A GEOLOGICAL EXAMINATION OF THE TAS PROSPECT OMINECA MINING DIVISION BRITISH COLUMBIA

NTS 93K/16
OMINEC MINING DIVISION
Latitude 55° 52'N
Longitude 124° 16'W

Prepared For

GOLDCAP INC.

By

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1. SUMMARY

The TAS prospect, situated about 50 kilometres north of Fort St. James in central British Columbia, occurs within the terrane of Quesnellia, a Mesozoic alkalic copper-gold porphyry province which extends the length of British Columbia. The prospect is underlain by Triassic - Jurassic volcanic and sedimentary rocks of the Takla Group, intruded by a diorite stock of probable Lower Jurassic age. Epiclastic sedimentary rocks consist mainly of laminated to poorly bedded siltstone with an appreciable volcanic component in places. These rocks are interbedded with subaqueous tuffaceous rocks of mafic to intermediate compositions. Mafic dykes intruding this assemblage are of two ages, an older set which predate metasomatic alteration and a younger, post-alteration set.

The rocks underlying the prospect have been fractured and faulted but have not been penetratively deformed. Faults appear to strike to the north or northwest and, like most of the fractures, have subvertical attitudes. Metamorphic grade is probably of subgreenschist facies of regional metamorphism; no, or little, contact metamorphic effects have been noted.

Wallrock alteration is probably related to the diorite stock and consists of an early, dominantly chloritic, alteration which is overprinted by an assemblage characterised by epidote, calcite and, adjacent to the stock, magnetite. Away from the stock in the Ridge Zone minor silicification has also occurred. Sulphide minerals occur as fracture fillings and as disseminations. Pyrite and pyrrhotite are common in the Ridge Zone

but as magnetite becomes common towards the stock, pyrrhotite amounts decrease. Minor chalcopyrite mineralization occurs in both the Ridge Zone and associated with the diorite stock.

Major and trace element chemistry of the rocks of the prospect suggest there is little to distinguish mineralization of the Ridge Zone from elsewhere on the prospect other than elevated arsenic amounts and possibly elevated potassium relative to other parts of the property associated with mineralization of the Ridge Zone.

2. CONCLUSIONS

1. Sulphide mineralization with associated gold of the Ridge Zone is controlled by northerly to northwesterly-striking shears which conform in attitude to faults and fracture systems of regional extent.

2. It is possible that mineralization of the Ridge Zone was formed during the same hydrothermal event which produced the propylitic alteration related to the diorite stock. However, the presence of secondary silica, elevated arsenic values and relatively low copper/gold and pyrite/pyrrhotite ratios compared to mineralization associated with the diorite stock may indicate either an evolving hydrothermal system related to diorite intrusion, or separate hydrothermal events of which one gave rise to the vein-type mineralization of the Ridge zone.

3. Intensity of propylitic alteration increases towards the diorite stock. It is to be expected that higher temperature, feldspar stable, alteration assemblages will be encountered by drilling to the southeast of the areas drilled to date.

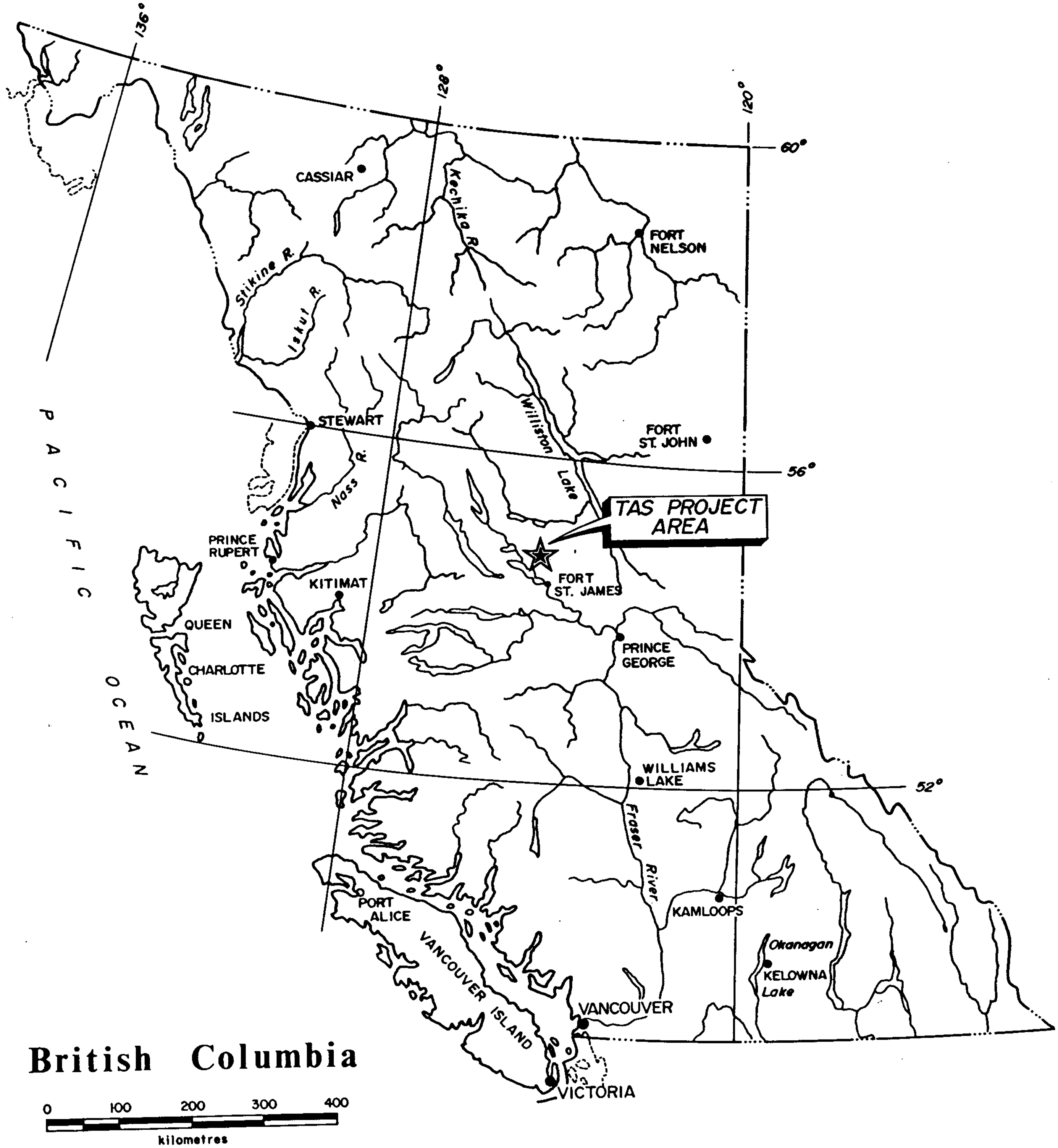
3. INTRODUCTION

3.1 General

The TAS property in the Inzana Lake region of northern British Columbia occurs within the Quesnel terrane of the Intermontane Belt, an alkalic copper-gold porphyry province extending from the British Columbia - U.S.A. border in the south to near the Yukon border in the north. Copper - gold deposits within this terrane are commonly associated with silica - undersaturated felsic stocks which have intruded volcanic and sedimentary rocks of similar age, i.e. Upper Triassic - Lower Jurassic. The TAS property covers an area underlain by sedimentary and volcanic rocks of the Upper Triassic Takla Group into which intermediate to felsic plutons were emplaced during Lower Jurassic time.

3.2 Location and Access

The TAS claims are located within the Omineca Mining District of north central British Columbia, approximately 50 kilometres north of Fort St. James (Figure 1). The claims are accessible from the Inzana Lake forestry road which passes through the southern part of the TAS group. Within the claim group access is provided by several four-wheel-drive trails from the Inzana Lake and Esker forestry roads (Figure 2).



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TAS PROJECT

Omineca M.D., B.C.

General Location Map

Scale	Date	N.T.S.
as shown	Dec. 1990	93 K/16

By BAILEY GEOLOGICAL CONSULTANTS CANADA LTD. — Figure 1

3.3 Physiography

The TAS claims are within an area of low relief, with low ridges, generally with bedrock at, or near, the surface in the north and a large area in the central and southern part of the property covered by glacial debris. Fluvial and glaciofluvial sediments occur in the southern part of the TAS group. Vegetation of the area consists of thick coniferous forest which, however, has been clearcut logged over part of the property.

3.4 Mineral Claims

The TAS property comprises 14 contiguous claims, a total of 194 units. The disposition of these claims, listed in Table 1, is shown in Figure 2. The claims are registered in the name of Noranda Exploration Company Limited (no personal liability) (NOREX) (90%) and Black Swan Gold MInes Ltd. (10%) and are subject to a joint venture agreement between NOREX, Black Swan and Goldcap Inc.

