned from CL100, 3+00E and 4+00E. The one 1990 silt sample, taken 350 metres along the contour soil line, returned only slightly elevated lead and zinc values of 22 ppm and 212 ppm, respectively. Gold was below detection limit in these samples. The source of the anomalous soil and stream sediment samples have yet to be determined.

Copper, zinc and arsenic anomalies were identified during the 1989 program in two parallel streams draining undivided Mississippian or older strata, located on the Cuds 1 claim. Field-screened stream sediment sample #459492 contained elevated copper, zinc and arsenic values of 145, 128, and 275 ppm, respectively, while silt samples #459494 and #459495 returned anomalous copper (120 and 139 ppm) and arsenic (85 and 130 ppm) values greater than the government 90th percentile for copper and 95th percentile for arsenic. Prospecting or geological mapping has yet to be done within the area.

Camp Creek, located west of the Duc Zone, returned elevated arsenic (195 ppm) and copper (142 ppm) values from field-screened sample 463413. It is expected that mineralization similar to that of the Duc Zone is the source of the high values.

8.0 DISCUSSION AND CONCLUSIONS

The Cuds 1-4 claims are still at an early stage of exploration, however, the preliminary data are very encouraging. The 1990 program was very successful in outlining two new areas of gold-bearing mineralization, south of Rug Lake and along Misty Ridge, north of the Porcupine River, in addition to the Duc Zone mapped and sampled in 1989. Each area is distinctive in the type of associated sulphide minerals and host rocks. Stream geochemistry also outlined four areas thought to reflect precious and base metal mineralization.

The Duc Zone is hosted within Upper Triassic Stuhini Group sedimentary and volcanic rocks between Bud and Camp Creeks, on the south side of the Porcupine River. This silicified and clay altered zone contains a number of narrow, gold-bearing quartz-sulphide veins. Float and grab samples of Duc Zone veins contained up to 5.49 g/tonne (0.160 oz/ton) gold with significant silver and base metal values. Due to weather conditions further sampling of this area was not possible. Further to the east, a quartz-sulphide vein outcrops along Bud Creek and its similarity mineralogy to the Duc Zone may indicate that the two zones are part of a single gold-bearing structure.

Stream geochemistry has outlined potential precious and base metal mineralization through two distinct geochemical signatures: gold±silver±arsenic anomalies and areas of anomalous copper-zinc-arsenic. The source or significance of these anomalies has yet to be determined.

The Cuds 1-4 property has demonstrated favourable underlying geology and alteration, similar to that hosting other precious metals occurrences in the Galore Creek district. The discovery of gold-bearing occurrences and encouraging stream and soil geochemical results from the property, coupled with the exploration successes achieved throughout Galore Creek in the past years, provide abundant incentive to conduct further exploration work on the Cuds claims.

Respectfully submitted,
EQUITY ENGINEERING LTD.

Ann L. Doyle, Geologist

Vancouver, B.C.
March, 1991

APPENDIX A

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BIBLIOGRAPHY

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APPENDIX B

STATEMENTS OF EXPENDITURES

STATEMENT OF EXPENDITURES
CUDS WEST CLAIM GROUP
(CUDS 1-4 CLAIMS)
(October 7 - October 20, 1990)

PROFESSIONAL FEES AND WAGES:		
David Caulfield, F.G.A.C.		
.25 days @ $375 day	$ 93.75	
Donald McInnes, Project Manager		
.25 days @ $300/day	75.00	
Ann Doyle, Geologist		
4.125 days @ $300/day	1,237.50	
Barry Girling, Prospector		
1 day @ $250/day	250.00	
Bruno Kasper, Geologist		
1 day @ $300/day	300.00	
Lloyd Addie, Prospector		
2.75 days @ $250/day	687.50	
		$ 2,643.75
MOBILIZATION AND SUPPORT COSTS:		
Pro rata according to mandays on each of several properties operated out of the Galore Creek/Porcupine River Camps		771.77
CHEMICAL ANALYSES:		
Rock Sample Analyses		
12 @ $18.19 each	$ 218.28	
Soil Sample Analyses		
8 @ $14.57 each	116.56	
Silt Sample Analyses		
1 @ $ 14.57	14.57	
		349.41
EXPENSES:		
Accommodation	$ 1,062.50	
Drafting	30.00	
Helicopter Charters	528.51	
Orthophoto Reproduction	1,445.00	
Printing and Reproductions	133.20	
Radio Rental	27.50	
		$ 3,226.71
MANAGEMENT FEE @ 15% on expenses		372.92
		7,364.56
REPORT (estimated)		2,500.00
		$ 9,864.56

APPENDIX C

ROCK DESCRIPTIONS

Description Abbreviations:

CA	Calcite	MC	Malachite
CB	Carbonate	MG	Magnetite
CL	Chlorite	MO	Molybdenite
CP	Chalcopyrite	PO	Pyrrhotite
EP	Epidote	PY	Pyrite
GL	Galena	QZ	Quartz
GE	Goethite	SI	Silica
LI	Limonite	SP	Sphalerite

Property : Cuds 1-4 Claims NTS : 104G/4E Date : 02/25/91

Sample No.	Location :		Type : Select	Alteration : NONE OBSERVED	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6318 395 N 340 380 E	Strike Length Exp. : 0.5 m	Sulphides : 1%CP, 1%PO, 1%PY						
39828	Elevation:	1185 m	Sample Width : 0.5 m	Oxides : LI	180	22	22000	19	9400	<5
	Orientation:	/	True Width : ? m	Host : Metavolcanic						

Comments : Discontinuous sample taken over 0.5m. Patchy, strong limonitic weathering for about 20m. Mineralization is patchy and localized. Foliation of host is oriented 035/45W.

