

671629

REPORT

on

COLUMARIO GOLD MINE PROPERTY

Terrace, B.C.

54° 35'N, 128° 23'W

for

HILLSBOROUGH RESOURCES LIMITED

Brampton, Ontario

in the

OMINECA MINING DIVISION

BRITISH COLUMBIA

CANADA

by

W.S. Read, B.Sc., P.Eng.
Cobble Hill, B.C.
Canada

4 November 1987

WAYLAND S. READ, B.SC., P.ENG.
CONSULTING GEOLOGIST

AREA CODE 804-TELEPHONE 743-2278

851 CHERRY POINT ROAD, COBBLE HILL, B.C. V0R 1L0 CANADA

4 November 1987

The Board of Directors,
Hillsborough Resources Limited,
120 Railroad Street,
Brampton, Ontario
L6X 1G8

Dear Sirs:

Please find attached my report on the Columario Gold Mine property near Terrace, B.C.

This report suggests a program to test the bulk mining potential in the area of the main mine workings.

The program can be run concurrently with the other exploration program, but has the advantage of being able to be conducted as a winter program.

Respectfully submitted,



Wayland S. Read, P.Eng.

WSR:mer

W. S. Read, P.Eng.
851 Cherry Point Rd.
R.R. #3, Cobble Hill, B.C.
V0R 1L0

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APPENDIX I - Figures 3-8 Endurance Minerals Inc.

(Reference data from report by Robert Wolfe, P.Eng., dated
June 30, 1987)

APPENDIX II - Excerpts from Minister of Mines Reports 1933-1940 (18 pages)

Columario Consolidated Gold Mines, Ltd., Victor Group

INTRODUCTION

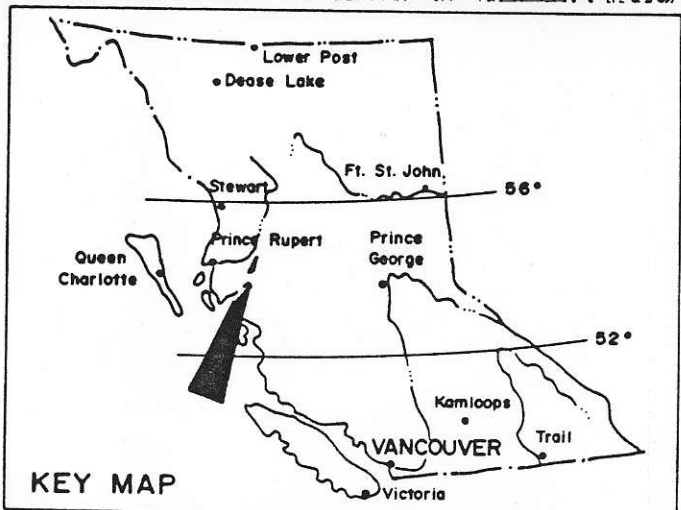
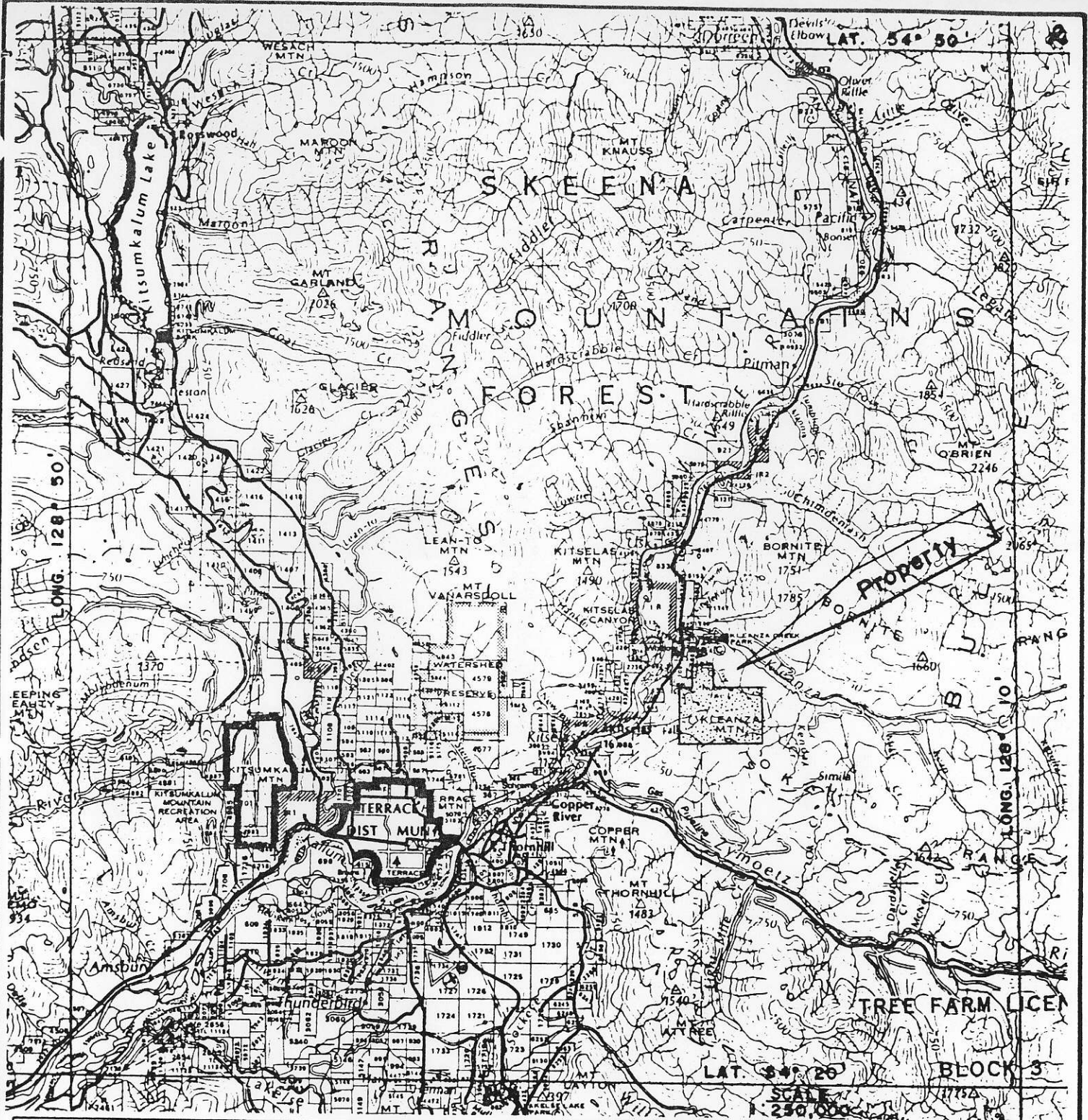
The writer, Wayland S. Read, P.Eng., was commissioned to write this report by Hillsborough Resources Limited. It is based on my two trips to the property (19-21 October, and 1 November 1987), research of published data, previous work and reports prepared by E. Livgard, P.Eng. (1984) and by Robert Wolfe, P.Eng. (1987).

Hillsborough Resources Limited has an agreement with Endurance Minerals Inc., to participate in exploring their Kleanza Mountain property (Columario Gold Mine). The property, of 54 contiguous claims, fractions, and reverted Crown grants, located about 13 air kilometres northeast of Terrace, B.C., is well located in relation to transportation and supplies.

Gold mineralization is known to occur in several locations on the property in quartz veins, and possibly in an unexplored epithermal-type environment.

One group of the veins (Columario Mine) was partially explored by underground methods in the late 20's and 30's. Approximately 8,000 feet of underground workings were driven and limited production achieved as concentrate, and later as direct shipping ore. In 1934 a concentrate shipment of 101.3 tons is reported to have contained 492.622 oz. gold and 1,401.23 oz. silver. Ton lot shipments in 1939 to the Prince Rupert Sampling Plant ranged from 1.205 to 2.00 oz per ton gold, and 2.90 to 6.00 oz. per ton silver.

In 1940 a small shipment of 0.1230 ton from the Victor group assayed gold 2.73 oz. ton, silver 1.60 oz. ton, and copper 2.30%. Work was discontinued during World War II and no further work was done on the property until 1984, when a small reconnaissance mapping, sampling and geochemical survey was conducted. This work confirmed gold content in the two veins sampled, but geochemical response was essentially flat except for a few erratic, isolated gold highs occurring immediately below known gold-bearing structures.



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 MI. 0 1 2 3 4 5 10 MI.

HILLSBOROUGH RESOURCES LTD.

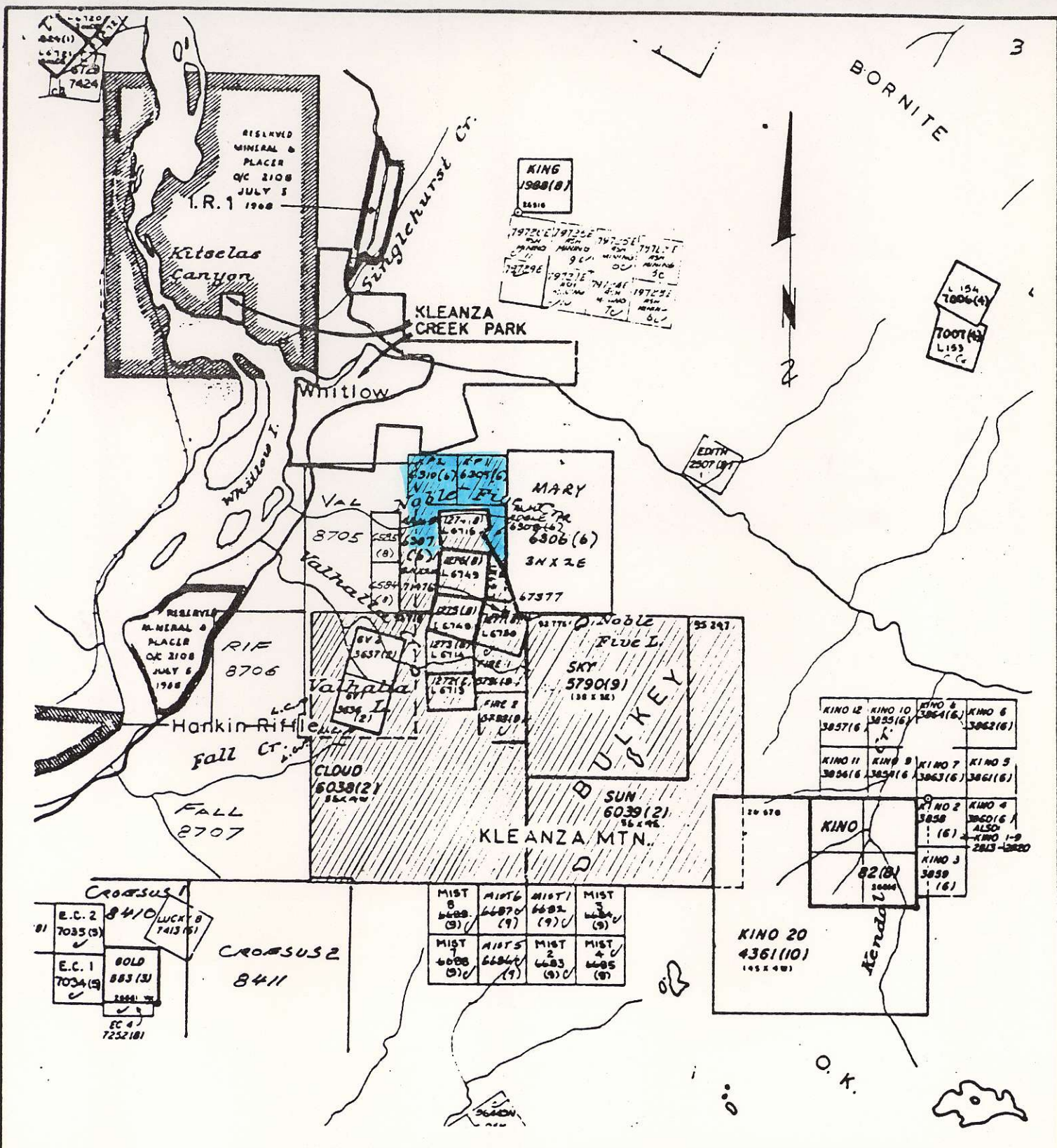
Columario Gold Mine Terrace, B.C.
 Omineca Mining Division NTS 1031/9W

LOCATION MAP
 Figure 1

Date: Oct. 31, 1987.

WAYLAND S. READ P.Eng., Consulting Geologist

BORNITE



HILLSBOROUGH RESOURCES LTD.

Columario Gold Mine
Omineca Mining Division

Terrace, B.C.
NTS 1031/9W

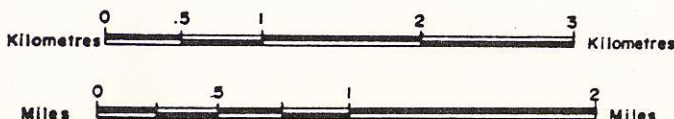
CLAIM MAP

Figure 2

Date: Oct. 31, 1987.

WAYLAND S. READ P.Eng., Consulting Geologist

SCALE
1:50,000



LOCATION AND ACCESS

The property is located 13 air kilometres northeast of Terrace, British Columbia, Canada. It is found on map sheet 103 I/9W of the National Topographic System, at approximately latitude 54°35'N, and longitude 128°23'W. Elevation on the claims group ranges from 1,100 feet to 4,300 feet above sea level.

The claims are on the north and northwest slope of Kleanza Mountain, sloping towards the Skeena and the Kleanza Rivers.

B.C. Highway 16 (Yellowhead Highway) passes between the property and the Skeena River. The main line of the Canadian National Railway is on the west side of the Skeena River. The Kleanza Creek Provincial Park, in part, is near the north claim boundary.

Recent logging in the area has accessed the property from the southwest at Fall Creek, to within about 1/2 km. from Valhalla Lake on the Cloud claim. A second logging road further northwest crosses the old tramline (to the mine workings) and intersects the property access trail near Noble Five Creek.

The logging road at Fall Creek turns off from Highway 16 3.8 km northwest of the bridge crossing the Zymoetz River at Copper River. This bridge is about 7 kilometres from Terrace. The second logging road turns off the highway 6.6 km. beyond the same bridge. The property trail is reached at 10.0 km. beyond the bridge, or 3.6 km. beyond the highway junction. This second road is in good condition and is presently active. Grades tend to be steep, and some switchbacks exceed 20% in grade.

Once found, the trail from Noble Five Creek can be readily followed to the area of old buildings and foundations where the tramline intersects the trail. This is estimated at about 800 metres south of the creek. This trail could be rebuilt with maximum grades of 12%. The hillside is steep with some rock outcrops, bluffs, and is heavily timbered. The rock may be rippable by heavy

equipment, but some drilling and blasting will likely be required. Extensive drilling and blasting will be required on the spur roads to access the adits.

