Geological and Geochemical

Report on the

GOLDEN EAGLE PROPERTY

Golden Eagle Group

Golden Eagle C.G.	198	1 claim
Okolona R.C.G.	58	1 claim
Sol 1-4	20383-86	4 claims
Sol 5	20422	1 claim
Sol 6-16	20387-97	11 claims
Sol 19-40	20400-21	22 claims
Sol 2	71	12 units
Twins	1280	9 units
Twin Sons 1	1281	1 claim
Twin Sons 2	1282	1 claim

Alberni Mining Division

92F/2E

49°07' North Latitude

124°36' West Longitude

Owned by

Oswood G. MacDonald
P.O. Box 160
Errington, B.C. V0R 1V0

and

Coast Copper Company Limited
1019-7th Avenue SW
Calgary, Alberta T2P 3E4

Operated by

Oswood G. MacDonald

Report by

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March 5, 1982

INTRODUCTION

General

The writer first examined the surface and underground workings on the Golden Eagle and Okolona claims on October 31 and November 1, 1980, accompanied by the owner, Oswood G. MacDonald.

Based on that examination, and on review of all publically and privately available data, the writer outlined a two-stage exploration program totalling $400,000 to attempt to define sufficient gold ore on the property to warrant production: the report was dated February 10, 1981.

Between July 17 and 20, 1981, the writer staked the 9-unit Twins claim in the adjacent Nitinat watershed, and restaked the expired Sol 17 and 18 claims as the Twin Sons 1 and 2 claims. Limited soil and rock sampling was carried out by two assistants on these claims between July 21 and 25, 1981.

Between October 29 and November 6, 1981, the writer prospected, sampled, and compass-surveyed the surface and underground workings in proximity to the Golden Eagle Vein.

The 50 Sol claims and units owned by Coast Copper Company Limited, and the 13 claims and units owned by O.G. MacDonald have been grouped to form the Golden Eagle Group (63 claims and units).

This report documents the above geological and geochemical work, totalling $25,900 of which $3,800 was applied to the Sol 1-3 and 19-34 claims on January 12, 1982.

Location, Access, Declination

Figures 1 and 2 show the location of the Golden Eagle Property on Vancouver Island, at the headwaters of China Creek, 21 km southeast of Port Alberni, 47 km westerly of Nanaimo, and 108 km westerly of Vancouver.

From Port Alberni, access to the claims is via 21 km of good gravel logging roads up China Creek to the active King Solomon Basin logging area cut-off. The west side of the property (Sol claims) is reached by an additional 4 km (25 km total) of good gravel road up McQuillan Creek to the King Solomon Basin. From the King Solomon Basin cut-off, the southeast corner of the claim area (Golden Eagle) is reached by an additional 6 km (27 km total) of old mining and logging roads in quite good condition, which follow the former railroad grade, to a washout on China Creek less than 1 km below the lowest Cedar Adit on the Okolona claim. The bridge over China Creek 1½ km past the King Solomon Basin cut-off has collapsed, and should be replaced. Generally, it is possible to drive across China Creek, except following heavy rains and during the spring run-off.

From the ferry terminal at Departure Bay (Nanaimo), it is 68 km on paved Highways 19 and 4 to the Mount Arrowsmith/Cameron River cut-off, plus 21 km of good gravel roads, as above, (89 km total) to the King Solomon cut-off. Via Port Alberni, the road distance is an additional 9 km on Highway 4 (98 km total).

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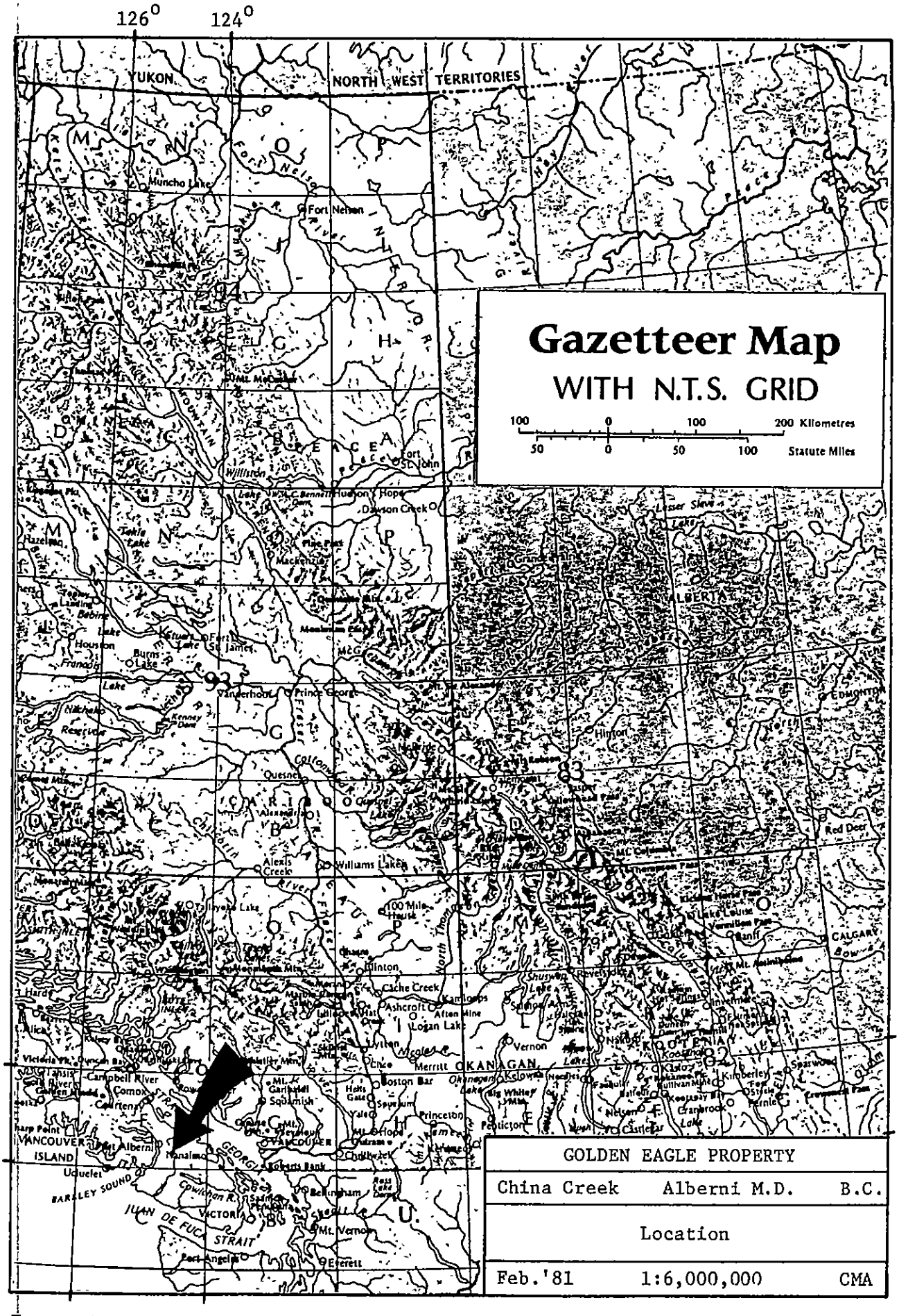
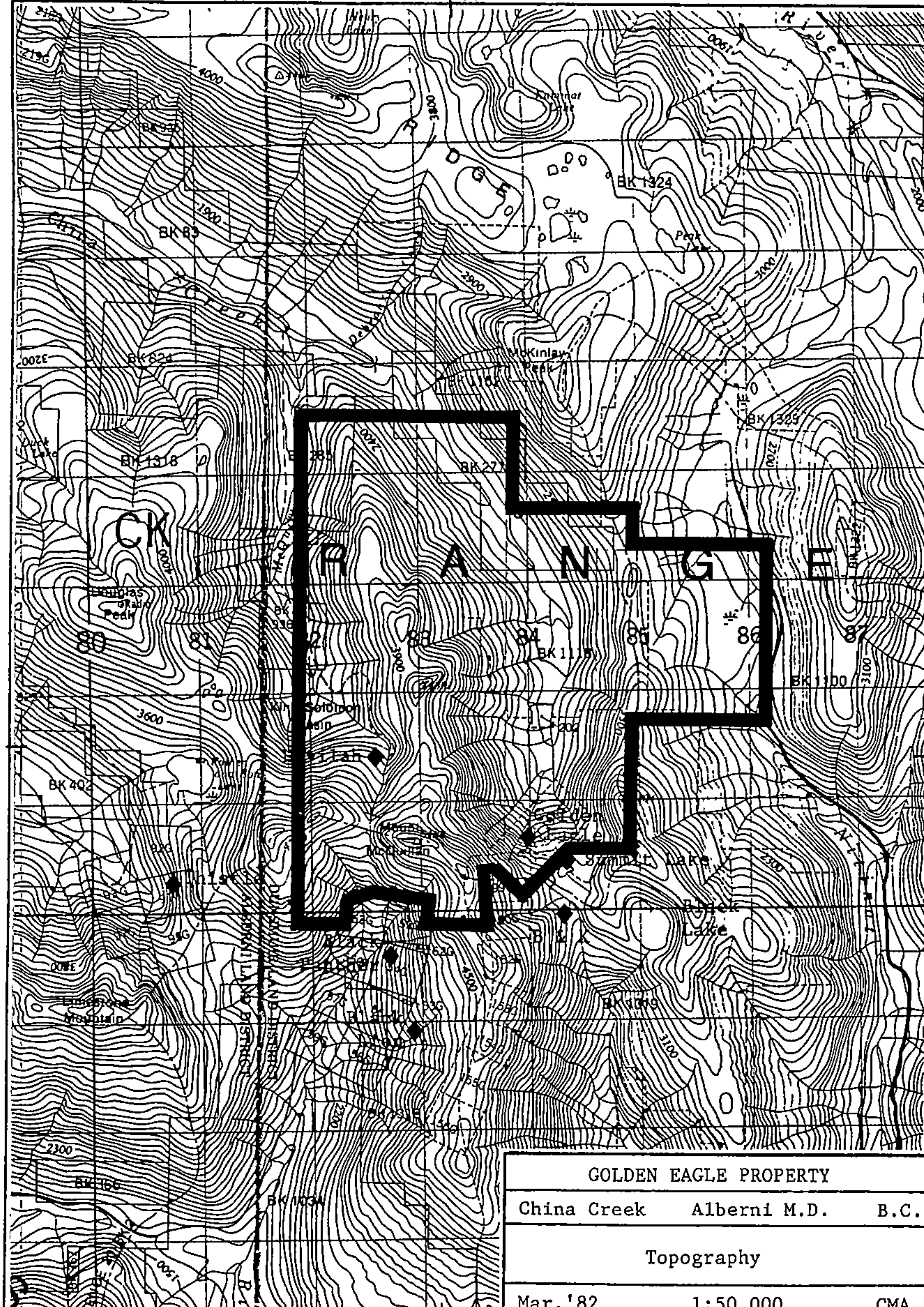


From: Atlas of B.C.
Farley, A.L. 1979

Fig. 1

124°36'



GOLDEN EAGLE PROPERTY

China Creek Alberni M.D. B.C.

Topography

Mar.'82 1:50,000 CMA

124°36'

From: NTS 1:50,000 1976
92F/2 Alberni Inlet

Fig. 2

Because logging operations are active in the China Creek watershed, use of the access roads should be coordinated with the MacMillan Bloedel dispatcher (Cameron Division). Similarly, because Port Alberni obtains water by pipeline from the lower portion of China Creek, access authorization also must be obtained from the Department of Health in Port Alberni.

The geographic location is 49°07' north latitude and 124°36' west longitude. The magnetic declination is approximately 22½° east, decreasing at 3.8 minutes annually.

Physiography, Rock Exposure, Glaciation

The Golden Eagle Property is in the Vancouver Ranges, one of three subdivisions of the Vancouver Island Mountains, in turn, a major subdivision of the Insular Mountains. As shown on Figure 2, the claims cover the uppermost headwaters of China Creek. Elevations rise from about 470 m (1550 ft) above sea level (ASL) at the northern extremity of the property in China Creek, to about 1575 m (5170 ft) at the peak of Mount McQuillan, a total relief of more than 1100 m (3600 ft).

The upper 4 adits on the Golden Eagle claim are in a very steep (average slope more than 40°), northerly trending "hogsback" between two small runoff creek-gullies.

The Sol claims straddle a prominent north trending ridge between McQuillan Creek on the west and the headwaters of China Creek on the east. The slopes are rugged and very steep. Cominco exploration personnel, on behalf of Coast Copper, established a base camp on the ridge, serviced by helicopter from Port Alberni.

Outcrop is abundant in the numerous steep gullies, above the tree-line at about 1300 m (4300 ft) elevation, and in frequent bluffs and cliffs on the steep slopes. In spite of the rugged topography, overburden coverage also is quite extensive, though generally shallow. Overall, the rock exposure probably averages about 20%.

During the Pleistocene Period, the Cordilleran ice sheet blanketed the area, moving in a south southwesterly direction, and deposited a thin mantle of glacial debris over most of the area. Thick sand and gravel deposits occur in the China Creek valley: these deposits were mined extensively for gold by placer methods prior to 1900. Overburden-covered scree and glacial debris also occurs on the lower slopes of the mountains bordering China Creek.

Timber, Soil, Water

All timber rights in the claim area have been acquired by MacMillan Bloedel Limited, and logging operations by their Cameron Division near the headwaters of China Creek will be active for a long period of time. In general, logging in the area benefits mine development. Negotiations for raw timber for mine use should present no difficulty, and should result in significant cost savings. Hemlock predominates, but fir, balsam, spruce, cedar, and pine also are present in varying proportions.

The "B-zone" soil horizon generally is quite well developed in the well-drained humo-ferric podzols throughout the claim area, and soil sampling is an effective exploration technique in the shallow overburden-obscured areas. The B horizon occurred at depths varying from less than 0.1 m to 0.3 m, and averaged about 0.2 m.

Adequate water for diamond drilling and tunneling is available from the numerous steep run-off creeks that drain the mountain areas. The flattish creek bed of China Creek for about 1 km below the Okolona claim is dry, except during the spring run-off, and after heavy rainfalls, when the water level quickly rises to 1 m or more. Water for mining purposes might be obtained by gravity line from Summit Lake or Black Lake, glacial cirque lakes about 1 ha and 13 ha in area, respectively, near the southeast corner of the property. Process water also might be obtained from these small lakes, or from China Creek or the Nitinat River.

Port Alberni obtains water for municipal use from China Creek.

Power, Transportation, Climate, Environment

Port Alberni is serviced by a main B.C. Hydro transmission line, and the Cameron depot of MacMillan Bloedel is only 13 km by road to the north property boundary, and a further 7 km to the Cedar adit.

Ships of 50,000-ton deadweight capacity currently service Port Alberni, and expansion to handle the 70,000-ton deadweight capacity "Panamax" class ships is feasible.

A good highway and rail line link Port Alberni to Nanaimo (and other major centres on Vancouver Island), whence by the B.C. Ferry system to mainland B.C. in the Vancouver area.

Between April and October, a daily floatplane service operates from Vancouver to Port Alberni. A 640-m by 45-m VFR landing strip, operated by MacMillan Bloedel, also may be used for charters and private planes.

Annual precipitation is in the order of 250 cm, 25% of which probably occurs as snow in the winter months, December to March. Mining operations may be carried out year round with little difficulty, and the 5-month period, June to October, normally is the best period for field surveys. In general, the climate is moderate, more or less typical of coastal B.C.