Sample No.	Location :		Type : Select	Alteration : NONE OBSERVED	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6318 400 N 340 375 E	Strike Length Exp. : 1 m	Sulphides : TRCP, ,1%PY						
39829	Elevation:	1185 m	Sample Width : 10 cm	Oxides : LI	>1000	26	20000	30	2200	<5
	Orientation:	/	True Width : m	Host : Metavolcanic						

Comments : Located 10m from 39828 at a bearing of 338 degrees. Mineralization is patchy and localized.

Sample No.	Location :		Type : Select	Alteration : SI	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6318 410 N 340 370 E	Strike Length Exp. : 0.5 m	Sulphides : TRCP, <1%PY						
39830	Elevation:	1185 m	Sample Width : 10 cm	Oxides : MC	>1000	20	13000	16	1400	<5
	Orientation:	/	True Width : m	Host : Metavolcanic-tuff						

Comments : Located 7m at 330 degrees from 39829. Strong limonitic staining.

Sample No.	Location :		Type : Select	Alteration : SI	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6318 412 N 340 370 E	Strike Length Exp. : 0.2 m	Sulphides : TRCP, <1%PY						
39831	Elevation:	1185 m	Sample Width : 20 cm	Oxides : LI	>1000	34	32000	91	4500	<5
	Orientation:	/	True Width : m	Host : Metavolcanic						

Comments : Located 2m north of 39830.

Sample No.	Location :		Type : Select	Alteration : EP	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6318 370 N 340 060 E	Strike Length Exp. : 20 m	Sulphides : 15%MG, 10-15%PY						
39838	Elevation:	1230 m	Sample Width : 10 cm	Oxides : LI	150	<1	630	3	75	10
	Orientation:	147 / 78 W	True Width : m	Host : Epidote skarn						

Comments : Small skarn xenolith in intrusive. <1% intermediate tuff bands in intrusive (pyroxene-rich). Strongly magnetic.

Sample No.	Location :		Type : Grab	Alteration : CL, QZ	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
		6322 890 N 341 690 E	Strike Length Exp. : 0.5 m	Sulphides : TRCP, 1%SP						
463901	Elevation:	100 m	Sample Width : 0.5 m	Oxides : GE, JA	1260	2.2	679	34	934	<5
	Orientation:	/	True Width : ? m	Host : Mafic volcanic						

Comments : Highly chloritic, foliated, mafic volcanic. Similar rusty volcanics exposed in two locations 5m apart.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465568	Location : 6318 360 N, 340 210 E; Elevation: 1250 m; Orientation: 320 / 80 W	Type : Grab; Strike Length Exp. : 5 m; Sample Width : 10 cm; True Width : 10 cm	Alteration : NONE OBSERVED; Sulphides : TRPY; Oxides : LI; Host : Tuff	<5	<0.2	67	12	68	<5

Comments : Sample located 25m south of Rug Lake.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465574	Location : 6319 670 N, 341 500 E; Elevation: 630 m; Orientation: 350 / 80 W	Type : Grab; Strike Length Exp. : 1 m; Sample Width : 10 cm; True Width : 10 cm	Alteration : QZ, CB; Sulphides : TRPY; Oxides : NONE OBSERVED; Host : Volcanic schist	<5	<0.2	259	<2	60	90

Comments : Sample located on south edge of pond, at helipad. Fe-carbonate alteration of sample.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465575	Location : 6319 810 N, 341 390 E; Elevation: 610 m; Orientation: 100 / 40 S	Type : Grab; Strike Length Exp. : 1 m; Sample Width : 10 cm; True Width : 10 cm	Alteration : CA, CL, QZ, SI; Sulphides : TRCP, TRGL, 2%PY; Oxides : NONE OBSERVED; Host : Silicified volcanic	<5	0.8	128	22	78	45

Comments : Sample consists of quartz stringers with chalcopyrite and galena, crosscutting the silicified host. Located 500m northwest of helipad.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465576	Location : 6319 840 N, 341 450 E; Elevation: 610 m; Orientation: 210 / 90	Type : Grab; Strike Length Exp. : 1 m; Sample Width : 10 cm; True Width : 10 cm	Alteration : CA, QZ, SI; Sulphides : TRGL, 3%PY, TRSP; Oxides : NONE OBSERVED; Host : Silicified volcanic	85	31.4	167	1070	1505	260

Comments : Sample consists of sphalerite and galena along quartz fractures. Located 25m north of 465576.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465644	Location : 6318 320 N, 340 500 E; Elevation: 1250 m; Orientation: 164 / 45 W	Type : Grab; Strike Length Exp. : 15 m; Sample Width : 1.5 m; True Width : 1.5 m	Alteration : CB, CL; Sulphides : NONE VISIBLE; Oxides : GE, JA; Host : Foliated metavolcanic, interbedded sediments	<5	<0.2	173	12	100	<5

Comments : Located in small gully running northwest.