Beyond the tramline the trail passes an adit (believed to be Adit 7 on Vein 1) and soon deteriorates into barely a footpath, with some steep grades and heavy overgrowth as it progresses towards the "Nelson Showing" (Haveroen Vein) to the south. All trails to the portals are overgrown and difficult to find. The heavy timber allows very few places for helicopter access.

A cabin and a floor for a tent were observed from the air at the edge of a small pond located about 900 metres northeast from Valhalla Lake. This had helicopter access, and was likely used during 1984 preliminary exploration. There is no other building, plant, or equipment on the property.

Further road access on the property is essential for more advanced stages of exploration.

A local Forestry official advises that further logging on the claims area is not planned until after 1991.

CLAIMS HELD BY COMPANY:

The company advises that it holds the following located and reverted Crown-granted mineral claims in the Ominece Mining Division, British Columbia, Canada, on Mineral Claim map 103 I/9W.

<u>Claim Name</u>	<u>Record #</u>	<u>Lot #</u>	<u>Tag #</u>	<u>Acres</u>	<u>Units</u>	<u>Expiry Date</u>
Valhalla	1272	L6713		39.35		1 Aug. 1989
Valhalla 1	1273	L6714		42.46		1 Aug. 1989
Valhalla 2	1275	L6748		42.29		1 Aug. 1989
Valhalla 3	1267	L6749		47.03		1 Aug. 1989
Valhalla 4	1274	L6715		41.95		1 Aug. 1989
L.C. Fraction	1277	L6750		49.75		1 Aug. 1989
Norman Fraction	1278	L6751		18.73		1 Aug. 1989
Cloud	6038		92778		20	10 Feb. 1990
Sun	6039		95247		20	10 Feb. 1990
Hans.	6307		71476		4	27 Jun. 1988
Noble Fraction	6308		76951		1	27 Jun. 1988
KP Nos. 1-2	6309-10		394769M-70M		2 (2 Post)	27 Jun. 1988

There is a total of 54 contiguous claims, fractions, and reverted Crown-grants at time of writing (as listed above).

The Hans and Cloud claims located under the modified grid system, appear to overtake the 7 reverted Crown grant claims and the Noble Fraction.

Section 17 of the Mineral Act would retain the forfeited Sky 5790 (9 units) within the Sun 6039 (20 units) claims. Likewise, the forfeited two Fire 5791-92 (2 Post claims) and the Nelson 1359 (2 units) would fall within the Cloud 6038 (20 units) claim.

As the G.V. 1 & 2, 2 Post claims 3636-7 located within the Cloud 6038 were owned by a second party when they forfeited, Section 17 would not come into effect, and the ground, being more than 25 hectares, would remain open to be

acquired by the first party, or a third party, which is, in fact, what happened. See Val 8705 (10 units).

Other than possible area reduction by overlap with the Kino 20 4361 to the southeast, the area of the property is approximately that of 44 mineral claim units of 25 hectares (61.78 acres) each, equaling 1,100 hectares of 2,718.3 acres.

The Mary claim 6306 (6 units) has forfeited. The Stacy 1 & 2, 6584-5 (2 Post claims) has forfeited. The Cloud, Hans and KP2 claims have apparently been overstaked, in part, on the west by the Val 8705 claim located for Erickson Gold Mining Corporation and recorded 31 August 1987.

HISTORY

The first reference to the property is in 1919 when the Kleanza Company, formed to develop the property, carried out preliminary prospecting. In 1921, a syndicate known as the "K Partnership" acquired a lease on the Golden Crown from the Kleanza Company and erected a Ross Mill on the property. Work was suspended shortly after. Small amounts of work were done annually until 1927 with results that led to the formation of Columario Gold Mines, Limited.

During that year a portable compressor was installed, and active development was carried out between 1928 and 1930. The work consisted of drifting, raising and crosscutting on and between Nos. 4, 5, 6 and 7 veins. A little work was done in 1931 and 1932, but was increased at the end of 1933 following reorganization of Columario Gold Mines, Limited as Columario Consolidated Gold Mines, Limited.

In 1934 a flotation plant of about 100 tons per day capacity was erected on the right bank of Noble Five Creek on the Usk-Terrace highway. A 12 bucket aerial tram was constructed from mine to mill with about 1400 feet elevation difference between tram stations at mine and mill. The main haulage level at an elevation of 1843 feet was about 100 feet above the upper tram terminal.

Milling operations commenced on 2 September, and were suspended after three months duration before the end of the year, as the mine was not developed to run the mill at capacity.

1934 production records (see Appendix) shows the mine operated 365 days with an average of 25 men, the mill operated 90 days with 7 men. Tonnage mined and milled was 2,300.

The 1934 Annual Report states that "data are not available covering the entire mill run, but from start to finish 101.3 tons of concentrates were produced, containing approximately 492.622 oz. gold and 1,401.23 oz. silver."

This, if divided into the total mill feed would average a recovery of 0.21 oz. gold, and 1.64 oz. silver per ton milled.

The 1935 Annual Report states the company suspended mining and milling operations in the early summer, and did not subsequently resume operations.

In 1938 a lease had been given on the Columario Mine to W. Duncan of Usk, who expected to commence work early in the year (1939).

In 1937 a Department of Mines Sampling Plant was built on the waterfront of Prince Rupert to stimulate prospecting and development of properties along the Prince Rupert branch of the Canadian National Railway. This was not a concentrator. Ore containing sufficient value to ship direct to the smelter was purchased and assembled at the plant until sufficient tonnage was collected for a shipment. Preferential freight rates had been negotiated.

The Tacoma smelter usually handled gold-silver-copper ores, and the Trail smelter silver and silver-gold ores with a high lead content, and high-grade zinc ores.

In 1939 Columario Consolidated Gold Mines Limited was in liquidation. The property was leased to W.W. Duncan and Associates of Usk. Their object was to selectively mine and ship high-grade ore from certain selections of the old workings. They shipped 15.86 tons of selected ore and also ten samples to the sampling plant. (See Record of Production & Appendix).

In addition, W.W. Duncan of Usk and S.C. Cooper of Terrace had staked the Victor Group covering ground formerly held by Columario. The main showings were at 4000 feet elevation, about 2 miles from the Columario Camp (el. 1,700 feet) by good pack-horse trail.

"The property was sampled to determine the possibility of sorting and cobbing a shipping-grade ore. Four samples from No. 2 vein indicated the presence of such ore." This showing now appears to be covered by the Cloud claim.

In 1940 work was continued on the Victor; a test shipment totaling 0.1230 ton and an assay lot was shipped to the sampling plant at Prince Rupert. The test shipment assayed gold 2.73 oz. ton, silver 1.60 oz. ton, and copper 2.30%.

The assay lot tested gold 3.50 oz/ton, silver 7.00 oz. ton, and copper 0.25%.

There is no continuing record, and testing probably stopped due to World War II. No other work on the property is known between 1940 and 1984 when Egil Livgard, P.Eng., conducted a soil survey, accessed the No. 8 Adit on No. 7 Vein, and sampled it, partially sampled the Haveroen Vein (Victor?) and did minor preliminary surface reconnaissance geology. (See Appendix I).

Soil samples are reported to have been collected every 50 metres on the grid, in some areas every 25 metres, and over mineralized veins every 12.5 metres. Samples were analyzed for Au., Ag., Pb., Zn., and Cu. Response was essentially flat except for a few erratic, isolated gold highs occurring immediately below known gold-bearing structures.

It is not known why there was this low geochemical response, but low ion mobility is a possibility, which, if so, would require a denser sample pattern.

In 1978 Magnus Bratlien applied for the reverted Crown-granted mineral claims and transferred all interest to Endurance Minerals Inc., in 1983. Additional adjoining claims were staked for Endurance Minerals in 1983-84.

By letter of agreement dated 11 October 1987, Hillsborough Resources Limited will participate with Endurance Minerals Inc., in exploring this property.

GEOLOGY AND MINERALIZATION

The geology of the Terrace Map Sheet (103 I E 1/2) was mapped by S. Duffell and J.G. Southern for the Geological Survey of Canada - Memoir 329, 1964.

The property has been described as occurring in a contact zone between Coast Range diorite and granodiorite (west side) and altered andesites of the Jurassic Hazelton Group on the east side. The 1934 Minister of Mines Report indicated that the andesites are probably a roof pendant. Where observed, the contacts near the vein zones are quite complex.

The 1934 report gives some detailed descriptions of veins, and is appended to this report. Briefly, it states that nine parallel quartz veins, with free walls, mainly from 1 to 3 feet wide, and in one case 6 feet wide, average distance apart being about 150 feet, outcrop at various points on the steep mountain-side between elevations of 1,700 and 2,100 feet. They strike north 20 to 30 degrees west, and dip northeast at angles of about 50 degrees. Sulphide mineralization is chiefly pyrite with some chalcopyrite, and in the case of No. 5 vein, galena. The veins are named in order from west to east, No. 1 being the most westerly and No. 9 the most easterly. The rock formation is altered andesite (greenstone) intruded by diorite stocks and lamprophyre dykes. Tongues of aplite occur which antedate the veins, and in which the latter pinch.

The point at which the eastern flank of the Coast Range batholith plunges downward is not, it is believed, accurately known, but indications point to this plunge taking place just east of Pitman, in which case the property would be situated in a roof pendant area.

A total of about 8,000 feet of underground workings was done in eleven adits during the development of seven vein structures. Most of the veins are in volcanic rocks near masses of granodiorite or along contacts between these

two types of rocks. Where the veins enter granodiorite they tend to pinch out within a short distance. Veins also occur along contacts of dykes that parallel the fracture system.

In 1933 three sacks of ore weighing 200 pounds were shipped to the Mines Branch at Ottawa for testing. The lot was crushed, ground and sampled and was found to contain gold, 1.44 oz. a ton; silver 3.51 oz. a ton; copper 0.42 per cent; lead 0.02 per cent; arsenic 0.01 per cent. Polished section showed that the gold was not present in the free state, but was associated with pyrite.

The main haulage level and crosscut at 1,843 feet was driven to intersect the downward continuation of the veins but was unsuccessful. A raise from this level to 4 vein in Adit 4 apparently encountered the vein 115 feet up. Geological projections indicate there is some question as to whether the crosscuts have been driven far enough to intersect Nos. 4 and 7 Veins. Detailed mapping of the levels and raises should give a better indication of this. Figures 3 and 5 in the Appendix are sketches showing this from the Wolfe report, 1987.

Also, from the level composite plans, the veins appear to be converging towards the south.

The Haveroen Showing reported by Livgard (1984) about 2,000 metres south and uphill from the Columario workings is probably a rediscovery of part of the Victor showings, and will require future exploration. A short (20 foot) adit has been driven on a 0.5 - 0.8 metre wide quartz vein striking N.50°W and dipping 45° to 63°N.E. 1984 channel sampling gave an average of 0.41 oz/ton gold over a width of 0.62 m, and a length of 6.5 m. This vein was traced on surface a distance of 120 metres. The gold is reported to be associated with irregularly-occurring sulphides (Coarse pyrite and oxidized material). The sulphides are reported to carry very high gold values.

North of Noble Five Creek, in the logged area, iron staining and some stockwork-like zones of narrow quartz stringers with pyrite were observed in the intrusive. This was not sampled but could correspond to the areas reported by Wolfe where widely-spaced grab samples assayed 0.005, 0.032 and 0.012 oz/ton gold, and is an exploration target to be followed up.

Placer gold has been reported from Kleanza Creek, which is downslope from these areas.

RECORD OF PRODUCTION - From B.C. Minister of Mines Reports:

(The following table records mine production in 1934 and reported concentrate values plus ton lots and assay lots to the Prince Rupert Sampling Plant.)

Name of Mine	Year	Mined Tons	Milled Tons	Shipped Tons	Au.oz/T Tons	Ag.oz/T	Cu.%	Fe.%	S.%	SiO ₂ %
Columario	1934	2300	2300	101.3	492.622	1,401.23	(Total content in concentrate)			
Columario	1939			11.3965	1.98	2.90	1.45	15.65	14.0	61.2
Columario	1939			2.4970	2.00	6.00	1.8	13.5	10.3	66.5
Columario	1939			1.9707	1.205	3.20	0.3	20.2	13.6	54.4
Columario	1939			0.0080	0.51	0.50	Nil	16.8	16.5	64.2
Columario	1939			0.0140	0.90	1.18				
Columario	1939			0.0065	2.37	6.59				
Columario	1939			0.0030	1.74	6.40				
Columario	1939			0.0035	2.07	6.70				
Columario	1939			0.0077	0.57	1.57				
Columario	1939			0.0030	0.29	1.47				
Columario	1939			0.0040	0.76	4.72	10.29			
Columario	1939			0.0590	3.68	8.30	1.8	23.3	24.5	46.6
Columario	1939			0.0635	1.69	4.10	Nil	28.4	18.6	41.0
Victor	1939			0.0050	0.18	0.20	0.4	6.7	1.6	81.6
Victor	1939			0.0057	4.12	2.40	1.8	25.0	25.2	44.8
Victor	1939			0.0010	0.10	0.20	Nil	44.2	47.4	4.2
Columario	1940			0.0165	0.96	1.00				
Victor	1940			0.1230	2.73	1.60	2.30	23.90	22.00	48.10
Victor	1940			0.0010	3.50	7.00	0.25			

PROGRAM

A surface exploration and drilling program has been proposed to Endurance Minerals Inc., by Robert Wolfe, P.Eng., in his report dated June 30, 1987.

An additional program, which can be carried on concurrently or separately, and can be conducted as a winter program, is proposed by the writer. This program would involve assessing the potential in the more immediate area of the Columario Gold Mine.

There are 11 adits, some with crosscuts and raises, ranging in elevation from 1700' to 2229', for a vertical range of 529 feet. Most work in the past was done over the vertical range of 386 feet from elevations 1843' to 2229'. Underground openings are reported to total approximately 8,000 feet.

The object of the program would be to rehabilitate the underground workings including raises, for mapping and sampling, to assess the distribution of gold mineralization. In particular, to determine if there is sufficient gold content in the veins and rocks separating them to make large tonnage blocks, and resulting lower mining costs possible.

The raises will be important to show vertical continuity, and to provide manways between levels.

The proposed road cuts joining the portals will crosscut the various veins, and should provide exposures for continuous samples and geological mapping, and provide a surface dimension to the mine level plans.

Additional surface samples over the workings would be desirable, in particular, on cross-sections showing surface values in relation to underground openings and their assay values.

This program would entail constructing an all-weather road from the logging road at Noble Five Creek, past the upper tram terminal and the Number 7 Adit, for a distance of approximately one kilometre. This road could be extended later to the Victor (Haveroen?) vein area, a distance, according to old

reports, of 2 miles or 3.2 kilometres, from the upper tram terminal area.

Initially the road could be branched from near the 1 km. point to give road access to the various portal levels:

- 1) A lower road cut from near Adit 7 (el. 1846 ft.) to Adit 1 (el. 1843 ft.) and possibly on to Adit 9 (el. 1950 ft.) and Adit 10 (el. 1916 ft.).
- 2) A second higher road cut from across the projection of Veins 1 and 2 joining Adit 4 (el. 2015 ft.), Adit 3 (el. 2016 ft.), Adit 2 (el. 2058 ft.) and possibly Adit 8 (el. 2018 ft.).
- 3) A third road cut joining Adit 5 (el. 2108 ft.) and a fourth road cut joining Adit 6 (el. 2229 ft.).