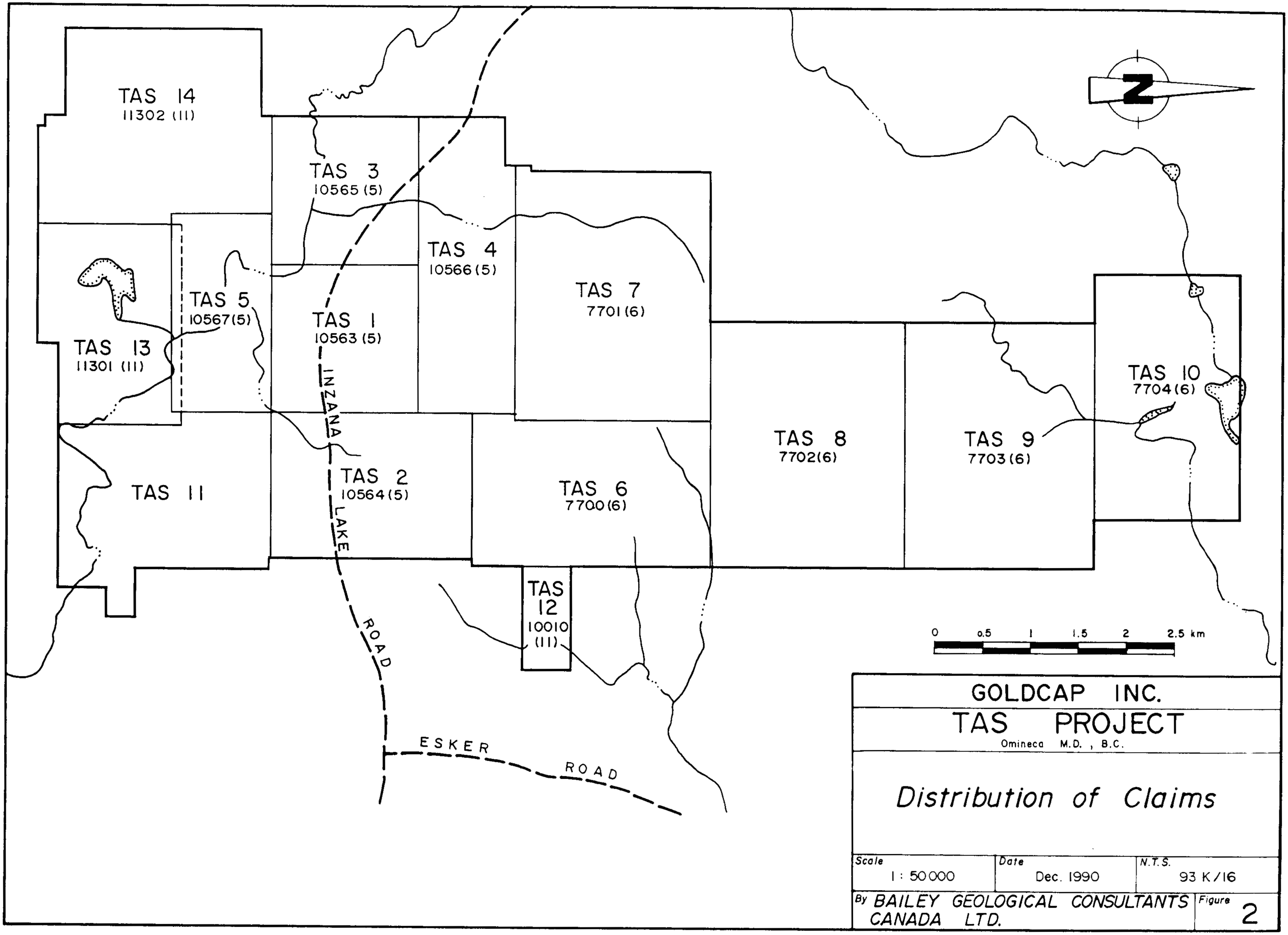
3.5 Previous Exploration

Early exploration of the area was in that part of the area now covered by the HA 1 claim to the south of the TAS group, carried out by the N.B.C. Syndicate who conducted VHEM, magnetometer and geological surveys in 1969, in order to evaluate a copper occurrence known on this claim. In 1982 during construction of the Inzana Lake forestry road copper mineralization was exposed in a road cut and subsequently staked. This zone became known as the Freegold Zone of the TAS group after the recognition of native gold in outcrop.

TABLE 1

TAS Claims

Name	Number	Units	Record Date	Expiry Date	Tag No.
TAS 1	10563	9	05/20/89	1994	105351
TAS 2	10564	12	05/20/89	1994	105352
TAS 3	10565	9	05/20/89	1994	105353
TAS 4	10566	12	05/20/89	1994	105354
TAS 5	10567	8	05/20/89	1994	105355
TAS 6	7700	15	05/24/86	1994	104937
TAS 7	7701	20	05/24/86	1994	104938
TAS 8	7702	20	05/24/86	1994	104939
TAS 9	7703	20	05/24/86	1994	104940
TAS 10	7704	15	05/24/86	1994	104941
TAS 11	7959	20	08/17/86	1994	73970
TAS 12	10010	2	11/05/88	1992	105157
TAS 13	11301	12	11/06/89	1992	105191
TAS 14	11302	20	11/12/89	1992	105192


TAS 14
11302 (11)
TAS 3
10565 (5)
TAS 4
10566 (5)
TAS 7
7701 (6)
TAS 5
10567 (5)
TAS 1
10563 (5)
TAS 13
11301 (11)
INZANA LAKE ROAD
TAS 2
10564 (5)
TAS 11
TAS 6
7700 (6)
TAS 8
7702 (6)
TAS 9
7703 (6)
TAS 10
7704 (6)
TAS 12
10010 (11)
ESKER ROAD
N
0 0.5 1 1.5 2 2.5 km
GOLDCAP INC.
TAS PROJECT
Omineca M.D., B.C.
Distribution of Claims
Scale 1 : 50 000
Date Dec. 1990
N.T.S. 93 K/16
By BAILEY GEOLOGICAL CONSULTANTS CANADA LTD.
Figure 2

In 1985 NOREX optioned the property and, during the period 1985 - 1987 established a grid and carried out geochemical, magnetometer and induced polarisation surveys, geological mapping and both diamond and percussion drilling. Most of the exploration was carried out on the Ridge Zone, an area located about 1.2 km north of the Inzana Lake road (Figure 2) where anomalous gold had been detected in soil samples over a distance of several hundreds of metres.

Drilling of the Ridge Zone by NOREX, and subsequent drilling by Black Swan Gold Mines Ltd. during 1988 and 1989 indicated the presence of at least three zones of shear - controlled gold mineralisation in this area.

3.6 1990 Exploration Programme

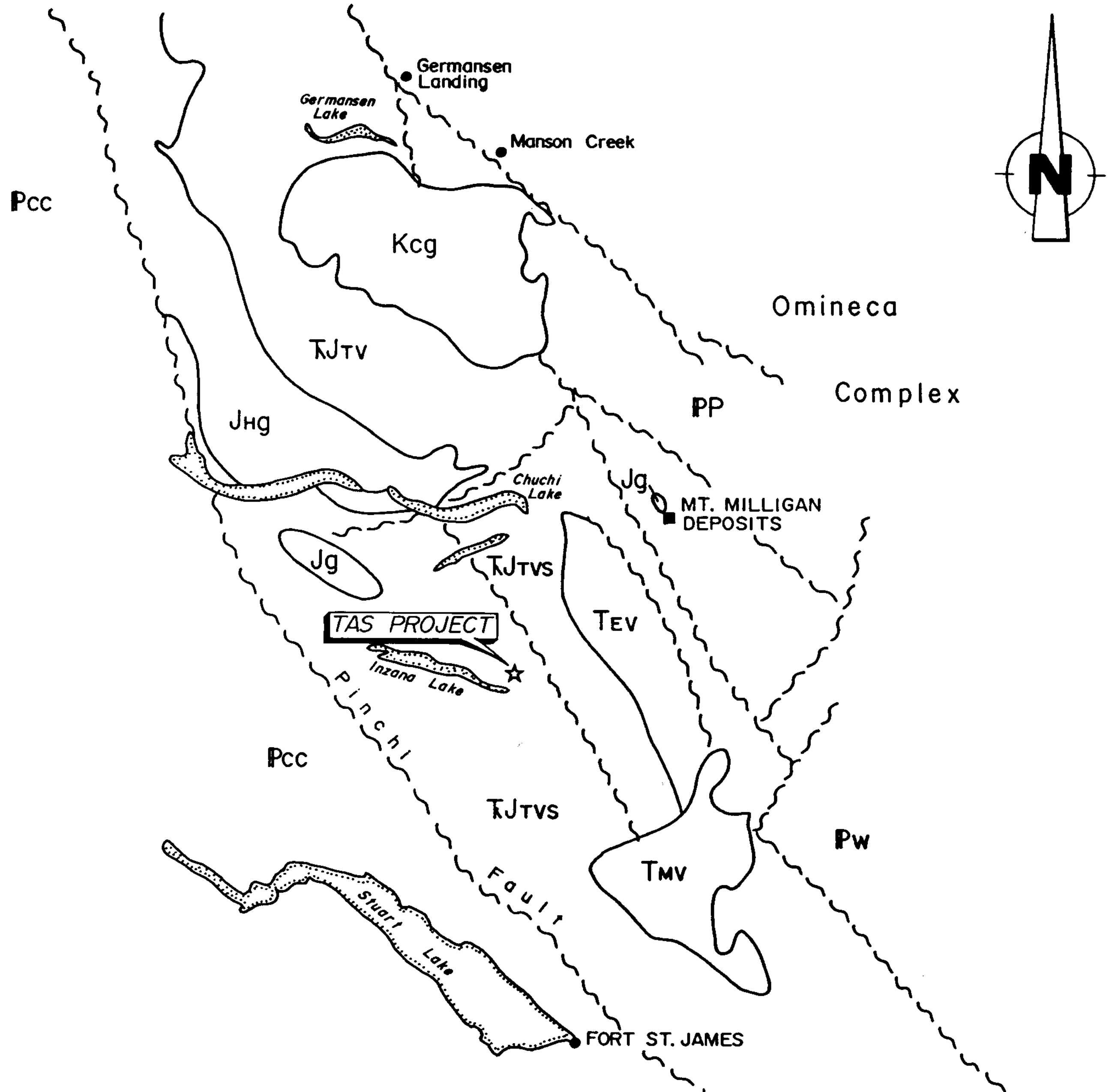
Exploration in 1990 consisted of relogging selected diamond drill core from holes previously drilled by Black Swan in 1988 and 1989 to ascertain type and distribution of lithologies and metasomatic mineral assemblages not previously detailed. This was intended to be accompanied by some geological mapping which, however, because of snow cover could not be undertaken. Heavy snowfalls also caused shortening of the relogging programme from the vehicle - supported camp.

4. GEOLOGY

4.1 Regional Geology

The region in which the TAS prospect occurs is underlain mainly by fine - grained pelitic sedimentary rocks with some volcanic interbeds, deposited in an intervolcanic basin between Takla Group volcanic rocks to the north of Chuchi Lake in the north and around Quesnel in the south. This volcanic-sedimentary assemblage is bounded to the west by the Pinchi fault and to the east by the mainly Paleozoic Wolverine and Omineca complexes (Figure 3). Mt. Milligan, a significant copper - gold deposit related to alkalic plutonism, occurs within mafic and intermediate volcanic rocks of the Takla Group about 25 kms to the northeast of the TAS prospect.

Within the sedimentary basin, including the area underlain by the TAS prospect, are a number of northwesterly-striking faults on which variable amounts of vertical movement have occurred. The Mt. Milligan stock lies on an uplifted fault block which may have been either a horst bounding the sedimentary basin during deposition, or a block uplifted after deposition with the overlying sediments having been eroded away, exposing the underlying basalts. To the west of Mt. Milligan an intrabasin graben has developed in which a considerable thickness of volcanics of Eocene age have been deposited over the Triassic - Jurassic sedimentary and volcanic rocks (J.L. Nelson, pers. comm., 1990). The TAS prospect lies to the west of this graben, near its western margin.