Sample No.	Location / Elevation / Orientation	Type / Widths	Alteration / Sulphides / Oxides / Host	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
465645	Location : 6318 300 N, 340 350 E; Elevation: 1260 m; Orientation: 336 / 52 W	Type : Grab; Strike Length Exp. : 2 m; Sample Width : 2 m; True Width : 2 m	Alteration : NONE OBSERVED; Sulphides : TRPY; Oxides : GE, JA; Host : Foliated volcanics, interbedded silicified sediments	<5	<0.2	85	16	44	<5

Comments : Sample located across large gully oriented north to north-northwest from 465644.

Sample No. 484401
Location : 6319 660 N / 341 460 E
Elevation: 740 m
Orientation: /
Type : Grab
Strike Length Exp. : ? m
Sample Width : 1.0 m
True Width : m
Alteration : CA, SI
Sulphides : TRPY
Oxides : GE
Host : Felsic tuff

Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
<5	<0.2	49	8	28	5

Comments : Pyrite gives the tuff a gossanous appearance. Tuffs are well-bedded; however, unable to get an orientation of bedding.

Sample No. 484402
Location : 6319 820 N / 341 335 E
Elevation: 630 m
Orientation: /
Type : Float
Strike Length Exp. : m
Sample Width : m
True Width : m
Alteration : CA, QZ, SI
Sulphides : <1%CP, <1%PY
Oxides : NONE OBSERVED
Host : Volcanic ?

Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
<5	<0.2	91	20	88	125

Comments : Sample located within creek gully, surrounding outcrop of similar material.

Sample No. 484403
Location : 6319 855 N / 341 320 E
Elevation: 600 m
Orientation: 175 / 05 E
Type : Grab
Strike Length Exp. : 0.6 m
Sample Width : 40 cm
True Width : 5 cm
Alteration : CA, QZ
Sulphides : TRGL, TRMO, 1%PY
Oxides : NONE OBSERVED
Host : Tuff

Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
25	32.0	85	100	234	190

Comments : Sample taken at intersection of quartz veins trending 175/05 E and 045/40 SE. Mineralization occurs along the periphery of the veins.

Sample No. 484404
Location : 6319 885 N / 341 320 E
Elevation: 600 m
Orientation: /
Type : Grab
Strike Length Exp. : 2.0 m
Sample Width : 1.0 m
True Width : ? m
Alteration : CA, SI
Sulphides : <1%GL, TRMO, 2%PY
Oxides : GE
Host : Tuff

Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
15	12.8	176	106	636	540

Comments : Sample of wallrock surrounding veins sampled in 484403. The mineralization occurs as blebs or fracture fillings.

Sample No. 484730
Location : 6319 645 N / 314 720 E
Elevation: 610 m
Orientation: 220 / 74 SE
Type : Grab
Strike Length Exp. : 10 m
Sample Width : 20 cm
True Width : >2 m
Alteration : NONE OBSERVED
Sulphides : 1-2%PY
Oxides : NONE OBSERVED
Host : Feldspar pophyritic dyke?

Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
<5	<0.2	34	2	46	5

Comments : Rounded feldspar phenocrysts, biotite and silver pyrite in fine grained black matrix. Strong biotite(?) hornfels zone. In the vicinity are strongly silicified sediments containing minor pyrite. Located on the edge of slide alder patch.

APPENDIX D

CERTIFICATES OF ANALYSIS

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

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

A9025991

Comments:

CERTIFICATE A9025991

EQUITY ENGINEERING LTD.

Project: CUDS 1-4
P.O. # : LOR90-02

Samples submitted to our lab in Vancouver, BC.
This report was printed on 6-NOV-90.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	8	Dry, sieve to -80 mesh
238	8	NITRIC-AQUA REGIA DIGESTION

* NOTE 1:

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

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	8	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
922	8	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
921	8	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
923	8	As ppm: 32 element, soil & rock	ICP-AES	5	10000
924	8	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
925	8	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
926	8	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
927	8	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
928	8	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
929	8	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
930	8	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
931	8	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
932	8	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
933	8	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
951	8	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
934	8	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
935	8	La ppm: 32 element, soil & rock	ICP-AES	10	10000
936	8	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
937	8	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
938	8	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
939	8	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
940	8	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
941	8	P ppm: 32 element, soil & rock	ICP-AES	10	10000
942	8	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
943	8	Sb ppm: 32 element, soil & rock	ICP-AES	5	10000
958	8	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
944	8	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
945	8	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
946	8	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
947	8	U ppm: 32 element, soil & rock	ICP-AES	10	10000
948	8	V ppm: 32 element, soil & rock	ICP-AES	1	10000
949	8	W ppm: 32 element, soil & rock	ICP-AES	10	10000
950	8	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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To: EQUITY ENGINEERING LTD.
207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Invoice Date: 6-NOV-90
Invoice No. : I-9025991
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025991