Upon favourable results from the underground program, the mine area could be further sampled and extended by underground diamond drilling, and drifting or crosscutting, as required.

The detailed information thus gained would also be an aid in exploring other surface targets.

Road access is essential to carrying out this program.

ESTIMATE OF COST:Road - to access main portals

Bulldozer	30 days x 10 hrs. x \$100.00	=	\$ 30,000.00
Swamper	30 days x 10 hrs. x 20.00	=	6,000.00
Air Track	30 days x 10 hrs. x 120.00	=	36,000.00
Backhoe	20 days x 10 hrs. x 50.00	=	10,000.00
Bridge	allow		10,000.00
Culverts	allow		2,000.00
Explosives	allow		10,000.00
Supervision & Engineering,	30 days x \$400.00		12,000.00
Room & Board, 30 days x 40.00			<u>1,200.00</u>
			\$ 117,720.00
Contingencies 10%			<u>11,720.00</u>
			\$ 128,920.00
General Administration 15%			<u>19,338.00</u>
TOTAL			\$ 148,258.00

Underground (1 Superintendent & 2 men)

Labour	3 men x 60 days x \$300.00/day	\$ 54,000.00
Loader	60 days x 8 hrs x \$40.00/hr	19,200.00
Pickup Truck	allow	5,000.00
Compressor	allow	10,000.00
Ground Support	allow	5,000.00
Ventilation	allow	2,000.00
Doors (3)	allow	3,000.00
Tools	allow	2,000.00
Pipe & Hoses	allow	5,000.00
Mobilization & Demobilization	allow	10,000.00
Room and Board 180 man/day @ \$40.00		<u>7,200.00</u>
		\$ 122,400.00
Contingency 10%		<u>12,240.00</u>
		\$ 134,640.00
General Administration 15%		<u>20,196.00</u>
TOTAL		\$ 154,836.00

ESTIMATE OF COST: (Continued)Technical (Survey, Sampling, Assay, Geology)

Staged over 2-3 month period, depending on accessibility.

Surveyors	2 men x 30 days x \$250.00	\$ 15,000.00
Geological	2 men x 30 days x \$325.00	19,000.00
Sampling	4 men x 30 days x \$250.00	35,000.00
Supervision & Geological Engineering	70 days x \$400.00	28,000.00
Drafting	1 man x 60 days x \$250.00	15,000.00
Survey Equipment Rental		2,000.00
Vehicle Rentals		17,500.00
Misc. Equipment Rentals & expendables		5,000.00
Freight		1,000.00
Accommodation & Food	390 man/days x \$40.00	15,600.00
Assaying - 2100 samples @ \$20.00		42,000.00
Transportation (airfares, etc.)		10,000.00
Telephone & Communications		2,000.00
Snow Removal, 3 months @ \$6,000.00		18,000.00
Compilation & Final Drafting & Report		<u>15,000.00</u>
		\$ 240,100.00
Contingency 10%		<u>24,010.00</u>
		\$ 264,110.00
General Administration 15%		<u>39,616.50</u>
TOTAL		\$ 303,726.50
	GRAND TOTAL	\$ 606,820.50

CONCLUSIONS AND RECOMMENDATIONS:

The Columario Gold Mine property has an interesting history of gold exploration dating from 1919, and modest production in 1934, 1939 and 1940. It has apparently not been explored since that time, apart from a preliminary program executed in 1984.

In this history, gold has been found over several areas of the claims, and, as well, is reported as placer in Kleanza Creek, downslope to the north of the property.

Consequently, further exploration is warranted.

Wolfe has suggested general epithermal target areas for surface exploration and I concur.

The program, as recommended in this report, is to test the area of the Columario Mine workings to assess the distribution of gold mineralization, and to determine if there is sufficient gold content in the veins, and rock separating them, to make large tonnage blocks and resulting lower mining costs possible.

This program can be run concurrently with the other program, but has the advantage of being able to be conducted as a winter program.

B I B L I O G R A P H Y

1. B.C. Minister of Mines Reports - Columario 1927, p.125; 1928, p.142; 1929, pp.148, 505; 1930, p.136; 1931, p.70; 1932, p.83; 1933, p.96; 1934, pp.A24, 29, C,2,3; 1938, p.C48; 1939 pp.A55, 57, 69; 1940 pp.A43, 54.
Victor - 1939, pp.59, 68; 1940, pp.45, 46, 54.
2. Duffell, S and Southern J.G., Geology of Terrace Map - Area, British Columbia 103 I E 1/2, Geological Survey of Canada Memoir 329, 1964.
3. Livgard, Egil, Geochemical Soil Survey Report For Endurance Minerals Inc., 11 October 1984.
4. Wolfe, Robert, Summary Report On The Kleanza Mtn. Property (Columario Gold Mine) For Endurance Minerals, 30 June 1987.

CERTIFICATE OF QUALIFICATIONS

I, Wayland Stuart Read, do hereby certify that:

1. I am a practicing Mining Geologist and my address is Cherry Point Road, Cobble Hill, British Columbia.
2. I am a graduate in Geology from Acadia University, Wolfville, Nova Scotia and have engaged in practicing my profession for over twenty years.
3. I am a member of the Association of Professional Engineers of British Columbia and the Yukon Territory, a Fellow of the Geological Association of Canada, and a member of the Canadian Institute of Mining and Metallurgy.
4. This report is based on my personal examination of the property on 19-21 October and 1 November 1987, as well as a broad experience in mineral exploration, development and production.
5. I have no interest, either direct or indirect in the properties or securities of Endurance Mineral Inc., nor in Hillsborough Resources Limited, nor do I expect to receive or acquire any such interests.

Respectfully submitted,

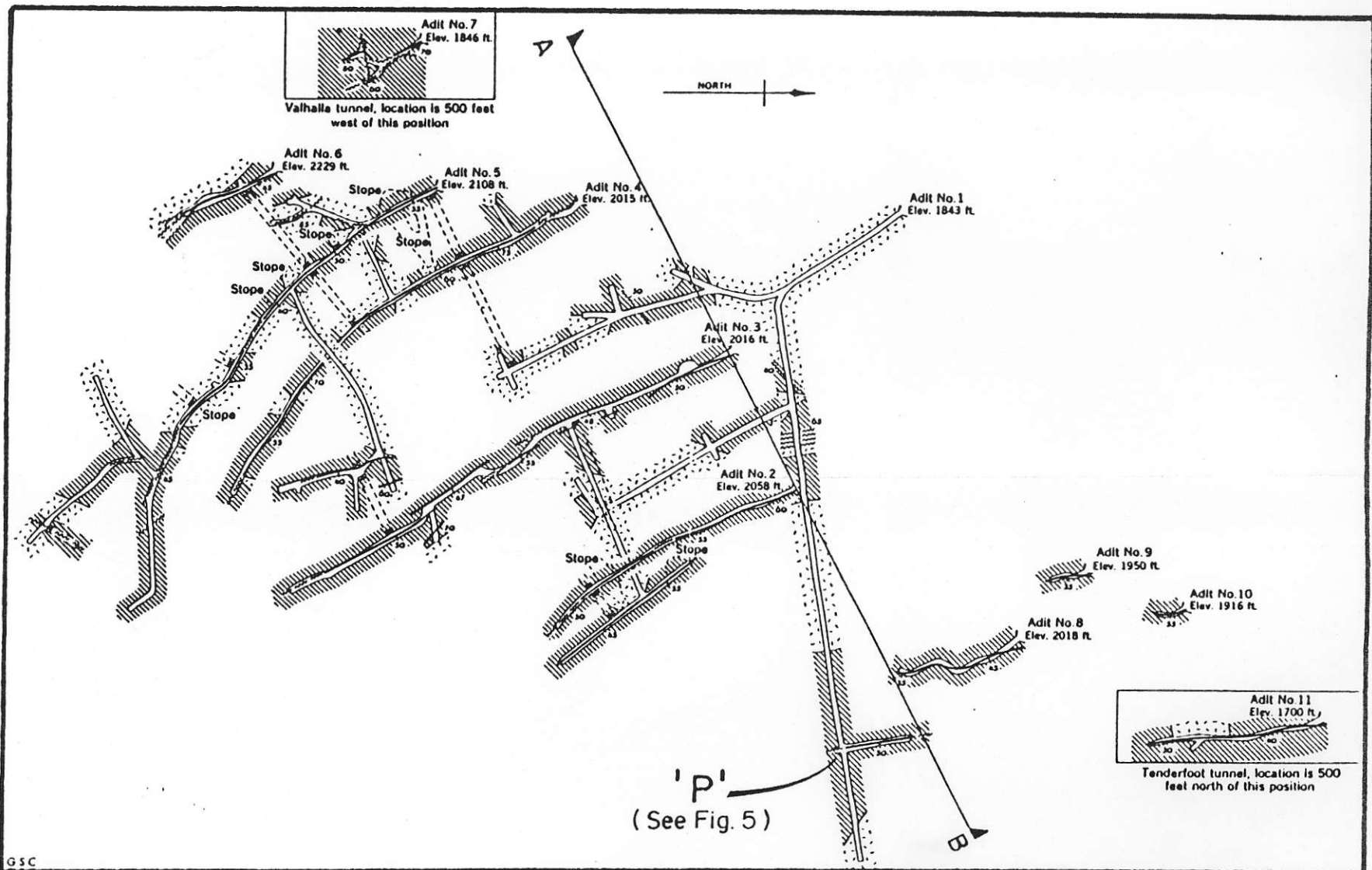


Wayland S. Read, B.Sc., P.Eng.

Cherry Point Road
Cobble Hill, B.C.
4 November 1987

A P P E N D I X I

Figures 3 - 8 Endurance Minerals Inc.
(Reference data from report by
Robert Wolfe, P.Eng.,
dated June 30, 1987.)



G 5 C

LEGEND



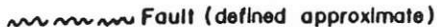
Granodiorite



Andesite



Vein



Fault (defined approximate)



Raise

Plan of Underground Workings of Columario Mine
(after Kindle, 1937) figure 3

Endurance Minerals Inc.

*Kleanza Mtn. Group
Omineca Mining Division*

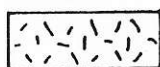
*Terrace, B. C.
N.T.S. 1031/9*



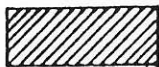


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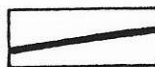
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Granodiorite



Andesitic lava



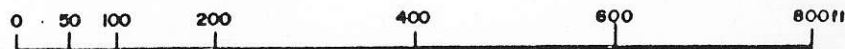
Vein

Geology of the Columario Mine area
figure 4

Endurance Minerals Inc.

*Kleanza Mtn. Group
Omineca Mining Division*

*Terrace, B.C.
N. T. S. 103 I / 9*



A

B

• 5(4)

• 4(4)

• 3(5)

• 2(6)

• 8(7)

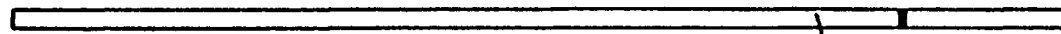
2,200'

2,100'

2,000'

1,900'

1,800'