TERTIARY

TMV	MIOCENE : Plateau basalt
TEV	EOCENE : Felsic to intermediate volcanics

MESOZOIC

Kcg	CRETACEOUS : Germansen Batholith
JHg	JURASSIC : Hogem Batholith
Jg	JURASSIC : Undifferentiated
TJTV	TRIASSIC - JURASSIC : Takla Group volcanics
TJTVS	TRIASSIC - JURASSIC : Takla Group volcanics, sediments

PALEOZOIC

Pw	Wolverine Complex and related rocks
Pcc	Cache Creek Group

PALEOZOIC & OLDER

PP	Undifferentiated

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Omineca M.D., B.C.

Regional Geology Map

Scale	Date	N.T.S.
1 : 1 Million	Dec. 1990	93 K/16

By *BAILEY GEOLOGICAL CONSULTANTS CANADA LTD.* Figure 3

4.2 Geology of the TAS Prospect

4.2.1 Lithologies

Because of paucity of outcrop and only localised drilling the geology of the TAS prospect is poorly known. Regional magnetic surveying suggests the presence of a large stock accompanied by secondary magnetite over the southern part of the prospect and the HA claim to the south, in part confirmed by limited outcrop and drilling. Plutonic rocks observed in outcrop and intersected by drilling indicate the stock, at least in part, to be of diorite composition with fine to medium grained equigranular to slightly porphyritic textures indicating emplacement at a relatively high crustal level. The diorite mainly consists of plagioclase, possibly of andesine composition, clinopyroxene and hornblende with minor amounts of probably primary biotite. Minor amounts of a more felsic intrusive rock, possibly monzonite, have been recognised in drill core.

Diorite has intruded an assemblage of fine grained sandstone, siltstone and tuffaceous volcanic rocks of dominantly latite or andesite composition although some rocks of more mafic composition also are present. Individual units range in thickness from less than a metre to several tens of metres.

The siltstone in places is finely laminated suggesting a relatively deep marine depositional environment. Elsewhere, its massive to poorly bedded character and immaturity indicates a probable proximal source. In composition it is similar to interbedded volcanic rocks suggesting derivation from volcanics (see, for example, sample 2032, Appendix 3), a conclusion supported by the common occurrence of grading from fine to medium grained waterlain tuff into siltstone.

Tuffaceous rocks include both porphyritic and fine to medium grained equigranular varieties. Both porphyritic and nonporphyritic varieties are plagioclase - rich, clinopyroxene - bearing, massive to poorly bedded subaqueous deposits interbedded with epiclastic sediments. Porphyritic tuffs are of two types, those with phenocrysts of plagioclase only, and those with pyroxene and/or hornblende as well as plagioclase. In the latter type the amount of plagioclase phenocrysts is generally greater than the amount of mafic phenocrysts. In previous work (e.g. Boronowski and Somerville, 1989) some of the porphyritic tuffs have been identified as intrusive rocks, a conclusion which is not supported by the common gradational contacts into epiclastic sediments and the compositional variation within the individual units.

Within the sedimentary - volcanic assemblage are numerous dykes characterised by the presence of clinopyroxene phenocrysts with or without hornblende. At least two periods of dyke intrusion appear to have occurred. An early intrusive stage may be related to mafic to intermediate volcanism in the area in that some dykes are of similar composition to mafic to intermediate tuffs within the volcanic-sedimentary assemblage. These dykes have been metasomatically altered along with the enclosing rocks and, thus, predate hydrothermal activity. Younger dykes postdate wallrock alteration and contain phenocrysts of clinopyroxene, green amphibole and a pale mica, possibly phlogopite. The presence of phlogopite and the paucity of plagioclase suggests these dykes are probably lamprophyric, a conclusion supported by previous petrographic examination (Boronowski and Somerville, 1989).

4.2.2 Metamorphism and Structure

Because of widespread hydrothermal alteration of the rocks of the area drilled, regional metamorphic effects are difficult to determine. However, the preservation of primary textures and fabrics and, in less metasomatised rocks, primary mineralogies, suggests that regional metamorphic effects have been minimal. Elsewhere in the region metamorphism is of subgreenschist grade.

Contact metamorphism (hornfels), contrary to the view of previous workers (e.g. Maxwell and Bradish, 1988; Boronowski and Somerville, 1989), has been minimal in the area examined. No metamorphic textures and mineral assemblages have been recognised in hand specimen or thin section other than those which may be equally ascribed to metasomatic (mainly propylitic) processes.

Deformation of the rocks of the TAS prospect is characterised by fracturing and faulting - no regionally extensive penetrative deformation has occurred. Fractures, for the most part, occur at low angles to core axes, suggesting subvertical attitudes. Intensity of fracturing increases toward faults, recognised in core by zones of gouge and brecciation. These zones also appear to dip steeply and are interpreted strike to the north or northwest. Fault movement, at least in some cases, has been later than diorite intrusion as in some drill holes the contact between diorite and the volcanosedimentary assemblage is a fault.

4.2.3 Alteration and Mineralization

Metasomatic alteration assemblages of the rocks of the TAS prospect record at least two periods of hydrothermal activity. An early period of chloritization occurs in all rocks, except the diorite intrusion and late dykes, and is manifested as a replacement of primary amphibole and pyroxene. Chloritic alteration is more intense adjacent to faults and fracture zones and, to some degree, is lithology dependent with feldspar-rich rocks (both volcaniclastic and epiclastic) being less affected than mafic-rich rocks. A second period of metasomatism is characterised by the development of calcite + chlorite away from the diorite stock and, near and within the stock, epidote + chlorite + magnetite +/- calcite +/- albite. In mineralized shears of the Ridge Zone calcite and chlorite with variable amounts of zeolite, epidote and quartz occurs, an assemblage not noted in core from holes drilled elsewhere on the property.

The development of secondary epidote and magnetite increases in intensity towards the margin of, and within, the diorite stock. Epidote up to 80% and magnetite clots and disseminations to about 5% of the total rock have been recognised in this zone.

Potassic alteration is suggested by positive cobaltinitrate staining results in many of the rocks of the TAS prospect. While potassium feldspar has been recognised in minor amounts in some rocks, it is not a dominant alteration mineral. It is thought that much of the potassium alteration may be in the form of potassic micas or clay; in part this alteration may be a late deuteric, or supergene, effect.

Sulphide mineralization associated with silicate alteration assemblages is characterised by pyrite and pyrrhotite as fracture fillings and disseminations. Pyrrhotite is common in the mineralized shears of the Ridge Zone where, in places, it exceeds pyrite in amount. Towards and within the diorite stock pyrrhotite is absent or rare and appears to have an inverse relationship with magnetite, i.e. where there is abundant magnetite, pyrrhotite is generally absent. This relationship suggests that the iron sulphides were formed during the same hydrothermal event in which magnetite was deposited but that the hydrothermal solutions from which the iron-bearing minerals were precipitated became more reducing away from the stock.

Copper mineralization was rarely observed in the core examined but, where seen, is in the form of chalcopyrite. In some fractures of the Ridge Zone massive veins of pyrite-pyrrhotite mineralization contain chalcopyrite included within the iron sulphides. Elsewhere, chalcopyrite, where present, occurs as discrete disseminations.

The distribution of alteration assemblages with respect to the drill holes logged during the current programme, the location of drill holes and a preliminary interpretation of the geology of part of the TAS prospect is shown in Figure 4 (rear pocket).

5. ROCK GEOCHEMISTRY

34 samples of drill core were collected for analysis by induction coupled plasma spectrometry (ICP) to determine element distribution of altered and sulphide-bearing rocks of the Ridge Zone, the diorite intrusion and rocks adjacent to the Freegold Zone. Analytical results are given in Appendix 1 while locations of core sampled in given in the accompaying drill logs (Appendix 2).

Rocks of DDH 89-48, drilled through a mineralized shear in the Ridge Zone, contains relatively elevated arsenic in a zone of strong fracturing with iron sulphides. This hole also displays weak potassium enrichment relative to other holes, although conclusions with respect to alkali distribution made from ICP analyses must be tentative at low concentration levels.

In general there is a positive correlation between copper and gold in all holes although copper/gold ratios are significantly less in DDH 89-48 than in other holes.

From results to date no marked trends are apparent in the distribution of elements, other than arsenic and potassium, which may allow the Ridge Zone mineralization be differentiated from other types of mineralization, such as diorite-hosted copper-gold mineralization. However, this may have important implications for the interpretation of surface geochemical (soil) survey results.

6. REFERENCES

Boronowski, A and R. Somerville, 1989: A report on the 1989 diamond drilling and trenching program, Tas property, near Inzana Lake, B.C. Black Swan Gold Mines Ltd.

Maxwell, G and L. Bradish, 1988: Report of work on the Tas project. Noranda Exploration Co. Ltd.

7. CERTIFICATE OF QUALIFICATIONS

I, David Gerard Bailey of 4668 Skyline Drive, North Vancouver, British Columbia, hereby certify that:

1. I am a consulting geologist with offices at Suite 308, 409 Granville Street, Vancouver, B.C.;

2. I hold the degrees of Bachelor of Science (Honours) in geology from Victoria University of Wellington, New Zealand (1973) and Doctor of Philosophy in geology from Queen's University, Kingston, Ontario (1978);

3. I have practised the profession of geologist continuously since graduation;

4. I am a Fellow of the Geological Association of Canada;

5. I personally carried out the work programme described in this report;

6. Neither myself, nor Bailey Geological Consultants (Canada) Ltd., hold, or have any right to hold, either directly of indirectly, an interest in the Tas property or in the member companies of the Tas joint venture.

Dated this 28th day of December, 1990, Vancouver, B.C.