Responsible mineral exploitation should present no undue problems in this resource-oriented area; and it is somewhat advantageous that longterm logging operations are planned, although more attention will have to be paid to the coordination of vehicular traffic. The most sensitive issue pertains to the fact that Port Alberni obtains a substantial proportion of its domestic water from China Creek, the intake for which is approximately 7½ km below the junction of McQuillan Creek with China Creek. Personnel working in the "Alberni Valley Watershed" area must obtain clearance from the Central Vancouver Island Health Unit at Port Alberni. Recognizing that mineral processing and tailings disposal may not be permitted in the China Creek watershed, the writer staked the 9-unit Twins claim to cover a suitable flat area in the much less sensitive, and extensively logged, Nitinat River watershed to the east. Great care must be taken during exploration activity to avoid contamination of China Creek.

History

Small-scale placer mining was conducted on China Creek principally between 1860 and 1900.

Prospecting in the 1890s lead to the discovery of 5 lode deposits shown on Figures 2 and/or 4: Mineral Creek, Golden Eagle, Havilah, Thistle, and Regina. Development work was most extensive on the Golden Eagle property, where work was terminated in 1903.

Renewed activity in the area between 1933 and 1942, spurred by the increase in the price of gold from about $20/oz to $35/oz, resulted in 3 additional lode discoveries: Black Panther, B & K (including Summit Lake), and Black Lion.

The Thistle mine was the most productive operation, yielding 6,867 tons averaging 0.39 oz Au/T (13.3 g/t), 0.24 oz Ag/T (8.3 g/t), and 4.56% Cu, between 1938 and 1942.

In 1936 and 1939, the Havilah property, now part of the expanded Golden Eagle property, reportedly produced 1,046 tons averaging 0.24 oz Au/T (8.2 g/t) and 1.28 oz Ag/T (43.7 g/t).

In 1962, Hunting Surveys conducted a regional aeromagnetometer survey over the area for the Canadian Pacific Railway, and the data was published by the GSC as part of their Aeromagnetic Series. Regional geological mapping also was carried out, and, in 1963 to 1965, Gunnex Limited examined most of the old workings in the area, and conducted an extensive program of silt sampling and prospecting.

In 1973, Cominco Limited examined the area drained by the anomalous Gunnex silt samples, and, in 1974, on behalf of Coast Copper Company Limited, staked 40 Sol claims. Between 1974 and 1977, Cominco conducted extensive geological, geochemical and geophysical surveys. An additional 12 units were staked in 1976 - the Sol 2 claim. In June and July, 1977, the exploration program culminated with the drilling of 3 BQ surface diamond drill holes aggregating 453 m: the best intersections reportedly were 15 m averaging 0.13% Cu and 16 m averaging 0.10% Cu.

The Golden Eagle claim was located in the fall of 1892, and 5 additional claims were added to the group, of which only the key Golden Eagle and Okolona claims were maintained in good standing, and Crown-Granted on October 31, 1895.

By 1895, 4 short, exploratory adits at roughly 30-m vertical intervals, had been driven on the main discovery vein, the Golden Eagle Vein, which was exposed on a steep "hogsback". The drifts varied from 7 m to 20 m in length, and totalled about 54 m. Sutton, the Government Assayer, stated in 1895 that the average vein width in the tunnels was "about 3½ feet (1.1 m), widening to 7 feet (2.1 m) and narrowing to a few inches (less than 0.1 m)". No work of consequence was done on an interesting exposure of mineralized quartz 50 to 100 m above the uppermost adit: the 1.8-m vein was referred to as the BSF Showing, named after Brady, Sutton, and Ferrier, who examined the vein.

Sampling by W. Pellew-Harvey, F.C.S., M.E., representing "South African Interests", in 1894 yielded an arithmetic average grade for gold (Au) of 55.9 g/t (1.63 oz/T) from 10 samples, varying from Trace to 180.0 g/t (5.25 oz/T); however, the corresponding sample widths were not given. A 227-kg bulk sample assayed 11.0 g/t (0.32 oz/T).

The Golden Eagle and BSF Veins were sampled by: J. Brady, M.E., District Mining Engineer, in 1896; W.F. Ferrier, representing Rossland mining interests, in 1902; and an unknown mining engineer, also in 1902. The results of their sampling, employing weighted averages, is summarized below:

Adit or Showing	Sampler	Number of Samples	Length m	Weighted Averages Width m	Au g/t	Au oz/T
Wills	Brady	3	--	2.10	14.1	0.41
1	Unknown	4	15	1.83	13.8	0.40
	Average	7	15	1.95	13.9	0.41
2	Brady	1	--	--	10.6	0.31
	Ferrier	6	10	0.93	73.7	2.15
	Unknown	3	18	0.68	13.4	0.39
	Average	10	14	0.85	52.8	1.54
3	Ferrier	7	13	0.68	5.2	0.15
	Unknown	4	18	0.59	2.7	0.07
	Average	11	15.5	0.65	4.4	0.13
4	Brady	1	--	1.80	2.7	0.08
Golden Eagle Vein	AVERAGE	29	--	1.07	21.7	0.63
BSF Vein	Brady	1	--	2.10	14.1	0.41
	Ferrier	5	58	0.94	10.6	0.31
	AVERAGE	6	58	1.52	13.0	0.38

Snowslides buried the lowest Adit 1 (Wills), presenting a constant hazard, and, in 1896, the decision was made to drive a long exploration tunnel from a protected location on the Okolona claim some 125 m below the Wills Adit. The Cedar Adit was driven irregularly (not in line-drive segments) for about 600 m, 170 m beyond Adit 4 on the Golden Eagle Vein, and 100 m beyond the BSF Vein at surface. Stevenson (1945) stated, incorrectly on both accounts, that the tunnel was "in fine-grained andesite throughout", and that "These workings intersect a few small stringers of unmineralized quartz, but do not cut any material that resembles the main vein of the upper adits, in attitude or vein-matter." The Cedar Adit was completed early in 1903, and the property has been dormant until the present time.

Properties on the west and south of the expanded Golden Eagle Property have been explored sporadically since 1979.

Property

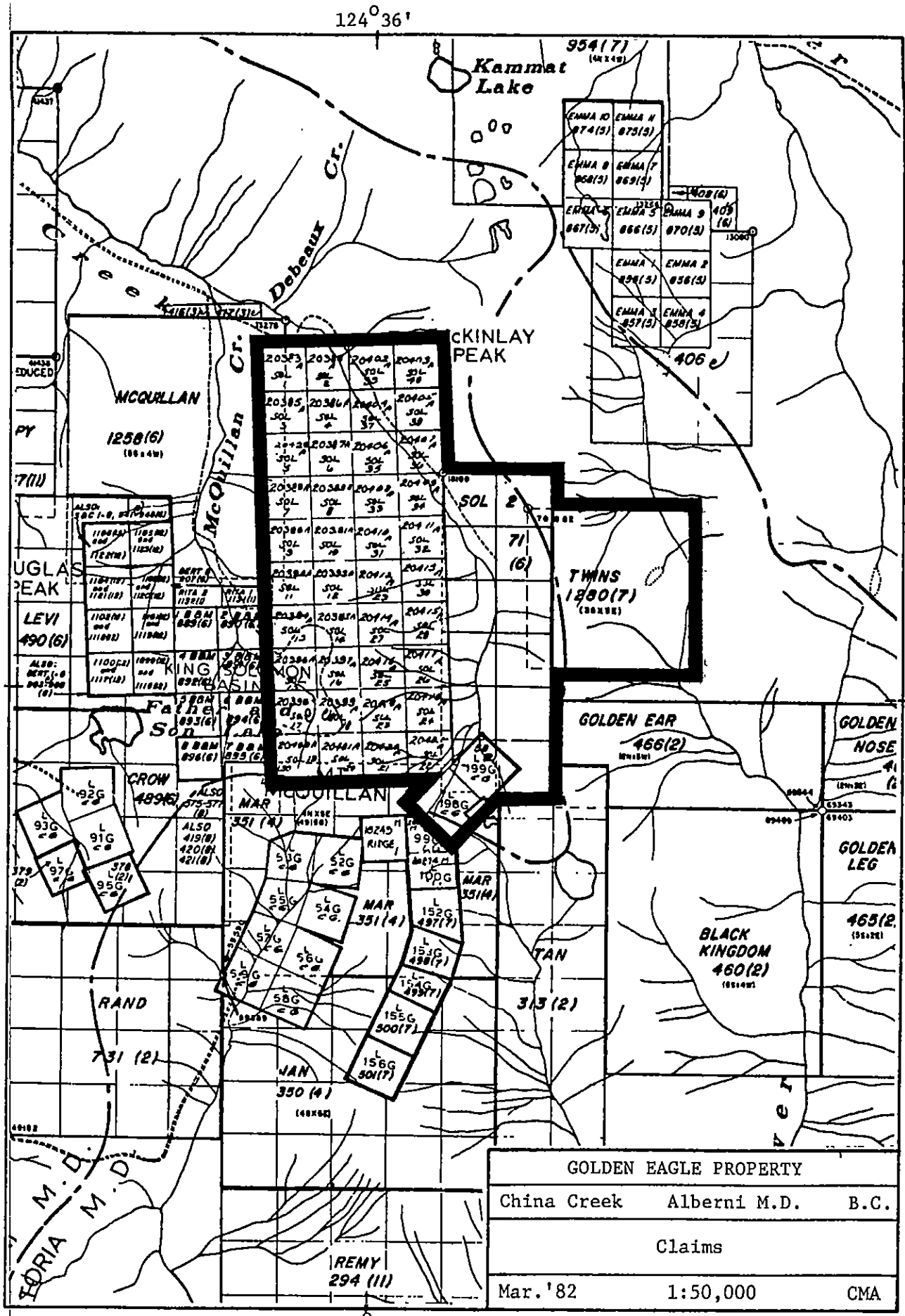
Figure 3 shows the expanded Golden Eagle Property as it appears on claim map 92F/2E, Alberni Mining Division (plus overlap into the Victoria Mining Division), Dunsmuir Land District, Vancouver Island, B.C. The record numbers for the Sol 21 to 40 claims should be 20402 to 20421, respectively, not as shown on the claim map. In addition, the expired claims, Sol 17 and 18, were restaked by the writer as the Twin Sons 1 and 2 claims, and transferred to MacDonald.

The Golden Eagle Property is almost wholly within the remaining active portion of the Esquimalt and Nanaimo Land Grant which reserved the mineral rights for base metals. All of the located claims have the mineral rights for precious metals (gold and silver), but payments will have to be negotiated with CanPac Minerals Limited for the production of base metals.

The Sol claims (50 claims and units) are owned by Coast Copper Company Limited, and the remaining claims (13 claims and units) are owned by O.G. MacDonald. Coast Copper reportedly has been assigned the base metal rights through an agreement with CanPac Minerals and Pan Canadian Petroleum. Details pertaining to the status of the claims are tabulated below:

Category	Claim Name	Claims or Units	Lot or Record Number	Record Date	* Expiry Date
Crown Grant	Golden Eagle	1	L:1986 198	Oct.31, 1895	--
Reverted Crown Grant	Okolona	1	L:1996 58	Feb. 6, 1976	Feb. 6, 1984
Mineral Claim	Twins	9	1280	Jul.23, 1981	Jul.23, 1982
	Twin Sons 1	1	1281	Jul.23, 1981	Jul.23, 1982
	Twin Sons 2	1	1282	Jul.23, 1981	Jul.23, 1982
		13			
Mineral Claim	Sol 1 - 4	4	20383-86	Jan.16, 1974	Jan.16, 1983
	Sol 5	1	20422	Jan.16, 1974	Jan.16, 1983
	Sol 6 - 16	11	20387-97	Jan.16, 1974	Jan.16, 1983
	Sol 19 - 40	22	20400-21	Jan.16, 1974	Jan.16, 1983
	Sol 2	12	71	Jun. 2, 1976	Jun. 2, 1982
		50			

* These dates to be extended by application of the assessment work described in this report.



From: B.C. Claim Map
92F/2E

Fig. 3

Work Done

Geological survey: Sol 1-16, 19-40 & 2, Okolona, Golden Eagle, Twin Sons 1 & 2

1. 22 km of prospecting, including 2.0 km of surface and underground compass surveying, and geological mapping at a scale of 1:1,250.
2. Detailed air photo interpretation over 2800 ha (4 km by 7 km) at a scale of 1:15,840 (1"=¼ mi), plus enlargement to 1:12,500.

Geochemical survey: Twins, Twin Sons 1 & 2, Sol 2, Okolona, Golden Eagle

1. 3.6 km of line cut, flagged, horizontally chained, and picketed at 50-m intervals in two areas.
2. 51 B-zone soil samples - 41 at 50-m intervals and 10 at 100-m intervals.
3. 44 rock geochem samples, including 19, 2-kg chip-channel samples.

GEOLOGICAL SURVEY

Regional Geology

Figure 4 shows the regional geology of the Alberni Map-Area at a scale of 1:250,000, as interpreted by Muller, 1969. Figure 5 shows earlier mapping in the China Creek Area at a larger scale of about 1:90,000 (reduced from 1"=1m, or 1:63,360) by Stevenson, 1945. There are significant differences in the bedrock geology of the Golden Eagle Property as mapped by the two geologists.

The oldest rocks belong to the Sicker Group, Permian and older in age, and, as shown on the structure sections, have been folded into a broad, north to northwesterly trending synclinal structure. The "Older Sediments" of Stevenson are comprised principally of pyroclastics (tuff and volcanic breccia) and flow breccia, plus much smaller quantities of jasper, chert, and limestone, and occur in two distinct belts. The volcanic assemblage is the basal sequence of the Sicker Group, unit 1 of Muller, Pennsylvanian and older in age. The limestone, chert and jasper belong to the Buttle Lake Formation, the uppermost sequence of the Sicker Group, unit 3 of Muller.