Projection of main haulage level and X-cut

LEGEND

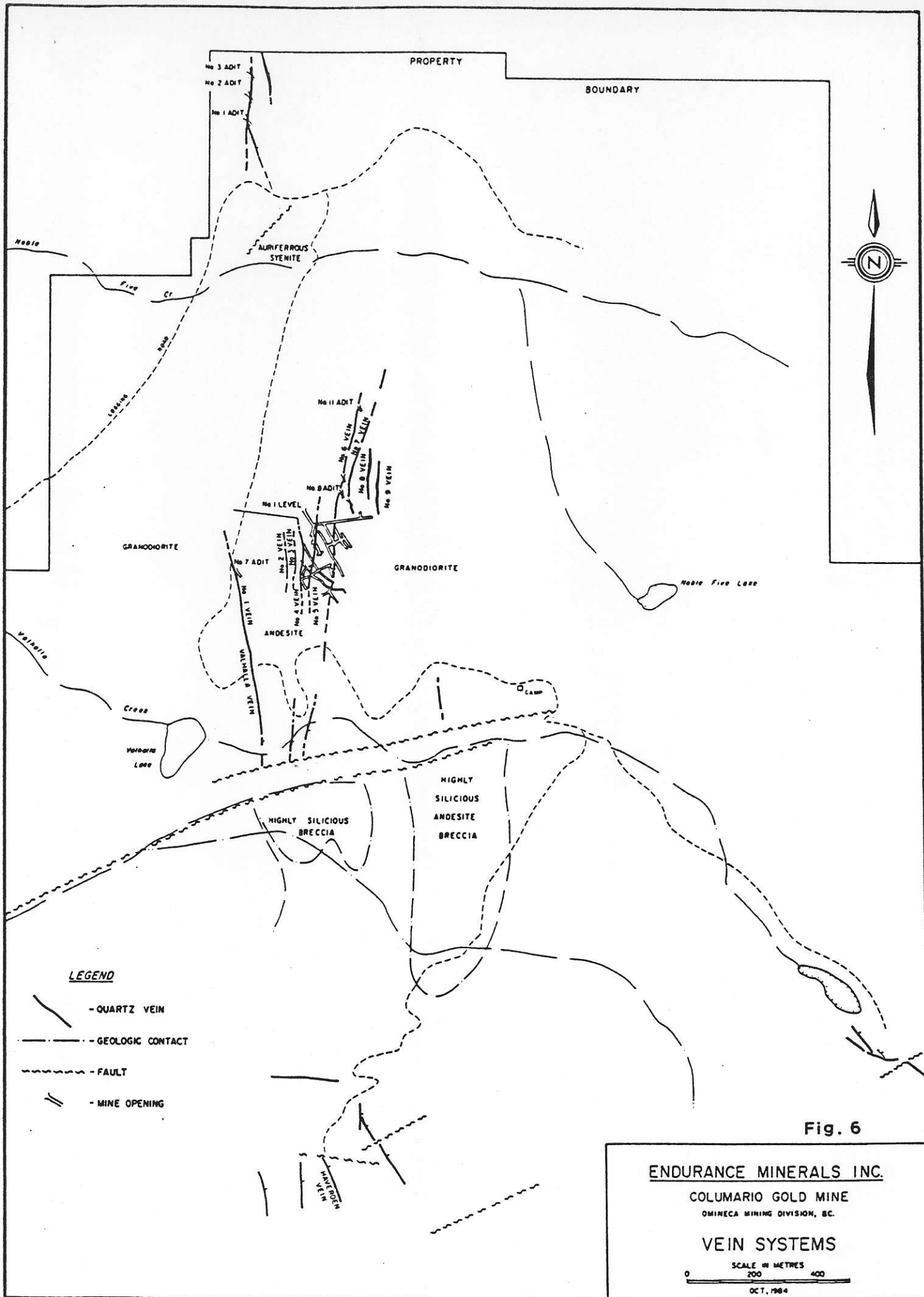
- 5 Adit # 5
- (4) Vein # 4
- Vein

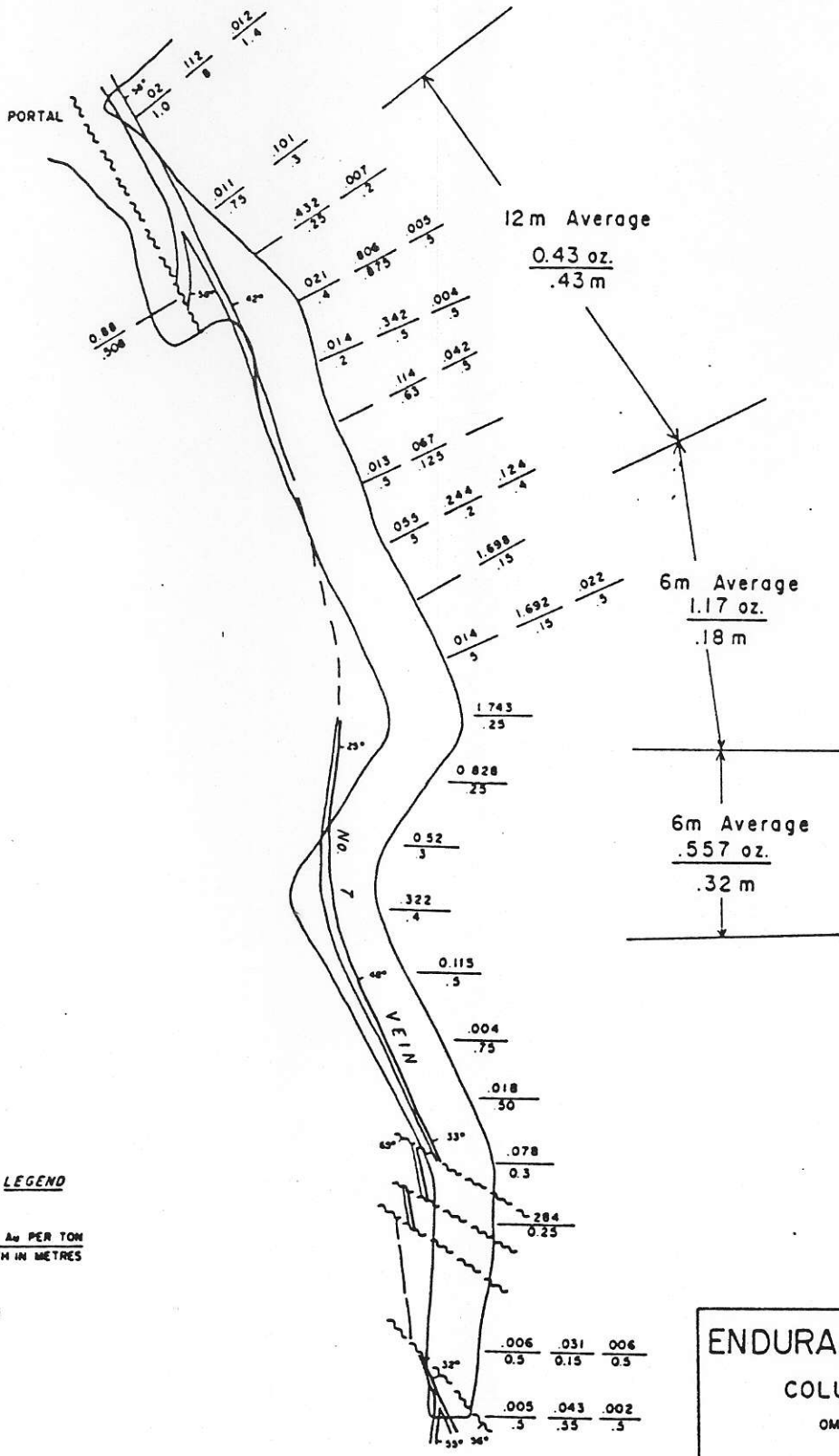
Endurance Minerals Inc.

Kleanza Mtn. Group Terrace, B. C.
Omineca Mining Division N.T.S 103 I / 9



Idealized Section A-B of Columario Vein System looking NW (see fig.3) Figure 5





LEGEND

Oz. Au PER TON
WIDTH IN METRES

Fig 7

ENDURANCE MINERALS INC.
COLUMARIO GOLD MINE
OMINECA MINING DIVISION, B.C.
No. 8 ADIT
ASSAY PLAN



A P P E N D I X I I

Excerpts from Minister of Mines Reports

1933 - 1940 (18 pages)

Columario Consolidated Gold Mines, Ltd.,

Victor Group

installation of expensive plant may prove a failure if principles are disregarded. While different capable workers employ somewhat different methods, attention to the following points is of great importance:—

(1.) While there is no difficulty in recovering fine bar gold by means of blanket table or sluice, it is quite essential that all coarse material should be removed by screening before passing material over the table or through the sluice. The material should all pass a $\frac{3}{16}$ -inch mesh screen at least. Some workers prefer carpet to blanket. Corduroy is used extensively at milling plants in various parts of the world. It is rarely or never used by bar-workers, possibly because the right quality is not obtainable locally.

(2.) An even flow of water and material over the blanket-sluice is important.

(3.) The slope of a blanket-table should be from $1\frac{3}{4}$ to 3 inches per foot, depending upon the rate of flow.

(4.) Some workers use wire screen over blankets to reduce the scouring tendency.

(5.) It is quite essential that blankets be rinsed off in a clean-up tub or pan at least every one and a half hours.

(6.) If gold is found rusty and hard to amalgamate, attrition will usually prove as effective as warming or using chemicals.

An ordinary "long-tom" mounted on rockers is popular with some miners. If the sand or gravel has to be transported by hand for any appreciable distance a convenient scheme is to mount the feed-box on a wheelbarrow-frame. Feed-box is hinged at discharge end to frame, and at the other end is a leg so that it can be inclined at any desired angle. It is mounted at such a height that it discharges directly on to the fixed grizzly, and is loaded in the horizontal position.

ROADS AND TRAILS.

Assistance was rendered under the "Mines Development Act" in connection with many roads and trails throughout the district during 1933. The road from Fort St. James northwards towards the Manson section is now passable for trucks and light cars to a point 15 miles north of the Nation river. It ends at the pack-train camp at Moosmoos meadows. The distance from this point by pack-trail over Bald mountain to Slate creek is about 30 miles. The distance from Fort St. James to the Nation river is 68 miles.

ADDRESSES.

During the winter addresses to prospectors were given by the Resident Engineer at important centres throughout the district.

ACKNOWLEDGMENT.

The Resident Engineer desires to express his thanks for the many courtesies received from operators and prospectors.

OMINECA MINING DIVISION.

SKEENA SECTION.

Columario Consolidated Gold Mines, Ltd.—Late in 1933 operations were resumed at the property of this company, near Usk, with a crew of fifteen men. Work proposed for the winter months includes raising between upper and lower tunnels on veins 4 and 5; crosscutting between veins 4, 5, and 6 and the driving of the main haulage-tunnel. The work was speeded up shortly after the close of 1933.

Lorne Creek.—A number of men carried on prospecting both for lode gold and placer on this creek and in the adjoining areas.

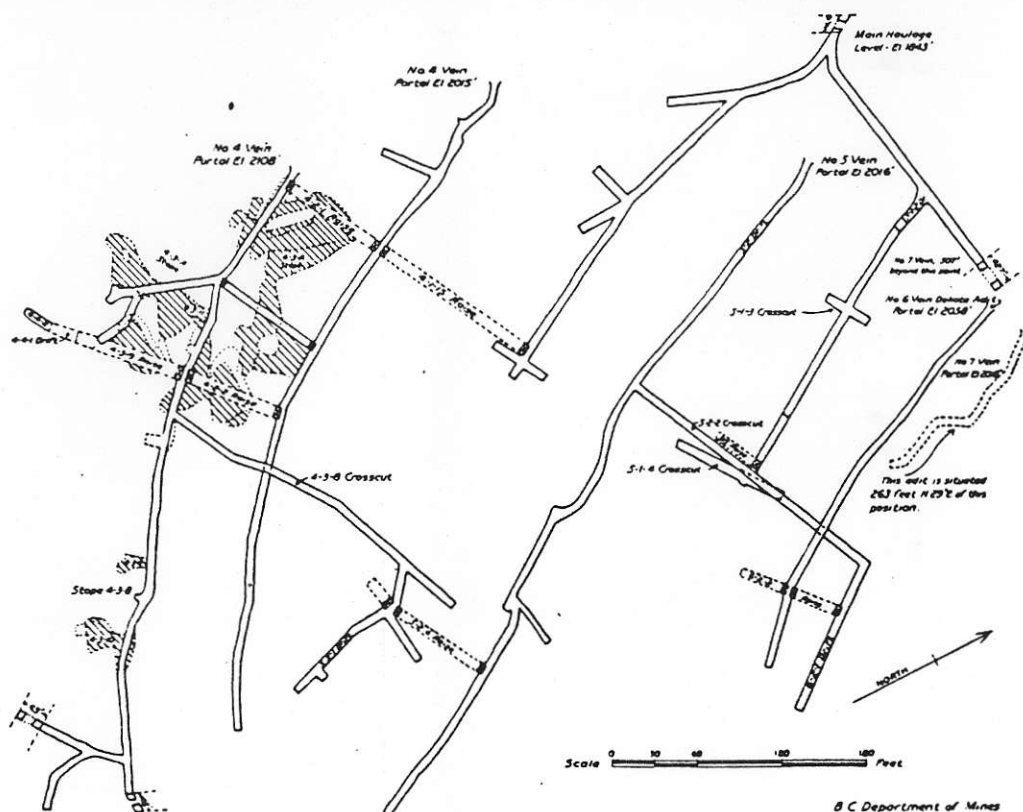
HAZELTON SECTION.

North of Hazelton, in the more immediate vicinity of Kisplox, sedimentary rocks of the Hazelton series are intruded at different points by stocks of granodiorite, and there is evidence of mineralization of the higher-temperature class carrying gold values. While no exposure of commercial proportions has yet been discovered, there appears to be no reason why such should not be discovered, and in the hope of making such discoveries a certain amount of prospecting is being carried on by local ranchers and natives.

OMINECA MINING DIVISION.

The *Valhalla*, *Kleanza*, and *Tenderfoot* groups, the property of Columario Consolidated Gold Mines, Limited, consist of the following Crown-granted claims and thirty held on location: *Valhalla No. 2*, *Valhalla No. 3*, *Norman Gold Mines, Ltd. Fraction*, and *L.C. Fraction*. The workings are on the steep and densely-timbered slopes of *Kleanza* mountain at elevations of 1,400 to 1,800 feet above the *Usk-Terrace* highway. The mill is situated on the right bank of *Noble Five* creek on the highway about $4\frac{1}{2}$ miles distant from *Usk*. A go-devil road and aerial tramway connect mine and mill. The mine may be reached by a shorter trail leaving the highway at *Kleanza* creek.

Nine parallel quartz veins, with free walls, mainly from 1 to 3 feet wide and in one case 6 feet wide, average distance apart being about 150 feet, outcrop at various points on the steep mountain-side between elevations of 1,700 and 2,100 feet. They strike north 20 to 30 degrees west and dip north-east at angles of about 50 degrees. Sulphide mineralization is chiefly pyrite with some chalcopyrite, and in the case of No. 5 vein, galena. The veins are named in order from west to east, No. 1 being the most westerly and No. 9 the most easterly. The rock formation is



Columario Consolidated Gold Mines, Ltd.

altered andesite (greenstone) intruded by diorite stocks and lamprophyre dykes. Tongues of aplite occur which antedate the veins, and in which the latter pinch. The point at which the eastern flank of the Coast Range batholith plunges downward is not, it is believed, accurately known, but indications point to this plunge taking place just east of *Pitman*, in which case this property would be situated in a roof-pendant area.

In 1919 the *Kleanza* Company was organized for the purpose of developing this property, and preliminary prospecting was carried on in that and the following year. In 1921 a syndicate known as the "*K. Partnership*" acquired a lease on the *Golden Crown* from the *Kleanza* Company and erected a Ross mill on the property, but work was suspended shortly afterward. During the next few years prospecting operations were carried on under the supervision of

John Willman. A small amount of work was subsequently done annually, with results which led to the incorporation of a company in 1927, the Columario Gold Mines, Limited. In that year a portable compressor was installed and an active campaign of development was carried out in the years 1928 and 1929. The work consisted of drifting, raising, and crosscutting on and between Nos. 4, 5, 6, and 7 veins. Development was continued during 1930 and a little work was done in 1931 and 1932. Development was speeded up at the end of 1933 following reorganization of Columario Gold Mines, Limited, as Columario Consolidated Gold Mines, Limited. In 1934 a flotation plant of about 100 tons daily capacity was erected on the right bank of Noble Five creek on the Usk-Terrace highway, a 12-bucket aerial tram was constructed from the mine to the mill, and an Ingersoll-Rand air-compressor of 500 cubic feet of free air per minute capacity, operated by a 112-114-horse-power Vickers-Petter Diesel engine, installed at the mine. Difference in elevation of the two tram terminals is approximately 1,400 feet. Milling operations were commenced on September 2nd and, simultaneously with construction, underground development was carried on as actively as possible. (Refer also to Annual Reports 1919, 1920, 1921, 1925, 1927 to 1933, inclusive, and Bulletin No. 1, 1932.)

The workings have been driven to explore the downward continuation of the surface showings. Other exposures, it is reported, occur at higher elevations, and this fall a showing is stated to have been discovered some distance above No. 4 upper adit, but these exposures have not been examined by the writer.

Present operations are confined almost entirely to Nos. 4, 5, 6, and 7 veins. Two adits between 550 and 600 feet long have been driven on No. 4 vein at elevations of 2,015 and 2,108 feet. They are known respectively as No. 4 lower and No. 4 upper adits. Two raises about 135 feet apart connect these levels.

Adits have been driven on Nos. 5, 6, and 7 veins at elevations of 2,016, 2,058, and 2,133 feet for distances of about 600, 300, and 150 feet respectively.

A crosscut has been driven from the upper adit on No. 4 vein to No. 5 vein, connecting with a raise from the adit on the latter. The adits on Nos. 5 and 6 veins are connected by a crosscut and short raise on No. 6 vein. This raise has been continued for a considerable distance above the adit-level.

The main haulage-level is at an elevation of 1,843 feet, about 100 feet above the upper terminal of the aerial tram. It is driven in a south-easterly direction for 155 feet, from which point workings have been driven to intersect the downward continuation of Nos. 4, 5, 6, and 7 veins. With the exception of what is presumably No. 7 vein, where a quartz stringer a few inches wide is exposed, no marked evidence of the downward continuation of the veins had been found at the time of the writer's examination on November 2nd.