GEOLOGICAL ASSOCIATION OF CANADA
D. G. BAILEY
FELLOW

David G. Bailey

APPENDIX 1
ANALYTICAL RESULTS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Bailey Geological Consultants PROJECT TAS 90 File # 90-5656

Box 189 Station A, 757 W, Vancouver BC V6C 2M3

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
2012	1	66	5	20	.1	6	9	372	2.30	23	5	ND	5	82	.2	2	2	37	2.07	.089	19	6	.51	104	.09	5	2.10	.30	.20	1	35
2013	1	62	4	18	.1	6	8	340	2.13	32	5	ND	5	100	.2	2	2	37	2.30	.090	19	5	.48	112	.10	6	2.20	.31	.21	1	54
2014	3	71	6	22	.1	7	10	426	2.99	49	5	ND	5	100	.2	2	2	47	2.78	.088	19	16	.64	77	.10	3	2.39	.27	.14	1	85
2015	2	97	4	21	.1	7	10	365	2.54	34	5	ND	5	73	.2	2	2	39	2.16	.091	18	12	.57	70	.09	5	2.19	.22	.14	1	33
2016	2	106	5	23	.1	9	12	461	2.97	32	5	ND	5	126	.2	2	2	47	3.04	.080	18	10	.75	75	.10	2	1.92	.18	.11	1	110
2017	2	139	3	20	.1	28	12	339	2.19	7	5	ND	3	106	.2	2	2	46	2.54	.147	12	19	.70	136	.14	2	1.21	.22	.28	1	8
2018	8	179	2	19	.1	30	14	340	2.18	5	5	ND	1	102	.2	2	2	35	2.13	.142	11	17	.40	121	.13	2	1.21	.28	.25	1	13
2019	1	117	4	52	.1	23	24	726	4.52	11	5	ND	2	211	.3	2	2	105	4.23	.116	3	18	1.94	94	.19	2	3.08	.24	.24	1	18
2020	6	150	4	22	.1	24	12	472	2.58	7	5	ND	3	100	.2	2	2	45	3.07	.135	12	19	.60	114	.14	2	1.30	.25	.21	1	19
2021	2	102	4	11	.1	7	10	189	1.41	4	5	ND	4	98	.2	2	2	18	1.34	.051	14	6	.21	149	.09	4	1.16	.20	.29	1	12
2022	4	166	4	14	.1	23	14	289	2.47	2	5	ND	2	78	.2	2	2	37	1.94	.153	10	17	.43	126	.13	2	1.26	.25	.25	1	5
2023	1	198	5	15	.1	11	20	242	3.15	5	5	ND	2	87	.2	2	2	58	2.45	.139	8	6	.73	33	.12	2	2.12	.30	.08	1	7
2024	1	47	2	17	.1	7	8	240	2.65	3	5	ND	2	75	.2	2	2	59	2.50	.135	7	5	.57	38	.12	2	1.91	.17	.06	1	19
2025	1	104	6	19	.1	6	12	271	3.34	7	5	ND	2	82	.2	2	2	58	2.41	.137	7	5	.64	35	.11	2	1.80	.10	.06	1	14
2026	5	126	4	16	.1	17	15	399	2.70	6	5	ND	1	111	.2	2	2	56	1.77	.137	10	14	.82	80	.17	2	1.35	.24	.17	1	8
2027	3	103	2	22	.1	19	17	643	3.91	9	5	ND	2	108	.2	2	2	97	4.00	.131	10	23	1.28	81	.16	2	1.97	.26	.16	1	12
2028	3	75	4	13	.1	14	9	349	2.26	2	5	ND	1	108	.2	2	2	57	1.67	.134	9	14	.59	74	.16	2	1.18	.23	.17	1	12
2029	1	94	3	25	.1	15	14	384	3.16	17	5	ND	3	67	.2	6	2	67	1.15	.126	10	16	.71	75	.15	2	1.43	.20	.21	1	23
2030	1	2063	4	1	.3	17	26	230	2.62	8	5	ND	2	105	.2	2	2	54	1.39	.153	9	17	.51	116	.14	2	.97	.23	.21	1	390
2031	1	176	4	27	.1	2	10	299	3.36	3	5	ND	4	193	.2	2	2	71	1.58	.136	15	1	.56	69	.13	2	1.29	.12	.14	1	8
2032	1	296	4	19	.1	11	10	367	2.93	2	5	ND	2	104	.2	2	2	69	1.88	.160	13	30	.83	55	.14	2	1.14	.22	.11	1	41
2033	4	732	4	11	.1	15	15	310	3.12	2	5	ND	1	122	.2	2	2	62	1.47	.158	14	26	.67	56	.15	2	1.13	.24	.10	1	300
2034	1	188	2	25	.1	11	13	519	3.91	7	5	ND	1	151	.2	2	2	86	3.18	.140	9	27	1.29	55	.19	2	1.77	.27	.11	1	26
2035	1	28	4	11	.1	4	4	187	1.84	2	5	ND	2	219	.2	2	2	46	2.02	.093	10	11	.36	42	.13	2	1.05	.13	.11	1	13
2036	1	349	3	17	.1	10	14	466	3.63	3	5	ND	1	180	.2	2	2	92	3.52	.137	8	24	1.10	79	.19	2	1.50	.15	.19	1	21
2037	1	408	3	11	.1	10	13	362	2.78	2	5	ND	1	165	.2	2	2	52	3.80	.132	16	17	.69	43	.14	2	1.06	.14	.13	1	12
2038	1	105	5	21	.1	9	11	383	2.97	2	5	ND	2	117	.2	2	2	69	1.76	.133	12	12	.65	87	.16	2	1.13	.17	.17	1	9
2039	1	114	3	16	.1	10	10	283	2.43	2	5	ND	1	127	.2	2	2	61	1.14	.129	11	7	.47	60	.13	2	1.02	.16	.11	1	4
2040	1	466	4	3	.2	8	16	287	2.37	2	5	ND	2	142	.2	2	2	38	3.69	.115	11	5	.33	43	.10	2	.81	.13	.10	1	3
2041	1	507	3	5	.1	11	23	258	2.62	2	5	ND	2	72	.2	2	2	38	2.07	.128	15	7	.59	21	.10	2	1.13	.15	.09	1	11
2042	1	92	3	69	.1	5	20	657	4.00	3	5	ND	1	172	.2	2	2	111	2.32	.350	15	4	1.64	72	.15	2	2.15	.08	.11	1	3
2043	1	29	3	59	.1	4	17	563	3.90	2	5	ND	1	159	.2	2	2	108	2.41	.347	14	4	1.31	69	.12	2	1.81	.08	.12	1	4
2044	2	26	5	29	.1	5	6	410	2.00	2	5	ND	2	184	.2	2	2	53	1.86	.087	11	14	.61	34	.13	2	1.12	.17	.05	1	5
2045	1	28	5	24	.1	2	6	330	2.65	2	5	ND	2	145	.2	2	2	77	1.43	.091	11	1	.45	64	.12	2	.93	.14	.10	1	3
STANDARD C/AU-R	19	57	41	131	7.0	73	31	1050	3.95	35	23	7	40	52	19.0	15	20	58	.45	.090	40	58	.91	182	.07	34	1.90	.06	.13	13	530

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: CORE AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: NOV 1 1990 DATE REPORT MAILED: Nov 5/90. SIGNED BY.......... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

APPENDIX 2
DRILL LOGS

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing
Collar	—	

PROPERTY	
Location	
Elevation	
Coordinates	
Length	
Hor. Comp.	Vert. Comp.
Bearing	
Began	Completed
Core Size	Recovery %
Hole No.	88-40
Sheet	of
Logged by	
Sampled by	

~~FOOTAGE~~ METRES (From)	(To)	RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS Cu ppm	Au ppb
0	5.8	5.8	CASING								
5.8	14.9	9.1	FELDSPATHIC TUFF Medium to fine grained, light greenish grey, feldspar-rich tuff with occasional subangular to subrounded accidental clasts 1-2cm. dia. Becoming finer grained downhole. 13.7 - 14.3 Hornblende porphyry dyke - intermediate, possibly monzonitic. Contact with tuff above 50° TCA.	Moderately chloritic. Pyrite as disseminations and fracture coatings, 1-4%.							
14.9	91.8	76.9	DIORITE/ANDESITE (?). Equigranular to weakly porphyritic plagioclase-rich with euhedral clinopyroxene (?diopsidic). Grain size <1mm av. Fracturing at 40° TCA - variable intensity (1-2cm apart at top, decreasing downwards). 23.2-23.5 Intense fracturing (?shear) 23.5-30.0 Bleached zone. 41.1-42.5 Intermediate dyke - pyroxene + hornblende + plagioclase porphyry. Grey, fine grained. Contact 45° TCA. Unaltered & unmineralized. 66.5-78.1 Mafic dyke. Possibly lamprophyric - porphyritic with phenocrysts of (?) hornblende and (?) clinopyroxene in dark grey matrix of unknown composition.	Weak pervasive chlorite. Minor to trace dis. py. Minor epidote (<5%) in places		2023 2024 2025	30.5 35.5 38.5	35.5 38.5 41.1	5.0 3.0 2.6	198 47 104	7 19 14
91.8	103.6	11.8	MAFIC DYKE Hornblende + (?) clinopyroxene phenocrysts in fine grained dark greenish grey matrix.	102.3-102.4 Massive pyrite band. 1-5% pyrite as disseminations and veinlets in lower part of unit.							

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing
Collar	—	

PROPERTY TAS
Location
Elevation
Coordinates

Length
Hor. Comp. Vert. Comp.
Bearing
Began Completed
Core Size Recovery %

Hole No. 88-43
Sheet of
Logged by
Sampled by

~~FOOTAGE~~ METRES		RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
0	6.7	6.7	CASING							
6.7	41.5	34.8	DIORITE Medium to fine-grained equigranular hornblende diorite Fracturing 20°-45° TCA - variable spacing and intensity 16.3-16.4 Fault gouge 22.1-24.5 Fault gouge and breccia	Epidote - calcite - hematite - chlorite - magnetite Common pervasive epidote alteration - epidote as clots, fracture envelopes and local replacements. Epidote overprint on earlier chlorite alteration. Abundant 2° magnetite (to ~5%) as discrete grains, clots, and replacement of mafic minerals. Sulphide-poor. Minor calcite veins						
41.5	70.6	29.1	VOLCANIC ASSEMBLAGE Interbedded intermediate tuff and pyroxenphyric (?) flows. Commonly highly fractured at variable angle TCA 41.5-43.0 Fault breccia - contact with upper diorite 70.0-70.6 Fault breccia and gouge - contact with lower diorite	Chlorite ± pyrite (~1-2%)						
70.6			DIORITE Medium grained equigranular hornblende diorite	Pervasive weak to moderate epidote alteration Assemblage epidote - calcite - magnetite ± K-spar (?)						