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
CL100 0+00E	201	238	< 5	0.4	6.66	< 5	100	< 0.5	< 2	0.11	1.0	8	110	33	4.77	< 10	< 1	0.12	10	1.12	305
CL100 0+50E	201	238	25	< 0.2	3.41	25	90	< 0.5	< 2	0.08	1.0	3	25	50	6.06	< 10	< 1	0.04	10	0.49	250
CL100 1+00E	201	238	10	2.0	4.49	330	180	< 0.5	< 2	0.30	2.0	7	30	99	5.24	< 10	< 1	0.14	10	0.92	620
CL100 1+50E	201	238	10	0.8	5.82	< 5	150	< 0.5	< 2	0.20	1.5	8	57	103	7.07	< 10	< 1	0.21	10	0.96	715
CL100 2+00E	201	238	< 5	0.4	4.03	10	170	< 0.5	< 2	0.13	1.0	10	49	65	4.73	< 10	< 1	0.24	10	0.93	550
CL100 2+50E	201	238	< 5	0.8	1.79	15	120	< 0.5	< 2	0.15	0.5	3	21	59	2.59	< 10	< 1	0.21	10	0.37	165
CL100 3+00E	201	238	< 5	0.4	3.83	< 5	180	< 0.5	< 2	0.18	1.0	5	47	61	6.29	< 10	< 1	0.43	10	0.92	330
CL100 4+00E	201	238	< 5	< 0.2	0.86	< 5	20	< 0.5	< 2	0.11	< 0.5	1	10	5	1.14	< 10	< 1	0.05	< 10	0.06	95

CERTIFICATION: B. Cargill

Chemex Labs Ltd.

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

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Page Number : 1-B
Total Pages : 1
Invoice Date: 6-NOV-90
Invoice No. : I-9025991
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025991

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
CL100 0+00E	201	238	< 1	0.02	31	850	4	< 5	9	10	0.20	< 10	< 10	125	< 10	62
CL100 0+50E	201	238	2	0.02	4	870	22	< 5	7	7	0.26	< 10	< 10	214	< 10	66
CL100 1+00E	201	238	3	0.02	6	1670	106	< 5	8	21	0.19	< 10	< 10	150	< 10	334
CL100 1+50E	201	238	1	0.01	14	970	24	< 5	6	10	0.30	< 10	< 10	120	< 10	372
CL100 2+00E	201	238	8	0.01	29	590	26	< 5	10	9	0.29	< 10	< 10	251	< 10	150
CL100 2+50E	201	238	5	0.02	7	680	18	< 5	3	11	0.16	< 10	< 10	82	< 10	46
CL100 3+00E	201	238	4	0.02	11	920	22	< 5	7	11	0.30	< 10	< 10	180	< 10	110
CL100 4+00E	201	238	1	0.01	2	300	22	< 5	1	11	0.15	10	< 10	39	< 10	20

CERTIFICATION: B. Cargill

Chemex Labs Ltd.

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

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

A9025580

Comments:

CERTIFICATE A9025580

EQUITY ENGINEERING LTD.

Project: CUDS 1-4
P.O. # : LOR90-02

Samples submitted to our lab in Vancouver, BC.
This report was printed on 31-OCT-90.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	1	Dry, sieve to -80 mesh
238	1	NITRIC-AQUA REGIA DIGESTION
* NOTE	1:	

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

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	1	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
922	1	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
921	1	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
923	1	As ppm: 32 element, soil & rock	ICP-AES	5	10000
924	1	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
925	1	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
926	1	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
927	1	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
928	1	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
929	1	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
930	1	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
931	1	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
932	1	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
933	1	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
951	1	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
934	1	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
935	1	La ppm: 32 element, soil & rock	ICP-AES	10	10000
936	1	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
937	1	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
938	1	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
939	1	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
940	1	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
941	1	P ppm: 32 element, soil & rock	ICP-AES	10	10000
942	1	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
943	1	Sb ppm: 32 element, soil & rock	ICP-AES	5	10000
958	1	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
944	1	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
945	1	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
946	1	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
947	1	U ppm: 32 element, soil & rock	ICP-AES	10	10000
948	1	V ppm: 32 element, soil & rock	ICP-AES	1	10000
949	1	W ppm: 32 element, soil & rock	ICP-AES	10	10000
950	1	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

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

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Page Number : 1-A
Total Pages : 1
Invoice Date: 31-OCT-90
Invoice No. : I-9025580
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025580

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
DM90-01	201	238	< 5	< 0.2	2.74	20	280	< 0.5	< 2	0.82	2.0	20	57	53	4.84	< 10	< 1	0.24	10	1.23	2930

CERTIFICATION: B. Cargil

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

To: EQUITY ENGINEERING LTD.
207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Invoice Date: 31-OCT-90
Invoice No. : I-9025580
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025580

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
DM90-01	201	238	4	0.03	56	1390	22	475	6	54	0.13	< 10	< 10	102	< 10	212

CERTIFICATION: B. Cargill

Chemex Labs Ltd.

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

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

A9025721

Comments: ATTN: HENRY AWMACK

CERTIFICATE A9025721

EQUITY ENGINEERING LTD.