A raise connects the main haulage-level with the lower level on No. 4 vein. In this raise No. 4 vein has apparently been located 115 feet up, where, although narrow, it is said to be well mineralized. Up to the time of the writer's examination all the ore milled had been extracted from No. 4 vein. The necessary connections had not been made with the higher levels on the other veins for passing ore to the main haulage-level. No samples were taken.

Development to date has disclosed in No. 4 vein a fairly continuous ore-shoot between the raises (135 feet apart) connecting the adits on this vein and showing evidence of strong continuation above No. 4 upper adit. This ore-shoot has now been heavily drawn upon to feed the mill. In addition, there is another shorter lens of ore south-east of this shoot showing in the back of No. 4 upper level. The width of ore varies from 12 to 30 inches. The last 200 or so feet driven on both No. 4 upper and No. 4 lower adits did not disclose material amounts of quartz.

The adit on No. 5 vein at 385 feet from the portal encountered an ore-shoot 100 feet long averaging 15 inches in width, containing \$9.60 per ton in gold (gold taken at \$20.67), as stated by W. G. Norrie-Lowenthal. In the raise from this adit to the crosscut from No. 4 upper adit, the average of nine samples taken by the management gave \$34.30 per ton in gold across 20½ inches (value of gold being taken at \$35 per ounce).

The adit on No. 6 vein shows between 215 and 245 feet from the portal an ore-shoot averaging \$14.60 across 21 inches, according to the sampling of W. G. Norrie-Lowenthal. The raise on this vein was carried to a height of 129 feet above the level of the adit on No. 5 vein. The average of fourteen samples taken by the management from this raise is given as \$22.40 across 18 inches (gold valued at \$35 per ounce). The adit on No. 7 vein, elevation 2,133 feet, shows a

shoot of ore 90 feet in length averaging \$18.30 across a width of 21 inches, according to the statement of W. G. Norrie-Lowenthal.

Milling operations were suspended after three months' duration before the end of the year. The following statement has been made by the manager: "The mill was run experimentally for three months at low capacity. The mine is not yet developed to operate the mill at capacity, and it was decided to shut down for the winter, as it is undesirable to run one or two shifts only through the cold weather, as costs are increased if the mill be run below capacity. We are therefore confining our work to development for the next three months."

Data are not available covering the entire mill-run, but from start to finish 101.3 tons of concentrates were produced, containing approximately 492.022 oz. gold and 1,401.23 oz. silver.

Primary crushing is done by an 8-inch Traylor gyratory crusher, belt-fed over a magnetic pulley to eliminate tramp iron. Ore passing from the gyratory crusher is elevated to a 90-ton feed-bin, whence it is delivered by jig-feeder to a 6- by 4-foot Hardinge-type ball-mill (4-ton charge of 4-inch and 3-inch balls) operating in closed circuit with a Dorr-type duplex classifier overflowing at 90 per cent. through 150-mesh to a 6-cell "gravity-flow" flotation-cone, the under-flow passing to a 6-leaf American filter. Reagents used per ton are as follows: 0.1 lb. soda-ash; 0.25 lb. ethyl xanthate; 0.1 lb. G.N.S. No. 5 pine-oil. Xanthate and pine-oil are added to the flotation circuit, half in the first cell and half in the third. Power is supplied by a full Diesel 168-brake-horse-power Petter engine.

This group, owned by L. E. Moody, of Usk, and R. Lowrie, consists of four claims—*Lucky Luke*, *Hummer*, *Amigo*, and *Indian* (the last on an Indian reserve). The property is on the well-timbered eastern slope of Kitsulas mountain on the west side of the Skeena river, about 700 feet above and a few hundred yards distant from the railway. It is reached by road from Usk about $1\frac{1}{4}$ miles distant.

A quartz vein, 1 to 3 feet wide, strike about north 65 degrees west, dip about 57 degrees north-east, carries hornite, chalcopryite, pyrite, and free gold. The walls of the vein are free. The rock formations are schistose volcanics intruded in places by aplitic tongues.

This property was operated by the owners until 1923, when it was optioned to S. A. D. Davis and partners, who during 1923 and 1934 carried on intermittent development-work with two men. In the fall of 1924 a shipment of 25 tons of hand-sorted ore was made; this gave returns of 18 oz. gold, 316 oz. silver, and 11,162 lb. copper. Thereafter but little work was done until the present year, when it was optioned to R. W. Seelye. (Refer also to Annual Reports 1918, 1919, 1923, 1924, 1925, and 1928.)

So far as known, the vein is largely covered, except at the original discovery, by glacial drift and dense vegetation, which makes it difficult to trace it on the surface.

The underground workings consist of an upper adit driven about 60 feet on the vein and another about 55 feet lower in elevation. The lower level is driven as a crosscut for about 100 feet to the vein, which it then follows for approximately 100 feet to a point where the vein is terminated by a fault, strike north 45 degrees east and dip south-east. A working follows the fault southwards for 21 feet, without disclosing definite evidence of the continuation of the faulted portion of the vein. The apparent displacement is to the south-west. The two workings are connected by a raise and stope, and in the latter an aplite tongue is exposed along the hanging-wall side of the vein. During the year a small belt-driven air-compressor of 100 cubic feet per minute capacity, operated by a Fordson tractor, was installed, and a winze sunk to a depth of 80 feet below the lower adit, immediately below the good ore found in the stope between the levels. The ore continues in the winze to a depth of 40 feet and then pinches, but improves again, and in the bottom a width of about $2\frac{1}{2}$ feet of quartz well mineralized with hornite and chalcocite and showing some free gold is exposed. From the bottom of the winze a drift was run for 15 feet following the vein north-westwards.

Operations were suspended in the summer.

This group is owned by T. M. Turner, of Terrace, and consists of several claims situated on the right bank of the Zymoetz river, about 3 miles above its mouth, and conveniently reached by a trail about half a mile in length from the Usk-Terrace highway. The property lies at a low elevation, comparatively close to river-level. A very brief examination of the property was made.

Surface showings consist of a number of quartz veins varying in width from a few inches to somewhat over 3 feet, occupying well-defined fissures. Some are mineralized with sphalerite,

feet, a maximum width of 10 feet, and from 3 to 5 feet deep. The pits indicate the probability that the meadow and area described is underlain by the deposit of lime. The trench affords a very good exposure of the white or cream-coloured deposit, and shows that at this point the latter is immediately overlain by moss and timber, with very little overlying soil. It will be noted that the area lying to the south-east of the meadow lies above water-level and is not overlain by any glacial debris, so that shipments can be made at any time from this region after it has been cleared of timber and vegetation. Development to date affords but little evidence as to the average depth of the deposit; obviously, therefore, no exact calculations as to quantity can be made, but assuming that an area 300 by 300 feet on the south-east side of the meadow is underlain by a wedge-shaped body of the deposit, 30 feet deep at its eastern extremity, and that the material in place occupies 18 cubic feet per ton, then 70,000 to 75,000 tons are indicated as lying above water-level and immediately available.

PROGRESS NOTES.

LODE-GOLD DEPOSITS.

Wells Area.

Cariboo Gold Quartz Mining Co., Ltd.—The rate of milling was increased to 150 tons daily on September 4th. A comprehensive development scheme was also carried forward, including the sinking of two vertical winzes on the 1,500 level, one in the *Rainbow* vein system (formerly "Nos. 5, 6, and 7 vein area") and the other in the *Sanders* vein system (formerly "Rainbow or Sanders" vein area). Both these had reached a depth of 250 feet on October 11th. (Refer to Annual Report for 1934, also to Memoir No. 181, Geological Survey of Canada, 1935.)

Island Mountain Mines Co., Ltd.—During the year the rate of milling was increased to about 100 tons daily and development and diamond-drilling to about 800 feet monthly. Tonnage milled consists of about 60 per cent. from quartz veins and 40 per cent. from the replacement deposit. (Refer to Annual Report for 1934, also to Memoir No. 181, Geological Survey of Canada, 1935.)

Barkerville Area.

Richfield Cariboo Gold Mines, Ltd.—During the year the main adit was advanced about 1,000 feet farther and has now reached a total length of approximately 2,600 feet. Near the face of the main adit some small sulphide-bearing quartz veins were cut. (Refer to Annual Report for 1934, and Memoir No. 181, Geological Survey of Canada, 1935.)

Stanley Area.

Cariboo Gold Syndicate.—This syndicate holds forty-eight mineral claims on Van Winkle mountain, 6 miles from Stanley. A number of "B" veins and one "A" vein are exposed on the flat-topped mountain summit in schistose sediments of the Cariboo series. An adit, the estimated length of which is 1,092 feet, has been started and on October 9th had advanced 25 feet towards its objective, 340 feet below the vein-outcrops.

Usk Area.

Omineca Gold Quartz Mines, Ltd.—This company was incorporated during the year for the purpose of operating the *Dardanelle* group on the *Zymoetz* river. (Refer to Annual Report for 1927.) A force of upwards of forty men was employed in constructing a tractor-trail, an essential preliminary to development, following the north bank of the river from the Terrace-Usk highway to the property, a distance of 12 miles.

Columario Consolidated Gold Mines, Ltd.—This company suspended mining and milling operations in the early summer, which were not subsequently resumed.

Smithers Area.

Glacier Gulch.—Operations were resumed at this property during the year by the owners, who shipped approximately 30 tons of ore. (Refer to Annual Report for 1934.)

Mamie.—The optionees, W. R. Wilson & Sons, continued No. 1 adit, the face of which at 218 feet from the portal showed a vein-width of 3 feet. A sample across 3 feet at this point assayed: Gold, 1 oz. per ton; silver, 4 oz. per ton. (Refer to Annual Report for 1934.)

Quesnelle Quartz Mining Co., Ltd.—T. Norton Youngs, manager; Russell Ross, general superintendent. In the period from June, when underground operations were resumed, until the end of the year, the following development-work was accomplished at this mine: 192 feet of drifting; 192 feet of crosscutting; 251 feet of raising. In addition, several stopes were opened up and equipped with chutes and manways. A complete assay plant is maintained at the property and an intensive sampling programme has been carried out.

During the summer a cyanide plant was constructed and put into operation on November 27th. The milling equipment consists of a 275-ton coarse-ore bin at the head of the surface tram from the mine-shaft head, a 9- by 15-inch Allis-Chalmers jaw-crusher, and a 40-foot conveyor to a 100-ton fine-ore bin.

The 4½- by 7-foot Allis-Chalmers ball-mill is driven by a 75-horse-power General Electric motor and operates in closed circuit with a 3- by 15-foot Dorr Simplex classifier. The classifier overflow is sent by gravity by a 12- by 19-foot Dorr combination washing-thickener (top tray), then to two 10- by 14-foot Dorr agitators, and back through the second, third, and fourth compartments of the thickener before being pumped to the tailings launder. The gold solution is clarified and treated in a Merrill-Crowe, bog-type, precipitation unit. The precipitate is refined in a Monarch tilting-pot furnace.

The crushing and grinding units are capable of handling up to 100 tons per twenty-four hours and although the present tank-capacity is 25 to 30 tons the addition of further thickeners and agitators would make an increase in tonnage a simple and comparatively inexpensive matter.

The mill machinery is all electrically driven by 440-volt motors with power supplied from a 125-k.v.a. generator driven by a 120-horse-power Vivian Diesel engine.

During the year an average of thirty men was employed; eight in the mine, thirteen at the mill on construction, seven on the surface, and two salaried officials.

Cariboo Yankee Belle Mining Co., Ltd.—W. F. Cameron, manager; C. R. Cameron, foreman. The main development tunnel, planned to intersect the Corban series of quartz veins at a depth of approximately 700 feet, was advanced to 1,643 feet from the portal before operations ceased for the year.

Marriner Group.—L. H. Hinton, engineer in charge. The N. A. Timmins Corporation took an option on this property during 1938 and did considerable exploratory work in the form of deep trenches and open-cuts. It is understood that the option was relinquished.

Golden Ore Syndicate.—Forbes A. Clarke, general manager. At the time of inspection, three men were employed in driving two short adits.

*Bell-Holm Group.**—Alfred Holmwood, of Prince George, during the year unwatered a shaft sunk a number of years ago to explore some intersecting quartz veins of maximum width 3 feet contained in schistose greenstone. The property is near the north end of the boundary-line between Pre-emption Lots 1602 and 1601, and is reached by following the Prince George-Hazleton Road south-westward for a distance of 6½ miles, at which point a wagon-road 3½ miles in length leads to the property. Sampling disclosed material gold values at one point.

BY

CHARLES GRAHAM.

Zymoetz River District.

Some prospecting was done in the *Zymoetz* and *Big Bull* groups and small shipments made from each to the sampling plant at Prince Rupert.

Usk District.

Small shipments were made from the *Cordillera* and *Lucky Luke* to the sampling plant.

→ A lease has been given on the *Columario Mine* to W. Duncan, of Usk, who expects to commence work early in the year.

Pitman District.

Grotto Group.—Considerable prospecting has been done and several shipments made to the sampling plant. Work is being continued through the winter months. This property is about 6 miles east of Usk.

* By Douglas Lay.

Some new ore was developed in the *Pugsley* mine on the 900 and 1,000 levels. The upper levels of the *Surf* mine were explored, sampled, some ore mined, and preparations made to open up above the old stopes.

KHUTZE INLET.

Hunter Group.—This group, owned by J. M. Meldrum and J. G. Campbell, was optioned late in the year to P. W. Racey and Seattle interests and exploration and development-work commenced. The group is located on the north branch of Khutze River, longitude 128° 18', latitude 53° 10', about 12 miles from tide-water.

PORCHER ISLAND.

Porcher Island Mines, Ltd.—This company went into bankruptcy in October, 1939. It owned the *Surf Point* and *Edye Pass* properties on Porcher Island, longitude 130° 40', latitude 54°.

[Reference: Annual Reports, 1934, Part B, and 1935, Part B.]

TERRACE-HAZELTON AREA.

ZYMOETZ RIVER.

Omineca Gold Quartz Mining Co., Ltd. Company office, 785 Dunsmuir Street, Vancouver, B.C.; Fred M. Wells, President; C. Hansen, Superintendent. The property, longitude 128° 10', latitude 54° 30', is situated on the north bank of the Zymoetz River, 14 miles from Copper City. The property is equipped with a small compressor driven by a water-turbine. An adit is being driven to intersect veins exposed on the surface and is in 705 feet. A 4-foot vein was cut at 410 feet. Six men were employed and operations suspended in September.

USK.

This old property in the vicinity of Usk was formerly operated by the **Cordillera Group**. Kitselas Mountain Copper Company and the Usk Mining Company, Limited, but no work has been done on it for many years. During the year James Darby, of Usk, carried out work with a view to mining shipping-grade ore, and sent 1 ton of ore to the sampling plant (*see* page 57). The property was examined and it was found that the outlook for profitable mining, sorting, and cobbing of shipping-grade ore was not encouraging.