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing			
Collar	-55°	270°	PROPERTY TAS	Length 73.7 m	Hole No. 89-48
			Location	Hor. Comp. / Vert. Comp.	Sheet 1 of 2
			Elevation 1001 m	Bearing	Logged by OGB
			Coordinates 49838.7 E / 49960.33 N	Began / Completed	Sampled by
				Core Size / Recovery %	

FOOTAGE METRES (From)	(To)	RECOV. INTERVAL	DESCRIPTION	MINERALIZATION + ALTERATION	GRAPHIC LOG
0	8.5	8.5	CASING		
8.5	24.4	15.9	LATITE TUFF (Feldspar phenoclasts) Fine grained light grey crystal tuff. Dominantly feldspathic matrix with euhedral to subhedral plagioclase phenoclasts, averaging 0.5 mm long. Accidental clasts 1-7 cm dia : [illegible] - diorite, mafic intrusion (? microgabbro) and altered monzonite. Pyroxene phenoclasts rare at top of hole, become more common downwards. 8.5 - 13.6 FAULT BX. Clasts of tuff to 3 cm in brownish clay-rich matrix. 14.9 - 13.2 FAULT BX + GOUGE. 16.1 - 18.5 FAULT BX. 20.5 - 24.4 FAULT BX + GOUGE.	Weakly chloritic matrix and mafic phenoclasts. Calcite as sparse veinlets of variable orientation and as a minor replacement of matrix. Trace pyrite. Limonite common on fracture surfaces.	
24.4	47.0	22.6	LATITE TUFF (Feldspar + clinopyroxene phenoclasts). Fine-grained, light grey, massive. Dominantly feldspathic matrix with euhedral to subhedral plagioclase phenoclasts and euhedral dark green to black clinopyroxene phenoclasts (2-4%). Feldspars greenish (? chloritized) in places. 28.0 - ~33 Zone of brecciation and intense fracturing. Rare highly altered diorite as accidental clasts.	Moderately chloritic. Sparse calcite veinlets and common limonitic fractures at 10-20° TCA. Py + po to 0.5% as disseminations + replacement of cpx 39-43.6. Pyrite + chlorite along fractures 43.6-47.5.	
47.0	47.6	0.6	MAFIC DYKE (?) Equigranular, medium grey, fine-grained, highly altered and fractured.	Strongly chloritic. 0.5 pyrite.	
47.6	52.9	5.3	SILTSTONE Light greenish grey, very fine grained massive: possibly somewhat hornfelsed although mineralogy not apparent because of fine grain size. Generally well fractured at low angle TCA. Possibly K-spar rich (from staining) which probably is original mineralogy rather than an alteration product.	Bleaching along fractures - K-spar alteration - chlorite - [illegible] pyrite along fractures. ± epidote and calcite.	
52.9	53.5	0.6	SANDSTONE (?) Dark greenish grey, mafic-rich, fine grained, actinolitic	Trace dis. pyrite. Chlorite - moderate	

SAMPLES No.	From	To	Length	ASSAYS Cu ppm	Au ppb
2012	39.4	40.8	1.4	66	35
2013	40.8	42.3	1.5	62	54
2014	42.3	43.1	0.8	71	85
2015	43.6	45.0	1.4	97	33
2016	45.0	47.6	2.6	106	110
2017	48.5	49.6	1.1	139	8
2018	51.5	52.9	1.4	179	13

MINCORD Exploration Consultants Ltd.	DRILL HOLE RECORD		Inclination	Bearing	PROPERTY	Length	Hole No. 89-48
		Collar	—		Location	Hor. Comp. Vert. Comp.	Sheet 2 of 2
					Elevation	Bearing	Logged by DGB
					Coordinates	Began Completed	Sampled by
						Core Size Recovery %	

FOOTAGE METRES		RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	Cu ppm	Au ppb	ASSAYS
53.5	55.8	2.3	SILTSTONE. Greenish grey to buff, very fine grained, massive; brecciated in part. Fractures ~20° TCA.	Eqc pyrite and calcite along fractures		2019	52.9	53.5	0.6	117	18	
						2020	53.5	55.8	2.3	150	19	
55.8	56.7	1.9	MAFIC (?) DYKE. Fine grained dark greyish green, possibly dioritic. Contacts with siltstone above and below, 45° TCA.	Potassic altered + pervasively chloritized.		2021	55.8	56.7	0.9	102	12	
						2022	56.7	58.2	1.5	166	5	
56.7	73.7	17.0	SILTSTONE. Greenish grey to buff, very fine grained, massive.	Alteration (buff colouration) decreases downhole								
				Pyrite - trace								
			61.4 - 63.0 FAULT BX.	K-spar (?) indicated								
			70.1 - 71.9 BX.	by staining								
			73.7 EOH									

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing
Collar	-45°	035°

PROPERTY TAS
Location
Elevation 951.44
Coordinates 49991.09E 49732.91N

Length
Hor. Comp. Vert. Comp.
Bearing
Began Completed
Core Size Recovery %

Hole No. 89-58
Sheet of
Logged by DGB
Sampled by

FOOTAGE METRES		RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
0	5.5	5.5	CASING							
5.5	16.7	11.2	MAFIC BRECCIA. Clinopyroxene-hornblende porphyritic clasts subangular to subrounded in mafic tuffaceous matrix. Dark green to greenish grey. Volcanic. 6.8-12.2 FAULT BX + GOUGE. Small subrounded clasts in clay-rich matrix.	Moderately chloritic. Trace pyrite.						
16.7	19.5	2.8	FELDSPATHIC TUFF (?LATITE) Fine grained to very fine grained, greenish grey. Small plagioclase phenoclasts in altered matrix. Primary fabric mainly obliterated by alteration. Accidental clasts of monzonite and diorite.	Moderate to strong chlorite alteration						
19.5	20.8	1.3	MAFIC TUFF. Phenoclasts of clinopyroxene and hornblende in chloritic, probably tuffaceous matrix. - Gradational contact with lower unit.	Moderate chlorite alteration. Calcite ± epidote veining 10° TCA. Pyrite blebs and clots to 1% in more altered rock.						
20.8	27.4	6.6	(?) LATITE TUFF. Probably feldspathic - primary fabric largely destroyed by alteration. Pseudomorphs of after clinopyroxene, hornblende and probably plagioclase. Subangular clasts to 1-2 cm. 26.5 - 27.0 Pyroxene-rich section. 25.5 - 27.0 FAULT BX.	Strongly chloritic. Staining indicates 2° K-spar.						
27.4	27.9	0.5	MAFIC DYKE. Hornblende phenocrysts (25%) and minor clinopyroxene with small plagioclase (< 0.5mm) in chloritic matrix.	Moderate chlorite						
27.9	39.0	12.1	FELDSPATHIC TUFF (?LATITE) Very fine grained. Pseudomorphs after plagioclase (?) in places. Alteration has largely destroyed primary fabric.	Strongly chloritic Silica alteration 28.0 - 30.50 Dis. py + po < 1%						
39.0	40.9	1.8	MAFIC TUFF. Medium grey, medium to fine grained, with phenoclasts of hornblende and minor clinopyroxene. Contact gradational with above unit.	Strongly chloritic. Minor dis. py + po.						

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing				
Collar	—		PROPERTY	Length	Hole No. 89-58	
			Location	Hor. Comp.	Vert. Comp.	Sheet of
			Elevation	Bearing		Logged by.
			Coordinates	Began	Completed	Sampled by
				Core Size	Recovery %	

~~FOOTAGE~~ METRES (From)	(To)	RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
40.8	44.0	3.2	FELDSPATHIC TUFF Fine-grained highly altered and fractured tuff. Small feldspar phenoclasts (< 1mm) and rare clinopyroxene grains	Chlorite intense. Calcite veinlets. Pyrite, pyrrhotite as fracture fillings						
44.0	45.6	1.6	HORNBLENDE-PYROXENE TUFF. Gradational from above. Clinopyroxene grains highly altered with up to 10% euhedral hornblende in fine-grained highly altered matrix. Fractures 30° TCA.	Chlorite + calcite						
45.6	47.1	1.5	FELDSPATHIC TUFF. Fine-grained altered tuff with plagioclase phenoclasts; occasional hornblende and cpx grains. Highly fractured	Calcite + chlorite. Hematite (minor) along fractures. Trace dis py.						
47.1	48.2	1.1	HORNBLENDE-PYROXENE TUFF Medium to fine-grained with mafic phenoclasts to 1cm dia.	Chloritic. Pyrite replacing cpx in places.						
48.2	56.4	8.2	SILTSTONE: Very fine-grained, medium grey. Highly fractured and brecciated in part.	Pyrite (<1%) as fracture filling and disseminations						
56.4	60.1	3.7	FELDSPATHIC TUFF Medium grained greenish grey. Highly fractured (10° TCA). Mainly feldspathic but some zones with hornblende and cpx grains.	Chloritic. Calcite + pyrite minor.						
60.1	60.4	0.3	INTERMEDIATE DYKE. Porphyritic - phenocrysts of hornblende and euhedral plagioclase in light greenish-grey fine-grained to aphanitic matrix	Slight chloritization.						
60.4	71.1	10.7	SILTSTONE Very fine grained light grey to pale green; finely laminated in places, otherwise massive. Bedding at 20° TCA. Variably fractured at 10°-20° TCA. 69.0-69.3 Hornblende-bearing intermediate dyke.	Minor calcite + chlorite. Pyrite dis < 1%						
71.1	71.6	0.5	FELDSPATHIC TUFF. Medium to fine grained grey tuff. < 1% mafic phenoclasts. Plagioclase-rich	Minor dis. pyrite						
71.6	85.0	13.4	SILTSTONE Fine grained to very fine grained grey to greenish grey. Minor tuffaceous interbeds. 76.2 - 78.0 Fault breccia: clay and milled siltstone clasts.	Sulphides ~1% Po > py - as fracture filling and minor disseminations						

MINCORD Exploration Consultants Ltd. — DRILL HOLE RECORD

	Inclination	Bearing
Collar	-45°	180°

PROPERTY TAS
Location
Elevation 890·05
Coordinates 48981·66 E
48724·55 N

Length
Hor. Comp. Vert. Comp.
Bearing
Began Completed
Core Size Recovery %

Hole No. 89-59
Sheet of
Logged by DGB
Sampled by

FOOTAGE METRES		RECOV. INTERVAL	DESCRIPTION	MINERALIZATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	Cu ppm	Au ppb	ASSAYS
0	9·8	9·8	CASING									
9·8	89·5	79·7	DIORITE Medium to fine grained hornblende diorite, equigranular, grey to green.	Variably altered		2042	62·2	63·4	1·2	92	3	
			33·4 -36·0 Fault breccia.	Epi + chl + mag ± calcite.		2043	63·4	64·5	1·1	29	4	
			Alteration both fracture controlled with fractures generally at a steep angle to TCA and as clots and mineral replacement.	Sulphides absent to rare (trace dis. py + cp 60·2 - 62·0)		2044	64·5	65·9	1·4	26	5	
				Minor dis py + along fractures at 71·5 - 74·0		2045	65·9	66·9	1·0	28	3	
				2° magnetite to 5% as blebs and disseminations 79·5 - 80·5.								
			EOH 89·5.									