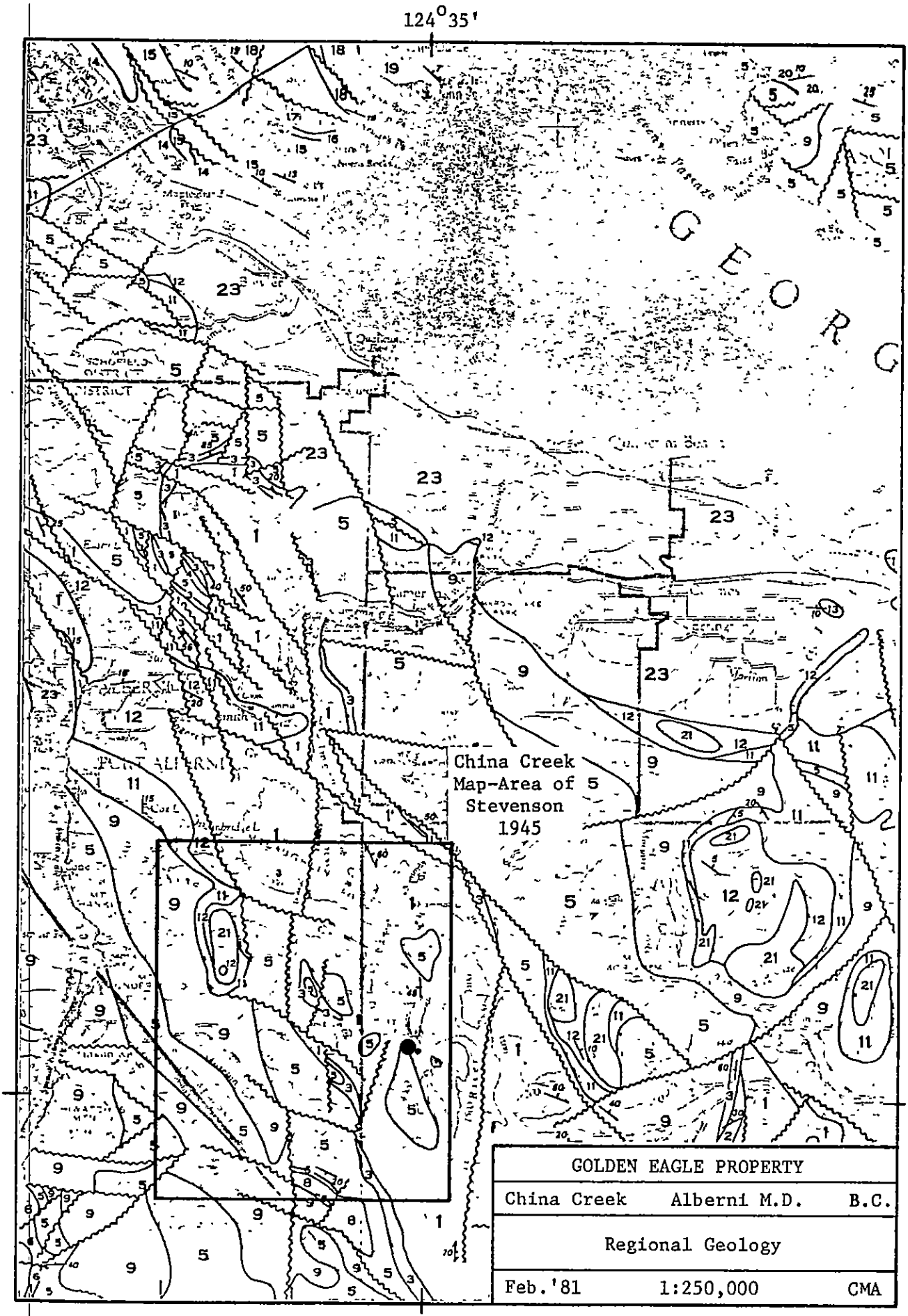
The "older" China Creek Andesite of Stevenson "overlies the older sediments and is folded with the sediments in a synclinal belt"; and, accordingly, may belong to the Karmutsen Formation of Triassic age, unit 5 of Muller. Muller, however, shows basal Sicker volcanics, unit 1, in the area mapped by Stevenson as China Creek Andesite. The China Creek Andesite consists principally of fine grained, dark green andesite that generally has an amygdaloidal structure, plus a smaller proportion of purplish, amygdaloidal andesite. Occasional lenses of dark grey chert and red jasper are intercalated with the andesite.

The Franklin Creek Basalt of Stevenson, an augite basalt, underlies the western half of the China Creek map-area, and typifies dark green to almost black, pillow basalts of the Triassic Karmutsen Formation. On the structure sections, Stevenson shows the Franklin Creek Basalt in fault contact with the Sicker Group "Older Sediments". Unconformable contact with the Sicker Group volcanics (Muller unit 1) and sediments (Muller unit 3, Buttle Lake Formation) also is indicated.

The main quartz diorite stock that typifies the Island Intrusions of Middle to Upper Jurassic age, strikes north northwesterly through the western portion of the China Creek map-area. The intrusive cuts the Franklin Creek Basalt, varies in width from 1 to 4 km, and is more than 20 km in length.

The intrusive diorite body mapped by Stevenson that strikes northerly through Mount McQuillan coincides extremely well with a low-magnitude aeromagnetic "high" defined by the 56,700 gamma contour. Figure 6 shows the contoured data from the aeromagnetic survey by Hunting Surveys in 1962. Muller erroneously shows Karmutsen volcanics in this area. The McQuillan Diorite is about 7 km long and ½ to 1 km wide; and probably also correlates with the Jurassic Island Intrusions. Diabase dykes to about 1 m thick cut the diorite. Much of the diorite has been brecciated, then healed by the introduction of siliceous, aplitic material, some of which also occurs as small dykes.

Stevenson also mapped three small bodies of feldspar porphyry adjacent to the McQuillan Diorite on the west, which reportedly are accompanied by numerous sills and dykes of similar composition. "The feldspar porphyry consists principally of feldspar with but little quartz, and no hornblende or other dark mineral." He consid-



From: Muller, J.E. Map 17-1968
GSC Paper 68-50 1969

Fig. 4

LEGEND

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT
23 Glacial and alluvial deposits

TERTIARY
22 Rhyolitic, to dacitic tuff, breccia, ignimbrite

21 Hornblende quartz diorite, leucoquartz monzonite, porphyritic dacite, breccia

CRETACEOUS OR TERTIARY
20 Sandstone, conglomerate

CRETACEOUS AND (?) TERTIARY
UPPER CRETACEOUS AND (?) TERTIARY
NANAIMO GROUP (11-19)
19 GABRIOLA FORMATION: sandstone, conglomerate, shale

UPPER CRETACEOUS
18 SPRAY FORMATION: siltstone, shale, fine sandstone

17 GEOFFREY FORMATION: conglomerate, sandstone

16 NORTHUMBERLAND FORMATION: siltstone, shale, fine sandstone

15 DE COURCY FORMATION: conglomerate, sandstone

14 CEDAR DISTRICT FORMATION: shale, siltstone, fine sandstone

13 EXTENSION-PROTECTION FORMATION: sandstone, conglomerate, shale, coal

12 HASLAM FORMATION: shale, siltstone, fine sandstone

11 COMOX FORMATION: sandstone, conglomerate, shale, coal: 11a is BENSON MEMBER: mainly coarse conglomerate

MESOZOIC

UPPER JURASSIC AND/OR LOWER CRETACEOUS
10 'Tofino Area Greywacke Unit'
Greywacke, argillite, conglomerate

JURASSIC
MIDDLE TO UPPER JURASSIC
9 ISLAND INTRUSIONS: biotite-hornblende granodiorite, quartz diorite

TRIASSIC AND JURASSIC
LOWER JURASSIC(?)
VANCOUVER GROUP (5-8)
BONANZA SUBGROUP (7, 8)
8 VOLCANIC DIVISION: andesitic to latitic breccia, tuff and lava, minor greywacke, argillite and siltstone

UPPER TRIASSIC AND LOWER JURASSIC
7 SEDIMENTARY DIVISION: limestone and argillite, thin bedded, silty carbonaceous

UPPER TRIASSIC
6 QUATSINO FORMATION: limestone, mainly massive to thick bedded, minor thin bedded limestone

UPPER TRIASSIC AND OLDER
5 KARMUTSEN FORMATION: pillow-basalt and pillow-breccia, massive basalt flows; minor tuff volcanic breccia. Jasperoid tuff, breccia and conglomerate at base

TRIASSIC OR PERMIAN
4 Gabbro, peridotite, diabase

PALEOZOIC

PENNSYLVANIAN, PERMIAN AND OLDER
LOWER PERMIAN
SICKER GROUP (1-3)
3 BUTTLE LAKE FORMATION: limestone, chert

MIDDLE PENNSYLVANIAN
2 Argillite, greywacke, conglomerate; minor limestone, tuff

PENNSYLVANIAN AND OLDER
1 Volcanic breccia, tuff, argillite; greenstone, greenschist, dykes and sills of andesite-porphyry

'WESTCOAST CRYSTALLINE COMPLEX' (A-D)
'BASIC ROCKS'
D Gabbro, peridotite

'TOFINO INLET PLUTON'
C Hornblende-biotite quartz diorite, granodiorite

'WESTCOAST DIORITES'
B Hybrid hornblende diorite, quartz diorite, agmatite; includes masses of hornfelsic volcanic rocks

'WESTCOAST GNEISS COMPLEX'
A Hornblende-plagioclase gneiss, amphibolite, hornfels

Geological boundary (approximate)

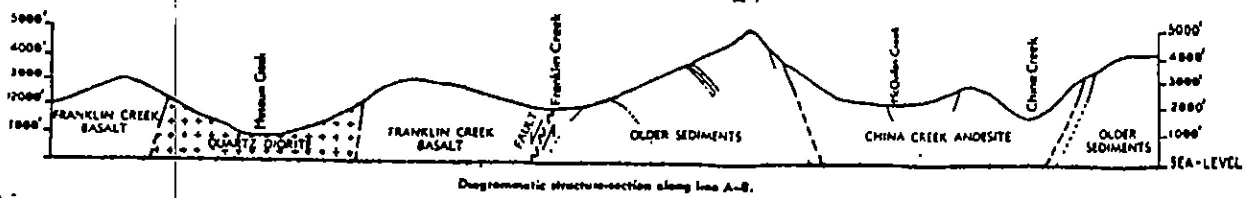
Bedding (inclined, vertical, overturned)

Schistosity, foliation (inclined)

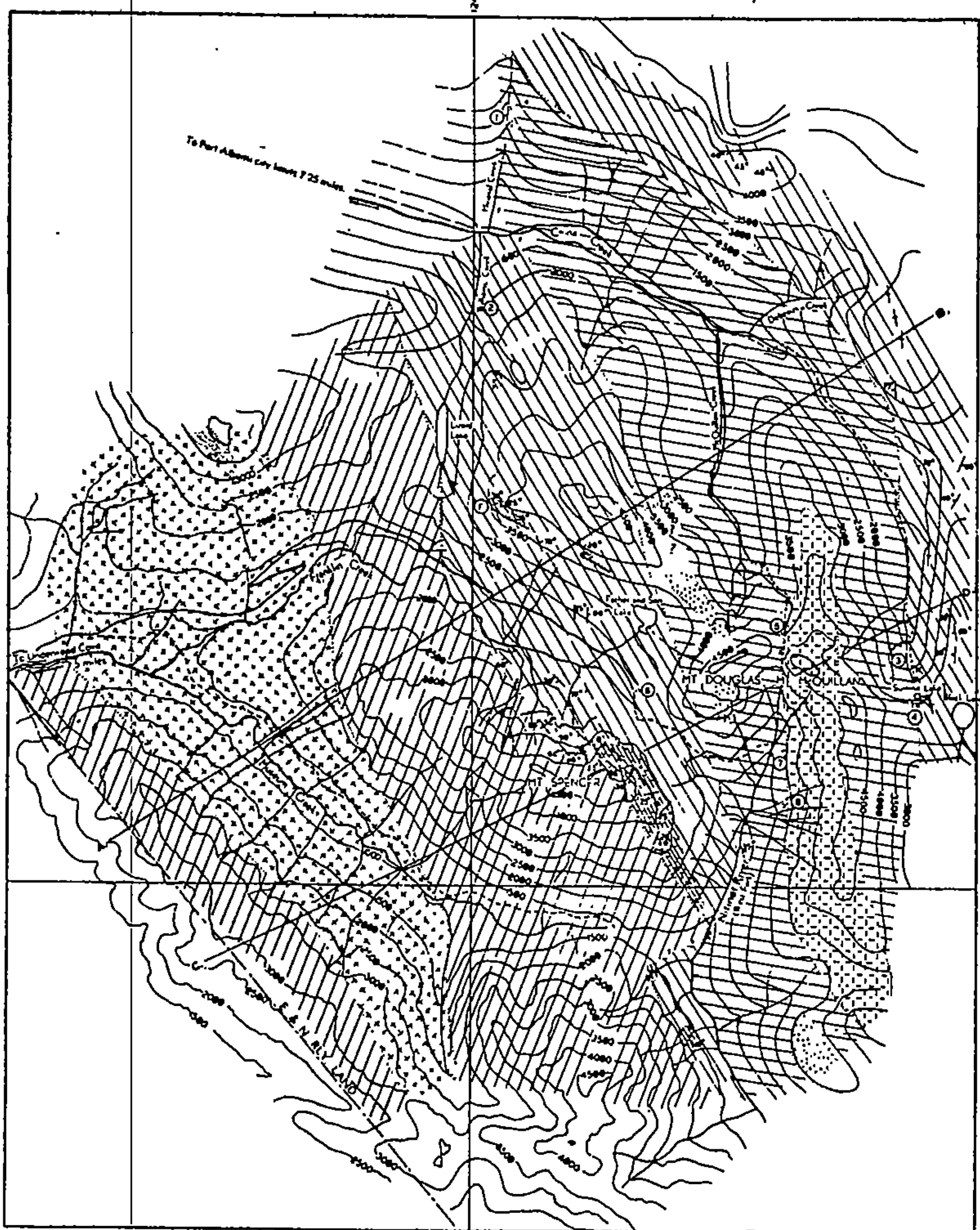
Schistosity, foliation and minor fold axes (inclined, vertical, arrow indicates plunge)

Lineation (axes of minor folds)

Fault (approximate); lineament



Diagrammatic structure-section along line A-B.



INDEX TO PROPERTIES.

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2. Regina
3. Golden Eagle
4. B & K
5. Havilah
6. Thistle
7. Black Panther
8. Black Lion

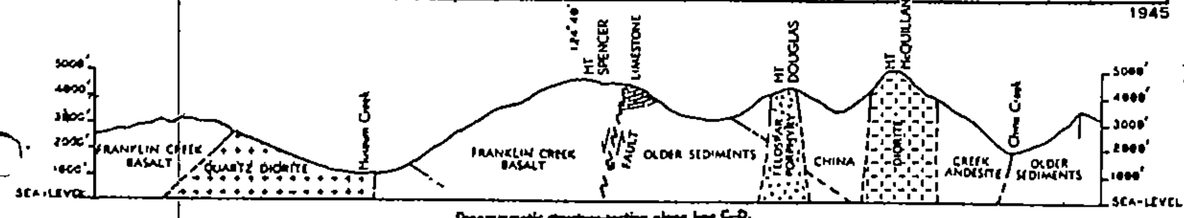
From:

Stevenson, J.S.