Project: CUDS 1-4
P.O. # : LOR90-02

Samples submitted to our lab in Vancouver, BC.
This report was printed on 5-NOV-90.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	8	Geochem ring to approx 150 mesh
294	8	Crush and split (0-10 pounds)
238	8	NITRIC-AQUA REGIA DIGESTION

* NOTE 1:

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

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	8	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
922	8	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
921	8	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
923	8	As ppm: 32 element, soil & rock	ICP-AES	5	10000
924	8	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
925	8	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
926	8	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
927	8	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
928	8	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
929	8	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
930	8	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
931	8	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
932	8	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
933	8	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
951	8	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
934	8	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
935	8	La ppm: 32 element, soil & rock	ICP-AES	10	10000
936	8	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
937	8	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
938	8	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
939	8	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
940	8	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
941	8	P ppm: 32 element, soil & rock	ICP-AES	10	10000
942	8	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
943	8	Sb ppm: 32 element, soil & rock	ICP-AES	5	10000
958	8	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
944	8	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
945	8	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
946	8	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
947	8	U ppm: 32 element, soil & rock	ICP-AES	10	10000
948	8	V ppm: 32 element, soil & rock	ICP-AES	1	10000
949	8	W ppm: 32 element, soil & rock	ICP-AES	10	10000
950	8	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.
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PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments: ATTN: HENRY AWMACK

Invoice Date: 5-NOV-90
Invoice No. : I-9025721
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025721

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
465574	205	294	< 1	0.04	147	1210	< 2	15	10	872	< 0.01	< 10	< 10	74	< 10	60
465575	205	294	65	0.02	26	1070	22	15	5	164	< 0.01	< 10	< 10	18	< 10	78
465576	205	294	16	0.01	48	900	1070	360	11	245	< 0.01	< 10	< 10	25	< 10	1505
484401	205	294	4	0.06	11	510	8	< 5	2	13	0.19	< 10	< 10	51	< 10	28
484402	205	294	8	0.02	41	1070	20	10	10	222	< 0.01	< 10	< 10	38	< 10	88
484403	205	294	206	0.01	8	70	100	50	< 1	35	< 0.01	< 10	< 10	1	< 10	234
484404	205	294	386	0.03	22	590	106	25	2	101	< 0.01	< 10	< 10	13	< 10	636
484730	205	294	5	0.11	5	930	2	< 5	7	37	0.18	< 10	< 10	85	< 10	46

CERTIFICATION: B. Cargill

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Invoice Date: 5-NOV-90
Invoice No. : I-9025579
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025579

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Au FA oz/T	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
463901	205	294	1260	0.036	2.2	5.09	< 5	920	< 0.5	2	1.28	6.5	16	77	679	7.90	< 10	< 1	1.66	< 10	2.24
465568	205	294	< 5	-----	< 0.2	2.06	< 5	240	< 0.5	2	0.96	< 0.5	12	120	67	3.90	< 10	< 1	0.41	10	0.82
465644	205	294	< 5	-----	< 0.2	3.95	< 5	380	< 0.5	< 2	2.01	< 0.5	30	70	173	7.71	< 10	< 1	0.20	< 10	2.13
465645	205	294	< 5	-----	< 0.2	2.06	< 5	3740	< 0.5	2	0.37	< 0.5	5	151	85	4.12	< 10	< 1	0.48	< 10	0.76

CERTIFICATION: B. Cargill

Chemex Labs Ltd.

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207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Project : CUDS 1-4
Comments:

Invoice Date: 5-NOV-90
Invoice No. : I-9025579
P.O. Number : LOR90-02

CERTIFICATE OF ANALYSIS A9025579

SAMPLE DESCRIPTION	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
463901	205	294	1630	1	0.31	7	1800	34	5	16	99	0.18	< 10	< 10	218	< 10	934
465568	205	294	825	< 1	0.38	12	640	12	10	9	52	0.06	< 10	< 10	83	< 10	68
465644	205	294	1375	< 1	0.31	43	660	12	10	20	44	0.28	< 10	< 10	250	< 10	100
465645	205	294	585	2	0.15	10	310	16	5	6	34	0.10	< 10	< 10	41	< 10	44

CERTIFICATION: B. Cargill

TSL LABORATORIES
DIV. BURGENER TECHNICAL ENTERPRISES LIMITED

2 - 302 - 48th STREET, EAST
SASKATOON, SASKATCHEWAN
S7K 6A4
(306) 931-1033 FAX: (306) 242-4717

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Equity Engineering Ltd.
207 - 675 West Hastings St.
Vancouver, B.C.
V6B 1N2

REPORT No.
S1903

INVOICE #: 16695
P.O.: R2539

SAMPLE(S) OF Rock

Ann Doyle
Project CUDS 1-4

REMARKS: Wrangell Samples-Equity Engineering

	Au ppb	Au ozt
39828	180	
39829	>1000	.073/.071
39830	>1000	.046/.031
39831	>1000	.038
39838	150	

COPIES TO: D. McInnes
INVOICE TO: Equity - Vancouver

Sep 18/90

SIGNED [signature]

CTA

For enquiries on this report, please contact Customer Service Department.
Samples, Pulps and Rejects discarded two months from the date of this report.