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing
Collar	-45°	360°

PROPERTY TAS
Location
Elevation 946.99 m
Coordinates 49167.17 E
49351.21 N

Length
Hor. Comp. Vert. Comp.
Bearing
Began Completed
Core Size Recovery %

Hole No. 89-60
Sheet 1 of 2
Logged by DJB
Sampled by

~~FOOTAGE~~ METRES		RECOV. (INTERVAL)	DESCRIPTION	MINERALIZATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
0	7	7	CASING							
7.0	10.4	3.4	(?) FELDSPATHIC TUFF (?LATITE) Light grey to greenish grey, very fine grained. Probably originally feldspathic but alteration has destroyed primary fabric. Some intervals with small hornblende phenoclasts	Bleached and silicified. Pyrite as disseminations and fracture coatings 1-2%						
10.4	10.7	0.3	HORNBLENDE DIORITE. Medium to fine grained, equigranular, light grey. Contact with unit above 45° TCA	Moderately chloritized. Pyrite dis. 1%						
10.7	13.8	3.1	(?) FELDSPATHIC TUFF (?LATITE) Light grey, very fine grained: some hornblende-rich zones	Bleached & silicified. Pyrite dis. & fracture coatings 1%						
13.8	14.0	0.2	DIORITE. Hornblende diorite, med-fine grained light grey. Contact with tuff ~~[illegible]~~ 60° TCA	Minor chlorite						
14.0	21.9	7.9	FELDSPATHIC TUFF (?LATITE) Grey to greenish-grey, fine grained: some hornblende-rich zones. Alteration has generally obliterated primary fabric.	Pyrite 1-2% as dis. and fracture coatings. Minor silicification: moderately chloritized						
21.9	27.6 ~~35.5~~	5.7 ~~3.6~~	INTERMEDIATE TUFF. Medium grained, greyish green to cream where bleached. Variable texture: upper part has small (1-2mm) hornblende phenoclasts and large (to 1cm) pseudomorphs possibly after clinopyroxene, in fine grained possibly feldspathic matrix. Unit becomes brecciated (in part cataclastic) down hole and primary textures obliterated. Non-porphyritic towards bottom of unit	Strong chloritic alteration and thin calcite ± pyrite veinlets. Minor pyrite ± po.						
27.6	33.3	5.7	HORNBLENDE PORPHYRY. Probably a dyke. Green porphyritic. Phenocrysts of euhedral hornblende and highly altered euhedral grains of probably clinopyroxene in very fine grained chloritic matrix. Matrix probably originally feldspathic.	Moderate chlorite. Minor py + po.						
33.3	36.5	3.2	MONZONITE. Equigranular, medium to fine grained plagioclase-rich with minor hornblende (<5%). Inter-granular material possibly K-spar (from staining). Texture: Plagioclase laths generally commonly oriented. Variably altered - where intense, primary textures destroyed	Variably chloritic and silicified. Bleaching and chloritization along fractures as well as pervasive in places.						

MINCORD Exploration Consultants Ltd.	DRILL HOLE RECORD		Inclination	Bearing	PROPERTY	Length		Hole No. 89-60
		Collar	—		Location	Hor. Comp.	Vert. Comp.	Sheet 2 of 2
					Elevation	Bearing		Logged by OGB
					Coordinates	Began	Completed	Sampled by
						Core Size	Recovery %	

FOOTAGE		RECOV.	DESCRIPTION	MINERALIZATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
	~~80.2~~	~~43~~								
36.5	~~41.0~~	3.5	POLYLITHIC BRECCIA. Angular to subrounded, poorly	Strong chloritization.						
	80.2	43.7	sorted clasts of siltstone, hornblende porphyry, monzonite,	Calcite veinlets. Py as		2026	45.7	46.5	0.8	
			diorite, felsic tuff and probably mafic volcanics in	fracture coatings and						
			very fine-grained chlorite matrix. In places clasts	diss. <1%. Minor po.		2027	46.5	47.7	1.2	
			(especially siltstone) exhibit reaction rims. Texture				49.5			
			in places (especially towards top of unit) is cata-			2028	~~47.7~~	50.8	1.3	
			clastic. Minor siltstone interbeds e.g. 59.0 - 59.1.							
			Probably a volcanic (or, shallow) breccia which, in part, has			2029	50.9	51.7	0.9	
			been rebrecciated by later faulting.							
			41.0 - 41.3 Equigranular, m-f.gr. monzonite dyke							
			51.4 - 52.4 Hornblende porphyry dyke							
			60.3 - 63.5 Hornblende diorite dyke - chlorite with epidote veinlets ± calcite							
			72.0 - 72.9 Hornblende porphyry dyke							
			EOH 80.2							

DRILL HOLE RECORD

MINCORD Exploration Consultants Ltd.

	Inclination	Bearing		
Collar	-45°	340°		

PROPERTY: TAS
Location:
Elevation: 946.90
Coordinates: 49015.03E / 49177.08N

Length: 86.30
Hor. Comp.: Vert. Comp.:
Bearing:
Began: Completed:
Core Size: Recovery: %

Hole No. 89-61
Sheet: of
Logged by: DGB
Sampled by:

~~FOOTAGE~~ METRES From	To	~~RECOV.~~ INT.	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	Sample No.	From	To	Length	Cu ppm	Au ppb
0	9.4	9.4	CASING								
9.4	14.4	5.0	FELDSPATHIC TUFF. Greyish green to grey, fine grained, dominantly plagioclase-rich, generally equigranular.	Chlorite + epidote ± calcite veinlets. Minor dis py + po + mag							
14.4	42.7	28.3	SILTSTONE. Buff to grey, highly fractured and, in places, brecciated. Fractured commonly about 20° TCA. Minor tuffaceous interbeds. Becoming less fractured downwards but with common epidote veinlets with 2° magnetite. 31.1 – 31.8 Equigranular diorite with epidote + magnetite. Weakly chloritic. 37.0 – 38.3 Monzonite or monzodiorite with epidote + magnetite	Py + po + mag - trace to 2%. Chlorite fairly pervasive. Calcite + epidote as fracture fillings. Buff alteration in places (? clay).		2030	30.2	31.1	0.9	2063	390
						2031	31.1	31.8	0.7	176	8
						2032	31.8	33.2	1.4	296	41
						2033	33.2	34.5	1.3	732	300
						2034	34.5	36.2	1.7	188	26
						2035	37.5	38.5	1.0	28	13
42.7	50.0	7.3	DIORITE / ANDESITE (?) Fine-grained grey and pale green, feldspar-rich matrix with small phenocrysts of plagioclase and clinopyroxene. Minor hornblende as phenocrysts. Possible flow texture suggested in places by common orientation of amphibole ~~and especially~~ around (?) xenoliths. This unit is variably altered and fractured and primary textures difficult to recognise in most cases. Possibly more than one rock type. 45.0 – 45.2 Hornblende porphyry dyke	Epidote + magnetite ± pyrite ± chlorite towards top, grading down to chlorite + pyrite towards bottom. Secondary amphibole (? actinolite) as a replacement of cpx.		2036	40.4	42.1	1.7	349	21
						2037	42.1	43.4	1.3	408	12
						2038	43.4	45.0	1.6	105	9
						2039	45.0	46.1	1.1	114	4
						2040	46.1	46.9	0.8	466	3
50.0	59.8	9.8	SILTSONE – TUFFACEOUS. Grey to greenish grey, poorly bedded to massive. Small (< 1mm) feldspar grains up to 30% in places. 57.2 – 57.9 Diorite - highly chloritised.	Epidote ± calcite along fractures. Pyrite ≤ 1%. 2° magnetite with epidote. Moderate to weak chlorite		2041	46.9	48.0	1.1	507	11
59.8	61.2	1.4	HORNBLENDE-BEARING TUFF. Fine grained, greenish grey with hornblende phenoclasts to 5mm length.	Chlorite ± epidote. Trace pyrite to about 1%							
61.2	68.3	7.1	(?) DIORITE. Fine grained grey to green, highly altered. Primary texture largely obliterated.	Epidote veinlets 50°-70° TCA common; some pervasive epidote + chlorite ± pyrite ± mag.							
68.3	71.3	3.0	FELDSPATHIC TUFF. Fine grained, greenish grey to grey, plagioclase phenoclasts, broken in some cases.								

MINCORD Exploration Consultants Ltd.

DRILL HOLE RECORD

	Inclination	Bearing	PROPERTY	Length	Hole No. 8961
Collar	—		Location	Hor. Comp. Vert. Comp.	Sheet of
			Elevation	Bearing	Logged by
			Coordinates	Began Completed	Sampled by
				Core Size Recovery %	

~~FOOTAGE~~ METRES		RECOV. INTERVAL	DESCRIPTION	MINERALIZATION AND ALTERATION	GRAPHIC LOG	SAMPLES No.	From	To	Length	ASSAYS
71.3	73.8	2.5	DIORITE. Greenish grey to grey, equigranular to slightly porphyritic, highly altered in part.	Chlorite + epidote ± magnetite						
73.8	82.0	6.2	SILTSTONE. Grey to greenish grey, minor tuffaceous zones	Chlorite						
82.0	83.1	1.1	HORNBLENDE-BEARING TUFF(?). Hornblende (?) phenoclasts in fine-grained grey to greenish-grey matrix	Chlorite ± epidote						
83.1	86.3	3.2	DIORITE(?) Fine grained, equigranular to slightly porphyritic, feldspar-rich greyish green to grey.	Minor chlorite						
			EOH 86.3							

APPENDIX 3
PETROGRAPHIC DESCRIPTIONS

#2013 Altered porphyritic plagioclase, hornblende trachyandesite.

General description

Altered plagioclase and very irregular hornblende phenocrysts in a groundmass of finer altered plagioclase and hornblende with interstitial K-feldspar (confirmed by stained slab).

Plagioclase phenocrysts and groundmass are altered to aggregates of fine epidote-clinozoisite(?) granules leaving faint remnant twinning. Hornblende phenocrysts and groundmass are altered to shredded/fibrous appearing secondary amphibole commonly irregularly interlaminated with chlorite.

Opaque; 5%, pyrite

Note: alteration , predominantly secondary amphibole and epidote (clinozoisite). Probably deuteric alteration.

K-feldspar gives an uneven stain, may be introduced but is not obviously fracture controlled.

Microscopic description

Phenocrysts

Plagioclase; 5%, subhedral, (0.4 to 1.5 mm), altered by abundant granules of epidote and very minor sericite. Twinning obliterated.

Hornblende; 10%, euhedral/anhedral (0.2 to >1.5 mm). Mottled medium green and greenish brown. Pleochroic. Few euhedral crystals but generally very irregular grains almost completely altered to subfibrous locally acicular secondary amphibole. Commonly interlaminated with lesser chlorite.