Annual Report - 1944

B.C. Minister of Mines

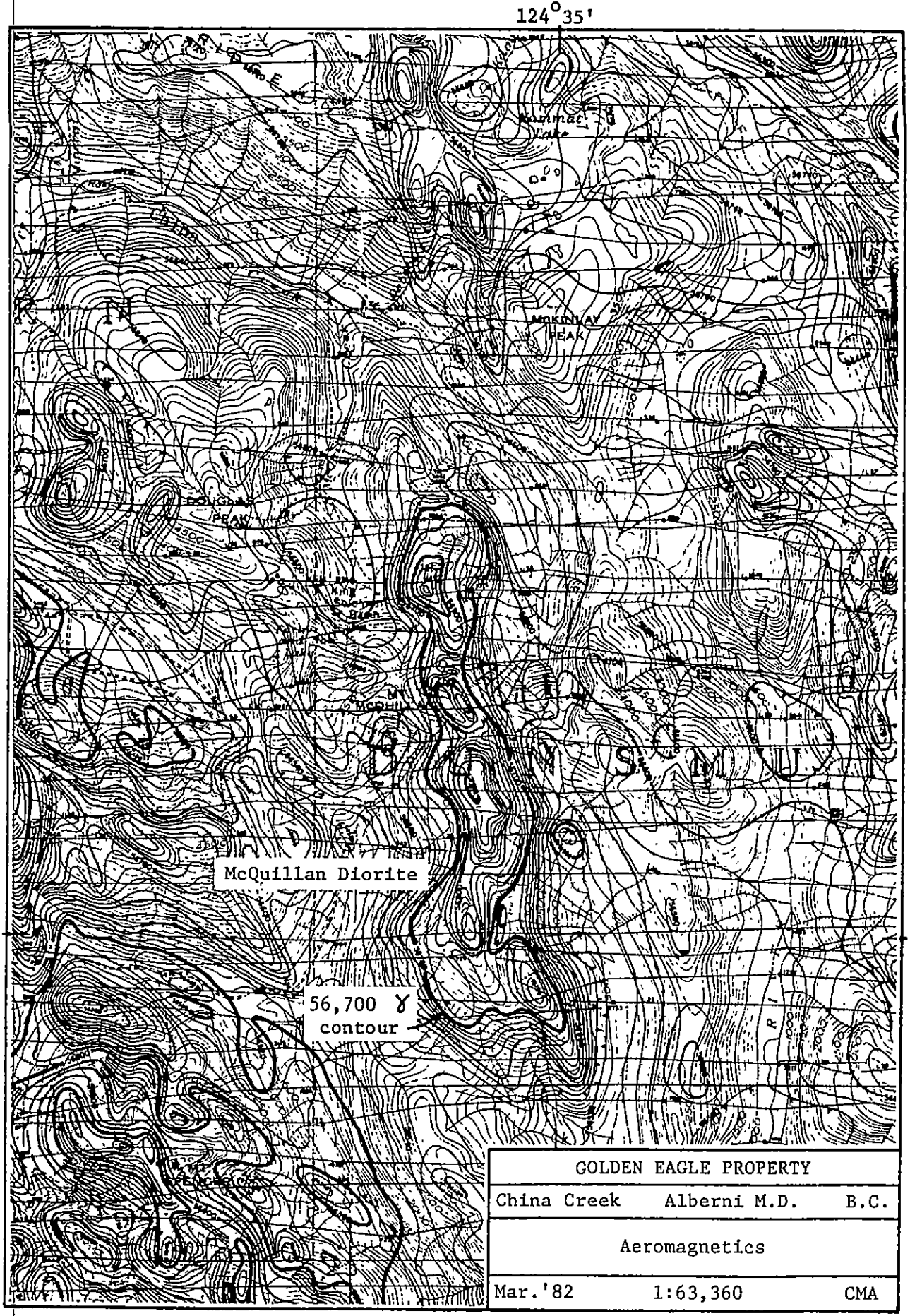
1945



Diagrammatic structure-section along line C-D.

Geologic Map of China Creek Area

Fig. 5



GOLDEN EAGLE PROPERTY		
China Creek	Alberni M.D.	B.C.
Aeromagnetics		
Mar.'82	1:63,360	CMA

From: GSC Aeromagnetic Series Map 5323G 1967
Alberni Inlet 92F/2 & Part of 92F/7

Fig. 6

ered the Golden Eagle Vein to be in a similar "small intrusive mass of feldspar porphyry". In the writer's opinion, the absence of mafic minerals near the Golden Eagle Vein is a function of bleaching and alteration in proximity to the quartz veining, and the 200-m by 100-m Golden Eagle intrusive is a small body of finer grained diorite satellitic to the McQuillan Diorite: the texture was not porphyritic in specimens examined by the writer.

"Sills of hornblende feldspar porphyry, from 0.3 m to 12 m thick, intrude Cretaceous sediments that cap the flat-topped peak north of Franklin Creek and west of Lizard Lake." These intrusions are Tertiary in age. Immediately north of Mount McQuillan, Cominco geologists mapped a number of quartz-feldspar porphyry intrusives (plugs, dykes, and sills) which they felt were "Tertiary Intrusions". The intimate spatial relationship, alone, suggests that these intrusions may be comagmatic differentiates of the McQuillan Diorite (Jurassic).

Local Geology and Mineralization

Figure 7, in the pocket of the report, shows the 1.3-km surface traverse (mostly pace, or distance estimate, and compass) and 0.7-km underground traverse (hip chain and compass) completed by the writer at a scale of 1:1,250.

The "hogsback" underlying the Golden Eagle Vein and Diorite is very steep, 35° to 45°, and, recognizing the limitations of the survey method, the relative locations of the surface and underground workings may not be accurate. An accurate 'legal' survey is planned for the next field season.

The Golden Eagle Diorite appears to be a small intrusive boss or plug, satellitic to the main McQuillan Diorite stock, and the Golden Eagle Property, in general, covers a typical 'porphyry' environment with very good exploration possibilities.

Since only Adit 3 on the Golden Eagle Vein was accessible, it was not possible to verify the results of the original sampling of the vein between 1896 and 1902. At that time, the weighted average of 29 samples was 1.2 m grading 16.0 g Au/t (0.47 oz/T).

Both the Golden Eagle Diorite and the Golden Eagle Vein should occur a short distance in the northwest wall of the Cedar Adit (126 m below the Wills Adit, Adit 1), in the vicinity of the northwest crosscut at station 19.

At surface, the BSF Vein swings sharply to the east when it passes from andesite into diorite. It is possible that the BSF Vein branches to the north northeast, and joins the Golden Eagle Vein; or, alternatively, it could parallel the Golden Eagle Vein.

Chip-channel samples R-18 and R-19 confirmed the gold values obtained from the BSF Vein between 1896 and 1902: the weighted average of 6 samples was 1.1 m grading 11.7 g Au/t (0.34 oz/T).

R-18	1.1 m	17.5 g Au/t (0.51 oz/T)	146 g Ag/t (4.27 oz/T)
or	1.4 m	13.7 g Au/t (0.40 oz/T)	131 g Ag/t (3.82 oz/T)
R-19	1.0 m	5.1 g Au/t (0.15 oz/T)	14.7 g Ag/t (0.43 oz/T)
or	2.5 m	3.0 g Au/t (0.09 oz/T)	38 g Ag/t (1.11 oz/T)

Well mineralized vein quartz, with disseminated pyrite, galena, and sphalerite, often carries more than 1% each of Pb and Zn. The precious metal values, particularly gold, occur with pyrite, more or less independently of the base metal content.

The strong vein at the southwest extremity of the Cedar Adit is the BSF Vein, 0.1 to 1 m in width, and diorite occurs with the vein on the west wall of the tunnel for more than 150 m. The walls and back of the tunnel are very dirty, and must be washed down and surveyed before detailed mapping and sampling is attempted. Stevenson, 1945, recognized neither the BSF Vein nor the diorite (or "feldspar porphyry") in the tunnel. The diorite in the Cedar Adit appears to extend about 90 m south of the main diorite body at surface; however, some narrow, highly altered, sill-like diorite accompanies the BSF Vein in andesite in the surface gully.

Strong, variably pyritic quartz veins in andesite adjacent to the Golden Eagle Diorite did not carry significant values where sampled. North northeast to northeast are the prevailing strike directions for the veins, including the BSF and Golden Eagle Veins, and dip about 70°, plus, easterly. The diorite appears to dip at 80°, plus, westerly. A 0.1-m epithermal, quartz-calcite vein with light pyrite, galena, and sphalerite mineralization, sample R-7, did carry significant silver-lead values (165 g Ag/t and 4.60% Pb). The strike of the vein, in the China Creek Andesite, is 280°, and dip 55° south. Several small lenses of massive pyrite in the volcanics did not yield significant precious metal values. These lenses probably were emplaced during the primary period of volcanism, rather than during the much later emplacement of the Island Intrusions and associated quartz veining and base and precious metal mineralization.

Numerous well mineralized quartz veins from 0.1 to 1 m in width occur in the steep gully on the west side of the hogsback, and, some interesting values were obtained, particularly in samples R-10, R-22, and R-23 (combined precious and base metal values). The possibility of a mineable stockwork orebody in the Golden Eagle Diorite, in addition to individual strong quartz veins that may be mineable, is worthy of serious investigation. The diorite body and major quartz veins should be delineated by diamond drilling at the Cedar Adit elevation, about 755 m ASL; from which base it would be a simple matter to drill, develop, and mine any ore above the level. The south end of the BSF Vein at surface is more than 300 m above the vein in the Cedar Adit; while the highest grade section developed on the Golden Eagle Vein, Adit 2, is approximately 150 m above the Cedar Adit (say, three 50-m sublevels above a main haulage level at the Cedar elevation).

The optimum direction for diamond drilling appears to be 300°/120°. The difficult topography makes it impractical to drill from surface for ore definition purposes; however, individual holes for exploration purposes may be necessary and warranted: helicopter support likely would be required.

Geological mapping is required to clarify the relationship between the Golden Eagle Diorite and the McQuillan Diorite stock; and also to investigate the south extension of the east grid on the Sol claims that contains at least local areas of porphyry copper mineralization, apparently mostly in China Creek Andesite. This area, between the Golden Eagle Diorite and Mount McQuillan, is extremely rugged, and only select traverses will be possible.

Air Photo Interpretation

Figure 8, in the pocket of the report, shows the linears that are observed on air photographs of the Golden Eagle Property when viewed stereoscopically. Both major and minor fractures, joints, shears, and faults are represented by the linears. Other pertinent data is plotted on the accompanying overlay.

The Golden Eagle and BSF Veins, striking generally NE, coincide with strong linears. In the Cedar Adit, however, the BSF Vein is arcuate in form, changing in direction stepwise from 8^{o} to 34^{o} to 61^{o} in its exposed length of 160 m, no doubt in accordance with the direction of the controlling fractures. One mineralized quartz-calcite vein also had a roughly E-W strike, and 55^{o} S dip. Some faulting in an ESE direction was noted, with 70^{o} N dip.

The Golden Eagle Diorite appears bounded on the NNE by a strong NW striking fault through Simmit Lake (NE side), and the SSW extremity of the diorite may be similarly fault-bounded.

The 56,700 gamma contour from the aeromagnetic map, plotted on the overlay, defines the position of the McQuillan Diorite stock. N-S fracturing is pronounced in and adjacent to the intrusive, and probably reflects renewed fracturing along the same zone of weakness in which the intrusive was emplaced. 'Porphyry' mineralization associated with this intrusive requires detailed investigation to establish the important mineralization directions and controls. ESE-WNW fracturing or faulting between Black Lake and Father and Son Lake, for example, may be important.

Air photo linears in the overall property area strike in every quarter quadrant direction: N-S, NNE-SSW, NE-SW, ENE-WSW, E-W, ESE-WNW, SE-NW, and SSE-NNW. Field data is required to assess the relative importance of these directions, as it pertains to mineralization.

GEOCHEMICAL SURVEY

General

The writer and two assistants completed 3.4 km of line-cutting and soil sampling on the 9-unit Twins claim. Chaining was slope-corrected, pickets were placed at 50-m intervals, and B-zone soil samples were taken at 50-m intervals on east-west lines (36 samples), and 100-m intervals on north-south lines (10 samples). Topography on the Twin Sons 1 and 2 claims was very steep, and only 200 m of north-south line was completed, with soil samples at 50-m intervals (5 samples). One grab sample of pyritic vein quartz was taken from a small dump that appears to be the uppermost adit on the former Havilah property (McQuillan Vein). The B soil horizon generally was well developed in the well-drained humo-ferric podzol, and standard grubhoe-sampling and atomic absorption analytical techniques were employed.

Analyses were completed for copper and lead, only, good pathfinder elements both for vein and porphyry mineralization in the area. Analytical details and results by Bondar-Clegg in North Vancouver are included in Appendix I. Because of the small number of samples taken, anomaly limits were established by graphical statistical calculations, Appendix II, using earlier soil sampling data from the Sol claims (now part of the Golden Eagle Group), and the Jan and Mar claims adjoining to the south. The geochemical results are plotted on Figure 9 for the Twins claim, and on Figure 10 for the Twin Sons 1 and 2 claims, in the pocket of the report.

In the course of prospecting and compass surveying on the Sol 2, Okolona, and Golden Eagle claims, 17 small (less than 200 g) rock chip geochemical samples were taken from mineralized outcrops, and 7 samples were taken underground in the Cedar Adit: pyritic quartz veins, with or without disseminated galena and sphalerite, pyritic andesite and diorite, and highly altered and bleached, pyritic diorite and andesite. In addition, 19 large (2 kg) chip-channel samples were taken from surface exposures of the Golden Eagle and BSF Veins. Base metal values, copper, lead, and zinc, and precious metal values, gold and silver, first were determined geochemically; then the high values were verified by assay methods, particularly for the representative chip-channel samples. The analytical procedures and results are included in Appendix I, and the sample locations, analyses, and brief descriptions are shown on Figure 7.

Results

The following table summarizes the results of the graphical statistical calculations for Cu and Pb (in parts per million, ppm), considering the source rock - Sicker Sediments (principally pyroclastics), and McQuillan Diorite and China Creek Andesite:

	Sicker Sediments		McQuillan Diorite & China Creek Andesite						
	MacDonald		Jan Resources			Coast Copper		Combined	
	Cu	Pb	Cu	Pb	Zn	Cu	Zn	Cu	Zn
Background	35	1	75	20	40	85	45	80	45
Weakly anomalous	55	3.5	160	30	60	250	100	200	100
Moderately anomalous	90	10	330	50	100	700	250	500	200
Strongly anomalous	140	30	700	75	150	2000	600	1300	500

No anomalous Cu and Pb soil values of significance were obtained on the Twins claim, underlain by Sicker Sediments, or on the Twin Sons 1 and 2 claims, underlain by China Creek Andesite.

The significantly higher anomalous Cu and Zn soil values obtained by Coast Copper, compared to those of Jan Resources, in spite of similar background values in areas underlain by McQuillan Diorite and China Creek Andesite, probably is due to the presence of 'porphyry' mineralization in the grid area on the Sol claims. Whether the 0.1% Cu grades over 15-m core lengths obtained by Coast Copper in two diamond drill holes are representative of porphyry mineralization in the area is a moot point, but the writer believes that additional field work is warranted, very likely including substantial diamond drilling.

No soil sampling has been conducted to date in the area of the Golden Eagle Diorite, and, topography permitting, at least one reconnaissance line is planned to cross both diorite bodies and the intervening China Creek Andesite. Because of the extremely rugged terrain, with numerous impassible cliffs, it is virtually impossible to expand on Coast Copper's ordered grid. Future soil lines and prospecting traverses will be laid out to conform with local topographic conditions.

The Golden Eagle Diorite, Figure 7, hosts major mineralized quartz veins, such as the Golden Eagle Vein and BSF Vein, and others, in addition to a multitude of smaller veins with several orientations, suggestive of a stockwork deposit. The values for 43 rock geochem samples are tabulated and keyed to the sample locations shown.

As potentially exploitable vein deposits, the values for 15 of the 43 samples are interesting; and, as much larger stockwork deposits, 26 of the 43 samples are interesting. Altered, pyritic diorite not associated with quartz veining, Sample R-4, contained no significant values suggestive of 'porphyry' gold mineralization. However, when introduced silica occurs in the altered, pyritic diorite, such as in sample R-29, interesting values also may occur: 1.85 g Au/t and 1.54% Zn.

As previously described, chip-channel sampling of the BSF Vein at surface confirmed the potential ore values obtained between 1896 and 1902: about 1 m averaging more than 11 g Au/t (0.3 oz/T). Similarly, the writer has no reason to doubt the potential ore values obtained from the Golden Eagle Vein in the same time period: about 1.2 m averaging more than 15 g Au/t (0.4 oz/T).

Pyritic vein quartz from the Twin Sons 2 claim, sample R-32, yielded very interesting precious metal values: 34.3 g Au/t (1.0 oz/T) and 34.0 g Ag/t (1.0 oz/T). This is the former Havilah Property, and McQuillan Vein.