TSL LABORATORIES
DIV. BURGENER TECHNICAL ENTERPRISES LIMITED

2 - 302 - 48th STREET, EAST
SASKATOON, SASKATCHEWAN
S7K 6A4
(306) 931-1033 FAX: (306) 242-4717

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Equity Engineering Ltd.
207 - 675 West Hastings St.
Vancouver, B.C.
V6B 1N2

REPORT No. S1945

INVOICE #: 16747
P.O.:

SAMPLE(S) OF Pulps

Project: CUDS 1-4

REMARKS: Equity Engineering

	Cu %
39828	1.71
39829	1.48
39830	1.08
39831	2.71

COPIES TO: D. McInnes
INVOICE TO: Equity Engineering - Vancouver

Dec 03/90

SIGNED Dennis Pilipiuk

CTA

For enquiries on this report, please contact Customer Service Department.
Samples, Pulps and Rejects discarded two months from the date of this report.

T S L LABORATORIES

2-302-48TH STREET, SASKATOON, SASKATCHEWAN S7K 6A4
TELEPHONE #: (306) 931 - 1033
FAX #: (306) 242 - 4717

I.C.A.P. PLASMA SCAN

AQUA-REGIA DIGESTION

EQUITY ENGINEERING LTD.
:07 - 675 WEST HASTINGS ST.
VANCOUVER, B.C.
V6B 1N2
.TTN: D. MCINNES PROJECT: CUDS 1-4

T.S.L. REPORT NO. : S - 1903 - 1
T.S.L. FILE NO. : M - 8081
T.S.L. INVOICE NO. : 16695

ALL RESULTS PPM

ELEMENT		39828	39829	39830	39831	39838
ALUMINUM	(AL)	15000	20000	13000	11000	12000
IRON	(FE)	140000	120000	78000	84000	71000
CALCIUM	(CA)	3300	2800	4200	5200	34000
MAGNESIUM	(MG)	6100	7400	5600	5100	5800
SODIUM	(NA)	200	180	430	420	200
POTASSIUM	(K)	330	160	600	960	4000
TITANIUM	(TI)	1000	1700	2200	2000	1300
MANGANESE	(MN)	370	480	260	280	640
PHOSPHORUS	(P)	610	700	620	810	13000
BARIUM	(BA)	20	58	43	45	34
CHROMIUM	(CR)	26	79	55	38	22
ZIRCONIUM	(ZR)	21	19	11	11	11
COPPER	(CU)	22000	20000	13000	32000	630
NICKEL	(NI)	86	26	30	14	7
LEAD	(PB)	19	30	16	91	3
ZINC	(ZN)	9400	2200	1400	4500	75
VANADIUM	(V)	85	150	82	80	210
STRONTIUM	(SR)	5	4	13	9	330
COBALT	(CO)	91	38	24	18	21
MOLYBDENUM	(MO)	< 2	10	4	< 2	< 2
SILVER	(AG)	22	26	20	34	< 1
CADMIUM	(CD)	56	20	14	28	< 1
BERYLLIUM	(BE)	< 1	< 1	< 1	< 1	< 1
BORON	(B)	< 10	< 10	< 10	< 10	< 10
ANTIMONY	(SB)	5	5	< 5	< 5	< 5
YTTRIUM	(Y)	6	6	5	5	15
SCANDIUM	(SC)	3	4	3	4	< 1
TUNGSTEN	(W)	< 10	< 10	< 10	< 10	< 10
NIOBIUM	(NB)	< 10	< 10	< 10	< 10	< 10
THORIUM	(TH)	250	220	110	150	280
ARSENIC	(AS)	< 5	< 5	< 5	< 5	10
BISMUTH	(BI)	< 5	10	< 5	< 5	20
TIN	(SN)	< 10	< 10	< 10	< 10	< 10
LITHIUM	(LI)	< 5	< 5	< 5	< 5	< 5
HOLMIUM	(HO)	< 10	< 10	< 10	< 10	< 10

ATE : SEP-27-1990 SIGNED : Bernie Dunn

APPENDIX E

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, ANN L. DOYLE, of 1545 Woods Drive, North Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist with offices at Suite 207, 675 West Hastings Street, Vancouver, British Columbia.