This group of six claims, covering ground formerly held by Columario **Victor Group**. Consolidated Gold Mines, Limited, was staked in 1937 by W. W. Duncan, of Usk, and S. C. Cooper, of Terrace. The claims are between 200 and 4,200 feet elevation on the westerly slope of Kleanza Mountain and are reached by motor-road from Usk for 3.3 miles; thence go-devil trail for 1.75 miles to the *Columario* camp at 1,700 feet elevation; thence a good pack-horse trail for 2 miles to the main showings at 4,000 feet elevation. Three samples were sent to the sampling plant (*see* page 59). The property was sampled to determine the possibility of sorting and cobbing a shipping-grade of ore. Four samples from No. 2 vein indicate the presence of such ore.

This is an old group of five mineral claims, owned by W. R. Adams, of **Golden Crown Group**. Usk. It is located around 800 feet elevation on the west side of Kleanza Mountain, and is reached by motor-road for 3½ miles from Usk and thence by foot-trail for ½ mile. Old work consists of open-cuts, stripping, and four adits. The owner extended No. 4 adit drift on No. 2 vein.

[Reference: Annual Report, 1921, page 95.]

Company office, 300 Insurance Building, Seattle, Washington. British **Nicholson Creek Mining Corporation**. Columbia office: 602 Hastings Street, Vancouver, B.C. R. K. Young, President; W. A. Schwalbe, Secretary-Treasurer. Capital: 5,000,000 shares, 1 cent par. The corporation owns a number of claims on the south side of Nicholson Creek, between 1,500 and 220 feet elevation, about 5 miles northward from Usk station on the Canadian National Railways.

During 1938 and 1939, some stripping and open-cutting was done on a showing at 1,800 feet elevation on the *Mac-Shannon* claim, about 9,000 feet south-eastward from the long adit. This showing has no relation to any of the showings in the locality of the long adit. In 1938 the following shipment was made from this showing to the Government sampling plant at Prince Rupert: Dry tons, 0.374; gold, 1.26 oz. per ton; silver, 44 oz. per ton; copper, 16.3 per cent.; sulphur, 8.6 per cent.; silica, 49.6 per cent.

The showing was sampled in 1939 as follows:—

- (1.) Across 2.5 feet, width of mineralization, in shear at centre of cut at 1,830 feet elevation: Gold, trace; silver, 1 oz. per ton; copper, 1.2 per cent.
- (2.) At locality of (1), two flat quartzose stringers each 3 inches wide: Gold, 0.12 oz. per ton; silver, 5 oz. per ton; copper, 3.4 per cent.; silica, 58.94 per cent.
- (3.) Selected cobbled-grade from dump of 1.5 tons (could be cobbled to about 1 ton): Gold, 1.10 oz. per ton; silver, 47 oz. per ton; copper, 17.3 per cent.; silica, 43.74 per cent.

This company is in liquidation. The property, on the east side of the Skeena River, 3 miles below Usk, was leased to W. W. Duncan and associates, of Usk. Their object was to selectively mine and ship high-grade ore from certain sections of the old workings. They shipped 15.86 tons of selected ore and also ten samples to the sampling plant (see page 55).

The property was examined and sampled with the object of determining the possibility of selectively mining stripping ore. Details of the sampling may be obtained upon application to the Department of Mines, Victoria, B.C.

PITMAN.

Grotto. This group of twelve claims is owned by J. Bell, A. M. Bethurem, G. Alger, and R. L. Brash, of Usk. It is located in the valley of Hard-scrabble Creek, longitude 128° 22', latitude 54° 43', about 2 miles south-westward from Pitman, on the Canadian National Railways.

During the first half of the year, the owners carried out exploration and development on both the upper and lower showings and shipped 19.7 tons of selected ore to the sampling plant (see pages 55 and 58).

In the late summer the property was optioned to Canadian Explorations, Limited, of Royal Bank Building, Vancouver, B.C. This organization with a crew of two men carried out superficial exploration up to about the middle of December. This consisted of stripping and tracing of No. 6 and No. 7 veins, and drifting on No. 2 and No. 3 veins.

[Reference: Annual Report, 1937, Part C; additional information obtained in 1938 may be had from Department of Mines, Victoria, B.C., for 50 cents.]

In the vicinity of Usk and Terrace work was done on several groups of claims, including the following:—

Zymoetz group, by T. Turner, of Terrace; *Black Bull* group, by W. Hagen, of Copper City; *Nugget*, *Lucky Strike*, and *Morning Star* claims, by P. Brusk, of Usk and Vanarsdol; *Lucky Luke*, by L. E. Moody and partner, of Usk; and *Four Ace* group, by Milton Allison, of Usk.

HAZELTON TO HOUSTON AREA.

SMITHERS.

Duthie Mines, Ltd. A. W. Herman, J. J. Kelley, and associates took an option on this property and commenced work in October. The property is at longitude 127° 25' and latitude 54° 47', about 9 miles by road from Smithers.

Two shipments were made to the sampling plant at Prince Rupert. One shipment of 2.68 tons contained 0.17 oz. gold per ton, 223.6 oz. silver per ton, 44 per cent. lead, 13.6 per cent. zinc, and 1 per cent. arsenic. The second lot of 5.7 tons

This group of eight mineral claims is owned by T. Turner, of Terrace, **Zymoetz Group**. B.C., and is situated at the base of the southerly slope of Kleanza ("O.K.") Mountain, between elevation 250 and 600 feet. The claims lie along and adjacent to the north side of the Zymoetz River, about 2 miles east of its confluence with the Skeena River. It is reached by a branch motor-road, suitable for light motor-cars, which leaves the Terrace-Usk Highway on the north end of the Zymoetz River Bridge.

Some further work was done in the lower adit in which the vein was intersected at 60 feet from the portal. At this locality, the mineral deposit consists of an irregularly reticulated quartz replacement from 1 to 3 feet in width, well mineralized with pyrite and sphalerite with some galena and chalcopyrite in altered hornblende-schist.

In order to ascertain the possible localization of gold values and the possible occurrence of shipping-grade ore, the following samples were taken:—

A sample from the lower adit of the deposit exposed in the face for a width of from 1 to 3 feet assayed: Gold, 0.28 oz. per ton; silver, 0.6 oz. per ton; copper, 0.1 per cent.; lead, *nil*; zinc, 4.3 per cent.; silica, 60.9 per cent.

A sample of selected sphalerite and galena mineralization from a small dump at the portal of the lower adit assayed: Gold, trace; silver, 5.2 oz. per ton; lead, 16.6 per cent.; zinc, 24 per cent.

A sample of selected pyrite and chalcopyrite mineralization from the small dump at the portal of the lower adit assayed: Gold, 0.26 oz. per ton; silver, 0.5 oz. per ton; copper, 0.45 per cent.; silica, 47.4 per cent.

[Reference: Annual Report, 1938, Part B.]

This group of eight claims is owned by Wm. Hagen, of Terrace, B.C., **Black Bull Group**. and is situated on the west side of Kleanza Mountain. It is reached by trail extending for about 1½ miles south-easterly from the Copper River Bridge to the cabin at about altitude 3,500 feet.

During the year, work was continued on the *Gem No. 1* mineral claim. This consisted of some stripping and open-cutting. The adit was also extended in a northerly direction through the lamprophyre dyke and the vein picked up on the north side of this dyke. The vein was then drifted on to the face of the adit, which at the time of the examination was 106 feet from the portal. The workings were mapped and sampled for the purpose of determining the possibility of sorting and cobbing a shipping-grade ore. Maps covering the details of the workings on the *Gem No. 1* and the *Bluebird No. 3* mineral claims and also one covering the trail leading to this property may be obtained for a small charge upon application to the Department of Mines, Victoria, B.C.

During the year the owner shipped to the sampling plant thirteen small lots of ore, totalling 2,2888 tons.

Usk.

Nicholson Creek Mining Corporation. Company office, 300 Insurance Building, Seattle, Washington; British Columbia office, 602 Hastings Street, Vancouver, B.C.; R. K. Young, President; W. A. Schwalbe, Secretary-Treasurer. Capital: 5,000,000 shares, 1 cent par. T. J. Shenton, Superintendent. The corporation owns a group of claims on the south side of Nicholson Creek, 5 miles northward from Usk Station on the Canadian National Railways. Additional development-work during the year consisted of 195 feet of drifting, 95 feet of raising, and 63 feet of crosscutting. A crew of five men was employed.

Victor Group. This group of claims covering ground formerly held by the Columario Consolidated Gold Mines, Ltd., was staked in 1937 by W. W. Duncan, of Usk, and S. C. Cooper, of Terrace. The claims are between 200 and 4,200 feet elevation on the westerly slope of Kleanza Mountain and are reached by motor-road from Usk for 3.3 miles; thence go-devil trail for 1.7 miles to the *Columario* camp at 1,700 feet elevation; thence a good pack-horse trail for 2 miles to the main showings at 4,000 feet elevation. Work was continued on this property with the view to extracting shipping-grade ore. During the year, one test shipment totalling 0.1230 ton and one assay lot were shipped to the sampling plant at Prince Rupert.

TABLE XVI.—METALLIFEROUS MINES SHIPPING IN 1934.

Mine or Group.	Location of Mine or Mill.	Owner or Agent.	RATED DAILY CAPACITY.		Operating at.	Date of First Operation.	Process.	Character of Ore.
			1933.	1934.				
Engineer.....	Atlin.....	R. H. Brooks, Atlin, leaser from Mining Corp. of Can., Ltd., Toronto	Tons. 50	Tons. 50	Tons. •	1925	Amalgamation; concentration.....	Gold.
Bonanza.....	Anyox.....	Granby Cons. M.S. & P. Co., Ltd. }	5,200	5,200	5,200	Jan., 1924	Flotation.....	Copper, gold, silver.
Hidden Creek.....	Anyox.....							
Granby Point.....	Anyox.....							
Dunwell.....	Stewart.....	Dunwell Mines, Ltd., Victoria.....	100	30	30	1927	Flotation; concentration.....	Gold.
Joker.....	Stewart.....	John Hovland, Stewart.....						Silver, gold.
Premier.....	Stewart.....	Premier Gold Mining Co., Ltd., Vancouver	500	500	500	July, 1922	Flotation.....	Gold.
United Empire.....	Stewart.....	United Empire Gold and Silver Mining Co., Ltd., Vancouver						Silver, gold, lead.
Eddy Pass.....	Refuge bay.....	F. J. Patterson, Refuge bay.....						Gold, silver.
Princess Royal.....	Surf inlet.....	Princess Royal Gold Mines, Ltd., Vancouver		100	†	August, 1917	Flotation; concentration.....	Gold.
Surf Point.....	Porcher Island.....	N. A. Timmins, Inc., Porcher Island	20	20	20	July, 1933	Flotation.....	Gold.
Cariboo Gold.....	Wells.....	Cariboo Gold Quartz Mining Co., Ltd., Vancouver	100	100	100	Jan., 1933	Cyanidation.....	Gold.
Island Mountain.....	Wells.....	Island Mountain Mines, Ltd., Vancouver		50	50	Nov., 1934	Cyanidation.....	Gold.
Columario.....	Usk.....	Columario Consolidated Gold Mines, Ltd., Toronto, Ont.		100	50*	Sept., 1934	Flotation.....	Gold.
Glacier Gulch.....	Smithers.....	Wilson Mining and Investment Co., Ltd., Vancouver						Gold, silver.
Golden Eagle.....	Topley.....	C. Matheson and D. Heenan, Topley						Gold, silver.
Nicola.....	Stump lake.....	Nicola Mines and Metals, Ltd., Vancouver	100	50	50*	1929	Flotation.....	Silver, lead, zinc.
Windpass.....	Black Pool.....	Windpass Gold Mining Co., Ltd., Vancouver		40	40	March, 1934	Flotation.....	
Bluehawk.....	Wilsone Landing.....	Bluehawk (Kelowna) Gold Mines Syndicate, Victoria						Gold, silver.
Pre Cambrian.....	Ewings Landing.....	Pre Cambrian Gold Mines, Seattle.....		25	25	1934	Flotation.....	Gold, silver.
Athelstan.....	Grand Forks.....	W. E. McArthur, Jr., Greenwood.....						Gold, silver.
Molly Gibson.....	Grand Forks.....	Oscar Anderson, Rossland.....						Gold, silver.
Union.....	Granby river.....	J. F. McCarthy, Grand Forks.....		200	200‡	Jan., 1930	Cyanidation.....	Gold.
Dividend.....	Osoyoos.....	Chas. S. Antonson.....						Gold.
Grandoro.....	Oro Fino mountain.....	Grandoro Mines, Ltd., Pentleton.....						Gold.
Morning Star.....	Osoyoos.....	Morning Star (Fairview) Gold Mines, Ltd., Vancouver						Gold.

* Idle at present.

† Princess Royal mill under reconstruction.

‡ Tailings re-treated.

TABLE XVII.—MINING COMPANIES EMPLOYING AN AVERAGE OF TEN OR MORE MEN DURING 1934.

Shipping Mines.

Name of Mine or Company.	DAYS OPERATING.		AVERAGE NUMBER OF MEN.		TONNAGE.	
	Mine.	Mill.	Mine.	Mill.	Mined.	Milled or Shipped.
Dunwell Mines, Ltd.....	334	235	20	15	6,361	4,100
Premier Gold Mining Co.....	306	306	217	26	154,093	154,693
United Empire.....	365	.....	33	.....	.....	58
Granby Cons. M.S. & P. Co.—						
Hidden Creek.....	362	362	454	68	1,744,524	1,742,324
Bonanza.....	303	.....	53	.....	133,176	133,176
Granby Point.....	362	.....	15	.....	13,948	.....
Timmins, Inc., Surf Point.....	340	311	21	7	7,814	5,658
Cariboo Gold Quartz.....	365	365	106	11	28,447	27,693
Island Mountain Mines Co.....	56	56	41	9	2,804	2,804
Columario Cons. Gold.....	365	90	25	7	2,300	2,300
Windpass Gold Mine Co.....	365	364	29	5	9,005	11,316
Pre Cambrian Gold Mines.....	354	107	8	6	3,154	3,100
Nicola Mines & Metals.....	334	168	44	8	6,095	6,095
Union Mine.....	90	164	5	16	.....	18,143*
Beaver Silver Mines, Ltd.....	300	.....	10	.....	.....	102
Bell Mine.....	299	.....	15	.....	.....	1,823
Butcher Boy.....	352	.....	10	.....	.....	58
Dentonla.....	365	241	28	31	22,610	22,464
Highland Lass, Ltd.....	310	.....	11	.....	.....	1,107
Superior Gold Mines, Ltd.....	61	61	20	8	3,504	3,419
Sally Mines, Ltd.....	308	.....	21	.....	.....	475
Waterloo Gold Mines, Ltd.....	334	.....	15	.....	.....	59
Wellington.....	300	.....	15	.....	.....	559
Grandoro Mines, Ltd.....	365	.....	26	.....	.....	546
Morning Star (Fairview).....	347	.....	33	.....	.....	2,652
Twin Lakes Gold Mining Co....	308	254	35	5	5,471	5,471
Sullivan.....	299	313	547	251	1,704,211	1,741,742
Monarch.....	342	341	56	24	96,200	94,880
Noble Five Mines, Ltd.....	365	.....	15	.....	.....	164
Gold Belt Mining Co.....	365	.....	17	.....	.....	291
Granite-Poorman.....	307	.....	13	.....	.....	503
Kootenay-Belle.....	304	29	26	6	2,324	1,615
Ymir Consolidated.....	92	.....	30	.....	.....	222
Goodenough.....	273	.....	16	.....	.....	4,039
Relief-Arlington.....	365	365	43	11	14,614	11,663
Reno Gold Mines, Ltd.....	365	365	85	25	26,895	26,895
Salmo Malartic, Ltd.....	365	.....	12	.....	.....	18
Wilcox Mining Syndicate.....	264	.....	8	2	3,320	1,680
Yankee Girl.....	193	.....	34	.....	.....	13,966
Velvet Gold Mining Co.....	214	60	6	7	2,400	2,553
Vancouver Island Gold.....	276	.....	12	.....	.....	40
Vidette Gold Mines, Ltd.....	330	277	40	6	7,229	7,217
Grange Mines, Ltd.....	365	365	28	6	3,330	3,330
Minto Gold Mines, Ltd.....	305	34	28	9	2,878	1,430
Bralorne Mines, Ltd.....	365	365	125	14	98,664	98,664
Pioneer Gold Mines.....	365	365	180	10	130,066	130,198
Wayside Gold Mines, Ltd.....	365	54	25	7	2,381	513
Hercules Consolidated.....	280	.....	28	.....	.....	18
Britannia M. & S. Co., Ltd....	289	165	350	159	786,412	759,697

* Tailing re-treated.