All creeks and intermittent run-off gullies draining Mount McQuillan should be prospected, rock geochem-sampled, and compass-surveyed similar to the Golden Eagle Diorite area. The objectives are vein deposits, stockwork deposits, and porphyry mineralization. Extremely difficult topography imposes the greatest constraint on such work. Possible sites for surface diamond drilling should be identified.

Interesting vein-type mineralization in the Summit Lake area, 500 m southeast of the Golden Eagle Vein, indicates that similar prospecting, sampling, and surveying should be completed in all drainages on the Golden Eagle and Okolona claims as well.

Selected soil sampling traverses also should be run to expand on the grid completed for Coast Copper on the Sol claims, and the area of possible porphyry mineralization should be extended southward on Mount McQuillan two claims to the south property boundary. Again, the rugged topography will be the principal control on this work. Similar, selected soil traverses also should be completed on the Golden Eagle and Okolona claims.

COSTS

I

Period	February 3, 1981 - June 2, 1981		
Expenditure	$3,817.37	Applied	$3,800
Category	Geological		
Claims	Sol 1-3, 19-34 = 19 claims		
Work done on	All 63 claims in Golden Eagle Group		

Details

Wages	C. M. Armstrong, P.Eng, Consulting Engineer Feb. 3-11, 15-19, 23-28. Mar. 1-5 10 days @ $350 =	$3,500.00
Transportation	Personal vehicle 126 km @ $0.30 =	37.80
Communications	Long distance	81.00
Other costs	Copying, typing, postage, miscellaneous	198.57
		$3,817.37

II

Period	June 3, 1981 - January 16, 1982		
Expenditure	$13,769.55	Applied	$13,700
Category	Geological & geochemical		
Claims	Sol 2, Twins, Twin Sons 1 & 2		
Work done on	Sol 2, Okolona, Golden Eagle, Twins, Twin Sons 1 & 2		

Details

Wages	C. M. Armstrong, P.Eng. Consulting Engineer Jun. 9, 14, 19-20, 26, 29. Jul. 21-22, 24-29. Oct. 9, 27, 29-31. Nov. 1-6, 8-10, 19-21, 23, 27. Dec. 4, 18-19, 22. Jan. 7, 11, 12.		
	10 days @ $400 =		$4,000.00
	15 days @ $350 =		5,250.00
	L. Beverly, S. Armstrong Jul. 21-25 4 days x 2 = 8 mandays @ $125 =		1,000.00
			10,250.00
Food & Accomodation	C.M. Armstrong Jul. 21-22, 24-29. Oct. 29-31. Nov. 1-6		
	L. Beverly, S. Armstrong Jul. 21-25		562.44
Transportation	Personal vehicle 429 km @ $0.30 =	$128.70	
	Ferries	104.60	
	4x4 rental 16 days @ $50 =	800.00	
	Fuel	63.36	
			1,096.66
Communications	Long distance	460.80	
	Mobile telephone - rental	135.00	
	calls	79.90	
			675.70
Assaying			834.30
Other Costs	Supplies, maps, air photos, typing, copying, postage, miscellaneous		350.45
			$13,769.55

Note: Expenditure prior to location of Twins and Twin Sons 1 & 2 claims (Jun. 3 - Jul. 20) = $1,380.01 - applied to Sol 2 claim, only (Jun. 2/82 anniversary date).

III

Period	January 17 - March 5, 1982		
Expenditure	$8,309.50	Applied	$8,200
Category	Geological & geochemical		
Claims	Sol 1-16, 19-40, Twin Sons 1 & 2, Okolona		
Work done on	All 63 claims in Golden Eagle Group		

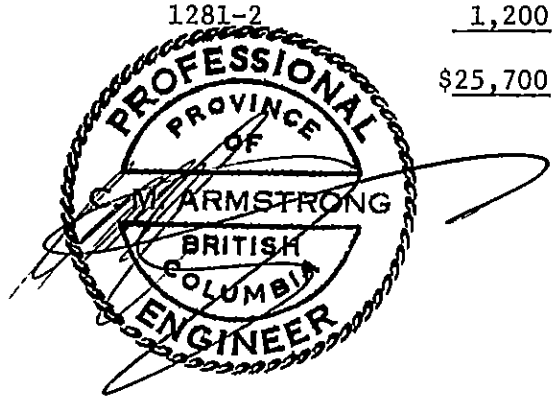
Details

Wages	C. M. Armstrong, P.Eng. Consulting Engineer Jan. 27-30, Feb. 1-10, 12-26, 28. Mar. 1-5. 21 days @ $350 =	$7,350.00
Transportation	Personal vehicle 269 km @ $0.30 =	80.70
Communications	Long distance	139.80
Other Costs	Air photographs, maps, postage, draughting supplies, typing, copying, miscellaneous	739.00
		$8,309.50

Note: Expenditure prior to anniversary date of Okolona claim (Feb. 6) = $2,545.60, not applied to Okolona claim.

Distribution of Expenditures Applied

Claim	Record Number	Approximate Expenditure
Golden Eagle	198	$13,000
Okolona	58	4,500
Sol 1-16, 19-40, 2	20383-97 20400-22 71	3,600
Twins	1280	3,400
Twin Sons 1 & 2	1281-2	1,200
		$25,700



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Stevenson, J.S. "Geology and Ore Deposits of the China Creek Area", from Annual Report, 1944, Minister of Mines, B.C., 1945.

Tully, D.W. "Report on the Sol Mineral Claim Group", for Coast Copper Company Limited, Nov. 9, 1981.

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Maps

Aeromagnetic Series	1:63,360	Alberni Inlet		92F/2	1967
Air Photographs	1:15,840	BC 7791 - 243-247			1977
Claim Map	1:50,000			92F/2E	
Geology	1:250,000	Alberni	Muller	92F	17-1968
	1:63,360	China Creek	Stevenson		1945
Topographic Series	1:50,000	Alberni Inlet		92F/2	1976
	1:250,000	Alberni		92F	1966

Abbreviations and Conversion Factors

Ag	=	silver	m	=	metre
ASL	=	above sea level	oz	=	Troy ounce
Au	=	gold	Pb	=	lead
cm	=	centimetre	ppm	=	parts per million
Cu	=	copper	ppb	=	parts per billion
g	=	gram	t	=	tonne
ha	=	hectare	T	=	short ton
km	=	kilometre	Zn	=	zinc

1	g/t	=	34.286 oz/T	1	m	=	3.281 feet
1	ha	=	2.471 acres	1	pound	=	453.6 g
1	inch	=	2.54 cm	1	t	=	1.1023 T
1	km	=	0.6214 miles				

CERTIFICATION

I, CHRISTOPHER MACKENDRICK ARMSTRONG of the City of Vancouver, Province of British Columbia, do hereby certify:

THAT I am a practicing Geological Engineer residing at 4085 West 29th Avenue, Vancouver, British Columbia, V6S 1V4, Canada.

THAT I am a registered Professional Engineer in good standing in the Provinces of British Columbia and Ontario.

THAT I received the degree of B.Sc. in Geological Engineering from Queen's University, Kingston, Ontario in 1960, and practiced my profession continuously in the period between leaving university in 1959 and returning to university in 1966.

THAT I enrolled in the Department of Mineral Engineering at the University of British Columbia in 1966, and in the period to 1969 completed course work and research work requirements in an M.A.Sc. program, specializing in bacterial-acid leaching systems; thesis writing was not completed; post graduate courses in economic geology and North American geology also were taken and completed.

THAT since leaving university in 1969, I have practiced my profession both as a Geological Engineer and as a Specialist-Advisor in ambient temperature-pressure leaching systems.

THAT the following is a true record of my employment and experience:

1957	4 mos. Junior Geologist. Noranda Mines Ltd. Noranda, Quebec.
1958	4 mos. Party Chief. Hollinger North Shore Exploration Co. Ltd. New Quebec and Labrador.
1959-1961	2 yrs. Assistant Geologist. Pickle Crow Gold Mines Ltd. Pickle Crow, Ontario. Teck Corporation Ltd.
1961-1962	1 yr. Assistant Geologist. Willroy Mines Ltd. Manitouwadge, Ontario.
1962-1964	2 yrs. Chief Geologist. Metal Mines Ltd. Werner Lake, Ontario. Consolidated Canadian Faraday.
1964-1966	2 yrs. Chief Geologist. Tegren Goldfields Ltd. Kirkland Lake, Ontario. Teck Corporation Ltd.
1967	½ yr. Project Geologist. McLeese Lake property, B.C. Geophysical Engineering & Surveys Ltd. Teck Corporation Ltd.
1969-1970	1 yr. Laboratory Manager, Chief Geologist, and Consulting Engineer. S. M. Industries Ltd. Vancouver, B.C.
1970-1982	13 yrs. Independent Consulting Engineer. Canada, U.S.A., and Mexico.

That this report is based on evaluation of prior publically and privately available data, on field work between July 16 and 29, 1981 and between October 29 and November 6, 1981, and on evaluation of the field data and air photography.

Dated at Vancouver this
5th Day of March, 1982

C. M. Armstrong, P.Eng.
Consulting Engineer

APPENDIX

I

Analyses - Bondar-Clegg & Co. Ltd.

BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

REPORT: 121-2048

FROM: C.M. ARMSTRONG

SUBMITTED BY: C.M. ARMSTRONG

DATE: 04-AUG-81 PROJECT: M-GE

ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
Cu	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80	SOILS	SEIVE -80
Pb	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		RETENTION OF REJECTS

REPORT COPIES TO: C.M. ARMSTRONG

INVOICE TO: C.M. ARMSTRONG

BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

REPORT: 121-2048

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	NOTES
0E-100S	SOILS	28	11	
200S		23	ND	should be <2
0E-TS-0S		11	3	
50S		32	2	
100S		25	ND	
150S		23	2	
200S		36	ND	
1500E-100S		55	2	
200S		60	2	
300S		60	ND	
500S		35	4	
620S		23	4	
700S		37	ND	
810S		12	ND	
890S		57	ND	
0S-0E		19	3	
50E		53	ND	
100E		20	2	
150E		45	ND	
200E		40	ND	
250E		77	>10000	should be <2
300E		49	>10000	
350E		61	>10000	
400E		69	>10000	
500E		34	>10000	
600E		34	>10000	
650E		36	>10000	
700E		34	>10000	
750E		42	>10000	
825E		55	>10000	
850E		59	>10000	
900E		20	>10000	
950E		22	2	
1000E		40	ND	
1050E		43	2	
1100E		64	ND	
1200E		36	ND	
1250E		48	8	
1300E		25	ND	
1330E		47	4	
1400E		35	ND	
1450E		46	9	
1500E		33	4	
1000S-855E		37	ND	
950E		36	ND	
1010E		33	2	
1115E		28	ND	
1300E		18	ND	
1340E		26	ND	
1400E		35	ND	
1420E		29	ND	

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: 985-0681 TELEX: 04-352667

August 12, 1981

C. M. Armstrong Consulting Engineer
4085 West 29th Avenue
VANCOUVER, B. C.
V6S 1V4

ERRATUM:

RE: Our 121-2049; Your Project M-GE

	Pb ppm reported	Pb ppm corrected
250E	G 10000	L 2
300E	G 10000	L 2
350E	G 10000	L 2
400E	G 10000	L 2
500E	G 10000	L 2
600E	G 10000	L 2
650E	G 10000	L 2
700E	G 10000	L 2
750E	G 10000	L 2
825E	G 10000	L 2
850E	G 10000	L 2
900E	G 10000	L 2

G denotes 'greater than'
L denotes 'less than'

We aplogize for any inconvenience this may have caused you.

BONDAR-CLEGG & COMPANY LTD.

/apq

To: M. Armstrong Consulting Ltd.

PAGE No. 1

4085 West 29th Avenue
Vancouver, B.C. V6S 1V4

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

REPORT NO. A29 - 1834

DATE: November 26, 1981

Samples submitted: November 12, 1981
Results completed: November 26, 1981

PROJECT: GE

I hereby certify that the following are the results of assays made by us upon the herein described rock samples.

MARKED	GOLD		SILVER								
WITH GEOCHEM REPORT # 121 - 3765	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent
13247	0.50		4.49		R-18A						
13248	1.14		7.07		B						
13249	0.050		1.95		C						
13250	0.005		2.16		D						
13251	0.002		0.45		E						
13252	0.030		3.56		R-19A						
13253	0.050		0.56		B						
13254	0.15		0.43		C						

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

DAR-CLEGG & COMPANY LTD.

, NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

SUBMITTED BY: C. ARNSTRONG

ETHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
tomic Absorption	-100	ROCKS	CRUSH,PULVERIZE -100
tomic Absorption	-100		RETENTION OF REJECTS
tomic Absorption	-100		
tomic Absorption	-100		
re Assay AA	-100		

INVOICE TO: C.M. ARMSTRONG

DETECTION LIMITS FOR GOLD
- 20 gram sample: 5 ppb.
- 10 gram sample: 10 ppb.
- 1 gram sample: 100 ppb.

Sample Wt. 20 g. unless otherwise stated.

NOTE:
Check concentration/sample weight ratio for effective detection level.

NDAR-CLEGG & COMPANY LTD.

E., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

Au PPB	NOTES	SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Zn PPM	As PPM	Au PPB	NOTES
		R-17C		365	2800	2320	26.0	2720	
		R-20		2600	40	1685	4.2	20	
		R-21		60	2800	1170	11.0	610	
		R-22		100	>10000	8520	45.0	480	
		R-23		445	>10000	9450	24.0	>10000	
		R-24		40	1330	460	7.1	1900	
		R-25		275	100	138	0.8	30	
		R-26		175	100	107	2.0	95	
545		R-27		280	3000	1560	9.4	210	
80		R-28		48	940	286	5.6	290	
10		R-29		120	3800	15390	11.0	1850	
10		R-30		770	7400	5560	33.0	495	
510		R-31		110	320	3230	11.0	500	
610		R-32		130	1300	435	34.0	>10000	
480									
230									
2060									
1630									
80									
170									
1060									
835									
1930									
1010									
2160									
505									
100									
115									
555									
170									

BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 • PHONE: 985-0681 • TELEX: 04-352667

Certificate of Assay

TO C. M. Armstrong
4085 West 29th Avenue
VANCOUVER, B.C. V6S 1V4

A21 - 1944

December 1, 1981

PROJECT: GE

I hereby certify that the following are the results of assays made by us upon the herein described pulps samples.

MARKED	PERCENT	PERCENT	MARKED	PERCENT	PERCENT	MARKED	PERCENT	PERCENT
SEE OUR GEOCHEM REPORT 121-3765	Ag oz/ton	Pb						
13247	4.53	-	R-18A					
13248	3.65	-	B					
13249	1.95	-	C					
13252	-	1.60	R-19A					
R - 07	4.80	4.60						
10	1.86	1.17						
14	-	2.18						
22	-	7.00						
23	-	1.60						

NOTE:

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

.....

Registered Assayer, Province of British Columbia

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: 985-0681 TELEX: 04-352667

CERTIFICATE OF ASSAY

TO C. M. Armstrong
4085 West 29th Avenue
VANCOUVER, B.C. V6S 1V4

A21 - 1970
December 10, 1981
PROJECT: GE

I hereby certify that the following are the results of assays made by us upon the herein described pulps samples.