2. THAT I am a graduate of Carleton University with a Bachelor of Science degree in Geology.

3. THAT my primary employment since June, 1989 has been in the field of mineral exploration.

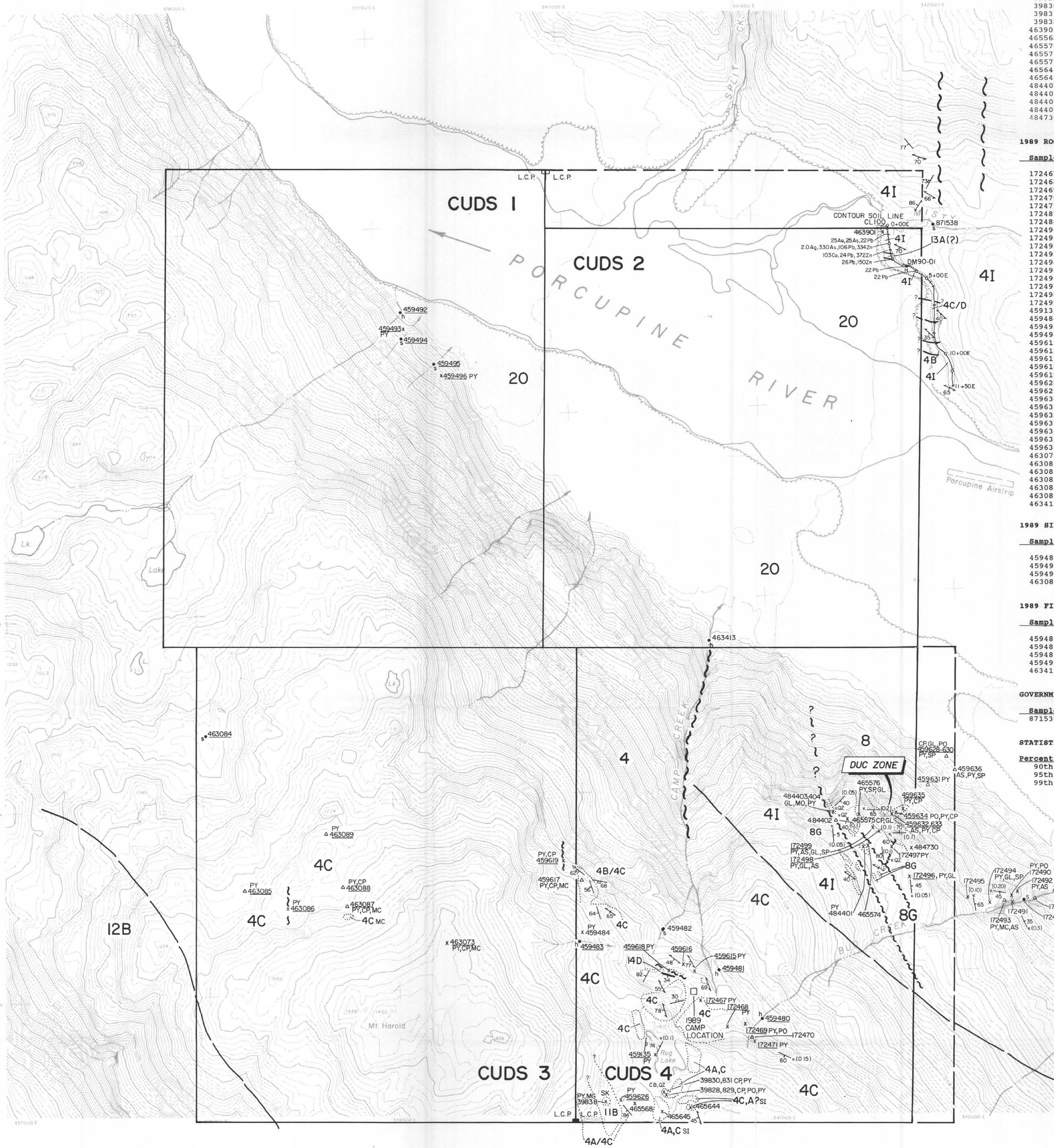
4. THAT this report is based on fieldwork carried out under my direction.

5. THAT I own no shares, directly or indirectly in Lorica Resources Ltd. or Pass Lake Resources Ltd., nor do I expect to acquire any shares. I have no interest, directly or indirectly, in the Cuds 1-4 property.

DATED at Vancouver, British Columbia, this 5th day of March, 1991.

A L Doyle

Ann L. Doyle, Geologist



1990 ROCK GEOCHEMICAL RESULTS

Sample	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
39828	180	22	1.71%	19	9400	<5
39829	2.47g/t	26	1.48%	30	2200	<5
39830	1.32g/t	20	1.08%	16	1400	<5
39831	1.30g/t	34	2.71%	91	4500	<5
39838	150	<1	630	3	75	10
463901	1.24g/t	2.2	679	34	934	<5
465568	<5	<0.2	67	12	68	<5
465574	<5	<0.2	259	<2	60	90
465575	<5	0.8	128	22	78	45
465576	85	31.4	167	1070	1505	260
465644	<5	<0.2	173	12	100	<5
465645	<5	<0.2	85	16	44	<5
484401	<5	<0.2	49	8	28	5
484402	<5	<0.2	91	20	88	125
484403	25	32	85	100	234	190
484404	15	12.8	176	106	636	540
484730	<5	<0.2	34	2	46	5

1989 ROCK GEOCHEMICAL RESULTS

Sample	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
172467	5	<0.2	47	<2	122	<5
172468	<5	<0.2	35	<2	74	30
172469	80	<0.2	162	<2	56	20
172470	<5	<0.2	99	<2	76	<5
172471	10	0.8	175	<2	152	<5
172487	<5	<0.2	201	16	130	15
172488	235	45.0	47	1480	88	6140
172490	220	9.2	291	90	118	330
172491	4.32g/t	153.3g/t	64	8480	854	5730
172492	160	6.6	20	378	82	190
172493	130	5.6	773	130	62	600
172494	70	1.8	84	260	232	170
172495	55	17.8	66	4780	572	280
172496	2.19g/t	81.4	166	1.29%	3010	235
172497	25	1.2	219	118	76	35
172498	175	66.0	284	434	46	1295
172499	3.91g/t	26.0	315	1885	5870	>10000
459135	<5	1.2	222	<2	18	<5
459484	30	<0.2	147	<2	84	<5
459493	<5	<0.2	177	<2	140	30
459496	<5	<0.2	178	2	66	20
459615	<5	<0.2	227	<2	48	<5
459616	<5	<0.2	40	<2	50	10
459617	<5	1.0	356	<2	1295	<5
459618	<5	<0.2	43	<2	118	10
459619	<5	<0.2	24	12	98	<5
459628	120	8.4	197	226	1.40%	7270
459629	<5	<0.2	139	8	186	145
459630	<5	4.2	657	14	82	70
459631	<5	3.2	538	62	70	20
459632	750	5.8	48	198	86	>10000
459633	15	<0.2	123	20	62	525
459634	<5	0.4	284	6	30	135
459635	170	3.2	129	18	34	765
459636	5.48g/t	370.3g/t	1885	4190	2.95%	>10000
463073	50	<0.2	165	<2	98	<5
463085	<5	<0.2	67	6	90	5
463086	<5	<0.2	12	<2	28	<5
463087	<5	<0.2	651	<2	174	5
463088	30	2.8	3900	<2	96	<5
463089	50	<0.2	122	10	112	135
463412	<5	0.6	501	<2	56	80