SAMPLING PLANT—Continued.
Tonnage Lots—Continued.

Lot No.	Property.	Shipper.	Locality.	Dry Tons.	Au	Ag	Cu	Pb	Zn	As	Sb	Fe	S	SiO ₂	Bi	Se	MoS ₂
					Oz. per Ton.	Oz. per Ton.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
179	Gold Boulder	J. Haahli	Stewart	0.7480	1.76	1.70	0.5	Nil	0.25	Nil	Nil	26.3	19.9	42.6			
180	Gold Boulder	J. Haahli	Stewart	2.7840	2.05	3.80	1.2	Nil	1.2	Nil	Nil	36.0	31.2	20.0			
298	Gold Boulder	J. Haahli	Stewart	7.2630	2.71	2.00	0.7	Nil	0.3	Nil	Nil	34.2	22.8	33.4			
299	Gold Drop	J. Morin and Casey	Stewart	4.8660	2.34	4.30	0.2	2.0	0.2	Nil	Nil	14.4	7.6	56.2			
185	Golden Eagle	D. Heenan	Topley	1.3010	0.35	461.50	2.1	13.2	13.6	Nil	1.08	7.1	13.8	35.2			
188	Golden Eagle	D. Heenan	Topley	0.3210	0.21	20.50	0.7	27.8	11.6	Nil	0.5	5.0	14.4	31.2			
207	Golden Eagle	D. Heenan	Topley	0.4258	0.16	215.50	1.2	19.2	15.2	0.2	Nil	6.8	16.3	32.8			
191	Gold group	Mathew Sam	Topley	0.1415	0.04	70.70	2.4	13.9	9.1	Nil	0.8	6.2	5.5	33.6			
199	Gold group	Mathew Sam	Topley	0.1360	0.01	23.00	0.8	11.4	12.3	Trace	Trace	6.3	8.0	32.9			
200	Gold group	Mathew Sam	Topley	0.0575	0.03	73.50	0.8	Nil	Trace	Nil	Nil	4.5	2.0	78.1			
260	Gold Leaf	J. Flynn	Anyox	1.8255	1.962	0.60	Nil	Nil	Nil	0.9	Nil	3.2	0.9	84.2			
261	Gold Leaf	J. Flynn	Anyox	3.6721	0.930	0.60	Nil	Nil	Nil	0.9	Nil	3.2	0.9	84.2			
264	Homestake (British Lion Mines, Ltd.)	K. Gordon Mackenzie	Alice Arm	8.8067	4.100	5.90	7.4	0.8	3.8	Trace	Nil	19.2	18.0	38.1			
143	Oral M.	J. Lehto and J. Haahli	Stewart	5.1685	0.830	2.00	3.5	Nil	0.4	Nil	Nil	10.0	6.3	66.6			
311	Ruth claim	T. H. Payne	Alice Arm	5.9575	0.220	150.00	Nil	0.6	1.2	0.8	0.35	6.2	4.4	74.8			
175	Snowbird group	T. E. Neilson	Stuart Lake	13.2205	Trace	Trace	Nil	Nil	Nil	Nil	55.0	0.3	19.8	19.5		0.11	
197	Snowbird group	T. E. Neilson	Stuart Lake	17.9585	0.04	0.20	Nil	Nil	Trace	Nil	57.5	0.4	22.0	17.0		0.17	
208	Tide Lake Gold	Mrs. J. L. Campbell	Stewart	0.7690	23.92	48.80	Nil	3.6	16.5	0.1	Nil	3.4	10.8	50.3			
224	Tide Lake Gold	Mrs. J. L. Campbell	Stewart	1.0163	16.37	39.30	Nil	2.33	10.17	Nil	Nil	3.7	9.5	49.3			
246	Victory group	Mrs. M. C. Simpson	Smithers	2.6851	0.50	28.00	0.9	15.2	6.8	5.3	Nil	11.6	8.8	33.2			
267	Victory group	Mrs. M. C. Simpson	Smithers	3.8545	0.525	34.50	0.9	20.2	8.6	4.3	Nil	10.8	9.3	24.8			
268	Victory group	Mrs. M. C. Simpson	Smithers	2.4310	0.305	26.50	0.7	15.8	8.8	3.5	Nil	9.0	9.2	34.6			
152	Wolf	J. Fiva	Alice Arm	5.4200	0.325	262.95	0.5	5.0	6.2	Nil	0.3	4.6	6.4	65.0			

Test Lots.

281-T	Alexander group	S. Chalmers	Stewart	0.0093	Trace	0.80											
282-T	Alexander group	S. Chalmers	Stewart	0.0151	0.06	49.00	Trace	3.7	6.4	Trace	Nil	5.4	11.6	66.0			
283-T	Alexander group	S. Chalmers	Stewart	0.0012	Trace	Trace											
293-T	American Boy	Mrs. B. S. Sargent	South Hazelton	0.1760	0.36	7.30	Nil	0.6	Nil	27.4	Nil	22.4	10.7	21.3			
182-T	Aurora M.C.	Karl Eklund	Anyox	0.0121	0.37	14.40	Nil	0.35	1.6	Nil	Nil	3.6	2.2	83.2			
183-T	Aurora M.C.	Karl Eklund	Anyox	0.0035	0.17	4.20	Nil	0.15	0.9	Nil	Nil	3.6	1.6	64.4			
304-T	Border M.C.	Wm. Kern	Porcher Island	0.0232	2.50	1.75	Nil					12.1	5.8	72.0			

241-T	Butedale	A. McLeod	Butedale	0.0520	Trace	Trace												
242-T	Butedale	A. McLeod	Butedale	0.0512	Trace	Trace												
292-T	Butedale	A. McLeod	Butedale	0.0440	0.04	1.50	5.2	Nū	Nū			7.0	1.6	53.2				
149-T	Columario	W. W. Duncan	Usk	0.0080	0.51	0.50	Nū			Nū		16.8	16.5	64.2				
157-T	Columario	J. Lee Bethurem	Usk	0.0140	0.90	1.18												
158-T	Columario	J. Lee Bethurem	Usk	0.0065	2.37	6.59												
159-T	Columario	J. Lee Bethurem	Usk	0.0030	1.74	6.40												
163-T	Columario	J. Lee Bethurem	Usk	0.0035	2.07	6.70												
164-T	Columario	J. Lee Bethurem	Usk	0.0077	0.57	1.57												
167-T	Columario	W. W. Duncan	Usk	0.0030	0.29	1.47												
168-T	Columario	J. Lee Bethurem	Usk	0.0040	0.76	4.72	10.29											
171-T	Columario	J. Lee Bethurem	Usk	0.0590	3.68	8.30	1.8			Nū		23.3	24.5	46.0				
202-T	Columario	W. W. Duncan	Usk	0.0635	1.69	4.10	Nū	Nū	Nū	Nū	Nū	28.4	18.6	41.0				
169-T	Cordillera	J. Darby	Usk	0.0427	0.26	0.90	1.2							83.0				
170-T	Cordillera	J. Darby	Usk	0.0343	0.26	1.00	1.0							86.6				
160-T	Coronado	H. Orm	Hudson Bay Mountain	0.0525	0.28	36.92	0.4	25.2	12.6	2.5	Nū	9.0	14.4	22.4				
161-T	Coronado	H. Orm	Hudson Bay Mountain	0.0670	0.42	72.00	0.5	16.2	19.6	2.6	Nū	9.9	16.6	24.4				
176-T	Coronado	H. Orm	Hudson Bay Mountain	0.0700	0.22	65.70	0.6	48.1	11.2	2.0	0.5	6.8	16.3	9.0				
177-T	Coronado	H. Orm	Hudson Bay Mountain	0.0645	0.26	47.00	0.7	32.4	14.1	2.9	0.6	8.0	15.2	18.2				
186-T	Coronado	H. Orm	Hudson Bay Mountain	0.0701	0.09	53.90	1.2	29.0	19.5	0.1	Nū	6.7	19.2	10.9				
187-T	Coronado	H. Orm	Hudson Bay Mountain	0.0542	0.06	15.60	0.1	9.2	33.0	0.1	Nū	7.7	20.0	15.1				
205-T	Coronado	H. Orm	Hudson Bay Mountain	0.0726	0.10	90.20	1.0	70.1	5.5	0.9	Nū	2.8	15.2	2.8				
206-T	Coronado	H. Orm	Hudson Bay Mountain	0.0487	0.25	1.30	Nū	0.8	2.0	16.8	Nū	16.7	8.9	37.9				
252-T	Coronado	H. Orm	Hudson Bay Mountain	0.0793	0.06	79.80	0.2	67.0	2.5	0.1	0.2	2.0	13.0	3.2				
195-T	Crusader Mining Co. (Gold Knife, Gold Drop, etc.)	K. Gordon Mackenzie	Stewart	0.0485	0.63	2.00	Trace	Nū	4.2	Nū	Nū	26.9	16.2	41.7				
215-T	Dolron	E. W. Dolron	Queen Charlotte Islands	0.0097	Trace	0.08	Nū	0.7	1.6	Nū								
269-T	Duthie mine	A. W. Kelly and J. J. Her- man	Smithers	0.0462	0.12	34.50	Trace	10.7	9.0	2.7	Nū	9.9	10.7	29.1				
270-T	Duthie mine	A. W. Kelly and J. J. Her- man	Smithers	0.0535	0.23	127.70	0.2	36.4	7.8	1.9	Nū	6.9	13.6	13.1				
271-T	Duthie mine	A. W. Kelly and J. J. Her- man	Smithers	0.0686	0.30	226.00	0.8	33.8	9.1	5.3	0.1	9.5	16.3	12.0				
272-T	Duthie mine	A. W. Kelly and J. J. Her- man	Smithers	0.0572	0.24	62.00	0.7	40.0	18.5	0.8	Nū	9.5	20.0	7.0				

238-T	Hyland Basin	C. M. Campbell	Smithers	0.0955	0.96	150.00	2.0	19.1	28.7	Nū	1.0	2.0	18.3	20.9			
239-T	Hyland Basin	C. M. Campbell	Smithers	0.0940	1.64	1255.00	15.6	2.4	2.2	Nū	2.0	10.5	4.8	80.0			
240-T	Hyland Basin	C. M. Campbell	Smithers	0.0985	1.74	301.10	4.0	22.2	9.1	Nū	1.0	2.6	6.9	40.7			
245-T	Homestake (British Lion Mines, Ltd.)	K. Gordon Mackenzie	Alice Arm	0.0405	0.15	3.20	4.0	9.6	8.1	Nū	Nū	13.4	18.4	33.4			
146-T	Marrigold	L. Bartholomew	Topley	0.1055	0.03	12.00	1.0	4.6	2.0	Nū	Nū	5.0	1.4	70.9			
243-T	Ness-Telkwa group	T. A. Logie	Smithers	0.4254	0.43	160.80	3.4	25.2	1.1	Nū	0.8	4.4	7.5	48.2			
251-T	Nugent Queen	E. M. Morrison	Allison Harbour	0.2721	2.08	2.40	0.2	Nū	1.8	Nū	Nū	7.6	6.6	74.8			
259-T	Nugent Queen	E. M. Morrison	Allison Harbour	0.5502	0.58	0.20	Trace	Nū	Nū	Nū	Nū	7.0	6.1	64.8			
274-T	Nugent Queen	E. M. Morrison	Allison Harbour	0.1332	1.60	8.00	1.2	3.2	0.9			10.1	8.8	71.9			
220-T	Rainbow group	A. A. McLean	Smithers	0.5390	0.57	40.20	12.0	Trace	0.9	0.55	1.65	14.3	11.8	37.6			
221-T	Rainbow group	A. A. McLean	Smithers	0.1828	0.12	75.10	14.1	Nū	1.4	1.55	5.4	10.9	11.4	24.9			
285-T	Red Cliffe	H. D. Haywood	Stewart	1.7995	2.33	10.00	0.2	Trace	0.6	Trace	Nū	16.2	7.6	58.4			
286-T	Red Cliffe	H. D. Haywood	Stewart	2.0105	3.83	10.10	Trace	Trace	0.5	Nū	Nū	16.1	7.1	58.2			
287-T	Red Cliffe	H. D. Haywood	Stewart	0.9920	2.55	11.00	0.4	20.4	6.5	Nū	Nū	15.3	13.0	26.6			
288-T	Red Cliffe	H. D. Haywood	Stewart	0.4465	2.32	10.00	1.0	8.2	22.7	Nū	Nū	14.0	19.9	22.8			
289-T	Red Cliffe	H. D. Haywood	Stewart	0.0301	10.15	3.35	Trace	Nū	Nū								
213-T	Rattacker	D. Rattacker	Manson Creek	0.0624	0.90	5.30	0.1	Nū	Nū	Nū	0.1	2.6	0.3	77.2			
294-T	Ruby	W. H. Harrison	White Sail Lake	0.0040	0.08	28.90	0.8	17.7	8.4	0.15	Nū	19.2	21.0	25.3			
295-T	Ruby	W. H. Harrison	White Sail Lake	0.0045	0.02	35.20	0.5	42.0	7.8	0.4	Nū	16.2	18.0	6.5			
302-T	Ruth claim	T. H. Payne	Alice Arm	0.0871	0.24	153.00	Nū	Nū	2.0	1.0	0.2	6.0	4.3	78.8			
303-T	Ruth claim	T. H. Payne	Alice Arm	0.0018	0.01	6.90	Nū	Nū	Trace	0.1	Nū	11.5	6.9	74.4			
201-T	Ruth & Francis	D. J. McLean	Stewart	0.0422	0.04	7.50	Nū	11.6	6.3	0.6	4.8	12.8	29.0	10.0			
196-T	Ryder	H. A. Ryder	Parkville	0.1975	0.02	0.20	Nū	Nū	0.2	Trace	28.7	1.6	11.0	52.0			
147-T	Three Star group	L. Kylling	Topley	0.4760	0.23	27.60	1.5	Nū	10.0	Nū	0.7	17.9	14.1	19.4			
148-T	Three Star group	L. Kylling	Topley	0.0242	0.12	1.80	Trace	1.9	2.2	Nū	Nū	5.0	4.5	80.2			
296-T	Tillicum M.C.	J. A. Goodspeed	Port Hardy	0.0015	2.58	5.50	0.2	7.4	6.2	Trace	Nū	20.4	20.1	41.4			
227-T	Victor group	W. W. Duncan and S. G. Cooper	Usk	0.0050	0.18	0.20	0.4	0.1	Nū	Nū	Nū	6.7	1.6	81.6			
228-T	Victor group	W. W. Duncan and S. G. Cooper	Usk	0.0057	4.12	2.40	1.8	0.2	Nū	Nū	Nū	25.0	25.2	44.8			
229-T	Victor group	W. W. Duncan and S. G. Cooper	Usk	0.0010	0.10	0.20	Nū	Nū	Trace	Nū	Nū	44.2	47.4	4.2			
142-T	Wolf	J. Fiva	Alice Arm	0.1060	0.58	237.50	0.2	5.0	6.1	Nū	Nū	5.1	6.7	72.1			