MARKED	Au oz/ton	MARKED	Percent	MARKED	Percent
SEE OUR GEOCHEM REPORT 121-3765					
R - 23	0.34				
32	1.00				

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX

II

Geochemistry - Graphical Statistical Calculations

C. M. ARMSTRONG, P.Eng.
Consulting Engineer

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GEOCHEMISTRY × GE ∘ Soil Statistical Analysis Calculations

Property △ Jan-Mar • Coast Copper

Company △ Jan Resources × Mac Donald

Date Jan. 1982

Element Cu

Lognormal distribution

$n = \frac{\log R}{\log w} = \frac{3.02}{0.1} = 31$

R = ratio of highest to lowest value = 2100/2 = 1050
w = width of classes & log w = 0.05, (0.1) or 0.2
n = number of classes

Class Limits ppm	log	Mid-pt log x	Frequency Count 20 40 60 80	Total f	%	%	t*	ft	ft^2	f(t+1)²
1.86	0.27									
2.35	0.37	0.32								
2.95	0.47	0.42								
3.72	0.57	0.52								
4.68	0.67	0.62								
5.89	0.77	0.72								
7.41	0.87	0.82								
9.33	0.97	0.92								
11.75	1.07	1.02								
14.79	1.17	1.12								
18.62	1.27	1.22								
23.44	1.37	1.32								
29.51	1.47	1.42								
37.15	1.57	1.52								
46.77	1.67	1.62								
58.88	1.77	1.72								
74.13	1.87	1.82								
93.33	1.97	1.92								
117.5	2.07	2.02								
147.9	2.17	2.12								
186.2	2.27	2.22								
234.4	2.37	2.32								
295.1	2.47	2.42								
371.5	2.57	2.57								
467.7	2.67	2.62								
588.8	2.77	2.72								
741.3	2.87	2.82								
933.3	2.97	2.92								
1175	3.07	3.02								
1479	3.17	3.12								
1862	3.27	3.22								
2344	3.37	3.32								

						1	0.35	100.03	1	0.22	100.00	1	0.24	100.04
														Cu
						1	0.35	99.68	1	0.22	99.78	1	0.24	99.80
						2	0.70	99.33	2	0.43	99.56	2	0.49	99.56
			1	0.80	100.00	1	0.35	98.63	2	0.43	99.13	2	0.49	99.07
1	1.96	99.99				3	1.05	98.28	4	0.87	98.70	3	0.73	98.58
1	1.96	98.03				5	1.75	97.23	6	1.30	97.83	5	1.22	97.85
1	1.96	96.07				9	3.15	95.48	10	2.16	96.53	9	2.19	96.63
7	13.73	94.11	7	5.60	99.20	9	3.15	92.33	23	4.98	94.37	16	3.89	94.44
6	11.76	80.38	6	4.80	93.60	8	2.80	89.18	20	4.33	89.39	14	3.41	90.55
15	29.41	68.62	6	4.80	88.80	21	7.34	86.38	42	9.09	85.06	27	6.57	87.14
6	11.76	39.21	15	12.00	84.00	21	7.34	79.04	42	9.09	75.97	36	8.76	80.57
7	13.73	27.45	11	8.80	72.00	25	8.74	71.70	43	9.31	66.88	36	8.76	71.81
6	11.76	13.72	16	12.80	63.20	19	6.64	62.96	41	8.87	57.57	35	8.52	63.05
1	1.96	1.96	14	11.20	50.40	26	9.09	56.32	41	8.87	48.70	40	9.73	54.53
			12	9.60	39.20	16	5.59	47.23	28	6.06	39.83	28	6.81	44.80
			9	7.20	29.60	11	3.85	41.64	20	4.33	33.77	20	4.89	37.99
			11	8.80	22.40	25	8.74	37.79	36	7.79	29.44	36	8.76	33.10
			7	5.60	13.60	14	4.90	29.05	21	4.55	21.65	21	5.11	24.34
			7	5.60	8.00	14	4.90	24.15	21	4.55	17.10	21	5.11	19.23
			2	1.60	2.40	9	3.15	19.25	11	2.38	12.55	11	2.68	14.12
			1	0.80	0.80	12	4.20	16.10	13	2.81	10.17	13	3.16	11.44
						7	2.45	11.90	7	1.52	7.36	7	1.70	8.28
						9	3.15	9.45	9	1.95	5.84	9	2.19	6.58
						8	2.80	6.30	8	1.73	3.89	8	1.95	4.39
						2	0.70	3.50	2	0.43	2.16	2	0.49	2.44
						6	2.10	2.80	6	1.30	1.73	6	1.46	1.95
						2	0.70	0.70	2	0.43	0.43	2	0.49	0.49
51✓	99.99✓		125✓	100.00✓		286✓	100.03✓		462✓	100.00✓		411✓	100.04✓	
M			JR			CC								
b =		35		75			85			70			80	
b + 1S =		55		160			250			175			200	
b + 2S =		90		330			700			400			500	
b + 3S =		140		700			2000			1000			1300	
Sicker			Intrusives +			Intrusives +								
Sediments			China Ck Andesite			China Ck Andesite								

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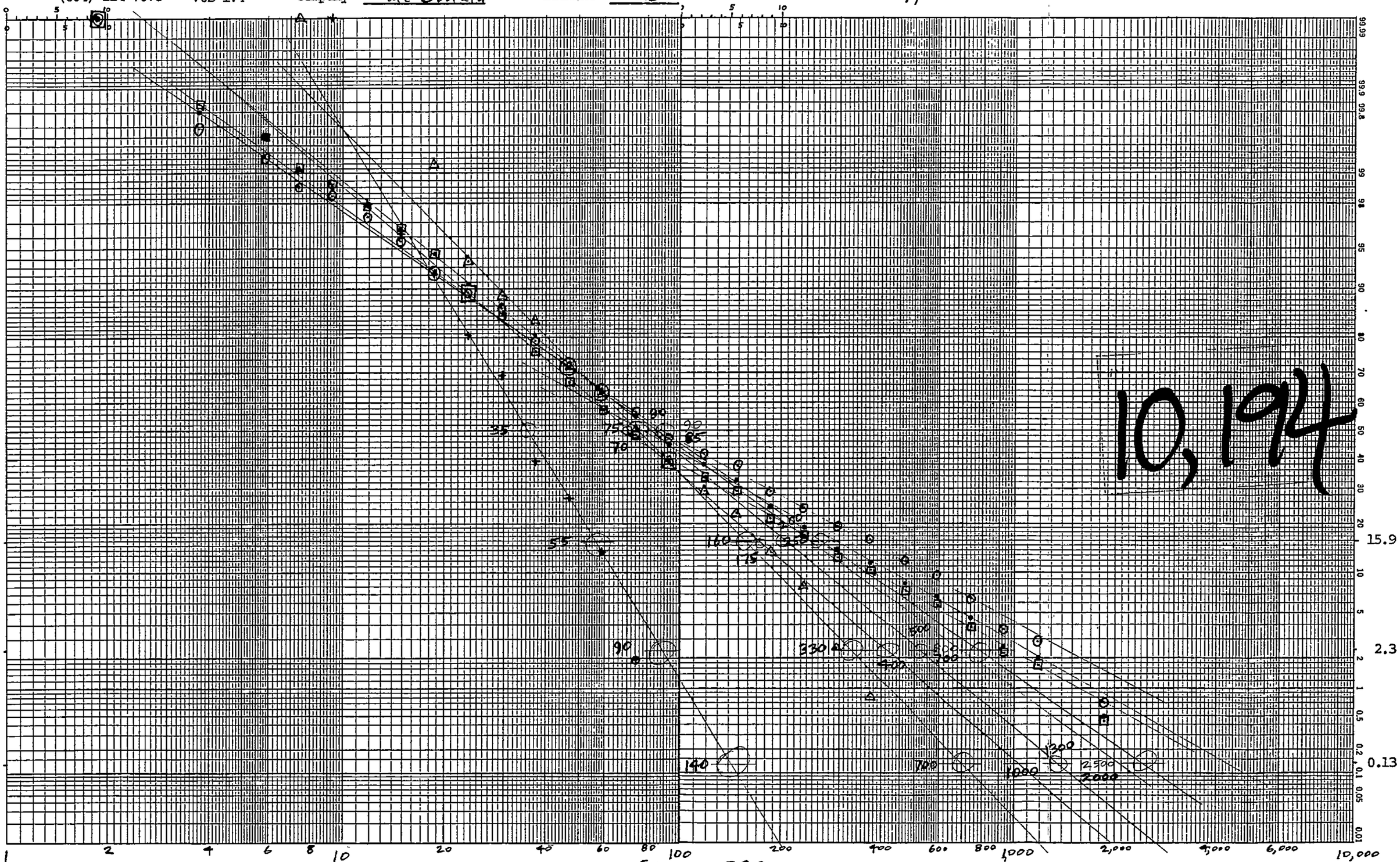
GEOCHEMISTRY Statistical Analysis Graph

Property Golden Eagle + Date Jan. 1982

Company Mac Donald Element Cu

● Sol Coast Copper

▲ Jan-Mar Jan Resources



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GEOCHEMISTRY — Statistical Analysis Calculations

Golden Eagle

Property Jan-Mar / Mac Donald

Company Jan Resources

Date Feb. 1982

Element Pb

Lognormal distribution

$n = \frac{\log R}{\log w} = \frac{1.85}{0.1} = 19$

R = ratio of highest to lowest value = $70/2 = 1 = 70$
w = width of classes & log w = 0.05, (0.1) or 0.2
n = number of classes

Class Limits ppm	log	Mid-pt log x	Frequency Count (20 40 60)	Total f	%	%	Calculation t*	ft	ft^2	$f(t+1)^2$
1.86	0.27									
2.35	0.37	0.32								
2.95	0.47	0.42								
3.72	0.57	0.52								
4.68	0.67	0.62								
5.89	0.77	0.72								
7.41	0.87	0.82								
9.33	0.97	0.92								
11.75	1.07	1.02								
14.79	1.17	1.12								
18.62	1.27	1.22								
23.44	1.37	1.32								
29.51	1.47	1.42								
37.15	1.57	1.52								
46.77	1.67	1.62								
58.88	1.77	1.72								
74.13	1.87	1.82								

Pb

34	66.67	100.00
8	15.69	33.33
2	3.92	17.64
4	7.84	13.72
2	3.92	5.88
1	1.96	1.96

1	0.80	100.00
1	0.80	99.20
31	24.80	98.40
51	40.80	73.60
25	20.00	32.80
14	11.20	12.80
2.	1.60	1.60

51✓ 100.00✓

125 100.00✓

b =	1	20
b + 1S =	3.5	30
b + 2S =	10	50
b + 3S =	30	75
	Sicker Sediments	Intrusives + China Ck Andesite

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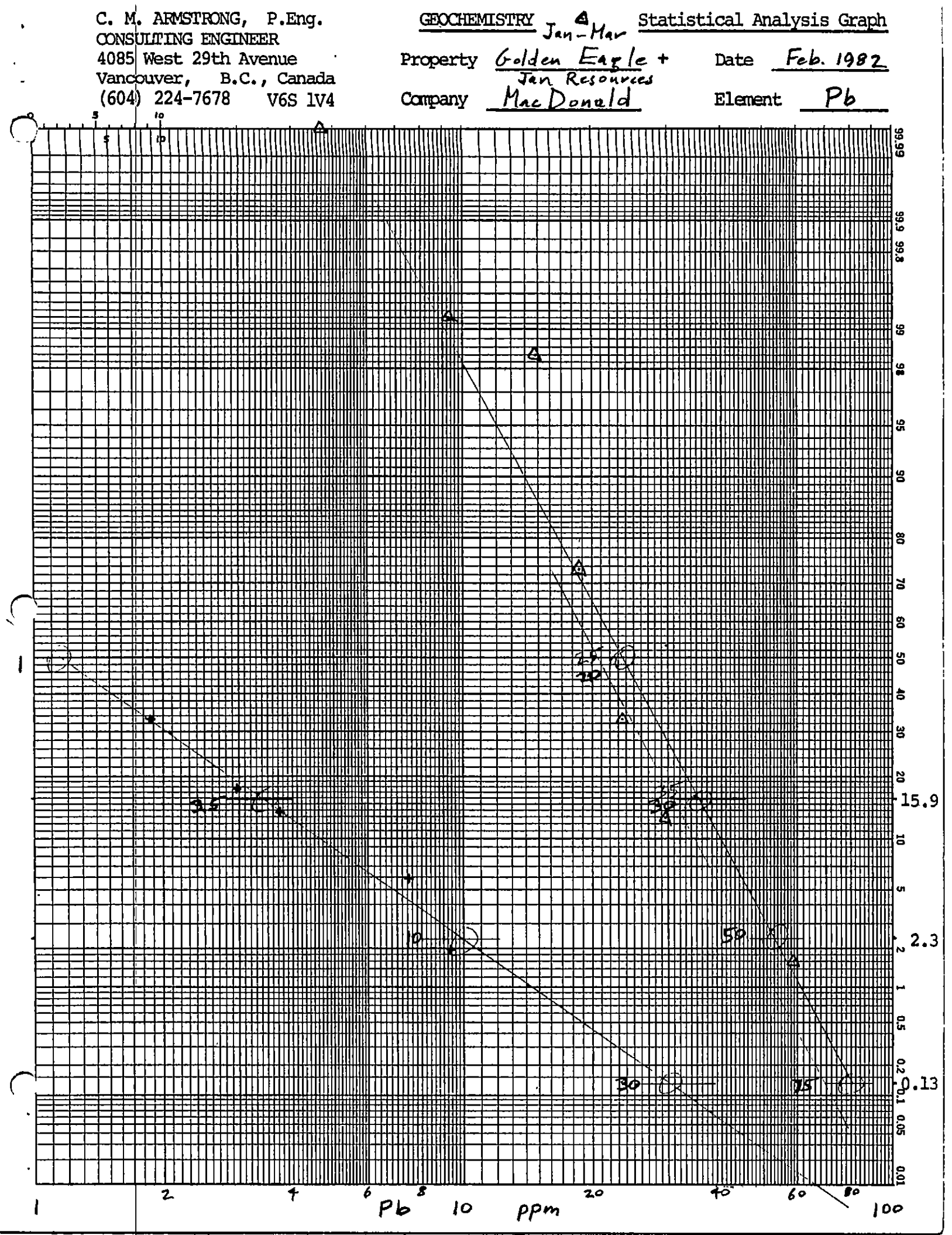
GEOCHEMISTRY Jan-Mar Statistical Analysis Graph

Property Golden Eagle + Jan Resources Date Feb. 1982

Company MacDonald Element Pb



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GEOCHEMISTRY — Statistical Analysis Calculations