Groundmass

Plagioclase; 50%, subhedral/anhedral, (<.05 to 0.4 mm), ghost-like outlines. Strong alteration by minute epidote granules and aggregates of granules. Weak sericite and d"clay" dusting alteration,. Twinning obliterated.

Hornblende; 20%, anhedral, (<.05 to 0.2 mm), very irregular grains. Acicular/subfibrous alteration to secondary amphibole and lesser chlorite.

K-feldspar; 10%(?), anhedral, (<.01 to 0.1 mm?), not confirmed in thin section. Probably low relief,featureless interstitial material in groundmass. Confirmed by stained slab.

#2013 Continued

Accessory minerals

Apatite; <<1%, subhedral, (to 0.2 mm), widely disseminated crystals.

Opaques; 5%, pyrite, euhedral/subhedral (<.05 to 0.4 mm) Widely disseminated

Alteration

Epidote (clinozoisite?); 20%, (included with plagioclase) anhedral, (<.01 to 0.3 mm). Generally clusters of small granules in plagioclase phenocrysts and groundmass. Widely disseminated coarser grains.

Secondary amphibole; 15%, (included with hornblende), anhedral, (<.05 to 0.2 mm), acicular/fibrous. Replacement of hornblende phenocrysts and groundmass.

Chlorite; <10%, (included with hornblende), anhedral, (<.05 to 0.2 mm), bladed. Interlaminated with secondary amphibole.

Sericite; <1%, anhedral, (microgranular) weak alteration of plagioclase.

Clay" dusting; <10%, (microgranular), weak dusting of plagioclase.

Veinlets

Plagioclase containing acicular amphibole (?) needles in radiating clusters associated with altered acicular amphibole in wall rock. Locally diffuse clouding by "clay"(?) alteration dusting.

#2023 **Deuteric altered weakly porphyritic andesite.**

General description

Weak porphyritic texture. Composed of weakly foliated laths of altered plagioclase and disseminated augite, lesser strongly altered biotite. Stained slab indicates absence of K-feldspar.

Plagioclase is partially altered to epidote (clinozoisite) as clusters of granules, particularly in centres of grains. There is very minor microgranular sericite. Margins of grains are albitic. Augite is partially altered to aggregates of epidote and lesser carbonate. There is associated bladed chlorite, lesser interlaminated sericite, containing biotite remnants.

Accessory minerals include minor apatite and sphene. Pyrite is disseminated among mafic grains.

Veined by epidote, lesser carbonate. Scattered clots (to several mm) composed of coarse grains of epidote, chlorite, carbonate.

Alteration late deuteric/saussuritic with contact metasomatic effects suggested by epidote (carbonate veinlets) and scattered clots of coarse epidote, carbonate, chlorite associated with augite.

Microscopic description

Plagioclase; 55%, subhedral, (0.2 to >1.5 mm), interlocking broad laths. Diffuse outlines. Granular/microgranular epidote and weak microgranular sericite alteration produce a strong dusted appearance. Remnant twinning indicates composition is in andesine range. Margins of grains are albitic.

Augite; 25%, anhedral, (0.1 to >1.0 mm), very irregular crystal remnants and aggregates of granular remnants. Moderate to strong alteration to mixtures of epidote, carbonate and chlorite.

Chlorite/biotite; <10%, anhedral (0.1 to 0.5 mm), clusters of blades mainly chlorite with obscure biotite remnants closely associated with altered augite.

Accessory minerals

Sphene; >1%, anhedral (<.05 to 0.3 mm), clusters of grains commonly associated with mafics but disseminated throughout.

Apatite; 1%, subhedral/anhedral (<.05 to 0.5 mm) widely disseminated crystals.

Opaques(pyrite); <5%, subhedral, (<.01 to 0.2 mm)

#2023 Continued

Alteration

Epidote (clinozoisite); >20% (included with augite and plagioclase) anhedral, (<.01 to >1.0 mm)
- (a) granules and aggregates of granules in plagioclase
- (b) slightly coarser grains alteration of augite
- (c) veinlets

Carbonate; <10% (included with augite chlorite/biotite), anhedral (<.01 to 0.5 mm).
- (a) alteration of augite
- (b) veinlets

Chlorite; <10% (included with augite, chlorite/biotite) anhedral, (0.1 to 0.5 mm)
- (a) alteration of augite
- (b) alteration of biotite(?)

Sericite; <1%, (included with plagioclase) anhedral, (microgranular), dusting of plagioclase.

Clots; <10%, composed of intermixed coarse grains of <<5% each of epidote, carbonate, chlorite. (introduced?)

Veinlets

Epidote, lesser carbonate

#2032 Deuteric altered fine-grained volcanogenic metagreywacke(?)
Note: Original textures obliterated. Sedimentary origin suggested because of subrounded to subangular grains. Weak layering (?) by differences in grains size.

General description

Composed predominantly of fine grained, subrounded interlocking altered plagioclase grains. Abundant secondary amphibole grains and clusters of grains disseminated throughout with some tendency for concentration in certain layers. Widely disseminated apatite grains. Weak layering results from variation in grain size and relative abundance of minerals. Accessory minerals include sphene and apatite.

Alteration assemblage includes weak sericitic and "clay" alteration dusting of plagioclase.

Alteration and/or introduced assemblage includes secondary amphibole which is disseminated throughout the groundmass with some tendency for concentration in layers. Small clusters of irregular epidote and carbonate grains are disseminated throughout wall rock but are most conspicuous in proximity to veins. Pyroxene (diopside?) granules appear to be concentrated with epidote-rich patches in association with veinlets.

Veinlets are composed of one or more of diffuse K-feldspar, carbonate, epidote, secondary amphibole.

Opaques >5%, disseminated pyrite and pyrrhotite and in veinlets.

Microscopic description

Plagioclase; 35%, anhedral, (.05 to 0.3 mm), subrounded to subangular interlocking grains. Weak sericitic and "clay" alteration dusting. Twinning indicates composition in low andesine range.

Pyroxene; <<5%, anhedral, (<.05 to 0.1 mm) subrounded. occurs locally with diffuse epidote-carbonate-rich patches in wall rock associated with veinlets. [Original augite? or introduced diopside]

Amphibole (secondary); 20%, anhedral, (<.05 to 0.3 mm) bladed/subfibrous. Strong green/blue/pale green pleochroism. Altered to or associated with bright green biotite/chlorite.

Secondary amphibole occurs:

(a) disseminated throughout the groundmass with some tendency to be concentrated in certain layers, (<.05 to 0.1 mm).

(b) as fracture controlled veinlets of coarser (to 0.3 mm)

#2032 Continued

grains. Diffuse margins with grains projecting into wall rock.
Associated with epidote, sphene and opaques.

Accessories

Apatite; <1%, subhedral, (<.05 to 0.1 mm). Disseminated throughout wall rock.

Sphene; >1%, anhedral, (<.01 to 0.1 mm). Disseminated throughout wall rock, more abundant coarser grains associated with veinlets.

Opaques (pyrite/pyrrhotite); >5%, subhedral, (<.01 to 0.4 mm). Disseminated grains, clusters of grains scattered through groundmass and as coarser crystals in veinlets.

Alteration minerals

Epidote; 15%, anhedral, (<.01 to 0.3 mm). Irregular grains occur throughout groundmass. Most abundant and coarser grains in wall rock associated with diffuse veinlets. Also occurs in veinlets.

Carbonate; <10%, anhedral, (<.01 to 0.3 mm) As for epidote.

Sericite; <1%, anhedral, (microgranular), weak alteration of plagioclase.

"Clay" dusting; <1%, weak alteration dusting of plagioclase.

Pyroxene (diopside?); <1%, anhedral, (<.05 to .01 mm), rounded granules, clusters of granules associated with epidote in close proximity to veins.

Secondary amphibole; see above

Chlorite/green mica; <<5%, anhedral, (<.05 to 0.2 mm), irregular blades associated with secondary amphibole in groundmass

Veinlets

K-feldspar; <<5%, anhedral, (<.01 to 0.1 mm), irregular interlocking grains. Veinlets with diffuse margins impregnating wall rock. Confirmed in stained slab.

Carbonate; sharp walled veinlets but shows increase in disseminated clots in wall rock near veinlets.

Epidote; sharp walled veinlets but shoes diffuse concentration in wall rocks near veinlets.

Secondary amphibole; distinct veinlets of coarser grains which project outwards into wall rocks.

#2040 Weakly porphyritic, altered plagioclase, augite, hornblende andesite.

General description

Original textures almost completely obliterated by alteration. Medium to coarse remnants of altered augite, plagioclase and lesser hornblende in a finer grained matrix of interlocking altered plagioclase and augite.

Augite phenocrysts are broken up into granular remnants outlining former crystals and grains and is strongly altered by microgranular semiopaque (epidote related?) clouding with weak to moderate sericite. Hornblende forms ragged crystal remnants.

Groundmass plagioclase and augite are altered the same as phenocrysts.

Accessory minerals include minor sphene and apatite.

The rock fabric has a diffuse superimposed network of less altered twinned plagioclase (albite). Fine granular epidote (secondary) amphibole and lesser pyroxene (diopside?) occur in this network but are also more conspicuously controlled by later hairline fractures.

Late fractures are filled by diffuse veinlets of K-feldspar, coarser late amphibole, epidote, carbonate clusters and opaques (pyrite), minor sphene.

Alteration late (deuteric) and recrystallization and impregnation through microfracture systems.

Microscopic description

Phenocrysts

Plagioclase; >5%, subhedral, (0.3 to 1.0 mm). Stubby crystals altered by strong microgranular semiopaque (high relief) clouding, slightly coarse epidote granules and minor sericite.

Pyroxene (augite); >5%, subhedral/anhedral (0.5 to 7.5 mm). Broken into granular remnants in optical continuity. Epidote alteration and minor introduced feldspar in microfractures. Clusters of opaque grains.

Hornblende; <5%, anhedral, (<0.5 to >1.0 mm). Very irregular remnants associated with augite. Altered to felted clusters of secondary amphibole.

#2040 Continued

Matrix

Plagioclase; 15%, subhedral, (<.05 to 0.3 mm) Diffuse outlines of altered grains as for phenocrysts in an interstitial albitic network.

Pyroxene (augite); <10%, anhedral, (<.05 to 0.5 mm). Aggregates of granules similar to phenocrysts interlocking with altered plagioclase in an interstitial albitic network.

Hornblende(?); <5%, anhedral, (<.05 to 0.5 mm), very irregular altered remnants. Altered to secondary amphibole. Associated with epidote.