472-T	Caledonia group	MacDonald, H.	Dorreen	0.0244	Trace	21.00	0.30	14.70	11.70	0.48	0.15	33.80	27.20	4.80		
432-T	Canadian Girl	Stephens, M. M.	Pitt Island	0.0557	0.46	0.30	Trace					14.60	14.10	60.00		
433-T	Canadian Girl	Stephens, M. M.	Pitt Island	0.1597	1.32	1.00	Trace					13.00	11.90	66.50		
315-T	Columario	Bissonnette, J.	Usk	0.0165	0.96	1.00										
313-T	Coronado	Orm, H.	Smithers	0.0525	0.39	36.00	0.25	16.50	13.60	8.25	0.20	12.60	15.50	21.00		
314-T	Coronado	Orm, H.	Smithers	0.0438	0.10	9.70	0.10	7.90	8.80	7.30	Nil	10.60	11.20	37.10		
487-T	Coronado	Orm, H.	Smithers	0.0647	0.22	42.00	0.40	19.80	14.80	4.70	0.20	9.60	14.70	28.60		
356-T	Coronado	Griffin, F.	Smithers	0.0690	0.21	50.60	1.00	34.50	17.10	2.00	0.30	9.00	18.60	11.40		
357-T	Coronado	Griffin, F.	Smithers	0.0082	0.92	5.50	0.10	Trace	11.60	18.00	Trace	28.80	18.90	19.30		
376-T	Coronado	Griffin, F.	Smithers	0.0393	1.13	7.70	1.20	Nil	13.00	20.50	Trace	24.20	18.80	18.80		
377-T	Coronado	Griffin, F.	Smithers	0.0612	0.26	32.80	1.00	22.20	22.70	2.70	0.20	9.60	19.90	17.10		
333-T	Dome Mountain	Wilson, R. W.	Smithers	1.0905	3.45	3.90	Trace	1.40	4.00	Nil	Trace	13.00	14.20	59.00		
334-T	Dome Mountain	Wilson, R. W.	Smithers	0.5670	2.40	3.20	Trace	1.40	4.00	Trace	Nil	11.00	13.80	54.40		
434-T	Dunwell	Samis & Co.	Stewart	0.5505	4.10	10.80	0.50	Nil	1.40			19.60	19.90	51.10		
373-T	Duthie	Herman, J. J.	Smithers	0.5215	0.30	260.10	0.70	32.50	13.00	3.00	0.80	11.20	18.50	12.10		
374-T	Duthie	Herman, J. J.	Smithers	0.2721	0.26	100.70	0.40	18.80	12.30	4.10	0.40	16.10	17.30	19.70		
411-T	Duthie	Herman, J. J.	Smithers	0.0493	0.36	69.40	0.20	16.30	13.10	3.80	0.20	9.30	14.40	27.40		
391-T	Duthie	McEwen, J. L.	Smithers	0.4871	0.16	200.00	Trace	51.10	15.60			4.70	18.70	2.90		
892-T	Duthie	McEwen, J. L.	Smithers	0.6737	0.26	252.00	0.20	39.60	16.50			7.80	18.40	5.90		
893-T	Duthie	McEwen, J. L.	Smithers	0.2285	0.28	254.00	0.70	26.60	16.70			8.80	18.20	16.30		
894-T	Duthie	McEwen, J. L.	Smithers	0.2871	0.22	57.40	0.80	51.00	9.20			6.50	15.30	7.90		
442-T	Duthie	McEwen, J. L.	Smithers	0.0605	0.10	119.30	0.40	55.70	4.70	0.75		5.00	9.40	10.50		
443-T	Duthie	McEwen, J. L.	Smithers	0.0540	0.28	80.00	0.50	28.10	19.60	2.50		10.80	20.00	9.90		
444-T	Duthie	McEwen, J. L.	Smithers	0.0693	0.32	93.00	0.30	39.50	9.90	3.00		8.80	16.50	15.00		
445-T	Duthie	McEwen, J. L.	Smithers	0.0585	0.27	138.40	0.40	26.00	15.40	4.10		9.80	16.50	19.40		
446-T	Duthie	McEwen, J. L.	Smithers	0.0609	0.22	174.50	0.40	37.60	16.90	1.50		8.40	18.30	7.50		
488-T	Duthie	McEwen, J. L.	Smithers	0.0492	0.24	34.00	0.30	24.30	19.90	1.50	0.10	15.20	20.90	10.90		
489-T	Duthie	McEwen, J. L.	Smithers	0.0577	0.26	151.00	0.60	16.80	18.30	1.80	0.30	9.60	15.60	27.40		
490-T	Duthie	McEwen, J. L.	Smithers	0.0547	0.20	161.00	0.50	25.20	17.00	1.30	0.30	8.40	15.30	20.10		
491-T	Duthie	McEwen, J. L.	Smithers	0.0597	0.26	159.00	0.30	33.10	14.00	0.70	0.20	9.60	15.80	16.10		
369-T	Eklund	Eklund, K.	Anyox	0.0350	0.20	0.40										
328-T	Gardner Canal	Dumas, H.	Gardner Canal	0.0073	0.10	Trace										
383-T	Glacier Gulch	Banta, W.; Loveless, G.; Campbell, S. F.	Smithers	0.0272	28.32	7.80									15.10	
323-T	Gold Drop	J. Morin	Stewart	0.0283	5.28	14.70										
361-T	Golden Eagle	Tompkins, E.	Topley	0.3125	0.19	244.80	1.10	22.60	17.30	Trace	0.80	4.10	15.40	30.80		
362-T	Golden Eagle	Tompkins, E.	Topley	0.2442	0.30	311.70	1.50	10.60	10.20	0.20	1.20	8.30	15.30	45.50		
363-T	Golden Eagle	Tompkins, E.	Topley	0.0557	0.81	235.80	0.60	3.00	1.60	0.10	Nil	11.00	10.80	57.60		
381-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.0582	0.09	229.30	1.30	21.40	18.60			5.60	16.80	29.60		
382-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.0018	0.02	79.10	4.20	5.70	7.50							
384-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.5065	0.35	204.60	0.90	7.70	6.10	0.10	0.50	8.10	9.90	56.00		
385-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.2670	0.44	195.50	0.60	5.20	4.70	0.10	0.40	8.60	9.30	61.00		
387-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.3030	0.22	106.00	0.30	2.30	2.60	0.08	0.35	7.60	7.40	68.90		
388-T	Golden Eagle	Bannert, E.; Tompkins, E.	Topley	0.1787	0.09	206.70	1.00	16.70	2.80	0.10	0.35	6.60	8.10	52.10		

423-T	Napco group	Rochfort, J. D. O.	Stewart	0.0026	147.30	50.00												
473-T	Orical group	Wold, C.	Topley	0.0353	0.07	151.00	0.70	14.30	0.90	Trace	0.60	11.20	2.10	38.30				
451-T	Red Bird	Kylling, L.	Topley	0.0868	0.01	30.00	16.40					4.80	4.80	44.60				
469-T	Red Cliffe	Haywood, H. D.	Stewart	0.0886	2.35	1.60	0.85	5.90	5.90	0.02	Nil	19.70	20.30	32.60				
413-T	Red Top	McLean, F.	Cedarvale	0.0095	0.24	2.10	Trace	Trace	Nil	12.40	0.40	21.40	14.40	47.10				
414-T	Red Top	McLean, F.	Cedarvale	0.0035	0.22	1.80				11.50	0.40	21.40	13.10	51.30				
448-T	Solomon mine	Garland, J.	Kalum Lake	0.1462	Trace	Trace												
440-T	Takla Landing	Shaede, E. R.	Takla Lake	0.0101	17.50													
316-T	Three Star group	Kylling, L.	Topley	0.0102	0.12	1.90	Nil	1.30	2.10	0.10	Nil	10.80	7.40	63.90				
317-T	Three Star group	Kylling, L.	Topley	0.0323	0.27	3.70	0.30	3.80	2.60	0.15	Trace	11.20	8.50	59.00				
318-T	Three Star group	Kylling, L.	Topley	0.0413	0.44	3.90	0.40	Nil	0.80	0.20	Nil	17.60	9.20	46.40				
319-T	Three Star group	Kylling, L.	Topley	0.0462	0.56	22.60	4.20	0.40	12.10	0.30	0.10	16.60	22.80	39.10				
418-T	Tide Lake Gold	Campbell, Mrs. J. L.	Stewart	0.3710	71.10	106.11	0.09	2.70	16.00	0.40		3.20	10.20	41.50				
351-T	Tillicum claim	Goodspeed, J. A.	Port Hardy	0.2115	3.03	6.00	0.30	6.00	6.00	Trace	Nil	23.20	20.30	35.80				
371-T	Tillicum claim	Goodspeed, J. A.	Port Hardy	0.0070	0.30	2.00	0.10	2.30	4.20	Nil	Nil	10.60	10.70	63.90				
372-T	Tillicum claim	Goodspeed, J. A.	Port Hardy	0.1000	1.33	4.00	0.30	5.70	6.40	Nil	Nil	23.70	21.50	34.80				
364-T	Toulon claim	Orm, H.	Usk	0.0318	0.15	3.80	2.90	Nil	Trace	Nil	0.50	6.00	1.60	82.40				
365-T	Toulon claim	Orm, H.	Usk	0.0462	0.24	2.30	3.50	Nil	Trace	Nil	Nil	7.20	2.40	80.20				
422-T	Victor group	Cooper, S. G.; Duncan, W. W.	Usk	0.1230	2.73	1.60	2.30					23.90	22.00	48.10				
347-T	Zymoetz group	Turner, T.	Copper River	0.0540	0.22	1.80	0.10	Nil	Nil	Nil	Nil	15.80	13.10	58.00				
348-T	Zymoetz group	Turner, T.	Copper River	0.0542	0.21	3.00	0.50	5.40	8.90	Nil	Nil	10.00	11.80	52.00				

Assay Lots.

324-X	Bhutze Rapids	Davies, S.	Prince Rupert	0.0030	0.08	2.40												
325-X	Bhutze Rapids	Davies, S.	Prince Rupert	0.0025	0.04	5.50												
326-X	Bhutze Rapids	Davies, S.	Prince Rupert	0.0010	0.02	0.20												
424-X	Chickamin group	Harrison, C. V.	White Sail Lake	0.0025	0.03	0.10	0.80											
336-X	Dawson	Dawson, J.	Porcher Island	0.0018	Trace	Trace												
349-X	Dorreen	Jones, J.	Dorreen	0.0010	0.22	0.20												
493-X	Hazelton View	Lee, J. T.	Hazelton	0.0010	5.10	9.30				5.90								2.50
370-X	Houston	Kelly, C.	Houston	0.0010	0.04	5.60	10.20	Nil	0.90	Nil	Nil	38.10	11.70	9.50				
405-X	Highland Basin	Agnew, H. W.	Smithers	0.0005	1.22	152.00	1.80	24.90	13.90	Trace	1.10	5.00	10.70	38.40				
425-X	Lorne Creek	Jones, J.	Lorne Creek	0.0005	0.04	0.10												
426-X	Lorne Creek	Jones, J.	Lorne Creek	0.0022	0.02	0.10												
474-X	Oral M (Stewart Canal Gold Mines, Ltd.)	Hahti, J.	Stewart	0.0010	0.13	0.47	1.00					6.20	2.80	69.30				
475-X	Oral M (Stewart Canal Gold Mines, Ltd.)	Hahti, J.	Stewart	0.0010	0.06	0.35	0.25					4.60	1.20	74.80				
476-X	Oral M (Stewart Canal Gold Mines, Ltd.)	Hahti, J.	Stewart	0.0010	0.98	3.20	6.90					25.20	19.30	33.00				
477-X	Oral M (Stewart Canal Gold Mines, Ltd.)	Hahti, J.	Stewart	0.0010	0.30	2.30	6.50					16.00	11.60	46.30				

SAMPLING PLANT—Continued.
Assay Lots—Continued.

Lot No.	Property.	Shipper.	Locality.	Dry Tons.	Au	Ag	Cu	Pb	Zn	As	Sb	Fe	S	SiO ₂	Bi	Co
					Oz. per Ton.	Oz. per Ton.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
312-X	Oriental group	Wold, C.	Topley	0.0015	0.02	46.60	0.20									
333-X	Oriental group	Wold, C.	Topley	0.0008	Trace	35.80		10.00	18.60							
340-X	Rocky Bay claim	Cunningham, J. W.	Sinclair Mills	0.0005	0.01	Trace	9.80									
341-X	Rocky Bay claim	Cunningham, J. W.	Sinclair Mills	0.0015	Trace	Trace	2.70									
467-X	Ritchie	Ritchie, A. D.	Anyox	•			Trace									
458-X	Ritchie	Ritchie, A. D.	Anyox	•			Trace									
459-X	Ritchie	Ritchie, A. D.	Anyox	•			Trace									
460-X	Ritchie	Ritchie, A. D.	Anyox	•			Trace									
350-X	Thompson	Thompson, N. G.	Prince George	0.0010	13.05											
352-X	Tillicum claim	Goodspeed, J. A.	Port Hardy	0.0010	0.14	1.30										
441-X	Victor group	Duncan, W. W.	Usk	0.0010	3.50	7.00	0.25									
390-X	Wold	Wold, C.	Topley	0.0005	Trace	4.40		Trace	5.20							

• Water sample.