Soil

Property Jan-Mar / Coast Copper — Date Feb. 1982

Company Jan Resources — Element Zn

480/2 = 240

Lognormal distribution

R = ratio of highest to lowest value = 365/2 = 183

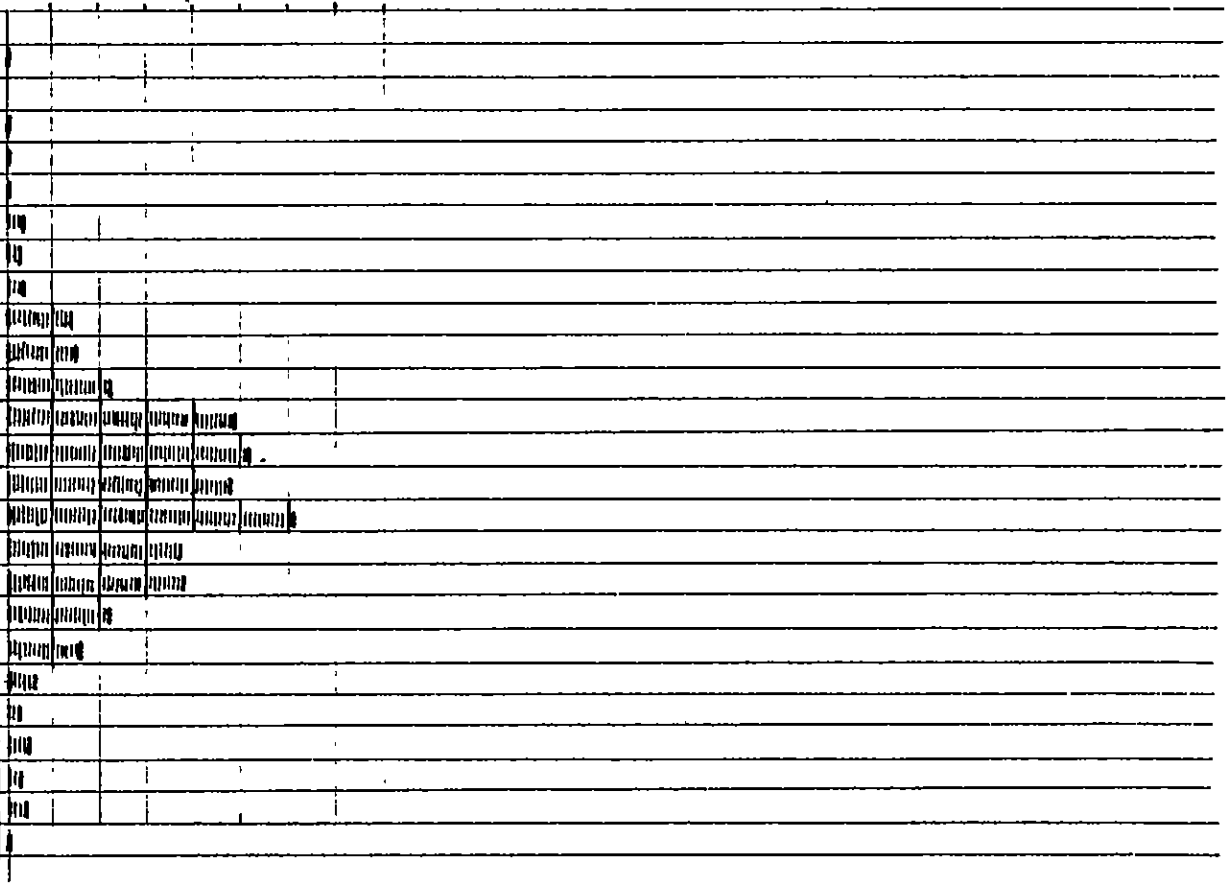
w = width of classes & log w = 0.05, (0.1) or 0.2

n = number of classes

$n = \frac{\log R}{\log w} = \frac{2.26}{0.1} = 23$

$\frac{2.38}{0.1} = 24$

Class Limits ppm	Class Limits log	Mid-pt log x	Frequency Total f	Frequency %	Calculation %	Calculation t*	Calculation ft	Calculation ft^2	Calculation $f(t+1)^2$
1.86	0.27	0.32							
2.35	0.37	0.42							
2.95	0.47	0.52							
3.72	0.57	0.62							
4.68	0.67	0.72							
5.89	0.77	0.82							
7.41	0.87	0.92							
9.33	0.97	1.02							
11.75	1.07	1.12							
14.79	1.17	1.22							
8.62	1.27	1.32							
23.44	1.37	1.42							
29.51	1.47	1.52							
37.15	1.57	1.62							
46.77	1.67	1.72							
58.88	1.77	1.82							
74.13	1.87	1.92							
93.33	1.97	2.02							
117.5	2.07	2.12							
147.9	2.17	2.22							
186.2	2.27	2.32							
234.4	2.37	2.42							
295.1	2.47	2.52							
371.5	2.57	2.62							
467.7	2.67	2.72							
588.8	2.77								



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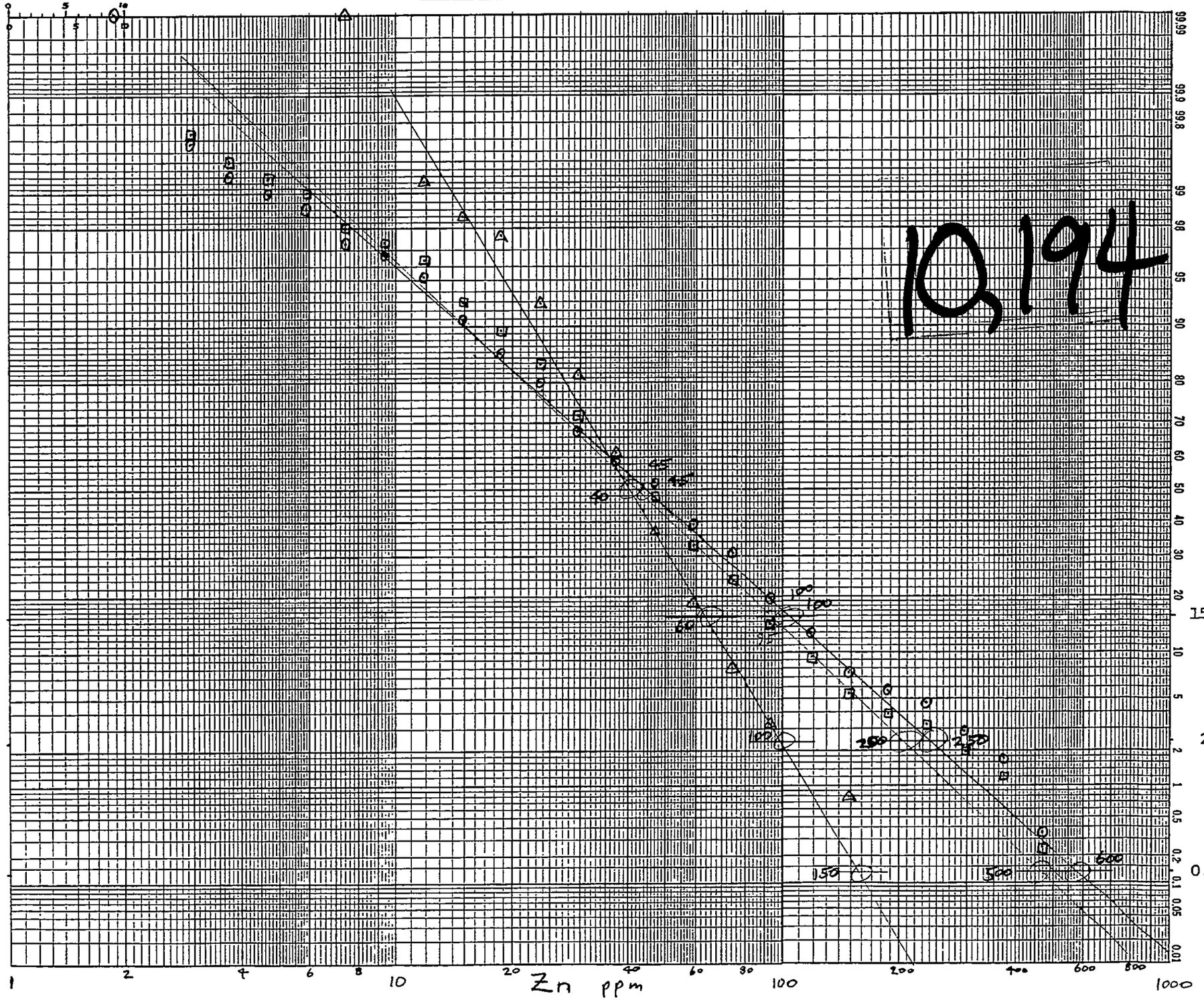
GEOCHEMISTRY — Statistical Analysis Graph

Property Golden Eagle — Date Feb. 1982

Company MacDonald — Element Zn

△ Jan-Mar Jan Resources

⊙ Sol Coast Copper



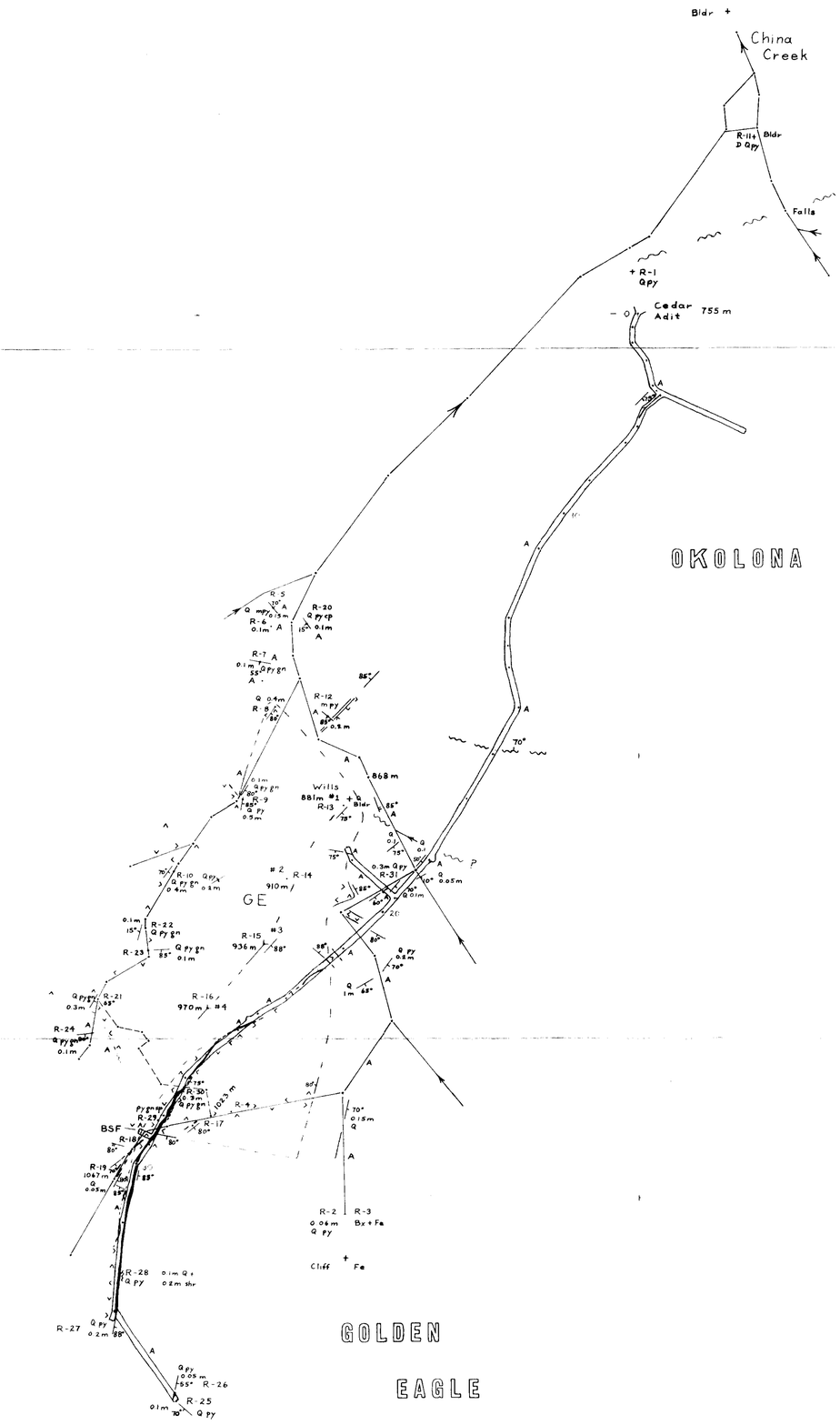
10,194

Zn

			1	0.35	100.01	1	0.24	99.97
			1	0.35	99.66	1	0.24	99.73
			1	0.35	99.31	1	0.24	99.49
			1	0.35	98.96	1	0.24	99.25
			4	1.40	98.61	4	0.97	99.01
1	0.80	100.00	2	0.70	97.21	3	0.73	98.04
			4	1.40	96.51	4	0.97	97.31
1	0.80	99.20	13	4.55	95.11	14	3.41	96.34
1	0.80	98.40	14	4.90	90.56	15	3.65	92.93
6	4.80	97.60	16	5.59	85.66	22	5.35	89.28
14	11.20	92.80	35	12.24	80.07	49	11.92	83.93
25	20.00	81.60	27	9.44	67.83	52	12.65	72.01
30	24.00	61.60	18	6.29	58.39	48	11.68	59.36
24	19.20	37.60	37	12.94	52.10	61	14.84	47.68
13	10.40	18.40	24	8.39	39.16	37	9.00	32.84
6	4.80	8.00	32	11.19	30.77	38	9.25	23.84
3	2.40	3.20	19	6.64	19.58	22	5.35	14.59
			16	5.59	12.94	16	3.89	9.24
1	0.80	0.80	5	1.75	7.35	6	1.46	5.35
			3	1.05	5.60	3	0.73	3.89
			5	1.75	4.55	5	1.22	3.16
			3	1.05	2.80	3	0.73	1.94
			4	1.40	1.75	4	0.97	1.21
			1	0.35	0.35	1	0.24	0.24
125 ✓	100.00 ✓		286 ✓	100.01 ✓		411 ✓	99.97	
JR			CC					

b =	40	45	45
b + 1S =	60	100	100
b + 2S =	100	250	200
b + 3S =	150	600	500

Intrusives +
China Ck Andesite



Sample	Length m	Au g/t	Ag g/t	Pb %	Zn %	Cu %	Remarks
SURFACE							
R-1	--	0.55	50	0.54	1.12	0.18	Grab, Q, hvy py
R-2	0.06	0.08	0.4	0.002	0.005	0.01	Q, hvy py
R-3	--	0.01	0.2	0.004	0.01	0.902	alt'd, bx, py
R-4	--	0.01	1.2	0.000	0.007	0.06	alt'd QD, py
R-5	0.1	0.51	10.0	0.006	0.003	0.005	semi-mass py
R-6	0.1	0.61	13.0	0.005	0.002	0.02	semi-mass py
R-7	0.1	0.68	165	4.60	0.77	0.03	qtz-cal, py, gn, sp
R-8	0.4	0.23	25.0	0.30	0.80	0.05	Q, py, sp, gn
R-9	0.5	2.06	6.0	0.08	0.14	0.02	Q, py, gn
R-10	0.4	1.63	64	1.17	1.18	0.09	Q, py, gn, sp
R-11	--	0.08	0.8	0.01	0.01	0.007	alt'd QD, py
R-12	0.2	0.17	6.9	0.005	0.005	0.08	semi-mass py
R-13	0.1	0.02	4.2	0.004	0.17	0.26	Q, py, sp
R-14	0.3	0.65	11.0	0.28	0.13	0.006	Q, py, gn, sp
R-15	0.1	0.48	45.0	7.00	0.83	0.01	Q, py, gn
R-16	0.1	11.7	24.0	1.60	0.91	0.04	Q, py, gn
R-17	0.1	1.90	7.1	0.13	0.01	0.004	Q, py, tr cp
R-18	--	35.3	34.0	9.13	0.01	0.01	Grab, Q, py, Twin Sons 2
Golden Eagle Zone							
R-19A	1.0	1.06	3.0	0.01	0.018	0.007	Q, lt py Wills - #1 Adit
B	1.0	0.84	15.0	0.03	0.009	0.02	alt'd QD, lt py
C	1.0	1.93	5.2	0.08	0.01	0.02	Q, ox'd
D	1.0	1.01	4.4	0.04	0.01	0.03	alt'd QD, Q, ox'd
R-19	--	2.16	40.0	2.18	0.88	0.03	Grab, Q, py, gn, sp #2 Adit
R-20	1.0	0.51	10.0	0.19	0.02	0.01	Q, v lt py #4 Adit
R-20A	0.7	0.10	12.0	0.07	0.01	0.03	alt'd QD #4 Adit
B	0.15	0.12	12.0	0.09	0.02	0.02	Q, lt py, ox'd
BSF Zone							
R-17A	0.1	0.56	17.0	0.38	0.61	0.04	Q, v lt py, gn, sp
B	1.0	0.17	9.2	0.08	0.27	0.06	alt'd QD, Q str, py, sp
C	0.3	7.72	26.0	0.28	0.23	0.04	Q, py, gn, sp
R-18A	0.4	17.1	154	0.45	0.27	0.05	alt'd QD, 5% Q, py, ox'd
B	0.3	39.1	242	0.45	0.37	0.07	Q, lt py, gn, sp, ox'd
C	0.4	1.71	69	0.17	0.17	0.04	alt'd QD, 10% Q, lt py
D	0.3	0.17	74	0.04	0.06	0.11	alt'd QD, py
E	1.0	0.07	15.4	0.05	0.09	0.07	sh'd & alt'd QD, ox'd
R-19A	0.4	1.02	122	1.60	1.25	0.14	Q, py, gn, sp
B	1.0	1.71	19.2	0.20	1.01	0.04	alt'd QD, py
C	1.0	0.14	14.7	0.21	0.35	0.02	Q, lt py, min gn, sp
CEDAR ADIT							
R-29	0.1	0.04	0.8	0.01	0.01	0.03	Sil'n, py
R-30	0.05	0.10	2.0	0.01	0.01	0.02	Q, lt py
R-31	0.2	0.21	9.4	0.30	0.14	0.03	Q, lt py, gn
R-32	0.4	0.29	5.6	0.09	0.01	0.005	Q, fe ox, v lt py
R-33	--	.85	11.0	0.38	1.55	0.01	alt'd QD, strs, py, sp, gn
R-34	0.3	0.50	33.0	0.74	0.56	0.08	Q, lt py, gn
R-35	0.2	0.50	11.0	0.03	0.32	0.01	Q, py