1989 SILT GEOCHEMICAL RESULTS

Sample	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
459482	5	0.2	50	6	96	30
459494	<5	<0.2	139	4	144	130
459495	<5	<0.2	120	2	134	85
463084	<5	<0.2	71	2	112	85

1989 FIELD SCREENED STREAM SEDIMENT GEOCHEMICAL RESULTS

Sample	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
459480	<5	<0.2	76	<2	106	40
459481	<5	<0.2	63	2	100	55
459483	5	<0.2	96	<2	100	20
459492	<5	<0.2	145	8	128	275
463413	<5	<0.2	142	2	148	195

GOVERNMENT REGIONAL GEOCHEMICAL SAMPLES

Sample	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
871538	7	0.2	55	8	62	4

STATISTICAL ANALYSIS FOR GOVERNMENT REGIONAL GEOCHEMICAL SAMPLES

Percentile	Au(ppb)	Ag(ppm)	Cu(ppm)	Pb(ppm)	Zn(ppm)	As(ppm)
90th	58	0.6	117	28	220	45
95th	168	1.0	169	48	328	78
99th	493	2.1	372	134	570	310

LEGEND

LITHOLOGIES

QUATERNARY
20 Glacial and unconsolidated alluvial deposits.

TERTIARY
Dykes and sills
14D Dioritic dykes.

EOCENE
13A Biotite quartz monzonite to monzonite: medium-grained, equigranular and leucocratic.

JURA-CRETACEOUS AND TERTIARY
Coast Plutonic Complex
12B Quartz-diorite to granodiorite: medium-grained, equigranular, melanocratic.

EARLY TO MIDDLE JURASSIC
Galore Creek Intrusions
11B Orthoclase porphyritic monzonite: coarse- to medium-grained, locally contains coarse hornblende crystals.

UPPER TRIASSIC
Stuhini Group
8 Undivided Stuhini Group volcanic, volcaniclastic and sedimentary rocks.
8G Tuffs/tuffaceous sediments: felsic, with well developed laminations.

MISSISSIPPIAN AND OLDER
4 Undivided metavolcanics and metasediments.
4A Tuff unit: consists of ash tuff, lapilli tuff and tuffaceous siltstone; generally siliceous, locally sheared, grades into chlorite-feldspar-quartz schist.
4B Intermediate flows and pyroclastics.
4C Argillite, siltstone: strongly laminated, siltstones are siliceous, argillites are biotite altered.
4D Greywacke: fine- to medium-grained; interbedded with lenses of argillite and siltstone of unit 4C.
4I Chlorite-feldspar-quartz schist: locally gneissic.

MINERAL ABBREVIATIONS

AS	arsenopyrite	CP	chalcopyrite	GL	galena
MC	malachite	MO	molybdenite	PO	pyrrhotite
PY	pyrite	QZ	quartz	SI	silica
SK	skarn	SP	sphalerite		

SYMBOLS

Rock outcrop
Geological boundary (approximate)
80 Fault with dip (approximate, inferred)
75 Bedding with dip
70 Foliation (inclined, vertical, unknown)
65 (0.1) Vein with dip and true width in metres
60 Joint with dip
55 Dyke with dip
Δ , X Rock sample (float, grab from outcrop)
S• Silt sample
H• Field-sieved stream sediment sample
Contour soil line with 50 metre stations. Results shown for Au >25ppb, Ag >1.0ppm, Cu >100ppm, Pb >20ppm, Zn >150ppm, As >20ppm.
L.C.P. , L.C.P. Legal corner post (located, approximate)
Tree line

Geology adapted in part from Kasper (1990), Souther et al. (1979), Logan and Koyanagi (1989).

Government geochemical data from GSC Open File 1645 (1988a) and 1646 (1988b).

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,138

0 100 500 1000
METRES

LORICA RESOURCES LTD.

CUDS 1-4 CLAIMS
GEOLOGY & GEOCHEMISTRY
BRITISH COLUMBIA

EQUITY ENGINEERING LTD.

DRAWN: A.D./ J.J.E.	MINING DIV.: LIARD	FIGURE 5
N.T.S.: 104G/4E	SCALE: 1:10000	
DATE: MARCH, 1991	REVISED:	