Accessory minerals

Apatite; 1%, subhedral, (<0.1 to 0.2 mm) Disseminated grains, clusters of grains.

Sphene; 1%, anhedral (<0.1 to 0.2 mm) Disseminated grains. Also associated with veinlets.

Opaques; >5%, pyrite

Alteration

Semiopaque dusting/clouding; >5%(included with plagioclase) alteration of plagioclase phenocrysts and groundmass.

Sericite; <1%; (included with plagioclase) weak fine dusting of plagioclase phenocrysts and groundmass.

Epidote; >10%, anhedral, (<.05 to 0.1 mm), clusters of granules in plagioclase and forming small clots associated with altered augite and hornblende.

Albite; 15%, anhedral, (<.05 to 0.3 mm). Occurs as a relatively unaltered diffuse network among more intensely altered groundmass and phenocrysts. Some grains show conspicuous polysynthetic twinning.

Microbrecciation

Pyroxene; >5%, anhedral, (<.05 to 0.1 mm), granules in microfractures

Epidote; >5%, anhedral, (<.05 to 0.1 mm), granules in microfractures

Secondary amphibole; 5%, anhedral, (<.05 to 0.4 mm) clusters of foliated grains in microfractures.

#2040 Continued

Veinlets

K-feldspar, carbonate, epidote, sphene, (secondary) amphibole, opaques.

#2042 Epidotized porphyritic plagioclase hornblende andesite/diorite

General description

Phenocrysts of medium-grained hornblende and vestiges of finer grained altered augite and plagioclase which ranges into fine plagioclase of groundmass. Stained slab indicates absence of K-feldspar.

Hornblende forms very irregular skeletal crystals poikilitically enclosing epidote-sericite altered plagioclase and scattered apatite grains. Plagioclase is locally intensely altered to sericite and abundantly disseminated epidote granules and pale red brown "clay" dustings which commonly coalesce to completely replace the plagioclase. Locally there are patches of relatively unaltered plagioclase visible (recrystallized?). Augite is broken up into remnant granules separated by chlorite and associated epidote granules. Patches of epidote have a strong laminated/layered texture with interlaminated chlorite suggesting complete replacement of biotite.

Opaques include subhedral grains of magnetite (magnetic) and skeletal grains of ilmenite(?)

The thin section and core fragments contain clots (to >1 cm) of fine granular epidote, some enclosed hornblende phenocrysts.

Hairline veinlets of recrystallized minerals in adjacent wall rock in optical continuity across veinlets.

Alteration is probably deuteric with a contact metasomatic (epidote clots) overprint.

Microscopic description

Percentages very approximate because of intensity of alteration

Phenocrysts

Hornblende; <15%, anhedral, (0.5 to >2.5 mm), very irregular skeletal grains. Weak associated epidote granules (alteration). Poikilitically encloses apatite and altered plagioclase and augite granules.

Augite; <10%, anhedral, (<.05 to 0.5 mm). Broken up into granules separated by chlorite and associated epidote alteration. Grades in size downwards to augite in groundmass.

Altered biotite (?); <5%, anhedral, (<0.1 to 1.0 mm). Former grains altered to interlaminated epidote, chlorite and opaques.

#2042 Continued

Altered plagioclase; <10%, subhedral, (0.5 to >1.0 mm). Indistinct outlines shown by patterns of intense granular epidote and sericite alteration. Appears to be a size gradation to groundmass.

Groundmass

Altered plagioclase; 45%, subhedral, (<.05 to 0.5 mm), Indistinct felted outlines shown by patterns of intense granular epidote and sericite alteration. Locally strong red-brown "clay" dusting. Plagioclase is locally recrystallized, relatively unaltered with twinning indicating composition in low andesine range. Contains abundantly scattered grains/clusters of granular epidote.

Augite; <40%, anhedral, (<.05 to 0.2 mm). as for phenocrysts" with a gradation to smaller grains. associated chlorite and epidote alteration as described above.

Accessory minerals

Apatite; >1%, subhedral, (<.05 to 0.2 mm), widely disseminated grains.

Opaques; <5%, subhedral, (<.05 to 0.15 mm), magnetic (magnetite) and skeletal crystals (possible ilmenite)

Alteration; percentages included with altered host

Sericite; 15%, anhedral, (<.05 to 0.2 mm),
(a) granular alteration of plagioclase, hornblende augite and (biotite?)
(b) granular clots to >1 cm.

Chlorite; <15%, anhedral, (<.05 to 0.2 mm) bladed/plumose. Alteration of augite.

Clots

Epidote; clots of granules to >1 cm.

Veinlets

Recrystallized plagioclase; hornblende to colourless amphibole.

APPENDIX 4
COST STATEMENT

COST STATEMENT

Fees and Wages

D.G. Bailey, Ph.D., F.G.A.C.:	
7.0 days field and travel @ $350/day	$2,450.00
3.5 days report preparation @ $350/day	1,225.00
0.5 days organization @ $350/day	175.00
Field Assistant:	
7.0 days @ $150/day	1,050.00
G.R. Peatfield, Ph.D., P.Eng.:	
6 hrs. supervision @ $70/hr.	420.00
	5,320.00

Consultants

Petrographic examinations by Vancouver Petrographics - Dr. K.E. Northcote, P.Eng.	**386.25**

Rentals

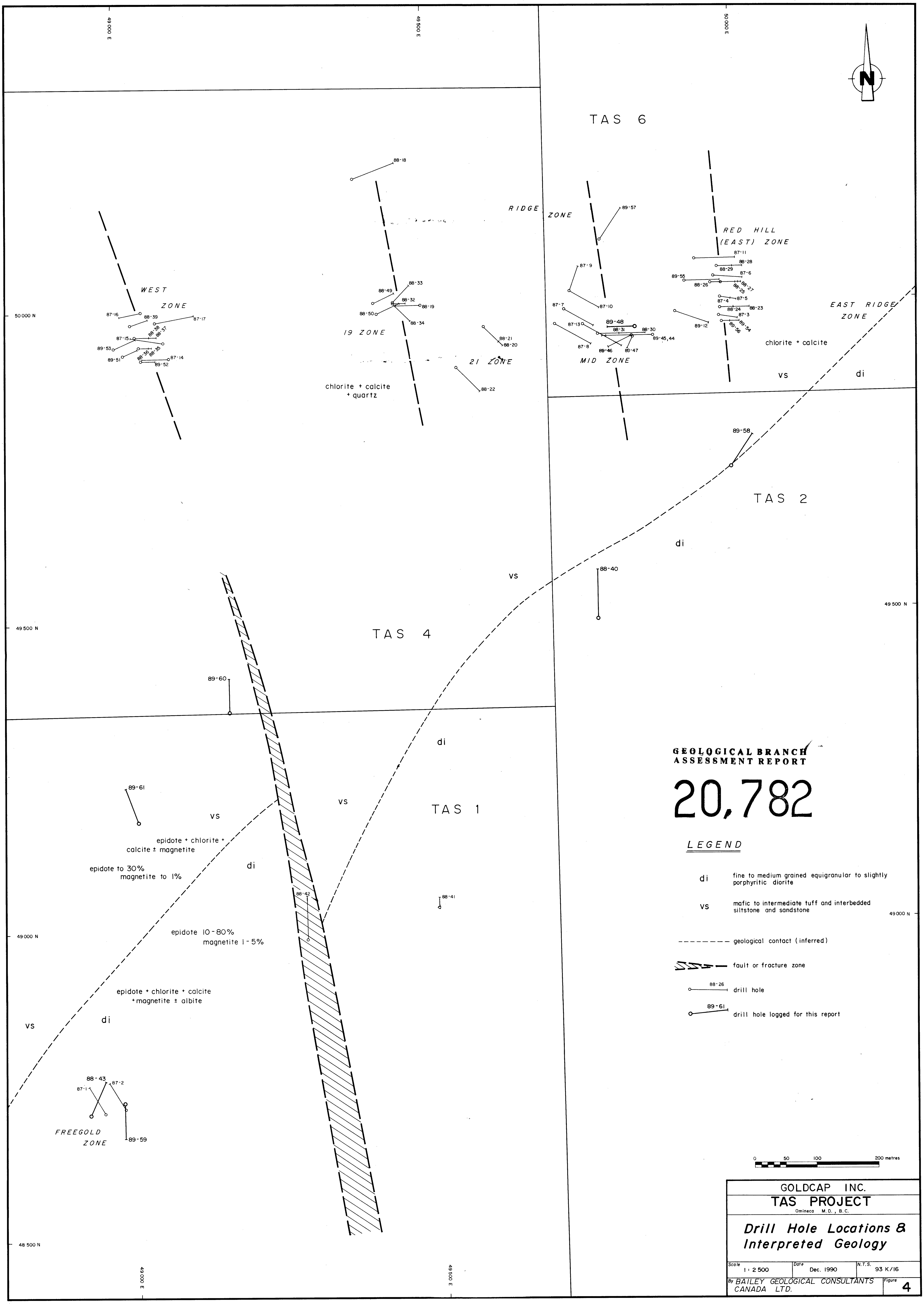
Vehicle: 7 days @ $60/day	420.00
Mileage: 2,000 km @ 10c/km	200.00
Camp & equipment: 7 days @ $30/day	210.00
	830.00

Disbursements

Geochemical analyses	365.50
Sample bags	12.00
Fuel	219.36
Room & board, groceries	486.80
	1,083.66

Report Preparation

Drafting	300.00
Word processing	50.00
Photocopies	30.00
Reprographics	20.00
Supplies	15.00
	415.00
	========
Total	8,034.91
	========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RIDGE ZONE
MID ZONE
RED HILL (EAST) ZONE
EAST RIDGE ZONE
FREEGOLD ZONE
88-18
89-57
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87-2
89-59
chlorite + calcite + quartz
chlorite + calcite
vs
di
epidote + chlorite + calcite ± magnetite
epidote to 30% magnetite to 1%
epidote 10-80% magnetite 1-5%
epidote + chlorite + calcite + magnetite ± albite
GEOLOGICAL BRANCH ASSESSMENT REPORT
20,782
LEGEND
di fine to medium grained equigranular to slightly porphyritic diorite
vs mafic to intermediate tuff and interbedded siltstone and sandstone
geological contact (inferred)
fault or fracture zone
88-26 drill hole
89-61 drill hole logged for this report
0 50 100 200 metres
GOLDCAP INC.
TAS PROJECT
Omineca M.D., B.C.
Drill Hole Locations & Interpreted Geology
Scale 1 : 2 500
Date Dec. 1990
N.T.S. 93 K/16
By BAILEY GEOLOGICAL CONSULTANTS CANADA LTD.
Figure 4