Q, qtz	quartz
hvy	heavy
bx	breccia
QD	quartz diorite
semi-mass	semi massive
lt	light
ox'd	oxidized
alt'd	altered
v	very
str	stringer
sh'd	sheared
sil'n	silicification
Fe ox	iron oxide
tr	trace
gn	galena
sp	sphalerite

10, 194

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. M. ARMSTRONG

Legend

Golden Eagle Diorite

Silurian Volcanics

Surface workings: pace & distance estimate & compass

Underground workings: tape & compass

MACDONALD

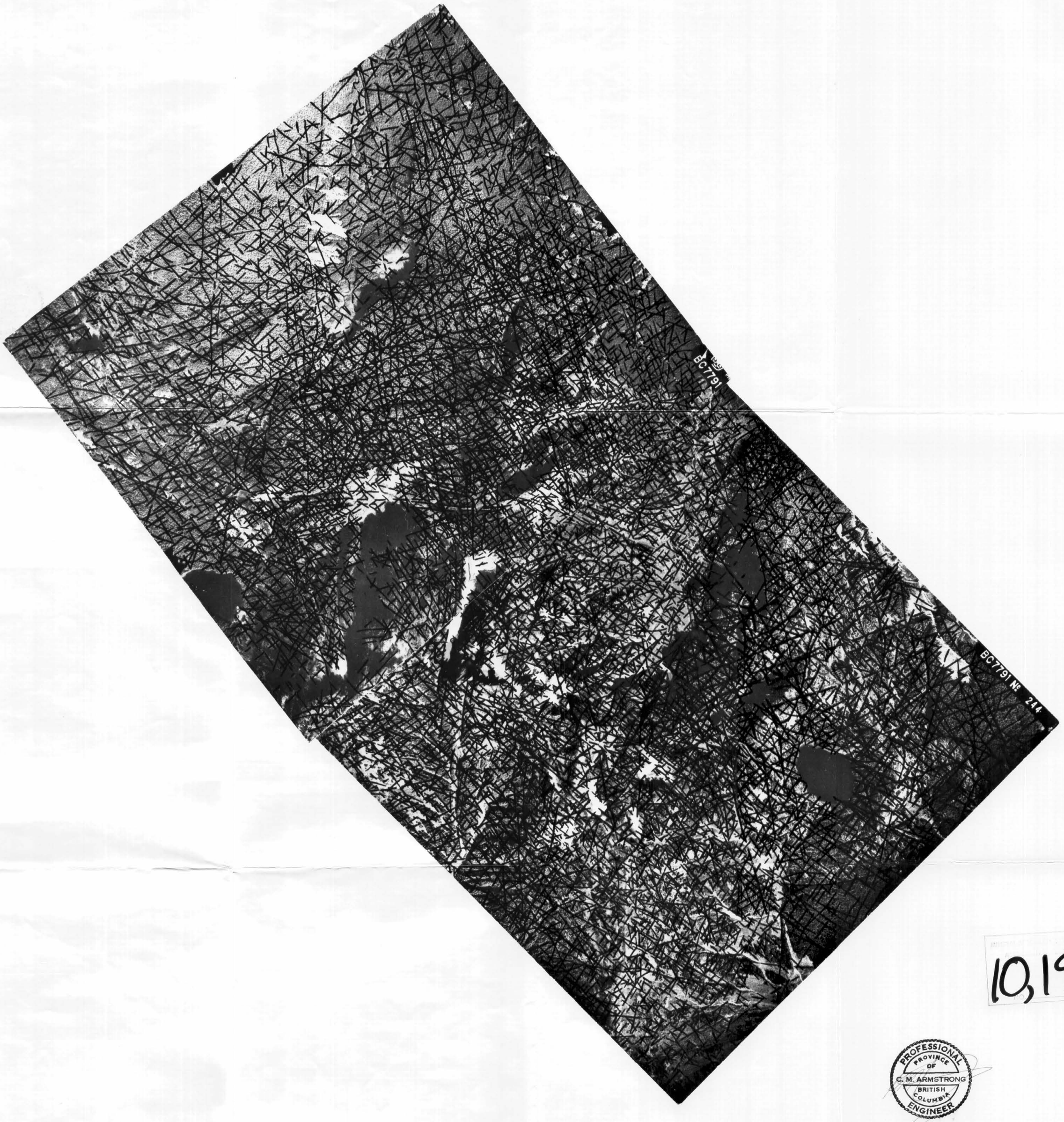
CHINA CREEK Alberni Mining Division B. C.

Golden Eagle Property

Geology & Geochemistry

Feb. '82 50 0 50 100 m CMA

Fig. 7



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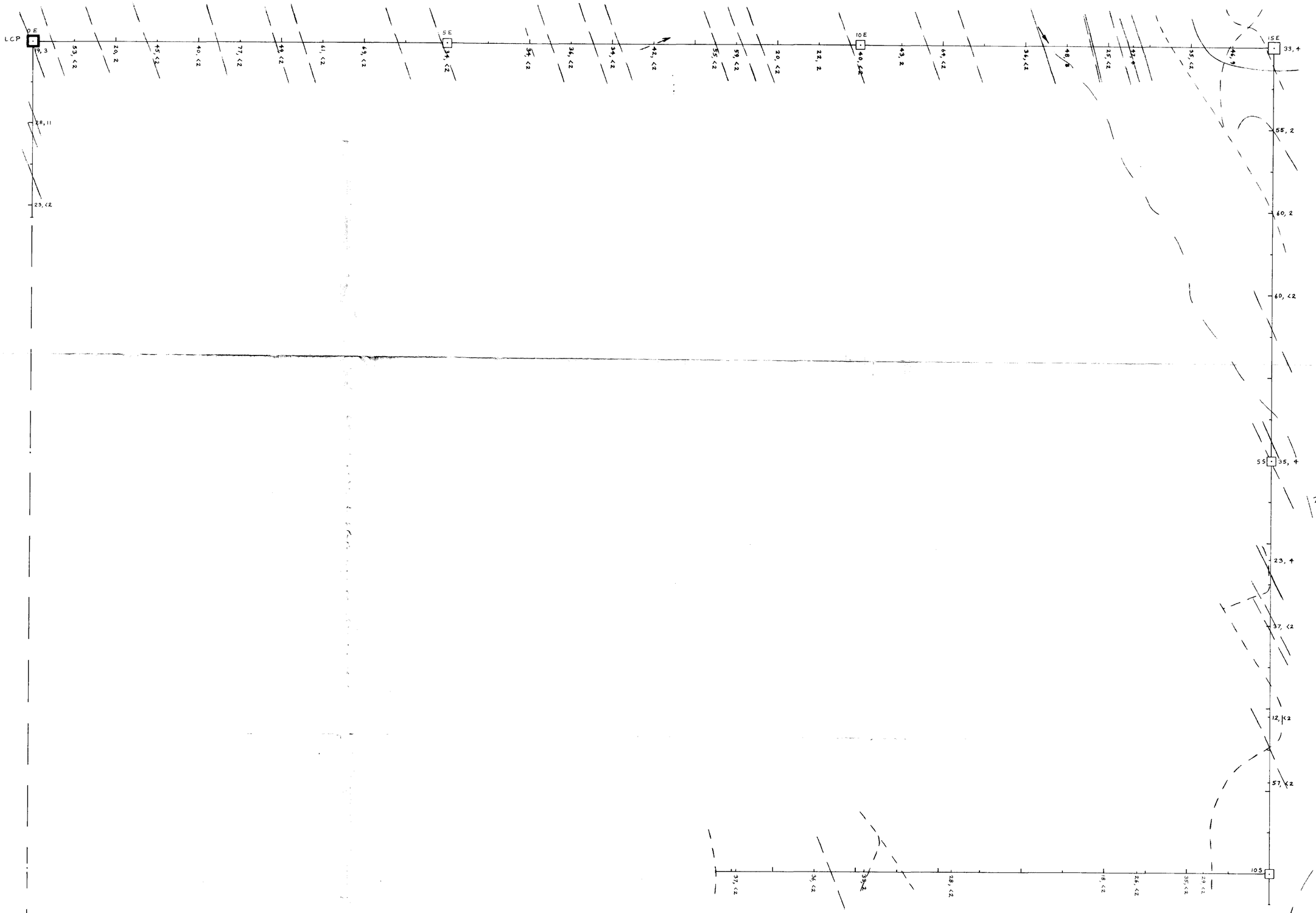
C. M. ARMSTRONG

22½°

From: BC 7791 244 & 246

MACDONALD		
CHINA CREEK	Alberni Mining Division	B. C.
Golden Eagle Property		
AIR PHOTO LINEARS		
Feb. '82	500 0 500 1000m	CMA

Fig. 8



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22½°

N

SOIL ANOMALY	Sicker Sediments Cu ppm	Pb ppm
Background	35	1
Weak	55	3.5
Moderate	90	10
Strong	140	30

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CHINA CREEK — Alberni Mining Division — B. C.

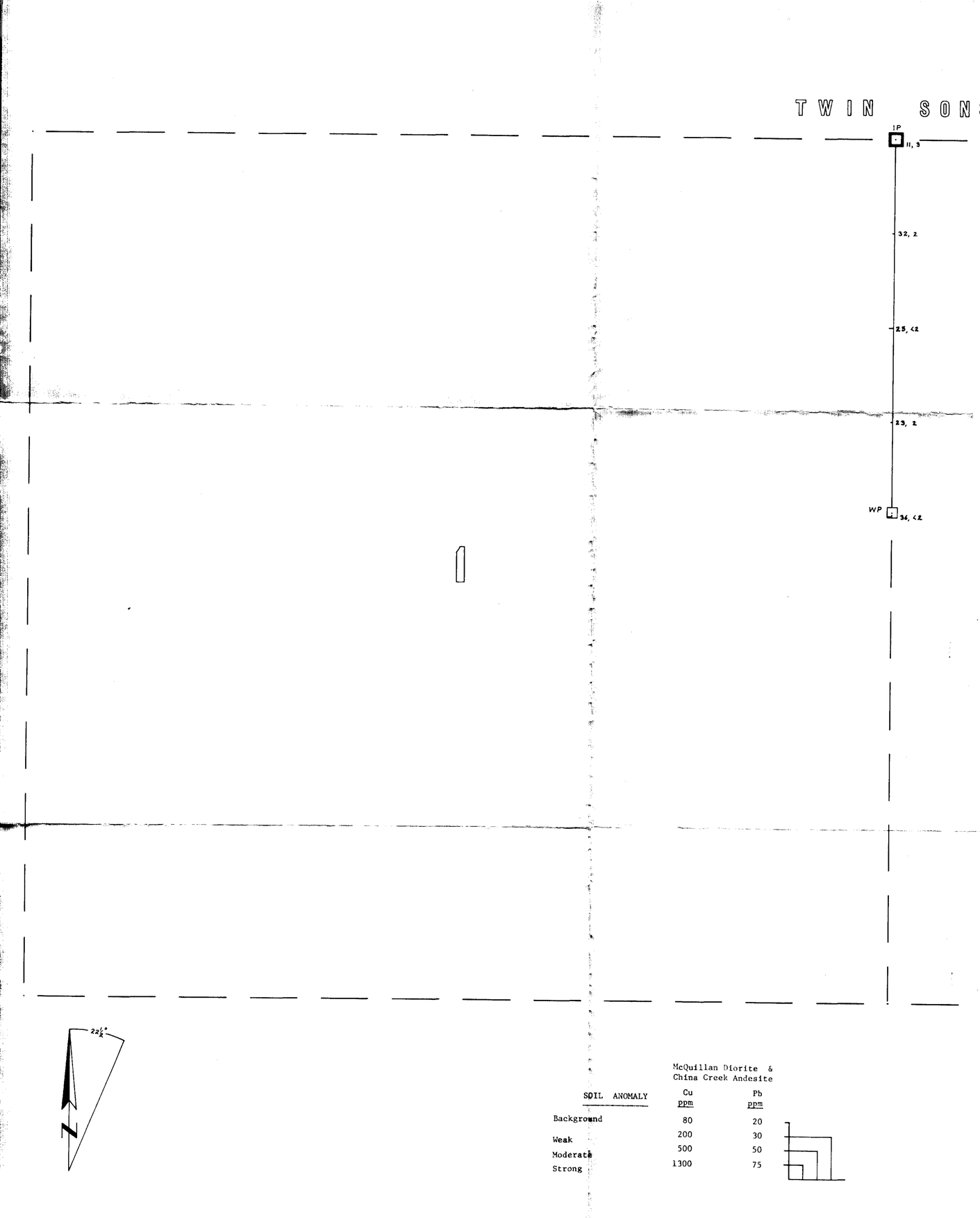
Golden Eagle Property

TWINS — Geochemistry

Feb. '82 — 100 0 100 200 m — CMA

Fig. 9

TWIN SONS



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McQuillan Diorite & China Creek Andesite

SOIL ANOMALY	Cu ppm	Pb ppm
Background	80	20
Weak	200	30
Moderate	500	50
Strong	1300	75

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CHINA CREEK — **Alberni Mining Division** — **B. C.**

Golden Eagle Property

TWIN SONS — Geochemistry

Feb. '82 — 50 0 50 100 m — **CMA**

Fig. 10

Deboaut Creek

McQuillan Creek

CHINA CREEK

Father and Son Lake

GE
GOLDEN EAGLE DIORITE
BSF

Summit Lake

Height of Land

Black Lake

Branch of Zitzul River

56,700 Contour

McQUILLAN DIORITE

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